Imprint

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Title page and back cover: Ach Valley with Hohle Fels.
Caves with the oldest Ice Age art

World Heritage nomination - Germany

Volume I
Nomination File chapter 1 - 9
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Large-size maps / DVD supplement

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EXECUTIVE SUMMARY

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The Lone Valley in wintertime.
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<tr>
<th>Country</th>
<th>Federal Republic of Germany</th>
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<tbody>
<tr>
<td>State, province or region</td>
<td>State of Baden-Württemberg (BW)</td>
</tr>
<tr>
<td></td>
<td>Alb-Donau District (UL)</td>
</tr>
<tr>
<td></td>
<td>District of Heidenheim (HDH)</td>
</tr>
</tbody>
</table>

| Name of property            | Caves with the oldest Ice Age art                |

<table>
<thead>
<tr>
<th>Geographical coordinates to the nearest second</th>
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<table>
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<th>Component part Id N°1: Ach Valley (Fig. 1)</th>
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<tr>
<td>Central point:</td>
</tr>
<tr>
<td>Area of property:</td>
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<td>Area of buffer zone:</td>
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</tbody>
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<th>Component part Id N°2: Lone Valley (Fig. 2)</th>
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<tr>
<td>Central point:</td>
</tr>
<tr>
<td>Area of property:</td>
</tr>
<tr>
<td>Area of buffer zone:</td>
</tr>
</tbody>
</table>

**Total area**

| Area of property:                          | 462.1 ha                                      |
| Area of buffer zone:                       | 1158.7 ha                                     |

Both component parts comprise three archaeological cave sites each.

<table>
<thead>
<tr>
<th>Component part Id N°1: Ach Valley (Fig. 1)</th>
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<tr>
<td>Geißenklösterle:</td>
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<tr>
<td>Sirgenstein Cave:</td>
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<td>(Id N° 1-2)</td>
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<td>Hohle Fels:</td>
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<tr>
<td>Hohlenstein Stadel Cave:</td>
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<tr>
<td>(Id N° 2-2)</td>
</tr>
<tr>
<td>Bockstein Cave / Bocksteintörlle:</td>
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<tr>
<td>(Id N° 2-3)</td>
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Hitherto, in the Swabian Jura Palaeolithic cave sites have only been discovered in the valley slope areas. For this reason, the delimitations of the component parts being nominated, the “Ach Valley” and the “Lone Valley” have been proposed in such a way that in each respective valley they extend from the valley floor up to the beginning of the uplands of the Swabian Jura. Both component parts of the property comprise a buffer zone.

**Component part Ach Valley (Id N°1)**

The Ach Valley is located about 20 km to the west of Ulm. It runs approximately parallel to the south-eastern cliff line of the Swabian Jura. This in turn follows approximately the course of what is today the valley of the Danube between Ehingen and Ulm. The nominated area of this valley section runs over a length of about 3 km, with a maximum floor width of about 500 m in an SW-NO direction between Schelklingen and Blaubeuren-Weiler in the Alb-Donau District. The overall area extends along the River Ach, which flows through the valley region and a little later opens into the River Blau. The valley floor in this area was scoured out some 200 m deep by the original course of the Danube, and at a later date again aggradated in part by its tributaries. The uplands of the plateau of the Swabian Jura nowadays rise up to 700 m above standard sea level. They enclose the nominated part of the valley, which is about 530 m above sea level, in the south-east and north-west.

The boundaries of the Ach Valley component part are therefore, in the SE and NW, located precisely at the transition from the valley slope to the upland. Only in the slope regions are there caves to be found with Ice Age sediments and archaeological finds. The delineation of the component part is defined by the location of the archaeological sites of the Geißenklösterle in the NE and the Hohle Fels in the SW. In this area, the property is somewhat widened in the direction of the localities of Schelklingen and Blaubeuren-Weiler, since experience has shown that further associated open-air sites are to be expected in the immediate vicinity of the caves. The
possibility to discover preserved archaeological sites in immediate connection with the “Caves with the oldest Ice Age art”, however, recedes perceptibly as the distance from the caves increases.

**Component part Lone Valley (Id N°2)**

The Lone Valley is a typical wide valley of the Jura uplands with a floor width of less than 200 m, the shoulder area of which rarely rises more than 50 m above the valley floor. The valley section nominated here comprises the area located between the K3022 district road from Öllingen (Alb-Donau District) to Bissingen ob Lontal (District of Heidenheim) and the Archäopark Vogelherd near the locality of Niederstotzingen-Stetten (District of Heidenheim). The overall area of the nominated part region more or less follows in its course the east-west axis of the valley, and has a length of about 3 km.

The northern and southern boundaries of the nominated area run along the transition from the slope area to the wooded upland areas of the Swabian Jura. The eastern and western boundaries have been determined on the basis of the archaeological sites of the Vogelherd Cave and Bockstein Cave. As in the Ach Valley, the property has been somewhat widened in the valley region, since experience has shown that further open-air sites are to be expected in the immediate vicinity of the caves. The possibility of preserved archaeological sites in immediate connection with the “Caves with the oldest Ice Age art”, however, recedes perceptibly as the distance from the caves increases.

**Buffer zone**

The respective buffer zones surround the component parts of the Lone Valley and Ach Valley. These are areas in which further archaeological sites are to be reckoned on, which have an indirect connection with the “Caves with the oldest Ice Age art”.

---

**Criteria under which property is nominated**

(i)  
(iii)
Fig. 1 Map of the Ach Valley (component part Id N° 1), showing boundaries of the property and the buffer zone.
Fig. 2 Map of the Lone Valley (component part Id N° 2), showing boundaries of the property and the buffer zone.
Draft statement of outstanding universal value

a) Brief synthesis

Some 43,000 years ago, anatomically modern humans (*Homo sapiens*) reached Europe. As far as is known at present, art began to develop after these people had spread into Europe. In this context, the representations of art which are the earliest known at the present time are associated with what is known as the Aurignacian. The Aurignacian was one of the earliest cultural stages of the Upper Palaeolithic period, and in Europe dates to between some 33,000 and 43,000 years ago.

Located in valley sections of the rivers Ach and Lone (Baden-Württemberg, South-west Germany) are six caves, the Vogelherd Cave, Hohlenstein Stadel Cave, Bockstein Cave / Bocksteintörle, Geißenklösterle, Sirgenstein Cave, and Hohle Fels. Beside others, archaeological layers belonging to the Aurignacian were discovered. These layers, dating back 35,000 to 43,000 years, contained hundreds of items of personal ornament, at least eight musical instruments (flutes made of ivory and bird bone), and more than 50 figurines carved from mammoth ivory. Among these are three therianthropes (composite beings that are half human, half animal), as well as the statuette of a woman and figurines depicting various animals from the Ice Age. Therefore the respective valley sections of the Lone and Ach Rivers have yielded a unique concentration of archaeological sites with some of the oldest figurative art and some of the oldest musical instruments worldwide.

The caves are located only a few kilometres away from each other within the two separate valleys. Together with the artifacts and the surrounding landscape they form an outstanding early cultural ensemble that helps to illuminate the origins of human artistic development. Both component parts of the property are, from historical, aesthetic as well as anthropological perspectives, of outstanding universal value (Article 1 of the Convention concerning the Protection of the World Cultural and Natural Heritage, 16 November 1972). Moreover, the “Caves with the oldest Ice Age art” fulfil a number of
the criteria for the definition of a site of human evolution in the meaning of the “HEADS Action Plan”. These relate in particular to the development of art, music, and religion.

Since the 19th century, archaeological excavations have repeatedly been conducted in the caves. This long and highly productive tradition of research has had a significant influence on the exploration of the Upper Palaeolithic in Central Europe.

b) Justification for criteria
Criterion (i): The nominated property represents a masterpiece of human creative genius.

The “Caves with the oldest Ice Age art” and their surrounding areas were part of the habitat of early modern Homo sapiens. They are therefore inseparably linked with the creators of this art. The sites represent the place of inspiration and origin of the oldest figurative art. Moreover, they document the specific locations where artists made, used and stored these finds. These caves served as the homes, ateliers and concert halls for the earliest artists. The components “landscape”, “caves” and “finds” are all to be considered within this ensemble. The remarkable figurative art objects and musical instruments found in the caves belong to the earliest masterpieces of human creativity in the world.

Criterion (iii): The nominated property bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

In the archaeological layers of the “Caves with the oldest Ice Age art” the cultural remains of the Aurignacian are preserved in its entire complexity. Unique are the figurative artworks and musical instruments from which we can gain insights into the origins of art, music and religion. They were produced, used and ultimately deposited in the caves of the Ach and Lone valleys. Thus, the landscape, the caves and the finds as an ensemble represent a unique and exceptional example of an early cultural tradition and an extinct culture.
c) Statement of integrity
The serial property of the “Caves with the oldest Ice Age art” represents components of the same historical-cultural group (Aurignacian) and the same geographical region (Swabian Jura). It is of central importance for our knowledge concerning Palaeolithic settlement systems as well as the origins of figurative art, music and religious concepts of early modern humans. The nominated areas encompass all components of the property: from the objects themselves to the archaeological layers and the settlement structures of the cave sites to the immediate surrounding landscape. In addition to the internationally renowned sites, the property includes lesser known sites and as yet unstudied sites. As such we are able to maintain the integrity of the designated property permanently with the help of existing protective measures and safeguarding provisions.

d) Statement of authenticity
Geological deposits protected the prehistoric remains at the cave sites until the first palaeontological and archaeological excavations. Thanks to this favourable geological setting, areas within the nominated property retained their authenticity. Excavations and scientific research have verified the authenticity of the caves, the landscape and the archaeological layers. An important element here is the existing and ongoing documentation of the sites, finds and features, demonstrating the reliability and outstanding quality of the information.

e) Requirements for protection and management
The serial property, “Caves with the oldest Ice Age art”, is protected with force of law by internationally ratified conventions, and by the laws of Germany and Baden-Württemberg. Activities which have an effect on the archaeological sites and the surrounding landscape are regulated and limited by law. The area in which the property and the cave sites are located enjoy protection by way of laws, which
protect cultural and natural heritage sites alike. The management system of the property is comprehensive and far-reaching. It integrates all levels of administration and the authorities concerned. Joint plans on the international, national, state-wide and regional levels are coordinated and implemented by way of action plans. The exchange of information for research and conservation purposes and sustainable tourism management is rendered possible and promoted by the use of existing international and national networks and the creation of new ones. The State Office for Cultural Heritage Baden-Württemberg ensures the upholding of the Cultural Heritage Protection Act, and supervises its implementation by way of an agreed monitoring programme. The Federal Republic of Germany and the State of Baden-Württemberg bear the financing of the nominated property. Further support is provided by the local districts and communities.
<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Ministerium für Finanzen und Wirtschaft Baden-Württemberg (Ministry of Finance and Economics Baden-Württemberg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Schlossplatz 4 Neues Schloss D-70173 Stuttgart Germany</td>
</tr>
<tr>
<td>Tel:</td>
<td>+49 (0)711 123-0</td>
</tr>
<tr>
<td>Fax:</td>
<td>+49 (0)711/123-4791</td>
</tr>
<tr>
<td>E-mail:</td>
<td><a href="mailto:poststelle@mfw.bwl.de">poststelle@mfw.bwl.de</a></td>
</tr>
<tr>
<td>Web address:</td>
<td><a href="https://mfw.baden-wuerttemberg.de">https://mfw.baden-wuerttemberg.de</a></td>
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<table>
<thead>
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<th>Organisation:</th>
<th>Landesamt für Denkmalpflege Baden-Württemberg im Regierungspräsidium Stuttgart (State Office for Cultural Heritage Baden-Württemberg)</th>
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<tbody>
<tr>
<td>Address:</td>
<td>Berliner Straße 12 D-73728 Esslingen am Neckar Germany</td>
</tr>
<tr>
<td>Tel:</td>
<td>+49 (0) 711 904 45-109</td>
</tr>
<tr>
<td>Fax:</td>
<td>+49 (0) 711 904 45-444</td>
</tr>
<tr>
<td>E-mail:</td>
<td><a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
</tr>
<tr>
<td>Web address:</td>
<td><a href="http://www.denkmalpflege-bw.de">http://www.denkmalpflege-bw.de</a></td>
</tr>
</tbody>
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1. IDENTIFICATION OF THE PROPERTY

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The south-west entrance of Vogelherd Cave.
1. Identification of the property

1.a Country
Federal Republic of Germany

1.b State, province or region
Federal State of Baden-Württemberg (BW) - Alb-Donau District (UL) and District of Heidenheim (HDH)

1.c Name of property
Caves with the oldest Ice Age art

1.d Geographical coordinates to the nearest second
Two spatially separated areas are being nominated for the inscription of a serial property on the World Heritage List. Both component parts comprise three archaeological cave sites each. The geographical coordinates for the six cave sites are indicated precise to the second.
Identification of the property

<table>
<thead>
<tr>
<th>Id N°</th>
<th>Name of component part</th>
<th>Region / district</th>
<th>Coordinates of central point</th>
<th>Area of nominated component part of the property (ha)</th>
<th>Area of buffer zone (ha)</th>
<th>Map N° (Fig.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ach Valley</td>
<td>Alb-Donau</td>
<td>N 48° 23’ 16” E 009° 45’ 56”</td>
<td>271.7</td>
<td>766.8</td>
<td>1-5</td>
</tr>
<tr>
<td>2</td>
<td>Lone Valley</td>
<td>Heidenheim / Alb-Donau</td>
<td>N 48° 33’ 18” E 010° 10’ 32”</td>
<td>190.4</td>
<td>391.9</td>
<td>1-6</td>
</tr>
<tr>
<td></td>
<td>Total area (ha):</td>
<td></td>
<td></td>
<td>462.1</td>
<td>1158.7</td>
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Tab. 1-1 Geographical coordinates (sexagesimal graduation, DD° MM’ SS”; WGS 1984 - DHDN 3, EPSG: 31467) of the component parts of the nominated property.

<table>
<thead>
<tr>
<th>Site (component part Id N°)</th>
<th>Northing</th>
<th>Easting</th>
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</thead>
<tbody>
<tr>
<td>Geißenklösterle (1-1)</td>
<td>N 48° 23’ 53”</td>
<td>E 009° 46’ 17”</td>
</tr>
<tr>
<td>Sirgenstein Cave (1-2)</td>
<td>N 48° 23’ 13”</td>
<td>E 009° 45’ 40”</td>
</tr>
<tr>
<td>Hohle Fels (1-3)</td>
<td>N 48° 22’ 44”</td>
<td>E 009° 45’ 16”</td>
</tr>
<tr>
<td>Vogelherd Cave (2-1)</td>
<td>N 48° 33’ 31”</td>
<td>E 010° 11’ 38”</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (2-2)</td>
<td>N 48° 32’ 57”</td>
<td>E 010° 10’ 21”</td>
</tr>
<tr>
<td>Bockstein Cave / Bocksteintürle (2-3)</td>
<td>N 48° 33’ 14”</td>
<td>E 010° 09’ 17”</td>
</tr>
</tbody>
</table>

Tab. 1-2 Geographical coordinates (sexagesimal graduation, DD° MM’ SS”; WGS 1984 - DHDN 3, EPSG: 31467) of archaeological cave sites within the projected serial property.
1.e Maps and plans, showing the boundaries of the nominated property and buffer zone

Fig. 1-1 Part of the world, location of Europe.
Fig. 1-2 Europe, location of Germany.
Maps and plans, showing the boundaries of the nominated property and buffer zone

*Fig. 1-3* Germany, location of the Swabian Jura and of the proposed component parts Ach and Lone Valley.
Identification of the property

Fig. 1-4 Location of the two proposed component parts Ach Valley (Id N° 1) and Lone Valley (Id N° 2) to the west and north-east of the city of Ulm (center of map).
Maps and plans, showing the boundaries of the nominated property and buffer zone

Fig. 1-5 Map of the Ach Valley (component part Id N° 1), showing boundaries of the property and the buffer zone.
Identification of the property

Fig. 1-6 Map of the Lone Valley (component part Id N° 2), showing boundaries of the property and the buffer zone.
1.f  Area of nominated property (ha) and proposed buffer zone (ha)

See Tab. 1-1.
Identification of the property
2. Description

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Inside view of Hohlenstein Stadel Cave in wintertime.
2. **Description**

2.a **Description of property**

**Setting**

The Swabian Jura is a low mountain range 200 km long and 40 km wide, in South-west Germany. It extends from the upper Rhine in the south-west to the Nördlinger Ries in the north-east.

Located in the central part of the Swabian Jura are the valleys of the rivers Lone and Ach, in an area which is designated as flat Jura. The flat Jura consists essentially of compacted or massive limestone, 400–600 m thick, of the White Jura, which in part has tertiary and quaternary deposits superimposed on it. It lies at an altitude of up to 800 m above sea level, south of a cliff line which was formed by the Upper Marine Molasse Sea.

Located in the valleys of the Lone and the Ach are a number of caves, which were used as dwelling places during Palaeolithic period. Within delimited sections of the two valleys there are in each case three caves, which are of outstanding universal value. The caves of Hohle Fels, Geißenklösterle and Sirgenstein Cave in the Ach Valley, and Hohlenstein Stadel Cave, Vogelherd Cave, and Bockstein Cave / Bocksteintörle in the Lone Valley, form the basis for the present nomination, due to the archaeological layers and the finds discovered in them. Excavation in four of the caves yielded animal and human figurines carved from mammoth ivory, as well as flutes made of bone and mammoth ivory. These have been dated to between 35,000 and 43,000 years ago, and accordingly are among the earliest evidence of figurative art and music anywhere in the world. These outstanding objects are associated with other typical stone and bone artefacts which belong to what is referred to as the Aurignacian, a cultural stage of the Palaeolithic in Europe. Accordingly, the ensemble of finds belong in the context of the spreading of anatomically modern humans (*Homo sapiens*) to Europe, and the development associated with “cultural modernity”.

As well as finds and the locations of finds, the surrounding landscapes of the two valleys are also essential components of the nomination. They are to be regarded as central parts of a larger settlement area of Ice Age hunters and gatherers, each have a length of 3 to 4 km and a surface area of some 190 ha and 270 ha respectively. In addition to the “Caves with the oldest Ice Age art” there are a number of other caves in the region. Although most of them have still not been fully archaeologically explored, we know that they yield archaeological remains. Altogether, the number of archaeological sites in the region are clear indicators of intensive use by prehistoric people.
Preliminary note: Age indication from radiocarbon dates

In the following sections, reference is often made to the ages of the individual sites and finds. The dating of finds from the Upper Palaeolithic is carried out as a rule by the $^{14}$C-method. The basis for this is the decay of radioactive carbon in organic material such as bone, antler, ivory, or charcoal. Radioactive carbon decays with a half-life of 5,730 years. Because the proportion of radioactive carbon in the atmosphere is not stable, but subject to permanent changes due to cosmic radiation, it is necessary to calibrate $^{14}$C-dates.

In the following sections age details are based on calibrated $^{14}$C-dates. The calibration was made with the aid of CalPal (U. Danzeglocke/ O. Jöris/ B. Weninger, CalPal-2007 online: http://www.calpal-online.de). For the age details, only the respective central values were used, while the standard deviations indicated were not taken into account. Calibrated dates reflect the years prior to 1950 (= cal BP).

Significance

In the river valleys of the Swabian Jura there are archaeological sites in caves which have a very particular role to play in the development of figurative art and music. Excavations in the archaeological horizons concerned have yielded figurines of animals and humans carved from mammoth ivory, as well as flutes made from bones and mammoth ivory. These have been dated to between 35,000 and
43,000 years ago, and accordingly are among the earliest evidence of figurative art and music anywhere in the world. These sites can be designated as “Caves with the oldest Ice Age art”. They and the works of art created in them represent an outstanding cultural heritage of humanity, of unique universal value.

As well as this, the finds are to be seen in their landscape context. Non-sedentary hunter-gatherer societies made use of vast regions as their basis for subsistence and living space. Within these regions, the Ach and Lone Valleys represent special, repeatedly used areas in which the development of figurative art and musical instruments has been manifested. The “Caves with the oldest Ice Age art” are therefore not to be understood simply as “repositories” for the movable objects, but, beyond that, are a source of inspiration, the place of creation and context of art. The components of “landscape”, “caves”, and “finds” form an indivisible whole and ensemble.
Ach Valley (component part Id N°1)

The Ach Valley is located about 15 km west of Ulm. The component part comprises a surface area of 271.7 ha and runs in a length of about 3 km with a maximum valley floor width of about 500 m in an SW-NO direction between Schelklingen and Blaubeuren in the Alb-Donau District. In this situation, the Ach flows north-east in the valley created by the Ancient Danube, opening into the River Blau a little later near Blaubeuren. The valley floor was scoured out in this area some 200 m deep by the original course of the Ancient Danube, and later again aggradated in part by its tributaries. The uplands of the Swabian Jura in the surrounding area rise nowadays up to 700 m above sea level. They delimit the valley, which is itself at about 530 m above sea level, in the south-east and north-west. Most of the caves and prehistoric shelters are to be found in the area of the steep and frequently notched valley slopes. The urban development of the towns of Schelklingen and Blaubeuren enclose this component part of the property to the north and south, while in the east and west the valley slopes form the boundary.

The boundaries of the Ach Valley component part are located in the SE and NW precisely at the transition from the valley slope to the upland. Only in the slope regions are there caves to be found with Ice Age sediments and archaeological finds. The delineation of the component part is defined by the location of the archaeological sites of the Geißenklösterle in the NE and the Hohle Fels in the SW. In this area, the property is somewhat widened in the direction of the localities of Schelklingen and Blaubeuren-Weiler, since experience has shown that further associated open-air sites are to be expected in the immediate vicinity of the caves. The possibility of preserved archaeological sites in immediate connection with the “Caves with the oldest Ice Age art”, however, recedes perceptibly as the distance from the caves increases.

Caves with OUV

Geißenklösterle (Id N°1-1)

The Geißenklösterle is located in the vicinity of Weiler, a suburb of Blaubeuren, on an eastern slope about 60 m above the floor of the Ach Valley. The cave is to be found inside a semicircular group of rocks, open to the north, which is the ruin of a larger cave hall. It has an entrance open to the west. The most important excavations in the Geißenklösterle were carried out in the nineteen seventies and eighties by Joachim Hahn, while between 2000 and 2002 Nicholas Conard continued with the investigations. To date, only a small part of the cave has been archaeologically explored. A cave entrance filled with sediment continues to the north.

The Geißenklösterle has yielded archaeological layers from the time of Neanderthals to the post-Ice Age period. Among them are also two archaeological horizons which are attributed to the Aurignacian (horizons II and III). There are still extensive areas of sediment in undisturbed deposits in the further reaches of the cave.
Fig. 2-3 Front view of the rock formation Bruckfels with the Geißenklösterle.

Fig. 2-4 Ground plan of Geißenklösterle.
Particularly important are the small works of art deriving from the upper Aurignacian layer (see below). These are figurines carved from mammoth ivory of three animals, a mammoth, a bison, and a bear, as well as an anthropomorphic half relief, likewise made of mammoth ivory. Also found in these layers were carved pendants made of mammoth ivory and perforated animal teeth. Musical instruments in the form of three flutes made of mammoth ivory and bird bones supplement the assemblage of finds. Thermoluminescence and radiocarbon dates determine the age of the finds from the lower Aurignacian layer in the Geißenklösterle to some 43,000 years ago. The Geißenklösterle therefore appears at present to have provided the oldest Aurignacian assemblage in Europe. Art objects and musical instruments derive from the upper Aurignacian layers. Like most of the figurines and flutes from the other “Caves with the oldest Ice Age art” they are between 35,000 and 41,000 years old.

**Sirgenstein Cave (Id N° 1-2)**

The Sirgenstein Cave is located about 1.5 km north-east of Schelklingen, at the edge of the Ach Valley, about 35 m above the valley floor. A tunnel-like entrance area opens into a domed cavity 40 m long and up to 34 m high, which is characterised by two holes in the cave roof. Most of the traces of the Palaeolithic occupation are to be found in the front part of the cave and the entrance area following on from it. They extend up to 15 m into the cave.

Archaeological excavations were undertaken in the Sirgenstein Cave as early as 1906 by Robert Rudolf Schmidt. At this time the predominant part of the sediments which were formerly present was removed.
While the topmost layers contained finds from the Middle Ages and the Metal Ages, the lower horizons yielded finds which date back to the Aurignacian and the time of Neanderthal man.

In the Aurignacian layers (horizons III - V) there were found, among other items, personal ornaments, such as a bead made of mammoth ivory. Radiocarbon datings made of bones from these layers resulted in an age for the Aurignacian settlement in the Sirgenstein Cave of between 35,000 and 39,000 years.

The Sirgenstein Cave acquired particular significance thanks to the attempt made as early as at the beginning of the last century to equate its stratigraphic sequence with the stratigraphies from the famous archaeological sites in South-west France. Even if it has not yielded any items of art or musical instruments, the Sirgenstein Cave is still extremely important in the history of research for this reason alone.
The Hohle Fels is a karst cave, located on the right edge of the Ach Valley, about 1 km north-east of Schelklingen. The entrance area is followed by a corridor about 15 to 20 m long, which leads to a large main cavern. From the main cavern there are side passages to the east and west. The main cavern has a surface area of about 500 m² and a height of about 30 m. This makes the Hohle Fels one of the largest cavern caves in southern Germany.

The first excavations were conducted in the Hohle Fels as early as 1872 by Oscar Fraas. The first systematic investigations were carried out by Joachim Hahn in the nineteen seventies and eighties, and since the mid-nineteen nineties Nicholas Conard has been carrying on the work. The archaeological excavations were carried out mainly in the corridor and a smaller extension connecting to the north-east. There are probably still extensive sediment sections in the other areas of the cave.

The stratigraphic sequence in the Hohle Fels ranges from the Middle Ages over the Upper Palaeolithic and back to the time of Neanderthals. There are a number of archaeological horizons attributed to the Aurignacian (horizons IIIa to Vb). They have been dated to between 32,000 and 43,000 years ago.

In the Aurignacian horizons at Hohle Fels, carved mammoth ivory figurines have been discovered. These include the representations of a water fowl, a horse’s head, and a small human statuette (“small Lion Man”). Of particular importance is a female statuette, which has been dubbed the “Venus of Hohle Fels”. She was discovered in the lowest Aurignacian layer, and is therefore one of the earliest figurines from the “Caves with the oldest Ice Age art”. In addition, a large number of personal ornaments have been found, made from mammoth ivory and animal teeth. Noteworthy are an almost complete bone flute and fragments of two other flutes made of mammoth ivory (see below).
Other palaeolithic sites in the Ach Valley (Id N°1)

Below the south wall of the Sirgenstein massif is a site with finds from a later phase of the Upper Palaeolithic, the Magdalenian.

Another archaeological site is located on the outer west wall of the Hohle Fels, which is called the Helga-Abri. The stratigraphic sequence of this rock shelter ranged from the Late Upper Palaeolithic (Magdalenian) to the Mesolithic.

Lone Valley (component part Id N°2)

The Lone Valley is a typical wide valley in the Jura uplands with a floor width of not more than 200 m, the shoulder area of which rarely rises to more than 50 m above the valley floor. The component part has a surface area which extends approximately from the K3022 district road in the west to the L1168 state road in the east. To the north and south the valley edges form the boundary.
The section of the Lone Valley referred to runs from west to east. It has a length of about 3 km and a surface area of 190.4 ha. While the valley plain is predominantly used for agricultural purposes, the valley slopes, with the domes of the compacted limestone are mostly covered by woodland. It is in these limestone cliffs that the caves and shelters are to be found.

The northern and southern boundaries of the nominated area run along the transition from the slope area to the upland areas of the Swabian Jura. The eastern and western boundaries have been determined on the basis of the archaeological sites of the Vogelherd Cave and Bockstein Cave. As in the Ach Valley, the property has been somewhat widened in the valley region, since experience has shown that further open-air sites are to be expected in the immediate vicinity of the caves. The possibility of preserved archaeological sites in immediate connection with the “Caves with the oldest Ice Age art”, however, recedes perceptibly as the distance from the caves increases.

Caves with OUV

**Vogelherd Cave (Id N°2-1)**

The Vogelherd Cave is located between Niederstotzingen-Stetten and Bissingen ob Lonetal, about 18 m above the course of the Lone. At the time of the Palaeolithic settlement, the cave had three entrances, which were connected to

![Fig. 2-9 Front view of the south-west entrance of Vogelherd Cave.](image)
Lone Valley (component part Id N°2)

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The Vogelherd Cave was discovered in 1931, and thoroughly excavated by Gustav Riek the same year. It yielded a stratigraphic sequence which extends from the Neolithic over the Upper Palaeolithic, back to the time of Neanderthals. Of particular importance are two archaeological horizons attributed to the Aurignacian (horizons IV and V). Radiocarbon dates from these layers revealed an age of between 35,000 and 40,600 years. Between 2005 and 2012 Nicholas Conard undertook investigations in the backdirt area of the 1931 excavations, with a large number of additional finds being discovered.

The Vogelherd Cave is to date the site among the “Caves with the oldest Ice Age art” which has yielded the highest number of figurative art objects from the Aurignacian period. In total, they number more than 40 definite figurines, and a large number of further fragments. Already during the early excavations by Riek a large number of figurines were being discovered, and with the later investigations by Nicholas Conard this was substantially increased. Most of the statuettes are made of mammoth ivory. One representation was carved from the patella (kneecap) of a wild horse. The animals of the Ice Age environment are portrayed. Strikingly frequently encountered are cave lions and mammoth, but there are also wild cattle, wild horses, and fish. An anthropomorphic figurine has also been found, and during the later investigations by Nicholas Conard fragments of two flutes were discovered, made of bird bones and mammoth ivory, as well as numerous beads and pendants created from mammoth ivory.

Fig. 2-10 Ground plan of Vogelherd Cave.
Hohlenstein Stadel Cave (Id N°2-2)

The Hohlenstein is a large rock massif on the southern edge of the Lone Valley, near Asselfingen. Three caves, the Stadel Cave, Bärenhöhle, and Ostloch are known, as well as a rock shelter, the Kleine Scheuer. The most important site in the Hohlenstein complex is the Stadel Cave (or simply the Stadel). The cave is located about 5 m above the valley floor and opens to the north. In the southerly direction it runs about 50 m horizontally into limestone.

The interior of the cave consists of several small chambers, which are delimited from one another by projecting rock walls. The rear area narrows increasingly. In this section of the cave there are still substantial sediments present, which yield archaeological remains.

The first systematic excavations in the Stadel Cave were carried out between 1935 and 1939 by Robert Wetzel and Otto Völzing. From 1956 to 1961 further work was carried out under the direction of Robert Wetzel, and new investigations from 2008 to 2013 by Claus-Joachim Kind and Thomas Beutelspacher supplemented and refined the earlier findings.

The excavations in the Stadel Cave produced a stratigraphic sequence which extends from the Middle Ages, through the Upper Palaeolithic, and back to the time of Neanderthal Man. Among others, there are also several Aurignacian layers. Radiocarbon measurements indicate an age for these of between 35,000 and 42,000 years. The cave has acquired particular status due to the finding of a...
figurine dubbed “Lion Man”. This being, a mixture of human and cave lion, is the largest carved ivory figurine from the Aurignacian to emerge from the “Caves with the oldest Ice Age art”. The statuette, carved from mammoth ivory, may be understood as an indicator of the religious conceptual world of early Homo sapiens. During the excavations by Claus-Joachim Kind and Thomas Beutelspacher further parts of this statuette were discovered, as well as personal ornaments such as carved pendants, made of mammoth ivory and perforated animal teeth.

**Bockstein Cave / Bocksteintörle (Id N°2-3)**

The Bockstein massif is located in the Lone Valley, on district road K3022 between Bissingen and Öllingen, on the outskirts of Rammingen. Thanks to the extensive excavations by Robert Wetzel in the 1930s and 1950s, a large number of sites were discovered there, with finds and artefacts from a number of different epochs from prehistory. Specifically, a distinction was drawn by the excavators between the Bockstein Cave, Bocksteintörle, Bocksteinloch, Westloch, Bockstein-grotte, Bocksteinschmiede, Brandplatte and Bocksteinabhang. All the sites are oriented westwards, and lie about 10 m above the valley floor.

The Bockstein Cave was excavated between 1879 and 1884 by Ludwig Bürger, and in 1883 by Bürger with the involvement of Friedrich Losch. In 1954, during the excavations by Robert Wetzel, the Bocksteintörle was discovered, the original entrance to the Bockstein Cave. The cave is 16 m deep and 9 m wide.
Fig. 2-13  Inside view of Bockstein Cave.

Fig. 2-14  Ground plan of Bockstein Cave.
Its stratigraphic sequence was not reliably documented during the first excavations, which were carried out very early in terms of the history of such research. By contrast, the Bocksteintörl yielded a rich stratigraphic sequence, extending from the Neolithic back to the Middle Palaeolithic. While the Bockstein Cave has been completely excavated, it may be that the entrance area, the Bocksteintörl, still has intact archaeological layers to be explored.

While the stratification of the Aurignacian finds from the Bockstein Cave is unclear, in the Bocksteintörl a clearly defined Aurignacian layer has been found (horizon VII). In this there were a number of personal ornaments, including pendants made of ivory and stone. Due to the wide range of 14C-dates from layer VII a precise temporal allocation is difficult, but it can be concluded that the age of the Aurignacian layer is some 34,000 - 36,000 years. Even though no figurative art objects were discovered, the other finds made, the research history, and the geographical location all mean that the Bockstein Cave and the Bocksteintörl form a vital part of the Aurignacian period ensemble of the nominated property.

Other palaeolithic sites in the Lone Valley (Id N°2)

Besides the Bockstein Cave, there are a number of other Palaeolithic sites in the Bockstein massif. Of particular significance in this context are the archaeological layers of the Middle Palaeolithic, with numerous findings from the Bockstein-schmiede.

Between the Bockstein massif and the Hohlenstein, on the south side of the valley, is the Fettershaldenhöhle. Excavations were carried out here in 2013 and 2014 by Nicholas Conard, which brought to light Pleistocene fauna remains and a number of stone artefacts.
In 2014 a small cave to the west of the Hohlenstein was excavated, which was dubbed the Frauenfels. Post-Ice Age and late Ice Age finds were made.

In the Hohlenstein massif, some 20 m west of the Stadel Cave, is the Bärenhöhle. This cave contained finds from the Iron and Bronze Ages, the Neolithic period, the Late Upper Palaeolithic, the Aurignacian, and from the time of the Neanderthals. While there is a rich inventory from the Middle Palaeolithic, little can be said about the Upper Palaeolithic horizons. The majority of the archaeological layers in the interior of the cave have so far not been excavated.

In the Hohlenstein, between the Bärenhöhle and Stadel, lies the Kleine Scheuer, a rock shelter with archaeological layers which are assigned to the Late Upper Palaeolithic.

In the slope area, about 20 m south-east of the Stadel Cave, is the Ostloch. A test excavation in 1935 yielded a number of bones and stone artefacts. The cave is otherwise regarded as unexplored.

**Buffer zones**

The respective buffer zones surround the component parts of the Ach Valley and Lone Valley. According to No. 104 of the Guidelines for the Implementation of the World Heritage Convention (2013), the buffer zone should comprise the immediate setting of the nominated property, important visual axes, and other areas or attributes that are functionally important as a support to the property and its protection. In the case of the present nomination, the “Caves with the oldest Ice Age art”, these are areas in which further archaeological sites are to be reckoned on, which have only an indirect connection with the “Caves with the oldest Ice Age art”.

Settlement systems of Ice Age hunter-gatherers consisted of different “types” of campsites, as indicated by ethnographic records of recent hunter-gatherer groups. These include, on the one hand, residential camps, and, on the other, hunting camps, kill sites, and places for obtaining raw materials. Residential camps were particularly intensively used. The “Caves with the oldest Ice Age art” and their immediate surroundings, with the rich range of artefacts which have survived to the present day are to be regarded as base camps. In the surrounding area it may be assumed that there were other short-term campsites, such as hunting camps and kill sites, as well as places for obtaining raw materials. There is justification for believing that such sites, with archaeological remains, are also to be found on the uplands outside the nominated component parts of the property, in what are termed open land locations. These have only an indirect connection with the “Caves with the oldest Ice Age art” within the valley sectors. The area of the buffer zone itself reflects the possible more restricted wandering range of an Ice Age hunter-gatherer group. Further storage locations and other stopping points would have been established here as
required. Outside the buffer zones, the probability of archaeological sites being preserved which have even an indirect connection with the “Caves with the oldest Ice Age art” perceptibly decreases.

**Special finds**

**General**

Clearly the most significant special features of the nominated sites are the items discovered in four of the caves which attest to the emergence of figurative art and music, and hence the designation of the sites as the “Caves with the oldest Ice Age art”. The objects involve, on the one hand, small animal and human figurines, carved from mammoth ivory. On the other hand, in three of the caves flutes were found, made from bird bones and mammoth ivory.

The figurines and flutes derive from archaeological horizons of the Aurignacian. Age measurements of bones from the layers concerned, with the aid of the $^{14}$C-method, assign them to the period between some 35,000 and 43,000 years. The small figurines are therefore among the earliest items of evidence of figurative art known anywhere in the world. The flutes, likewise, are the earliest musical instruments yet found.

Most of the figurines were found in the Vogelherd Cave, amounting to more than 40 objects, although a number of representations also derive from the Geißenklösterle and the Hohle Fels. The largest statuette is the “Lion Man” from the Hohlenstein Stadel Cave, a mixed being of a man and cave lion. Flutes were found in the Geißenklösterle, Hohle Fels, and Vogelherd Cave, and personal ornaments such as pendants and beads have been found in all six “Caves with the oldest Ice Age art”.

**Figurative representations**

**Animal figurines**

When the excavations in 1931 in the Vogelherd Cave yielded small animal figurines in the Aurignacian layers, carved from mammoth ivory, their great age and their actual assignment to the Aurignacian caused doubt in many quarters. In the past few decades, however, these types of figurines have also been discovered in Aurignacian layers in the Geißenklösterle, the Hohle Fels, and the Hohlenstein Stadel Cave. Their chronological allocation to the Aurignacian is today no longer called into question. In fact, animal figurines form part of the normal assemblage of the Aurignacian in the caves of the Ach Valley and Lone Valley. It may even be assumed that small figurines of this type were also present in the Bockstein Cave and the Sirgenstein Cave, where they have so far not been found. It is possible that, due to the somewhat imprecise excavation method which was employed during the first investigations, very early in terms of the
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<td>mammoth ivory</td>
<td>3.1</td>
<td>hedgehog</td>
<td>2-35</td>
</tr>
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<td></td>
<td>Backdirt</td>
<td>mammoth ivory</td>
<td>1.2</td>
<td>cave lion, fragment</td>
<td>2-36</td>
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<tr>
<td></td>
<td>Backdirt</td>
<td>mammoth ivory</td>
<td>3.1</td>
<td>mammoth, fragment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backdirt</td>
<td>mammoth ivory</td>
<td>3.1</td>
<td>“Lion Man”</td>
<td>2-37</td>
</tr>
<tr>
<td></td>
<td>Backdirt</td>
<td>23 further fragments of figurines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backdirt</td>
<td>67 further potential fragments of figurines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (2-2)</td>
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<td>mammoth ivory</td>
<td>31.1</td>
<td>“Lion Man”</td>
<td>2-37</td>
</tr>
</tbody>
</table>

Tab. 2-1 Figurative Aurignacian art from the “Caves with the oldest Ice Age art”.
history of research, they simply did not survive. This supposition seems all the more probable in the light of the findings of small ivory figurines during the new investigations between 2005 and 2012 in the backdirt from the excavations in 1931 in front of the Vogelherd Cave.

Represented are the animals from the Ice Age environment. It should be noted that most of the representations are very realistic. Where the figurines are complete, the types of animals are easily and unambiguously identifiable. Among them are wild horses and wild cattle, with a striking frequency of cave lions and mammoths. This has led to the theory that it was preponderantly the dangerous animals of the Ice Age steppes which were represented. More recent findings, however, such as the figurine of a water fowl from the Hohle Fels or the representation of a fish from follow-up excavations at the Vogelherd, indicate that a one-dimensional interpretation of the statuettes’ function cannot be correct.
The animal figurines are all very small, with a length of between 2.5 cm and 10 cm. The dimensions of the heads, bodies, and the extremities are properly proportioned and matched very well to one another. The surfaces are carefully carved and were later polished. Some of the figurines have a slight shine, which appears to have been caused by a certain degree of wear. This indicates that they were in use for some considerable time. Some are provided with small holes, implying that they might have been worn as pendant or suspended.

A very large number of the animal figurines have ornamentation in the form of engraved crosses, dots, lines, and notches. The significance of these can only be surmised with difficulty today. The notion may be excluded that the ornamentation was intended to emphasise specific parts of the body or the pelt. The markings are too unsystematically applied for this to be the case. The ornamentations seem to convey messages which are no longer understood in our times. This would seem to indicate that among the people of the Ice Age, besides language, there also existed a second level of communication.

**Representations of human beings**

Among the figurines made from mammoth ivory representations of Ice Age animals are by far in the majority. Anthropomorphic statuettes are rare. From the excavation in 1931 at the Vogelherd Cave there is a figurine which could be designated as human. This involves an ivory object of some length, with an offset rounded thickening at one end, which can be interpreted as a human head. The body is embellished with indented dots. By contrast with the very naturalistic representations of the animals, the human figurine is highly stylised.

From the oldest Aurignacian layer of Hohle Fels (layer Vb) comes a statuette which represents a woman. She is only 6 cm tall, and also seems at least in part to be highly stylised. Two large breasts are clearly defined. The arms, with carefully carved hands, lie on the body beneath the breasts. The stomach and
Fig. 2-20 (left) Fragment (head) of a horse figurine made of ivory from Hohle Fels (length 3.6 cm).

Fig. 2-21 (right) Water fowl figurine made of ivory from Hohle Fels (length 4.7 cm).

Fig. 2-22 (left) Anthropomorphic figurine made of ivory from Hohle Fels ("small Lion Man"; length 2.6 cm).

Fig. 2-23 (right) Anthropomorphic figurine made of ivory from Hohle Fels ("Venus"; length 6.0 cm).

Fig. 2-24 Bison figurine made of ivory from Vogelherd Cave (length 6.0 cm).
Fig. 2-25 Lion figurine made of ivory from Vogelherd Cave (length 8.8 cm).

Fig. 2-26 Anthropomorphic figurine made of ivory from Vogelherd Cave (length 6.9 cm).

Fig. 2-27 Mammoth figurine made of ivory from Vogelherd Cave (length 5.0 cm).
the hips are voluminous. The pubic triangle and genitalia are clearly formed. The legs are short and run to tipped ends. Amazingly, the figurine has no head. Instead, there is a ring-shaped hole on the broad shoulders. The polished surface in the hole indicates that the figurine must at least from time to time been hung on a cord or worn as a pendant.

The surface of the female figurine is provided with several deeply carved lines, in particular on the stomach and back, with other shorter deep lines identifiable at different places on the shoulders, arms, and breasts.

The female figurine has been dubbed the “Venus of Hohle Fels”. From its clearly emphasised gender features it can be assumed that it was an expression of sexuality. It seems logical to assume also that it can be associated with fertility.

**Animal-human figurines**

As well as the animal figurines and the two human figurines, there are three statuettes from the “Caves with the oldest Ice Age art” which represent unique therianthropes, with the attributes of both animals and humans.

The largest of the figurines from the “Caves with the oldest Ice Age art” comes from the Hohlenstein Stadel Cave. With a length of 31.1 cm it is in fact the largest Ice Age statuette carved from mammoth ivory which exists. The figurine represents a mixed being of a human and a cave lion. The head, front legs, and paws clearly belong to a cave lion. By contrast, the lower part of the figurine’s body and the legs are those of a human. These show details such as the navel, and particularly striking as human are the hollows of the knees, the calves, the ankles, and the heels.

The figurine of the “Lion Man” carries ornamentation at three places. The left ear is decorated from behind with more than twelve parallel grooves. These grooves differ markedly from the traces left by the creation of the figurine, such as can be seen, for example, on the left part of the mouth. As well as this, the left arm bears seven deep horizontal notches, which in interaction with the slightly raised webs between the incisions produce a flat relief effect. These notches could be interpreted as representing tattooing or decorative scarification. Finally, on the sole of the left foot can be seen at least eight grooves running at a right angle to the orientation of the foot. These too differ from the usual marks left by carving.

Many of the details of the figurine, such as the head, shoulders, elbows, knees, and heels were very naturalistically carved. By contrast, the paws, groin, and feet are strikingly stylised.

The figurine of the “Lion Man” consists of two components. The head and the arms belong to a cave lion, while the lower body and legs are those of a human. Such mixed creatures do not occur in nature. This points to immense strength
Fig. 2-28 Horse figurine made of ivory from Vogelherd Cave (length 4.8 cm).

Fig. 2-29 Animal figurine without head (perhaps a lion) made of ivory from Vogelherd Cave (length 6.4 cm).

Fig. 2-30 Lion figurine made of ivory from Vogelherd Cave (length 6.8 cm).
of imagination and the skilled realisation of a purely mental image, only a short time after modern Homo sapiens settled the European continent.

It may be that the statuette represents a deity. Cave lions were the largest and most dangerous predators of the Upper Pleistocene in Europe. Likewise, it may represent a person, perhaps a shaman, who is wearing a lion head. Both interpretations would be indicative of a religious significance of the figurine.

Two further figurines may also represent therianthropes. A small statuette, only 2.6 cm tall, from the Hohle Fels has likewise been interpreted as a stylised “small Lion Man”. The overall conceptualisation of the figurine, with the elongated upper body, bears a striking resemblance to the large “Lion Man”. In the Geißenklösterle, on a small ivory platelet, worked as a half-relief, a human figurine was found with raised hands. This is seen as being a representation of a person praying (“Adorant”). This figurine too has a strikingly long upper body. The legs and the feet are unambiguously human, while by contrast the head bears theriomorphic features. On the left arm, as with the large “Lion Man”, are a number of carved notches, which might likewise possibly be interpreted as tattooing or decorative scarification. On the rear of the platelet rows of indented dots can be seen.

The function of the figurines

The attempt to interpret the significance of the small figurines made of mammoth ivory can only be based on a few facts. The animal figurines reflect the natural environment during the Aurignacian period. What is noticeable, however, is that the frequency of the animals represented in no way corresponds to the frequency of the animals hunted, which can be assessed with the aid of faunal remains discov-
ered at the archaeological sites. The frequency of the lion figurines is particularly striking. Lions are indeed repeatedly attested in the fauna from the caves, but they account for only a small proportion in the statistics of the types of animals in evidence. Moreover, the fact that, at least with the largest of the therianthropes found, besides the human characteristics, the attributes of a cave lion are represented, emphasises the importance of these predators for the people of the Ice Age.

Cave lions were the largest and most dangerous predators of the Ice Age environment in Central Europe. The fact that they are represented frequently leads one to believe that they were an important part of the mythology and spirituality of Ice Age people. The figurine of the large “Lion Man” could also be seen as a representation of a deity. This would lead to an interpretation of the figurine which is linked to the beginnings of religion.

Against this background it becomes difficult to accord a purely profane meaning to the other animals represented, such as mammoths, wild horses, and wild cattle. The marks often applied to the statuettes are indicative of messages being associated with the figurines. These messages cannot indeed be decoded any longer today. However, they do point to a special level of communication which was linked to the animal figurines. From this it may be concluded that the figurines were not simply playthings, but may have played an important part overall in the mythology, spirituality, and perhaps even in the religion of Ice Age man.

Also noteworthy is the small representation of a water fowl. Such birds could be regarded in the religious world of Ice Age peoples as being intermediaries between different spheres, connecting the earth with the air and the water.

An important role is also played by the small representation of the “Venus of Hohle Fels”. Its over-emphasised representation of the attributes of the female makes it very probable that the figurine served as a symbol of sexuality. It seems specifically reduced to sexuality. What is striking in this context is the stylisation which can be identified in contrast to the very naturalistic representations of the animals. With this emphasis on the female, it is logical to see in the “Venus of Hohle Fels” the representation of a mother goddess.

The statuettes from the “Caves with the oldest Ice Age art” are among the earliest figurative representations known at the present time. They are the record of an important step in the development of artistic creativity of those who, anatomically speaking, are modern human. It is striking that with all the interpretation scenarios there is a very clear link between the figures and the mythology and the spirituality of Ice Age people. It is possible that they provide an outline of religious concepts during the Ice Age.
Fig. 2-32 Lion figurine made of ivory from Vogelherd Cave (length 5.6 cm).

Fig. 2-33 Fish figurine made of ivory from Vogelherd Cave (length 7.0 cm).

Fig. 2-34 Animal figurine (possibly a bovine) made of ivory from Vogelherd Cave (length 4.5 cm).

Fig. 2-35 Animal figurine (possibly a hedgehog) made of ivory from Vogelherd Cave (length 3.1 cm).

Fig. 2-36 Fragment (head) of a lion figurine made of ivory from Vogelherd Cave (length 1.2 cm).
Fig. 2.37 The “Lion Man” figurine made of ivory from Hohlenstein Stadel Cave (height 31.1 cm).
The spatial provenience of the ivory figurines

The location of the ivory figurines in the “Caves with the oldest Ice Age art” is known, or can at least be reconstructed. The ivory carvings in the Geißenklösterle, Hohle Fels and the Vogelherd Cave were found in the middle of the normal settlement detritus, together with hundreds of animal bones and stone tools. It may therefore be considered that in these caves the figurines were a constituent part of everyday life. The situation appears to be different in the Hohlenstein Stadel Cave, however. At least, the immediate location in which the “Lion Man” was found, a small chamber in the interior of the Stadel Cave, was evidently a special place. It is possible that the figurine, together with adornments, was deposited in this place deep in the interior of the cave and away from the working and living areas. Perhaps this was a place to hide the statuette, and it was never recovered. More probable, however, is the concept that the small chamber in the Stadel Cave was a holy place, which was attended during cult or religious activities, in which the “Lion Man” played a particular part.

Musical instruments

In three “Caves with the oldest Ice Age art” fragments of flutes have been discovered. In total, there are records of eight flutes. While some of them, such as those from the later excavation at the Vogelherd, were recovered only as small fragments, three more complete examples allow for more specific conclusions to be drawn.

The first of the flutes to be discovered came from the upper Aurignacian layer of the Geißenklösterle. It has a surviving length of 12.65 cm, but was originally at least 15 cm long. To create it, the radial bone of a whooper swan (Cygnus cygnus) was used. At the preserved end of the flute it can be seen that the end of the joint was separated from the rest of the bone by a ring-shaped notch. The three preserved holes were cut flat into the bone, not drilled. Finally, there are still ornamental scratches to be seen on the flute. A reconstruction of this instrument from Tab. 2-2

<table>
<thead>
<tr>
<th>Site (component part Id N°)</th>
<th>Flute N°</th>
<th>Archaeological layer</th>
<th>Material</th>
<th>Fragmentation</th>
<th>Fig.</th>
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<td>II</td>
<td>swan radius</td>
<td>large fragment</td>
<td>2-38</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>II</td>
<td>bird bone swan</td>
<td>small fragment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>II</td>
<td>mammoth ivory</td>
<td>large fragment</td>
<td>2-39</td>
</tr>
<tr>
<td>Hohle Fels (1-3)</td>
<td>1</td>
<td>Vb</td>
<td>griffon vulture</td>
<td>large fragment</td>
<td>2-40</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Va. 10</td>
<td>mammoth ivory</td>
<td>1 small piece</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Vb</td>
<td>mammoth ivory</td>
<td>1 small piece</td>
<td></td>
</tr>
<tr>
<td>Vogelherd Cave (2-1)</td>
<td>1</td>
<td>bird bone</td>
<td></td>
<td>3 small pieces</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>mammoth ivory</td>
<td></td>
<td>1 small piece</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 2-2 Aurignacian period flutes from the “Caves with the oldest Ice Age art”.
the radial bone of a modern-day swan shows that tones can indeed be produced with the flute, and melodies can be played. Particularly striking is the high pitch.

The most complete of the flutes from the “Caves with the oldest Ice Age art” was found in the lowest Aurignacian layer of the Hohle Fels. It is 21.8 cm long and was probably made from the radial bone of a griffon vulture (Gyps fulvus). Five holes are preserved, four of them complete. These too were cut in flat and not drilled. One end of the flute has been notched into a V-shape, which was probably the mouth piece.

The making of a flute from a bird bone, which by nature is hollow, does not seem to have been particularly challenging from the technical point of view. The situation is different with flutes made from mammoth ivory. Such a flute is attested from the upper Aurignacian layer of the Geißenklösterle. In this case, it was not possible to make use of a basic shape that by its nature was already usable. Instead, the flute was carved from ivory in two symmetrical half-shell elements. The two elements then had to be connected to each other using some form of so far unknown adhesive, possibly pitch, so as to be airtight. The flute was reconstructed from 31 fragments, and has a preserved length of 18.7 cm. The holes were again cut in flat. Along the edges of the flute are numerous notches. The technical effort needed to create this flute from mammoth ivory was substantially greater than with a flute made from hollow bird bones. A reproduction of this flute revealed that tunes could also be played on it.

With the musical instruments it was possible not only to produce individual notes, but also to play melodies. In other words, they were not simply whistles, but actual flutes. The playing of melodies was therefore already a frequent and regular part of everyday life during the Aurignacian in the “Caves with the oldest Ice Age art”.

**¹⁴C dating of the archaeological layers with ivory figurines and flutes**

From the Aurignacian layers in the “Caves with the oldest Ice Age art” which yielded the ivory figurines and flutes a large series of ¹⁴C-dates has been derived.
The dating of finds from the Aurignacian period is achieved at the limit range of possibilities with the $^{14}$C-method. The standard deviations of the dates are usually very large. This often renders a reliable interpretation difficult.

Despite this uncertainty, however, the large body of radiocarbon dates from the Aurignacian layers of the “Caves with the oldest Ice Age art” speaks to us clearly. The most recent age measurements are set at some 35,000 years, and the oldest at about 41,000, perhaps even 43,000 years. It may be assumed that the true age of the ivory figurines lies between the two extreme values. It is also probable that not all the figurines belong exactly to the same time period.

Some indication of the age can also be derived from the stratigraphic observations. The figurines from the Geißenklösterle were all found in the upper of the two Aurignacian layers (IIa/b). This dates back to between 34,000 and 38,000 years. The lower Aurignacian layer (IIIa/b), with an age of up to 43,000 years, by contrast did not yield any figurines. In the Geißenklösterle the ivory figurines (and the flutes) appear to belong to a somewhat later phase within the South German Aurignacian. This assumption, however, is contradicted by the fact that the dates from ultra-filtered samples (Oxford Radiocarbon Accelerator Unit)
Fig. 2-41. Calibrated radiocarbon dates from Aurignacian layers from the „Caves with the oldest Ice Age art“, calibrated with the CalPal-software using the IntCal13 calibration curve. The dates are correlated with the NGRIP δO18 record on the GICC05 time scale as a climatic indicator (GS = Greenland Stadial; GI = Greenland Interstadial). Light grey bars highlight Heinrich events (H3, H4, H5), which signal ice flow surges during the Pleistocene.
Special finds

from layer II in the Geißenklösterle, definitely indicates a somewhat older value, between 38,000 and 41,000 years.

By contrast, the situation in the Hohle Fels is somewhat different. A small horse’s head was discovered from the transition layer between the Aurignacian and Gravettian (IId / IIe - IIIa). It was the second lowest archaeological layer (Va) that yielded the small “Lion Man” and the water fowl. The “Venus of Hohle Fels”, conversely, was discovered in the lowest Aurignacian layer (Vb). The flute made from a griffon vulture bone was also found in the same layer. Venus and flute therefore belong, stratigraphically, to a very early section of the Aurignacian.

The situation in the Hohlenstein Stadel Cave is similar. The “Lion Man” was found in the sixth spit of the excavations by Wetzel in 1939. In the fifth spit, and even probably in the fourth, at another location in the cave, finds from the Aurignacian were uncovered. From this it results that the “Lion Man” likewise belongs to an early phase of the Aurignacian. This is confirmed by the recent excavations, which show a correlation between the find location of the “Lion Man” and the lowest Aurignacian layer (Au).

By contrast, there is less information forthcoming with regard to the situation in the Vogelherd Cave. It is known, however, that the ivory figurines were taken from the upper Aurignacian layer IV as well as from the lower Aurignacian layer V. This demonstrates that the figurines from the Vogelherd Cave came into being over an extended period of time.

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**Tab. 2-3** Age details of the archaeological layers which yielded the ivory figurines. All dates are calibrated 14C-dates. Calibration of the central values with CalPal (U. Danzeglocke/ O. Jöris/ B. Weninger, CalPal-2007online: http://www.calpal-online.de). All age details for the ivory figurines are indirect, since other finds were dated from the archaeological layers. The figurines themselves were not dated.
With the information available, it may therefore be conjectured that the “Venus of Hohle Fels” and the “Lion Man” from the Hohlenstein Stadel Cave are among the oldest of the figurines. The figurines from the lower Aurignacian layer V from the Vogelherd Cave may perhaps also be attributable to this period. Conversely, the other finds from the Hohle Fels, all the figurines from the Geißenklösterle, and at least the finds from the upper Aurignacian layer IV of the Vogelherd Cave are more recent. These details about the relative and absolute ages of the ivory figurines from the “Caves with the oldest Ice Age art” indicate that, amazingly, the two most complex figurines, “Venus” and “Lion Man”, belong to the oldest representations from the Aurignacian altogether.

**Personal ornaments**

In all six “Caves with the oldest Ice Age art”, personal ornaments from the Aurignacian were found. These involve in particular ornaments carved from mammoth ivory, including various different types of beads, such as single and double perforated beads and a variety of pendants. There are also pendants made from perforated animal teeth and from clay schist.

The ornament items made of ivory which in particular are of essential significance as proof of the cultural modernity of the first anatomically modern humans in Europe. Three mammoth ivory pendants from the lower Aurignacian layer (horizon III) of the Geißenklösterle are so far the first examples of three-dimensional carved pendants anywhere in the world. The creation of such an ornamental item required complex thinking, because the shape of the pendant does not occur naturally. The wealth of ornamental items from the “Caves with the oldest Ice Age art” is striking. The ornamental items probably served the identification of the individual person, and possibly also of a group of people. As well as this, they attest to the need of early modern man to carry adornment and show it off to the outside world.

<table>
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<th>Clay schist pendants</th>
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<td>2</td>
<td></td>
</tr>
<tr>
<td>Sirgenstein Cave (1-2)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hohle Fels (1-3)*</td>
<td>206</td>
<td>12</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Vogelherd Cave (2-1)*</td>
<td>310</td>
<td>35</td>
<td>7</td>
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</tr>
<tr>
<td>Hohlenstein Stadel Cave (2-2)</td>
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<td>3</td>
<td>14</td>
<td></td>
</tr>
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<td>Bockstein Cave / Bocksteinlöle (2-3)</td>
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<td>1</td>
<td>1</td>
<td>3</td>
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<td><strong>Total number</strong></td>
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<td><strong>52</strong></td>
<td><strong>42</strong></td>
<td><strong>3</strong></td>
</tr>
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</table>

**Tab. 2-4** Aurignacian age ornamental objects from the “Caves with the oldest Ice Age art”.
* Provisional figures as of the end of 2014.
Fig. 2-42 Personal ornaments (beads) from Vogelherd Cave, Hohle Fels and Sirgenstein Cave.
2.b History and development

Geology and landscape history

Stretching transversely across southern Germany, from the upper Rhine in the south-west to the Nördlinger Ries in the north-east, is the Swabian Jura. It is the highest-lying landscape unit of the cuesta landscape of South-west Germany.

In the SW, the plateau-like chain of the Randen forms the transition to the Swiss Jura, while in the NE the impact crater of the Nördlinger Ries separates the Swabian Jura from the Franconian Jura. This slope land, known as the “Albtrauf”, projects above the Jura piedmont by up to 400 m in the NW, and forms a clearly visible demarcation in this area. The delimitation of the Swabian Jura to the S, to the Upper Swabian molasse basin, is provided by the Danube.

The Swabian Jura is usually subdivided in the NW-SE direction. In this context, a differentiation can be made between the landscape units of the Jura cuesta scarp, the hilly Jura, and the flat Jura.

Layers of the Lower and Middle Jura form the Jura piedmont, while the geographical landscape units of the Swabian Jura in the narrower sense are largely formed by the layers of the Upper Jura.

Fig. 2-43 Personal ornaments (animal teeth and ivory pendants) from Hohlenstein Stadel Cave.
History of the origin and development of the Swabian Jura

**Jura period**

At the beginning of the Jura period (about 200 million years), what was at that time the super continent *Pangaea* broke into the continents known as *Gondwana* and *Laurasia*. Between the two newly created continents, *Laurasia* in the northern hemisphere and *Gondwana* in the southern, a stretch of sea came into being. This expanded due to the slow sinking of the land in the Jura, and formed the *Neotethys*, a large cohesive sea. Nowadays, the area which was flooded in this way would stretch from southern Germany, over the Alps and western Europe (South of France and as far as Portugal), to the British Isles. About 150 million years ago, the northern access of the sea was cut off. The Jura Sea which came into being in this way can be regarded as a periphery sea of the southern Tethys Sea.

In this region, during the entire Jura period, marine sediments of clay, marl, and lime began to be deposited on the sea bed. The dense lime deposits were formed in this situation from large numbers of living creatures dying off, such as sponges, corals, ammonites, and belemnites. The three main Jurassic rock formations are subdivided from bottom to top, on the basis of their colour, in the Black (Lias, 200-175 million years ago), Brown (Dogger, 175-161 million years ago), and White Jura (Malm, 161-140 million years ago).

At the beginning of the Jura period, the sea areas, which were close to alleviation, overflowed. Sapropel was deposited on the sea bed, from which the dark, clayey rock layers of the Black Jura were formed. The layers of the Brown Jura, sandy-clayey marl, obtained their brown colour due to a high iron content. They were formed by the illuviation and concentration of sands containing iron in the coastal regions of the Jura Sea. The White Jura, which forms the slope of the cuesta scarp, consists of almost pure calcite. This can be characterised by an alternating sequence of marls, limestone banks, and compacted limestone (reefs). The formation was formed, among other factors, by the projecting of reefs in the tropical flat sea, which extended over a large area.

**Cretaceous**

With the receding and alleviation of the Jura Sea from the area of the Swabian Jura in the Cretaceous (144-65 million years ago) a period began in which the weathering and erosion of the mainland predominated. Today there are no layers from the Cretaceous period present any longer in South-west Germany.

**Palaeogene and Neogene**

From the upper Eocene on (about 60 million years ago) a number of European mountain ranges were folded out. The mountains came into being predominantly due to the pressure which the north drift of the African-Adriatic plate exerted onto the Eurasian plate. This is when, among other, the Alps and the
Swabian Jura were formed. Then, in the Oligocene (about 30 million years ago), fluvioterrestrial and marine sedimentation processes took effect on the Swabian Jura. The marine sedimentation came about predominantly from the depositing processes of the Upper Marine Molasse Sea (Paratethys). This involved a trough-shaped lowering of the Alp piedmont, which came about in the end phase of the formation of the Alps due to the fact that the European continental plate was pushed down under the weight of the mountain mass and filled with water.

In the Lower and Middle Miocene (about 20.5 – 12 million years ago) volcanic activity predominated, in particular on the Middle Jura, which is to be seen in connection with the tectonic processes referred to earlier.

During this period there was an alternation of alleviation and flooding of the molasse basin, which is reflected today in the molasse layers of the Swabian Jura. The Paratethys finally ran dry in the Middle Miocene (about 12 million years ago). The subsequent periods of the Endmiocene and Pliocene about 11.6 – 2.6 million years ago) was in turn characterised by weathering and erosion processes of the mainland, while at the same time the rivers Blau, Ach, Schmiech and Lone dug into the rock, resulting in a ridge furrowed by valleys.

Fig. 2-44 Glaciation in Europe during the last Ice Age (Würm-Weichsel Glaciation).
**Cuesta landscape**

The Swabian Jura is a constituent part of the South German cuesta landscape. In this situation, the deposits of the White Jura form the highest lying regions. The characteristic cuestas of today have been in existence since the Neogene, following the formation of the Upper Rhine Rift as a result of plate tectonic processes about 30 million years ago. The areas on both sides of the rift valley were raised up substantially, with the Black Forest coming into being on the German side and in the west, on the French side, the Vosges Mountains. The raising effect tipped the layers out of the horizontal in the entire South German cuesta region, into an oblique setting, so that they now fall away from the Upper Rhine Rift moving outwards to the west and east. Due to the raising and oblique setting of the layers, they were subjected to intensified weathering, with harder layers resisting erosion for longer than softer ones. Mudstones weather very easily, and form flattened areas, while the hard sandstones or limestones are less prone to weathering and form steep slopes. The structure forms which come into being in this situation expose the geological layers on the surface of the earth.

**Quaternary**

At the beginning of the Pleistocene, the Ice Age period, around 2.6 million years ago, a climate change occurred, for reasons which have still not been unambiguously explained, which led to a phased glaciation of northern Europe and the region of the Alps. The interchange between cold periods (glacial) and warm periods (interglacial) can best be explained by periodic fluctuations in the earth’s orbit and axis, in other words the eccentricity, the obliquity, and the precession. In classic quaternary geology, six major glacial systems were defined in the Pleistocene period of southern Germany by terrestrial distribution, referred to as the Biber Ice Age, Danube Ice Age, Günz Ice Age, Mindel Ice Age, Riss Ice Age, and Würm Ice Age. During these Ice Ages, cold climate conditions, from time to time even arctic, prevailed in Europe. In the intervals between the Ice Ages, the climate in Europe was moderate. These periods are therefore designated as interglacial or warm periods. As has been demonstrated from core samples in the deep seas and in the Antarctic Ice, however, during the Pleistocene there were far more Ice Ages than the six glacial systems mentioned. The number may be some 50 cycles of cold periods and the warm periods associated with them. It is only possible to a limited degree to establish a reliable correlation between the terrestrially proven glacial systems and the climate fluctuations evidenced from the core samples. Moreover, the subdivision applied today to the Ice Age in southern Germany differs markedly from the classic arrangement with only six Ice Ages.

During the cold periods of the Pleistocene, the area of the Swabian Jura lay mostly in the periglacial region. In the last two Ice Ages, the Riss and Würm glaciation, the Alpine glaciers reached almost as far as the southern edge of the western Swabian Jura, while the Riss Ice Age even extended beyond the course of the
Danube. The interchange between cold and warm periods had an intense influence on shaping the landscape, and the Ice Age climatic conditions took effect, by weathering and erosion of the rock layers, on the relief of the Swabian Jura.

The history of the rivers and the formation of the valleys
The waterway network of the Swabian Jura is divided in two by the European watershed, which on the surface runs mostly in the vicinity of the Jura cuesta scarp, between the Rhine side (draining the Rhine to the North Sea) and the Danube side (draining the Danube to the Black Sea). North of the Alps, in what is today the Alpine piedmont, the precursors of the Danube also drained the land to the west, before the original Danube began to form in the later Pliocene, some seven million years ago.

Ach Valley
During the Upper Miocene and the Old Pliocene, the Danube still flowed through what is today the Ach Valley, near Blaubeuren, at the level of today’s upland of the Swabian Jura (Ancient Danube). As a consequence of the raising of the land during the Pliocene and Pleistocene Ages, a perceptible deepening took place of the valley stretches, in part down to 40 m below the modern day valley floor. The severe aggradation of the valley which followed during the Riss Ice Age raised the valley floor in such a way that the Danube was forced to divert further and further to the south. There it created extensive flood plains, in the course of which it still runs today.

In the valley which was created by the Original Danube and heavily aggradated during the glacial period, the small river Ach now runs today in a north-easterly direction. The Ach rises west of Schelklingen at the Ach Source (535 m above sea level), a karst source some 500 m south of Urspring Abbey. As far as Schelklingen it flows in an easterly direction, then turns north-east. At this juncture it passes, along the southern edge of the valley, the Hohle Fels, about 100 m away, the rock formation of the Sirgenstein, and, further on, near Weiler, the Bruckfels formation with the Geißenklösterle. The Ach then flows through the town of Blaubeuren and opens into the Blau in the vicinity of the Blautopf. The Blau then flows eastwards along the same Original Danube valley, and joins the modern day Danube in the inner city part of Ulm. The course of the Ach has a total length of about 10 km.

Lone Valley
During the Tertiary period, the original Lone was a significant river, with the two main courses of the Tübinger Lone and the Cannstatter Lone. The Tübinger Lone flowed approximately on the line of what is today the Neckar Valley, at Plochingen, in an easterly direction. In its further course it passed the Fils Valley, and at that time also flowed in the course of the Lone known today, as far as Upper
Swabia. There it emptied into the Tethys Sea. With the raising of the Alps and the Swabian Jura in the Tertiary period, and the lowering of the Upper Rhine Rift, parts of the original Lone were tapped by the Rhenish Neckar, and now drain westwards. The source of the Lone was relocated to the Jura highland, to the east. Nowadays the Lone rises in the Lonsee lake and flows south-east. It then alters course, and flow in a north-easterly direction, passing the Bockstein Cave, Hohlenstein Stadel Cave and the Vogelherd Cave. In the vicinity of Giengen, after about 37 km, it empties into the Brenz, which then in turn empties into the Danube.

**Karst and cave formation**

One of the most striking features of the Swabian Jura is the karstification of the Jura limestone. Karst comes into being when rain and groundwater take effect on limestone formations over a long period. The water dissolves the lime, causing cavities to form, which today can in part be accessed as caves and cave systems. The Swabian Jura, together with the Franconian Jura, forms the largest cohesive Karst system in Central Europe.

Karst and water draining systems of the Swabian Jura came into being in their present form primarily as a result of the Tertiary uplift and upheaval processes, and their periglacial superimposition in the Quaternary. It was in this way that most of the tributaries of the Danube lost their water, as they withdrew, due to an intensified aggradation of their valleys during the Pleistocene Ice Ages, to the southern edge of the Swabian Jura. The result of this was a partially complete and partially periodic drying up of the Danube tributary valleys.
Fig. 2-46  Formation of the Ach Valley: Early Pleistocene. The Danube flows ca. 80 m above today’s valley floor.

Fig. 2-47  Formation of the Ach Valley: Beginning of the Riss Glaciation.

Fig. 2-48  Formation of the Ach Valley: Climax of the Riss Glaciation. The Danube flows in a different valley.

Fig. 2-49  Formation of the Ach Valley: Late Pleistocene. Two separate river systems (Schmiech as well as Ach and Blau) flow in different directions through the old Danube valley.
Due to the fact that the heavily calcareous Jura layers of the Swabian Jura are permeated by numerous crevices and clefts, precipitation water seeps in rapidly and directly. It has absorbed carbon dioxide from the air, and converted it into carbonic acid. The water containing carbonic acid then dissolves the lime under ground. The crevices and clefts which are already present therefore become ever larger over the course of time, and the water is rapidly conducted away in subterranean karst water systems. The dissolving of the lime is particularly effective in the area of the ground water table, and it is here in particular that large underground cavities come into being, with the karst effect being still further magnified by erosion processes.

Among the striking manifestations of karst are doline sink holes, earth subsid ence, dry valleys, and caves. The most impressive cavity forms of the karst are undoubtedly the caves. When the water encountered impermeable layers of clay or loam, it flowed off underground, following the inclination of the layers. Under certain circumstances the water might have re-emerged somewhere on the surface as a karst spring. The subterranean rivers forged their way through the rock. Added to the chemical erosion of the lime by carbonic acid was the mechanical erosion caused by the flowing water. Roofs fell in, and cavities became karst caves. Because the joints and cavities were largely filled with water at the start of the cave formation, the dissolving of the lime took place over the whole of their surfaces. This occurred on the floor, the walls, and also on the roofs of the cavities, and the cavities slowly developed into the size of true caves. In this situation, too, enlargement due to walls and roofs becoming loose and collapsing likewise had a part to play, this frequently being triggered by frost weathering.

Former water-formed caves can become dry due to a fall in the water table. In these dried-out cave systems the sedimentation of earth layers then began, which caused cave passages to be partially refilled.

Subterranean cave systems are often not accessible, or only with considerable effort. They are only cut into as the valleys become deeper, and can be entered as caverns from the outside. The “Caves with the oldest Ice Age art” (Vogelherd Cave, Bockstein Cave, Hohlenstein Stadel Cave, Geißenklösterle, Hohle Fels and Sirgenstein Cave) are caverns formed by karst processes. They were opened due to the deepening of the Lone Valley and the Ach Valley, and could then be used as dwelling places for humans. The archaeological traces were integrated into the natural sedimentation of the caves.

**The Palaeolithic**

The Palaeolithic - “Old Stone Age” - designates the earliest period of human history (prehistory), in which people lived in nomadic hunter-gatherer communities. The term “Stone Age” relates to the stone artefacts discovered in the archaeological layers. The Palaeolithic in Europe is subdivided into three peri-
Fig. 2-50 Formation of karst caves:
1. Water cave.

Fig. 2-51 Formation of karst caves:
2. Transition to dry cave.

Fig. 2-52 Formation of karst caves:
3. Dry cave.

Fig. 2-53 Formation of karst caves:
4. Sedimentation.
The Palaeolithic

ods, the Lower, Middle, and Upper Palaeolithic. Within this threefold division, additional different archaeological cultures (or what are referred to as “technocomplexes”) can be distinguished, which were mostly defined on the basis of characteristic stone tools.

The oldest fossils which are attributed to human phylogenesis are more than four million years old, and derive from East Africa. The hominids of this period were not yet producing stone tools. Some 2.5 million years ago, in East Africa, the Palaeolithic began, with the first stone tools. These earliest stone tools were produced by the first representatives of the genus *Homo*, who are designated as *Homo rudolfensis*, *Homo habilis* and *Homo ergaster*. Over the course of thousands of years, hominids spread out from Africa over the entire Old World.

The oldest human remains presently known in Europe derive from the Iberian Peninsula, and perhaps also from Italy, and are probably more than one million years old. It is possible that a short time after this the entire European continent was settled. The finds from this period belong to the Lower Palaeolithic, the bearers of which in Europe were humans, who are known as *Homo antecessor*, *Homo erectus* or *Homo heidelbergensis*. The end of the Lower Palaeolithic is defined as being concomitant with the appearance of new stone knapping techniques. The Lower Palaeolithic was followed by the Middle Palaeolithic, the representatives of which in Europe are regarded as being the Neanderthals (*Homo neanderthalensis*). The Middle Palaeolithic lasted from about 250,000 to 40,000 years ago, and in some regions of Europe even to some 35,000 years ago.

About 43,000 years ago, a new form of human migrated into Europe, designated as *Homo sapiens* (rational man, anatomically modern man), to which we still belong today. They probably spread from the south-east along the Danube Valley (the Danube Corridor hypothesis). A successive immigration from the Russian steppes or Central Asia has also been discussed. These people produced artefacts which characterise the Upper Palaeolithic. The end of the Middle Palaeolithic and the beginning of the Upper Palaeolithic have not been unambiguously clarified to this day. After a period in which it is possible that in certain regions of Europe modern humans and Neanderthals coexisted, the Neanderthals disappeared. The Upper Palaeolithic of *Homo sapiens* in Europe began some 43,000 years ago, and lasted until the end of the last Ice Age, about 11,600 years BP. Among the most important archaeological cultures of this period in Europe are the Fumanian (or Proto-Aurignacian), Aurignacian, Gravettian, Solutrean, Badegoulien, Magdalenian and Azilian. The Upper Palaeolithic was followed in Europe by the post-Ice Age Mesolithic Period.

Early *Homo sapiens* differed from the Neanderthals by a whole range of physical features. These features characterise the anatomical modernity of *Homo sapiens*. As well as this, however, there is also a cultural modernity to be taken into consideration. This includes the production of blades and bladelets from flint, and tools made of bone, antler, and ivory. The cultural modernity is also character-
ised by a manifestation which is designated as symbolic communication. The term “symbol” is understood in this connection to mean those things which are not everyday objects of use, but which had a transferred, communicative significance. Symbolic communication is therefore defined by forms of behaviour which cannot any longer be designated exclusively as functional and necessary for survival. These include, for example, the use of pigments and the production and wearing of personal ornamentation. Perhaps the most significant constituent part of symbolic communication, however, is the invention of art. As far as is known today, this occurred during the early phase of what is known as the Aurignacian.

![Fig. 2-54 Chronological overview of the Palaeolithic and Mesolithic periods.](image-url)
The Aurignacian

The name Aurignacian is derived from the site at Aurignac in South-west France (Haute Garonne). Aurignacian sites have been discovered in many regions of Europe and the Near East. They are assigned to a time span of between some 33,000 and 43,000 years ago. In Europe, the Aurignacian is the oldest unambiguous Upper Palaeolithic technocomplex. Still unexplained is the temporal and contextual relationship to assemblages which are allocated to the Proto-Aurignacian (or Fumanian).

Chronologically the Aurignacian follows the so-called “transitional industries” between the Middle and Upper Palaeolithic. These are, for example, the Bohunician and the Bachokirian in eastern Central Europe, the Châtelperronian in France, the Uluzzian in Italy, and various assemblages from the surroundings of Kostenki in Russia.

The Aurignacian is the oldest cultural complex which can be correlated with considerable certainty to the appearance of *Homo sapiens* in Europe. In the first half of the last century it was subdivided by the French prehistorian Denis Peyrony into five stages. This differentiation is today only rarely still applied. In general, following on from the Proto-Aurignacian, reference is made to an early and a late Aurignacian. The oldest assemblages known at the present time in Europe derives from layer III from Geißenklösterle (see below), and is up to 43,000 old. The Aurignacian ended some 33,000 years ago.

Assemblages from the Aurignacian are characterised by the occurrence of blades and bladelets made of flint, as well as typical secondarily modified stone artefacts. In this context, the production of the narrow bladelets appears to be closely associated with the occurrence of so-called carinated artefacts. These items, among them what are known as carinated endscrapers, nosed endscrapers, carinated burins, and busked burins, were, as their nomenclature indicates, originally regarded exclusively as tools. Nowadays it is known that these artefacts were, above all, specialised cores, from which the narrow bladelets were derived. Other typical forms of tools from the Aurignacian are intensively retouched blades and what has been dubbed Dufour bladelets. These small, narrow bladelets are retouched on one or both longitudinal edges. These may have been attached to shafts as cutting implements.

In addition to lithic artefacts, projectile tips made of bone and ivory are also a typical category of finds from the Aurignacian. These items probably served to provide the tip elements for (throwing) spears. These include what are known as “split-base points”, which are characteristic of the older Aurignacian period.

It is in the assemblages from the Aurignacian that deliberately shaped personal ornaments such as beads and pendants made of ivory are encountered for the first time. These were carefully carved and provided with a hole. The creation of a bead or a pendant made of ivory in cognitive terms goes beyond the pro-
duction of pendants from mollusc shells, the shape of which is already provided in nature. Such simple perforated snail and mollusc shells are indeed known from older assemblages in Africa and in the Near East, but not carved beads and pendants.

The Aurignacian is also linked to the first occurrence of figurative art. Originally, simple representations carved on stones were regarded as typical of the Aurignacian. They defined Style I of André Leroi-Gourhan’s classification in which he presumed a successive development of Palaeolithic art. These simple carvings included representations of animals, as well as images of male and female genitalia (see Chapter 3.2).

The rock paintings in the Grotte Chauvet (see Chapter 3.2) do not fit into the formulated conception of a successive evolution of art. The representations found
there of a large number of animals tend rather to show analogies to later art styles from the Upper Palaeolithic (Style III or IV according to Leroi-Gourhan). Absolute datings by the ¹⁴C-method, including pigments from the paintings, give a time span of between some 33,000 and 37,000 years, and so appear to confirm the great age of the representations from the Grotte Chauvet.

In the Grotta di Fumane in northern Italy (see Chapter 3.2), in the archaeological layers from the (Proto-?) Aurignacian, limestones have been discovered which are painted with a red pigment. Simple lines predominate, but there are also representations of an animal and a human figurine, perhaps with an animal head. Absolute datings assign these finds to the period between 36,000 and 44,000 years ago. A date measured from an ultrafiltrated sample indicated 41,000 years. Given that ultrafiltrated samples usually yield the most precise dates, this indication is with great probability to be accorded the highest relevance (see Chapter 3.2).

A particular role in the development of figurative art in the Aurignacian is played by the small carvings from mammoth ivory which were found in the “Caves with the oldest Ice Age art”. They are realistic representations and tend to resemble in their representation and workmanship more the naturalistic paintings from the Grotte Chauvet than the abstract illustrations of Style I.

**Genesis and context of palaeolithic layers in caves**

**Sedimentation processes and geological context**

Of considerable significance for the chronological allocation of archaeological remains is their spatial context. In an ideal situation, artefacts are embedded in an environment which can be interpreted stratigraphically. This is the case in particular with cave finds, with their stratigraphic sequences often comprising several metres in depth. Caves function as “sediment traps”; in other words, in comparison with a constantly changing landscape, they represent a less dynamic environment. This is particularly advantageous for good preservation of archaeological finds, and this in turn means that caves are normally excellent archives of the history of early man.

As a rule, Palaeolithic cave finds derive from Pleistocene sediments, which have been deposited over millennia. During the genesis of these different geological horizons, Ice Age hunters and gatherers have left their traces behind, which in turn have become embedded in the soil by the ongoing natural sedimentation. Naturally occurring sediments in caves can be of quite different origins. A typical cave stratigraphy is composed, for example, of loams which have been flushed in from the karst systems, detached particles from the roof and walls of the cave, larger pieces of rock which have broken free, and fine wind-blown sediment (loess). Depending on the intensity of human usage, it is also possible for purely anthropogenic layers to form, for example due to the siting of fire places, large areas of waste deposits, or the “trampling” of soil horizons. Likewise, animals
such as bats, birds, or cave bears, for example by piles of droppings, can also contribute to a not inconsiderable compilation of sediment.

It must be emphasised that sedimentation sequences are often not continuous, but may be interrupted by erosion processes. This means that among the archaeological finds, besides actual breaks in occupation, there are incomplete sequences in the material cultures. In addition, there are post-depositional processes, i.e. secondary (physical) layer rearrangements, caused, for example, by animal movements, periglacial processes and (chemical) conversions of sediments, for instance by the dissolving and formation of different minerals. This in turn can have direct effects on archaeological finds, on their context and connection, and therefore, in the final analysis, on their interpretation. It is only recognition of the genesis of stratigraphic sequences and understanding the so-called “site formation processes” which will allow for the chronological allocation of archaeological finds, the forming of cohesive assemblages, and, ultimately, interpretations of human behaviour in the prehistoric period.

The stratigraphic sequences in the “Caves with the oldest Ice Age art” are also complex compositions of sedimentation processes, erosions and post-depositional processes. In this context, each individual site exhibits its own characteristics, as a result of locally influenced processes. Even if, so far, comprehensive correlations of whole layer packages with specific climatic periods or even events are missing, the regular presence of loess paired with limestone detritus nevertheless points to the occurrence of cave sediments in the Lone Valley and Ach Valley during the Pleistocene. Loess is an extremely fine wind-blown sediment, which, during cold climatic periods has been deposited in particular in the entrance areas of the caves. As well as this, loess was flushed into the karst from

Fig. 2-56 Sedimentation processes in caves.
1) Eroded sediment from the slope behind the cave rinses into the cave.
2) Dissolved particles seep into the cave through cracks in the rock.
3) Loose rocks may fall from the walls and the ceiling.
4) Water washes sediment into the caves.
5) Especially in the entrance area, wind-blown sediment is deposited in the cave.
outside and formed cave loam. Limestone detritus likewise occurs in layers from cold climate periods, when parts of the cave roof and walls became detached due to frost splitting or congelifraction, and layered as sediment on the floor of the cave. The artefacts from the Ice Age people who used the “Caves with the oldest Ice Age art” as dwelling places were left behind during the sedimentation processes which have been outlined here, and are therefore found in the Pleistocene layers.

**The prehistoric context**

Although a correlation between the different cave stratigraphies of the Lone Valley and the Ach Valley remains a desirable aim, the clearly differentiated archaeological assemblages embedded in the separate geological horizons exhibit the typical cross-regional chronology of early hunter-gatherer cultures. This sequence ranges from sediments of the last warm period (Eem-Interglacial), through sediments of the last (Würm) Ice Age, with the geological and sedimentological feature typical of that period, and into the following warm period (the Holocene), with the soil formations typical of this period. The archaeological finds embedded in these correspond to the known chronological sequence: Above layers with finds from the Middle Palaeolithic, the time of the Neanderthals, lie the layers with findings from the Upper Palaeolithic, linked to the anatomically modern humans of the Ice Age. These are in turn overlaid by layers with post-Ice Age finds. The different archaeological assemblages can in most cases be clearly separated from one another by their allocation to the different layers.

The oldest archaeological findings in Europe belong to the Lower Palaeolithic, between somewhat more than one million and some 250,000 years ago (see above). This was followed in Europe by the age of the Neanderthals, the Middle Palaeolithic. After the end of the Middle Palaeolithic, archaeological layers with transitional complexes were formed in a number of regions in Europe. These layers yielded a mixture of Middle and Upper Palaeolithic elements. They are attributed, for example, to the Chatelperronian or to the Bohunician. These deposits are overlaid by the archaeological layers of the Upper Palaeolithic in the narrower sense. The sequence of the Upper Palaeolithic technocomplexes is similar across wide parts of Europe. The oldest phase of the Upper Palaeolithic in Europe was the Aurignacian, followed by the Gravettian, Solutrean, Bademoulian, Magdalenian and Late Palaeolithic.

The finds discovered in the “Caves with the oldest Ice Age art” derive predominantly from deposits of the last (Würm) Ice Age. Older layers with archaeological finds, i.e. from earlier glacial and interglacial periods, have so far not been found, with one exception. They were probably flushed out of the caves some 100,000 years ago, during cross-regional erosion processes. Only in the Vogelherd Cave could evidence be found of the last residue of a layer from the Eem
Interglacial period, the last warm period, with finds of interglacial fauna (e.g. forest elephant – *elephas antiquus*).

The sequence of archaeological layers in the “Caves with the oldest Ice Age art” largely coincides with the other Palaeolithic sequences in Europe. Due to the erosion events mentioned, however, archaeological layers are missing from the Lower Palaeolithic and the older Middle Palaeolithic. As well as this, during the Solutrean and the Badegoulian periods, there was evidently no settlement in the middle part of Central Europe. This can be explained by the extreme arctic climate conditions which prevailed during this phase of the last Ice Age. In the middle area of Central Europe it was so cold that Palaeolithic people had hardly any chance of survival, and they left the region. The usual sequence of Upper Palaeolithic technocomplexes in the middle area of Central Europe therefore reads: Middle Palaeolithic - Aurignacian - Gravettian - Magdalenian - Late Palaeolithic.

In the caves of the component part of the Ach Valley, this sequence can be found repeatedly, as testimony to the intact stratigraphies. In the caves of the component part of the Lone Valley of the nominated property, too, this is sometimes the case. Interestingly, however, in two of these caves (Stadel Cave in the Hohlenstein and the Vogelherd Cave), layers of the Gravettian are absent. This is probably likewise the result of local erosion processes, and again indicates that the archaeological layers still present today in the “Caves with the oldest Ice Age art” are the product of complex sedimentation and clearance events. But even if in some caves individual archaeological layers are missing from among those which are usually present, the stratigraphic sequences of the caves are intact, even in the Lone Valley. Major post-depositional processes in the last 10,000 to 15,000 years can be largely excluded.

Of particular importance in the “Caves with the oldest Ice Age art” are the archaeological layers of the Aurignacian, since the earliest manifestations of figurative art and music derive from these horizons. This early Upper Palaeolithic industry is characterised by a series of specific features, which differ from both earlier and later technocomplexes. These include a typical technique of stone knapping for the production of blades and bladelets, as well as specific forms of tools made of stone as well as of bone (see above). Among the stone artefacts typical for the Aurignacian which have been found in the “Caves with the oldest Ice Age art” are what are referred to as “carinated pieces” (carinated and nosed endscrapers, carinated and busked burins), as well as blades with characteristic retouches imposed on the surfaces of the objects (referred to as “Aurignacian retouch forms”). In addition to these, the assemblages include split-base points made of bone, antler or ivory, characteristic of the later Aurignacian. This classic assemblage of finds is further extended by an artistic component, which includes personal ornamentation as well as the distinctive figurative art. The Aurignacian assemblage therefore clearly stands apart in particular from older finds of the Middle Palaeolithic, the
age of the Neanderthals. The archaeological layers of the Aurignacian show that the “Caves with the oldest Ice Age art” were used as settlement sites of the earliest modern humans in Europe. They therefore have a direct connection with the appearance and spreading of our species in Europe, and with the onset of “cultural modernity” associated with this.

The archaeological layers of the Aurignacian in the caves of the Swabian Jura were recognised as such as early as after the old excavations of the 19th and early 20th century. Comparable finds had already been forthcoming at this time from known French sites, which, as a rule, gave their names to Palaeolithic technocomplexes. Accordingly, thanks to the intact stratigraphies of the “Caves with the oldest Ice Age art” and the unequivocal allocation of the archaeological assemblages, it is attested that the development of Palaeolithic cultures in South-west Germany compare very largely with the sequences known from other regions of Europe.

**History of research**

**Overview**

The nominated sections of the valleys of the Lone and Ach are regions of extraordinarily intensive research activity. The earliest documented research undertakings in the caves of the Ach Valley and Lone Valley date back to Oscar Fraas. In 1861/62 he carried out test excavations in the Stadel Cave and also investigated the Hohlenstein Bärenhöhle, although exclusively with a palaeontological mission, on the hunt for bones of the cave bear. Following his investigations in 1866 at the Schussenquelle in Upper Swabia, he also soon recognised the archaeological relevance of the Hohlenstein Bärenhöhle, which he visited again in 1866, and the Hohle Fels in the Ach Valley, which was investigated for the first time in 1871. In 1879 Ludwig Bürger began his excavations in the Bockstein Cave. Since these first excavations, a considerable number of further investigations have been carried out in the Ach Valley and in the Lone Valley. In the first half of the last century, for example, excavations were conducted, using the appropriate methods for the time, in the Sirgenstein Cave, the Vogelherd Cave, and the sites at the Bockstein and the Hohlenstein. Since the 1970s, sites such as Geißenklösterle and Hohle Fels have been investigated. This work continues to the present time, and has been very precisely conceived. Modern methods of excavation technology have been developed in the process, and the results of the individual analyses carefully documented and published. Follow-up investigations in the Vogelherd Cave and the Stadel Cave in the Hohlenstein yielded new findings towards the interpretation of living conditions during the Upper Palaeolithic.

To summarise, more than thirty excavation undertakings have been carried out in the “Caves with the oldest Ice Age art” in the Lone Valley and Ach Valley, some of which have continued for several years, or even decades. The scientific poten-
tial of the caves referred to, and the other sites, in part still not excavated, in the component parts of the nominated property is still far from exhausted.

The excavations in the six caves with OUV

Geißenklösterle (Id N°1-1)
The site was discovered in 1957 during archaeological surveys within the framework of the excavation of another Palaeolithic site in the area (Brillenhöhle). An initial archaeological test excavation was carried out in the same year under the direction of Gustav Riek. The trench was extended in 1973 by Eberhard Wagner, Wighart von Koenigswald, and Rolf C. A. Rottländer. Over the following two years, Joachim Hahn and Eberhard Wagner directed the excavations jointly. Hahn was thereafter the sole excavation director responsible. Up to 1984, and between 1986 and 1991, further excavations took place in the Geißenklösterle. These yielded archaeological layers from the Mesolithic, the Magdalenian, the Gravettian, the Aurignacian, and the Middle Palaeolithic. The investigations by Hahn were concentrated mainly on the Gravettian and Aurignacian horizons. Later, in 2000 and 2002, Nicholas Conard continued the investigations in layers of the Aurignacian and of the Middle Palaeolithic. Since then, the excavations in the Geißenklösterle have been brought to an end, but further natural science investigations and sampling procedures continue to be carried out.

Excavation campaigns in the Geißenklösterle

1957: G. Riek (University of Tübingen)
1973: E. Wagner/W. v. Koenigswald (State Office for Cultural Heritage Baden-Württemberg / University of Tübingen)
1974–75: E. Wagner / J. Hahn (State Office for Cultural Heritage Baden-Württemberg / University of Tübingen)

Fig. 2-57 Excavations at Geißenklösterle by the University of Tübingen in 2002.
Fig. 2-58  Stratigraphy of Geißenklösterle (AH = Archaeological Horizon).
1976–84: J. Hahn (University of Tübingen)
1986–91: J. Hahn (University of Tübingen)
2000–02: N. Conard (University of Tübingen)

Sirgenstein Cave (Id N°1-2)

Parts of the vestibule and the interior of the Sirgenstein Cave were already excavated as early as 1906 by Robert Rudolph Schmidt. The topmost section of the stratigraphy contained finds from the metal ages and the mediaeval period. Somewhat lower down Schmidt encountered archaeological horizons from the Magdalenian, Gravettian, Aurignacian, and Middle Palaeolithic. In the archaeological horizons of the Aurignacian, besides tools made of stone and bone, personal ornaments were also found, such as a bead fashioned from mammoth ivory.

During the classification of the finds, Schmidt attempted to make a comparison between the archaeological layers of the Sirgenstein Cave with the cultural sequence known from the famous Palaeolithic sites in France. At the time this was
a novel concept, and demonstrates the relevance of the Sirgenstein Cave in the history of such investigations.

Excavation campaigns in the Sirgenstein Cave

1906: R. R. Schmidt (University of Tübingen)

Hohle Fels (Id N°1-3)

In the years 1870 and 1871 the site was examined for the first time archaeologically and palaeontologically under the direction of Oscar Fraas and Theodor Hartmann. These excavations were restricted to the eastern part, in the front area of the main cavern. They yielded hardly any archaeological material worth mentioning, but did produce a very large number of cave bear remains. Further investigations followed in 1906 by Karl Herrmann Hartung and Paul Wigand, as well as in the same year under the direction of Robert Rudolph Schmidt. Between 1958 and 1960 test excavations were made at different locations, carried out by Gustav Riek and Gertrude Matschak. Under the direction of Joachim Hahn, between 1977 and 1978 excavations were continued in the area already uncovered by Riek and Matschak. One excavation area was located in the corridor. Here archaeological horizons from the Magdalenian and the Gravettian in particular were encountered. The excavations were resumed in 1988 under the direction of Joachim Hahn. Up to 1996, further archaeological investigations were conducted in the area of the corridor. After the death of Hahn, the scientific work in the Hohle Fels was continued in 1997 by Nicholas Conard at the same place, and continue to the present day. As well as the archaeological layers of the Mag-
Fig. 2-61  Stratigraphy of Hohle Fels (AH = Archaeological Horizon). The archaeological horizons I and Va are not visible in this part of the section. Thus their approximate position in the vertical sequence has been marked.
dalenian and Gravettian, layers which are to be allocated to the Aurignacian and Middle Palaeolithic have also been excavated. In 2008 the famous “Venus” figurine was found. The Hohle Fels has yielded one of the most complete Upper Palaeolithic stratigraphic sequences, and one of the richest in finds, in the whole of Central Europe.

**Excavation campaigns in the Hohle Fels**

1870–71: O. Fraas / Th. Hartmann (Naturalienkabinett Stuttgart)
1906: R. R. Schmidt (University of Tübingen)
1906–07: K. H. Hartung / P. Wigand (-)
1958–60: G. Riek / G. Matschak (University of Tübingen)
1977–79: J. Hahn (University of Tübingen)
1988–96: J. Hahn (University of Tübingen)
1997–2015: N. Conard (University of Tübingen)

**Vogelherd Cave (Id N°2-1)**

The cave was discovered in 1931 by the local historian Herrmann Mohn, when he found stone artefacts in the backdirt of a badger’s burrow. In the same year, Gustav Riek arranged for the site to be completely excavated within three months, and, in the process, archaeological layers from the Neolithic, the Magdalenian, the Aurignacian, and the Middle Palaeolithic were discovered. In 1978 Eberhard Wagner, in a follow-up excavation, once again investigated the areas of the south-west and south entrances. Further regular follow-up excavations in the backdirt area of the excavation by Riek took place between 2005 and 2012, under the direction of Nicholas Conard, during which a large number of further finds were discovered.

**Excavation campaigns in the Vogelherd Cave**

1931: G. Riek (University of Tübingen)
1978: E. Wagner (State Office for Cultural Heritage Baden-Württemberg)
2005–12: N. Conard (University of Tübingen)

**Hohlenstein Stadel Cave (Id N°2-2)**

The first test excavations in the Stadel Cave were conducted in 1861 by Oscar Fraas. These were carried out exclusively from palaeontological points of view, however, to look for the remains of cave bears. Further excavations were made by Ludwig Bürger at an unknown date, and by Robert Rudolph Schmidt in 1908. Schmidt dug again in 1925 with the aid of Georg Kraft, at the “Große” and “Kleine Scheuer” (“large” and “small barn”), and found Middle Palaeolithic artefacts. While the Kleine Scheuer can be located without any ambiguity
Fig. 2-62 Stratigraphy of Vogelherd Cave.

Fig. 2-63 Excavations at Vogelherd by the University of Tübingen in 2011.
(see Chapters 2.a, 2.b and 4.a), it is not clear whether the “Große Scheuer” relates to the Stadel Cave, even if this is relatively likely. It is no longer possible to make a definite assignment of the Middle Palaeolithic artefacts unearthed at that time to one of the two sites. In 1935 a test excavation was carried out behind the “Ulmer Mauer” (“Ulm Wall”), a 16th century structure in the Stadel Cave, under the direction of Robert Wetzel. The test trench opened the previous year was extended in 1936. Between 1937 and 1939, Otto Völzing assumed the local excavation direction of the work initiated by Wetzel in the Stadel Cave. In 1939 the figurine of the “Lion Man” was discovered. The planned scientific assessment of the finds was interrupted by the outbreak of the Second World War. Between 1956 and 1957 and between 1959 and 1961, with the involvement of Otto Völzing and Marie-Luise Wirsing, further systematic investigations were carried out. The stratigraphy identified by Wetzel in the Stadel Cave comprised in particular archaeological layers from the Neolithic, the Mesolithic, the Magdalenian, the Aurignacian, and the Middle Palaeolithic. In 1983 a further test excavation was carried out under the direction of Eberhard Wagner. The aim of this study was to investigate the cave on the basis of the archaeological layers still present. During the dig, however, a point was examined which had already been excavated in the 1930s and 1950s by Wetzel and Völzing, and had been filled in again. In 1996 and 1997, archaeological excavations took place in the valley in front of the Hohlenstein, under the direction of Nicholas Conard, Michael Bo-
lus, and Andrew Kandel. More recent excavations in the Stadel Cave itself were conducted between 2008 and 2013 under the direction of Claus-Joachim Kind and Thomas Beutelspacher. The intention was likewise to clarify whether there were still intact sediments present in or in front of the cave, and whether they could be linked to the stratigraphic sequence documented by Wetzel and Völzing. Finds were uncovered which allowed for new understandings of the temporal, cultural, and ecological sequences in the cave.

**Excavation campaigns in the Hohlenstein Stadel Cave**

1861: O. Fraas (Naturalienkabinett Stuttgart)
n. d.: L. Bürger (-)
1908: R. R. Schmidt (University of Tübingen)
1931: G. Riek (University of Tübingen)
1935–39: R. Wetzel / O. Völzing (University of Tübingen)

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**Fig. 2-65** Stratigraphy of Hohlenstein Stadel Cave (AH = Archaeological Horizon).
History of research

Fig. 2-66 Excavations in Hohlenstein Stadel Cave by R. Wetzel in 1937.

Fig. 2-67 Excavations in Hohlenstein Stadel Cave by the State Office for Cultural Heritage Baden-Württemberg in 2012.
1956–57: R. Wetzel / O. Völzing (University of Tübingen)
1959–61: R. Wetzel / O. Völzing (University of Tübingen)
1983: E. Wagner (State Office for Cultural Heritage Baden-Württemberg)
1996–97 Valley floor in front of Hohlenstein: N. Conard / M. Bolus / A. Kandel (University of Tübingen)

Bockstein Cave / Bocksteintörl (Id N°2-3)

Ludwig Bürger began the archaeological investigations in the Bockstein Cave in 1879 with a test excavation. In 1883 Ludwig Bürger worked together with Friedrich Losch on the exploration of the site. From 1884 onwards Bürger then continued to investigate the stratigraphic sequence in the Bockstein Cave alone, during which period he had the small opening to the grotto enlarged by blowing up a large limestone block in the entrance area. It became clear that the cave had fallen in. The archaeological layers encountered probably belonged to the Magdalenian, Aurignacian, and Middle Palaeolithic. Due to the excavation methods employed, however, it is difficult to provide any reliable details. In addition to stone artefacts, ceramic shards, and animal bones, Bürger discovered two human skeletons. At the time they were assigned to the modern era. This was reviewed in 2000, and they have been demonstrated to date from the Mesolithic period. In 1908, Robert Rudolph Schmidt investigated several square metres in front of the west part of the cave, in order to establish a connection with the excavations by Ludwig Bürger. He only found sediments which had already been disturbed, however. Within

![Excavations at Bockstein by R. Wetzel in 1956.](image)
the framework of the extensive test excavations on the Bockstein massif by Robert Wetzel, in 1953 the original access to the Bockstein Cave, the Bocksteintörle, was discovered. The Bocksteintörle was excavated in 1955–56 under the direction of Wetzel. The stratigraphy included archaeological layers from the Neolithic, the Mesolithic, the Magdalenian, the Gravettian, the Aurignacian, and the Middle Palaeolithic. In the Aurignacian layers a number of items of personal ornamentation were found, including pendants made of ivory and stone. At the present time there are no archaeological excavations taking place in or at the Bockstein Cave.

*Excavation campaigns in the Bockstein Cave and the Bocksteintörle*

1879: L. Bürger (-)
1883: F. Losch / L. Bürger (-)
1884: L. Bürger (-)
Buildings and facilities in the area of the nominated property

The “Caves with the oldest Ice Age art” were already being used in prehistoric times as dwelling places or burial sites. In general, the sites in the Ach Valley and Lone Valley are to this day largely undisturbed, apart from excavations. In particular, the accumulation of different old stratigraphic layers contributed to the prehistoric remains being preserved until their first palaeontological or archaeological excavation.

In the Ach Valley component part of the nominated property there are a number of privately used buildings and the planned information centre at the Hohle Fels (see Chapter 4.b.i). In the Lone Valley component part of the nominated property there are no private buildings, while the Archäopark Vogelherd serves as an information centre. In addition, roads, railway tracks and power poles are located in the property.

Archäopark Vogelherd (Niederstotzingen-Stetten ob Lontal)

In the vicinity of the Vogelherd Cave are buildings which belong to the “Archäopark Vogelherd”. The construction procedures were overseen by the State Office for Cultural Heritage. During the construction of the information centre any deep intrusions into the ground were avoided, which might have damaged archaeological layers potentially present in the area. Care was taken during the construction to ensure that a safe distance interval from the archaeological site was maintained. The various facilities established within the framework of the construction of the Archäopark include the museum building and the parking areas. The external section surrounding the cave supplements the area by way of a number of installations which are intended to contribute to an understanding of prehistoric life. These are all established on the ground surface. The range of information available includes particular guided tours and practice-oriented Palaeolithic programme stations, together with audiovisual presentations in the museum area (see Chapter 5.h).

The construction programme was completed in 2013 and includes:

- A visitors centre with exhibition areas, souvenir shop, and café
- Public toilets
- Outside facilities around the Vogelherd Cave
- Clearly marked paths, steps, and installations
Buildings and facilities in the area of the nominated property

Fig. 2-70 The “Archäopark Vogelherd” in Niederstotzingen.

- Fencing and gate areas
- Parking areas

The “Archäopark Vogelherd” opened on 01 May 2013.

**Channel construction and renaturing of the Lone**

Between 2006 and 2014 a renaturing project of the Lone was undertaken as part of a water body development plan. This included, among other elements, communalising the Lone with a water body margin of 10 m.

**Other structural facilities**

**Roads**

The main road (*Bundesstraße*) B492 runs through the Ach Valley component part in a southwest-northeast direction, i.e. along the Ach river. Only a few smaller roads divert from this main road, therefore leaving most of the valley
free of any traffic. In addition, there are unpaved trails and partly paved narrow roads, which are not accessible for public traffic.

Besides the district road K3022 and the state road L1168 at the eastern and western ends of the Lone Valley component part, no paved roads run through this part of the property. The area is only accessible on trails and narrow unpaved roads.

**Rail line**

A railway line runs through the Ach Valley component part, parallel and with a distance of few metres to the main road B492.

**Power poles**

A power supply line with small power poles runs through the Ach Valley component part in southwest-northeast direction, from Schelklingen to Blaubeuren. The poles are situated on farmland. From a pole half way between the two towns an additional power supply line branches off in an easterly direction.

In the Lone Valley component part, a power supply line runs through the property near the Archäopark Vogelherd. It affects the property only marginally. There is no power supply line in the Lone Valley itself.
3. Justification for inscription

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Head of the “Lion Man” figurine from Hohlenstein Stadel Cave.
3. **Justification for inscription**

3.1.a **Brief synthesis**

**Summary of factual information**

Groups of human beings began to spread out across Europe around 43,000 years ago; they belonged to *Homo sapiens*, i.e. anatomically modern humans. Most artefacts left behind by early *Homo sapiens* in Europe are placed in the cultural category of the so-called Aurignacian. The Aurignacian is dated to between about 33,000 and 43,000 years ago and belongs to the Upper Palaeolithic, the most recent stage of the Palaeolithic period.

Modern man, *Homo sapiens*, differed in several characteristics from his predecessors in Europe, the Neanderthals. On the one hand, these were evolutionary physical transformations, for which the results are designated as “anatomical modernity”. On the other hand, a transformation in material artefacts occurred as well, which belong to “cultural modernity”. The most significant component of the cultural modernity of *Homo sapiens* is the use of symbols. The objects with symbolic character were not everyday personal effects, since they assumed a transferred, communicative meaning. Such symbols are, for example, jewellery, dyes and colourants, musical instruments and art objects. These art objects in particular allow, at least partially, insights into the spiritual and religious world of human beings from the Palaeolithic period.

In the Swabian Jura, precisely within the valley segments of the Ach and Lone Rivers (Baden-Württemberg, South-west Germany), the six caves are located: Vogelherd Cave, Hohlenstein Stadel Cave, Bockstein Cave / Bocksteintörle, Geißenklösterle, Sirgenstein Cave and Hohle Fels.

![Fig. 3-1 View from the South-west into the Ach Valley with Hohle Fels on the right-hand side.](image)
Among other things, strata dating to the Aurignacian were discovered in them. These strata, dated to between 35,000 and 43,000 years ago, contained hundreds of pieces of jewellery and ornaments, at least eight musical instruments (flutes made of ivory and bird bones) and more than 50 carved figurines made of mammoth ivory. Among them were three therianthropes, the statuette of a woman and figurines of many Ice Age animals. Further undisturbed layers dating to the Aurignacian exist in several caves.

**Summary of qualities**

The nominated property with the valley segments of the Lone and Ach Rivers features a worldwide singular concentration of sites with the most ancient figurative art and the most ancient musical instruments. The cave sites in the two valley segments, only a few kilometres away from one another, form, together with the recovered specimens and the surrounding landscape, a unique ensemble of ancient culture.

The caves are the discovery sites for small ivory figurines and flutes that are considered the earliest examples of masterworks of human creativity (criterion i). The property represents unrivalled and extraordinary evidence of a cultural tradition (criterion iii) which depicts the overall complexity of the Aurignacian. The technological ensemble of the Aurignacian period, which is also well-known in other regions of Europe, is complemented by an artistic facet within the caves. Landscape, caves and artworks represent a significant chapter of human history. Furthermore, caves are an excellent example of a bequeathed form of human settlement. They were the hub of life for Ice Age inhabitants and served as both a place of work and living space.

![Fig. 3-2 View from the West into the Lone Valley.](image-url)
Archaeological excavations have been taking place in the caves, off and on, since the 19th century. This long and productive research tradition exerted considerable influence on the investigation of the Upper Palaeolithic in Central Europe. The “Caves with the oldest Ice Age art” fulfil several criteria for the definition of a property of human evolution as defined by the HEADS action plan. These refer particularly to the development of art, music and religion.

3.1.b Criteria under which inscription is proposed (and justification for inscription under these criteria)

“Caves with the oldest Ice Age art” involves a serial application that comprises two subsections that are spatially separated from one another. They encompass defined segments of the Lone Valley and Ach Valley. The nomination has its justification in the itemised criteria (i) and (iii) in the Operational Guidelines for Implementation of the World Heritage Convention (2013) in paragraph 77.

Criterion (i): The nominated property represents a masterpiece of human creative genius.

The “Caves with the oldest Ice Age art” and their surrounding areas were part of the habitat of early modern Homo sapiens. They are therefore inseparably linked with the creators of this art. The sites represent the place of inspiration and origin of the oldest figurative art. Moreover, they document the specific locations where artists made, used and stored these finds. These caves served as the homes, ateliers and concert halls for the earliest artists. The components “landscape”, “caves” and “finds” are all to be considered within this ensemble. The remarkable figurative art objects and musical instruments found in the caves belong to the earliest masterpieces of human creativity in the world.

Criterion (iii): The nominated property bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

In the archaeological layers of the “Caves with the oldest Ice Age art” the cultural remains of the Aurignacian are preserved in its entire complexity. Unique are the figurative artworks and musical instruments from which we can gain insights into the origins of art, music and religion. They were produced, used and ultimately deposited in the caves of the Ach and Lone Valleys. Thus, the landscape, the caves and the finds as an ensemble represent a unique and exceptional example of an early cultural tradition and an extinct culture.

“Human Evolution: adaptations, dispersals and social developments” (HEADS)

In the study carried out by ICOMOS “Filling the gaps – an action plan for the future”, the World Heritage List was analysed for incongruence in 2004. In the process, special attention was paid to representation of the countries/regions,
their chronologies as well as the typological and thematic contexts therein. The study is part of a global strategy previously established by UNESCO in 1994 with the goal of aspiring to creation of a viable, representative and balanced World Heritage List (http://whc.unesco.org/en/globalstrategy/). Among other things, it was determined in the context of this analysis that “[p]roperties with strong links to human origins are insufficiently represented on the World Heritage List and are located in all the regions of the world. The values of these properties are under-recognised” (WHC-10/34.COM/INF.5F2, July 2010).

In order to compensate for the existing disequilibrium, various measures were undertaken. For the nomination presented here, of major significance are the goals, first and foremost, of the action plan submitted during the 33rd Meeting of the World Heritage Committee in Seville (2009) and accepted in Brasilia (2010) with the programme title “Human Evolution: adaptions, dispersals and social developments” (HEADS). Human prehistory was subdivided into three criteria in this action plan: “human evolution”, “archaeological sites” and “rock art”, and declared to be one of the current focal points for the promotion of World Heritage sites.

In the context of the HEADS action plan, prehistoric properties, among others, of human evolution based on various criteria are defined and classified according to paragraph 15.5. According to the HEADS action plan, sites linked specifically to Human Evolution can include inter alia properties that are related to bio-cultural processes regarding the human lineage as part of the record of life and of earth’s history as well as major changes corresponding to cognitive steps (e.g. speech, music, beliefs, dance and art) versus technological innovations (e.g. domestication of fire, tools production).

It was particularly emphasised in this context that in most cases the criteria for the HEADS action plan can only be fulfilled by the transportable artefacts discovered at the sites. These substantiate the status of a property as a site and space for development of the individual who made use of it, and therefore its outstanding universal value (OUV) as well. The criteria for the evaluation of proper-
ties giving evidence of human evolution validate explicitly that properties can be recorded as World Heritage on the basis of their transportable artefacts.

The “Caves with the oldest Ice Age art” fulfil several criteria of the definition of a property of human evolution as defined by the HEADS action plan paragraph 15.5 (WHC-10/34.COM/INF.5F2, July 2010). The objects found in the Aurignacian strata of the “Caves with the oldest Ice Age art” substantiate in numerous ways the emergence and development of a symbolic communication that represents a crucial component of the cognitive development of the modern Homo sapiens. Ornamental objects most likely served as an identification object for the individual and, in some cases as well, for the whole group of human beings. The statuettes carved out of mammoth ivory are among, to date, the oldest examples for the origin of figurative art that are known worldwide. Moreover, in light of the composite beings with attributes of humans and animals, for the first time the beginning of religious perception becomes comprehensible. The emergence of figurative art, music and religious perceptions as a cognitive developmental step should therefore be viewed as a basic component of human evolution that distinguished early modern Homo sapiens.

Further aspects, found under paragraph 15.6 of the HEADS action plan, are equally relevant for the categorisation of “Caves with the oldest Ice Age art” as a property of human evolution. Thus the caves have a special value for reconstruction of environmental history in the Palaeolithic, and provide substantial information concerning human lifestyle during the last ice age. Furthermore, the sites are, not least due to their temporally far-reaching, comprehensive and intensive investigation, of particular outstanding historical relevance for the Upper Palaeolithic.

Fig. 3-4 Meeting in the framework of the HEADS Thematic Programme in Tübingen, 2013.
On the basis of the aspects presented above, the serial property “Caves with the oldest Ice Age art” possesses not only outstanding universal value; rather, it exhibits thematic and chronological attributes that are discussed in the action plan “Filling the gaps”. This becomes clear not least through the publications of the HEADS action group, which have proposed and prioritised the “Caves with the oldest Ice Age art” as a property to be inscribed in the World Heritage List.

### 3.1.c Statement of integrity

The serial property of the “Caves with the oldest Ice Age art” represents components of the same historico-cultural group (Aurignacian) and the same geographical region (Swabian Jura). It is of central importance for our knowledge concerning Palaeolithic settlement systems as well as the origins of figurative art, music and religious concepts of early modern humans. The nominated areas encompass all components of the property: from the objects themselves to the archaeological layers and the settlement structures of the cave sites to the immediate surrounding landscape. In addition to the internationally renowned sites, the property includes lesser known sites and as yet unstudied sites. As such we are able to maintain the integrity of the designated property permanently with the help of existing protective measures and safeguarding provisions.

### Choice of the two components of the serial

The property “Caves with the oldest Ice Age art” is located in two geographically separated segments, about 35 km apart from one another, of the Lone Valley and the Ach Valley in the Swabian Jura. One can find in both component parts three caves respectively, which have revealed find strata from the Aurignacian period. The valley areas with the caves are a central element of a landscape that was used by the human beings from the early Upper Palaeolithic. This is reflected once again in the fact that the typical artefacts from the Aurignacian made of bone, antlers, ivory and stone were found in these caves. As well, carved figurines and flutes made of bird bones and mammoth ivory were discovered in four of the caves. These discoveries show that the caves and the surrounding landscape served as inspiration, workshops, living space and social hub in the life of the stone-age communities. Both valley segments were cultural centres that have provided us with the oldest references to the emergence of art, music and religion. Thus the matter at hand concerns, pursuant paragraphs 1, 45 and 137 of the Operational Guidelines for Implementation of the World Heritage Convention (2013), a serial national property in which the two component parts possess cultural, social or functional interrelations. Both considered component parts contribute to outstanding universal value of the property.
Structural integrity
The individual components of the serial property are entirely factored in and encompass discoveries, archaeological strata, settlement structures and sites as well as the immediately surrounding landscape. Moreover, by means of archaeological prospecting and excavation, several other Palaeolithic sites within the nominated area are well-known. Further sites that are as yet undiscovered are protected by the expansion of the property to the approximately 3 km long valley areas, respectively, up to the valley rims.

Visual integrity
The position of stone-age campgrounds was frequently selected in such a way that an unobstructed view was possible. Open visual axes from the campground to the immediate surroundings were of fundamental significance for communication, hunting and mobility. In the past ten-thousands of years, the morphology of the valley segments has however changed dramatically in consequence of geological and pedological processes. Since, still today, a remarkable view is offered from all cave sites into the respective valley segments, one can assume that the visual axes at the time of the Palaeolithic settlement were relatively unhindered.

Geographic integrity
Both subsections of the property are located in two valleys of the Swabian Jura. The geographical area is defined on the basis of the location of the caves. Both subsections represent the entire cultural context of the archaeological phenomenon “Aurignacian”. This includes as well several not-so-well-known Palaeolithic sites.

Fig. 3-5 View of the inside of Hohle Fels.
Historico-cultural significance

The subsections of the Ach and Lone Valleys include the well-known Aurignacian period cave sites there. In these two valley segments, Aurignacian period find strata are preserved in their entire complexity. Furthermore, carved figurines made of mammoth ivory as well as flutes from bird bones and mammoth ivory were found in caves in both valley segments. These objects provide insights into the emergence of figurative art, music and religion. The valley segments thus offer us an extraordinary example for the cultural evolution of early modern man.

Excavation and scientific potential

The nominated serial property possesses a proportionate balance between excavated and undisturbed areas. In the six known caves with Aurignacian background excavations over a time-span of 150 years have taken place (see Chapter 2.b). By necessity, portions of the cave sediment were removed during these projects. But at the same time, these investigations generated the recovered specimens, among them the art objects and musical instruments that justify the outstanding universal value of the property. The excavation proceedings were precisely recorded according to the scientific standards of the respective time. Only through extensive and comprehensive documentation of the research results was disclosure of the extraordinary value of the area for stone-age research, in particular the Upper Palaeolithic, made possible. The excavation signifies thus the transformation of archaeological structures in legible documentation. The results of the work-projects and assessments were presented in publications of high scientific

Fig. 3-6 View from Geißenklösterle into the Ach Valley.
value (see Chapter 7.e). The results of the assessment of these data are, to date, and in regard to knowledge based on the Palaeolithic – the Upper Palaeolithic in particular – substantial.

At least in four of the caves (Geißenklösterle, Hohle Fels, Hohlenstein Stadel Cave und Bockstein Cave / Bocksteintörle) undisturbed sediments, which contain archaeological assemblages, are still in place. As regards the other two, this may also be the case, despite comprehensive excavations in the past. These sediments thus represent the scientific potential of the property. Other sites that are located within the property are known (see Chapters 2.a, 2.b and 4.a). They have, thus far, been only partially examined or remain completely non-researched in the context of test excavations for the assessment of scientific value. Even the non-researched caves form, together with other heretofore undiscovered sites, the scientific capital of the nominated property as an archaeological and ecological archive.

Further acquired knowledge depends on the results from future excavations. Since excavations however amount to a destructive and irreparable encroachment upon the soil, it shall be a goal of management of the property to guarantee a proper balance between investigation and conservation.

Monument protection authorities guarantee that a considerable and scientifically relevant part of the existing archaeological and geological substance within the property is preserved as an archive of the outstanding universal value for future generations. Excavation projects are therefore limited. In Baden-Würt-
temberg only the State Office for Cultural Heritage and few other scientific institutions such as Universities undertake archaeological excavations. The State Office for Cultural Heritage Baden-Württemberg inspects requests for excavation permissions and documents its decisions in a verifiable way. Only selected projects with detailed scientific question and justified objectives are authorized. The excavations have to be conducted using the latest techniques and methods. As well as this, special attention is paid to the accurate documentation of the excavations in order to ensure the conversion of archaeological sources into documented knowledge. Thus matters of research and conservation can be balanced.

3.1.d Statement of authenticity

Geological deposits protected the prehistoric remains at the cave sites until the first palaeontological and archaeological excavations. Through this favourable geological setting, areas within the nominated property maintained their authenticity. Excavations and scientific research have verified the authenticity of the caves, the landscape and the archaeological layers. An important element here is the existing and ongoing documentation of the sites, finds and features, demonstrating the reliability and outstanding quality of the information.

Authenticity of the serial and sources of information

Since the topic at hand here involves prehistoric sites, there are no written sources or verbal testimonials available. All information and findings are generated therefore by scientific investigation. This involves excavations at the sites and, equally so, evaluation of the findings from the archaeological examinations. The relevance of the scientific information, which exists due to the large quantity of cave sites, is indisputable. This has been made evident through the long research

![Fig. 3-8 Hohle Fels in wintertime.](image)
history and the quantity of subsequent publications (see Chapters 2.b and 7.e). As early as 1892, an initial publication of the findings from the excavations at the Bockstein Cave was released. By the same token, the prehistoric artefacts and stratigraphic sequence of the Sirgenstein Cave were scientifically documented in 1906. Ever since then, examinations have continued with an innovative, scientific method – according to the standard procedures of the respective time. These were based on meticulous graphic and textual documentation during and after the work at the respective site. This documentation was prepared over numerous years by research scientists at the Eberhard Karls University of Tübingen and the State Office for Cultural Heritage Baden-Württemberg as well as by further highly qualified scientists from other scientific institutions. For the most part, the results from the investigations in scientific publications were recorded with a high standard. Documentations and publications are widely accepted as a credible and truthful source. The archaeological legacy of all realised excavations is exhibited in Baden-Württemberg in various museums and academic institutes or archives, and can be analysed for further knowledge creation at any time.

**Authenticity of the single component parts**

Even though the caves within the two subsections in the Lone and Ach Valleys have been known for a long time, they have remained for the most part uncompromised until today. Major damage to the caves cannot be seen, with the exception of the natural weathering of the walls. Aside from the accumulation of sediments, the cave rooms remain for the most part in the same condition as during the Palaeolithic. Conversely, the appearance of the valleys themselves has changed in the last tens of thousands of years, caused by geological and pedological processes.

![Fig. 3-9 Hohlenstein Stadel Cave in wintertime.](image)
The on-going accumulation of sediments over tens of thousands of years has led to an undisturbed embedding of the recovered specimens. Thus the sedimentation of the find strata, of different ages, has contributed to preservation of the prehistoric legacy until modern times. The authenticity of the two valley segments as an area of sequential prehistoric societies, and whose habitat was defined by the course of the valleys and ranges of hills in the Swabian Jura, is therefore guaranteed. The historic authenticity of the caves, of the recovered specimens and the landscape has been documented, moreover, by the scientific analyses of the archaeological excavations. The prerequisite for this is, as previously explained, the excellent documentation of the findings, which is verifiable and available (see Chapter 6).

Current use

Intensive use of the caves no longer takes place today. Only the Vogelherd Cave is located within the Archäopark Vogelherd and thus within the area of the outdoor facilities of the information centre. The cave is therefore visited by numerous tourists (see Chapter 5.h). The Hohlenstein Stadel Cave, Hohle Fels and Geißenklösterle are secured by trellis fences and no longer accessible to the public (see Chapter 4.a). These were installed between the 1950s and the 1970s. A lighting installation was put into Hohle Fels during the first systematic archaeological excavations between 1955 and 1960. This was improved with an emergency lighting system. In order to avoid damage to sediments caused by visitors, a steel bridge was erected over the current excavation area in 2001, which is located behind the entrance area of the cave. Access to Geißenklösterle is currently made possible by a secured pathway. This prevents slippage of sediment down into the steep area in front of the cave. Bockstein Cave and Sirgenstein Cave are viewed only sporadically nowadays by visitors. All six caves serve as an archive for scientific research. They are being retained in their current condition and thoroughly protected by law (see Chapter 5.b and 5.c).

3.1.e Protection and management requirements

Framework for protection and management

Protection mechanisms

The nominated serial national property “Caves with the oldest Ice Age art” is recognised as a clearly demarcated, highly protected landscape with archaeological sites (see Chapter 7.b and Annex). The respective component parts are protected by legal provisions of the State of Baden-Württemberg (Cultural Heritage Protection Act, Nature Conservation Law). Measures that could possibly have repercussions for the property are restricted or prohibited. In particular, they are listed as excavation protection areas in which cultural heritage sites of particular importance may be reasonably presumed to exist. Thus they are
generally protected against any disturbance (Article 22 DSchG BW). According to Article 12 of the Cultural Heritage Protection Act of Baden-Württemberg the archaeological sites of Hohle Fels, Sirgenstein Cave, Geißenklösterle, Bockstein Cave / Bocksteintörl, Hohlenstein Stadel Cave and Vogelherd Cave are listed cultural monuments of particular importance. The property and the corresponding buffer zones are cultural monuments according to the Cultural Heritage Protection Act of Baden-Württemberg (Article 2 DSchG BW). Further conservation measures are specified in various other laws at the federal level (Railway Rearrangement Act, General Railways Law, Federal Building Code, Federal Mining Act, Federal Spatial Planning Law, Environmental Impact Assessment Act, Federal Forestry Act, Federal Nature Conservation Act), the Act to Protect German Cultural Property against Removal and the Federal Soil Protection Act - (see Chapters 5.b and 5.c).

Previously existing provisions for protection and preservation are further enforced through the corresponding cultural heritage and nature conservation laws. This also includes, in addition to the prevention of disruptive ground excavations, preservation of point-of-view axes, silhouettes and panoramas.

Moreover, the nomination as World Heritage property should facilitate exchange of experiences and knowledge between experts and other involved parties. This includes examination and resultant comprehension of the archaeological phenomena as well as presentation of artefacts and sites. This scope of duty should be coordinated with the previously existing protective measures for both the discovered and still undiscovered sources. By means of careful and forward-looking management of landscape, sites and artefacts, a balanced and sustainable inter-

![Fig. 3-10 Trellis fence inside Hohlenstein Stadel Cave.](image-url)
action between data-finding, investigation, conservation and transfer of knowledge can thus be created.

Since the property with its outstanding universal value is now being perceived more pronouncedly by the public, ever since its nomination as a World Heritage site, visitors should be sensitised by purposeful management to the value, integrity and authenticity of the property. It is a specific goal to generate a balance between conservation, research, tourism and the expectations of those citizens who live and work in the vicinity of the “Caves with the oldest Ice Age art”.

**Administration and management system**

The nominated property “Caves with the oldest Ice Age art” is administrated by the Ministry of Finance and Economics Baden-Württemberg as the supreme monument protection authority, by Departments 21 - Regional Planning, Construction Law and Cultural Heritage in the Regional Administrative Council of Stuttgart and Tübingen - as the senior monument protection authority, by the State Office for Cultural Heritage in the Regional Administrative Council of Stuttgart as the responsible state-wide expert authority, as well as by the lower monument protection authorities (Local Construction Rights Authority, the District Administration Heidenheim - Department for Building and Environmental Protection, the Administrative Cooperation Langenau - Building Authority and the District Administration Alb-Donau District - Special Service Construction, Fire and Disaster Prevention). These officials make decisions regarding protective measures and implement them through legal provisions within administrative processes. Furthermore, they authorise and supervise conservation measures and current research projects within the property. They promote documentation and publication of the findings and dissemination of same to the broader public. Moreover, they support the scientific collaboration of various institutions.

The coordinated proceedings of all involved parties within the provisions of a mutually decided Management Plan serve the protection and preservation of the property (see Chapter 5.e and Volume II). The Management Plan was developed in consultation with all stakeholders such as municipalities, districts, the State of Baden-Württemberg, Nature Conservation and Cultural Heritage authorities, museums, associations and tourism industry organisations. Goals, policy objectives and strategies are represented therein, which are meant to guarantee the conservation and protection of the property. With these measures it is assured that the outstanding universal value of the property can also be preserved in the future. Various regional and tourism plans support, moreover, sustainable marketing and contribute to awareness-raising within the community (see Chapter 5.d).
Protection and management requirements

Identification of specific long-term challenges

The property has become endangered by a series of factors. Included in these endangerment factors are the following: the increase in tourism associated with a nomination, the pressure to develop, natural disasters and the destruction of scientific resources. In the following, the long-term challenges are listed individually for the outstanding universal value of the nominated property “Caves with the oldest Ice Age art”.

Long-term challenge 1: Intensification of tourism

Since both valley segments of the nominated property are publically accessible, the touristic usage by the visitors of the property and, in particular, of the ar-

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* In this context, within the framework of the supreme monument protection authority, it is entrusted in particular with the following tasks,

1. Preparing the technical principles and guidelines for methodology and practice of cultural heritage preservation and protection, and ensuring their uniform implementation on a regional level,
2. the preparation and implementation of cultural heritage promotional programmes,
3. the acquisition of cultural heritage monuments and collective ensembles in lists, their documentation, and their research,
4. advising third parties about technical matters in respect of cultural heritage, in particular the owners and possessors of cultural monuments,
5. putting into effect the centralized public relations work with regard to cultural heritage protection, making known to the public the cultural heritage of the region which is encompassed by the protection of monuments, and also presenting to the public the measures being taken to safeguard this heritage,
6. maintaining central specialist libraries, documentation compilations, specialist databases, as well as providing other centralised services, and
7. preparing tax certifications in accordance with Article 10j of the Income tax Law, inasmuch as no responsibility rests with the Federal Land Archive.

Fig. 3-11 Organisation of Monument Protection in the property.
chaeological sites represents potential strain. For example, during an intensive inspection of the archaeological cave sites by the visitors, the find strata and discoveries can be damaged.

Strategy: The touristic use of the sites has to be sustainable and controlled. The sites with sediments containing the archaeological assemblages – Hohlenstein Stadel Cave, Geißenklösterle and Hohle Fels – are protected by trellis fences. The Vogelherd Cave is located on the grounds of the “Archäopark Vogelherd”. An inspection of these four caves can take place under supervision of trained personnel, and, in some cases, be offered on a regular basis. There are most likely still archaeological strata in Bockstein Cave and Sirgenstein Cave. Further measures should be undertaken in order to guarantee their protection in the future as well (see Chapter 5.e and Volume II).

The development and maintenance of the pathways at all sites, their safeguarding and the sign-posting is planned and will be organised by the respective municipality and the State of Baden-Württemberg (see Chapter 5.e and Volume II). The State Office for Cultural Heritage checks the condition of the caves and the strata within on a regular basis (see Chapter 6).

**Long-term challenge 2: Excavation of archaeological sites**

Excavations are being, and have been, carried out at all known cave sites with sediments containing the archaeological assemblages in the area of the property. In connection with this excavation, the archaeological original sources are

**Fig. 3-12** Tourists during Open Monuments Day 2009 at Hohlenstein Stadel Cave.
being destroyed. The archaeological examinations signify as well, however, a transformation of archaeological structures in legible documentation. Only after the results have been assessed we can acquire our knowledge concerning Ice Age inhabitants. Since science and the respective methods are always developing, there must nevertheless be a guarantee that the archaeological potential to be processed shall remain intact for future generations. This is why a proper balance between excavations and undisturbed areas must be in place.

Strategy: It was determined in a research plan (see Chapters 5.d, 5.e and Volume II) that excavations are only allowed to take place when a detailed scientific problem has been presented. Monument protection authorities guarantee that a considerable and scientifically relevant part of the existing archaeological and geological substance within the property is preserved as an archive of the outstanding universal value for future generations. Excavation projects are therefore limited. In Baden-Württemberg only the State Office for Cultural Heritage and few other scientific institutions such as Universities undertake archaeological excavations. The State Office for Cultural Heritage Baden-Württemberg inspects requests for excavation permissions and documents its decisions in a verifiable way. Only selected projects with detailed scientific question and justified objectives are authorized. The excavations have to be conducted using the latest techniques and methods. As well as this, special attention is paid to the accurate documentation of the excavations in order to ensure the conversion of archaeological sources into documented knowledge. Thus matters of research and conservation can be balanced. In the research plan, furthermore, it was specified that the area of the nominated property should be explored in order to find unknown sites, and to protect against improper excavations.

**Long-term challenge 3: Natural disasters / natural deterioration of the caves**

Natural disasters represent a problem over the long-term. Indeed, they cannot be avoided; however appropriate preventive measures can be implemented. There are in the area of the nominated property generally no mentionable immediate dangers presented by natural disasters. Neither flooding nor fire endangers the cave sites. Nevertheless, the caves are subject to natural processes of deterioration and erosion – which is always the case in rocky karst terrain, where they occur more often. The nominated valley areas are however located in an area that is almost completely free of earthquakes (see Chapter 4.b.iii).

Strategy: Efforts are continuously being made to monitor on a regular basis the stability and condition of the caves. Currently at all sites laser scans are being prepared in order to ascertain the present condition. A comparison of the data by means of scans on a regular basis will reveal changes. Moreover, constant efforts are also being made in the management and control system (see Chapters 5.e, Volume II and Chapter 6) to check the condition of the caves and eventually-occurring changes by means of regularly-scheduled inspections. In the process, the local
Justification for inscription

Long-term challenge 4: Conservation and archiving of the discoveries and findings

The sites discovered at the archaeological excavations have to be preserved. Also, the still-existing archaeological strata in the sites have to be secured as archives.

Strategy: Within the scope of the Management Plan, measures were designed (see Chapter 5.d, 5.e and Volume II) intended to assure the future archiving and preservation of the discoveries and sites by means of the institutions responsible such as the State Office for Cultural Heritage, the University of Tübingen and museums. These institutions possess capacities for restoration, professional storage and ex-
Protection and management requirements

Hibition of the discoveries. The current condition of the cave sediments will be monitored and secured on a regular basis by the State Office for Cultural Heritage.

**Long-term challenge 5: Construction plans in the area of the property (development pressures)**

The area in the nominated property can be exposed to development pressure. Construction measures in the vicinity of the property could, for example, impair the landscape and interfere with the viewing axes. The danger also exists that archaeological legacies could be destroyed or impaired.

Strategy: Cultural heritage protection and nature conservation laws guarantee that the nominated property shall receive the highest level of protection in the future. The erection of buildings within the property, as well as those that disturb the view can be legally prevented. An appropriately-wide buffer zone with high standards of protection was determined in the scope of the nomination.

**Long-term challenge 6: Changes in usage (development pressures)**

The subsections of the nominated property are currently being used primarily for land and forestry operations. A change in present usage could endanger both known and unknown archaeological sites.

Strategy: Cultural heritage protection and nature conservation laws guarantee that the nominated property receives the highest level of protection. A change in the current land utilisation requires legal authorisation and can, if necessary, be prevented.
Commitments of State Party / Federal State party for long-term protection and management

The Federal Republic of Germany is obligated, pursuant the ratification of the World Heritage Convention (1972) on 23 August 1976 (admission of the German Democratic Republic on 12 December 1988), to protect and conserve the properties on the World Heritage List.

Cultural heritage protection in the Federal Republic of Germany falls under the cultural sovereignty of the 16 Federal States. Each State is thus responsible for conservation of cultural monuments within their own borders. Both subsections of the nominated property “Caves with the oldest Ice Age art” are located in Baden-Württemberg. The Cultural Heritage Protection Act of Baden-Württemberg is thus valid for the property (see Chapter 5.b). Additionally, in Baden-Württemberg cultural heritage protection is embedded in the constitution.

In Baden-Württemberg, the State Office for Cultural Heritage is the respective authority that is in charge of supervision of the property. For protection and conservation of the property, necessary financial means are set aside annually out of the State Office for Cultural Heritage budget.
3.2 Comparative analysis

Introduction

Shortly after anatomically modern humans appeared in Central Europe, they began producing figurative art objects, music instruments and personal ornaments.

The “Caves with the oldest Ice Age art” in the Swabian Jura form the basis for the nomination at hand. Personal ornaments such as beads and pendants, typical for the Aurignacian, were found here. In four of them (Geißenklösterle, Hohle Fels, Hohlenstein Stadel Cave and Vogelherd Cave), animal and human figurines made of mammoth ivory and flutes made of mammoth ivory and bird bones were also found. As shown through radiocarbon dating, these objects are between 35,000 and 43,000 years old and are currently considered to belong to the oldest examples of their kind worldwide.

The “Caves with the oldest Ice Age art” can be characterised by their individual peculiarities. This enables a comparison with other archaeological sites and, therefore, a verification of the outstanding universal value of the nominated property.

The Action Plan submitted during the 33rd Meeting of the World Heritage Committee in Seville (2009) and accepted in Brasilia (2010) with the programme title “Human Evolution: adaptations, dispersals and social developments” (HEADS) (see Chapter 3.1) is an important basis for evaluation of Palaeolithic properties.

In the context of this HEADS Action Plan, prehistoric properties of human evolution are defined on the basis of various criteria. These indicate that those properties can be approached as World Heritage that are related to bio-cultural processes regarding the human evolution as part of the record of life and earth’s history, reflect cultural alteration or cognitive steps, or represent significant changes regarding language development, music, art and religious beliefs.

The comparison is subdivided into three main areas. In the first step, the “Caves with the oldest Ice Age art” are placed vis-à-vis such other properties that have been previously included in the UNESCO World Heritage List or on Tentative Lists. In the second step a comparison is made between “Caves with the oldest Ice Age art” and other important stone-age sites that are thematically, temporally or stylistically similar. And finally, the third comparison involves representation of therianthropic beings and evidence of flutes.

In all comparisons investigations shall be made to confirm that the “Caves with the oldest Ice Age art” have characteristics that substantiate and validate their outstanding universal value in the series of world-famous sites.
Comparison with properties on the World Heritage List

Key palaeolithic properties without art on the World Heritage List and on Tentative Lists

Currently several properties on the UNESCO World Heritage List and on Tentative Lists are recorded that can be dated back to the Palaeolithic period or even earlier in human history. The oldest among them are approximately 4.5 million years old.

Most sites are properties that are related to human evolution. These include the Lower Valley of the Awash River, the Lower Valley of the Omo River and Melka Kunture in Ethiopia, Dmanisi in Georgia, the Sangiran Early Man Site in Indonesia, the Sites of Human Evolution at Mount Carmel in Israel, the Lake Turkana Parks in Kenya, the South African sites of the Cradle of Humankind and the South African sites of the Emergence of Modern Humans, the archaeological sites of Atapuerca in Spain and the Olduvai Gorge in the Ngorongoro Conservation Area in Tanzania, which all represent the most important discovery locations for the oldest pre-human and human fossils, such as Australopithecus, Homo erectus and Archaic Homo sapiens.

All properties covered here have spanned a long period of scientific activity. All of them also represent many decades of research that go back, in part, to discoveries made in the first half of the last century. The knowledge gleaned from them has impacted generations of scientists worldwide. The properties thus give testament to an intensive and productive research history.

It is a feature of all the named properties that they involve characteristic landscapes. Within each of these landscapes there are numerous archaeological sites. The prehistoric humans lived in these landscapes and made use of the resources available there.

In some of these archaeological sites, in addition to human skeleton remains, lithic artefacts were discovered that comprise the oldest testament to human technology, of which the world is aware. The properties thus involve bio-cultural processes of human evolution as part of the record of life.

It is a common characteristic of all these properties that the objects that confirm and define their OUV are mobile (i.e. transportable). Human skeletal remains and lithic artefacts achieve their scientific significance only after thorough documentation and analysis are executed. In order to execute this analysis, they have to be removed from the property at which they were found. It can be assumed in regard to most properties of human evolution on the UNESCO World Heritage List that they are in locations that still contain further important specimens, and heretofore have not been scientifically examined. These could be of the same scientific significance as the previously-found objects, but it is also possible that their significance by far exceeds these previously-found objects.
But also the specimens that have yet to be discovered that are still integrated in the sediments on site, shall achieve their scientific value only after documentation and analysis. They are therefore also potentially transportable. This is a phenomenon that refers to archaeological properties in general, as long as they receive their outstanding universal value only through recovered specimens and not through architectonic relics.

**Key properties on the World Heritage List and on Tentative Lists with palaeolithic engravings, paintings in caves and on rock faces**

One can find on the UNESCO World Heritage List and on Tentative Lists properties that have revealed the most significant Palaeolithic cave paintings and engravings in the world. They are among the classic properties of this genre of art in southern France and northern Spain. This includes caves such as the Grotte Chauvet in the Ardèche in France, the caves of Lascaux, Les Combarelles, Rouffignac, Font de Gaume and La Mouthe in the Valley of Vézère in France and the caves of Altamira, El Castillo, Peña de Candamo, Ekain and La Garma in Spain. In addition, in the last years some cave sites with Paleolithic art were discovered outside these classical regions. These include Creswell Crags in Great Britain, Kapova Cave in Russia, Badanj Cave in Bosnia and Herzegovina as well as Coliboaia in Romania. But rock faces were also painted and engraved. This is the case at properties with such artwork in Cacadu National Park in Australia, in the Serra da Capivara National Park in Brazil and at the prehistoric Rock Art sites in the Côa Valley and Siega Verde (Portugal and Spain).
In all cases the animals of the respective environment are represented. On the rock faces and rock shelters of Cacadu National Park in Australia, there are representations of emus, kangaroos, crocodiles and snakes. In the European caves, one can find primarily the animals of the Ice Age environment such as mammoths, woolly rhinoceroses, wild horses and wild cattle. Predatory animals such as cave lions are also illustrated numerous times. In addition to this absolutely distinctive figurative art, there are however multifaceted signs and symbols in almost all of these properties, the former obvious meaning of which can hardly be ascertained today.

The stylistic elements of the figurative representations in Europe seem to indicate a successive development that was described for the first time by André Leroi-Gourhan. This development spans from more or less stylised representations in the Aurignacian, to simple outline drawings in the Gravettian, to realistic illustrations with strikingly small heads in the Solutrean period and finally to the accurately detailed natural pictures in the Magdalenian.

A comparison shows that the majority of the cave paintings from the caves of France and Spain originate from the Gravettian, Solutrean and especially the Magdalenian. Ages for these properties spanned from 15,000 to 30,000 years old. Only the paintings from Grotte Chauvet presumably belong to the Aurignacian period and revealed, partially measured directly with samples from the colour-ants, \( ^{14} \text{C} \)-dating between 33,000 and 37,000 years. Surprisingly, the paintings from Grotte Chauvet do not correspond to the sketched direction of development as defined by André Leroi-Gourhan. They illustrate very natural, polychrome pictures as they typically appeared for the first time in the Solutrean or the Magdalenian. But stylistically, the depictions of lions in the Grotte Chauvet are very similar to lion figurines from the “Caves with the oldest Ice Age art”.

In addition to the paintings dated to the Gravettian, Solutrean and Magdalenian, there are, in a few of the caves mentioned such as Peña de Candamo, La Garma and El Castillo, signs and symbols painted on the wall that are possibly older. They could belong to the Aurignacian. Thus the age-dating of the calc-sinter on a stippled disc from the cave El Castillo in Spain resulted in an age of more than 40,000 years. This disc, however, as in the case with the symbolic drawings from the other caves, did not have figurative representations.

Most of the caves mentioned with Palaeolithic wall art do not appear as a one-off. This is why landscapes are frequently recorded as properties in the UNESCO World Heritage List. The painted walls in Cacadu National Park, Cõa Valley and Siega Verde, as well as the painted caves in the Vézère Valley and in northern Spain are examples for the use of whole landscapes by Palaeolithic humans. The mobile hunters and gatherers use these landscapes to provide necessary resources such as food, raw materials and water. The painted caves and rock faces were located within their territories and probably had some significance as a
special place, or they were sacred sites. But they also served in part as locations for settlements, in which family associations or clans lived for some time.

Comparison to the “Caves with the oldest Ice Age art” and conclusion

The “Caves with the oldest Ice Age art” acquired their significance through the discovery of small figurines, flutes and personal ornaments. These objects are among the oldest examples of their genre that are known worldwide. They show that, during the Aurignacian, a crucial innovation in human evolution arose. Humans began to reflect about their environment, and to represent it. They also began to decorate themselves. The figurines are simultaneously a testament of a spiritual world, as well as being a reference to the emergence of an early form of religion. The recovered specimens hence represent significant transformations in human evolution on the basis of the emergence of music, art and religious beliefs. They define the outstanding universal value of the caves and fulfil, furthermore, the criteria for the HEADS action plan.

As is the case with other archaeological properties that were previously recorded on the UNESCO World Heritage List, the objects from the “Caves with the oldest Ice Age art” are transportable. Only through documentation and analysis of their collectivisation with other objects, in part also only through their cleaning and even restoration, their scientific significance was revealed and, consequently, the outstanding universal value of the property as well. This is also in accord with the criteria of the HEADS action plan.

Many of the previously recorded properties on the UNESCO World Heritage List from the Palaeolithic do not involve individual sites; rather, they are based on the whole landscape. It was the development of the Valleys of Awash and Omo in Ethiopia that led to the fact, in the first place, that strata with skeletal remains and stone tools of early humans became accessible. At the same time, these properties however represent the landscapes used by the Australopithecines and early hominids. Also the Vézère Valley in the South-west of France is to be viewed as a landscape used by humans from the Middle Palaeolithic and Upper Palaeolithic. The property of the “Caves with the oldest Ice Age art” also circumscribes a landscape. This was used by the humans of the Aurignacian, even if it changed its appearance in the last tens of thousands of years. The humans lived in this landscape, took advantage of the available resources and occupied the caves. According to everything that is known thus far, the caves served here not only as short-term hunting camps; rather, it seems more likely that larger family associations lived in the caves as residential camps. By the same token, it seems that these caves might also have played a role as special locations or even sacred places. The “Caves with the oldest Ice Age art” hence form an inseparable ensemble together with the surrounding landscape and the figurines and flutes discovered in them.
Fig. 3-17  Grotte Chauvet-Pont d'Arc, France. Panel of the Lions, Aurignacian.

Fig. 3-18  Vogelherd Cave, Germany. Lion figurine with newly found adjoining fragment, Aurignacian.
Fig. 3-19 Grotte de Lascaux, France. Aurochs, Early Magdalenian.

Fig. 3-20 Grotte de Lascaux, France. The shaft of the Dead Man, Early Magdalenian.
There are neither paintings nor engravings on the walls in the “Caves with the oldest Ice Age art”. Instead, in the find strata from the Aurignacian were found the previously mentioned small, carved animal and human figurines made of mammoth ivory. Among the figurines from the “Caves with the oldest Ice Age art” were found animals from the Ice Age environment such as wild horses, wild cattle and cave lions. The animals, the relatively numerous cave lions in particle, are stylistically and thematically similar to the paintings of cave lions in Grotte Chauvet. The small female figurine “Venus of Hohle Fels” is unique. In addition to the statuettes of animals, there are also therianthropes in the “Caves with the oldest Ice Age art”; these composites consist of attributes of cave lions and humans. This is a thematic analogy to the paintings of a female lower-body with the neighbouring head of a cave lion in Grotte Chauvet.

Many of the recorded properties on the UNESCO World Heritage List give evidence of a long research history. This is also the case for the “Caves with the oldest Ice Age art”. Initial excavations took place here as early as the second half of the 19th century. In the 20th century, intensive investigations then followed. These are now being continued in the present century. The investigations have classified the discoveries from the “Caves with the oldest Ice Age art” into the developmental scheme of the Palaeolithic in Europe. Sometimes they even determine and define the respective interpretation.

The dating of objects from the Aurignacian strata, in which the ivory figurines were found as well, underscores the special significance of the “Caves with the oldest Ice Age art”. The radiocarbon dates range between 35,000 and 43,000 years. They hence make these Aurignacian remains slightly older than the paintings in Grotte Chauvet and considerably older than the paintings of the caves in the Vézère Valley and in northern Spain. It is especially here that the “Caves with the oldest Ice Age art” provided the proof that, as early as the early Aurignacian, figurative representations of animals and humans were produced and used.

The figurines belong to the oldest examples for figurative art that are currently known worldwide. The flutes discovered in the same find strata are the, to date, oldest musical instruments worldwide. This shows that the “Caves with the oldest Ice Age art” fill a gap on the UNESCO World Heritage List in the context of the properties recorded from the Palaeolithic. This concerns on the one hand the old age of the art objects, and on the other, their style of representation as three-dimensional small figurines.

The “Caves with the oldest Ice Age art” have, as is the case in the Vézère Valley or in northern Spain, remained unchanged in recent millennia. They serve as an example for the artistic development during various epochs of the Palaeolithic. While the caves in south-western France and northern Spain supplied primarily wall-paintings from the Gravettian, Solutrean and Magdalenian periods, Grotte Chauvet provided wall-paintings and the “Caves with the oldest Ice Age art” provided mobile art works from the Aurignacian. All mentioned properties are authentic and are accompanied by considerable integrity.
Comparison with key sites from a similar cultural background

Important palaeolithic key sites with early art

There is evidence of art from various continents that dates back to the Upper Pleistocene.

Numerous rock paintings exist in Africa. A definite temporal classification is not possible in most cases. Exceptions are the painted stone plates from the Apollo 11 Cave in Namibia. Antelopes, zebras, rhinoceroses and other animals are represented here. These paintings, with an age of from 30,000 to 32,000 years, are currently recognised as the oldest dated figurative representations on the African continent.

There are paintings in caves on Sulawesi (Indonesia) as well, hand-prints and figurative representations among them. By means of direct uranium-series dating of the overlying calc-sinter, the age of the representations from the Leang Tim puseng Cave can be determined. The illustration of a babirusa (pig-deer) dates back to approximately 35,000 years, and a hand-stencil even to an age of 40,000 years. The babirusa is currently recognised as the oldest figurative representation in Southeast Asia.

The Australian continent is also rich in paintings on rock faces. Their age can often times not be determined precisely. Such paintings were, in part, produced still in the modern era by the Aboriginal people of Australia. It is possible that the emergence of painting dates all the way back to the Pleistocene. The paintings from the Cacadu National Park (s. above) with representations of emus, kangaroos, crocodiles and snakes have been dated to between 10,000 and 20,000 years old.

The oldest artistic expressions in Europe are linked with the Aurignacian. They are differentiated into various groups. Thus, there are engravings and paintings on rock faces, paintings on cave walls as well as carved mobile art works.

At a few sites engravings on limestone were discovered in find strata from the Aurignacian. These sites include La Ferrassie, Abri Castanet, Abri Cellier and Abri Blanchard. Starkly abstracted animal figurines can be recognised on the stones. Thus, these discoveries deal with figurative art. The animal representations often times have a stiff appearance. They are picked deeply into the rock – the technical procedure here does not enable any kind of detailed contouring. The animal species depicted is frequently unclear and, therefore, cannot be identified specifically. Besides, there are representations of vulvas and phalluses. These engravings are typical for the Style I in the sequence for Palaeolithic art as defined by Leroi-Gourhan. Other than a general assignment to the Aurignacian period, the exact dating of these representations is impossible.

Perhaps it is appropriate to allocate the painted depictions from the (Proto-)Aurignacian strata of the Grotta di Fumane to this group as well. Limestone rocks decorated with colourful lines were found here. A starkly abstracted representa-
Justification for inscription

A further stone shows a (human?) figurine standing upright, which seems to be wearing horns on his head. This is most likely a representation of yet another therianthropic creature (metamorphic animal-human). The Aurignacian period strata from the Grotta di Fumane have been dated to an age from 36,000 to 44,000 years. One date, which was calculated by means of an ultra-filtrated sample, amounted to 41,000 years. Since ultra-filtrated samples typically provide the most exact dates, this age indication, with a high level of probability, can be afforded the most relevance. As regards the paintings on the stones, this has not yet reached the level...
of fully distinct figurative art; rather, the stylised figurines display a strong similarity to the other linear drawings from the Grotta di Fumane.

In several caves there are paintings that date back to the Aurignacian. One of these caves is the previously mentioned Grotte Chauvet (s. above). The paintings found there contradict in many respects the differentiation of the art styles – as presented by Leroi-Gourhan – since they demonstrate early, fully distinct figurative art. Even though there was doubt concerning the temporal categorisation of the paintings from Grotte Chauvet, many of the representations seem to nevertheless belong to the Aurignacian period. Direct dating of coloured pigments from the paintings resulted in an age of between 34,000 and 37,000 years.

There are paintings on rock faces in Baume-Latrone as well. The majority of the illustrations have been heretofore dated to the Solutrean based on art-historical considerations. A $^{14}$C-dating from a wood-charcoal sample that was removed from underneath the painting yielded an age of about 37,000 years. It has however not been clarified whether the resultant date actually reflects the true age of the paintings. These are quite stylistically differentiated from the paintings in the Grotte Chauvet due to their starkly abstracted representation. Yet on the other hand, there are no analogous cases regarding the representations of Style I as defined by the sequence of Palaeolithic art according to Leroi-Gourhan. However, provided that the dating applies, at least a few of the representations from Baume-Latrone would be considered the oldest figurative cave paintings that are currently known.

The majority of paintings from several caves that have already been mentioned (s. above) is younger than the Aurignacian and are categorised into the Middle or Late Upper Palaeolithic. However, in the sites El Castillo, Abri de La Viña and Peña de Candamo there are painted signs on the walls that, through direct dating of the overlying calc-sinter, can be dated back to the Aurignacian. For a red
disc in El Castillo, an age of more than 40,000 years can be assumed. The red disc would thus be considered as the oldest painting on a cave wall that is currently known. Of course, this does not concern figurative art, as is the case with all other representations mentioned here.

In the Aurignacian site in Stratzing in Austria a figurine was found that is considered mobile art. It was carved out of amphibolite schist. This is a representation of a female figurine as a dancer. The figurine’s age lies between 34,000 and 36,000 years.

Fig. 3-23 Grotta di Fumane, Italy. Red painting of a therianthrope (?), Aurignacian.
Key palaeolithic sites with transportable art objects

In addition to paintings on rock faces or in caves that can be referred to as “wall art”, there is still one other style of art. The respective objects here are small and were thus transportable during the Pleistocene. They were not stationary, as was the case with the paintings in caves and on cliff walls; rather, they could be transported from one campsite to another. These transportable objects presumably represented the same significance for the Palaeolithic humans as the cave paintings, even though they usually do not seem as impressive. With the transportable objects – and with the paintings as well – a distinction needs to be made between the non-figurative drawings and the figurative representations.

In the South African cave site Pinnacle Point, in a find stratum from the Middle Stone Age, mechanically processed pieces of red ochre with an age of about 164,000 years were found. These objects serve as the currently oldest proofs of the use of pigments.

The currently oldest known examples for non-functional drawings or carvings on objects originate from South Africa as well. In Blombos Cave, a whole series of pieces of red ochre were discovered in find strata that were dated as far back as the African Middle Stone Age (Stillbay Complex). Some of them had engravings that could not have arisen, at least in part, from the use of red ochre as a coloured pencil or in the production of pulverised pigment. Particularly famous was a piece of red ochre from the strata complex M1, which displays an arrangement of scored lines on the surface. The lines form a series of X-symbols, which are connected by straight lines with one another. There is no functional activity that would result in the emergence of such a complex pattern on the surface of a piece made of red ochre. Therefore, this piece has to comprise an intentionally-produced art object. This engraving was dated to an age of between 74,000 and 78,000 years.

At Diepkloof Rock Shelter, an archaeological site in South Africa, more than 250 fragments of ostrich-egg shells were found. They originate from small containers that were possibly used for the storage of water. They are about 60,000 years old and are classified in the African Middle Stone Age as well. One can recognise engraved lines on the fragments of the ostrich-egg shells. These presumably formed abstract geometric patterns.

The objects discovered at these two sites do not yet represent figurative art. They are, however, furnished with complex lines that can possibly be interpreted as decoration. These decorations presumably carried their significance through clearly communicated symbolism, which might have been considered as an identification marker for a certain social group. The African Middle Stone Age is most likely linked with early representatives of Homo sapiens.

Palaeolithic sites with transportable art objects occur frequently in Europe. They all belong to the Upper Palaeolithic period and are therefore directly connected to the emergence of the modern Homo sapiens in Europe.
Justification for inscription

Fig. 3-24 Venus of Willendorf, Austria, Gravettian.

Fig. 3-25 Venus of Hohle Fels, Germany, Aurignacian.
The representations of Style 1 as defined by Leroi-Gourhan (s. above) have been dated to the Aurignacian (s. above). They were for the most part applied to rock faces or isolated rocks and will not be considered in this context. The same is true of the painted stones from the Grotta di Fumane in northern Italy.

The only genuine mobile art-work belonging to the Aurignacian other then that of the “Caves with the oldest Ice Age art” originates from the site Stratzing in Austria (s. above). This involves a carved and stylised female figurine made of amphibolite schist that is designated as “the dancer”. Its age is between 34,000 and 36,000 years.

Further examples for transportable figurative hand-held art-work are attributed to the Gravettian, Solutrean and the Magdalenian.

The artworks discovered in the Gravettian sites are between 26,000 and 32,000 years old. Characteristic for the time of the Gravettian is the production of female figurines with sexual features drawn in a highly explicit style. The heads of the figurines are typically stylised and do not provide any recognition of individual specificity. Those female figurines grouped under the designation “Venus” appeared across a broad geographic distribution. It spanned from Siberia to South-west France. The most famous example is perhaps a figurine made of limestone – the “Venus of Willendorf” (Austria). But such female figurines were also made of mammoth ivory. These figurines with their extremely emphasised sexual features can be interpreted as representations of sexuality and fertility. In addition to the “Venus of Willendorf”, there are such figurines from Laussel, Lespugue and other sites in France, from Balzi Rossi in Italy and from Avdeevo, Gagarino, Kostenki and Mal’ta in Russia. In Dolní Věstonice in the Czech Republic such a female figurine was discovered made of fired clay. A discovery from the Grotte du Pape near Brassempouy in France is noteworthy. This is a small female head that became known as the “Dame à la capuche”. In contrast to the other female representations, this small head features clearly-worked individual facial features. Similar is a female head from the Czech site Dolní Věstonice carved out of mammoth ivory.

Representations of men are seldom found. From the Czech site Dolní Věstonice, there is a figurine made of mammoth ivory that has been interpreted as an expression of a man. Illustrations that have male sexuality as the central theme are also seldom found in the Gravettian. In a Gravettian find stratum in Hohle Fels in South-west Germany (which is being nominated in this application due to its discoveries from the Aurignacian) an elongated pebble was found, which was re-worked into the representation of a phallus.

In the Gravettian sites, more than just human figurines are to be found. Small carvings of animals made of ivory or limestone are equally well-known. The figurines represent animals of the Ice Age environment. There were illustrations of mammoths, bears, lions and others. Such figurines were taken, for example,
from the Russian sites in Kostenki and Sungir. An animal representation is engraved on an antler spike from the Hohle Fels. Special reference should be made to the discovery of the production of ceramics in the Gravettian. In the Czech site Dolní Věstonice there are figurines that consist of fired clay. Among them are representations of mammoths, rhinos and bears, as well as a female figurine, the "Venus of Dolní Věstonice" (s. above). Moreover, firing ovens were found at the site, which shows that the clay figurines were fired on site.

An important site for transportable hand-held art is the Cueva del Parpalló in Spain. In this cave, several thousand engraved or painted stone plates were discovered in sites from the Solutrean, Badegoulian and Magdalenian. Deer, horses, ibex, aurochs, a wild boar, a fish and other figurines were found here.

A further group of sites with mobile art objects is categorised in the Magdalenian. The sites are between 15,000 and 20,000 years old. In the mobile art of the Magdalenian, a broad palette of representations is thus present, as in the cave paintings. Primarily animals of the Ice Age environment are illustrated. They were sketched onto stone plates or bones, antlers and ivory. Such objects stem from places like Grotte d’Enlène, the cave of La Vache or from Mas d’Azil in France as well as from Gönnersdorf and Petersfels in Germany. Among others, depictions were made, for example, of mammoths, horses, wild cattle and ibex, which were designed very realistically. Sometimes illustrations of animals as three-dimensional figurines serve as ornamentations for tools made of antlers and ivory. Such discoveries are known, for example, from Grotte d’Enlène, the cave of La Vache or from Mas d’Azil in France.
particular, the points of spear-throwers (propulseurs) were relatively often decorated with figurines. In this case one can find the typical sculptures of ibex, deer and cattle.

In the Magdalenian layer of Hohle Fels several stones with painted red dots were discovered. Comparable pieces were also found in a Late Palaeolithic layer in Hohlenstein Kleine Scheuer and in several Azilian layers at different sites, for example Mas d’Azil in France.

Representations of humans are less common. Characteristic for the Magdalenian period are the female figurines of the type Gönnnersdorf. This usually involves representations in profile – without exception there is no head. The buttocks are presented as a triangle, while breasts and arms do not always appear. These figurines are either engraved on stone plates and animal bones, or carved from stone, jet black beads, ivory or antlers. They are found, for example, in Gönnnersdorf and Petersfels in Germany. The representations of La Marche in France should be particularly noted. In Magdalenian find strata, engravings on stone plates were discovered of more than 150 human figurines. Among them, very realistic representations of male and female heads were found. The heads seem to have individual facial expressions. This is in contrast to the illustrations of stylised female figurines, which are otherwise typically wide-spread in the Magdalenian.

Comparison with the “Caves with the oldest Ice Age art” and conclusion

Carved animal and human figurines made of mammoth ivory were discovered in the “Caves with the oldest Ice Age art”. The statues are dated to the time period between approximately 35,000 and 43,000 years. The figurines were designed quite realistically; among them one can find representations of Ice Age animals such as wild horses, bison and mammoths. The high percentage of cave lions is striking. This makes reference to the special role that the largest predators of the last Ice Age in Europe could have played in mythology, spirituality and most likely religion of the stone-age Homo sapiens.

Figurative art belongs, since the first appearance of Homo sapiens in Europe, to the characteristic components of Palaeolithic sites. The earliest of them is dated to the Aurignacian. The Aurignacian is the oldest Upper Palaeolithic technocomplex in Europe and the Middle East.

Art appeared in the Aurignacian in diverse forms. Illustrations of animals were engraved and painted on boulders and stones. Additionally, it is notable that representations of vulva and phalluses frequently appeared as well. The animals are quite abstracted and appear heavy-handed and awkward. They form the first level in the interpretation of a successive evolution of Palaeolithic art as defined by André Leroi-Gourhan. Conversely, the animal and human figurines from the “Caves with the oldest Ice Age art” are very naturalistic. They contradict hence the image of a slow further development of the figurative art of the Aurignacian.
Justification for inscription

Fig. 3-27 Mas d’Azil, France. Spear-thrower with the sculpture of an ibex, Magdalenian.
up to the Magdalenian. Even in the beginning of the Upper Palaeolithic, the first modern humans created fully distinctive figurative art objects. Of course, it cannot be excluded that there were precursors for such figurines made of perishable materials such as wood.

The walls were painted in a few caves during the Aurignacian. Signs and symbols were frequently applied. They had evidently carried a transferred communicative significance that can no longer be accessed today. These signs and symbols are however not figurative. Age dating of the signs is not simple. Sometimes their allocation to the Aurignacian is based exclusively on the superposition of the signs by obviously younger paintings. In several cases, the age of the calc-sinter on the paintings was determined by means of Uranium-series dating. These age datings show that the walls of several caves were decorated more than 40,000 years ago. These age indications are comparable with the temporal classifications of the figurines from the “Caves with the oldest Ice Age art”. However, the distinctive figurative components are missing.

In two of the caves there are figurative representations on the walls that could be classified in the Aurignacian. Grotte Cauvet is included on the UNESCO World Heritage List (s. above). Some of their paintings are thematically and stylistically similar to figurines from the “Caves with the oldest Ice Age art”. Similar to these, they are very naturalistic and contradict the image of a successive development of Palaeolithic art in Europe. Direct dating of colour pigments from the paintings resulted in an age of 34,000 to 37,000 years. This demonstrates that they are slightly younger than the figurines from the “Caves with the oldest Ice Age art”.

The paintings from Baume-Latrone have been heretofore mostly attributed to the Solutrean. A 14C-measurement from a sample that was removed from underneath one of the paintings produced however an age of about 37,000 years. It seems to be unclear still whether this age indication actually dated the paintings, or if it more likely denotes an older settlement in the cave, which existed prior to the appearance of the paintings. Provided however that the age indication is correct, the paintings in Baume-Latrone would be temporally comparable to the figurines from the “Caves with the oldest Ice Age art”. Stylistically however, prominent deviations appear, even when one of the paintings in Baume Latrone shows a cave lion, which can also be found numerous times in the “Caves with the oldest Ice Age art”.

Within the mobile figurative art-works from the Aurignacian, the discoveries from the “Caves with the oldest Ice Age art” assume a special role. The depictions of the animals of the Ice Age, the humans and also the therianthropes are unique. They differ from all other mobile figurative art-works from the Aurignacian due to the highly-realistic approach to illustration. They do not correspond to the stiff, unclear representations from Style I as defined by André Leroi-Gourhan. Actually, they demonstrate in a very early phase of cultural development
of the anatomically modern human, a high degree of artistry, which is combined with a pronounced observational talent and an enormous imagination. Figurative mobile art-works originate from almost all phases of the Upper Palaeolithic. They possess, for their cultural affiliation, respectively characteristic
features. A distinction must be made here between representations of animals and those of humans.

A human representation was discovered in the Aurignacian site Stratzing in Austria. It concerns a female figurine carved out of amphibolite schist. It is dated to between 34,000 and 36,000 years old. The representation seems to be abstracted; clear bodily characteristics cannot be recognised. This distinguishes it from the figurines from the “Caves with the oldest Ice Age art”, and it is furthermore somewhat younger.

Female statuettes, known as “Venus Figurines” and found at various sites throughout Europe, are attributed to the Gravettian period which followed the Aurignacian. They are carved out of stone or ivory and exhibit an exaggerated peculiarity of the primary and secondary sexual characteristics, while heads and faces are only implied and abstracted. They have been dated to an age between 26,000 and 32,000 years.

Among the statuettes from the “Caves with the oldest Ice Age art”, there is also a female figurine that has been designated as “Venus of Hohle Fels”. Until its discovery in 2008, it was assumed that images of women with exaggerated and emphasised sexual characteristics were a definitional characteristic of the Gravettian. This scientific opinion had to be examined. The “Venus of Hohle Fels” shows that the custom of illustrating women with extremely-formed sexual features, which are interpreted as a representation of sexuality and fertility, actually began around 10,000 years earlier than previously accepted and can be dated back to the Aurignacian.

In the Magdalenian as well there are female figurines. They were carved from various materials such as ivory or gagate (jet) and engraved on stone plates or bones. They are dated between 15,000 and 20,000 years. These female figurines are considerably abstracted and are thus markedly differentiated from the “Venus of Hohle Fels”.

Statuettes or engravings with representations of animals can be found at many different sites. In part, they are more or less abstracted but also sometimes designed very realistically. The representations involve the Ice Age animal world, including horses, ibex, cattle and lions. The statuettes are carved from stone or ivory. In Dolní Věstonice, there are, in addition to figurines made from conventional materials, some that are made of fired clay. Engravings are also found on stone plates or bones, ivory and antlers. The oldest of the animals originate in the Gravettian and are between 26,000 and 32,000 years old. The youngest of these were discovered at sites from the Magdalenian and the Late Palaeolithic and are between 12,000 and 20,000 years old.

The animal figurines from the “Caves with the oldest Ice Age art” are attributed to the Aurignacian. They are carved from mammoth ivory, hence, with their age of between 35,000 and 43,000 years, are much older than the animal figurines from the Gravettian, Solutrean or Magdalenian. The small statuettes are figura-
Justification for inscription

tively detailed and shaped, realistic representations of the Ice Age animal world. Mammoths and cave lions are illustrated considerably often. They are currently considered to belong to the oldest figurative representations anywhere on the planet.

The animal and human figurines carved out of mammoth ivory from the “Caves with the oldest Ice Age art” are singular. They are older than all other heretofore known figurative illustrations from the Palaeolithic and are fascinating due to their extremely detailed and naturalistic representation. They show the world of Ice Age humans in the Aurignacian and provide us with insights into their spiritual association level. It is demonstrated due to their age that modern humans produced figurative art immediately after their immigration into Europe.

Fig. 3-29 Stratzing Galgenberg, Austria. Female figurine, Aurignacian.
Of course, it appears to be possible that future research on other continents will also reveal figurative art objects that are perhaps even older than the figurines from the “Caves with the oldest Ice Age art”. This is demonstrated clearly by the cave paintings in Sulawesi, which are up to 40,000 years old. But even if new and possibly older art-works are discovered at other sites, the discoveries from the “Caves with the oldest Ice Age art” would lose nothing of their scientific relevance and their extraordinary universal significance. The discoveries represent the art of an epoch of human development (the Aurignacian) in a confined geographic region (the Swabian Jura). The surrounding landscape belongs as much to the “Caves with the oldest Ice Age art” as the fascinating and significant recovered specimens made within their walls.
Key palaeolithic sites with representations of therianthropes

Therianthropic figurines, with animal features and human attributes combined, are rare among the Upper Palaeolithic cave paintings and transportable art objects. Paintings and engravings of therianthropes are only known from a few caves. Among these there is a “bison-man” from the cave of Le Gabillou in the Dordogne region of South-west France. In the cave Les Trois Frères located in the Ariège of southern France, at least two such representations have been found. One also represents a “bison man”, while the other one is a human being with antlers, described as a horned god (“dieu cornu”). In Grotte Chauvet in the Ardèche of France a combination of a bison head and a lion head with a female lower body has been uncovered. The therianthropes from Le Gabillou and Les Trois Frères have been dated to the Magdalenian, the therianthropic creature from Grotte Chauvet to the Aurignacian.

In addition, some other transportable art objects may be interpreted as therianthropic creatures. In Grotta di Fumane several red-coloured paintings on limestone were discovered in layers dating to the (Proto-) Aurignacian. Among these is the painting of a horned figurine in a human posture. Furthermore, there is the combination of an ibex-head with legs and female genitals on a Magdalenian spear thrower (propulseur) from Las Caldas Cave in Spain.

Among the figurines from the “Caves with the oldest Ice Age art”, there are three examples to be seen as therianthropic beings. In addition to smaller, somewhat unclear representations from the Geißenklösterle and the Hohle Fels, there is the large figurine of the “Lion Man” from the Hohlenstein Stadel Cave. This statuette reveals a mix of attributes of a cave lion in the head and the upper body, as well as those of a human in the lower body and legs.

Common to all of these depictions is the combination of the head and the upper body of at least one animal with the lower part of a human. Reversed combinations are unknown.

It is possible that, with these therianthropic beings, divinities are represented. Equally, shamans could be represented, which are wearing an animal mask or an animal pelt with head. Both interpretations show the clear reference of the therianthropic creatures to the religion of the Ice Age humans.

The figurines from the “Caves with the oldest Ice Age art” are between 35,000 and 43,000 years old. They are grouped with the oldest representations of therianthropic beings that are currently known worldwide.

Noteworthy here is the location of many of these examples of therianthropes. They have often been found in secluded places. The “bison man” of Le Gabillou, for example, was discovered at the far end of a low and narrow passage in the cave. The bison-woman in Grotte Chauvet is located in the far back portion of the cave, in the vicinity of the large frieze of lions. In the Les Trois Frères Cave, the “dieu cornu” looks down on the observer from a 3.5 m height at the end of
a small side passage. In the Hohlenstein Stadel Cave the therianthropic “Lion Man” was found in a small chamber away from the habitation area at the entrance to the cave.

**Key palaeolithic sites with flutes**

Musical instruments do not appear frequently in the archaeological legacy of the Upper Palaeolithic. However, at a few sites it was possible to retrieve flutes. They have, as opposed to whistles, more than one hole so that melodies could be played.

The oldest presumed flute hails from a Middle Palaeolithic find stratum in the cave Divje Babe in Slovenia. In a fragment of a femur from a young cave bear, two holes can be found. These holes seem to be neither scraped nor cut; rather, they were pierced. The discovery of this flute in a Middle Palaeolithic find strata
Justification for inscription

is often considered evidence that Neanderthal man was familiar with music. On the other hand, the interpretation of the discovery from Divje Babe is very controversial in professional circles. It is discussed whether or not the holes in the bone are more likely bite marks from a carnivore.

If the unsettled discovery from Divje Babe is not considered, the eight specimens from the “Caves with the oldest Ice Age art” document the earliest examples for flutes that are presently known worldwide. Only in the Grottes d’Isturitz in southern France was another flute retrieved from an Aurignacian find stratum.
that might have a similar age. A fragment from the Siberian site Khotyk is rather vaguely dated, but could also belong to the same time period. It is however not clear whether the object is a flute or a whistle. The remaining known flutes are altogether younger and originate from the Gravettian or the Magdalenian.

Summary of the Comparative Analysis

In the “Caves with the oldest Ice Age art” carved figurines made of mammoth ivory and flutes fashioned from mammoth ivory and bird bones were discovered. The objects were discovered in find strata from the Aurignacian and are between 35,000 and 43,000 years old. The statuettes and the flutes are considered to be among the oldest evidence for figurative art and music that are known worldwide. Comparable art objects from this early period of *Homo sapiens* are otherwise not known anywhere. The highly naturalistic, detailed representation of the Ice Age animal world leaves the viewer astounded by its old age and artistic perfection.

The “Caves with the oldest Ice Age art” are located in two separate valleys. The hunters and gatherers from the Aurignacian period lived in these valleys and took advantage of the necessary resources for survival. The caves served as habitation, while some of them also served as special locations and sacred places. The figurines and flutes found in the caves indicate significant changes in the music, in the figurative art and in the religious beliefs of the humans. This is in accord with the HEADS action plan. The “Caves with the oldest Ice Age art” are one of a long series of other properties that are already recorded on the World Heritage List, and that have received their outstanding universal value due to their unique ensemble of transportable objects. The nominated property represents here a landscape from the Aurignacian that is unique worldwide. In its present form, the property possesses considerable authenticity and integrity. The combination of the caves, their special artefacts and the landscape that surrounds them form a prominent milestone in the history of human beings and in the emergence of figurative art and music. Inscription of the “Caves with the oldest Ice Age art” into the UNESCO World Heritage List with their early art objects and musical instruments would fill a gap. It would complement the list of previously inscribed properties through a remarkable living environment of the Aurignacian – and hence the early modern humans of Europe.
Fig. 3-33 Map with some European key sites mentioned in the comparative analysis. 1-Willendorf / Stratzing Galgengberg 2-Grubgraben 3-Brasempouy, Grotte du Pape 4-Grotte d’Enlène / Les Trois Frères / Grotte du Mas d’Azil 5-Grotte d’Isturitz 6-La Marche 7-La Vache 8-Grotte de Gabillou / La Ferrassie / Rouffignac / La Mouthe / Font de Gaume / Les Combarelles / Abri Cellier / Abri Belcayre / Abri Blanchard / Lascaux / Laussel 9-Grotte des Rideaux, Lespugue 10-Gönnersdorf 11-Petersfels 12-Balzi Rossi 13-Cueva del Parpalló 14-Grotta di Fumane 15-Divje Babe 16-Dolní Věstonice 17-Coliboaia 18-La Baume-Latrone 19-Grotte Chauvet-Pont d’Arc 20-Altamira / El Castillo / La Garma 21-Peña de Candamo 22-Ekain 23-Atapuerca 24-Pair-non-pair 25-Avdeevo 26-Gagarino 27-Kostenki 28-Malta 29-Kapova Cave 30-Sungir 31-Côa Valley / Siega Verde 32-Creswell Crags 33-Badanj Cave 34-Isernia-La Pineta 35-Dmanisi 36-Caves with the oldest Ice Age art.
3.3 Proposed statement of outstanding universal value

Draft statement of outstanding universal value

a) Brief synthesis

Some 43,000 years ago, anatomically modern humans (Homo sapiens) reached Europe. As far as is known at present, art began to develop after these people had spread into Europe. In this context, the representations of art which are the earliest known at the present time are associated with what is known as the Aurignacian. The Aurignacian was one of the earliest cultural stages of the Upper Palaeolithic period, and in Europe dates to between some 33,000 and 43,000 years ago.

Located in valley sections of the rivers Ach and Lone (Baden-Württemberg, South-west Germany) are six caves, the Vogelherd Cave, Hohlenstein Stadel Cave, Bockstein Cave / Bocksteintörle, Geißenklösterle, Sirgenstein Cave, and Hohle Fels. Beside others, archaeological layers belonging to the Aurignacian were discovered. These layers, dating back 35,000 to 43,000 years, contained hundreds of items of personal ornament, at least eight musical instruments (flutes made of ivory and bird bone), and more than 50 figurines carved from mammoth ivory. Among these are three therianthropes (composite beings that are half human, half animal), as well as the statuette of a woman and figurines depicting various animals from the Ice Age. Therefore the respective valley sections of the Lone and Ach Rivers have yielded a unique concentration of archaeological sites with some of the oldest figurative art and some of the oldest music worldwide. The caves are located only a few kilometres away from each other within the two separate valleys. Together with the artifacts and the surrounding landscape they form an outstanding early cultural ensemble that helps to illuminate the origins of human artistic development. Moreover, the “Caves with the oldest Ice Age art” fulfil a number of the criteria for the definition of a site of human evolution in the meaning of the “HEADS Action Plan”. These relate in particular to the development of art, music, and religion.

Since the 19th century, archaeological excavations have repeatedly been conducted in the caves. This long and highly productive tradition of research has had a significant influence on the exploration of the Upper Palaeolithic in Central Europe.
b) Justification for criteria

Criterion (i): The nominated property represents a masterpiece of human creative genius.

The “Caves with the oldest Ice Age art” and their surrounding areas were part of the habitat of early modern *Homo sapiens*. They are therefore inseparably linked with the creators of this art. The sites represent the place of inspiration and origin of the oldest figurative art. Moreover, they document the specific locations where artists made, used and stored these finds. These caves served as the homes, ateliers and concert halls for the earliest artists. The components “landscape”, “caves” and “finds” are all to be considered within this ensemble. The remarkable figurative art objects and musical instruments found in the caves belong to the earliest masterpieces of human creativity in the world.

Criterion (iii): The nominated property bears a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

In the archaeological layers of the “Caves with the oldest Ice Age art” the cultural remains of the Aurignacian are preserved in its entire complexity. Unique are the figurative artworks and musical instruments from which we can gain insights into the origins of art, music and religion. They were produced, used and ultimately deposited in the caves of the Ach and Lone valleys. Thus, the landscape, the caves and the finds as an ensemble represent a unique and exceptional example of an early cultural tradition and an extinct culture.

c) Statement of integrity

The serial property of the “Caves with the oldest Ice Age art” represents components of the same historico-cultural group (Aurignacian) and the same geographical region (Swabian Jura). It is of central importance for our knowledge concerning Palaeolithic settlement systems as well as the origins of figurative art, music and religious concepts of early modern humans. The nominated areas encompass all components of the property: from the objects themselves to the archaeological layers and the settlement structures of the cave sites to the immediate surrounding landscape. In addition to the internationally renowned sites, the property includes lesser known sites and as yet unstudied sites. As such we are able to maintain the integrity of the designated property permanently with the help of existing protective measures and safeguarding provisions.

d) Statement of authenticity

Geological deposits protected the prehistoric remains at the cave sites until the first palaeontological and archaeological excavations. Thanks to this favourable geological setting, areas within the nominated property retained their authenticity. Excavations and scientific research have verified the authenticity of the caves, the landscape and the archaeological layers. An important element
here is the existing and ongoing documentation of the sites, finds and features, demonstrating the reliability and outstanding quality of the information.

e) Requirements for protection and management

The serial property, “Caves with the oldest Ice Age art”, is protected with force of law by internationally ratified conventions, and by the laws of Germany and Baden-Württemberg. Activities which have an effect on the archaeological sites and the surrounding landscape are regulated and limited by law. The area in which the property and the cave sites are located enjoy protection by way of laws, which protect cultural and natural heritage sites alike.

The management system of the property is comprehensive and far-reaching. It integrates all levels of administration and the authorities concerned. Joint plans on the international, national, and regional levels are co-ordinated and implemented by way of action plans. The exchange of information for research and conservation purposes and sustainable tourism management is rendered possible and promoted by the use of existing international and national networks and the creation of new ones. The State Office for Cultural Heritage Baden-Württemberg ensures the upholding of the Cultural Heritage Protection Act, and supervises its implementation by way of an agreed monitoring programme. The Federal Republic of Germany and the State of Baden-Württemberg bear the financing of the nominated property. Further support is provided by the local districts and communities.
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4. STATE OF CONSERVATION AND FACTORS AFFECTING THE PROPERTY

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The corridor in Hohle Fels Cave with a bridge installation across the excavation area.
4. State of conservation and factors affecting the property

The following chapter details the state of conservation of the “Caves with the oldest Ice Age art”. The focus in this is primarily upon describing the physical condition of the caves. As the archaeological layers are indicative of the scientific potential of the respective sites, their state of conservation is also categorised. In a further step the long-term challenges are listed, in particular the developmental pressure, the problems associated with conserving finds and records as well as natural risks. This enables the hazards that threaten the outstanding universal value of the finds to be recognised and assessed at an early stage. A strategy for averting these potential dangers (see Chapter 3.1.e) is addressed in the Management Plan for the property (see Chapter 5.e and Volume II).

4.a Present state of conservation

State of conservation of the cave sites in the Ach Valley (Id N°1)
The Ach Valley component part of the nominated property “Caves with the oldest Ice Age art” contains three known Palaeolithic sites that primarily determine the outstanding universal value of the site. These are the Hohle Fels, the Sirgenstein Cave and the Geißenklösterle. With the exception of minor changes triggered by karst, the caves are stable in both form and appearance.

State of conservation of the cave sites in the Lone Valley (Id N°2)
The Lone Valley component part of the nominated property “Caves with the oldest Ice Age art” contains three known Palaeolithic sites that primarily determine the outstanding universal value of the site. The Bockstein Cave with the Bocksteintörle preceding it, the Hohlenstein Stadel Cave and the Vogelherd Cave are karst caves. The Vogelherd Cave and the Hohlenstein Stadel Cave are stable in form and appearance. Blasting in the scope of 19th century archaeological investigations of the Bockstein Cave resulted in damage to the front and the south-western part of the cave. However, the cave is not at risk of collapse.

State of conservation of the find-bearing sediments of the “Caves with the oldest Ice Age art” in the Ach Valley component part (Id N°1)
A large part of the layers in the entrance area of Sirgenstein Cave was already excavated at the beginning of the 20th century. Yet, intact layers are most probably preserved in the rear part of the cave. The two other caves, Geißenklösterle and
Fig. 4-1 Map of Ach Valley component part, showing Palaeolithic sites in the property.
Fig. 4-2  Map of Lone Valley component part, showing Palaeolithic sites in the property.
Hohle Fels, contain further find-bearing sediments with material legacy of early modern humans. These are of great scientific importance for future research. In addition, the layers represent an archive of this particular section of human development. They are therefore of outstanding universal value and should be preserved for future generations.

**Geißenklösterle (Id N°1-1)**

**History of research**

The archaeological layers in the Geißenklösterle were first investigated by a team led by Gustav Riek in 1957. This excavation and a further one by Eberhard Wagner in 1973 were minor sondages. It was not until the period between 1974 and 1991 that large-scale investigations were conducted under the leadership of Joachim Hahn. In 2000 the excavations were resumed by Nicholas Conard, continuing until 2002 (for more details see Chapter 2.b).

![Fig. 4-3 Ground plan of Geißenklösterle, highlighting the area of the current cave entrance where the latest excavations have been conducted. The cave passage and the northern cave entrance are completely unexcavated.](image-url)
Stratigraphy
The cultural sequence of Geißenklösterle comprises layers from the Middle Palaeolithic, i.e. the times of Neanderthals in Europe, throughout the Upper Palaeolithic to the Mesolithic. The Upper Palaeolithic sequence includes the Aurignacian, the Gravettian and the Magdalenian (see illustration in Chapter 2.b).

Documentation and state of conservation
The existing archaeological layers have not been wholly excavated. The solid rock was only reached in the front, western part of the cave, where a deep sondage was conducted. Further find-bearing sediments exist, particularly in the rear, north-eastern part of the cave. A cave passage from the excavation area to the northeastern part of the collapsed dome of Geißenklösterle is still filled with sediment.

The latest excavation units in the southern entrance area of the cave passage have varying depths, as the excavations have proceeded differently within the area. Different cultural layers have been penetrated over the years. While layers...
Fig. 4-5  Trellis fence in front of Geißenklösterle.

Fig. 4-6  Safety measures taken for the preservation of sediments in Geißenklösterle: The area of the latest excavations has been covered with rocks.

of the Middle Palaeolithic and the Aurignacian have been reached in the central part, the north-eastern parts still contain Gravettian layers. In addition, Gravettian as well as Magdalenian layers are still preserved in the western part of the excavation area. The archaeological layers almost certainly extend further into the cave passage, where the in situ preservation of cultural remains from all aforementioned periods can be expected.

The Geißenklösterle is protected against public access by metal grilles. Visitors are not permitted to enter the cave, to avoid endangering the archaeological layers. However, tours to the cave are offered at regular intervals.
Future research
No further archaeological excavations are currently planned. However, samples may still be removed for scientific purposes and dating.

In the long term archaeological excavations might be conducted in parts of the cave. However, they will have to be limited to small areas. These potential future excavations must be coordinated with the State Office for Cultural Heritage and with referees of the UNESCO.

Sirgenstein Cave (Id N°1-2)

History of research
The Sirgenstein Cave has seen no archaeological investigation following the completion of the work led by Robert Rudolph Schmidt in 1906. Schmidt excavated the archaeological layers at two excavation trenches in front of the cave and two areas inside the cave itself.

Stratigraphy
The archaeological investigation of the sediments in Sirgenstein Cave, effected by R. R. Schmidt, have defined a cultural sequence that comprises layers from the Middle Palaeolithic, the Aurignacian, the Gravettian and the Magdalenian (see illustration in Chapter 2.b).

Documentation and state of conservation
The archaeological investigations led by Schmidt have taken place in the caves forecourt and the subsequent entrance area. In a section drawing that displays
Fig. 4-8 View of the Sirgenstein massif from the Ach Valley floor.
the longitudinal profile of the excavated area, Schmidt indicated that he has excavated an area which has reached up to 11.50 m from the caves opening into the cave until reaching the wall in a northerly direction. The excavated area extended 7.50 m towards the south of the entrance, exposing most of sediments on the caves forecourt. Schmidt further stated that the overall excavated area accounts for 140.7 m². If this is true, to date most of the Sirgenstein Cave’s interior has not been excavated. Further, Schmidt did not reach solid rock with his excavations. Therefore, it can be assumed that the forecourt and the entrance areas are at least partly filled with find-bearing sediments.

Currently none of the previously excavated areas are exposed by excavation or other means. The archaeological layers discovered by Schmidt almost certainly extend further towards the hall of the cave and most certainly on the extensive forecourt. Since the sediments adjacent to Schmidts excavation are still untouched, the in situ preservation of cultural remains from all aforementioned periods can be expected.
Fig. 4-10 Different views of the lasercan of Sirgenstein Cave, showing the different sections of the cave and the supposed location of Schmidt’s archaeological excavation in 1906.
The current overall situation in the cave has recently been documented in detail by the State Office for Cultural Heritage using the laserscanning technique. With special regard to excavations conducted in the past, however, it must be stated that there is no thorough modern documentation.

**Future research**

In the upcoming years further research that includes the removal of sediments is not planned. Since the preservation of archaeological layers on the forecourt, in the entrance area as well as inside the cave have as yet not been documented by modern excavation techniques, ground radar testing and test excavations may be effected in the future.

In the long term archaeological excavations might be conducted in parts of the cave. However, they will have to be limited to small areas. These potential future excavations must be coordinated with the State Office for Cultural Heritage and with referees of the UNESCO.

**Hohle Fels (Id N°1-3)**

**History of research**

Excavations were first conducted in the Hohle Fels by Oscar Fraas and Theodor Hartung in 1870/1871. The investigations were palaeontological in nature and were limited to areas of the hall (see Chapter 2.b). Archaeological investigations followed in the years 1958 to 1960 under the leadership of Gustav Riek and Gertrude Matschak. At differing intervals the Hohle Fels was also investigated between 1977 and 1996 under Joachim Hahn. The investigations of Riek and Matschak as well as the excavations of Hahn were restricted primarily to the area of the corridor leading from the entrance to the hall. Areas measuring a few square metres in size were also excavated within the hall. Nicholas Conard recommenced the excavations on the site in 1997, with these continuing to this day.

**Stratigraphy**

Building upon the findings of Hahn, Conard has defined the cultural sequence in the Hohle Fels as it is known today. The cultural sequence comprises layers from the Middle Palaeolithic, the Aurignacian, the Gravettian and the Magdalenian (see illustration in Chapter 2.b).

**Documentation and state of conservation**

The archaeological investigations led by Conard have taken place exclusively within the area of the corridor. To date, this has not yet been completely excavated. Similarly, the hall of the cave is still filled with find-bearing sediments, identified by using Ground Penetrating Radar (GPR).

The current overall situation in the cave has recently been documented in detail by the State Office for Cultural Heritage using the laserscanning technique. With special regard to excavations conducted in the past it must be stated that the corridor is the only area of Hohle Fels cave with a thorough documentation.
It has shown that the sediments in the cave are difficult to separate due to their similar appearance. Fortunately, there are areas with fire or limestone debris, distinguishable by the sometimes strikingly different amounts of artefacts. The layers in the cave are not horizontal. They are deposited in an oblique position, descending from the hall towards the entrance.

The currently exposed excavation units in the corridor of the cave have varying depths, as the excavations have proceeded differently within the area. Different cultural layers have been penetrated over the years. Since the excavation area is laid out in steps with depth increasing from the edge towards the centre, the exposed layers in the centre are older than the ones towards the edge. While layers of the Middle Palaeolithic and the Aurignacian have been reached in the central
The northwestern and southeastern parts still contain Upper Palaeolithic layers from post-Aurignacian times (Gravettian and Magdalenian). The archaeological layers almost certainly extend further in all directions, i.e. towards both the entrance and the hall of the cave. Since the sediments in these areas adjacent to the current excavation units are still untouched, the *in situ* preservation of cultural remains from all aforementioned periods can be expected.

The cave is enclosed by a metal grille and secured with an alarm system. The Hohle Fels can be visited in the scope of public tours.

**Fig. 4-12** Different views of the Laserscan of Hohle Fels Cave, showing the different sections of the cave and the location of archaeological excavations.
State of conservation and factors affecting the property

Image Description:
Coloured areas show excavation units with different cultural strata:
- Magdalenian
- Gravettian
- Transition Aurignacian-Gravettian
- Aurignacian
- Middle Palaeolithic
- Bedrock (schematic)
- Unexcavated
- Planned excavation

Fig. 4.13 Ground plan of the excavation area in the corridor of Hohle Fels Cave, illustrating the progress of excavation and planned extension of excavation units. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth. Numbered square metres in the bedrock area in the northeast are situated in a niche in the cave wall and have already been excavated.
**Future research**

The current excavation area is situated in the corridor of the cave. Further work can be conducted in the still uncovered excavation units in the next five to ten years. It is planned to further excavate sediments in parts of the excavation area from the already reached layers of the Middle Palaeolithic down to the bottom of the stratigraphy and the bedrock. The aim is to get a complete overview of the stratigraphic sequence in the cave. Therefore, the excavation will proceed in an area in the centre of the current excavation area (see detailed plan). The walls of the excavation units must be stepped due to safety regulations. Hence, it will be necessary to extend the excavation area by 1 m towards the entrance and towards the hall. All in all, the extension of the excavation area will comprise an area of ca. 8 to 9 m². It will be limited to the corridor area. The University of Tübingen will excavate and document all archaeological features and finds from all prehistoric and historic periods applying modern standards of excavation and documentation techniques.

Comprehensive intact sediments are preserved in the hall and in the entrance area, as shown by GPR-analyses. Because documentation of the palaeontological investigations of O. Fraas in the hall of Hohle Fels Cave is lacking, localisation of these areas would only be possible through larger excavations. For the reason of conservation of find-bearing sediments, permissions for such excavations cannot be granted. Hence, permissions for excavations exceeding the approved

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**Fig. 4-14** Trellis fence at Hohle Fels.
area of the currently ongoing excavations in the corridor cannot be granted in the next 10 years.

In general, potential future research must be coordinated with the State Office for Cultural Heritage and with referees of the UNESCO. On the one hand, research generates information for an optimal conservation of archaeological layers in these areas; on the other, it is guaranteed that comprehensive sequences of sediments with significant archaeological layers are preserved in the future.
Further palaeolithic sites in the Ach Valley component part (Id N°1)

**Helga-Abri**

The Helga-Abri is located on the outer western wall of the Hohle Fels. It was investigated for the first time by Gustav Riek and Gertrude Matschak between 1958 and 1960. Between 1976 and 1984 further excavation was conducted under Joachim Hahn. The stratigraphic sequence of the archaeological layers was identified during the course of these excavations. Further find-bearing sediments are present. Currently, no further archaeological investigations are planned.

The Helga-Abri is accessible to the public.

**Sirgenstein southern wall**

This site is situated on the southern wall of the Sirgenstein massif. The find-bearing sediments were probably fully excavated in 1957 under Gustav Riek.

There is free access to the site.

**State of conservation of the find-bearing sediments of the “Caves with the oldest Ice Age art” in the Lone Valley component part (Id N°2)**

The state of conservation of the archaeological find layers in the cave sites of the Lone Valley nominated component part varies. For example, the Vogelherd Cave has already been completely excavated. The find-bearing sediments within the Bockstein Cave have also been completely excavated. In the area in front of the cave, the Bocksteintörl, further intact archaeological layers are still to be found, however. Similarly, find-bearing segments are also located in the Hohlenstein Stadel Cave. These should be regarded as an archive for the research of the Palaeolithic era - and therefore of outstanding scientific value. They should be preserved for future generations.

**Vogelherd Cave (Id N°2-1)**

**History of research**

The Vogelherd Cave was completely excavated in 1931 by Gustav Riek. Subsequent excavations in the backdirt were undertaken by Nicholas Conard in the years from 2005 to 2012. The archaeological potential of the cave has been exhausted (for details see Chapter 2.b).

**Stratigraphy**

According to Riek’s publication, the stratigraphy of Vogelherd comprised layers from the Middle Palaeolithic, the Aurignacian, the Magdalenian and the Neolithic (see illustration of a profile in Chapter 2.b). The sedimentation was unregular and the different horizons were not preserved in all areas. Nonetheless, it can be stated that the layers from the Aurignacian were the thickest and the richest in finds.
State of conservation and factors affecting the property

Fig. 4-17 Ground plan of Vogelherd Cave with recent excavation areas in front of the cave in the backdirt of Riek’s excavation of 1931. The cave itself was completely excavated in 1931.

Fig. 4-18 Aerial photograph of Vogelherd Cave during the excavations in front of the cave in 2012.
Documentation and state of conservation

Since even the backdirt from Riek’s excavation in 1931 has been completely excavated, no archaeological layers are preserved in and around Vogelherd Cave. The excavation of the backdirt, conducted by the University of Tübingen, has been documented by modern standards and has yielded several spectacular finds (see Chapter 2.a). The work of Gustav Riek was published in 1934 in a comprehensive monograph and - considering the norm of archaeological excavation at the time - allows for the fairly detailed reconstruction of sedimentation and the stratigraphic allocation of artefacts. Several profiles drawn during Riek’s excavation illustrate the original stratigraphic situation in the cave.

Today, the cave is part of the Archäopark Vogelherd and can be visited. The current overall situation in and around the cave has recently been documented in detail by the State Office for Cultural Heritage using the laserscanning technique.

Future research

No further excavation or other research is currently planned at Vogelherd.

Hohlenstein Stadel Cave (Id N°2-2)

History of research

The Hohlenstein Stadel Cave was subjected to archaeological investigation under the leadership of Robert Wetzel and Otto Völzing in the 1930s and 1950s. Subsequent excavations were conducted between 2009 and 2013 under Claus-Joachim Kind and Thomas Beutelspacher (for details see Chapter 2.b).

Fig. 4-19 The Hohlenstein massif with Stadel Cave (left) and Bärenhöhle (right).
Stratigraphy
The cultural sequence of Hohlenstein Stadel Cave comprises layers from the Middle Palaeolithic, the Aurignacian, the Magdalenian, the Neolithic and younger horizons from the Metal Ages (Bronze Age, Iron Age, Roman period, Middle Ages). With over 4 m the stratigraphy of this cave is the thickest so far documented in the Lone Valley (see illustration of a profile in Chapter 2.b).

Fig. 4-20  Ground plan of Hohlenstein Stadel Cave with excavation areas. The area south of the “Chamber of the Lion Man” is completely unexcavated.
Documentation and state of conservation
The most recent excavations at Hohlenstein-Stadel indicated that find-bearing sediments are still present to date. Preserved archaeological layers - untouched by the excavations of the 1930s and 1950s - are primarily located in the rear, southern area of the cave. Here, in a small side-chamber ca. 30 m from the entrance, fragments completing the „Lion Man“-figurine were discovered, indicating that the statuette was discarded in this area („Chamber of the Lion Man“). The most recent excavations of the State Office for Cultural Heritage also showed that the stratigraphy in the rear section of the cave can be connected to the cultural sequence documented by Robert Wetzel during his excavations.
State of conservation and factors affecting the property

Fig. 4-22 Ground plan of the excavation area in the “Chamber of the Lion Man” in Hohlenstein Stadel Cave, illustrating the progress of excavation. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth.
Present state of conservation

Fig. 4-23 Trellis fence inside Hohlenstein Stadel Cave.

Fig. 4-24 Preservation of sediments in Hohlenstein Stadel Cave.
Further Pleistocene sediments are still preserved in Hohlenstein Stadel Cave, including artefacts from the Middle Palaeolithic and the Aurignacian.

Access to the cave area that still contains find-bearing sediments is protected by a metal grille. This section is not intended to be accessed by visitors, thus ensuring that the archaeological potential remains protected. The area in front of the metal grille is freely accessible. Public tours are offered on special occasions.

**Future research**

No further research activity is planned at this stage.

In the long term archaeological excavations might be conducted in parts of the cave. However, they will have to be limited to small areas. These potential future excavations must be coordinated with the State Office for Cultural Heritage and with referees of the UNESCO.

**Bockstein Cave / Bocksteintörl (Id N°2-3)**

**History of research**

The find-bearing sediments in the cave were first investigated by a team led by Ludwig Bürger and Friedrich Losch between 1879 and 1884. These researchers gained access to the cave with the use of dynamite. In the process they dynamited parts of the original south-west cave wall. The Bockstein Cave was later fully excavated by Robert Wetzel. In the course of these works the original entrance to the cave, the Bocksteintörl, was also discovered.

**Stratigraphy**

The cultural sequence of Bockstein Cave comprises layers from the Middle Palaeolithic, the Aurignacian, the Magdalenian, the Mesolithic and the Neolithic.

**Documentation and state of conservation**

Sediments inside the cave were completely removed during the excavations of Bürger and Losch. Wetzel, in turn, discovered preserved archaeological layers during his excavations in the until then unknown original entrance (Bocksteintörl). He excavated a trench two metres wide and six metres long in a northeasterly direction (N 55° E, parallel to the excavation trenches at Bocksteinschmieide). In parts, the excavation reached bedrock. In front of Bocksteintörl Wetzel left a two metres wide and one and a half metres deep unit unexcavated. In this area archaeological layers and artefacts are probably still present.

The Bockstein Cave is freely accessible to visitors.

**Future research**

No future research is currently planned in or around Bockstein Cave.

In the long term archaeological excavations might be conducted in areas around the cave. However, they will have to be limited to small areas. These potential future excavations must be coordinated with the State Office for Cultural Heritage and with referees of the UNESCO.
Present state of conservation

Westloch

Bocksteintörle

artificial entrance to Bockstein Cave

Bockstein Cave

N

10 m

cave completely excavated in 1879 and 1908

excavation area of R. Wetzel between 1953 and 1956

Fig. 4-25 Ground plan of Bockstein Cave with excavation area of Wetzel at Bocksteintörle. The inner part of the cave is completely excavated. Intact sediments are probably still present in front of the cave.

Fig. 4-26 Bockstein Cave, view from the West.
Further palaeolithic sites in the Lone Valley component part (Id N°2)

*Hohlenstein Bärenhöhle*

In the Hohlenstein Bärenhöhle, situated just a few metres to the west of the Hohlenstein Stadel Cave, the first excavations were conducted by Oscar Fraas in the period 1861/62. The bones of cave bears were removed exclusively during this process. It was only later excavations in the 1950s and 1960s under Robert Wetzel and Otto Völzing that Palaeolithic layers were discovered. The investigations occurred primarily in the forward area of the cave - the corridor. In the rear section of the Hohlenstein Bärenhöhle - the hall - find-bearing sediments are still to be found. Their state of conservation can be assessed as very good. Currently, no further archaeological investigations are planned.

In order to preserve these archaeological layers the rear section of the Hohlenstein Bärenhöhle is protected by a metal grille.

*Hohlenstein Kleine Scheuer*

Between the Hohlenstein Bärenhöhle and Stadel Cave lies the Kleine Scheuer. Robert Rudolph Schmidt discovered this rock shelter in 1908. In 1923 Wolfgang Soergel and Elsbeth Soergel-Rieth worked here. During the course of the excavations on the Stadel Cave, Robert Wetzel and Otto Völzing also investigated the Kleine Scheuer in 1938 as well as from 1959 - 61. With the subsequent excavations in 1974 under the leadership of Joachim Hahn and Wighart von Koenigswald the archaeological activities at the Kleine Scheuer were concluded until this time. Find-bearing layers still remain. Currently, no further archaeological investigations are planned.

*Further sites in the Bockstein*

The areas around the Bockstein Cave, the Bocksteinloch and the Bocksteingrotte were excavated in the 1930s and 1950s under Robert Wetzel. Not only the caves themselves were investigated, but also the areas in front of and adjacent to them. These include the Bocksteinschmiede with mainly Middle Palaeolithic finds, the Bocksteinhang and the Bocksteinbrandplatte. These were excavated, in some cases on a large scale. In a number of areas of these sites find-bearing sediments are still present.

The entire Bockstein site is freely accessible to visitors.

*Fetzershaldenhöhle*

The site is located around a kilometre to the north-west of the Hohlenstein massif. The cave was first scientifically investigated in 2013 under the leadership of Nicholas Conard and Mohsen Zeidi. The sondage indicated that Palaeolithic find layers are present. Further excavations are currently not planned.
Frauenfels

This cave is situated about 100 m to the west of the Hohlenstein massif. In 2014 archaeological investigations were carried out under Claus-Joachim Kind and Thomas Beutelspacher directly in front of the entrance to the cave. Find-bearing layers were discovered in the course of these investigations. Further find layers are anticipated in and in front of the cave. Further excavation is currently not foreseen.

Unknown find sites in the area of the nominated property

It may be assumed that a part of the existing Palaeolithic site has not yet been discovered. These as yet unknown sites constitute part of the scientific potential. Their state of conservation can be regarded as original. As the sites have not yet been excavated, an assessment of the value of this potential is not possible. However, taking into account the findings of the previous excavations in the known sites of both component parts of the property, their scientific value has to be assumed to be high.

Intensive prospecting has been conducted over the course of recent years in both the two component parts of the property and in the further surroundings. This work involved members of the State Office for Cultural Heritage, the University of Tübingen and volunteer helpers. The measures resulted in the identification of various caves and rock overhangs, such as the Fettershaldenhöhle and Frauenfels sites. Further searches are underway continuously. These form part of the monitoring programme.
Summary
The state of conservation of the find-bearing sediments is divided into two categories below. The category “conservation” describes the physical condition of the layers on site. The category “scientific potential” estimates the quantity and value of the findings to be anticipated in an excavation, using the mass of the layers that are likely to be present and their already-determined chronological allocation.

Regarding the physical conservation:
Category 1: Sites at which it is to be expected that the majority of the evaluable archaeological layers and finds are undamaged.
Category 2: Sites at which parts of the archaeological layers and finds have already been excavated.
Category 3: Sites that have been completely excavated and analysed in the past.

Regarding scientific potential:
Category 1: Sites that can be investigated in future and that have great scientific potential (research reserves).
Category 2: Sites whose layers and finds could still be analysed in part in order to expand scientific findings.

Category 3: Sites whose records and finds have already been completely investigated.
State of conservation and factors affecting the property

The risks to the outstanding universal value of the property can be broken down into several areas. The risk factors include the increase in tourism that would accompany an inscription on the World Heritage List, development pressures, natural disasters and the possible destruction of the scientific resources. The long-term challenges for the outstanding universal value of the “Caves with the oldest Ice Age art” nominated property are listed below.

4.b.i Development pressures

Construction activity in the area of the property

The area of the nominated property could come under development pressure.

<table>
<thead>
<tr>
<th>Name of site (component part Id N°)</th>
<th>conservation</th>
<th>scientific potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geißenklö sterle (1-1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sirgenstein Cave (1-2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hohle Fels (1-3)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Helga-Abri (1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sirgenstein southern wall (1)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Vogelherd Cave (2-1)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (2-2)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Bockstein Cave / Bocksteinhörle (2-3)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hohlenstein Bärenhöhle (2)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Hohlenstein Kleine Scheuer (2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Further positions in the Bockstein (2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fetzershaldehöhle (2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Frauenfels (2)</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Tab. 4-1 State of conservation and scientific potential of cave sites in both component parts.

State of conservation of the landscape

Since the landscape is considered an important part of the property, its appearance and constant form of exploitation are important aspects. To date the nominated component parts remain largely untouched. They are inhabited only by few residents. The erection of further buildings in the nominated component parts as well as the change from agricultural or silvicultural to a commercial use requires the express approval of the State Office for Cultural Heritage. Further development and settlement of the property is not intended in the future. Statistics demonstrate that population size and form of land use in the area are stable (see Chapter 4.b.v).

4.b Factors affecting the property

<table>
<thead>
<tr>
<th>Name of site (component part Id N°)</th>
<th>conservation</th>
<th>scientific potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geißenklö sterle (1-1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sirgenstein Cave (1-2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hohle Fels (1-3)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Helga-Abri (1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sirgenstein southern wall (1)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Vogelherd Cave (2-1)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (2-2)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Bockstein Cave / Bocksteinhörle (2-3)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Hohlenstein Bärenhöhle (2)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Hohlenstein Kleine Scheuer (2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Further positions in the Bockstein (2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fetzershaldehöhle (2)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Frauenfels (2)</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Ach Valley (Id N°1)

The nominated section of the Ach Valley property is primarily used for agricultural and forestry purposes. The peripheral areas of the protected area overlap parts of the municipalities of Blaubeuren-Weiler and Schelklingen. An expansion of the settlements into the area of the property is conceivable. These construction measures could infringe upon landscapes and visual axes in the area of the property. In addition, there is also a risk of archaeological legacies being destroyed or inhibited.

Both the Federal Highway B492 and the railway line pass through the valley between Blaubeuren and Schelklingen and therefore through the property. These are located on the floor of the valley and therefore have no negative effect on the sites already discovered, or on future sites. An expansion of the transport routes is not anticipated at the current time, but could be planned in the future. In the event of construction measures that occurred as a consequence sites could be destroyed without being documented.

At the time of nomination there are plans to construct an information point in the vicinity of the Hohle Fels. This will only be able to be built after all heritage and nature-related considerations have been taken into account. In addition, care has also been taken to ensure that neither the information point building nor the accompanying features such as car parks and recreational areas inhibit the sight axes from and to the site.

Strategy: Heritage conservation and nature protection laws dictate that the nominated property receives the highest-possible protection. A small area of the nominated component part of the Ach Valley is inhabited. The buildings be-
long to the municipality of Blaubeuren-Weiler. There are also isolated working farms at the entrance to the Riedental Valley. Any further building or change of use within the nominated property or that could inhibit the sight axes would have to be approved by the senior monument protection authority. Parts of the settlements of Schelklingen and Blaubeuren-Weiler are located in a valley area inside the nominated buffer zone. Any building or change of use in this area is subject to mandatory approval by the lower monument protection authority. Given that these areas are cultural heritage sites in accordance with Article 2 DSchG BW, the senior monument protection authority is involved in the procedure as the arbiter in matters of public concern. An appropriately wide buffer zone with high protection standards was determined within the scope of the nomination.

**Lone Valley (Id N°2)**

The district road K3022 in the west and the state road L1168 in the east pass through the nominated component part of the Lone Valley. Expansion and reconstruction measures could infringe upon landscapes and visual axes in the area of the property. Archaeological sites that may exist in the area of the construction measures could be destroyed.

Strategy: Heritage conservation and nature protection laws dictate that the nominated property receives the highest-possible protection. In the nominated component part of the Lone Valley, the legal stipulations for the protection of cultural heritage mean that construction and change of use of the areas is subject to mandatory approval by the senior monument protection authority. The erection of buildings within the site and those that could inhibit the sight axes is therefore subject to statutory regulation. An appropriately wide buffer zone with high protection standards was determined within the scope of the nomination. In the buffer zone, which is likewise uninhabited, all the areas are cultural heritage sites under Article 2 DSchG BW. The senior monument protection authority is therefore involved in all plans for building work, as the arbiter in matters of public concern.

**Changes in use**

Both component parts of the nominated property are situated in regions that are used primarily for agricultural and forestry purposes. In the valley areas the principal use is agriculture, whilst the slopes are wooded. A change in the current use could endanger both known and unknown archaeological sites.

Strategy: Heritage conservation and nature protection laws dictate that the nominated property receives the highest-possible protection. Construction measures and a change in use of the areas in the vicinity of the property that could result in construction are subject to statutory regulation. Similarly, a change in the current agricultural use is subject to statutory approval.
Mining
Limestone, marl, sand and clay are used as natural base materials in the production of cement. As the bedrock of the Swabian Jura consists to a large extent of Mesozoic Jura limestone, this is extracted in various valleys of the mountain range. One of these valleys is the Ach Valley, with a cement plant located just a few kilometres south of the Hohle Fels. The mining of limestone could represent a risk to known and unknown sites.

Strategy: Heritage conservation, nature protection and mining laws dictate that the nominated property receives the highest-possible protection. The extraction of raw materials on sites within the area of the nominated property requires approval.

4.b.ii Environmental pressures
At the present time there are no environmentally-related pressures that endanger the World Heritage property in either the Lone Valley or the Ach Valley. The most likely risk here is changes to the caves caused by karst processes.

Karst
The caves are located in a karst area and have been - and continue to be - formed via karst processes. Appearance and substance are therefore still subject to the natural formation and wearing of the limestone. Overall, these changes are minimal and the form and appearance of the caves appear stable.

Strategy: A regular check of the condition of the cave sites and of the sediments contained in them are provided for by the State Office for Cultural Heritage Baden-Württemberg within the framework of the monitoring procedure (see Chapter 6 and Management Plan [Volume II] Chapter 11). The State Office for Cultural Heritage records the current state of preservation of the caves by means of laser scanning. A comparison of the data in the course of regular scans will reveal any changes. The condition of the caves and changes which might occur, are also examined in the context of regular visits, with the municipalities and local associations which are committed to the care of the cave sites playing an important part in this.

4.b.iii Natural disasters and risk preparedness

Natural disasters / natural deterioration of the caves
Natural disasters represent a long-term problem. Although they cannot be wholly avoided, preventive measures can nonetheless be taken. Neither the Lone Valley nor the Ach Valley experience extreme environmental conditions that could have a negative influence upon the property or planned protected zones. Specific protective measures against earthquakes, flooding, fire or other extreme
climatic conditions are not necessary, from the present-day viewpoint. However, the caves are subjected to the natural processes of deterioration and erosion that occur in karst areas in particular. It is therefore necessary to counteract a possible risk of collapse with preventive measures (see Chapter 4.b.ii).

**Earthquakes**
Since 1973 there have been no significant earthquakes recorded in the area of the component parts of the nominated property. According to Ministry of the Interior of the State of Baden-Württemberg (2005), the areas in which the component parts are located are designated “earthquake zone 0”. This means that, in accordance with the risk level used as a basis, intensities of 6.0 to < 6.5 on the Richter scale may be reached. However, the maximum strength of seismic shocks ever recorded in the vicinity of Blaubeuren lay at around 2.5 on the Richter scale. In the area of the Lone Valley property no seismic shocks have been recorded since records began.

**Flooding**
The rivers Ach and Lone that gave their names to the respective valleys each flow through a component part of the nominated property. According to the State Water Law of Baden-Württemberg (appendix WG to Article 3 paragraph 1 clause 3 WG BW in the version of 20 January 2005) these are first order bodies of water.

In the nominated component part of the Lone Valley the Lone regularly dries out on large stretches of its course, as the water drains into the karst completely. Above ground, all that remains visible is the distinctive, typical dried valley of the Swabian Jura region. Flooding of the caves – which are located far above the valley floor – has not been registered thus far and would appear to be ruled out. Throughout the stretch the Ach flows in a relatively broad primordial Danube valley, but only carries a minimal water transport volume, even in the spring. The cave sites are situated some metres above the valley. Risk of flooding does not exist.

**Fire**
As all of the caves are located in or in the direct vicinity of forest, forest fires are to be reckoned with.

The vegetation of the protective zones does not form a component of the outstanding universal value of the property. This is defined by the caves, the cultural layers contained therein and by finds that would, in all likelihood, not be affected by a forest fire.

Strategy: The nearest fire stations in the Ach Valley are located in Schelklingen, Blaubeuren and Pappelau, in part just a few hundred metres from the nomina-
Factors affecting the property

![Map of Baden-Württemberg showing zones of earthquake intensity.](image)

Legend:
- Area with no endangerment from earthquakes (up to 6,0 on open Richter scale)
- Zone 0 - earthquakes with an intensity between 6 and 6,5 on open Richter scale possible
- Zone 1 - earthquakes with an intensity between 6,5 and 7 on open Richter scale possible
- Zone 2 - earthquakes with an intensity between 7 and 7,5 on open Richter scale possible
- Zone 3 - earthquakes with an intensity above 7,5 on open Richter scale possible
- Component parts
State of conservation and factors affecting the property. In the Lone Valley the nearest fire station is situated in Stetten ob Lontal. Further firefighting units are available in Niederstotzingen, Asselfingen and Bissingen. These can cover the distance of approximately 2 km to the property in just a few minutes. Corresponding operational plans exist.

4.b.iv Visitors/tourism pressures and the responsible visitation at World Heritage sites

The intensification of tourism

As both component parts of the nominated property are publicly accessible, the tourist use of the property and the archaeological sites in particular by visitors represents a potential burden. The intensive accessing of the archaeological cave sites by visitors could result in the destruction of find layers and finds. Particularly affected by this would be the Hohlenstein Stadel Cave, the Geißenklösterle and the Hohle Fels, as extensive sediments are still assumed to exist in these.

Strategy: The tourist use of the sites must be sustainable and controlled in order to conserve the outstanding universal value. Three archaeological sites with find-bearing sediments are secured with grilles (Hohlenstein Stadel Cave, Geißenklösterle and Hohle Fels). The Vogelherd Cave is located on the site of the Archäopark Vogelherd. Tours of these four caves are only permitted under expert supervision and are therefore regulated. Bockstein Cave / Bocksteintörl and Sirgenstein Cave are not currently secured. The find layers that potentially still exist in these caves are protected by a strong covering layer, however. Thus far there has been no disturbance or damage in this area. At the time of submission of the application there are no plans to install barriers at these sites. Control of the state of conservation is ensured via regular monitoring. If damage were to occur, necessary measures would be taken (see Chapter 5.e and Volume II).

The laying down and upkeep of paths to the sites, the securing and signposting of these is organised by the municipalities responsible, as well as the landowners (see Chapter 5.e and Volume II). The various interests are co-ordinated with one another in the Management Plan. The State Office for Cultural Heritage inspects the state of conservation of all caves and the layers contained therein at six-monthly intervals (see Chapter 6). In addition, caves and landscape are also checked for disturbance and damage by the municipalities and associations.

At the present time there are a number of tourism plans available for the region of the nominated component parts of the Lone Valley and Ach Valley property (see Chapter 5.e and Volume II). The Tourism plan by the Schwäbische Alb Tourismus e.V. association may be regarded in this context as a comprehensive concept for the region. For the area of the nominated World Heritage site, in addition, the representatives of the parties with an interest in tourism and the municipalities have come together under the umbrella brand of “Weltkultursprung” (World origin of culture). It is planned that the members of the umbrella
brand should create a sustainable strategy for tourist marketing, and thus contribute to the conservation of the property of such cultural historical value.

Use patterns

Ach Valley (Id N°1) - concentration of activity

Tourist activity in the Ach Valley component part of the nominated property is currently focused primarily on the area around the Hohle Fels. In all likelihood this is due to the archaeological investigations in the interior of the cave, which are conducted annually. During the course of the excavations in recent years several ivory figurines and what are currently the world’s oldest flutes have been discovered.

These finds are presented in the Urgeschichtliches Museum Blaubeuren, situated just 2 km from the property, in Blaubeuren. The museum provides information off-site, i.e. not directly in the area of the nominated property, on the “Caves with the oldest Ice Age art”. Tours are organised to the Geißenklösterle and Sirgenstein Cave sites. In the period between the reopening in May 2014 and January 2015 over 25,000 people visited the museum.

The guided tours of the Hohle Fels are provided by the Museumsverein Schelklingen and the University of Tübingen. Visitor numbers are not known.

Fig. 4-32  Visitors in Hohlenstein Stadel Cave during Open Monuments Day 2012.
The caves can currently be reached via an extensive network of walking and cycling trails. The walking trails are mainly used at weekends in particular and are equipped with information boards. These inform tourists with regard to excavations and finds at the cave sites. In addition, they also make visitors aware of the outstanding universal value of the caves. Statistics regarding visitor numbers have not yet been compiled.

**Ach Valley (Id N°1) - activities planned in the future**

It is planned to erect an information point integrated into the landscape in the vicinity of the Hohle Fels. This should convey the outstanding universal value of the site and finds of the “Caves with the oldest Ice Age art” and the Hohle Fels in particular. This requires that heritage and nature conservation concerns are taken into account. The State Office for Cultural Heritage is decisively involved in the realisation of the concept for this.

Within the scope of the newly drawn-up tourism plan of the association Schwäbische Alb Tourismus e.V. (SAT) various activities are planned regarding the property. These include a shuttle service to the various museums and information points with finds from the “Caves with the oldest Ice Age art”. In addition, activity days are also to be offered at and in the caves (see Chapter 5.d).

**Lone Valley (Id N°2) - concentration of activity**

The tourist activities in the Lone Valley are concentrated on the Archäopark Vogelherd, an information centre erected in 2013. Most visitors follow the signs and

![Fig. 4-33 Presentation for children in the Urgeschichtliches Museum Blaubeuren.](image)
the instructions contained in the information brochures. The entire site is fenced in and under video surveillance. The Vogelherd Cave can only be entered when the information centre is open. So far there have been no problems caused by vandalism. In the year of opening approximately 36,000 visitors were recorded.

The Lone Valley is connected via walking and cycling trails. Motorised vehicles are only permitted to enter this section of the valley for agricultural or forestry purposes. Information boards are placed on paths and in front of the cave sites.
These inform as well as making visitors aware of the subject of the Ice Age and the outstanding universal value of the “Caves with the oldest Ice Age art”. Visitor numbers are not known thus far.

**Lone Valley (Id N°2) - activities planned in the future**

In the Lone Valley there is an information point on the "Caves with the oldest Ice Age art" at Rammingen-Lindenau, just a few metres from the component part of the nominated property. This facility is also used by the “Schwäbische Alb UNESCO Global Geopark” and is set to be extended in the coming years.
The municipality of Asselfingen is also planning to establish an information point for the “Lion Man”.

Within the scope of the newly drawn-up tourism plan of the association Schwäbische Alb Tourismus e.V. (SAT) various activities are planned regarding the property. These include a shuttle service to the various museums and information points with finds from the “Caves with the oldest Ice Age art”. In addition, activity days are also to be offered at and in the caves (see Chapter 5.d).

**Projected levels of visitation**

It may be assumed that the attractiveness of the property for visitors will increase with a successful nomination as World Heritage site. The component parts of the nominated property comprise two landscapes of several hundred hectares in size, well connected via cycling and walking trails. These are already visited by several thousand guests each year as a recreational area. The example of the Archäopark Vogelherd illustrates that an annual number between 36,000 and 40,000 visitors per year and component part does not represent a burden for the property, caves and landscape.

The regionally connected museums and the measures to improve infrastructure that have been carried out or are planned contribute to the sustainable channeling of visitor flows within the property.

Access to sites with intact archaeological sediments that are the subject of ongoing scientific investigation is regulated. As a consequence, the Hohlenstein Stadel Cave, Hohle Fels and Geißenklösterle caves may only be entered under expert supervision. The state of all of the caves is checked regularly in the scope of monitoring (see Chapter 6).

Fig. 4-36 Visitors in the Archäopark Vogelherd, Niederstotzingen.
4.b.v  Number of inhabitants within the property and the buffer zone

Ach Valley (Id N°1)

Below 1% of the area of this component part of the nominated property is inhabited. Some of the buildings belong to the municipality of Blaubeuren-Weiler. In addition, there are also individual farms in operation at the entrance to the Riedental Valley. The part of the nominated property in which the buildings are situated is a excavation protected zone. The erection of further buildings here requires the express approval of the State Office for Cultural Heritage. Parts of the settlements of Schelklingen and Blaubeuren-Weiler are located in the valley area within the nominated buffer zone. Construction projects here must be approved by the lower monument protection authority (Untere Denkmalschutzbehörde).

Lone Valley (Id N°2)

The area of the nominated property in the Lone Valley and its buffer zone is uninhabited. Statutory requirements regarding heritage and nature conservation mean that the development and alternative use of the areas in the nominated property is not to be expected.

Population development in both component parts

Based on the data available from the last 50 years, no dynamic population development is to be anticipated in the two nominated component parts. The numbers of residents in the last 15 years have been stable or even decreasing. Likewise with regard to change of use of areas used for agriculture and forestry to areas of settlement or commerce, no significant increases have been manifested in the last 25 years, in either the Ach Valley or the Lone Valley.

4.b.vi Conservation of the scientific potential and the archaeological output

Excavation of archaeological sites - conservation of scientific potential

Excavations are and have been carried out in all known cave sites in the area of the property. Excavation destroys original archaeological sources. However, these investigations also constitute the transformation of prehistoric structures into legible documentation. It is only through the results of the analysis that we acquire our knowledge of the Ice Age inhabitants of the Ach Valley and Lone Valley. Monument protection authorities guarantee that a considerable and scientifically relevant part of the existing archaeological and geological substance within the property is preserved as an archive of the outstanding universal value for future generations. Excavation projects are therefore limited. In Baden-Württemberg only the State Office for Cultural Heritage and few other scientific institutions
Factors affecting the property

Tab. 4-2 Population living within the nominated property and buffer zone (2014).

<table>
<thead>
<tr>
<th>Name of the component part (Id N°)</th>
<th>District</th>
<th>Inhabitants in the property</th>
<th>Inhabitants in the buffer zone</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ach Valley (1)</td>
<td>Alb-Donau</td>
<td>14</td>
<td>678</td>
<td>692</td>
</tr>
<tr>
<td>Lone Valley (2)</td>
<td>Alb-Donau / Heidenheim</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total population in both component parts:</td>
<td></td>
<td>14</td>
<td>678</td>
<td>692</td>
</tr>
</tbody>
</table>

Tab. 4-3 Population development between 1961 and 2013 in the townships and municipalities in whose area the nominated component parts are located (Source: State Statistical Office of Baden-Württemberg. Figures are rounded up to full 100 places. http://www.statistik.baden-wuerttemberg.de/BevoelkGebiet).

<table>
<thead>
<tr>
<th>Component part (Id N°) / town, municipality</th>
<th>District</th>
<th>Population / inhabitants per km² in 1961</th>
<th>Population / inhabitants per km² in 1980</th>
<th>Population / inhabitants per km² in 2000</th>
<th>Population / inhabitants per km² in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ach Valley (1) / Blaubeuren</td>
<td>Alb-Donau</td>
<td>11,000 / 139</td>
<td>12,000 / 151</td>
<td>12,000 / 152</td>
<td>11,800 / 149</td>
</tr>
<tr>
<td>Ach Valley (1) / Schelklingen</td>
<td>Alb-Donau</td>
<td>6,000 / 84</td>
<td>6,300 / 84</td>
<td>7,100 / 95</td>
<td>6,800 / 89</td>
</tr>
<tr>
<td>Lone Valley (2) / Niederstotzingen</td>
<td>Heidenheim</td>
<td>3,400 / 114</td>
<td>3,900 / 130</td>
<td>4,900 / 165</td>
<td>4,500 / 152</td>
</tr>
<tr>
<td>Lone Valley (2) / Herbrechtingen</td>
<td>Heidenheim</td>
<td>10,000 / 170</td>
<td>11,600 / 198</td>
<td>13,200 / 226</td>
<td>12,900 / 220</td>
</tr>
<tr>
<td>Lone Valley (2) / Asselfingen</td>
<td>Alb-Donau</td>
<td>700 / 56</td>
<td>800 / 62</td>
<td>1,000 / 75</td>
<td>1,000 / 78</td>
</tr>
<tr>
<td>Lone Valley (2) / Rammingen</td>
<td>Alb-Donau</td>
<td>800 / 59</td>
<td>1,000 / 70</td>
<td>1,300 / 91</td>
<td>1,300 / 91</td>
</tr>
<tr>
<td>Lone Valley (2) / Öllingen</td>
<td>Alb-Donau</td>
<td>300 / 40</td>
<td>400 / 48</td>
<td>400 / 55</td>
<td>500 / 67</td>
</tr>
</tbody>
</table>

Tab. 4-4 Land usage in the townships (Blaubeuren and Schelklingen), in whose area the nominated component part of the Ach Valley is located (Source: State Statistical Office of Baden-Württemberg. http://www.statistik.baden-wuerttemberg.de/BevoelkGebiet).

<table>
<thead>
<tr>
<th>Year recorded</th>
<th>District</th>
<th>Surface area (ha)</th>
<th>Settlement and commercial use (ha)</th>
<th>Agricultural and forestry use (ha)</th>
<th>Other areas (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>Alb-Donau</td>
<td>15,439</td>
<td>1,288</td>
<td>13,867</td>
<td>285</td>
</tr>
<tr>
<td>1996</td>
<td>Alb-Donau</td>
<td>15,439</td>
<td>1,374</td>
<td>13,709</td>
<td>356</td>
</tr>
<tr>
<td>2004</td>
<td>Alb-Donau</td>
<td>15,439</td>
<td>1,398</td>
<td>13,689</td>
<td>352</td>
</tr>
<tr>
<td>2013</td>
<td>Alb-Donau</td>
<td>15,495</td>
<td>1,486</td>
<td>13,651</td>
<td>357</td>
</tr>
</tbody>
</table>

Tab. 4-5 Land usage in the townships and municipalities (Asselfingen, Herbrechtingen, Niederstotzingen, Öllingen and Rammingen) in whose area the nominated component part of the Lone Valley is located (Source: State Statistical Office of Baden-Württemberg. http://www.statistik.baden-wuerttemberg.de/BevoelkGebiet).

<table>
<thead>
<tr>
<th>Year recorded</th>
<th>District</th>
<th>Surface area (ha)</th>
<th>Settlement and commercial use (ha)</th>
<th>Agricultural and forestry use (ha)</th>
<th>Other areas (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>Alb-Donau / Heidenheim</td>
<td>12,340</td>
<td>1,148</td>
<td>11,069</td>
<td>123</td>
</tr>
<tr>
<td>1996</td>
<td>Alb-Donau / Heidenheim</td>
<td>12,341</td>
<td>1,238</td>
<td>10,992</td>
<td>109</td>
</tr>
<tr>
<td>2004</td>
<td>Alb-Donau / Heidenheim</td>
<td>12,342</td>
<td>1,397</td>
<td>10,842</td>
<td>102</td>
</tr>
<tr>
<td>2013</td>
<td>Alb-Donau / Heidenheim</td>
<td>12,341</td>
<td>1,462</td>
<td>10,764</td>
<td>115</td>
</tr>
</tbody>
</table>
State of conservation and factors affecting the property

Fig. 4-37 Excavation at Vogelherd in 1931.

Fig. 4-38 Recent excavation at Vogelherd in 2011.
such as Universities undertake archaeological excavations. The State Office for Cultural Heritage Baden-Württemberg inspects requests for excavation permissions and documents its decisions in a verifiable way. Only selected projects with detailed scientific question and justified objectives are authorized. The excavations have to be conducted using the latest techniques and methods. As well as this, special attention is paid to the accurate documentation of the excavations in order to ensure the conversion of archaeological sources into documented knowledge. Thus matters of research and conservation can be balanced.

The Sirgenstein Cave, Bockstein Cave / Bocksteintörle and Vogelherd Cave sites have already been largely excavated. Yet, unimpaired layers probably still exist in Sirgenstein Cave and Bockstein Cave / Bocksteintörle. The Hohlenstein Stadel Cave, the Hohle Fels and the Geißenklösterle have already been partly subjected to archaeological investigation. As the excavations in the past two decades at these sites have shown, there is a high likelihood of them having major scientific potential. Further sites in the area of the property have also been partially excavated and have a significant scientific value. Amongst others, these include the Hohlenstein Bärenhöhle, the sites at the Bockstein, the Fetzershaldenhöhle and the Frauenfels.

Strategy: A research plan stipulated (see Chapters 5.d and Volume II) that excavations could only take place when a detailed scientific question exists. Excavations are currently only underway in the Hohle Fels near Schelklingen and shall thus be continued in future years. Moreover, further test excavations in previously
unknown archaeological caves in the Ach and Lone Valleys shall be executed. Sustainable investigation of the examined sites shall be targeted. This involves among other things the back-filling and subsequent security of the respective excavation unit. Excavations are only allowed to take place when a detailed scientific enquiry has been presented. The excavations must be documented according to the most up-to-date technologies and methods, in order to guarantee transfer of the archaeological sources into documented knowledge. Monument protection efforts in this case guarantee that a considerable and scientifically relevant part of the existing archaeological and geological substance is preserved as an archive of the outstanding universal value and for future research.

The State Office for Cultural Heritage Baden-Württemberg has been entrusted, as the respective expert authority, with protection and conservation of the property, and grants authority for follow-up research, particularly for excavations (and surveys) with the goal of discovering cultural monuments. Municipalities are responsible for management, care and protection of the monuments on site.

**Unauthorised excavations at known and unknown sites**

Since the beginning of archaeological research the collection of archaeological artefacts has exercised a great fascination, including on non-scientists. However, the inexpert excavation and collection of artefacts at archaeological sites means that valuable information is irretrievably destroyed. The lack of expert documentation is particularly serious. It will not be possible to fully rule-out the risk of inexpert and unauthorised excavations in the future.

Strategy: The risk of illicit excavations in the already known caves can be countered by the installation of grilles or fences. This protection is intended to avoid changes to the landscape picture and the character of the caves. In the area of the property, the cultural heritage protection legislation (DSchG BW) ensures the maximum possible protection. The law stipulates that any exploration and excavation aimed at finding cultural heritage items is subject to mandatory approval (Article 21 DSchG BW). The excavation and removal of objects of cultural historical value is prohibited (Article 8 DSchG BW) and is regarded as a criminal misdemeanour (Article 27 DSchG BW) and is punishable by a fine of up to 50,000 €, and in particularly serious cases up to 250,000 €. Criminal misdemeanours under Article 27 paragraph 1 DSchG BW are prosecuted by the lower monument protection authority with jurisdiction. If it appears, in the event of a risk, that action cannot be taken in sufficient time by the cultural heritage protection authority concerned, then the senior monument protection authority can implement measures, or, if that authority too cannot act in sufficient time, the police force concerned can take the provisional steps necessary (Article 7 paragraph 4 DSchG BW).

“Illicit excavators” who remove a find may lay themselves open to prosecution on grounds of misappropriation in accordance with Article 246 of the Criminal Code (StGB), to the disadvantage of an owner of the find.
Conservation and archiving of finds and records

The finds discovered during the course of the archaeological excavations need to be conserved and expertly stored or exhibited. Otherwise, their degree of conservation will deteriorate. The existing archaeological layers at the sites also need to be secured as an archive.

Strategy: In the scope of the Management Plan a research/conservation plan was drawn up (see Chapters 5.d, 5.e and Volume II), the aim of which is to secure the future archiving and conservation of the finds. Work has begun on the complete archiving of the find complexes from the cave sites that have already been excavated. This is to be continued in the future. The establishments concerned have the capacity for restoration, expert storage and exhibition of the finds (see Chapter 5.g).

The current state of the caves and their find-bearing sediments is monitored and secured regularly by the State Office for Cultural Heritage in the scope of the conservation plan (see Chapters 5.d, 5.e and Volume II). In addition, research institutes that conduct excavations in Baden-Württemberg are obliged to ensure the expert securing of the respective sites and the intact layers contained therein.

<table>
<thead>
<tr>
<th>Find complex (Id N°)</th>
<th>Owner</th>
<th>Current place of storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geißenklösterle (1-1)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen; Landesmuseum Württemberg, Stuttgart</td>
</tr>
<tr>
<td>Sirgenstein Cave (1-2)</td>
<td>University of Tübingen</td>
<td>University of Tübingen</td>
</tr>
<tr>
<td>Höhle Fels (1-3)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen; Urgeschichtliches Museum Blaubeuren</td>
</tr>
<tr>
<td>Vogelherd Cave (earlier excavation) (2-1)</td>
<td>University of Tübingen</td>
<td>University of Tübingen</td>
</tr>
<tr>
<td>Vogelherd Cave (new excavation) (2-1)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen; Archäopark Vogelherd; Urgeschichtliches Museum Blaubeuren</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (earlier excavation) (2-2)</td>
<td>Ulmer Museum</td>
<td>Ulmer Museum</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (new excavation) (2-2)</td>
<td>State of Baden-Württemberg</td>
<td>State Office for Cultural Heritage Baden-Württemberg, Esslingen</td>
</tr>
<tr>
<td>Bockstein Cave / Bocksteinötle (2-3)</td>
<td>Ulmer Museum</td>
<td>Ulmer Museum</td>
</tr>
</tbody>
</table>

Tab. 4-6 Ownership status and current location of the finds from the “Caves with the oldest Ice Age art”. All new finds are owned by the State of Baden-Württemberg and are transferred to the Archäologisches Landesmuseum Baden-Württemberg after completion of their scientific evaluation (see Chapter 7.d).
State of conservation and factors affecting the property

Fig. 4-40 Laser scanning inside Hohlenstein Stadel Cave.

Fig. 4-41 Restoration and conservation of archaeological finds at the State Office for Cultural Heritage Baden-Württemberg.
Fig. 4-42 Different views of the CT scan of the “Lion Man” figurine.
State of conservation and factors affecting the property
## 5. Protection and Management of the Property

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<td>337</td>
</tr>
</tbody>
</table>
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Bridge spanning the Lone River in the Lone Valley component part.
5. Protection and management of the property

5.a Ownership

In Germany, the municipalities are responsible for the documentation of the ownership circumstances of the areas under their authority. The obtaining of updated information is possible at any time by making enquiries at the municipal State Registry offices concerned. The locations of the land parcels within the property and their owners are listed in detail in the Annex.

The ownership circumstances of the areas in the component part Ach Valley are:

2% of the area in the ownership of the Federal Republic of Germany
26% of the area in the ownership of the Federal State of Baden-Württemberg
11% of the area in the ownership of the municipalities
61% of the area in private ownership

The ownership circumstances of the areas in the component part Lone Valley are:

0% of the area in the ownership of the Federal Republic of Germany
43% of the area in the ownership of the Federal State of Baden-Württemberg
19% of the area in the ownership of the municipalities
38% of the area in private ownership

The lion’s share of the property belongs to the State of Baden-Württemberg, the municipalities and private owners. A minor section, which includes primarily the state roads, is in the possession of the Federal Republic of Germany.

The owners concerned were given information about the nominated World Heritage and the existing protective provisions. Conveyance of this information has already ensued prior to the nomination on site in the respective towns and municipalities in the context of information events (lectures) given by the State Office for Cultural Heritage. Moreover, the nomination to World Heritage was covered in the respective municipality meetings and verified by a large majority (see Management Plan Chapter 17 [Volume II]). Finally, all owners have been informed of the historical significance of the property through the statutory order of the nominated acreage as excavation protection areas in which monuments of particular importance may be reasonably presumed.
Fig. 5-1  Percentage of land ownership in the component parts.

<table>
<thead>
<tr>
<th>Cultural monument of particular importance</th>
<th>District</th>
<th>Subdistrict (No.)</th>
<th>Land parcel No.</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hohle Fels</td>
<td>Alb-Donau District</td>
<td>Schelklingen (8310)</td>
<td>251</td>
<td>Township of Schelklingen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>493</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1434/2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1435</td>
<td></td>
</tr>
<tr>
<td>Sirgenstein Cave</td>
<td>Alb-Donau District</td>
<td>Blaubeuren-Weiler (8306)</td>
<td>517</td>
<td>Private</td>
</tr>
<tr>
<td>Geißenklösterle</td>
<td>Alb-Donau District</td>
<td>Blaubeuren-Weiler (8306)</td>
<td>143</td>
<td>State Forestry Administration</td>
</tr>
</tbody>
</table>

Tab. 5-1  Ownership circumstances of areas with cave sites in the Ach Valley component part (Id N°1).
The cave sites are located in different land parcels. Most of them are in the ownership of the adjacent municipalities. The area in which the Geißenklösterle in the Ach Valley is located belongs to the Federal State of Baden-Württemberg. By contrast, the area of the Sirgenstein Cave and a part of the area in the vicinity of the Hohlenstein Stadel Cave are at present still in private hands. The intention is that in the years to come these two land parcels, as well as other areas in private ownership in the property should be transferred to public ownership.

### 5.b Protective designation

Several legislative acts relating to the protection of monuments and nature in Germany and Baden-Württemberg, apply within the property and the buffer zone. The bodies of legislation are reproduced in Chapter 7.b.

#### Protective measures Ach Valley (Id N°1)

The area of the property in the Ach Valley and its buffer zone are affected by a substantial number of statutory protective measures by way of protection of monuments and of nature. These encompass the entire region and guarantee the best possible large-area protection of the property and the buffer zone. The corresponding protection provisions are divided individually into the following sections. The effect and application of the protective measures are explained in Chapter 5c.
<table>
<thead>
<tr>
<th>Designation of protection</th>
<th>Legislation</th>
<th>As per Article</th>
<th>Announcement (as amended)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection of landscape and monuments of art, history and nature</td>
<td>BWVerf</td>
<td>3c</td>
<td>1953 (2011)</td>
</tr>
<tr>
<td>Cultural monuments</td>
<td>DSchG BW</td>
<td>2</td>
<td>1983 (2014)</td>
</tr>
<tr>
<td>General protection of cultural monuments</td>
<td>DSchG BW</td>
<td>8</td>
<td>1983 (2014)</td>
</tr>
<tr>
<td>Cultural monuments of particular importance</td>
<td>DSchG BW</td>
<td>12</td>
<td>1983 (2014)</td>
</tr>
<tr>
<td>Registration procedure</td>
<td>DSchG BW</td>
<td>13</td>
<td>1983 (2014)</td>
</tr>
<tr>
<td>Investigations of cultural monuments</td>
<td>DSchG BW</td>
<td>21</td>
<td>1983 (2014)</td>
</tr>
<tr>
<td>Excavation protection areas (GSG)</td>
<td>DSchG BW</td>
<td>22</td>
<td>1983 (2014)</td>
</tr>
<tr>
<td>Nature conservation areas</td>
<td>BNatSchG</td>
<td>23</td>
<td>1976 (2013)</td>
</tr>
<tr>
<td>Biosphere Reserve Area</td>
<td>BNatSchG</td>
<td>25</td>
<td>1976 (2013)</td>
</tr>
<tr>
<td>Landscape protection areas (LSG)</td>
<td>BNatSchG</td>
<td>26</td>
<td>1976 (2013)</td>
</tr>
<tr>
<td>Natural monuments</td>
<td>BNatSchG</td>
<td>28</td>
<td>1976 (2013)</td>
</tr>
<tr>
<td>Legally protected biotopes</td>
<td>BNatSchG</td>
<td>30</td>
<td>1976 (2013)</td>
</tr>
<tr>
<td>Protected areas</td>
<td>BNatSchG</td>
<td>32</td>
<td>1976 (2013)</td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>36</td>
<td>2005 (2013)</td>
</tr>
<tr>
<td>Specially protected biotopes (woodland)</td>
<td>LWaldG BW</td>
<td>30a</td>
<td>1995 (2014)</td>
</tr>
<tr>
<td>Woodland protection area</td>
<td>LWaldG BW</td>
<td>32</td>
<td>1995 (2014)</td>
</tr>
<tr>
<td>European bird protection area</td>
<td>Directive 2009/147/EG</td>
<td>3</td>
<td>2009</td>
</tr>
<tr>
<td></td>
<td>VSG-VO</td>
<td>3</td>
<td>2010</td>
</tr>
</tbody>
</table>

Tab. 5-3  Legal protective designation of the property and buffer zones. Details are provided in the corresponding tables relating to the respective protection measures (BWVerf = Constitution of the Federal State of Baden-Württemberg; DSchG BW = Baden-Württemberg Monument Protection Law; BNatSchG = Federal Nature Conservation Act; NatSchG BW = Baden-Württemberg Nature Conservation Act; FFH = Flora-Fauna Habitat; LWaldG BW = Baden Württemberg State woodlands Law; VSG-VO = Ordinance from the Ministry of Food and Rural Affairs of Baden-Württemberg with regard to the designation of European bird protection areas).
Protective designation

Tab. 5-4 Surface areas of the Ach Valley component part and the associated buffer zone.

<table>
<thead>
<tr>
<th>Total surface area (ha)</th>
<th>Area of property (ha)</th>
<th>Area of buffer zone (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1038.5</td>
<td>271.7</td>
<td>766.8</td>
</tr>
</tbody>
</table>

**Tab. 5-5** The surface areas of the protection zone in the area of the Ach Valley component part. Surface area values are rounded and given in hectares. Details are provided in the corresponding Tab. s relating to the respective protection measures (DSchG BW = Baden-Württemberg Monument Protection Law; BNatSchG = Federal Nature Conservation Act; NatSchG BW = Baden-Württemberg Nature Conservation Act; LWaldG BW = Baden-Württemberg State woodlands Law; FFH = Flora-Fauna Habitat; VSG-VO = Ordinance from the Ministry of Food and Rural Affairs of Baden-Württemberg with regard to the designation of European bird protection areas).
Component part Ach Valley (Id N°1) - Excavation protection area (Article 22 DSchG BW)

All the land parcels in the Ach Valley component part are designated as excavation protection areas in accordance with Article 22 of the Baden-Württemberg Monument Protection Law (DSchG BW). For the municipal districts of Blaubeuren, Blaubeuren-Weiler and Schelklingen, the relevant statutory ordinance came into effect on 18 July 2014 (amended on 22 July 2014) (Official Gazette of the City of Ulm and of the Alb-Donau District of 18 July 2014; amendment of 31 July 2014).

In the buffer zone there are at present no land parcels which are designated as excavation protection areas.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation protection area</td>
<td>2014</td>
<td>Article 22 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5-6 Legislative act and year of the ordinance relating to the excavation protection areas in the Ach Valley component part (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act).

<table>
<thead>
<tr>
<th>Excavation protection area</th>
<th>Ach Valley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The Swabian Jura, is one of the most important regions in Europe for finds from the Palaeolithic. This relates in particular to the Ach Valley. Here there are a number of Palaeolithic sites, three caves of which the Geißenklösterle, Hohle Fels and Sirgenstein Cave are particularly important. In addition to this, these three monuments are of major significance with regard to the history of early humans. The finds made in them include figurines of people and animals made from mammoth ivory, flutes made from bird bones and mammoth ivory, and objects of personal adornment. These are among the oldest objects of this kind anywhere in the world.</td>
</tr>
<tr>
<td>Status</td>
<td>Excavation protection area (Article 22 DSchG BW- Arch.)</td>
</tr>
<tr>
<td>Id No.</td>
<td>-</td>
</tr>
<tr>
<td>Date of securing/announcement, in</td>
<td>18 July 2014 (Amendment 01 August 2014) / Official Gazette of the City of Ulm and of the Alb-Donau District</td>
</tr>
<tr>
<td>File reference</td>
<td>-</td>
</tr>
<tr>
<td>Designation</td>
<td>Excavation protection area Ach Valley</td>
</tr>
<tr>
<td>Spatial delimitation</td>
<td>See area map</td>
</tr>
<tr>
<td>Municipal limits</td>
<td>Schelklingen (8310); Blaubeuren (8300); Blaubeuren-Weiler (8306)</td>
</tr>
<tr>
<td>TK25 No.</td>
<td>7624 Schelklingen</td>
</tr>
<tr>
<td>Latitude / longitude</td>
<td>48°23'15.59“ / 009°45'56.19” (centroid)</td>
</tr>
<tr>
<td>Surface area</td>
<td>2,717,149 m²</td>
</tr>
</tbody>
</table>

Tab. 5-7 Excavation protection area in accordance with Article 22 of the Baden-Württemberg Monument Protection Law (DSchG BW) in the nominated Ach Valley component part.
Fig. 5-2 Ach Valley component part (Id N°1): Excavation protection area mirroring the property.
Component part Ach Valley (Id N°1) - Cultural monuments of particular importance (Article 12 DSchG BW)

In the region of the Ach Valley component part there are three archaeological sites (Hohle Fels, Sirgenstein, Geißenklösterle) which, as cultural monuments of particular importance in accordance with Article 12 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW), have been entered on the Cultural monuments list of the Federal State of Baden-Württemberg. They form the basis of the present nomination.

In addition to this, there is a historical monument of particular importance in the buffer zone, the ruin of Gleißenburg Castle (Article 12 of the Baden-Württemberg Cultural Heritage Protection Act). This location is not a fundamental part of the present nomination.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural monument of particular importance: “Hohler Fels” Cave and “Helga-Abri” rock shelter</td>
<td>2010</td>
<td>Article 12 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument of particular importance: Sirgenstein Cave</td>
<td>2010</td>
<td>Article 12 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument of particular importance: Geißenklösterle Cave</td>
<td>2010</td>
<td>Article 12 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument of particular importance: Gleißenburg Castle ruin</td>
<td>1926</td>
<td>Article 12 (Article 28) DSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Tab. 5-8  Legislative act and year of designation of the cultural monuments of particular importance in the Ach Valley component part and its associated buffer zone (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act).
### "Hohle Fels" Cave and "Helga-Abri" rock shelter

| Description                                                                 | Hohle Fels: Cave with Palaeolithic layers of the Middle Palaeolithic, the Aurignacian, Gravettian and Magdalenian; figurines made of mammoth ivory, flutes made of mammoth ivory and bird bones, items of personal adornment  
|                                                                           | Helga-Abri: Rock shelter with layers from the Magdalenian and the Epipalaeolithic |
| Status                                                                    | Cultural monument of particular importance [Article 12 DSchG BW] |
| Id No.                                                                    | 1072 |
| Date of securing/announcement, in                                          | 15.04.2010 / Schelklingen |
| File reference                                                            | SCHE001-LD |
| Designation                                                               | "Hohler Fels" Cave and "Helga-Abri" rock shelter |
| Spatial delimitation                                                       | See area map |
| Municipal limits                                                          | Schelklingen (8310) Property No.: 251, 493, 1434/2, 1435 |
| TK25 No.                                                                  | 7624 Schelklingen |
| Latitude / longitude                                                      | 48°22'45.98" / 009°45'14.92" (Hohle Fels);  
|                                                                           | 48°22'44.95" / 009°45'13.93" (Helga-Abri) |
| Surface area                                                              | 8,353 m² |

### Sirgenstein Cave

| Description                                                                 | Cave with Palaeolithic layers from the Middle Palaeolithic, Aurignacian, Gravettian and Magdalenian; items of personal adornment |
| Status                                                                    | Cultural monument of particular importance [Article 12 DSchG BW] |
| Id No.                                                                    | 1123 |
| Date of securing/publication, in                                          | 14.06.2010 / Blaubeuren |
| File reference                                                            | WEIL001-LD |
| Designation                                                               | Sirgenstein Cave |
| Spatial delimitation                                                       | See area map |
| Municipal limits                                                          | Blaubeuren-Weiler (8306) Property No.: 517 |
| TK25 No.                                                                  | 7624 Schelklingen |
| Latitude / longitude                                                      | 48°23'13.17" / 009°45'40.11" |
| Surface area                                                              | 2,885 m² |
### Geißenklösterle Cave

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cave with Palaeolithic layers from the Middle Palaeolithic, Aurignacian, Gravettian, Magdalenian and Mesolithic; figurines made of mammoth ivory, flutes made of mammoth ivory and bird bones, items of personal adornment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural monument of particular importance (Article 12 DSchG BW)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Id No.</th>
</tr>
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<tbody>
<tr>
<td>1122</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of securing/publication, in</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.06.2010 / Blaubeuren</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>File reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEIL002-LD</td>
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<table>
<thead>
<tr>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geißenklösterle Cave</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spatial delimitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>See area map</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Municipal limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaubeuren-Weiler (8306) Property No.: 143</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TK25 No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7624 Schelklingen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Latitude / longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>48°23'53.29'' / 009°46'17.70''</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surface area</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,334 m²</td>
</tr>
</tbody>
</table>

### Gleißenburg Castle ruin

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The castle, located at the outlet of the Höllental Valley, which is mentioned in the 14th century, in 1408 belonged to the Lords of Wernau as an Austrian fiefdom. The last fief holder (from 1494), Albrecht Heinrichmann, Blaubeuren Under-Steward, sold the castle in 1506 to the Blaubeuren Infirmary Foundation. The castle was destroyed in the Thirty Years War.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural monument of particular importance (Article 12 DSchG BW)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Id No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of securing/publication, in</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.04.1926 / Blaubeuren</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>File reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gleißenburg Castle ruin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spatial delimitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>See area map</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Municipal limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaubeuren (8300) Property No.: 1135/1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TK25 No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7624 Schelklingen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Latitude / longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>48°22'37.44'' / 009°47'28.53''</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surface area</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,078 m²</td>
</tr>
</tbody>
</table>

**Tab. 5-9** Cultural monuments of particular importance according to Article 12 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) in the Ach Valley component part and its associated buffer zone.
Component part Ach Valley (Id N°1) - Cultural monuments (Article 2 DSchG BW)

The entire area of the property and its surrounding buffer zone is a cultural monument in accordance with Article 2 DSchG BW (World Heritage protection zone). Other cultural monuments in accordance with Article 2 DSchG BW are located in the nominated part area and the associated buffer zone. This involves four archaeological monuments and two historical monuments. The respective areas are protected, but are not component parts of the present nomination.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominated World Heritage site, “Caves with the oldest Ice Age art”</td>
<td>2015</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Buffer zone of the nominated World Heritage site, “Caves with the oldest Ice Age art”</td>
<td>2015</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument, remains of settlement below the Sirgenstein (Obere Wert)</td>
<td>1990</td>
<td>Article 28 BNatSchG, Article 2 DSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cultural monument, Kühnenbuch barrow cemetery</td>
<td>1988</td>
<td>Article 28 BNatSchG, Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument, Kühnenbuch barrow</td>
<td>1988</td>
<td>Article 28 BNatSchG, Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument, Großbeund Schelklingen</td>
<td>2012</td>
<td>Article 28 BNatSchG, Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument, Blaubeuren-Weiler, Crossing Keeper’s House</td>
<td>2004</td>
<td>Article 28 BNatSchG, Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument, Blaubeuren-Weiler, Boundary Stone</td>
<td>1985</td>
<td>Article 28 BNatSchG, Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5-10 Legislative act and year of the Ordinance for Cultural Monuments in the Ach Valley component part and its associated buffer zone (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act, BNatSchG = Federal Nature Conservation Act).
## Settlement remains below the Sirgenstein (Obere Wert)

| Description | As well as remains of individual Palaeolithic settlements (flint tools) associated with the Sirgenstein Cave, during road construction work traces were found of a settlement from the earlier Celtic La Tène culture (second to first centuries before Present) and the Middle Ages (10th to 14th centuries). The boundaries of the settled area are not more precisely known. |
| Status | Cultural monument (Article 2 DSchG BW) |
| Id No. | - |
| Date of securing/publication, in | 15.11.1990 / Blaubeuren-Weiler |
| File reference | WEIL003-LD |
| Designation | Remains of settlement below the Sirgenstein Cave |
| Spatial delimitation | See area map |
| Municipal limits | Blaubeuren-Weiler (8306) Property No.: 285/4, 286/2, 286/3, 510, 511, 513/1, 515, 516, 517 |
| TK25 No. | 7624 Schelklingen |
| Latitude / longitude | 48°23'09.52'' / 009°45'39.52'' |
| Surface area | 3,087 m² |

## Kühnenbuch barrow cemetery

| Description | Group of at least four burial mounds, probably from the Bronze Age or Hallstatt Period (16th – 13th centuries before Present and 8th – 5th centuries before Present respectively), which may contain body or cremation burial remains, grave goods (weapons, clothing, and items of personal adornment made of bronze and iron, ceramics). It is also assumed that there are flat graves between the tumuli (without mounds). |
| Status | Cultural monument (Article 2 DSchG BW) |
| Id No. | - |
| Date of securing/publication, in | 11.1988 / Blaubeuren |
| File reference | BLAU011-LD |
| Designation | Kühnenbuch barrow cemetery |
| Spatial delimitation | See area map |
| Municipal limits | Blaubeuren (8300) Property No.: 1135/1 |
| TK25 No. | 7624 Schelklingen |
| Latitude / longitude | 48°23'02.51'' / 009°46'44.98'' |
| Surface area | 10,423 m² |
### Kühnenbuch barrow

| Description | A burial barrow from the Bronze Age or Hallstatt Period (16th – 13th centuries before Present and 8th – 5th centuries before Present respectively), which may contain body or cremation burial remains, grave goods (weapons, clothing, and items of personal adornment made of bronze and iron, ceramics). The small stone mound to the east of these may likewise be a barrow. |
| Status | Cultural monument (Article 2 DSchG BW) |
| Id No. | - |
| Date of securing/publication, in | 11.1988 / Blaubeuren |
| File reference | BLAU012-LD |
| Designation | Kühnenbuch Barrow |
| Spatial delimitation | See area map |
| Municipal limits | Blaubeuren (8300) Property No.: 1135/1 |
| TK25 No. | 7624 Schelklingen |
| Latitude / longitude | 48°22'41.97'' / 009°46'32.62'' |
| Surface area | 121 m² |

### Große Beund

<p>| Description | Remains of settlement from the Urnfield culture (12th – 9th centuries before Present) and from the early La Tène period (5th – 4th centuries before Present) west of the Ulmer Straße are evidence of an extended settlement in the area along the Ach. Findings from the early Middle Ages (5th – 8th centuries) east of the Ulmer Straße may be the remains of a settlement or a cemetery. It may be assumed that further finds will be made (ceramics, objects made of iron, bronze and bone) and more extensive findings (building outlines, middens, post holes and foundations, barrows, and grave goods). The boundaries of prehistoric and early historic settlements are not more precisely known. |
| Status | Cultural monument (Article 2 DSchG BW) |
| Id No. | - |
| Date of securing/publication, in | 14.12.2012 / Schelklingen |
| File reference | SCHE006-LD |
| Designation | Große Beund |
| Spatial delimitation | See area map |
| Municipal limits | Schelklingen (8310) Property Nos.: 389, 436, 474/13, 475, 476, 476/2, 477, 478, 814 |
| TK25 No. | 7624 Schelklingen |
| Latitude / longitude | 48°22'27.47'' / 009°44'28.43'' |
| Surface area | 10,594 m² |</p>
<table>
<thead>
<tr>
<th>Blaubeuren-Weiler Crossing Keeper’s House</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Status</strong></td>
</tr>
<tr>
<td><strong>Id No.</strong></td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
</tr>
<tr>
<td><strong>File reference</strong></td>
</tr>
<tr>
<td><strong>Designation</strong></td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blaubeuren-Weiler Boundary Stone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Status</strong></td>
</tr>
<tr>
<td><strong>Id No.</strong></td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
</tr>
<tr>
<td><strong>File reference</strong></td>
</tr>
<tr>
<td><strong>Designation</strong></td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
</tr>
</tbody>
</table>

Tab. 5-11 Cultural monuments in accordance with Article 2 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) in the nominated Ach Valley component part and in the associated buffer zone.
Fig. 5-3 Ach Valley component part (Id N°1): Cultural protection areas. World Heritage protection zone mirroring the property and the buffer zone.
Component part Ach Valley (Id N°1) - Natural monuments (Article 28 BNatSchG / Article 31 NatSchG BW)

In the Ach Valley component part and the associated buffer zone there are a number of natural individual formations (END) or areas (FND), which in accordance with Article 31 of the Baden-Württemberg Nature Conservation Act (NatSchG°BW) have been declared as natural monuments.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>FND – Höhle Fels near Schelklingen</td>
<td>1998</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FND - Rock formation Sirgenstein with cave</td>
<td>2003</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FND - Rock formation at Bruckfelsen with caves</td>
<td>2003</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>END - 3 broad-leaved lime trees at war memorial</td>
<td>2003</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FND – Höllfels with rock needle</td>
<td>2003</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>FND - Woodland pool near Grätershütte</td>
<td>2003</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FND – Stream source at Lower Gleßenburg</td>
<td>2003</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>END - 1 red beech tree</td>
<td>1998</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>END - 1 broad-leaved lime tree</td>
<td>1998</td>
<td>Article 28 BNatSchG</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 31 NatSchG BW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5-12 Legislative act and year of the ordinance for individual natural monuments (END) and areas (FND) in the area of the Ach Valley component part and the associated buffer zone (BNatSchG = Federal Nature Conservation Act; NatSchG BW = Baden-Württemberg Nature Conservation Act).
Hohle Fels near Schelklingen

Description: The Hohle Fels opens at the foot of a sugarloaf-shaped needle of rock, over 30 m in height, formed from upper massive or compacted limestone from the Upper Jurassic (jO-Mo, formerly White Jurassic zeta) in the Ach Valley between Schelklingen and Blaubeuren. After following a passage some 25 metres in length, one of the largest caverns in the Swabian Jura is reached, with a surface area of more than 500 m² and up to 23 m in height. The cave is of outstanding archaeological importance, having already yielded numerous findings from the Palaeolithic and Neolithic, the Bronze Age, and on into the Middle Ages.

Status: Nature monument, area type (FND)
Protection area No.: 84251080001
Designation: Hohle Fels near Schelklingen
Spatial delimitation: See area map
Municipal limits: Schelklingen (8310) Property No.: 1435
TK25 No.: 7624 Schelklingen
Latitude / longitude: 48°22'44.79'' / 009°45'14.76''
Surface area: 1,249 m²

Sirgenstein rock formation with cave

Description: High above the Ach Valley, at the foot of the Sirgenstein, formed from massive or consolidated limestone from the Upper Jurassic period (jO-Mo), the entrance to the Sirgenstein Cave (length about 40 m, height 34 m) is some 6 m wide. By way of a tunnel-like passage, a substantial dome-shaped hall is reached, which features two openings in the roof. During excavations important finds were made from the Middle and Upper Palaeolithic, the Bronze Age, and Iron Age, through to the Middle Ages. Freely accessible except during breeding periods.

Status: Natural monument, area type (FND)
Protection area No.: 84250200049
Designation: Sirgenstein rock formation with cave
Spatial delimitation: See area map
Municipal limits: Blaubeuren-Weiler (8306) Property No.: 517
TK25 No.: 7624 Schelklingen
Latitude / longitude: 48°23'13.76'' / 009°45'39.29''
Surface area: 950 m²
Protection and management of the property

<table>
<thead>
<tr>
<th>Bruckfelsen rock formation with caves (Bruckfels Cave and Geißenklösterle)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Status</strong></td>
</tr>
<tr>
<td><strong>Protection area No.</strong></td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
</tr>
<tr>
<td><strong>File reference</strong></td>
</tr>
<tr>
<td><strong>Designation</strong></td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 broad-leaf lime trees at war memorial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Status</strong></td>
</tr>
<tr>
<td><strong>Protection area No.</strong></td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
</tr>
<tr>
<td><strong>File reference</strong></td>
</tr>
<tr>
<td><strong>Designation</strong></td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Höllfels with rock needle</td>
</tr>
<tr>
<td>Woodland pool near Grätershütte</td>
</tr>
<tr>
<td>Stream source at Lower Gleißenburg</td>
</tr>
</tbody>
</table>

**File reference**

**Designation**

**Spatial delimitation**

**Municipal limits**

**TK25 No.**

**Latitude / longitude**

**Surface area**

### Höllfels with rock needle

- Description: Natural monument, area type (FND)
- Protection area No.: 84250200046
- Date of securing/publication, in: 03.12.2002 / "Das Blaumännle", Official Information Gazette of the Township of Blaubeuren, of 07.02.2003; 08.02.2003
- File reference: -
- Designation: Höllfels with rock needle
- Spatial delimitation: See area map
- Municipal limits: Blaubeuren (8300) Property No.: 1135/1
- TK25 No.: 7624 Schelklingen
- Latitude / longitude: 48°22'30.24" / 009°46'43.18"
- Surface area: 2,930 m²

### Woodland pool near Grätershütte

- Description: -
- Status: Natural monument, area type (FND)
- Protection area No.: 84250200045
- Date of securing/publication, in: 03.12.2002 / "Das Blaumännle", Official Information Gazette of the Township of Blaubeuren, of 07.02.2003; 08.02.2003
- File reference: -
- Designation: Woodland pool near Grätershütte
- Spatial delimitation: See area map
- Municipal limits: Blaubeuren (8300) Property No.: 1135/1
- TK25 No.: 7624 Schelklingen
- Latitude / longitude: 48°23'17.16" / 009°46'47.25"
- Surface area: 449 m²

### Stream source at Lower Gleißenburg

- Description: -
- Status: Natural monument area type (FN0)
- Protection area No.: 84250200044
- Date of securing/publication, in: 03.12.2002 / "Das Blaumännle", official information gazette of the town of Blaubeuren, of 07.02.2003; 08.02.2003
- File reference: -
- Designation: Source pool at the Lower Gleißenburg
- Spatial delimitation: See area map
- Municipal limits: Blaubeuren (8300) Property No.: 1135/1
- TK25 No.: 7624 Schelklingen
- Latitude / longitude: 48°23'02.79" / 009°47'09.58"
- Surface area: 215 m²
### Individual and area type natural monuments in accordance with Article 28 of the Federal Nature Conservation Act (BNatSchG) / Article 31 of the Baden-Württemberg Nature Conservation Act (NatSchG BW) in the nominated Ach Valley component part and in the associated buffer zone.

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th><strong>Status</strong></th>
<th><strong>Protection area No.</strong></th>
<th><strong>Date of securing/publication, in</strong></th>
<th><strong>File reference</strong></th>
<th><strong>Designation</strong></th>
<th><strong>Spatial delimitation</strong></th>
<th><strong>Municipal limits</strong></th>
<th><strong>Surface area</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 red beech tree</strong></td>
<td>Individual natural monument (END)</td>
<td>84251080010</td>
<td>30.10.1998 / Notifications Gazette of the Township of Schelklingen of 12.11.1998; 13.11.1998 (in force)</td>
<td>-</td>
<td>1 red beech tree</td>
<td>See area map</td>
<td>Schelklingen (8310) Property No.: 644/6</td>
<td>-</td>
</tr>
<tr>
<td><strong>1 broad-leaf lime tree</strong></td>
<td>Individual natural monument (END)</td>
<td>84251080002</td>
<td>30.10.1998 / Notifications Gazette of the Township of Schelklingen of 12.11.1998; 13.11.1998 (in force)</td>
<td>-</td>
<td>1 broad-leaf lime tree</td>
<td>See area map</td>
<td>Schelklingen (8310) Property No.: 427/2</td>
<td>-</td>
</tr>
</tbody>
</table>
Component part Ach Valley (Id N°1) - Legally protected biotopes (Article 30 BNatSchG / Article 32 NatSchG BW) and woodland biotopes (Article 30a LWaldG BW)

Since 1992, certain biotope types have been expressly protected by the Biotope Protection Law (Article 32 Nature Conservation Act BW, NatSchG BW). Now a catalogue of specific biotype forms which are of particularly high value, worthy of conservation, and in need of protection, is included in the BNatSchG and NatSchG BW respectively. In the nominated component part and in the buffer zone of the Ach Valley both open ground and woodland biotopes are present.

The woodland biotopes referred to are additionally protected in accordance with Article 30a of the Woodland Protection Law of the State of Baden-Württemberg (LWaldG BW).

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
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<td>Article 32 NatSchG BW</td>
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<td>Article 30a LWaldG BW</td>
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<tr>
<th>Biotope No.</th>
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<th>Surface area (m²)</th>
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<tr>
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<td>Hedgegrows by the railway line south of Weiler</td>
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<td>Hedgegrows at the end of the Tiefental valley south of Weiler</td>
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<td>Roadside hedgegrows north-east of Schelklingen</td>
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<td>Roadside hedgegrows by the B492 south of Weiler</td>
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</tr>
<tr>
<td>276244255136</td>
<td>Hedgegrows and sparse strip grassland north-east of Schelklingen</td>
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</tr>
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<td>176244253720</td>
<td>Sedge reed stripland in the Ach Valley (municipal boundary with Blaubeuren)</td>
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<tr>
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<td>Hedgegrows in the lower Berne Valley</td>
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<tr>
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<td>Hedgegrows at the woodland edge on the Rohr common south of Weiler</td>
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<td>276244251423</td>
<td>Massifs on the Brandhalde hill slope near Schelklingen</td>
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<tr>
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<td>Quarry at Spätenhartsteige, west of Gerhausen</td>
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<tr>
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<td>Rock ridge formation south of Weiler</td>
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<td>Sirgenstein secondary rock formation south of Weiler</td>
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<td>Spare strip grassland south of Spitzer Stein</td>
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<td>276244254286</td>
<td>Bischofsfels rock formation SE of Weiler</td>
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<td>276244254287</td>
<td>Hohler Fels NW of Ottenhausen</td>
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<tr>
<td>276244254303</td>
<td>Rock formation SSE Weiler</td>
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<td>Rock formation at the Hohlen Fels (1) NW of Ottenhausen</td>
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<td>Blue-grass beech wood near Schelklingen</td>
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<tr>
<td>276244251434</td>
<td>Sirgenstein rock formation south of Weiler</td>
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<tr>
<td>276244251436</td>
<td>Rock formation at Blasenhau, NW of Ottenhausen</td>
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<tr>
<td>276244254288</td>
<td>Trackway with rock formations SSE of Weiler</td>
<td>Woodland biotope</td>
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<tr>
<td>276244255138</td>
<td>Rock formation SSE of Weiler (1)</td>
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<tr>
<td>176244253716</td>
<td>Rock formation from Bruckfels as far as Spitz Stein</td>
<td>Woodland biotope</td>
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<tr>
<td>176244252863</td>
<td>Heathland beech woods SE of Weiler</td>
<td>Woodland biotope</td>
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<tr>
<td>276244254280</td>
<td>Bruckfels and Geißenklösterle region</td>
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<tr>
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<td>Sedge and beech woods SSE of Weiler</td>
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<tr>
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<td>Woodland mantle SE of Weiler</td>
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<tr>
<td>276244255137</td>
<td>Heathland beech woods in the Köhnenbuch area SE of Weil</td>
<td>Woodland biotope</td>
<td>11,811</td>
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</table>

**Tab. 5-15** Legally protected biotopes in accordance with Article 30 of the Federal Nature Conservation Act (BNatSchG) / Article 32 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the Ach Valley component part.
<table>
<thead>
<tr>
<th>Biotope No.</th>
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<th>Surface area (m²)</th>
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<tbody>
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<td>Hedgerows at the end of the Tiefental Valley south of Weiler</td>
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<td>Roadside hedgerows by the B492 south of Weiler</td>
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<td>Hedgerows at the edge of the wood in the Tiefental Valley south-west of Weiler</td>
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<tr>
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<td>Tree hedgerow at recessed ground on Riedental common, east of Schelklingen</td>
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<tr>
<td>176244253719</td>
<td>Reed bank near the Schelklingen clarification plant</td>
<td>Open ground</td>
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<tr>
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<td>Hedgerow at the edge of the wood in the Tiefental Valley south-west of Weiler</td>
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<td>Hedgerows in the Ach Valley below Schelklingen</td>
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<td>Field hedgerow at the railway embankment below Schelklingen</td>
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<td>Ash hedgerows in the Tiefental Valley south-west of Weiler</td>
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<td>Field shrubs in the Tiefental Valley south-west of Weiler</td>
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<tr>
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<td>Shrubs, sparse grassland, and rock formations at the railway line SE of Weier</td>
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<td>Deciduous forest characterised by plants of the Corydalis group in the Hölltal Valley</td>
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<td>Caves west of Blaubeuren</td>
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<td>Rock formations below Gleißenburg</td>
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<td>Dolines on the common State SW of Weier</td>
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<td>Deciduous forest characterised by plants of the Corydalis group south of Gleißenburg Castle ruin</td>
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<td>Teufelskanzel formation WNW of Pappelau</td>
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<td>276244251441</td>
<td>Rock formations in the Riedental Valley north of Sotzenhausen</td>
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<td>Rock strip at the foot of the Gleißenburg</td>
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<tr>
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<td>Rock at Kapellenberg, east of Sotzenhausen</td>
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<tr>
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<td>Rock formations in the Riedental Valley north of Sotzenhausen</td>
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<td>Block scree at the Nägelesfels rock formation</td>
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<td>Rock strip at the Geißenkopf, south of Gleißenburg</td>
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<td>Individual rock formations in the Hölltal Valley, east of Höllfelsen</td>
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<td>Höllfels rock formation, WNW of Pappelau</td>
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<td>Rock slope edge at Spätenhart, south west of Weiler</td>
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<td>Block scree formation, SW of Weiler</td>
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<td>Sedge beech woodland at Kraissenkopf</td>
<td>Woodland biotope</td>
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<tr>
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<td>Rocks in the protected woodland at the outlet of Tiefental Valley</td>
<td>Woodland biotope</td>
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<tr>
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<td>Beech copse behind Gleißenburg</td>
<td>Woodland biotope</td>
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<td>Block lime tree woodland at Zwerenbuch, east of Schelklingen</td>
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<tr>
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<tr>
<td>276244254282</td>
<td>Blue-grass beech wood near Schelklingen</td>
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<td>Block woodland at the Gleißenburg Castle ruin</td>
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<td>Deciduous forest characterised by plants of the Corydalis group in the Hölltal Valley</td>
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<td>Block woodlands in the Hölltal Valley</td>
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<td>Richly-structured mixed hardwood woodland east of Weiler</td>
<td>Woodland biotope</td>
<td>17,274</td>
</tr>
<tr>
<td>276244251463</td>
<td>Sedge beech woodland south of Gleißenburg</td>
<td>Woodland biotope</td>
<td>17,631</td>
</tr>
<tr>
<td>276244251461</td>
<td>Dry slope woodland at Gleißenkopf</td>
<td>Woodland biotope</td>
<td>18,648</td>
</tr>
<tr>
<td>276244251478</td>
<td>Succession woodland west of Gerhausen</td>
<td>Woodland biotope</td>
<td>19,566</td>
</tr>
<tr>
<td>276244251420</td>
<td>Old growth woodland at the outlet of the Tiefental Valley</td>
<td>Woodland biotope</td>
<td>48,596</td>
</tr>
<tr>
<td>275244251372</td>
<td>Sedge beech woodland in the Tiefental Valley, east of Weiler</td>
<td>Woodland biotope</td>
<td>54,407</td>
</tr>
<tr>
<td>276244251421</td>
<td>Rocky sedge beech woodland, SW of Weiler</td>
<td>Woodland biotope</td>
<td>66,197</td>
</tr>
</tbody>
</table>

Tab. 5-16 Legally protected biotopes in accordance with Article 30 of the Federal Nature Conservation Act (BNatSchG) / Article 32 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the area of the buffer zone of the Ach Valley.
Component part Ach Valley (Id N°1) - Woodland protection areas (Article 32 LWaldG BW)

There are no woodland protection areas which are protected in accordance with Article 32 of the Woodland Protection Law of the State of Baden-Württemberg (LWaldG BW) in the Ach Valley component part.

Within the buffer zone there is the “Rabensteig Woodland Protection Area”. This falls under the provisions of Article 32 of the Woodland Protection Law of the Federal State of Baden-Württemberg (LWaldG BW). The ordinance relating to the “Rabensteig Protected Woodland” was promulgated on 1 January 1970 (last amendment on 8 October 2004).

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodland protection area,</td>
<td>1970</td>
<td>Article 32 LWaldG BW</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Rabensteig Protected woodland</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tab. 5-17** Legislative act and year of the ordinance for woodland protection areas in the Ach Valley component part and the associated buffer zone (LWaldG BW = Woodland Protection Law of the Federal State of Baden-Württemberg).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>989007000109</td>
<td>Rabensteig</td>
<td>Protected woodland</td>
<td>325,33</td>
</tr>
</tbody>
</table>

**Tab. 5-18** Woodland protection areas in accordance with Article 32 of the Woodland Protection Law of the Federal State of Baden-Württemberg (LWaldG BW) in the area of the buffer zone of the Ach Valley.
Fig. 5-4. Ach Valley component part (Id N°1): Natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.
Component part Ach Valley (Id N°1) - Landscape protection area (Article 26 BNatSchG / Article 29 NatSchG BW)

The area of the nominated property in the Ach Valley, as well as large parts of the associated buffer zone are protected by the ordinance relating to the “Blaubeuren” landscape protection area of 17 December 1993 (last amendment 27 September 2010), as well as by the ordinance relating to the “Schelklingen” landscape protection area of 20 June 2001.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaubeuren landscape protection area</td>
<td>1993</td>
<td>Article 26 BNatSchG</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 29 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Schelklingen landscape protection area</td>
<td>2001</td>
<td>Article 26 BNatSchG</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 29 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Tab. 5-19  Legislative act and year of the ordinance relating to the landscape protection areas in the Ach Valley component part and its associated buffer zone (BNatSchG = Federal Nature Conservation Act, NatSchG BW = Baden-Württemberg Nature Conservation Act).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4259003000034</td>
<td>Blaubeuren</td>
<td>landscape protection area</td>
<td>2,358,238</td>
</tr>
<tr>
<td>4259003000024</td>
<td>Schelklingen</td>
<td>landscape protection area</td>
<td>358,915</td>
</tr>
</tbody>
</table>

Tab. 5-20  Landscape protection area in accordance with Article 26 of the Federal Nature Conservation Act (BNatSchG) / Article 29 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the Ach Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4259003000034</td>
<td>Blaubeuren</td>
<td>landscape protection area</td>
<td>4,438,250</td>
</tr>
<tr>
<td>4259003000024</td>
<td>Schelklingen</td>
<td>landscape protection area</td>
<td>2,177,413</td>
</tr>
</tbody>
</table>

Tab. 5-21  Landscape protection area in accordance with Article 26 of the Federal Nature Conservation Act (BNatSchG) / Article 29 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the area of the buffer zone of the Ach Valley.
Component part Ach Valley (Id N°1) - Natura 2000 (FFH-Area) in accordance with Article 32 BNatSchG / Article 36 NatSchG BW


The two protection areas designated in accordance with Article 32 of the Federal Nature Conservation Act (BNatSchG) / Article 36 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW), “Tiefen and Schmiechtal” and “Blau and Kleine Lauter”, extend over parts of the area of the property and the buffer zone of the Ach Valley.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natura 2000 (FFH) area of Tiefental and Schmiechtal</td>
<td>2005</td>
<td>Article 32 BNatSchG / Article 36 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Natura 2000 (FFH) area of Blau and Kleine Lauter</td>
<td>2005</td>
<td>Article 32 BNatSchG / Article 36 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Tab. 5-22 Legislative act and year of the ordinance of Natura 2000 (FFH area) in the Ach Valley component part and of the associated buffer zone (BNatSchG = Federal Nature Conservation Act, NatSchG BW = Baden-Württemberg Nature Conservation Act).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>809026000166</td>
<td>Tiefental and Schmiechtal</td>
<td>FFH area</td>
<td>449,698</td>
</tr>
<tr>
<td>809026000008</td>
<td>Blau and Kleine Lauter</td>
<td>FFH area</td>
<td>950,93</td>
</tr>
</tbody>
</table>

Tab. 5-23 Natura 2000 (FFH area) in accordance with Article 32 of the Federal Nature Conservation Act (BNatSchG) / Article 36 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the Ach Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>809026000166</td>
<td>Tiefental and Schmiechtal</td>
<td>FFH area</td>
<td>1,921,338</td>
</tr>
<tr>
<td>809026000008</td>
<td>Blau and Kleine Lauter</td>
<td>FFH area</td>
<td>2,497,958</td>
</tr>
</tbody>
</table>

Tab. 5-24 Natura 2000 (FFH area) in accordance with Article 36 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the area of the buffer zone of the Ach Valley.
Component part Ach Valley (Id N°1) - Bird protection area (VSG-VO / Directive 2009/147/EG)

On 5 February 2010 the ordinance was issued by the Ministry of Food and Rural Affairs of Baden-Württemberg for the designation of European bird protection areas (VSG-VO and Directive 2009/147/EG).

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird protection area, valleys of the flat Jura region</td>
<td>2010</td>
<td>Article 3 Directive 2009/147/EG Article 3 VSG-VO</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Tab. 5-25 Legislative act and year of designation of the bird protection areas in the Ach Valley component part and the associated buffer zone.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>939027000108</td>
<td>Valleys of the flat Jura region</td>
<td>SPA region</td>
<td>462,619</td>
</tr>
</tbody>
</table>

Tab. 5-26 Bird protection area in accordance with the Bird Protection Area Ordinance (VSG-VO) in the Ach Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>939027000108</td>
<td>Valleys of the flat Jura region</td>
<td>SPA region</td>
<td>2,029,374</td>
</tr>
</tbody>
</table>

Tab. 5-27 Bird protection area in accordance with the Bird Protection Area Ordinance (VSG-VO / Directive 2009/147/EG) in the region of the buffer zone of the Ach Valley.
Fig. 5-5 Ach Valley component part (Id N°1): Further natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.
Component part Ach Valley (Id N°1) - Biosphere Reserve Area (Article 25 BNatSchG / Article 28 NatSchG BW)

In Baden-Württemberg parts of the Swabian Jura are designated as Biosphere Reserve Areas by statutory ordinance of 31 January 2008 (VO Biosphere Reserve Area). The Biosphere Reserve Area is subdivided into three zones. These are designated as the Development (1), Care (2), and Core zones (3). In the Ach Valley component part, areas predominate which are classified as Care zones, but in the planned associated buffer zone, as well as Care zones, Development and Core zones are also represented.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosphere Reserve Area Swabian Alb</td>
<td>2008</td>
<td>VO Biosphere Reserve Area</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>UNESCO-Biosphere Reserve Area</td>
<td>2009</td>
<td>-</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Tab. 5-28  Legislative act and year of the ordinance relating to the Biosphere Reserve Areas in the Ach Valley component part and its associated buffer zone.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>809028000001</td>
<td>Swabian Jura</td>
<td>Development zone (1)</td>
<td>5</td>
</tr>
<tr>
<td>809028000002</td>
<td>Swabian Jura</td>
<td>Care zone (2)</td>
<td>133,114</td>
</tr>
</tbody>
</table>

Tab. 5-29  Biosphere Reserve Area in accordance with VO Biosphere Reserve Area in the Ach Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>809028000001</td>
<td>Swabian Jura</td>
<td>Development zone (1)</td>
<td>301,055</td>
</tr>
<tr>
<td>809028000002</td>
<td>Swabian Jura</td>
<td>Care zone (2)</td>
<td>1,313,734</td>
</tr>
<tr>
<td>809028000003</td>
<td>Swabian Jura</td>
<td>Core zone (3)</td>
<td>107,084</td>
</tr>
</tbody>
</table>

Tab. 5-30  Biosphere Reserve Area in accordance with VO Biosphere Reserve Area in the region of the buffer zone of the Ach Valley.
Protection and management of the property

Fig. 5-6 Ach Valley component part (Id N°1): UNESCO Biosphere Reserve Area. Property (red) and buffer zone (blue) displayed as shaded surfaces.
Protective measures Lone Valley (Id N°2)

The area of the property in the Lone Valley and their buffer zones are affected by a considerable number of statutory protection measures for the protection of monuments and nature. These encompass the entire area and guarantee the best possible large-area protection of the property and of the buffer zone. The relevant protective measures are considered individually in the following sections. Applications and effects of the protection measures are explained in Chapter 5c.

### Tab. 5-31 Surface area of the Lone Valley component part and the associated buffer zone.

<table>
<thead>
<tr>
<th>Designation of protection (GSG)</th>
<th>Legislation</th>
<th>As per Article</th>
<th>Area of property (ha)</th>
<th>Area of buffer zone (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation protection areas</td>
<td>DSchG BW</td>
<td>22</td>
<td>190.4</td>
<td>0</td>
</tr>
<tr>
<td>Cultural monuments of particular importance</td>
<td>DSchG BW</td>
<td>12</td>
<td>33.4</td>
<td>0</td>
</tr>
<tr>
<td>Cultural monuments</td>
<td>DSchG BW</td>
<td>2</td>
<td>190.4</td>
<td>391.9</td>
</tr>
<tr>
<td>Nature conservation areas</td>
<td>BNatSchG</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>26</td>
<td>5.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Natural monuments</td>
<td>BNatSchG</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>31</td>
<td>5.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Legally protected biotopes</td>
<td>BNatSchG</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>32</td>
<td>24.9</td>
<td>8.9</td>
</tr>
<tr>
<td>Specially protected biotopes (woodland)</td>
<td>LWaldG BW</td>
<td>30a</td>
<td>22.2</td>
<td>7.9</td>
</tr>
<tr>
<td>Woodland protection area</td>
<td>LWaldG BW</td>
<td>32</td>
<td>17.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Landscape protection areas (LSG)</td>
<td>BNatSchG</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>29</td>
<td>179.0</td>
<td>256.8</td>
</tr>
<tr>
<td>Protected areas</td>
<td>FFH-Directive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BNatSchG</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>36</td>
<td>16.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Biosphere Reserve Area</td>
<td>BNatSchG</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NatSchG BW</td>
<td>28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>European bird protection area</td>
<td>Directive 2009/147/EG</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VSG-VO</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tab. 5-32 Surface area of protection zones in the area of the Lone Valley component part. Surface area data has been rounded and is given in hectares. Details regarding the respective protection measures are given in the corresponding tables (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act; BNatSchG = Federal Nature Conservation Act; NatSchG BW = Baden-Württemberg Nature Conservation Act; FFH = Flora-Fauna Habitat; LWaldG BW = Woodland Protection Law of the State of Baden Württemberg; VSG-VO = Ordinance by the Ministry of Food and Rural Affairs for the designation of European bird protection areas).
Component part Lone Valley (Id N°2) - Excavation protection area (Article 22 DSchG BW)

All the properties of the Lone Valley component part are designated as excavation protection areas in accordance with Article 22 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW). The statutory ordinance for the municipal limits of Niederstotzingen-Stetten and Herbrechtingen-Bissingen in the District of Heidenheim came into force on 18 November 2014. For the municipal limits of Rammingen and Asselfingen, the excavation protection area was designated on 12 April 2014. Properties in the buffer zone are at present not designated as excavation protection areas.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation protection area Lone Valley (Alb-Donau District)</td>
<td>2014</td>
<td>Article 22 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Excavation protection area Lone Valley (District of Heidenheim)</td>
<td>2014</td>
<td>Article 22 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5-33 Legislative act and year of the ordinance for the excavation protection areas in the Lone Valley component part (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act).

<table>
<thead>
<tr>
<th>Excavation protection area Lone Valley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>The Swabian Jura is to be regarded as one of the most important regions in Europe with regard to finds from the Palaeolithic. This relates to the Lone Valley in particular. There are a number of archaeological sites from the Palaeolithic period here, of which three caves – the Vogelherd Cave, Hohlenstein Stadel Cave and Bockstein Cave / Bocksteinlöle – are particularly important. As well as this, these three monuments are of very great significance with regard to the early history of mankind. In them there have been found figurines of humans and animals made from mammoth ivory, flutes made from bird bones and mammoth ivory, and Items of personal adornment, which are among the oldest relics of this kind anywhere in the world.</td>
</tr>
</tbody>
</table>

| Status                               |
| Excavation protection area (Article 22 DSchG BW) |

<table>
<thead>
<tr>
<th>Id No.</th>
</tr>
</thead>
</table>

| Date of securing/publishation, in     |
| 12 April 2014 / “Heimatrundschau”, the official gazette of the Township of Langenau (for the excavation protection area in the Lone Valley in the Alb-Donau District) |
| 18 November 2014 / Official gazettes of the Townships of Herbrechtingen and Niederstotzingen (for the excavation protection area in the Lone Valley in the District of Heidenheim) |

<table>
<thead>
<tr>
<th>File reference</th>
<th>-</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Designation</th>
<th>Excavation protection area Lone Valley</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Spatial delimitation</th>
<th>See area map</th>
</tr>
</thead>
</table>

| Municipal limits     |
| Rammingen (8195); Asselfingen (8200); Niederstotzingen-Stetten (2622); Herbrechtingen-Bissingen (2586) |

| TK25 No.             |
| 7427 Sontheim a.d. Brenz; 7426 Langenau |

| Latitude / longitude |
| 48°33’17.59” / 010°10’31.59” (centroid) |

| Surface area         |
| 1,903,609 m² |

Tab. 5-34 Excavation protection area in accordance with Article 22 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) in the nominated Lone Valley component part.
Fig. 5-7 Lone Valley component part (Id N°2): Excavation protection area mirroring the property.
Component part Lone Valley (Id N°2) - Cultural monuments of particular importance (Article 12 DSchG BW)

In the region of the Lone Valley component part there are three archaeological sites (Vogelherd Cave, Bockstein rock formation, Hohlenstein rock formation), which are registered as cultural monuments of particular importance in accordance with Article 12 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) on the cultural monuments list of the Federal State of Baden-Württemberg. They form the basis for the present nomination.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vogelherd Cave cultural monument of particular importance</td>
<td>1979</td>
<td>Article 12 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Bockstein rock formation cultural monument of particular importance</td>
<td>2012</td>
<td>Article 12 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Hohlenstein rock formation cultural monument of particular importance</td>
<td>2013</td>
<td>Article 12 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5-35 Legislative act and year of the ordinance of cultural monuments of particular importance in the Lone Valley component part and its associated buffer zone (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act).

<table>
<thead>
<tr>
<th>Vogelherd Cave</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Id No.</td>
</tr>
<tr>
<td>Date of securing/publication, in</td>
</tr>
<tr>
<td>File reference</td>
</tr>
<tr>
<td>Designation</td>
</tr>
<tr>
<td>Spatial delimitation</td>
</tr>
<tr>
<td>Municipal limits</td>
</tr>
<tr>
<td>TK25 No.</td>
</tr>
<tr>
<td>Latitude / longitude</td>
</tr>
<tr>
<td>Surface area</td>
</tr>
</tbody>
</table>
### Tab. 5-36 Cultural monuments of particular importance in accordance with Article 12 Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) in the Lone Valley component part and its associated buffer zone.

<table>
<thead>
<tr>
<th>Bockstein rock formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Id No.</td>
</tr>
<tr>
<td>Date of securing/publication, in</td>
</tr>
<tr>
<td>File reference</td>
</tr>
<tr>
<td>Designation</td>
</tr>
<tr>
<td>Spatial delimitation</td>
</tr>
<tr>
<td>Municipal limits</td>
</tr>
<tr>
<td>TK25 No.</td>
</tr>
<tr>
<td>Latitude / longitude</td>
</tr>
<tr>
<td>Surface area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hohlenstein rock formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Id No.</td>
</tr>
<tr>
<td>Date of securing/publication, in</td>
</tr>
<tr>
<td>File reference</td>
</tr>
<tr>
<td>Designation</td>
</tr>
<tr>
<td>Spatial delimitation</td>
</tr>
<tr>
<td>Municipal limits</td>
</tr>
<tr>
<td>TK25 No.</td>
</tr>
<tr>
<td>Latitude / longitude</td>
</tr>
<tr>
<td>Surface area</td>
</tr>
</tbody>
</table>
Component part Lone Valley (Id N°2) - Cultural monuments (Article 2 DSchG BW)

The entire area of the property and the buffer zone is a cultural monument in accordance with Article 2 DSchG BW. Other cultural monuments in accordance with Article 2 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) are located in the Lone Valley component part and in the associated buffer zone. This relates to four archaeological monuments. The respective areas are protected, but are not component parts of the present nomination.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominated World Heritage site, “Caves with the oldest Ice Age art”</td>
<td>2015</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Buffer zone of the nominated World Heritage Site, “Caves with the oldest Ice Age art”</td>
<td>2015</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cultural monument, Teufelsküche Cave</td>
<td>1990</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cultural monument, Vogelherd (Niederholz)</td>
<td>2010</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cultural monument, Grabhügelfeld Christlesbauerholz</td>
<td>1978</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cultural monument, Villa rustica</td>
<td>1979</td>
<td>Article 2 DSchG BW</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Tab. 5-37 Legislative act and year of the ordinance for the cultural monuments in the Lone Valley part component and its associated buffer zone (DSchG BW = Baden-Württemberg Cultural Heritage Protection Act).

### Teufelsküche Cave

- **Description**: The entrance to this cave, which is presumed to be the “Teufelsküche” ("Devil’s Kitchen") Cave which was discovered and excavated in 1866, is today almost entirely buried. A number of the lithic artefacts which were found at that time date back at least to the Neolithic period or even older.
- **Status**: Cultural monument (Article 2 DSchG BW)
- **Id No.**: -
- **Date of securing/publication, in**: 28.02.1990 / Asselfingen
- **File reference**: ASSE002
- **Designation**: Teufelsküche
- **Spatial delimitation**: See area map
- **Municipal limits**: Asselfingen (8200) Property No.: 2364
- **TK25 No.**: 7427 Sontheim a.d. Brenz
- **Latitude / longitude**: 48°32’56.30” / 010°10’24.81”
- **Surface area**: 1,699 m²
### Vogelherd (Niederholz)

**Description**
In the recorded surrounding area of the Vogelherd Cave it may be assumed that there are archaeological finds and findings locations of Palaeolithic origins which are of cross-regional importance. In addition to this, there are records on the Vogelherd of the remains on the surface of iron ore mining conceivably from the La Tène period, and it may be presumed that there are further finds and findings locations present.

**Status**
Cultural monument (Article 2 DSchG BW)

**Id No.**
1A

**Date of securing/publication, in**
2010 / Asselfingen

**File reference**
STET001

**Designation**
Surrounding protection area of the Vogelherd Cave

**Spatial delimitation**
See area map

**Municipal limits**
Niederstötzingen-Stetten (2622) Property No.: 67, 220, 226, 230, 233/1, 233/2, 234, 235, 236, 237, 240, 241, 251, 257, 258, 258/1, 259, 261/1

**TK25 No.**
7427 Sontheim a.d. Brenz

**Latitude / longitude**
48°33'32.54''/ 010°11'38.61''

**Surface area**
112,387 m² / 2,789 m² in buffer zone

### Christlesbauerholz Barrow Field

**Description**
According to records by the State Office of Statistics (from about 1921), FK25 NO 0572, and in the list compendium, there is an ancient burial barrow field located on the "Christlesbauerholz" Common.

**Status**
Cultural monument (Article 2 DSchG BW)

**Id No.**
-

**Date of securing/publication, in**
06.06.1978 / Herbrechtingen-Bissingen

**File reference**
BISS004

**Designation**
Christlesbauerholz burial barrow field

**Spatial delimitation**
See area map

**Municipal limits**
Herbrechtingen-Bissingen (2586) Property No.: 2703, 2716

**TK25 No.**
7427 Sontheim a.d. Brenz

**Latitude / longitude**
48°33'22.51'' / 010°10'03.66''

**Surface area**
9,534 m² / 31,790 m² in buffer zone
Villa rustica (Roman Farmstead, “formerly the Lehenhölzle”)

| Description | A Roman farmstead with at least four buildings, one with a cellar. North-east of the complex, in a spoil tip, was a Merovingian period grave, with weapons as grave goods. |
| Status | Cultural monument (Article 2 DSchG BW) |
| Id No. | - |
| Date of securing/publication, in | 19.06.1979 / Asselfingen |
| File reference | ASSE004 |
| Designation | Asselfingen, “formerly Lehenhölzle”, Villa rustica |
| Spatial delimitation | See area map |
| Municipal limits | Asselfingen (8200) Property No.: 2367 |
| TK25 No. | 7427 Sontheim a.d. Brenz |
| Latitude / longitude | 48°32′41.18″ / 010°10′24.36″ |
| Surface area | 18,200 m² |

**Tab. 5-38** Cultural monuments in accordance with Article 2 of the Baden-Württemberg Cultural Heritage Protection Act (DSchG BW) in the nominated Lone Valley component part and in the associated buffer zone.
Fig. 5-8 Lone Valley component part (Id N°2): Cultural protection areas. World Heritage protection zone mirroring the property and the buffer zone.
Component part Lone Valley (Id N°2) - Natural monuments (Article 28 BNatSchG / Article 31 NatSchG BW)

In the Lone Valley component part there are five natural (FND) areas which, due to their particular value, are classified as natural monuments. There are no individual natural monuments (END) present.

One individual natural area in the region of the buffer zone of the Lone Valley has the status of a natural monument.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>FND - Vogelherd Cave</td>
<td>2005</td>
<td>Article 28 BNatSchG Article 31 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>FND - Kochstein</td>
<td>2005</td>
<td>Article 28 BNatSchG Article 31 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>FND – Bockstein Cave with rock formation</td>
<td>1996</td>
<td>Article 28 BNatSchG Article 31 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>FND - Rahmenstein (3 rock formations with different caves)</td>
<td>1997</td>
<td>Article 28 BNatSchG Article 31 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>FND - Hohlenstein (3 caves)</td>
<td>1997</td>
<td>Article 28 BNatSchG Article 31 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>FND – Sink hole (dolines) with approach ditches</td>
<td>1997</td>
<td>Article 28 BNatSchG Article 31 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

_Vogelherd_

**Description**
This concerns two small caves north-west of Niederstotzingen-Stetten ob Lontal, formed in the upper compacted limestone of the Upper Jura (joMo), which are only a few metres long.

**Status**
Natural monument area type (FND)

**Protection area No.**
81350270011

**Date of securing/publication, in**
10.11.2005 / no details; 23.12.2005 (in force)

**File reference**
-

**Designation**
Vogelherd

**Spatial delimitation**
See area map

**Municipal limits**
Niederstotzingen-Stetten (2622) Property No.: 233/1, 234

**TK25 No.**
7427 Sontheim a.d. Brenz

**Latitude / longitude**
48°33’33.50” / 010°11’39.85”

**Surface area**
32,600 m²
<table>
<thead>
<tr>
<th><strong>Kochstein</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Natural monument area type (FND)</td>
</tr>
<tr>
<td><strong>Protection area No.</strong></td>
<td>81350200008</td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
<td>10.11.2005 / no details; 23.12.2005 (in force)</td>
</tr>
<tr>
<td><strong>File reference</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Designation</strong></td>
<td>Kochstein</td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
<td>See area map</td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
<td>Herbrechtingen-Bissingen (2586) Property No.: 2703, 2716</td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
<td>7427 Sontheim a.d. Brenz</td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
<td>48°33'18.71'' / 010°10'52.44''</td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
<td>3,700 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Bockstein areal</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Natural monument area type (FND)</td>
</tr>
<tr>
<td><strong>Protection area No.</strong></td>
<td>84250970001</td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
<td>06.11.1996 / &quot;Heusteige&quot; notifications gazette of Asselfingen and Rammingen of 28.11.1996; 29.11.1996 (in force)</td>
</tr>
<tr>
<td><strong>File reference</strong></td>
<td>-</td>
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<tr>
<td><strong>Designation</strong></td>
<td>Bockstein Areal</td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
<td>See area map</td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
<td>Rammingen (8195) Property No.: 557</td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
<td>7427 Sontheim a.d. Brenz</td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
<td>48°33'14.62'' / 010°09'17.98''</td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
<td>10,023 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Rahmenstein (3 rock formations with different caves)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Natural monument area type (FND)</td>
</tr>
<tr>
<td><strong>Protection area No.</strong></td>
<td>84250110001</td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
<td>08.08.1997 / Notifications Gazette of Asselfingen of 20.11.1997; 21.11.1997 (in force)</td>
</tr>
<tr>
<td><strong>File reference</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Designation</strong></td>
<td>Rahmenstein (3 rock formations with different caves)</td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
<td>See area map</td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
<td>Asselfingen (8200) Property No.: 2651</td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
<td>7427 Sontheim a.d. Brenz</td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
<td>48°33'18.71'' / 010°10'58.10''</td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
<td>1,891 m²</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Natural monument area type (FND)</td>
</tr>
<tr>
<td><strong>Protection area No.</strong></td>
<td>84250110002</td>
</tr>
<tr>
<td><strong>Date of securing/publication, in</strong></td>
<td>08.08.97 / Notifications Gazette of Asselfingen of 20.11.1997</td>
</tr>
<tr>
<td><strong>File reference</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Designation</strong></td>
<td>Hohlenstein (3 caves)</td>
</tr>
<tr>
<td><strong>Spatial delimitation</strong></td>
<td>See area map</td>
</tr>
<tr>
<td><strong>Municipal limits</strong></td>
<td>Asselfingen (8200) Property No.: 2364</td>
</tr>
<tr>
<td><strong>TK25 No.</strong></td>
<td>7427 Sontheim a.d. Brenz</td>
</tr>
<tr>
<td><strong>Latitude / longitude</strong></td>
<td>48°32'57.42'' / 010°10'22.69''</td>
</tr>
<tr>
<td><strong>Surface area</strong></td>
<td>4,135 m²</td>
</tr>
</tbody>
</table>

| **Description** | - |
| **Status** | Natural monument area type (FND) |
| **Protection area No.** | 84250110003 |
| **Date of securing/publication, in** | 08.08.97 / Notifications Gazette of Asselfingen of 20.11.1997 / 21.11.1997 (in force) |
| **File reference** | - |
| **Designation** | Sink hole (dolines) with approach ditches |
| **Spatial delimitation** | See area map |
| **Municipal limits** | Municipal limits of Asselfingen (8200) Property No.: 2336 |
| **TK25 No.** | 7427 Sontheim a.d. Brenz |
| **Latitude / longitude** | 48°32'39.45'' / 010°10'25.88'' |
| **Surface area** | 1,328 m² |

**Tab. 5-40** Individual and area types of natural monuments in accordance with Article 28 of the Federal Nature Conservation Act (BNatSchG) / Article 31 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the nominated Lone Valley component part and in the associated buffer zone.
Component part Lone Valley (Id N°2) - Legally protected biotopes (Article 30 BNatSchG / Article 32 NatSchG BW) and woodland biotopes (Article 30a LWaldG BW)

Since the enactment of the Biotope Protection Law, in accordance with Article 32 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW), all registered biotopes are expressly protected. Now included in the Federal Nature Conservation Act (BNatSchG) and the Baden-Württemberg Nature Conservation Act (NatSchG BW) respectively is a catalogue of specific biotope types, which are of particularly high value, worthy of conservation, and requiring protection. In the nominated component part and in the buffer zone of the Lone Valley, there are both open ground and woodland biotopes recorded.

The woodland biotopes cited are, in addition, protected in accordance with Article 30a of the Woodland Protection Law of the State of Baden-Württemberg (LWaldG BW).

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open ground</td>
<td>1992</td>
<td>Article 30 BNatSchG</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 32 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Woodland biotope</td>
<td>1992</td>
<td>Article 30 BNatSchG</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 32 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article 30a LWaldG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Protection and management of the property

<table>
<thead>
<tr>
<th>Biotope No.</th>
<th>Biotope</th>
<th>Classification</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>174261353892</td>
<td>Sections close to nature of the Lone south-west of Bissingen</td>
<td>Open ground</td>
<td>2,081</td>
</tr>
<tr>
<td>174271353887</td>
<td>Sparse grassland residue south-east of Bissingen</td>
<td>Open ground</td>
<td>1,095</td>
</tr>
<tr>
<td>174271353888</td>
<td>Hedgerow south-east of Bissingen</td>
<td>Open ground</td>
<td>147</td>
</tr>
<tr>
<td>174271353889</td>
<td>Hedgerow in the Lone Valley south-east of Bissingen</td>
<td>Open ground</td>
<td>278</td>
</tr>
<tr>
<td>174271353890</td>
<td>Sections close to nature of the Lone south-east of Bissingen</td>
<td>Open ground</td>
<td>6,274</td>
</tr>
<tr>
<td>174271357513</td>
<td>Tree hedgerow at the roadside north-west of Stetten</td>
<td>Open ground</td>
<td>1,284</td>
</tr>
<tr>
<td>174271357514</td>
<td>Dry biotope complex around the Vogelherd Cave near Stetten o.L.</td>
<td>Open ground</td>
<td>16,583</td>
</tr>
<tr>
<td>274261350220</td>
<td>Rock formations in Reute, south-east of Hausen</td>
<td>Woodland biotope</td>
<td>1,77</td>
</tr>
<tr>
<td>274261350221</td>
<td>Sparse grassland in Buschlenberg, SW of Bissingen</td>
<td>Woodland biotope</td>
<td>3,182</td>
</tr>
<tr>
<td>274261350222</td>
<td>Woodland in Buschlenberg, south of Bissingen</td>
<td>Woodland biotope</td>
<td>78,412</td>
</tr>
<tr>
<td>274264251159</td>
<td>Dry biotope near Bockstein, NNE of Illingen</td>
<td>Woodland biotope</td>
<td>10,656</td>
</tr>
<tr>
<td>274264251160</td>
<td>Bockstein Cave/Bocksteinenschmiede, NNE of Illingen</td>
<td>Woodland biotope</td>
<td>1,107</td>
</tr>
<tr>
<td>274264251161</td>
<td>Rock formation in Bocksteinhalde, NNE of Illingen</td>
<td>Woodland biotope</td>
<td>1,215</td>
</tr>
<tr>
<td>274264251162</td>
<td>Heathland near the Bockstein, NNE of Illingen</td>
<td>Woodland biotope</td>
<td>1,149</td>
</tr>
<tr>
<td>274264251163</td>
<td>Protected woodland (Fetzershalde), NW of Lindenau</td>
<td>Woodland biotope</td>
<td>22,879</td>
</tr>
<tr>
<td>274264257617</td>
<td>Succession woodland near Bockstein NE of Illingen</td>
<td>Woodland biotope</td>
<td>209</td>
</tr>
<tr>
<td>274264257619</td>
<td>Rock formations at Fetzeralde, NW of Lindenau</td>
<td>Woodland biotope</td>
<td>284</td>
</tr>
<tr>
<td>274264257620</td>
<td>Fetzeralde Cave NW of Lindenau</td>
<td>Woodland biotope</td>
<td>26</td>
</tr>
<tr>
<td>274271350327</td>
<td>Field shrubs in Natternbühl, SE of Bissingen</td>
<td>Woodland biotope</td>
<td>1,755</td>
</tr>
<tr>
<td>274271350328</td>
<td>Sparse grassland in Natternbühl, SE of Bissingen</td>
<td>Woodland biotope</td>
<td>2,065</td>
</tr>
<tr>
<td>274271350330</td>
<td>Rock formations in Katzenloch, SE of Bissingen</td>
<td>Woodland biotope</td>
<td>6,188</td>
</tr>
<tr>
<td>274271350331</td>
<td>Rock formation in Gmeindle, south of Bissingen</td>
<td>Woodland biotope</td>
<td>2,11</td>
</tr>
<tr>
<td>274271350332</td>
<td>Succession woodland and Kochstein rock formation SW of Bissingen</td>
<td>Woodland biotope</td>
<td>3,301</td>
</tr>
<tr>
<td>274271350333</td>
<td>Field hedgerow in the Lone Valley, south of Bissingen</td>
<td>Woodland biotope</td>
<td>6,221</td>
</tr>
<tr>
<td>274271350335</td>
<td>Rock formation in Rauhb erg, NW of Stetten</td>
<td>Woodland biotope</td>
<td>691</td>
</tr>
<tr>
<td>274271350336</td>
<td>Woodland in Rauhberg, NW of Stetten</td>
<td>Woodland biotope</td>
<td>5,408</td>
</tr>
<tr>
<td>274271350337</td>
<td>Succession woodland near Vogelherd, NW of Stetten</td>
<td>Woodland biotope</td>
<td>6,931</td>
</tr>
<tr>
<td>274271350345</td>
<td>Sparse grassland in Gmeindle, south of Bissingen</td>
<td>Woodland biotope</td>
<td>5,936</td>
</tr>
<tr>
<td>274274251251</td>
<td>Rock formations NNW of Asselfingen Rahmenstein</td>
<td>Woodland biotope</td>
<td>2,051</td>
</tr>
<tr>
<td>274274251252</td>
<td>Rock face in Hintere Plätze, NNW of Asselfingen</td>
<td>Woodland biotope</td>
<td>368</td>
</tr>
<tr>
<td>274274251254</td>
<td>Woodland at the Bärenhöhle, N of Lindenau</td>
<td>Woodland biotope</td>
<td>20,598</td>
</tr>
<tr>
<td>274274251255</td>
<td>Woodland at the Fetzershalde, NNW of Lindenau</td>
<td>Woodland biotope</td>
<td>35,312</td>
</tr>
<tr>
<td>274274251261</td>
<td>Dolines near the Bärenhöhle, N of Lindenau</td>
<td>Woodland biotope</td>
<td>1,22</td>
</tr>
<tr>
<td>274274257618</td>
<td>Rock formations at the Fetzeralde, N of Lindenau</td>
<td>Woodland biotope</td>
<td>629</td>
</tr>
</tbody>
</table>

Tab. 5-42 Legally protected biotopes in accordance with Article 30 of the Federal Nature Conservation Act (BNatSchG) / Article 32 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) and woodland biotopes (Article 30a LWaldG BW) in the Lone Valley component part.
<table>
<thead>
<tr>
<th>Biotope No.</th>
<th>Biotope</th>
<th>Classification</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>174271353886</td>
<td>Field shrubs, bushland, and residual juniper heathland SE of Bissingen</td>
<td>Open ground</td>
<td>4,777</td>
</tr>
<tr>
<td>174271353887</td>
<td>Residual sparse grassland south-east of Bissingen</td>
<td>Open ground</td>
<td>67</td>
</tr>
<tr>
<td>174271353888</td>
<td>Hedgerow south-east of Bissingen</td>
<td>Open ground</td>
<td>114</td>
</tr>
<tr>
<td>174271353891</td>
<td>Field shrubs south of Bissingen</td>
<td>Open ground</td>
<td>392</td>
</tr>
<tr>
<td>174271357515</td>
<td>Dolines with residual limestone sparse grassland, north of Stetten</td>
<td>Open ground</td>
<td>235</td>
</tr>
<tr>
<td>174271357516</td>
<td>Field shrubs with residual limestone sparse grassland and hedgerow north of Stetten</td>
<td>Open ground</td>
<td>4,487</td>
</tr>
<tr>
<td>274261350217</td>
<td>Dolines in Reute, SW of Bissingen</td>
<td>Woodland biotope</td>
<td>643</td>
</tr>
<tr>
<td>274261350218</td>
<td>Dolines in Grund, SW of Bissingen</td>
<td>Woodland biotope</td>
<td>573</td>
</tr>
<tr>
<td>274261350220</td>
<td>Rock formations in Reute, SE of Hausen</td>
<td>Woodland biotope</td>
<td>121</td>
</tr>
<tr>
<td>274261350222</td>
<td>Woodland in Buschlenberg, south of Bissingen</td>
<td>Woodland biotope</td>
<td>3,336</td>
</tr>
<tr>
<td>274261350223</td>
<td>Dolines in Büschelberg, SW of Bissingen</td>
<td>Woodland biotope</td>
<td>472</td>
</tr>
<tr>
<td>274264251162</td>
<td>Heathland near Bockstein, NNE of Öllingen</td>
<td>Woodland biotope</td>
<td>14,454</td>
</tr>
<tr>
<td>274264251163</td>
<td>Protected woodland (Fetzershalde), NW of Lindenau</td>
<td>Woodland biotope</td>
<td>338</td>
</tr>
<tr>
<td>274264251241</td>
<td>Dolines in the Grubenhau, NW of Lindenau</td>
<td>Woodland biotope</td>
<td>437</td>
</tr>
<tr>
<td>274264257617</td>
<td>Succession woodland near Bockstein, NE of Öllingen</td>
<td>Woodland biotope</td>
<td>10,225</td>
</tr>
<tr>
<td>274271350326</td>
<td>Rock formations in Niederfeld, NW of Stetten</td>
<td>Woodland biotope</td>
<td>1,064</td>
</tr>
<tr>
<td>274271350327</td>
<td>Field shrubs in Natternbühl, SE of Bissingen</td>
<td>Woodland biotope</td>
<td>6,535</td>
</tr>
<tr>
<td>274271350329</td>
<td>Succession woodland at Schlangenbg. SE Bissingen</td>
<td>Woodland biotope</td>
<td>28,408</td>
</tr>
<tr>
<td>274274251251</td>
<td>Rock formations, NNW of Asselfingen Rahmenstein</td>
<td>Woodland biotope</td>
<td>292</td>
</tr>
<tr>
<td>274274251253</td>
<td>Dolines in Hintere Plätze, NNW of Asselfingen</td>
<td>Woodland biotope</td>
<td>649</td>
</tr>
<tr>
<td>274274251254</td>
<td>Woodland near the Bärenhöhle, N of Lindenau</td>
<td>Woodland biotope</td>
<td>3,773</td>
</tr>
<tr>
<td>274274251261</td>
<td>Dolines near the Bärenhöhle, N of Lindenau</td>
<td>Woodland biotope</td>
<td>196</td>
</tr>
<tr>
<td>274274251262</td>
<td>Dolines in Frauenholz, NNE of Lindenau</td>
<td>Woodland biotope</td>
<td>1,521</td>
</tr>
<tr>
<td>274274251263</td>
<td>Dolines near Römerkastell, NNE of Lindenau</td>
<td>Woodland biotope</td>
<td>2,35</td>
</tr>
<tr>
<td>274274251264</td>
<td>Dolines in Frauenholz, NW of Asselfingen</td>
<td>Woodland biotope</td>
<td>2,356</td>
</tr>
<tr>
<td>274274251265</td>
<td>Dolines in Donnhau, NNW of Asselfingen</td>
<td>Woodland biotope</td>
<td>1,437</td>
</tr>
</tbody>
</table>

Tab. 5-43 Legally protected biotopes in accordance with Article 30 of the Federal Nature Conservation Act (BNatSchG) / Article 32 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) and woodland biotopes (Article 30a LWaldG BW) in the area of the buffer zone of the Lone Valley.
Component part Lone Valley (Id N°2) - Woodland protection areas (Article 32 LWaldG BW)

Located in the Lone Valley component part is the “Schonwald Frauenholz” woodland protection area, which is protected in accordance with Article 32 of the Woodland Law of the State of Baden-Württemberg (LWaldG BW).

Located in the area of the buffer zone are the woodland protection areas of “Schonwald Frauenholz” and “Bannwald Grubenhau”. The ordinance relating to the “Schonwald Frauenholz” was implemented on 9 December 1974 (last amendment on 30 July 2003), and that for the “Bannwald Grubenhau” on 27 January 1970 (last amendment 8 October 2004).

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodland protection area, Schonwald Frauenholz</td>
<td>1974</td>
<td>Article 32 LWaldG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Woodland protection area, Bannwald Grubenhau</td>
<td>1970</td>
<td>Article 32 LWaldG BW</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Tab. 5-44 Legislative act and year of the ordinance relating to woodland protection areas in the Lone Valley component part and the associated buffer zone (LWaldG BW = Woodland Protection Law of the State of Baden Württemberg).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>989008000029</td>
<td>Frauenholz</td>
<td>Schonwald</td>
<td>177,302</td>
</tr>
</tbody>
</table>

Tab. 5-45 Woodland protection areas in accordance with Article 32 of the woodland Law of the State of Baden-Württemberg (LWaldG BW) in the Lone Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>989008000029</td>
<td>Frauenholz</td>
<td>13,008</td>
</tr>
<tr>
<td>989007000039</td>
<td>Grubenhau</td>
<td>946</td>
</tr>
</tbody>
</table>

Tab. 5-46 Woodland protection areas in accordance with Article 32 woodland Law of the State of Baden-Württemberg (LWaldG BW) in the region of the buffer zone of the Lone Valley.
Fig. 5-9 Lone Valley component part (Id N°2): Natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.
Component part Lone Valley (Id N°2) - Landscape protection area (Article 29 NatSchG BW)

The Lone Valley component part, as well as large parts of the associated buffer zone, are protected by way of the ordinance relating to the “Middle Lone Valley” landscape protection area of 2 March 1989, and to the “Lone and Hürbetal” landscape protection area of 24 September 1990.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape protection area, Middle Lone Valley</td>
<td>1989</td>
<td>Article 26 BNatSchG / Article 29 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Landscape protection area, Lone Valley and Hürbe Valley</td>
<td>1990</td>
<td>Article 26 BNatSchG / Article 29 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

**Tab. 5-47** Legislative act and year of the ordinance relating to the landscape protection areas in the Lone Valley component part and its associated buffer zone (BNatSchG = Federal Nature Conservation Act, NatSchG BW = Baden-Württemberg Nature Conservation Act).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Protection area name</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4259003000052</td>
<td>Middle Lone Valley</td>
<td>654,236</td>
</tr>
<tr>
<td>1359003000023</td>
<td>Lone Valley and Hürbe Valley</td>
<td>1,135,626</td>
</tr>
</tbody>
</table>

**Tab. 5-48** Landscape protection area in accordance with Article 26 of the Federal Nature Conservation Act (BNatSchG) / Article 29 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the Lone Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Protection area name</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4259003000052</td>
<td>Middle Lone Valley</td>
<td>1,383,813</td>
</tr>
<tr>
<td>1359003000023</td>
<td>Lone Valley and Hürbe Valley</td>
<td>1,184,405</td>
</tr>
</tbody>
</table>

**Tab. 5-49** Landscape protection area in accordance with Article 29 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the region of the buffer zone of the Lone Valley.
Component part Lone Valley (Id N°2) - Natura 2000 (Article 32 BNatSchG / Article 36 NatSchG BW)

A protection area designated as Natura 2000 extends over the region of the Lone Valley component part and the associated buffer zone. The “Hungerbrunnen, Sacken, and Lone Valley” has been designated as an Flora-Fauna Habitat area in accordance with Article 32 Federal Nature Conservation Act (BNatSchG) / Article 36 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW).

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
<th>Property</th>
<th>Buffer zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natura 2000 (FFH), Hungerbrunnen, Sacken, and Lone Valley region</td>
<td>2005</td>
<td>Article 32 BNatSchG Article 36 NatSchG BW</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

**Tab. 5-50** Legislative act and year of the ordinance of Natura 2000 (FFH area) in the Lone Valley component part and the associated buffer zone (BNatSchG = Federal Nature Conservation Act, NatSchG BW = Baden-Württemberg Nature Conservation Act).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8090260000065</td>
<td>Hungerbrunnen, Sacken and Lone Valley FFH area</td>
<td></td>
<td>166,669</td>
</tr>
</tbody>
</table>

**Tab. 5-51** Natura 2000 (FFH area) in accordance with Article 32 of the Federal Nature Conservation Act (BNatSchG) / Article 36 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the Lone Valley component part.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Protection status</th>
<th>Surface area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8090260000065</td>
<td>Hungerbrunnen, Sacken and Lone Valley FFH area</td>
<td></td>
<td>7,455</td>
</tr>
</tbody>
</table>

**Tab. 5-52** Natura 2000 (FFH area) in accordance with Article 32 of the Federal Nature Conservation Act (BNatSchG) / Article 36 of the Nature Conservation Act of Baden-Württemberg (NatSchG BW) in the region of the buffer zone of the Lone Valley.
**Fig. 5-10** Lone Valley component part (id N°2): Further natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.
5.c Means of implementing protective measures

The legal protection of the components of the serial nomination “Caves with the oldest Ice Age art” is submitted to the national and regional (Länder) legislations of Germany as well as to a number of international conventions. The legal protective designation guarantees adequate protection of the nominated property and of its corresponding buffer zone. The following sections give an overview of the legal protective designation that applies to protect the “Caves with the oldest Ice Age art” and explain its effects.

Monument protection

International conventions

The legal protection of the component parts of the serial nomination „Caves with the oldest Ice Age art“ is submitted to a number of international conventions. Some concern the protection of archaeological heritage in general terms (Valletta Convention 1992; The Hague Convention 1954). Others imply the prevention of illicit transfer of cultural property (UNESCO 1970). All these conventions back up the German national legislation, which is the basic element of heritage management.

Valletta Convention (1992)

The Valletta Convention ensures that all signatory countries apply protection measures (conservation, excavation, financing and information policies, etc.) for their archaeological heritage. It takes over and develops the recommendations issued in the European Convention on the Protection of the Archaeological Heritage (London 1969). It is for each Government to apply the European Convention on the Protection of the Archaeological Heritage in ways that fit in with national practice and legislation.


The Hague Convention (1954)

The Convention for the Protection of Cultural Property in the Event of Armed Conflict (The Hague 1954) assures the protection of cultural heritage in case of armed conflict and catastrophes. It implies in particular an inventory of all sites needed to be protected.

In order to prevent the misuse of this instrument of protection, the Standing Conference of the Ministers of Education and Cultural Affairs of the Federal States, by its decision of 26 June 1998, set maximum limits for the number of cultural items to be recognised per Federal State within Germany. For Baden-Württemberg, the
number of possible monuments with particular historical and cultural value is set at 1360. A corresponding list was drawn up in May 1984. All 1360 possible places were taken by this time, and since then the list has remained unchanged. At that time, the “Vogelherd Inhabited Cave” in the Lone Valley and the “Geißenklösterle Inhabited Cave” in the Ach Valley were identified as being worthy of protection. The “Hague Convention” was ratified by the Federal Republic of Germany in 1967.

**World Heritage Convention (1972)**

The UNESCO Recommendation concerning the Protection, at National Level, of the Cultural and Natural Heritage (Paris, 1972) proposes that each State Party should formulate, develop and apply as far as possible and in conformity with their jurisdictional and legislative requirements, a policy whose principal aim should be to co-ordinate and make use of all scientific, technical, cultural and other resources available to secure the effective protection, conservation and presentation of the cultural and natural heritage.

The Federal Republic of Germany undertook the commitment, in accordance with the ratification of the World Heritage Convention (1972), on 23 August 1976, to protect and keep safe the sites on the World Heritage List.

**UNESCO 1970 Convention**

With the UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (UNESCO Convention 1970) also called the UNESCO 1970 Convention, the State Parties announce as illicit the import, export and transfer of ownership of cultural property in a contrary way to the provisions adopted by this Convention. The State Parties must undertake to oppose such practices with the means at their disposal, and particularly by removing their causes, putting a stop to current practices, and by helping to make the necessary reparations.

On 18 May 2007, the Law relating to the Reparation of Cultural Property (KultGüRückG) was adopted by the German Bundestag, for the implementation of the Convention. The Federal Republic of Germany ratified the “UNESCO Convention against illegal dealings with cultural property” on 30 November 2007.

**International Charters**

**Venice Charter (1964)**

In the Venice Charter the term “Monument” was defined at the international level. In this context, it was determined in the international framework which aims the care of monuments should have in future in respect of conservation, restoration, excavation, documentation, and publication. The Venice Charter is founded on the basic principles of monument conservation and care of the Athens Charter (1931) and the New Delhi Recommendation (1956).
Means of implementing protective measures

Lausanne Charter (1990)

The Charter drawn up by the ICOMOS General Assembly in Lausanne accords with the criteria and procedures of the Venice Charter (1964), but relates in particular to the protection and care of archaeological heritage. Set forth in the Charter were the principles regarding different aspects of dealing with archaeological monuments.

International recommendations

New Delhi Recommendation (1956)

The UNESCO Recommendation on International Principles Applicable to Archaeological Excavations (New Delhi 1956) is a document setting recommendations for the protection of archaeological heritage on an international level and sets regulations for the implementation of archaeological excavations.

### Table 5-53

<table>
<thead>
<tr>
<th>Legal instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Cultural Convention CETS No.: 018, Paris, 19 December 1954</td>
</tr>
<tr>
<td>UNESCO Convention concerning the Protection of World Cultural and Natural Heritage, Paris, 16 November 1972</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratified / signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
</tr>
<tr>
<td>1967</td>
</tr>
<tr>
<td>1975</td>
</tr>
<tr>
<td>1976</td>
</tr>
<tr>
<td>2002</td>
</tr>
<tr>
<td>2007</td>
</tr>
<tr>
<td>2009</td>
</tr>
</tbody>
</table>

Tab. 5-53 Conventions ratified by Germany for the protection of archaeological cultural property.

### Table 5-54

<table>
<thead>
<tr>
<th>Charters</th>
</tr>
</thead>
<tbody>
<tr>
<td>International charter for the conservation and restoration of monuments and sites (The Venice Charter)</td>
</tr>
<tr>
<td>Charter for the protection and management of the archaeological heritage (The Lausanne Charter)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Announcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
</tr>
<tr>
<td>1990</td>
</tr>
</tbody>
</table>

Tab. 5-54 International charters for the protection of cultural heritage and archaeological sites.

Lausanne Charter (1990)

The Charter drawn up by the ICOMOS General Assembly in Lausanne accords with the criteria and procedures of the Venice Charter (1964), but relates in particular to the protection and care of archaeological heritage. Set forth in the Charter were the principles regarding different aspects of dealing with archaeological monuments.
**UNIDROIT Convention (1995)**

The UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects (Rome 1995) aims more particularly at the restitution of stolen or illegally exported cultural heritage.

**National protection - cultural heritage and federal legislation**

**Protection of cultural heritage as the responsibility of the federal states**

Germany is a federal republic. According to the constitution of the Federal Republic of Germany, the individual states are responsible for the care and preservation of their respective cultural monuments. The protection of historical and cultural monuments is anchored in the individual constitutions of the 16 federal states. The “Caves with the oldest Ice Age art” are located in the Swabian Jura in the Federal State of Baden-Württemberg. Accordingly, the respective state laws are therefore authoritative.

**Protection of cultural heritage and federal legislation**

The care and preservation of ancient monuments as matters of public interest are anchored in a number of federal laws. Among these are federal railway laws (Railway Rearrangement Act [Eisenbahnneuordnungsgesetz, ENeuOG], in particular Article 5 of this law, and the General Railway Law [Allgemeines Eisenbahngesetz, AEG]); further, the Federal Building Code (Baugesetzbuch, BauGB), the Federal Mining Act (Bundesberggesetz, BBergG), the Federal Spatial Planning Act (Raumordnungsgesetz, ROG), the Federal Environmental Impact Assessment Act (Umweltverträglichkeitsprüfungsgesetz, UVPG), the Federal Nature Conservation Act (BNatSchG), the Federal Forest Act (Bundeswaldgesetz, BWaldG), the Act to Protect German Cultural Property against Removal (Gesetz zum Schutz des deutschen Kulturgutes gegen Abwanderung, KultgSchG) and the Federal Soil Protection Act (Bundesbodenschutzgesetz, BBodSchG).

Monument conservation interests are not only legally binding when a construction permit-application touches monument protection laws alone, but also when the statutory provisions defined in other federal or state laws are affected. In this respect, all the individual state laws for the protection of cultural heritage have similar provisions, calling for the approval of the appropriate cultural heritage protection authority for a project to proceed. The regulatory authority responsible for issuing the permit makes sure that the cultural heritage protection authority is heard.

Of particular significance for the protection of cultural heritage are Article 4 BauGB and Article 1 paragraph 6, No. 1 BauGB and the related amendments of Article 2 UVPG. According to Article 4 BauGB, monument protection authorities have to be included during the deployment of land-use plans as public agencies. It is further stated in Article 1 paragraph 6, No. 1 BauGB that during deployment of the urban land-use plans, notably the following interests should be taken into consideration regarding structures that are worthy of preserva-
Means of implementing protective measures

tion: building culture, protection of cultural monuments and cultural heritage, valued city districts, streets and squares that are of historical, artistic or municipal building significance, and formation of the village and landscape-impression.

On completion of the procedure for the deployment of the urban land-use plan, the authorities inform the municipalities, provided that, from the evidence available, the implementation of the land-use plan has in particular negative effects on the environment.

According to Article 2 UVPG an environmental impact assessment includes the inspection, description and evaluation of all direct and indirect effects of a procedure on humans, including human health, animals, plants and the biological diversity, soil, water, air, climate and landscape, cultural assets and other material goods as well as the interaction of the aforementioned protected goods. Thus, according to Article 21 paragraph 1a UVPG an approval decision of the planning can only be issued, if it can be assured that the public interest is not concerned, and in particular that the dangers for the protected goods, mentioned in Article 2 paragraph 1 Sentence 2 UVPG, cannot be caused.

Accordingly, under Article 21, paragraph 1a UVPG, a decision to adopt a plan may only proceed if it is assured that the welfare of the general public will not be prejudiced, and in particular will not incur any risks to the protected items cited under Article 2, paragraph 1, clause 2 UVPG.

Additionally, pursuant Article 1a paragraphs 2 and 3 BauGB, reasons must be given for the necessity of the conversion of areas used for agricultural purposes or as woodland, and any substantial detriments to the appearance of the landscape or to the creative and functional capacity of the balance of nature must be avoided. This is of significance, inasmuch as the whole of the nominated component part of the Lone Valley, large areas of the nominated component part of the Ach Valley, and large parts of the buffer zones are used for agricultural and forestry purposes.

<table>
<thead>
<tr>
<th>Legal instrument</th>
<th>Announced (as amended)</th>
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<tbody>
<tr>
<td>Railway Rearrangement Act (ENeuOG); Art. 5 (AEG)</td>
<td>1993 (2006)</td>
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<tr>
<td>Federal Building Code (BauGB)</td>
<td>1987 (2014)</td>
</tr>
<tr>
<td>Federal Mining Act (BBergG)</td>
<td>1980 (2009)</td>
</tr>
<tr>
<td>Federal Nature Conservation Act (BNatSchG)</td>
<td>2009</td>
</tr>
<tr>
<td>Federal Forest Act (BWaldG)</td>
<td>1975 (2010)</td>
</tr>
<tr>
<td>Act to Protect German Cultural Property against Removal (KultgSchG)</td>
<td>1999 (2007)</td>
</tr>
</tbody>
</table>

Tab. 5-55 Laws in Germany addressing the protection and security of cultural heritage.
Protection and management of the property

The history of cultural heritage protection legislation in Germany

The first law on cultural heritage protection was passed in Baden. The Cultural Heritage Protection Act of Baden from 12 July 1949 served as an example for other federal states. With two exceptions, the Acts were passed in the original federal States in the 1970s. Since then some of them have been changed often and sometimes radically. The laws in the ‘new’ federal States were all formulated in the 1990s after the reunification of Germany. Meanwhile, some of them have undergone multiple changes. The aim of ‘modern’ cultural heritage protection laws is to provide for the preservation, protection, maintenance and study of the monuments. In the case of archaeological monuments the aim is to leave them untouched in the soil, excavation being a form of destruction. This intention goes beyond earlier policies such as the Prussian Excavation Act of 1914, which, until the introduction of the individual State laws, regulated the modalities of excavations deemed as unavoidable within the area previously under Prussian rule.

Regional protection - primary protection mechanisms

Cultural Heritage Protection Act of Baden-Württemberg (Baden-Württemberg Monument Protection Law – DSchG BW) - executive summary

It was specified in Article 3c of the Constitution of the Federal State of Baden-Württemberg, in the version of 11 November 1953, that “the landscape and the monuments of art, history, and nature [...] should [enjoy] the protection and care of the State and the Municipalities.”

The legal basis for Baden-Württemberg is the Cultural Heritage Protection Act (Denkmalschutzgesetz Baden-Württemberg, DSchG BW) which was passed on 1 January 1972. It obliges all owners of ancient and historical monuments, whether they be private individuals, the church, a municipality or the State itself to ‘preserve and maintain (the monument) as far as is just and reasonable’ (Article 6 DSchG BW).

Objects, ensembles, and parts of objects – including archaeological sites – the preservation of which is deemed, for scientific, artistic or regional historical reasons, to be in the public interest are defined as cultural monuments (Article 2 DSchG BW). The task of protecting, maintaining and especially monitoring these cultural monuments as well as prevention of damage and the rescue and salvage thereof is the duty of the cultural heritage authority (Article 1 DSchG BW). A cultural monument may only be destroyed or eliminated, compromised in its appearance or removed from its vicinity with the permission of the cultural heritage protection authority (Article 8 DSchG BW). Also, research at cultural heritage sites, especially excavations with the aim to discover new sites, may only be conducted with the permission of the State Office for Cultural Heritage in accordance with the senior monument protection authority (Article 21 DSchG BW).
Cultural monuments of particular importance enjoy additional protection through appearance on the cultural monuments list ("Denkmalbuch", Article 12 DSchG BW). The senior monument protection authority is responsible for adding or deleting a monument from the list (Article 13 DSchG BW). Excavation protection areas can be permanently protected against any disturbance (areas in which monuments of particular importance may be reasonably presumed, Article 22 DSchG BW). The assent of the cultural heritage authority is obligatory for work in such an area.

The “Caves with the oldest Ice Age art” enjoy multiple protection by way of the Cultural Heritage Protection Act. While the caves themselves are recorded as cultural monuments of particular importance on the cultural monuments list (Article 12 DSchG BW), the Lone and Ach Valley component parts are excavation protection areas in which monuments of particular importance may be reasonably presumed (Article 22 DSchG BW). As well as this, the property and buffer zones are cultural monuments in accordance with Article 2 DSchG BW.

Protection of nature

International conservation of nature

The archaeological sites in the nominated serial property are protected not only by cultural monument legislation but also by environmental protection laws (areas of natural beauty, landscape conservation areas, flora and fauna habitat protection, bird reserves).

Natura 2000

The European Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, known as the ‘Habitats Directive’ respectively ‘FFH-Directive’ (Fauna, Flora and Habitats), which, together with Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (this is the codified version of Directive 79/409/EEC as amended), form the cornerstone of the European Ecological Network ‘Natura 2000’. ‘Natura 2000’ is a network of numerous wildlife reserves within the European Union that are protected by coherent standards. It includes Special Areas of Conservation (SACs) designated by member States under the Habitats Directive, and bird sanctuaries, or Special Protection Areas (SPAs). Protection of ‘Natura 2000’ sites is more precisely defined in Article 6, Paragraph 1 and 2 of Council Directive 92/43/EEC, and Article 3 of Directive 2009/147/EC. According to these articles, member states are obligated to take appropriate steps to preserve and protect the SACs and the SPAs as well as to initiate measures to reinstall the balance of the ecological systems, where necessary.
The basis for the safeguarding of FFH areas are management plans and care and development plans respectively. Within the framework of these specific plans, which are binding on the authorities, *inter alia* the presence of habitat types and forms under the FFH Directive are acquired and assessed, and specific aims and measures determined for their care and development.


FFH areas extend over parts of the property (see Chapter 5.b).

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<tr>
<th>Legal instrument</th>
<th>Announced (as amended)</th>
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<tr>
<td>92/43/EEC (FFH-Directive)</td>
<td>1992</td>
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*Tab. 5-56* European Directives for the protection and safeguarding of nature conservation areas.

**International recommendations for nature conservation**

*European Landscape Convention (2000)*

The aim of the agreement within the European Landscape Convention is to implement directives and measures at the local, regional, national and international level with regard to the protection, management, and planning of landscapes in the whole of Europe.

**Regional protection - conservation of nature**

*Baden-Württemberg Nature Conservation Act (Naturschutzgesetz Baden-Württemberg - NatSchG BW).*

As with legislation relating to the cultural heritage protection, the individual Federal States are responsible for the designation of nature protection areas, national parks, biosphere reserve areas, landscape protection areas, nature parks, natural monuments, and protected landscape constituent parts. In addition to this, the Federal States are required, in accordance with Article 20, Paragraph 1 (see Chapter 7.b), of the Federal Nature Conservation Act (BNatSchG), to create a composite of biotopes which comprises at least 10% of their State surface area.
The Nature Conservation Act of the Federal State of Baden-Württemberg (NatSchG BW) offers additional protection to the cultural monuments within the nominated property. For example, the caves, and also the landscape surrounding them, fall in large part under the Nature Conservation Act. Specific sections of the nominated component parts are registered as nature protection areas, protected biotopes, landscape protection areas, flora-fauna-habitat (Natura 2000), biosphere reserve areas, geotopes and geoparks.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Announcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation on International Principles Applicable to Archaeological Excavations, New Delhi</td>
<td>1956</td>
</tr>
<tr>
<td>UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects, Rome</td>
<td>1995</td>
</tr>
<tr>
<td>European Landscape Convention CETS No.: 176, Florence</td>
<td>2000</td>
</tr>
</tbody>
</table>

Tab. 5-57 UNESCO Recommendations.

**Nature protection areas (NSG), area type and individual natural monuments (FND / END)**

Areas in which particular protection is considered necessary for nature and landscape, for scientific, natural historical, or social historical reasons, in order to preserve, develop, or restore habitats, communities, or biotopes of specific wild types of animals and plants, are safeguarded as nature protection areas.

In accordance with Article 23 of the Federal Nature Conservation Act (BNatSchG), nature protection areas may also be designated due to the rarity, particular uniqueness, or outstanding beauty of nature and landscape.

As well as designated regions, individual (END) or area type (FND) natural monuments are also to be understood as protected regions. Natural monuments are individual creations of nature designated with legally-binding effect (e.g. valuable trees, rock formations, caves) or corresponding surface areas of up to five hectares in extent, which require particular protection for scientific, natural historical, or social historical reasons, or due to their rarity, uniqueness, or beauty (just as in Article 28 of the Federal Nature Conservation Act, BNatSchG). “The removal of the natural monument, and any actions which could lead to the destruction, damage, or change to the natural monument, are prohibited, in line with more detailed provisions.”

In addition to this, the areas referred to as geotopes are also protected as natural monuments. According to the definition provided by the Geological Services of the Federal States, geotopes are natural historical formations of inanimate nature, which provide information about the development of planet earth and/or of life. They include outcrops of rock, soils, minerals, and fossils (petrified lifeforms), as well as individual natural creations and natural landscape components.
The legal basis for the designation are, according to Article 2, Paragraph 2, Item 2 of the Federal Soil Protection Act (BBodSchG), the functions of soils as an archive of natural and cultural history, as well as the provisions relating to natural monuments in the Federal Nature Conservation Act (Article 28 BNatSchG) and in the Baden-Württemberg Nature Conservation Act (Article 31 NatSchG BW).

All six of the archaeological cave sites of both the nominated component part regions are designated as individual natural monuments.

Protected biotopes

Since 1992 certain specific biotope types have been expressly protected by Article 32 (formerly Article 24a) of the Baden-Württemberg Nature Conservation Act (NatSchG BW) and Article 30 of the Federal Nature Conservation Act. According to this, all actions are prohibited which could lead to the destruction or to substantial or sustained impairment of the particularly protected biotopes. The status of protected biotope is comparable to that of a nature protection area or natural monument. In addition to this, woodland biotopes are also placed under protection in accordance with Article 30a of the State Forest Act of the Federal State of Baden-Württemberg (LWaldG BW). A part of the nominated property and of its buffer zones have been registered as protected biotopes.

Fig. 5-11 Signs informing visitors at the entrance of Hohle Fels about the natural protection status of the cave.
Means of implementing protective measures

Fig. 5-12 Signs informing visitors at the Geißenklösterle about the natural protected area. Translation: Prohibition order to enter and climb. Throughout the year, for the protection of rare animals and plant species, it is prohibited to enter or climb the rock formation (District administration Alb-Donau - Lower Nature Protection Authority).
Woodland protection area (protected and protection woodland)

A large part of the nominated property and of its buffer zones consists of woodland areas (see Chapter 5.b). According to Article 11, Paragraph 2, Item 1 of the Federal Forest Act (BWaldG), in its new version of 31 July 2010, appropriate account of the function of the woodland as an archive of natural and cultural history is to be taken in the management of the woodland.

In accordance with Article 9 of the State Forest Act of the Federal State of Baden-Württemberg (LWald BW), woodland “may only be transformed into another type of use with the approval of the senior forestry authority.” “When taking the decision in respect of an application for change of use, the rights, obligations, and economic interests of the owners of the woodland and the interests of the general public are to be weighed against one another. Approval should be withheld if the change of use is not compatible with the aims of spatial order and rural planning, or if the conservation of the woodland is overwhelmingly in the public interest, in particular if the woodland is of major significance to the performance capacity of the balance of nature, forestry production, or the recreation of the general public.”

Moreover, some areas of the nominated component parts are subject to the particular protection of a woodland protection area (see Chapter 5.b), as defined in Article 32 of the State Forest Act of the Federal State of Baden-Württemberg (LWaldG BW). Woodland protection areas include, inter alia, protected and protection woodlands. Protected woodlands are total reserves, which are left to themselves, and no forestry management is undertaken there. A protection woodland is a woodland reserve in which a specific woodland community, with its types of animals and plants, a specific stock, or a specific woodland biotope is to be conserved, developed, or renewed.

Landscape protection areas (LSG)

Landscape protection areas are designated in order to conserve the variety, uniqueness, and beauty of the landscape. They further serve to conserve, develop, or restore the performance or function capacity of the natural balance, and to conserve or improve the utilisation capacity of the natural resources.

The greatest part of the nominated component parts and the associated buffer zones lie in landscape protection areas. These are defined by Article 26 of the Federal Nature Conservation Act (BNatSchG).

UNESCO Biosphere Reserve Area Swabian Alb

In Baden-Württemberg, parts of the Swabian Jura are designated by statutory ordinance of 31 January 2008 as Biosphere Reserve Areas (VO Biosphere Reserve Area). Recognition as UNESCO Biosphere Reserve Area was effected in 2009.

Biosphere Reserve Areas are localities which are designated with legally-binding effect as zones which are unitarily to be protected and developed, which:
1. are of substantial size and characteristic of specific landscape types,
2. in substantial part fulfill the preconditions of a nature protection area, and otherwise predominantly of a landscape protection area,
3. serve predominantly the conservation, development, or restoration of a landscape which has been shaped by previous versatile usage, and the wide variety of types and biotopes which have historically grown in it, including wild and earlier cultivated forms of economically used or usable types of animals and plants,
4. serve as good examples of the development and testing of particularly sensitive forms of management of the natural resources, and
5. serve the purposes of environmental training and Education for Sustainable Development (ESD), ecological research, and long-term environment observation.

Biosphere Reserve Areas are declared by statutory ordinance, and are to be classified and developed, by taking account of the exceptions incurred by the spatial extent and settlement, as core, care, and development zones. Areas of the nominated component parts of the Ach Valley lie within the Biosphere Reserve Area Swabian Alb.

<table>
<thead>
<tr>
<th>Legal instrument</th>
<th>Announced (as amended)</th>
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<tbody>
<tr>
<td>Art. 3c (2) of the Constitution of the Federal State of Baden-Württemberg (BWVerf)</td>
<td>1953 (2011)</td>
</tr>
<tr>
<td>Ordinance by the Ministry of Food and Rural Affairs on the Biosphere Reserve Area Swabian Alb (VO-Biosphärengebiet / VO Biosphere Reserve Area)</td>
<td>2008</td>
</tr>
<tr>
<td>Ordinance by the Ministry of Food and Rural Affairs relating to the designation of European Bird Protection Areas, (VSG-VO) with Annex 1</td>
<td>2010</td>
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</table>

**Tab. 5-58** Federal State laws and ordinances adopted in the Federal State of Baden-Württemberg which contribute to the protection and safeguarding of archaeological cultural monuments.
5.d Existing plans related to municipality and region in which the proposed property is located

The nominated property of “Caves with the oldest Ice Age art” is embedded in a versatile natural landscape. Besides legislation relating to the preservation of monuments, mechanisms of protection of nature contribute to the preservation of the property. Appropriate plans for the protection of nature and research have been presented over the past few years, and will be extended further in the future. In addition to this, there exist a number of regional plans for the enhancement of the protection of nature, to strengthen structurally weak regions, and to pursue archaeological research. These plans provide not only protection of natural, but also of cultural monuments in the property. The property and its special touristic features will be promoted and marketed by different regional and cross-regional tourism associations. All representatives of touristic interests are networked within the Coordination Group “Tourism”, and act in harmony with the State Office for Cultural Heritage Baden-Württemberg.

Political support

On 7 February 2012 the Council of Ministers of the Federal State of Baden-Württemberg adopted the Cabinet decision to prepare the application for the inscription of the “Caves with the oldest Ice Age art” on the UNESCO World Cultural Heritage list. This demonstrates that this present nomination of the property in Baden-Württemberg is supported and accorded priority at the highest political level (Chapter 7.b).

Within the first few months of 2013, the municipal councils of the seven communities affected, Blaubeuren, Schelklingen, Asselfingen, Rammingen, Öllingen, Niederstotzingen and Herbrechtingen, also agreed by overwhelming majorities, in part even unanimously, to support the application for the adoption of the “Caves with the oldest Ice Age art” on the UNESCO World Cultural Heritage list. This shows that at the community level too, this nomination has met with the broadest approval (Chapter 7.b). In addition, the management plan for the nominated property has been approved by all affected communities.

Regional plans

Regional plan of the Donau-Iller Regional Association

Cultural heritage protection and conservation has also been taken into account regional planning (Point 2.1). In particular, in the regional plan of the Donau-Iller Regional Association (1987), to which the nominated component part of the Ach Valley and parts of the component part of the Lone Valley belong, provision is made under Point 2.1.4 for the archaeological cultural heritage items found
within the region to be protected and conserved. As well as this, the regional plan of the Donau-Ille Regional Association also takes account of the interests of landscape and nature conservation. By way of example, it has been determined that the landscape structure which still remains close to nature in the valleys of the Danube and Iller rivers and their tributaries should be safeguarded and secured. Also of significance is the fact that hillside slopes, including the slope edges, should be kept free of building construction (B1 Point 1.3). This means that Palaeolithic sites are better protected, since there is a greater likelihood of caves being encountered in slope areas. In the regional plan, too, selected areas in the Baden-Württemberg part of the region are represented in which the requirements for nature protection and landscape conservation are accorded particular importance. These include, among others, the Lone Valley and Hürbe Valley, the Blau Valley and lateral branch valleys, as well as rock formations in general (B1 Point 2.1). The regional plan of the Donau-Ille Regional Association also seeks to establish a clear distinction between areas with building construc-
tion and those without (B1 Point 4.4). The intention is that settlement activity in the entire area of the Donau-Iller Regional Association should take place within the framework of an organic development of the municipalities (B2 Point 1.1.1). It is intended that any risk of spoiling of the landscape should be prevented. Parts of the landscape which are particularly exposed as well as being visually striking, such as ridges and domes, which determine the shape of the landscape, and the slopes of the river valleys which lend the landscape of the region its particular character, should fundamentally be kept free of building expansion (B2 Point 1.4). Thanks to this planning, the risk of excess building construction and the destruction of archaeological cultural heritage will be greatly reduced.

East Württemberg Regional Plan

The regional plan for East Württemberg too, in the coverage of which, among other features, the area of the nominated component part of the Lone Valley is located, also specifies that untouched areas which require protection will remain unspoilt. Cultural heritage protection and the conservation of nature go hand in hand in this situation. By way of example, the regional planning represents landscape environments as being in need of protection which, due to their uniqueness and variety as landscapes as well as their natural beauty and their resource of cultural heritage items of outstanding quality (both structural and archaeological cultural heritage monuments), are particularly well-suited to restoration to a status close to nature. These landscape environments are in harmony with the requirements of agriculture and forestry, as well as safeguarding other landscape functions, such as those of cultural heritage protection, of conservation of nature and of landscape, and of biotope protection for peaceful landscape-related recovery. Interventions, such as the building of settlements and infrastructure undertakings, which would impair the suitability of the landscape for recovery, are to be avoided (Point 3.2.4.1).

Conservation of nature and safeguarding of the landscape are given particular consideration in the regional planning of the East Württemberg Regional Association. Areas which require protection in terms of nature conservation and safeguarding of the landscape supplement the network of already existing areas of protection for nature and the landscape, as well as natural monuments which cover substantial surface areas and protected biotopes. They should in particular fulfil the conditions with regard to the landscape for the continued existence of the wide variety of species of both our flora and fauna, and at the same time serve to retain the function of the soil as a repository for the natural vegetation and as a record for the history of the landscape. By conservation and careful sustaining of the natural conditions of the landscape and its unique features such as valley wetlands, marshlands, bodies of water, and areas of woodland, as well as by the protection and care of the cultural heritage features which adorn the landscape (both structural and archaeological cultural heritage monuments), they should at the same time also provide a contribution to the maintaining and nurturing of the historic cultural landscape of the region of East Württemberg, and thereby retain the value of the landscape in its
recovery. Any undertakings or activities which run counter to the purpose of protection should be avoided in these areas, and such use as is made in recovery should be restricted to a form which is nurturing, and incurs no impairment to nature (Point 3.2.1).

As with the regional plan of the Donau-Iller Regional Association, the East Württemberg Regional Plan greatly reduces the risk of excess building construction and the destruction of archaeological cultural heritage, especially in those parts of the Lone Valley affected by this regional plan.

**UNESCO Biosphere Reserve Area Swabian Alb**

In 2009 the Biosphere Reserve Area Swabian Alb, with a surface area of 85,269 ha, was recognised by UNESCO as a Biosphere Reserve Area.

The aims of the Biosphere Reserve Area Swabian Alb are concentrated on sustained regional development with man and nature in harmony. In this context, the focus is on the protection and development of the cultural landscape created by man. To put these aims into practice, a number of different functions and tasks have been defined, which can be summarised under the following aspects:

**1. Protection functions:**

- Landscape planning and regulation of intervention
- Protection of nature and care of the landscape
- Protection of species and biotope
- Resource protection
- Monitoring of the provisions of protection
- Contractual protection of nature
- Projects for the protection of nature and environment
- Maintaining of socio-cultural uniqueness

**2. Development functions:**

- Initiation, implementation, and support of projects for sustained regional development in all economic sectors, even beyond the limits of the biosphere reserve areas
- Advice and support for the users of the land in the implementation of sustained forms of utilisation
- Initiation, implementation, and support of economic measures (e.g. product development, process optimisation, marketing, environment management, issue of regional seals of quality, application for protected trademarks and certificates)
Protection and management of the property

Initiation, implementation, and support of projects for the maintaining of sociocultural uniqueness

Initiation and support of networks

3. Functions of logistic support:

- Sustained development, documentation, and public relations work
- Visitor and information centres
- Visitor guidance and care
- Information and involvement of local residents
- Ecological environment observation, socio-economic monitoring

Guidelines are established in order to implement these tasks. Within these guidelines, and adapted to the respective task areas, the UNESCO Biosphere Reserve Area Swabian Alb has been subdivided into a Core, Care and Development zone.

The Core zone is intended to be an expression of nature which as far as possible has not been subjected to influence. The area designated in this way should not be used under forestry management, nor exploited in any other way.

The Care zone serves to conserve cultural landscapes which are extensively used, but used with care, such as meadowland for fruit cultivation and crop mowing, or juniper pastures. Besides sustained agricultural management, the Care zone also serves the purposes of recreation and education.

In the Development zone, the focus is on people and their economic interests. The intention here is to increase the value creation of the region, but in a way which safeguards the environment and the resources. The Development zone is understood to be a space for the local people to live, work, and enjoy recreation.

Specially trained guides who present nature and the landscape help sensitisie visitors to the extraordinary characteristics of the landscape. They present the Biosphere Reserve Area and the cultural landscape related to it at various different information points, and so contribute to sustained regional development.

The Information Centre for the Biosphere Reserve Area was opened on 23 October 2010 in the town of Münsingen. This also serves as the information point for the Schwäbische Alb UNESCO Global Geopark.

Since parts of the Ach Valley component part are situated within the management and development zone of the Biosphere Reserve Area, and since the reserve is intended to be extended in the future, the cave sites in the Ach Valley and their surrounding landscape are positively affected by the aims of the Biosphere Reserve Area. A particular important factor is the funding of projects with a fund of 200.000 € per year, including projects which intend to help preserve
Existing plans related to municipality and region in which the proposed property is located

Fig. 5-13  Center part of Swabian Jura showing the extension of the UNESCO Biosphere Reserve Area.
the historical and cultural heritage. Also, the Biosphere Reserve Area aims to enhance public outreach, including tours offered by trained guides, some which have a focus on archaeological and cultural themes.

In general, the Biosphere Reserve Area makes a huge contribution to preserving the unique landscape of the Swabian Jura in which both component parts Ach and Lone Valley are situated. The Ach Valley is directly affected by aims and activities of the Biosphere Reserve Area management and development zones.

**Natura 2000**

Natura 2000 is the centrepiece of European Union nature and biodiversity policy. It is a European Union wide network of nature protection areas established under the 1992 Habitats Directive (see Chapters 5.b and 5.c).

The aim of the network is to assure the long-term survival of Europe’s most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) which they designate under the 1979 Birds Directive.

Natura 2000 is not a system of strict nature reserves where all human activities are excluded. While the network will certainly include nature reserves, most of the land is likely to continue to be privately owned. Natura 2000 has a focus on ensuring sustainability of future management, both ecologically and economically. The establishment of this network of protected areas also fulfils a Community obligation under the UN Convention on Biological Diversity.

The Ach and Lone Valleys are directly affected by the FFH protection areas “Tiefen- and Schmiechtal”, “Blau and Kleine Lauter” (both in the Ach Valley) and the “Hungerbrunnen, Sacken, and Lone Valley” (see Chapter 5.c). These areas contribute to the preservation of the natural landscape in the surrounding area of the “Caves with the oldest Ice Age art”.

**Schwäbische Alb UNESCO Global Geopark**

Geoparks are areas with landscape or geological special features. In them, the significance of geological and geomorphological processes for the spatial distribution of natural resources, as well as for land usage, surface design and economic and cultural history are consciously made tangible – both internally and externally. The targets of nature and environmental conservation should thus be combined, in a socially acceptable manner, with promotion of regional economic development. National Geoparks should contribute to the realisation of the goals in Agenda 21 through presentation, preservation and sustainable usage of the geological heritage. Agenda 21 is a development and environmental-political action plan for the 21st century, i.e. a guidance paper for sustainable development. It was resolved by 172 nations in 1992 in Rio de Janeiro at the United Nations Conference for Environment and Development (UNCED). Aspects of eco-
Existing plans related to municipality and region in which the proposed property is located

Economic development under the key points of tourist promotion and recreational activities are to be incorporated thereby into the planning.

In accordance with the designation criteria, a national Geopark possesses geologic sights (geotopes) of random dimension or an ensemble of several geotopes that are of regional and national geo-scientific significance, scarcity or beauty, and can be considered as representative of a landscape and its geological history of origin. In addition to the geological sights, archaeological, ecological, historical and/or cultural sights should be present as well which have been prepared for tourists, or can be equivalently developed. A national Geopark has clearly defined borders and has to be managed in a clearly defined structure. Moreover, it features a sufficiently large surface area to be able to accommodate economic development on site. In the Geoparks, the goals of nature and environmental conservation should be combined with promotion of regional economic development, in a socially acceptable manner. As a further task for Geoparks, environmental education and dissemination of geological knowledge among the general public must be mentioned. In national Geoparks, the inner relationships of the fragile and synchronised “system Earth” are clarified using selected examples.

The component parts Lone and Ach Valleys of the serial nomination are located in an area that has been recognised as a national Geopark since 2002. Since 2004, the “Swabian Jura” has also been certified as a European Geopark. The Swabian Jura was recognised as a Geopark in 2005 as one of 77 member regions of the “Global Network of National Geoparks”, assisted by UNESCO. In 2015 it received the official status of a “UNESCO Global Geopark”.

The responsibilities of the Geopark are subdivided into three areas. In the forefront are protection of the geological heritage and conveyance of geological topics in the context of environmental education. Equally important, however, are sustainable regional development and scientific research within the park.

Geotourism is supported by museums, information centres and other institutions. Guided tours, interpretative trails and exhibitions are part of the geo-educational concept. Besides the general public, educational programmes especially address schools. In order to guarantee a high standard, the guides and the personnel of the information centres are trained in special courses.

Numerous publications contribute to the educational process. Among these are a geotouristic map of the Swabian Jura as well as different flyers and leaflets. Special information is given in books dealing with single localities, e.g. Nusplin-

<table>
<thead>
<tr>
<th>Designation</th>
<th>Year of designation</th>
<th>Legislative act</th>
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<tr>
<td>National Geopark</td>
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<tr>
<td>European Geopark</td>
<td>2004</td>
<td>-</td>
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<tr>
<td>Geopark assisted by UNESCO</td>
<td>2005</td>
<td>-</td>
</tr>
<tr>
<td>Schwäbische Alb UNESCO Global Geopark</td>
<td>2015</td>
<td>-</td>
</tr>
</tbody>
</table>

Tab. 5-60 Geoparks in the nominated property and the associated buffer zone.
Swabian Albs Geopark
GERMANY

Highlights
- EGN Designated 2004
- GGN Designated 2004
- N48°41'38", E009°53'49"
- 6,688 km²
- Jurassic fossils and 200 million years of Earth’s history

The Swabian Alb extends for more than 220 km across southwest Germany and tells of the last 200 million years.

Fig. 5-14 Schwäbische Alb UNESCO Global Geopark. General information.

Fig. 5-15 Map of the Schwäbische Alb UNESCO Global Geopark and geological highlights (www.geopark-alb.de). Component parts emphasised in red.
Existing plans related to municipality and region in which the proposed property is located

gen or Steinheim. Other publications present more general topics, such as the geology and palaeontology of the whole area. The overall aim of the Geopark is to establish a consciousness of the geological past of the Swabian Jura.

Aims and activities of the Geopark directly affect the “Caves with the oldest Ice Age art”. The Geopark gives specific information about the caves on its website and at its information points. Geopark information points are located in close proximity to the Lone Valley (in Rammingen-Lindenau) as well as in the Urgeschichtliches Museum in Blaubeuren in the Ach Valley. The Geopark also advertises public events, tours and hiking trails at and near the caves. In addition, it helps to protect the caves by making public general rules and regulations for visiting caves and vulnerable geologic formations.

LEADER+ (2000-2006)

Under the auspices of the programme “Liaison entre actions de développement de l’économie rurale” (LEADER), the EU and the State of Baden-Württemberg are promoting innovative projects for the revitalisation of rural space. The LEADER field-of-operation “Brenz region” has existed since 2000. It comprises large sections of the district Heidenheim and areas of the Alb-Donau District and the Ostalb district. It was named after the river Brenz, a tributary river of the Danube. The component part Lone Valley in the nominated property is located completely within this LEADER field-of-operation.

Development of the rural regions in the context of LEADER ensues from the bottom up (bottom-up-principle). The EU specifies only a rough guideline thereby. The LEADER action groups are responsible for implementation of the LEADER programme at a regional level. The action groups work out the development priorities and development objectives for their LEADER region and embed this in a regional development concept. On the basis of the development concept, they make decisions regarding which projects are most suitable for achievement of the development objectives, thus justifying the funding thereof.

The LEADER+ programme was carried out in the years from 2000 to 2006 in this Brenz region. One of its key points involved the Palaeolithic sites in the region, such as Vogelherd Cave, the Hohlenstein and the Bockstein. Furthermore, the archaeological sites in the Brenz region were networked within the framework of an international cooperation with further European sites. The partners involved here are primarily municipalities in southwest France, within whose boundaries the renowned Aurignacian archaeological sites are located. These included Aurignac, Mas d’Azil and Istaritz. Within the context of the project an international conference was held, about which a volume concerning the art of the Aurignacian was published. Moreover, there was a travelling exhibition with the title “The Beginnings of Art in Europe”.

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In the context of the LEADER programme, a thematic signage trail was produced that brings the visitors closer to the landscape, geological and archaeological special characteristics of the Brenz region, thus sensitising them to their value. As a result of the LEADER+ programme the interregional exchange - both national and international - has been fostered, which in turn has led to an intensified regional development.

**LEADER (Action group Brenz region) 2007-2013**

This renewed LEADER promotional period started in January 2008 and continued until the end of 2013. The overriding motto and mission statement of the integrated rural development for the Brenz region states: “Preserve the landscape, shape the living space, experience the cultural history”. For the various thematic fields, five overriding and closely-networked key objectives were established for this region:

- Strengthening of “soft tourism”
- Promotion of marketing for regional products
- Preservation of the natural and cultural heritage
- Improvement in the quality of life in the rural area
- Area-overlapping and transnational cooperation

The region anticipates from the implementation of their strategy:

- an improvement in quality of life for the local population
- fortification of regional identity
- regional image building
- a contribution to solutions for demographic problems
- an increase in regional value creation and competitiveness
- a contribution to conservation of resources and environment protection
- an increase in tourism
- creation and retention of jobs

The region should also be competitive in the future and be able to offer prospects, especially for young people. The LEADER promotional measures can thus be perceived as a sustainably effective regional plan.

A central key topic of the LEADER action group for the Brenz region was promotion of “soft tourism” and culture. The Lone Valley and its neighbouring tributary valleys formed thereby an important promotional focus.
Development of the Archäopark Vogelherd (see Chapter 4.b.iv) is to be viewed as a flagship project. The LEADER project is pursuing the goal of preserving the cave as a cultural heritage and protecting it from destruction. Additionally, the project served, and is serving, in upgrading the archaeological site and making it well-known beyond the limitations of the scientific community.

Since interest has increased considerably in Palaeolithic art from the Lone Valley in recent years on the part of local, regional and foreign guests and will most likely continue to increase, the touristic infrastructure has been enhanced through the construction of parking spaces, pathways and signposts.

The objective was to produce added value in the existing agricultural and tourist potential, and to make these attractive and enjoyable for both the inhabitants and guests. The measures for the project “hiking-trail concept” have thus networked the offers, thereby increasing the added-value of the attractions on site.

In sum, the programme has positively influenced the development of the region, including the property, and its touristic value.

**LEADER 2014-2020**

A further promotional period was authorised for the timeframe from 2014 to 2020. The slogan “Designing the future with competence and innovation” carries the guiding principle “We are designing the Brenz region 2020 with competence and innovation. It is liveable, mobile, qualified, gender-sensitive and profiled in terms of both natural and cultural heritage”. The four strategic spheres of activity for this promotional period are:

- designing the quality of life together
- facilitating qualification for everyone
- improving opportunities for women
- profiling of both natural and cultural heritage.

Included in the objectives for the field of activity “profiling of natural and cultural heritage” are the protection and development of intact, perceptible cultural landscapes with regional identity, networking and marketing of regional touristic offerings and cultural events as well as creation of lively traditions. A key point thereby lies in further development of the Ice Age and cave projects carried out by LEADER+ (“The Aurignacian and the beginnings of art in Europe” as well as “Archäopark at the Vogelherd Cave”). Previously existing and long-term domestic and foreign partnerships should be continued, and synergy-effects of the network structures should be utilised. In addition to the heretofore committed partners in France, the Austrian LEADER region Wachau-Dunkelsteinerwald has offered itself as a further transnational cooperation. There as well, significant Stone Age art objects have been found. Through joint campaigns with the Archäopark Vogelherd and other archaeological sites in the Lone Valley, targeted
marketing of Ice Age art shall be promoted. A Europe-wide networking of sites with the oldest art objects in human history is being aspired. New offerings in “encounter” tourism and educational tourism are to be developed thereby. The project planners envision various measures with respective promotional funding for the cave-site surroundings in the Lone Valley. This includes the projects “Ice Age art region Lone Valley”, “Neanderthal path Bockstein Cave, signposting, pathway”, and a nature conservation project in the Bockstein Cave surroundings.

Conclusion for the regional plans

Both the previously established and future regional plans contribute to far-reaching national and international enhancement of the landscapes in the Swabian Jura. Particular value is applied hereby to national and international cooperation. By means of the aforementioned measures, optimal commitment to the nominated property “Caves with the oldest Ice Age art” shall be achieved. The “Caves with the oldest Ice Age art” are embedded in a functioning infrastructural network. In the future, both collaboration and the network shall be further developed. In this regard it shall be strictly observed that protection of the property generally assumes the highest priority.

Tourism plans

(also see Chapter 4.b.iv)

Currently available are various tourism plans for the area of the nominated component parts Lone and Ach Valleys. The Tourismus Marketing GmbH Baden-Württemberg (TMBW) and the association Schwäbische Alb Tourismus e.V. (SAT) are to be allocated to a touristic overriding level. The Tourismus Marketing GmbH Baden-Württemberg (TMBW) is responsible, domestic and foreign, as a state organisation for the marketing of the holiday state Baden-Württemberg. The representatives of the associations and companies harmonise their plans with the State Office for Cultural Heritage within the “Tourism” coordination group. The SAT markets the tourist high points of the Swabian Jura in their entirety, and takes advantage of the fame of the “Caves with the oldest Ice Age art” as a representative advertisement for the whole region. As well as this the administrations of the Alb-Donau (Fachdienst Ländlicher Raum/Kreisentwicklung) and Heidenheim Districts advertise and coordinate the management of the touristic highlights in the region.

On a regional level, the representatives of various tourism stakeholders have joined forces under the umbrella organisation known as “Weltkultursprung” (World origin of culture), in order to set up tourist marketing for the culturally and historically valuable property on a sustained basis, and to contribute to their conservation. A steering committee with this aim is made up, among other parties, of representatives from all the municipalities involved, the two districts, the Ulmer Museum, the Urgeschichtliches Museum Blaubeuren, the Archäologis-
ches Landesmuseum Baden-Württemberg, the Archäopark Vogelherd, the University of Tübingen, and the State Office for Cultural Heritage Baden-Württemberg. Within the steering committee, and a select coordination group, a specific concept for information and presentation has been worked out. The State Office for Cultural Heritage advises the representatives of this umbrella organisation and, as one of the founder members, participates in its activities.

Furthermore, the Ulm / Neu-Ulm Touristik GmbH (UNT) focuses on the tourist issues and requirements of the city of Ulm. The “Lion Man” discovered in the Hohlenstein Stadel Cave is on display at the Ulmer Museum.

**Coordination Group “Tourism”**

In the context of the World Heritage nomination of the “Caves with the oldest Ice Age art”, a special committee was established under the auspices of the Coordination Group “Tourism” (*Tourismus AG*), in which the interests of the corresponding representatives from the various local and regional tourism associations, the museums, the associations, the districts and municipalities within the nominated property are coordinated. As a member of this coordination committee, the State Office for Cultural Heritage Baden-Württemberg has assumed a leading role to assure that conservation concerns are placed above touristic objectives. The primary objective here is an effort towards sustainable handling of the cultural and natural monuments, as well as a sustainable development of communal matters.
The touristic stakeholders have agreed to support the objectives of the WH Coordination Office (see Annex).

The Coordination Group “Tourism” is composed of stakeholders who have an interest in the touristic development and the conservation of the nominated World Heritage. These include the tourism associations, Tourismus Marketing GmbH Baden-Württemberg (TMBW), Schwäbische Alb Tourismusverband e.V. (SAT) and Ulm/Neu-Ulm Touristik GmbH (UNT) and the “World origin of culture” umbrella organisation (see below).
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Representatives of the regional districts and municipalities also belong to this coordination group, as do the local associations concerned. The State Office for Cultural Heritage Baden-Württemberg represents the interests of cultural heritage care and upkeep within the coordination group. The aim is to harmonise the requirements of tourism and the protection of the World Heritage site, in order to guarantee its conservation by sustained usage.

As well as this, representatives of the Biosphere Reserve Area Swabian Alb and of the Schwäbische Alb UNESCO Global Geopark are also represented in this body. Aims and measures are likewise agreed on with representatives of the LEADER Action Group for the Brenz region.

- State Office for Cultural Heritage Baden-Württemberg
- Tourismus Marketing GmbH Baden-Württemberg (TMBW)
- Schwäbische Alb Tourismusverband e.V. (SAT)
- Ulm/Neu-Ulm Touristik GmbH (UNT)
- “World origin of culture” umbrella organisation
- Biosphere Reserve Area Swabian Alb
- Schwäbische Alb UNESCO Global Geopark
- LEADER Action Group, Brenz region
- Archäopark Vogelherd
- Urgeschichtliches Museum Blaubeuren
- Archäologisches Landesmuseum Baden-Württemberg
- Museum of the University of Tübingen (MUT)
- Ulmer Museum
- Landesmuseum Württemberg
- “Lonetal Verein e.V.”
- “Gesellschaft für Urgeschichte und Förderverein Urgeschichtliches Museum Blaubeuren e.V.” (GfU)
- “Museumsgesellschaft Schelklingen Verein für Heimatgeschichte e.V.”
- “Förderverein Eiszeitkunst Lonetal e.V.”

Tourismus Marketing GmbH Baden-Württemberg

Within the strategic marketing concept of the TMBW, the subject area “Culture” comprises one of four thematic pillars. In a state like Baden-Württemberg, already well-endowed with art and cultural treasures, the scientifically documented beginnings of human art and music in the Swabian Jura signify an additional consolidation of the profile as a destination for culture enthusiasts. The “Caves with the oldest Ice Age art” shall therefore assume, in coming years, a central position in the thematic pillar “Culture.”
Schwäbische Alb Tourismusverband e.V.

In order to design tourism, timely and sustainably, in the Swabian Jura, the strategic concept “Tourism 2020 Swabian Jura” was presented in 2014 by the “Schwäbische Alb Tourismus e.V.” (SAT). Under the future strategy “Destination Swabian Jura” within the context of the strategy concept, the stakeholders in the districts, the municipalities and the economy agreed on four fields of action:

1. Development of a long-term conceived, and therefore sustainable, mutual “brand policy” for the destination. Quality and sustainability in all products should be in the foreground.

2. Development of a collaborative and differentiated experience-space image. Every business, every municipality and the individual districts have a special position and a significant task within this overall experience-space. In the process, citizens are crucial identity carriers, and shall be explicitly involved in product development.

3. The brand-name product outcome should be developed, prepared and marketed in three core business areas (hiking, biking and excursions). The current tourism, characterised by nature and cultural landscapes, should at the same time be enhanced in a sustainable and eco-friendly manner. For this purpose, the special features within the natural and the cultural spaces in the Swabian Jura should be emphasised here once again. As a guiding principle for the overall touristic experience-space of the Swabian Jura, the “Lion Man” has been chosen – the figurine of a therianthrope from the Stadel Cave in the Hohlenstein, which is recognised as an essential part of the nomination at hand. The Swabian Jura shall become the “Land of the Lion Man”, while three thematic zones shall be created: “Albtrauf”, “DonauHochAlb” and “WeltKulturreich”.

4. This brand organisation shall be guided by participative decision making, and project management takes place through hierarchical and staggered allocation of duties.

For the “Caves with the oldest Ice Age art”, the thematic zone “World Cultural Realm” (“WeltKulturreich”) is particularly relevant since both component parts of the nominated property are located within this space. The nominated property plays a central role in the concept of the Schwäbische Alb Tourismus e.V. This shall become particularly clear through designation of further sections of the Swabian Jura as “Land of the Lion Man”. Touristic activities on a regular basis, such as “Ice Age Art Twilight Event” or theme-routes for bicycle tours and hiking trips should thus be developed and executed. Dissemination of information regarding the outstanding universal value of the property should hereby be implemented.

Ulm / Neu-Ulm Touristik GmbH

The Ulm/Neu-Ulm Touristik GmbH (UNT) is the marketing company for the cities of Ulm and Neu-Ulm, founded in 1993, for the sector tourism and conference
Existing plans related to municipality and region in which the proposed property is located

matters. As the official tourism site for the two cities, they fulfil communal tasks and are at the same time active as a commercial enterprise. The core task of the UNT consists of planning, preparation, execution and monitoring of measures for the promotion of touristic and business-trip motivated tourist traffic for both cities. The goals are: growth in the level of awareness regarding the Danube twin-city, an increase in the arrival and overnight numbers as well as expansion of revenues induced by these increased overnight and day-tourist numbers.

From a touristic point of view the archaeological sites in the nearby Lone and Ach Valleys and the exhibited artworks and musical instruments represent a unique selling point. These artworks, heretofore the oldest known made by man, can be discovered in close proximity to their mysterious sites on foot or by bicycle and experienced in newly-built, modern and attractive museums and parks.

Since the UNT is a member in the SAT, it actively brings the subject “Ice Age art” to the tourism market. On a larger scale both the TMBW and the Deutsche Zentrale für Tourismus (DZT) ensure a high national and international publicity of the UNT’s touristic offers focusing on Ice Age art in the region.

After a joint Ice Age art exhibition of altogether nine partners at the tourism fair CMT Stuttgart (17 to 25 January 2015) the UNT aims at developing concepts for joint touristic offers, including combination tickets, bycicle tours in the Ach and Lone Valleys and special coach trips. Starting in 2015, there will also be a long-term marketing campaign named “Young Danube”, to which the UNT contributes touristic offers focusing on Ice Age art.

**Development of Tourism at the District Administrations**

The administrations of the Alb-Donau and Heidenheim Districts, in particular the Fachdienst Ländlicher Raum/Kreisentwicklung (special service rural areas / district development) at the Alb-Donau District administration engages in the development, advertisement, coordination as well as the management of the touristic highlights in the region.

**Weltkultursprung (World origin of culture)**

The local stakeholders have joined forces at a further committee on 21 March 2014 in the form of “Working Group for the Umbrella Brand Ice Age Art” (AGDEK). The umbrella brand “Weltkultursprung” focusses not only on touristic aspects, but incorporates in a fair and equal manner politics, science and honorary office for the benefit of the Ice Age art.

This working group comprises two committees – the **Coordination Committee** and the **Steering Committee**. The coordination committee performs work at the operative level, while the steering committee is the decision-making body.

A member in the steering committee is a representative, respectively, from the following authorities, cities, municipalities and institutions (see Volume III - 8):

Resulting from the collaboration the umbrella brand with the logo “Weltkultursprung” (World origin of culture), and a corporate design have been developed. The corporate design is meant to be deployed, in a suitable form, at the presentation locations in the Urgeschichtliches Museum Blaubeuren, Ulmer Museum and Archäopark Vogelherd, as well as with their advertising media. Moreover, the development of joint advertising materials and a unified information concept with a joint homepage (www.welt-kultursprung.de) are planned.

The districts are obligated to exert influence on the location municipalities for the archaeological sites Vogelherd, Hohlenstein, Bockstein, Geißenklösterle, Sirgenstein and Hohle Fels, and to display signs with indication of the UNESCO World Heritage as well as the logo “Weltkultursprung” (World origin of culture) on the main streets at village entrances, at railway stations and at the archaeological sites.

Moreover, the population should become sensitised to the value of the cultural heritage site and the nominated property. For this purpose, a travelling exhibition has been conceived by the umbrella brand “Weltkultursprung” that will visit various stations in Europe. In the summer of 2015, the travelling exhibition will kick off with representation of the State Baden-Württemberg at the European Union in Brussels.

**Summary of the tourism plans**

The represented tourism plans contribute to far-reaching national and international touristic marketing of the landscapes in the Swabian Jura. They realise the value of the nominated property “Caves with the oldest Ice Age art” in terms of tourism as well. The “Caves with the oldest Ice Age art” are thus embedded in a functioning touristic network. In the future as well, this network is meant to be further intensified and developed. It shall be strictly avoided that any form of conflict between tourism on the one hand and protection of the property on the other emerges. Protection of the property is hereby granted absolute priority.
Research plan / conservation plan

In the context of the envisioned management structure for the nominated property “Caves with the oldest Ice Age art”, formation of the Coordination Group “Conservation, Research and Monitoring” was agreed in September 2014. This is made up of representatives from the State Office for Cultural Heritage Baden-Württemberg, the University of Tübingen, the municipalities and the active associations with reference to the “Caves with the oldest Ice Age art”.

The parties primarily responsible in this group are the State Office for Cultural Heritage Baden-Württemberg and the University of Tübingen, since the archaeological, geological and geographical research work in the nominated component parts Ach and Lone Valleys are currently being carried out almost exclusively by the representatives of these institutions. Moreover, the State Office for Cultural Heritage Baden-Württemberg – as specialized authority responsible for such matters – has been entrusted with the protection and conservation of the property. The municipalities and associations are responsible for the management, maintenance and protection of the cultural monuments on site.

In October 2014 and in September 2015, the representatives of the State Office for Cultural Heritage Baden-Württemberg and the University of Tübingen met and agreed on the strategy for a research plan for the next five to ten years (see Chapter 4.a, Chapter 7.b and below).

Monument protection authorities guarantee that a considerable and scientifically relevant part of the existing archaeological and geological substance within the property is preserved as an archive of the outstanding universal value for future generations. Excavation projects are therefore limited. In Baden-Württemberg only the State Office for Cultural Heritage and few other scientific institutions such as Universities undertake archaeological excavations. The State Office for Cultural Heritage Baden-Württemberg inspects requests for excavation permissions and documents its decisions reviewable. Only selected projects with detailed scientific question and justified objective are authorized. The excavations have to be conducted using the latest techniques and methods. Amongst others high value is set on accurate documentation in order to ensure the conversion of archaeological sources into documented knowledge. Thus matters of research and conservation can be balanced.

Research objectives

Intensive collaboration has already been taking place in recent decades between the State Office for Cultural Heritage Baden-Württemberg and the University of Tübingen. Furthermore, numerous international expert colleagues contribute know-how to the respective work groups (see Chapter 5.g). This collaboration should be continued and intensified in coming years in order to conserve the outstanding universal value of the nominated property and to expand related
scientific knowledge through an active research programme (see Chapter 4.a, and Chapter 7.b, Research plan University of Tübingen).

The excavations in Hohle Fels near Schelklingen shall thus be continued in future years. Moreover, further test excavations in previously unknown archaeological caves in the Ach and Lone Valleys shall be executed. Sustainable investigation of the respectively examined site shall be targeted. This involves among other things the back-filling and subsequent security of the respective excavation unit.

Furthermore, the surveying projects in the two nominated component parts of the valley shall be intensified, in order to locate previously unknown sites. Through identification of location and condition, necessary protective measures can then be taken.

What is more, the prospecting will be intensified in the two nominated valley sections, in order to locate heretofore unknown archaeological sites. On the basis of knowledge regarding location and condition, requisite protective measures can then be undertaken.

In addition to state of the art archaeological analyses, the use of novel scientific methods plays a considerable role in the present research projects in the Ach and Lone Valleys. Archaeological explorations within the property – both current and planned projects – involve geological survey methods such as core drilling and GPR (Ground Penetrating Radar). The use of these methods offers new insights into archaeological, ecological and palaeoclimatic developments.

Documentation, publication and communication

The representatives of the University of Tübingen and the State Office for Cultural Heritage Baden-Württemberg agreed to continue to annually publish the results from the on-going and future excavations in the “Archäologische Ausgrabungen in Baden-Württemberg” – the official regional publication medium of archaeological activities involving preservation of monuments. Moreover, the results shall continue to be published in international magazines and publication series regarding research activities in the “Caves with the oldest Ice Age art”.

Further publications generate specific reports concerning the excavations in the context of the research programme “The role of culture in the process of geographic expansion” (ROCEEH), which is embedded in the University of Tübingen and the Senckenberg Research Center Frankfurt and financed by the Academy of Sciences Heidelberg (Heidelberger Akademie der Wissenschaften). Moreover, the new edition of the “Guide to Archaeological Monuments in Baden-Württemberg” (“Führer zu archäologischen Denkmälern in Baden-Württemberg”), which have originally been published in 1973 and 1979, has been planned by the State Office for Cultural Heritage Baden-Württemberg for the Lone Valley, the Ach and Blau Valleys. Recently in April 2015 and under the auspices of the annual conference of the Hugo Obermaier-Gesellschaft, the book “Ice-Age Archaeology in the
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Fig. 5-18 Example of the “Archäologische Ausgrabungen in Baden-Württemberg” (Archaeological excavations in Baden-Württemberg).

Fig. 5-19 Recently published guide book.
Swabian Jura” (“Eiszeitarchäologie auf der Schwäbischen Alb”) was published, which offers an overview of the key Ice-Age cave sites within the region.

In order to support international and national researchers in their research studies who are thematically familiar with the “Caves with the oldest Ice Age art”, the State Office for Cultural Heritage Baden-Württemberg is pursuing development of a web-based publication data bank. Moreover, an archive data bank is planned that will facilitate fast location and uncomplicated processing of data and assemblages from the individual archaeological sites.

What is more, communication regarding topics in research and preservation with representatives from other UNESCO World Heritage sites and archaeological project groups is being pursued. This exchange should be organised within international symposia. For this purpose, the pre-existing structure of the HEADS World Heritage thematic programme in UNESCO (“Human Evolution: adaptations, dispersals and social developments”, see Chapter 3.1.b) shall be used. The University of Tübingen and the State Office for Cultural Heritage Baden-Württemberg intend to cooperate intensively in the future as well with the HEADS World Heritage thematic programme.

## 5.e Property management plan or other management system

### Introduction

The Management Plan for the “Caves with the oldest Ice Age art” was prepared in mutual agreement of all representatives of the townships and municipalities, the District of Heidenheim and the Alb-Donau-District, the Ministry of Finance and Economics Baden-Württemberg, the State Office for Cultural Heritage, the University of Tübingen, the regional museums and information centers, the local associations that are related to sites or prehistoric archaeology as well as other stakeholders with scientific, touristic, communal and communicational tasks and interests.

It serves as an integrated planning and action concept for the determination of goals as well as the coordination and implementation of measures with regard to the protection, maintenance, utilization, development and communication of the nominated World Heritage Site “Caves with the oldest Ice Age art”.

Its central aim is to register, preserve, protect and present adequately the cultural property nominated for inscription on the World Heritage List in accordance with Article 5 of the Convention for the Protection of the World Cultural and Natural Heritage. On the basis of this jointly developed Management Plan all stakeholders pursue the intention of securing a comprehensive, permanent and sustainable protection of the site which is nominated for inscription on the UNESCO World Cultural and Natural Heritage list.

The full Management Plan is annexed as Volume II.
Basic goals and principles

In order to do justice to the diverse interests of the parties involved and, at the same time – as the top priority – to assure protection of World Heritage and its outstanding universal value, various committees and steering groups agreed on coordinated action and regulated exchange of information.

The guidelines for sustainable action on the part of participating institutions and stakeholders are presented in the management plan at hand. This occurs with regard to a balance between conservation, research, tourism and the demands of all those who live and work in the area of the “Caves with the oldest Ice Age art”.

The management plan shall be understood as a regulatory framework, in which both concrete statements regarding future handling of the property as well as perspectives regarding long-term development are laid down. It is nevertheless not meant as an inflexible proposal; rather, it should be interpreted as an evolving document. This can and should be revised and updated on a regular basis.

The management plan is to be seen as an instrument that creates coordinated regulations for the protection, conservation and development of the property on the basis of legal laws. The previously agreed mechanisms, regulations and agreements thereby form the basis. The management plan thus refers to pre-existing provisions, but is not in and of itself legally binding. Within its scope, neither shall core competencies be newly institutionalised, nor pre-existing areas of responsibility changed.

The stated goal is to optimise and further develop the existing protective mechanisms. This can only be achieved over the long term through communication, exchange and sustainable cooperation. In summary, the following goals are envisaged:

• Safeguarding and preservation of the existing archaeological property
• Planning the conservation and development of protective measures
• Planning for the scientific investigation
• Conflict avoidance and conflict management
• Planning for sustainable touristic benefit
• Planning for sustainable economic benefit
• Expansion of the education and information offering regarding the property for creation and improvement of public awareness concerning the property specifically, and the World Heritage in general on a regional, national and international level, in the framework of Education for Sustainable Development (ESD)
Management structure and coordination

The conservation, management, and development of nominated national serial sites require close cooperation between all the representatives of different interests, but in particular between owners and the public authorities. In order to make the management of the serial property being nominated here, the “Caves with the oldest Ice Age art”, capable of being handled by an efficient structure, a multi-stage management system was developed. This involves representatives from all administrative levels and representatives of different interests, and facilitates communication within the respective interest sectors, such as conservation, cultural and nature heritage protection, tourism, administration, and research. These sectors are interlinked within different steering and coordination groups, and coordinate the corresponding task sectors. The respective steering and coordination groups hold regular meetings, coordinated by the State Office for Cultural Heritage and the WHS-Secretariat.

Targets for protection

The property “Caves with the oldest Ice Age art” is recognised as a clearly demarcated, highly protected landscape with archaeological sites. It is administered by the Ministry of Finance and Economics Baden-Württemberg as the supreme monument protection authority, by Department 21 - Regional Planning, Construction Law and Cultural Heritage in the Regional Administrative Council of Stuttgart as the senior monument protection authority, by the State Office for Cultural Heritage in the Regional Administrative Council of Stuttgart as the responsible state-wide competent expert authority, as well as by the lower monument protection authorities (Municipal Administration Herbrechtingen, the District Administration Heidenheim, Administrative Cooperation Langenau and the District Administration Alb-Donau District). These officials make decisions regarding protective measures and implement them through legal provisions within administrative processes. Furthermore, they authorise and supervise conservation measures and current research projects within the property. They promote documentation and publication of the findings and dissemination of same to the broader public. Moreover, they support the scientific collaboration of various institutions.

The coordinated proceedings of all involved parties within the provisions of a mutually decided management plan serve the protection and preservation of the property. Previously existing provisions for protection and preservation are further enforced through the corresponding cultural heritage and nature conservation laws. This also includes, in addition to the prevention of disruptive ground excavations, preservation of point-of-view axes, silhouettes and panoramas. Moreover, the nomination as World Heritage property should facilitate exchange of experiences and knowledge between experts and other involved parties. This includes examination and resultant comprehension of the archaeological phenomena as well as presentation of artefacts and sites. This scope
of duty should be coordinated with the previously existing protective measures for both the discovered and still undiscovered sources. By means of careful and forward-looking management of landscape, sites and artefacts, a balanced and sustainable interaction between data-finding, investigation, conservation and transfer of knowledge can thus be created.
Since the property with its outstanding universal value is now being perceived more pronouncedly by the public, ever since its nomination as a World Heritage site, visitors should be sensitised by purposeful management to the value, integrity and authenticity of the property. It is a specific goal to balance conservation, research and tourism on the one hand and the expectations of citizens living and working in the vicinity of the World Heritage site on the other.

**Commitment of the representatives of interests**

All the representatives of interests involved in the World Heritage nomination for the “Caves with the oldest Ice Age art” have formally agreed on the necessity and advantage of a joint management plan for the national serial property. The “World Heritage Coordination Office at the State Office for Cultural Heritage Baden-Württemberg” (WHS-Secretariat) has coordinated and defined the management plan, and determined the working methods and procedures. The representatives of interests have agreed on unified aims and principles within the framework of a joint management arrangement, and have accepted the management strategy as an overall concept.

**Aims and strategy**

The intention is that, by the development of an appropriate management system, which integrates the different legal and administrative levels, with their specific skills and areas of expertise, the strategy of the management plan and the aims associated with it will be put into full effect. This strategy includes the creation of a master plan (Catalogue of Measures), defining the appropriate actions and measures, and then putting them into effect within a specific time frame. Every stakeholder fulfils particular legal and administrative tasks within the management strategy. As a result, each plays a part in the coordination network, and benefits from this cooperation within the nomination procedure as a whole. The planning concentrates in this context on the development of uniform standard guidelines (such as concepts of sustained visitor management and conservation), the possibility of exchange, and communications and public relations, as well as the continuation of research and capacity building. The measures are aimed at achieving excellent management, as well as the protection and conservation of the property, in order to provide added support for its credibility.

The guidelines and provisions for the actions of all the partners are specified as uniform goals for the different areas of activity. This uniform programming is a precondition for guaranteeing coherence within the different areas of activity, and the determination of these domains is in this context based on the “C’s” of the UNESCO strategy, as specified both in the Budapest Declaration (WC-02/CONF.202/25,9) as well as in the HEADS action plan (World Heritage Papers 29, 66-72) as a management programming procedure. An additional ‘C’ for coordination has been taken as an integral consideration.
Activity domain 1: Securing the coordination of the parties involved (Coordination)

- Public authorities involved, and all the parties jointly concerned, are coordinated within one information strategy. The information flow is transparent.
- The international, national, regional and local experts involved in the conservation and research of the World Heritage site form a network with a very high performance capacity. Steering and coordination groups hold regular meetings.

Activity domain 2: Strengthening the credibility of the World Heritage List (Credibility)

- All the parties involved strive for best possible performance (excellence) in respect of management, protection, conservation, promotion, and research of the property.
- The demands and obligations which derive from nomination for World Heritage status, and therefore the guidelines of the World Heritage Convention, will be met.
- Active participation and support by all the interest groups involved is guaranteed. This contributes towards excellent functional performance of the World Heritage system.

Activity domain 3: Securing the conservation of the World Heritage sites (Conservation)

- The outstanding universal value, the historical authenticity, and the integrity of the nominated property will be safeguarded.
- In general, disturbances in the ground in the area of the property will be largely avoided. Any building undertakings must be assessed and approved by the State Office for Cultural Heritage Baden-Württemberg. If it is intended that archaeological research work should be carried out, complete scientific documentation will be prepared. Archaeological excavations within the property will therefore serve to increase knowledge. Excavation projects are however limited. Only selected projects with detailed scientific question and justified objectives are authorized. The excavations have to be conducted using the latest techniques and methods.
- Monument protection authorities guarantee that a considerable and scientifically relevant part of the existing archaeological and geological substance within the property is preserved as an archive of the outstanding universal value for future generations.
- Regular monitoring will be carried out in order to guarantee the maintaining of the property. In this context the existing methodology will be regularly assessed and improved.
• Programmes will be created which can monitor the effects of tourism on the property. In order to ensure sustained visiting of the property, if required, a corresponding regulating procedure for the tourist presence will be imposed.

• The existing structures and finds will be documented and archived in order to monitor their status of conservation. The State Office for Cultural Heritage Baden-Württemberg further inspects requests for excavation permissions and documents its decisions in a verifiable way.

**Activity domain 4: Development and promotion of measures for efficient capacity building (Capacity building) / Strengthening the cooperation (Cooperation)**

• The management will strive to expand and enhance the knowledge, capacities and readiness for action of those persons who bear direct responsibility for the World Heritage status.

• It is intended that decision-makers and other persons with responsibility should be granted power of representation, in order in this way to achieve an improvement in the institutional structures and processes.

• A dynamic relationship between cultural heritage and its environment will be established and intensified.

• The cooperation and exchange with UNESCO Regional Offices (Biosphere Reserve Area Swabian Alb, Schwäbische Alb UNESCO Global Geopark) will be intensified, in order to be able to implement changes / improvements for World Heritage sites in accordance with the provisions of the World Heritage Manual, rapidly and effectively.

• Training and research programmes with international participation will be set up, in order to render the exchange of knowledge easier and faster.

• Knowledge and findings which relate to the conservation of the “Caves with the oldest Ice Age art” will be shared.

• Expert and specialist knowledge will be improved by ongoing discussion and cooperation.

**Activity domain 5: Enhancing public awareness and their involvement and support by communication and education (Communication)**

• A superordinated, sustained and unified visitor and information concept (GIC) will be created (sensitising of the public to the topic, and their integration and support, incorporating the concept of Education for Sustainable Development [ESD]).

• The uniform communication and public relations strategy will keep the general public informed of the need for the protection of the property and of their outstanding universal value. International, national, regional, and local
decision making bodies are well aware of the value of the “Caves with the oldest Ice Age art”.

• The transfer of knowledge from the maintainers of cultural heritage to educational institutions will be intensified.

• Exchanges and communication with representatives of scientific institutions will be expanded. Universities and research institutions will receive access to relevant data, and exchange this on a regular basis.

**Activity domain 6: Integration of the local municipalities (Communities)**

• The people who live in and around the property will be informed in detail about the World Heritage status. The intention here is to promote the identification of the residents of the region with the property. The aim is for them to be fully aware of the outstanding universal value of the site.

• The active participation of the municipalities in the upkeep, conservation, and management will be promoted. The required financial investments are to be regarded with the proviso of the financial and economic capability of the townships and municipalities.

• Local decision-making bodies will be involved in direct on-site measures.

• The community representatives responsible have access to the national and international network of the “Caves with the oldest Ice Age art”.

**Structure of the Management Plan**
The full Management Plan is annexed as Volume II.

1. **Introduction**
2. **Structure**
   - Text part
   - Catalogue of Measures
3. **Basic principles and goals**
4. **Administrative structures**
   - Cultural heritage
   - Nature conservation
   - Planning and building
   - Contact information
5. **Overview**
   - Significance of the “Caves with the oldest Ice Age art”
   - Determination of the outstanding universal value
     - The UNESCO criteria
   - Determination of the integrity and historical authenticity
     - Integrity
     - Authenticity
   - Requirements for protection and management
6. **Property, areas, targets and instruments of protection**
   - Definition of the protected property
   - Protected areas (selection of the component parts)
     - Ach Valley component part N° 1)
     - Lone Valley (component part N° 2)
   - Buffer zones
   - Maps
   - Targets for protection
   - Protective instruments
     - Cultural heritage
     - Nature conservation
     - Regional plans
7. Ownership structures and sponsorship

8. Assemblage
   - Recording of archaeological sites
   - Recording of archaeological finds
   - Current work and next steps

9. Science and research
   - Research history
   - Scientific potential, interdisciplinary collaboration and current research activities
   - Summary of the results
   - Coordination and further steps

10. Risks and preventive protection
    - Development pressure
      - Potential risks
      - Efforts and protection
    - Environmental influences
      - Potential risks
      - Efforts and protection
    - Pressure from tourism
      - Potential risks
      - Efforts and protection
    - Construction work, population pressure and land development
      - Construction
      - Population pressure
      - Land development
    - Illicit excavation
      - Potential risks
      - Efforts and protection

11. Present state of conservation
    - State of conservation of the cave sites in the Ach Valley (Id N°1)
    - State of conservation of the cave sites in the Lone Valley (Id N°2)
    - State of conservation of the find-bearing sediments of the “Caves with the
oldest Ice Age art" in the Ach Valley component part (Id N°1)
- Geißenklösterle (Id N°1-1)
- Sirgenstein Cave (Id N°1-2)
- Hohle Fels (Id N°1-3)

Further palaeolithic sites in the Ach Valley component part (Id N°1)
- Helga Abri

State of conservation of the find-bearing sediments of the “Caves with the oldest Ice Age art” in the Lone Valley component part (Id N°2)
- Vogelherd Cave (Id N°2-1)
- Hohlenstein Stadel Cave (Id N°2-2)
- Bockstein Cave / Bocksteintörlre (Id N°2-3)

Further palaeolithic sites in the Lone Valley component part (Id N°2)
- Hohlenstein-Bärenhöhle
- Hohlenstein Kleine Scheuer
- Further sites in the Bockstein
- Fetzershaldenhöhle
- Frauenfels

Unknown find sites in the area of the nominated property

Summary

12. Monitoring, quality assurance and conflict management
- Monitoring
  - Regular reporting
  - Reactive monitoring
  - Preventive monitoring

- World Heritage compatibility
  - Quality assurance
  - Working groups and commissions

Conflict management

13. Creating awareness
- Information and sensitisation
- Tourism and visitor guidance
  - Tourism plans and tourism management
Regional visitor facilities
Visitor facilities outside the property
UNESCO Welterbestätten Deutschland e.V.

Communications
Guide signs
Internet presence
TV / Radio
Publications
Special events
Special exhibitions
The outcome

Teaching resources
Portfolios / Excursion guides for schools
Training
Museums and information points

Global transfer of knowledge, networks and international cooperation

14. Sustained usage
Sustainability strategy
Economic goals and social goals
Ecological aims

15. Ressources and financing
Financing
Conservation and monitoring
Personnel
Research
Development of museums and exhibitions

16. Management
Introduction
World Heritage

Management structure and coordination
World Heritage Coordination Office at the State Office for Cultural Heritage
Baden-Württemberg – World Heritage Site-Secretariat (WH Coordination
Protection and management of the property

Office / WHS-Secretariat
Steering Committee „Caves“
Coordination Group „Tourism“
Coordination Group „Conservation, Research and Monitoring“
Steering Committee and Coordination Committee „Ice Age Art“

Representatives of interests
Local associations
University of Tübingen
Regional authorities / Governments
Municipalities
Museums / Information centres
Tourism associations
Biosphere Reserve Area Swabian Alb
Schwäbische Alb UNESCO Global Geopark
LEADER and LEADER+

Initial situation and management obligation
Commitment of the representatives of interests

Aims and strategy
Activity domain 1: Securing the coordination of the parties involved (Coordination)
Activity domain 2: Strengthening the credibility of the World Heritage List (Credibility)
Activity domain 3: Securing the conservation of the World Heritage sites (Conservation)
Activity domain 4: Development and promotion of measures for efficient capacity building (Capacity building) / Strengthening the cooperation (Cooperation)
Activity domain 5: Enhancing public awareness and their involvement and support by communication and education (Communication)
Activity domain 6: Integration of the local municipalities (Communities)

17. Catalogue of Measures
Fig. 5-21 View from the inside of Sirgenstein Cave.
5.f Sources and levels of finance

Introduction
Within Germany, each Federal State is responsible for provision of financial and human resources for protection of their archaeological cultural monuments. The Federal States comply thereby with the high standards which are prescribed through national and international networks. The Federal State of Baden-Württemberg is responsible for financing *inter alia* the state universities and the state museums (e.g. the Landesmuseum Württemberg and the Archäologisches Landesmuseum). Communal museums are financed by both the federal state and the respective municipalities.

Conservation and monitoring
Financial means for preservation of cultural monuments in Baden-Württemberg are integrated in the Federal State budget. The Federal State of Baden-Württemberg carries out its monument protection duties as follows: The supreme monument protection authority is the Ministry of Finance and Economics. The senior monument protection authorities are the regional administrative councils (*Regierungspräsidien*) with their headquarters in Stuttgart, Tübingen, Karlsruhe and Freiburg. The State Office for Cultural Heritage is affiliated to the *Regierungspräsidium* Stuttgart.

The Ministry of Finance and Economics makes resources available to the State Office for Cultural Heritage. The State Office for Cultural Heritage is ready to meet the costs which will be incurred in the future for the planned World Heritage “Caves with the oldest Ice Age art”. From 2013 to 2015 expenditures for the “Caves with the oldes Ice Age art” were 230,000 €, 225,000 € and 352,000 €, respectively.

According to Article 1 of the Cultural Heritage Protection Act of Baden-Württemberg (*Denkmalschutzgesetz Baden-Württemberg*, DSchG BW), the State and — to an appropriate extent — also the municipalities must finance the costs of restoration, preservation, stabilization and excavation of archaeological monuments. The lower monument protection authorities (*Untere Denkmalschutzbehörden*) are funded by the respective districts and municipalities. In some cases the owner or the originator of damage can be obliged to contribute to the costs. Non-governmental foundations may also provide financing for research, publication and the preservation of historical monuments.

Monitoring and supervision of the conservation of the sites of the “Caves with the oldest Ice Age art” fall within the scope of the tasks of the public authorities concerned. The State Office for Cultural Heritage Baden-Württemberg develops strategies which contribute to the conservation, protection and monitoring of the cave sites, and implements them. It also has its own laboratories, with full-time restorer personnel. Here, all the objects which derive from excavations by the State Office for Cultural Heritage can be restored and prepared accordingly.
Administrative and scientific personnel

At the State Office for Cultural Heritage Baden-Württemberg, the president and a scientific consultant are dedicated to the World Heritage procedure “Caves with the oldest Ice Age art”. Based on the positive experiences in the field of World Heritage management with the existing archaeological World Heritage sites in Baden-Württemberg, the “Prehistoric Pile dwellings around the Alps” and the “Upper German-Rhaetian Limes”, which in each case are serviced by an individual manager, a qualified manager has also been permanently appointed for the “Caves with the oldest Ice Age art”, at the State Office for Cultural Heritage, who represents and coordinates the administration and deals with the issues of the nominated property as a permanent task. There are also several employees who are financed from the on-going budget of the State Office for Cultural Heritage (see Chapter 5.j). The annual budget of the State Office for Cultural Heritage for personnel in 2015 is provided by the State of Baden-Württemberg and amounts to 6,180,000 €.

The archaeological research conducted in the “Caves with the oldest Ice Age art” is carried out primarily by staff from the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen and the State Office for Cultural Heritage Baden-Württemberg. During the last ten years, research was carried out primarily by different work-groups (see Chapter 5.j). Considerable financial resources were deployed for this purpose. Running expenditures by the University of Tübingen for projects related to the “Caves with the oldest Ice Age art” from 2013 to 2015 amounted to 565,000 € each year.

At the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen, a professor and one scientific consultant are occupied as full-time employees with the research covering the “Caves with the oldest Ice Age art”. The proportion of these activities can change in the course of a year, and can therefore not be precisely estimated. In addition there is a series of employees who are financed by external fund projects (see below).

Studies and scientific work

A range of different archaeological projects are already being promoted in the two nominated component parts, among others by the Cultural Heritage Foundation Baden-Württemberg (Denkmalstiftung Baden-Württemberg) and the German Research Foundation (Deutsche Forschungsgemeinschaft [DFG]).

Excavations were carried out by the State Office for Cultural Heritage Baden-Württemberg in the Hohlenstein Stadel Cave between 2008 and 2013 and during the year 2014 in the archaeological site Frauenfels. The financial means required here originate from the on-going budget of the State Office for Cultural Heritage. Thus a total of 352,000 € have been made available for the year 2015 for studies in the area of the nominated property.
The University of Tübingen has performed excavations in Hohle Fels every year since 1997. Moreover, excavations took place in Geißenklösterle and in front of the Vogelherd Cave, while examinations at the Fetterschaldenhöhle were performed. The costs for theses digs and for the scientific personnel are covered for the most part by third-party funds from the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen. Currently, the workgroup under the leadership of Prof. Nicholas Conard has at their disposal an annual budget of about 565,000 €. Included in this budget is an annual contribution of 35,000 € by the Alb-Donau District to support research projects of the University of Tübingen, such as excavations and scientific analysis.

**Development of museums, exhibitions and similar structures**

A series of museums and information centres are dedicated to the high-profile dissemination of information on topics regarding the “Caves with the oldest Ice Age art”. The Archäopark Vogelherd, Niederstotzingen and the Urgeschichtliches Museum Blaubeuren are to be mentioned here as information support bases on site. The latter informs for more than 50 years about the Palaeolithic in the region. They offer a wide spectrum of educational events. This includes initiatives for school classes, various courses and workshops for children and adults on the topic of Stone Age, presentations of prehistorical skills, guided tours to the archaeological sites, and special theme days. The Urgeschichtliches Museum Blaubeuren functions as the central point, presenting all aspects of the Palaeolithic. Further museums that provide information about the caves and exhibit archaeological artefacts found there are located in Stuttgart, Tübingen and Ulm.

The costs for the construction of the Archäopark Niederstotzingen (2,000,000 €) were financed by funds from the LEADER action group in the Brenz region, the State of Baden-Württemberg and the Heidenheim District. The Förderverein Eiszeitkunst (Ice Age Art Promotional Association), the town of Niederstotzingen and private donors bear the running expenses of the information center, amounting to 200,000 € in 2013 and 450,000 € in 2014 and 2015, respectively. Expenses for the redesign for the Urgeschichtliches Museum Blaubeuren (7,780,000 €) were guaranteed by funds from the federal government, of the State of Baden-Württemberg, the tourism promotion for the State of Baden-Württemberg, the promotional association of the museum, the Gesellschaft für Urgeschichte, and the township of Blaubeuren. Running expenditures of the Urgeschichtliches Museum amounted to 450,000 € in 2013, 780,000 € in 2014 and 650,000 € in 2015.

Furthermore, the costs for the renewed restoration of the “Lion Man” and related conservation and scientific support in 2013 were carried by the State Office for Cultural Heritage Baden-Württemberg.

A travelling exhibition was designed for the year 2015 in the context of the umbrella brand “Weltkultursprung” (World origin of culture) regarding Ice Age art in the caves of the Swabian Jura. The funds required to accomplish this were provided by the
Fig. 5-22 Travelling exhibition regarding Ice Age art in the caves of the Swabian Jura.

Baden-Württemberg Foundation, the Alb-Donau District, the Heidenheim District, the township of Ulm, and the State Office for Cultural Heritage Baden-Württemberg.

In the past decades, exhibitions on the beginnings of Ice Age art were periodically presented in the Urgeschichtliche Museum Blaubeuren. Further exhibitions were coordinated and effected by the Alb-Donau and Heidenheim District administrations as well as the Gesellschaft für Urgeschichte, informing the local population about the importance of the region in this regard. Moreover, several times a year the Urgeschichtliche Museum featured lectures on the Ice Age, Ice Age art and related topics.

In order to effect regional expansion of the information network for the “Caves with the oldest Ice Age art” and to sensitise visitors on site to the cultural heritage, further funding was made available by the State of Baden-Württemberg for development of an information system. The State budget for Baden-Württemberg will provide resources for 2015 and 2016 in the amount of 250,000 € in each case. These resources will enable measures and projects to be sponsored
and promoted with the aim of developing a common and holistic information system for the “Caves with the oldest Ice Age art”. The selection of the projects which are to be sponsored in each case will be made under the auspices of the State Office for Cultural Heritage, in conjunction with the Coordination Group “Tourism”. These resources can be used, for example, for the establishment and extension of information points in the vicinity of the Hohle Fels Cave in the Ach Valley and in the vicinity of the Hohlenstein in the Lone Valley.

<table>
<thead>
<tr>
<th>Institution</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Tübingen</td>
<td>565,000</td>
<td>565,000</td>
<td>565,000</td>
</tr>
<tr>
<td>State Office for Cultural Heritage Baden-Württemberg</td>
<td>230,000</td>
<td>225,000</td>
<td>352,000</td>
</tr>
<tr>
<td>Archäopark Vogelherd Niederstotzingen</td>
<td>200,000</td>
<td>450,000</td>
<td>450,000</td>
</tr>
<tr>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>450,000</td>
<td>780,000</td>
<td>650,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,445,000</strong></td>
<td><strong>1,690,000</strong></td>
<td><strong>1,687,000</strong></td>
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</tbody>
</table>

Tab. 5-61 Overview of the approximate running expenditures (in €) by different institutions in Baden-Württemberg per year for projects related to the “Caves with the oldest Ice Age art”. Not listed are expenditures for regular members of staff.

<table>
<thead>
<tr>
<th>Action</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of Archäopark Vogelherd Niederstotzingen</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Reconstruction of Urgeschichtliches Museum Blaubeuren</td>
<td>7,780,000</td>
</tr>
<tr>
<td>Exhibition “Weltkultursprung” (World origin of culture)</td>
<td>80,000</td>
</tr>
<tr>
<td>Information system</td>
<td>500,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10,360,000</strong></td>
</tr>
</tbody>
</table>

Tab. 5-62 Overview of the approximate one-time expenditures (in €) for major development projects related to the “Caves with the oldest Ice Age art”, financed by several institutions in Baden-Württemberg and the European Union (Archäopark Vogelherd - LEADER).
Fig. 5-23 Special exhibition at the Urgeschichtliches Museum Blaubeuren.
5.g  Sources of expertise and training in conservation and management techniques

Expertise and training of national authorities members

The majority of the experts in the field of archaeological and related disciplines among the German government authorities and institutions for monument preservation possess an appropriate university or college degree corresponding to their area of responsibility. In Germany, there are in all 25 universities with institutes, department chairs or seminars that deal with the subject of Prehistoric Archaeology.

The universities named below in the field of archaeology and monument preservation offer graduate and post-graduate degrees (Bachelor, Master/Magister and PhD). Lectures on prehistoric archaeology and related scientific disciplines are offered here. In this regard, at the institutes in Erlangen, Jena, Cologne, Mainz and Tübingen, special emphasis is placed on lectures that deal with research in the Palaeolithic.

In museum and restoration workshops – the Landesmuseum Württemberg, the Römisch-Germanisches Zentralmuseum in Mainz, the Staatlichen Akademie der Bildenden Künste, Stuttgart and the laboratories at the State Office for Cultural Heritage Baden-Württemberg, most of all, must be mentioned here – conservators are being trained in the techniques required for restoration of artefacts from Palaeolithic sites.

Fig. 5-24  Refitting the fragments of the “Lion Man” figurine in the laboratories of the State Office for Cultural Heritage.
<table>
<thead>
<tr>
<th>Federal State</th>
<th>Town</th>
<th>Name of University</th>
<th>Name of Institute</th>
<th>Faculty / Subject area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baden-Württemberg</td>
<td>Freiburg im Breisgau</td>
<td>Albert Ludwigs University</td>
<td>Institute for Archaeological Sciences: Prehistory, Protohistory and Medieval Archaeology</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td></td>
<td>Heidelberg</td>
<td>Ruprecht Karls University</td>
<td>Centre for Classical Sciences: Institute of Prehistoric Archaeology und Near Eastern Archaeology</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td></td>
<td>Tübingen</td>
<td>Eberhard Karls University</td>
<td>Institute of Prehistory, Early History and Medieval Archaeology</td>
<td>Geoscienific and Cultural Study Faculty</td>
</tr>
<tr>
<td>Bavaria</td>
<td>Bamberg</td>
<td>Otto Friedrich University</td>
<td>Institute for Archaeology, Monument Preservation Studies und Art History: Prehistorical and Protohistorical Archaeology</td>
<td>Humanities and Cultural Studies</td>
</tr>
<tr>
<td></td>
<td>Erlangen</td>
<td>Friedrich Alexander University</td>
<td>Institute of Prehistoric Archaeology</td>
<td>Philosophical Faculty, Subject Area Theology</td>
</tr>
<tr>
<td></td>
<td>Munich</td>
<td>Ludwig Maximilians University</td>
<td>Institute of Pre- and Protohistory and Provinical Roman Archaeology</td>
<td>Faculty of Cultural Sciences</td>
</tr>
<tr>
<td></td>
<td>Regensburg</td>
<td>University of Regensburg</td>
<td>Chair for Pre- and Protohistory</td>
<td>Faculty for Philosophy, Art-, History- and Social Sciences</td>
</tr>
<tr>
<td></td>
<td>Würzburg</td>
<td>Julius Maximilians University</td>
<td>Chair for Prehistorical and Protohistorical Archaeology of the Institute for Classical Studies</td>
<td>Philosophical Faculty I</td>
</tr>
<tr>
<td>Berlin</td>
<td>Berlin</td>
<td>Free University</td>
<td>Institute for Prehistorical Archaeology</td>
<td>Historical- and Cultural- Sciences</td>
</tr>
<tr>
<td>Hamburg</td>
<td>Hamburg</td>
<td>University Hamburg</td>
<td>Prehistoric Archaeology of the Archaeological Institute</td>
<td>Humanities: Subject Area Cultural History and Cultural Studies</td>
</tr>
<tr>
<td>Hessen</td>
<td>Frankfurt am Main</td>
<td>Johann Wolfgang Goethe-University</td>
<td>Institute of Archaeological Sciences Department III: Pre- and Protohistory</td>
<td>Linguistics and Cultural Studies</td>
</tr>
<tr>
<td></td>
<td>Marburg</td>
<td>Phillips University</td>
<td>Pre- and Protohistory (Prehistorical Seminar)</td>
<td>Subject Area: History and Cultural Studies</td>
</tr>
<tr>
<td>Mecklenburg-Vorpommern</td>
<td>Greifswald</td>
<td>Ernst Moritz Arndt University of Greifswald</td>
<td>Chair for Pre- and Protohistory of the Historical Institute</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td>Federal State</td>
<td>Town</td>
<td>Name of University</td>
<td>Name of Institute</td>
<td>Faculty / Subject area</td>
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<tr>
<td></td>
<td>Rostock</td>
<td>University of Rostock</td>
<td>Chair for Pre- and Protohistory at the Heinrich Schliemann Institute for Classical Studies</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td></td>
<td>Göttingen</td>
<td>Georg August University</td>
<td>Seminar for Pre- and Protohistory</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td></td>
<td>Bochum</td>
<td>Ruhr University</td>
<td>Archaeological Sciences: Classical Archaeology, Pre- and Protohistory, Archaeometry</td>
<td>Historical Science</td>
</tr>
<tr>
<td>Nordrhein-Westfalen</td>
<td>Bonn</td>
<td>Rheinische Friedrich Wilhelms University</td>
<td>Institute for Archaeology and Cultural Anthropology, Department of Pre- and Protohistoric Archaeology</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td></td>
<td>Köln</td>
<td>Albertus Magnus University</td>
<td>Institute of Prehistoric Archaeology</td>
<td>Philosophical Faculty</td>
</tr>
<tr>
<td></td>
<td>Münster</td>
<td>Westfälische Wilhelms-University</td>
<td>Department for Prehistoric Archaeology of the Historical Seminar</td>
<td>Subject Area History / Philosophy</td>
</tr>
<tr>
<td>Rheinland-Pfalz</td>
<td>Mainz</td>
<td>Johannes Gutenberg-University</td>
<td>Work Area Prehistoric Archaeology of the Institute for Classical Studies</td>
<td>Subject Area Historical and Cultural Sciences</td>
</tr>
<tr>
<td>Saarland</td>
<td>Saarbrücken</td>
<td>Saarland University</td>
<td>Subject Area: Classical Studies: Pre- and Protohistory and Near Eastern Archaeology</td>
<td>Philosophical Faculty I</td>
</tr>
<tr>
<td>Sachsen</td>
<td>Leipzig</td>
<td>University of Leipzig</td>
<td>Chair for Pre- and Protohistory with Collection for Pre- and Protohistory of the Historical Seminar</td>
<td>Faculty for History, Art and Oriental Sciences</td>
</tr>
<tr>
<td>Sachsen-Anhalt</td>
<td>Halle an der Saale</td>
<td>Martin Luther University</td>
<td>Institute for Art History and Archaeology of Europe: Prehistoric Archaeology and Medieval Archaeology and the Modern Era</td>
<td>Philosophical Faculty I: Social Sciences and Historical Cultural Sciences</td>
</tr>
<tr>
<td>Schleswig-Holstein</td>
<td>Kiel</td>
<td>Christian Albrechts University</td>
<td>Institute of Prehistoric Archaeology</td>
<td>Philosophy and Mathematics-Natural Sciences Faculty</td>
</tr>
<tr>
<td>Thüringen</td>
<td>Jena</td>
<td>Friedrich Schiller University</td>
<td>Department for Pre- and Protohistory</td>
<td>Philosophical Faculty</td>
</tr>
</tbody>
</table>

Tab. 5-63 Departments at German universities that offer expertise and training in prehistoric archaeology.
Excavation technicians are being trained in Germany according to an established system and certified, both of which are monitored by the association of state archaeologists as well as the commission (Verband der Landesarchäologen and Römisch-Germanische Kommission). The sequence of a three-year training programme within the State Office for Cultural Heritage Baden-Württemberg is obligatory in order to attain the necessary qualifications. Moreover, the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen has been offering, for the last 15 years, a professional training programme as technician for archaeological sciences. In this training programme, particular emphasis it put on the mastering of excavation techniques and documentation, surveying technique, data collection, data evaluation as well as find-preparation and find-cataloguing in Palaeolithic archaeological sites. The professional conservators at the State Office for Cultural Heritage responsible for the finds of the “Caves with the oldest Ice Age” art have completed one of the respective training programmes.

Subject-specific conferences that are organised by universities, archaeological and museum associations, archaeological societies and research associations, such as the meeting of the Hugo-Obermaier Society offer furthermore the possibility for scientific interaction as regards preservation and archaeological site management.

**Knowledge base of the authorities involved**

In Baden-Württemberg, the archaeological cultural heritage is managed by the Ministry of Finance and Economics Baden-Württemberg as the supreme cultural heritage authority. Senior monument protection authorities are the Regional Administrative Councils in the four administrative districts of Stuttgart, Karlsru-
he, Freiburg and Tübingen and the State Office for Cultural Heritage as the competent expert authority. The lower monument protection authorities represent the lowest official level, usually the lower planning law authorities in the district administrations, larger municipalities and administrative bodies.

The trained specialists in the State Office for Cultural Heritage responsible for management and conservation of the “Caves with the oldest Ice Age art” are primarily archaeologists who have intensively studied European archaeology and the preservation of monuments. Technical personnel possess special qualifications and multi-year experience in the field of preservation of monuments in Palaeolithic archaeological sites and discoveries. Besides, there are trained specialists for Cultural Heritage management with other academic backgrounds (see Chapter 5.j).

As early as February 2012 in the context of the nomination, a permanent “World Heritage Coordination Office” was installed in the State Office for Cultural Heritage Baden-Württemberg (World Heritage Site-Secretariat). A coordinator was implemented in order to produce the nomination dossier. He is responsible on site for management of the property in the future. He monitors in compliance with cultural heritage (monument protection), takes care of stakeholder matters and mediates the World Heritage concept as well.

Here, analysis can be based on experiences in the management of the World Heritage properties “Prehistoric Pile dwellings around the Alps” and “Frontiers of the Roman Empire” (Upper German-Rhaetian Limes). Both World Heritage properties are supervised by the State Office for Cultural Heritage Baden-Württemberg. For this purpose as well, specified coordination points were installed with one coordinator each, who are trained scientists in the respective specialty field and who take care of management and monitoring of the World Heritage properties. For the “Caves with the oldest Ice Age art”, a comparable structure has also been implemented.

Scientific personnel who are specialised primarily in research work and carry out research projects concerning the “Caves with the oldest Ice Age art” work for the most part at the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen. Excavations and scientific evaluations are carried out under the direction of Prof. Nicholas Conard, Head of the Department of Early Prehistory and Quaternary Ecology. These research efforts comprise – in addition to in-house research work done by the State Office for Cultural Heritage Baden-Württemberg – an important foundation for our knowledge regarding discoveries from the “Caves with the oldest Ice Age art” and their context.

National and international cooperation

The specialists for prehistoric archaeology in the State Office for Cultural Heritage Baden-Württemberg and in the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen entertain close scientific interdisciplinary research collaborations with other facilities that deal with research on prehistory and, first and foremost, the Palaeolithic.
### Sources of expertise and training in conservation and management techniques

<table>
<thead>
<tr>
<th>Institution</th>
<th>Contact individuals</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Office for Cultural Heritage Baden-Württemberg</strong></td>
<td>Prof. Dr. Claus-Joachim Kind, Conny Meister, M.Sc., Dr. Stephan M. Heidenreich</td>
<td>Evaluation of the discoveries (artefacts) and findings from the Ach and Lone Valleys (archaeology, laser-scan)</td>
</tr>
<tr>
<td><strong>Institute for Archaeological Sciences (INA) at the University of Tübingen</strong></td>
<td>Prof. Nicholas J. Conard, Alexander Immel, Jun.-Prof. Dr. Christopher E. Miller, Alvise Barbieri, Prof. Dr. Katerina Harvati, Prof. Dr. Johannes Krause, Dr. Susanne Münzel, Cosimo Posth, PD Dr. Simone Riehl, Dr. Britt Starkovitch.</td>
<td>Evaluation of the discoveries (artefacts) and findings from the archaeological sites in the Ach and Lone Valleys, (archaeology, micromorphology, anthropology, archaeobotany)</td>
</tr>
<tr>
<td><strong>Institute for Geosciences at the University Tübingen</strong></td>
<td>“Prof. Dr. Hervé Bocherens, Prof. Dr. Madeleine Böhme, Dr. Dorothée Drucker”</td>
<td>Palaeoecology, palaeoclimatology</td>
</tr>
<tr>
<td><strong>Senckenberg Forschungsinstitut und Natur-museum Frankfurt</strong></td>
<td>PD Dr. Angela A. Bruch,</td>
<td>Palaeoclimatology, palaeobotany</td>
</tr>
<tr>
<td><strong>Senckenberg Center for Human Evolution and Palaeoenvironment in Tübingen (HEP)</strong></td>
<td>Prof. Dr. Volker J. Moosbrugger, Dr. Sibylle Wolf</td>
<td>Aspects of biological and cultural evolution of man.</td>
</tr>
<tr>
<td><strong>Staatliches Museum für Naturkunde Stuttgart</strong></td>
<td>Dr. Reinhard Ziegler</td>
<td>Small-mammal remains</td>
</tr>
<tr>
<td><strong>Boston University, Dept. of Anthropology</strong></td>
<td>Prof. Paul Goldberg</td>
<td>Micromorphology</td>
</tr>
<tr>
<td><strong>Kenyon College Gambier, Dept. of Anthropology</strong></td>
<td>Prof. Bruce L. Hardy</td>
<td>Residue and use-wear analysis on stone tools</td>
</tr>
<tr>
<td><strong>Université de Liège, Service de Préhistoire</strong></td>
<td>Dr. Veerle Rots</td>
<td>Signs of usage in lithic artefacts</td>
</tr>
<tr>
<td><strong>Universitat Rovira e Virgili Tarragona, Dept. of History and History of Art</strong></td>
<td>Dr. Florent Rivals</td>
<td>Palaeontology</td>
</tr>
<tr>
<td><strong>University of Vienna, Department of Palaeontology</strong></td>
<td>Prof. Dr. Gernot Rabeder, Dr. Martina Pacher</td>
<td>Palaeontology</td>
</tr>
<tr>
<td><strong>University of Potsdam</strong></td>
<td>Prof. Michael S. Hofreiter</td>
<td>Palaeogenetic analysis</td>
</tr>
<tr>
<td><strong>Museum für Naturkunde Berlin</strong></td>
<td>Dr. Gottfried Böhme</td>
<td>Fish, amphibian and reptile fauna analysis</td>
</tr>
<tr>
<td><strong>State Office for Geology, Raw Materials and Mining Baden-Württemberg</strong></td>
<td>Dr. Christian Fritz</td>
<td>Raw material analysis</td>
</tr>
<tr>
<td><strong>University of Oxford, Oxford Radiocarbon Accelerator Unit</strong></td>
<td>Prof. Thomas Higham</td>
<td>Radiocarbon dating</td>
</tr>
<tr>
<td><strong>Swiss Federal Institute of Technology Zurich</strong></td>
<td>Dr. Irka Hajdas</td>
<td>Radiocarbon dating</td>
</tr>
<tr>
<td><strong>Département de Préhistoire du MNHM (Museum national d'Histoire naturelle) UMR 7194 du CNRS</strong></td>
<td>Dr. Christophe Falguères, Dr. Keiko Kitagawa, Maïlys Richard,</td>
<td>ESR dating, Palaeontology</td>
</tr>
<tr>
<td><strong>Max Planck Institute for Evolutionary Anthropology (EVA) / University of Bayreuth</strong></td>
<td>PD Dr. Daniel Richter</td>
<td>Dating methods</td>
</tr>
</tbody>
</table>

Tab. 5-64 Scientific institutions and personnel that are involved in research projects concerning the “Caves with the oldest Ice Age art”.

Current and planned archaeological investigations and geological surveys such as core-drilling procedures facilitate new findings in the area of archaeology as well as ecological and Palaeolithic changes. Coordination of excavation activities in the State of Baden-Württemberg and – in the component parts of the property in particular – occurs exclusively through the State Office for Cultural Her-
Protection and management of the property

itage Baden-Württemberg as the responsible expert authority. This is based on Article 21 DSchG BW: follow-up investigations, especially excavations with the goal of discovering cultural monuments, require authorisation. Authorisation is granted by the Office for Cultural Heritage in consultation with the senior monument protection authority.

Since the archaeological researches in recent years have focussed predominantly on the excavations in Hohle Fels, Geißenklösterle, Hohlenstein Stadel Cave and Vogelherd Cave, at this point the relevant research institutes and their respective objectives concerning these archaeological sites should be exemplarily presented.

In a research plan it was agreed to continue and intensify the international collaboration in coming years, in order to expand scientific findings regarding the nominated property by means of an active research programme.

5.h Visitor facilities and infrastructure

**Status of visitation**

Artefacts, reconstructions and research history of the Palaeolithic settlements in the Swabian Jura are presented in numerous museums and visitor centres. They convey the outstanding universal value of the “Caves with the oldest Ice Age art” with their unique discoveries. All exhibition and information centres that display original artefacts are located in Baden-Württemberg and even, in part, in the immediate vicinity of the archaeological sites. The necessary touristic infrastructure is, for the greater part, both locally and regionally available.

In the following section, the museums and information centres are listed that are dedicated to presentation of the “Caves with the oldest Ice Age art”. These museums and information centres can usually be found at easily accessible locations, whereby a continuous effort is being made to guarantee unlimited access to these public buildings. Near the museums, information points and properties themselves, one can find tourist information offices, public transport, catering operations and diverse possibilities for accommodations. Multi-language information for international visitors is offered on location as well as in the internet (see Chapter 5.i).

**Visitor facilities inside and near the nominated property**

Directly in, or in the surrounding area of the two component parts of the nominated properties there are the information centres Archäopark Vogelherd and the Urgeschichtliches Museum Blaubeuren. In Rammingen-Lindenauf there is a small information point that is also used by the Schwäbische Alb UNESCO Global Geopark. Plans have been made to further expand the information system in the future. This refers especially to the information point Hohle Fels near Schelklingen, which shall be constructed over the next few years.
Fig. 5-26 Locations of museums and information centers presenting finds from the property "Caves with the oldest Ice Age art".
In recent years it could be observed that public interest in the topics “Palaeolithic” and “oldest art” is constantly increasing. This is reflected in the visitor numbers in the various museums and information points.

Archäopark Vogelherd (Niederstotzingen-Stetten ob Lontal)

In the Information Centre “Archäopark Vogelherd” the archaeological site and the significance of the Palaeolithic archaeological landscape are addressed. Furthermore, two of the ivory figurines from subsequent excavations at the Vogelherd Cave are presented. The information centre was built, among other sources, with funds from the European promotional programme “LEADER+” and the Federal State Baden-Württemberg, the township of Niederstotzingen and private associations in order to make the topics of the Palaeolithic accessible to a broader public. The prehistoric discoveries are to be exhibited hereby in the vicinity of their original archaeological site. At the same time, construction of the information centre shall serve to promote the economically underdeveloped regions.

The centre of the Archäopark is an information building. It is located a few hundred metres away from the Vogelherd Cave. Facts concerning the Palaeolithic and Ice Age are presented here. Additionally, the two previously mentioned ivory figurines are exhibited. Nearby, an outdoor facility extending around the Vogelherd Cave and the information centre completes the Archäopark by means of diverse installations. These are meant to inform visitors about prehistoric life, and contribute to understanding thereby. Included in the information offering are most of all guided tours and practice-oriented, Stone Age programme stations as well as audio-visual presentations. Building activities at the Archäopark Vogelherd were completed in 2013. Opening of the facility took place in May 2013. In 2013, as many as 36,000 guests were registered.

The Archäopark Vogelherd is easily accessible, as the whole area - except the cave - is at ground level. A parking lot for both cars and buses is close by. The exhibition, the museum shop and cafe as well as the outdoor park area are accessible for disabled people. Since the cave itself is situated on a hillside, the path leading to the cave is not entirely accessible for disabled people. Restaurants and hotels can be found in the region, the closest of which is located in Niederstotzingen.

Urgeschichtliches Museum (Blaubeuren)

The Urgeschichtliches Museum Blaubeuren (Urmu) is situated nearby the internationally important and reknown sites of the Middle and Upper Palaeolithic of the Ach and Blau Valleys. As the central museum for the Palaeolithic period in Baden-Württemberg (branch museum of the Archäologisches Landesmuseum Baden-Württemberg) and under the heading “Wo der Mensch wurde” (Where man came into being), the Urgeschichtliches Museum Blaubeuren inter alia presents the oldest figurative art and musical instruments worldwide. All fig-
### Visitor facilities and infrastructure

**Tab. 5-65** Visitor numbers at the museums and information points in or near the property, presenting artefacts from the “Caves with the oldest Ice Age art”.

<table>
<thead>
<tr>
<th>Town</th>
<th>Museum / Info-point</th>
<th>Visitors 2012</th>
<th>Visitors 2013</th>
<th>Visitors 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niederstotzingen-Stetten</td>
<td>Archäopark Vogelherd</td>
<td>n.a.</td>
<td>36,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Blaubeuren</td>
<td>Urgeschichtliches Museum</td>
<td>17,000</td>
<td>15,500</td>
<td>28,000</td>
</tr>
<tr>
<td>Rammingen</td>
<td>Information point “Lindenau”</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

**Tab. 5-66** Information and exhibition locations in close proximity to the “Caves with the oldest Ice Age art”.

<table>
<thead>
<tr>
<th>Town</th>
<th>Museum / Info-point</th>
<th>Component part (Id N°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaubeuren</td>
<td>Urgeschichtliches Museum</td>
<td>Ach Valley (1)</td>
</tr>
<tr>
<td>Schelklingen</td>
<td>Information point Hohle Fels (planned)</td>
<td>Ach Valley (1)</td>
</tr>
<tr>
<td>Niederstotzingen-Stetten</td>
<td>Archäopark Vogelherd</td>
<td>Lone Valley (2)</td>
</tr>
<tr>
<td>Rammingen</td>
<td>Information point “Lindenau”</td>
<td>Lone Valley (2)</td>
</tr>
</tbody>
</table>

**Fig. 5-27** Visitor facilities at the Archäopark Vogelherd, Niederstotzingen.
Fig. 5-28 Flyer advertising the Archäopark Vogelherd, Niederstotzingen.
figurative Ice-Age artworks from the archaeological layers of the Hohle Fels, near the town of Schelklingen, such as the “Venus of Hohle Fels”, the oldest figurative representation of a human, a water fowl or the “Small Lion Man” are on display. Further highlights exhibited, are two original flutes discovered at the Geißenklösterle. They were made from a radial bone of a griffon vulture and of mammoth ivory. Numerous finds made from mammoth ivory, such as personal adornments and further evidence of the Middle and Upper Palaeolithic are presented and vividly inform the visitor about the living conditions during the Ice Age. The guests of the museum can choose from a wide range of supplementary programs. Annual special exhibitions, a special Stone Age workshop, educational events for children, adolescents and adults, other workshops, guided tours by skilled professionals to the cave-sites and within the museum as well as scientific lectures, are part of the museum’s program. During the annual events of the “Academy for adults” and “Open Cave Day”, archaeologists explain the results of the latest research. Scientifically the museum is directed by the University of Tübingen. It employs its own scientific and pedagogical personnel. Moreover the University of Tübingen maintains a research station at the museum. It is also the Schwäbische Alb UNESCO Global Geopark information point, providing insights about the landscape and the history of the formation of the Swabian Jura. The Museum was reopened in May 2014 after extensive enlargement and refurbishment. A rise in the numbers of visitors from 15,500 in 2013 to 28,000 in 2014 is evidence of the increasing interest among the public in the subject of Ice Age archaeology.

The museum is located near the center of Blaubeuren. Parking lots for cars and buses are closeby. The train station with direct connection to the city of Ulm is in walking distance (ca. 750 m). With a ramp at the entrance and an elevator inside the building the Urgeschichtliche Museum is entirely accessible for handicapped people. The museum also has its own shop and cafe. Hotels and restaurants can be found close by in the city center of Blaubeuren.

**Information point Hohle Fels Schelklingen**

In the valley floodplain below the Hohle Fels, an information point is to be constructed that will make reference to discoveries from the Hohle Fels, and to inform the public regarding the outstanding universal value of the Ach Valley as an archaeological find region. At the time of the nomination, construction work was still in the planning stage. The State Office for Cultural Heritage Baden-Württemberg has been fundamentally involved in strategy development and implementation.

**Information point Hohlenstein Rammingen-Lindenau**

Only a few hundred metres away from the Hohlenstein Stadel Cave in the small hamlet Lindenau, a pre-existing information point shall be expanded that is also
Protection and management of the property

Fig. 5-29 Entrance area of the Urgeschichtliches Museum Blaubeuren.

Fig. 5-30 Exhibition room at the Urgeschichtliches Museum Blaubeuren.
used by the Schwäbische Alb UNESCO Global Geopark. It serves to display the discoveries from the Stadel Cave, especially a copy of the figurine of the Lion Man, as well as to explain the outstanding universal value of the Lone Valley as an archaeological excavation region.

Even though the hamlet of Rammingen-Lindenau is off the main roads, it can be easily reached by car and bus. A parking lot offers space for several vehicles. The information point as well as the adjacent restaurant with bathrooms is accessible for handicapped persons.

**General information within the nominated property**

The various stakeholders, who are involved in mediation for the nominated World Heritage property, have joined forces under the umbrella brand “Weltkultursprung” (World origin of culture). This comprises, among others, representatives from all participating municipalities, the two districts, the Ulmer Museum, the Urgeschichtliches Museum Blaubeuren, the Information Centre Archäopark Vogelherd Niederstotzingen, the University of Tübingen and the State Office for Cultural Heritage Baden-Württemberg (see Chapter 5.d). Within a steering committee and an upstream coordination group, an agreed information and presentation concept was jointly developed.

The umbrella brand “Weltkultursprung” (World origin of culture) is, furthermore, focused on a unified presentation of the property. It is built on a previously-existing information network. Information boards highlighting the cave sites were thus erected, as early as during the preparatory phase for the nominated component part, under the auspices of the promotion of sustainable tourism for the region. This previously-existing information offering shall be unified and expanded in the near future. Signposting of the pathways in the valley segments and in front of the caves in particular has also been implemented, or it is a part of future plans.

Accessibility of a few caves such as Geißenklösterle, Sirgenstein Cave, Bockstein Cave / Bocksteintörle and Hohlenstein Stadel Cave shall be improved in the future. Since these sites are situated in remote areas, it is necessary to walk several hundred meters on unpaved paths to reach the caves. They are therefore unfortunately not accessible for disabled people. Further measures for improvement of the information structure, sustainability and accessibility shall be carried out within the management plan (see Chapter 5.e and Volume II).

**Visitor facilities outside the nominated property**

Anticipated pressure due to rising visitor numbers in connection with a nomination is reduced through regional dispersion of the presentation locations. The discoveries from the “Caves with the oldest Ice Age art”, including carved ivory figurines, flutes and personal ornaments, as well as artefacts made of bone, stone and antler shall be decentrally exhibited. The respective institutions thereby are networked together (see Chapter 5.d). The reciprocal exchange of artefacts and mutual presentations and/or exhibitions is already an essential part of the different museum strategies.
Le berceau de l’homme artiste!  
Where man came into being

Fig. 5-31 Flyer advertising the Urgeschichtliches Museum Blaubeuren.
In addition to the facilities in or in the vicinity of the property, three more museums farther away from the property are dedicated to presentation of discoveries from the “Caves with the oldest Ice Age art”. They provide information about the archaeological sites and further aspects of the Ice Age settlement and house original artefacts from the various archaeological sites at Ach and Lone Valleys.

The museums are usually located in places that are easy to access. A barrier-free entrance to these public buildings has been guaranteed. Tourist offices, installations for public transport, parking spaces, gastronomic operations, accommodations and multi-language information points are available in close proximity. Further information relevant for national and international visitors, the accessibility of museums and other offerings in the surrounding area can be obtained from the respective homepages (see Chapter 5.d).

**Ulmer Museum**

The Ulmer Museum, established in 1924, stages exhibitions of art, archaeology, and urban and cultural history in Ulm. Its displays include the Archaeological Collection, with finds from the pre-history and early history of the Ulm region. One highlight of the museum is undoubtedly the ivory statuette of the “Lion Man”, which was discovered in the Hohlenstein Stadel Cave. It also features finds from the excavations of R. Wetzel, such as personal ornaments from the Aurignacian layers of the Bockstein-Törle and the Neanderthal femur fragment from the Hohlenstein-Stadel. Some 43,000 visitors were recorded in 2014.

**Museum Schloss Hohentübingen - University of Tübingen (MUT | Early Cultures | Collections at Schloss Hohentübingen)**

This museum brings together objects from the teaching collection of the Institutes for Prehistory, Early Prehistory and Medieval Archaeology, for Classical Archaeology, for Egyptology, for Ethnology and for the Ancient Oriental seminar. The teaching collection of the Institute for Prehistory and Early Prehistory hails back partially to discoveries that were made by Robert Rudolf Schmidt at the beginning of the 20th century in the caves of the Swabian Jura. Particularly significant are the ivory figurines from the Aurignacian displayed here and discovered in the Vogelherd Cave by Gustav Riek in 1931. Some finds from the re-excavations by Nicholas J. Conard are also on display. The museum had 30,000 visitors in 2014.

**Landesmuseum Württemberg (LMW), Stuttgart**

The Landesmuseum Württemberg in Stuttgart presents significant discoveries and findings from the years of history of mankind from Baden-Württemberg. Included among them are the first traces of human beings from the Stone Age, legacies from the Bronze Age and Iron Age, Roman findings, and remnants from the Alamanni and Franks in the early Middle Ages. A 300,000-year regional-archaeological spectrum emerges here that concerns everything from landscapes
Protection and management of the property

Fig. 5-32  Frontal view of the Ulmer Museum.

Fig. 5-33  Exhibition of the “Lion Man” figurine at the Ulmer Museum.

Fig. 5-34  Museum of the University of Tübingen at the castle Hohentübingen.
to climate, from the emergence of the foraging and agricultural cultures to the disappearance thereof, and from early civilisations to the beginnings of medieval settlements. Above and beyond this regional archaeology, this broad spectrum of the antique collection facilitates a peek into the world of the high cultures in the Mediterranean region from the Bronze Age into Late Antiquity.

Displayed in the Landesmuseum Württemberg in Stuttgart are the archaeological findings from the Geißenklösterle, including the carved Aurignacian period ivory figurines, such as a mammoth, a bison, a cave bear and a human figurine; and one flute created from the radial bone of a whooper swan. One part of a lion’s head found in the Vogelherd Cave and made of mammoth ivory is also on display. The number of visitors in 2014 amounted to about 234,500 individuals.

<table>
<thead>
<tr>
<th>Town</th>
<th>Museum / Info-point</th>
<th>Visitors 2012</th>
<th>Visitors 2013</th>
<th>Visitors 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tübingen</td>
<td>Museum Schloss Hohentübingen</td>
<td>19,500</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Stuttgart</td>
<td>Landesmuseum Württemberg</td>
<td>218,500</td>
<td>241,500</td>
<td>234,500</td>
</tr>
<tr>
<td>Ulm</td>
<td>Ulmer Museum</td>
<td>37,000</td>
<td>40,000</td>
<td>43,000</td>
</tr>
</tbody>
</table>

Tab. 5-67 Information and exhibition locations in Baden-Württemberg with discoveries from the “Caves with the oldest Ice Age art”.

Fig. 5-35 Exhibition room of the Vogelherd figurines in the Museum of the University of Tübingen at the castle Hohentübingen.
Exhibitions

Since 1990 exhibitions on the beginnings of Ice Age art were periodically presented in the Urgeschichtliches Museum Blaubeuren. Further exhibitions were coordinated and effected by the Alb-Donau and Heidenheim District administrations as well as the Gesellschaft für Urgeschichte, informing the local population about the importance of the region in this regard. Moreover, several times a year the Urgeschichtliche Museum featured lectures on the Ice Age, Ice Age art and related topics.

Since public interest in Stone Age archaeology has significantly risen in recent years, special exhibits covering this topic are also offered on a regular basis. Thus
in 2009 at the large state exhibition “Eiszeit. Kunst und Kultur” (Ice Age, Art and Culture) that was organised and staged by the Archäologisches Landesmuseum Baden-Württemberg in Stuttgart, about 98,000 visitors were counted. A brief outline of human prehistory of hunters and gatherers was displayed in the exhibit from the beginnings until the onset of settlement. A special focus was offered here in the form of presentation of the animal and human figurines, in the original, from the “Caves with the oldest Ice Age art”. Furthermore, works of art from numerous other important Palaeolithic archaeological sites in Europe were exhibited.

The Ice Age art from the caves in Swabian Jura also played a central role in the exhibition “Ice Age Art: the arrival of the modern mind” in the British Museum in London. The “Lion Man” from the Hohlenstein Stadel Cave functioned here as the focal point for the subject area “Imagination” to illustrate the human capacity to represent objects that do not exist. The exhibit had more than 100,000 visitors.

A new travelling exhibit, which places in the foreground above all the figurative art and music instruments discovered in the “Caves with the oldest Ice Age art”, was presented for the first time in 2015. The resources for putting this into op-
5.1 Policies and programmes related to the presentation and promotion of the property

Information and sensitisation

The target groups for creating awareness with regard to the property, their outstanding universal value, and the World Heritage concept include first and foremost the local residents and interested visitors including school classes. One of the major aims of educational events and programmes is the integration of Education for Sustainable Development (ESD).

In step with the procedure, a number of lectures have been provided for the local population on the topic of the “Caves with the oldest Ice Age art” and the nomination as a World Heritage site by the State Office for Cultural Heritage.

In addition to this, in April 2015 the annual gathering of the Hugo Obermaier Society, the cross-regional German association for research into the Pleistocene
and the Stone Age, was held in Heidenheim, in the vicinity of the Lone Valley. Many of the international scientists who made contributions at the gathering made reference to the topic areas of the “Caves with the oldest Ice Age art”. In a lecture given by the Working Group responsible for the World Heritage application at the State Office for Cultural Heritage, the application procedure and the state of the process were presented in detail to the scientific community. As well as the scientific presentations, there were two public lectures given about the Ice Age sites in the Ach Valley and Lone Valley, which were very well attended. The meeting was supported - both financially and through voluntary work - by different parties, including the University of Tübingen, the Förderverein Eiszeitkunst im Lonetal e.V., the “Weltkultursprung”, the City of Heidenheim, the District of Heidenheim, the Archäopark Niederstotzingen, the Urgeschichtliches Museum, the Hanns Voith Stiftung and the Stadtsparkasse Heidenheim.

Public presentation
As previously demonstrated in Chapter 5.g, a series of museums and information centres are dedicated to public exposure of topics from Stone Age archaeology with special reference to the “Caves with the oldest Ice Age art”. As the primary information support bases on site, the Archäopark Vogelherd Niederstotzingen and the Urgeschichtliches Museum Blaubeuren must be mentioned...
Protection and management of the property

They offer a broad spectrum of educational events. This includes initiatives for school-classes, various courses and workshops for children and adults on the topic of the Stone Age, presentations of prehistoric skills, guided tours to the archaeological excavations on site and special theme days. Funding for the museums and their special activities come from the municipalities and the State of Baden-Württemberg.

Different museums, which offer exhibits covering the caves and provide information about the artefacts, are located in Stuttgart, Tübingen and Ulm. Further information points shall be constructed (or expanded) in the vicinity of the Hohle Fels in the Ach Valley and near Hohlenstein in the Lone Valley. For this purpose, funds amounting to 250,000 € each have been set aside in the Baden-Württemberg state budget for 2015 and 2016. A plethora of individual actions and projects generated by the participants in the Coordination Group “Tourism” shall thus be funded, with which a joint, integrated information system for the “Caves with the oldest Ice Age art” shall be developed.

A description on site has already been provided at all caves. This shall be unified in collaboration with municipalities, districts, museums and associations. Particularly the umbrella brand “Weltkultursprung” (World origin of culture) makes contributions in this regard (see Chapter 5.d).

In the context of the umbrella brand “Weltkultursprung” (World origin of culture) a website has moreover been installed, which provides information about the nominated property and makes reference to the internet presence of individual
Policies and programmes related to the presentation and promotion of the property

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Fig. 5-41 Official website of the State Office for Cultural Heritage Baden-Württemberg concerning the nomination “Caves with the oldest Ice Age art”.

stakeholders (http://www.welt-kultursprung.de). What is more, a website covering the topic of “Caves with the oldest Ice Age art” shall be produced by the State Office for Cultural Heritage Baden-Württemberg. Here, as a matter of priority, information shall be provided regarding the outstanding universal value and necessity for protection, conservation and preservation of the nominated property. The development of this website is funded by the State Office for Cultural Heritage.

Further media, e.g. local and national magazines, brochures, leaflets and television broadcasts, provide information to the general public concerning the significance of the property. The Ice Age in the Swabian Jura has previously been covered in a number of television broadcasts, and its outstanding position in the context of the early history of mankind (see Chapter 7.a).

Also, at the annually-scheduled Caravan-Motor-Touring (CMT) trade-fair in Stuttgart – the largest international public exhibition for tourism and leisure activities – information is offered every year at the stand of the State Office for Cultural Heritage Baden-Württemberg concerning the previously existing World Heritage sites in Baden-Württemberg. A separate presentation has been planned for the “Caves with the oldest Ice Age art” as well here, funded by the State Office for Cultural Heritage.
Since 1990 the Open Cave Day is celebrated at the Geißenklösterle and Hohle Fels. On this day, members of the local association of the Gesellschaft für Urgeschichte und Förderverein des URMU Blaubeuren e.V. (GfU) and the University of Tübingen inform the interested public about the Palaeolithic and make these cave-sites accessible. This is made possible through the invaluable support and voluntary work of the local association and the University of Tübingen.

On European Heritage Days, which take place across Europe every year in September, the caves are open to the public. Interested parties are informed by experts concerning the outstanding value of these cultural monuments, their history, and archaeology in general. In this instance, the future World Heritage manager will represent World Heritage at the venue. These events are financed by the State Office for Cultural Heritage.

Fig. 5-42 Art event with figurines of the “Lion Man” at a public space in Ulm, 2008.
UNESCO World Heritage Day is celebrated on the first Sunday in June every year. And every year another German World Heritage site features as the central event of German World Heritage Day. The German UNESCO Commission and the UNESCO Welterbestätten Deutschland e.V., of which the Ministry of Finance and Economics of Baden-Württemberg is a member, take advantage of World Heritage Day to present their aims and activities to the general public. In 2015, the central event of German World Heritage Day is being held in Unteruhldingen, Baden-Württemberg (Prehistoric Pile Dwellings around the Alps). Following a positive assessment of the nomination of the “Caves with the oldest Ice Age art”, in future special guided tours and activities will be carried out, based around World Heritage. Funding for these activities comes from the State Office for Cultural Heritage.

As well as this the Urgeschichtliches Museum Blaubeuren and the Archäopark Vogelherd Niederstotzingen are integrated into the international network of heritage sites “Ice Age Europe” (http://www.ice-age-europe.eu), which functions as an umbrella brand. Here 18 sites across Europe joined forces to link information and support important efforts to protect, research and disseminate the European Ice Age heritage.

Fig. 5-43 European Heritage Days 2009 at Hohlenstein Stadel Cave.
Scientific work and scientific publications

Evaluation of the finds from archaeological excavations is a significant essential part of the scientific work. Results from the excavations are made accessible to both the scientific community as well as the general public after completion of an evaluation thereof. This helps to furthermore integrate the results of an excavation in previously-known scientific concepts, and expands upon them if necessary.

In order to make research results accessible, considerable funds were – in addition to third-party funds from the University of Tübingen – set aside out of the budget of the State Office for Cultural Heritage Baden-Württemberg and the Alb-Donau District for evaluation, publication and presentation of excavation results from the “Caves with the oldest Ice Age art”. This shall be continued in the future.

Current projects

During recent decades, archaeological excavations have taken place on a regular basis. Currently, there are various research projects focused on the “Caves with the oldest Ice Age art”. The University of Tübingen has been carrying out annual excavations in Hohle Fels since 1997. The costs for excavation and scientific personnel have been covered by the budget of the Institute of Prehistoric Archaeology at the University of Tübingen and third-party means. Also, subsequent excavations in both Geißenklösterle and Vogelherd Cave, as well as a test excavation in the recently-discovered Fetzershaldenhöhle in the Lone Valley were paid with funds from this institute. Currently, the workgroup under the direction of Prof. Nicholas J. Conard has access to an annual budget of around 600,000 €.

Excavations were also carried out in the Hohlenstein Stadel Cave between 2008 and 2013, and in the recently-discovered sites Frauenfels and Buschlenberg Cave in the Lone Valley in 2014 and 2015. The project is directed by Prof. Claus-Joachim Kind and Thomas Beutelspacher M.A. The generated costs were carried by the State Office for Cultural Heritage Baden-Württemberg.

Current publications and press

Regarding the various excavations in the Ach and Lone Valleys as well as analyses of the collected findings and artefacts, a huge number of publications in international and national trade journals, monographs, Doctoral and Master’s theses and popular scientific magazines have appeared. Also in television and radio programmes, development of figurative art and music in the “Caves with the oldest Ice Age art” has been taken up time and time again (see annexed DVD).

Reports from a number of research and rescue excavations will appear in scientific publications in the next few years. Furthermore, publications of the research carried out within the ongoing research programme „ROCEEH“ (The Role of Culture in Early Expansions of Humans) of Heidelberg Academy of Sciences complement the series of publications on topics related to the “Caves with the oldest Ice Age art”.


In addition to scientific publications, popular scientific releases will provide information about the “Caves with the oldest Ice Age art”. Thus it is planned to re-release, in edited form, the “Guide to archaeological monuments in Baden-Württemberg” concerning archaeological sites in the Lone and Ach Valleys and originally published by the State Office for Cultural Heritage Baden-Württemberg. Funds are being set aside for this purpose by the State Office for Cultural Heritage.

And finally, it should be emphasised that the scientific collaboration within the HEADS World Heritage thematic programme will be continued. Cooperation with other scientists and communication regarding the respective results are understood as a central and essential part of research conducted on the “Caves with the oldest Ice Age art”.

Résumé
All measures and projects mentioned above have proven to be very effective regarding the presentation and promotion of the property. While research projects contribute to the acquisition of new insights, the mentioned public relations activities foster the intensive dissemination of information regarding the “Caves with the oldest Ice Age art”. It should be emphasised here that the local population identifies with the caves and the art objects found therein. Also, the concept of “World Heritage” is not unfamiliar to the population. In connection with all measures, there has always been and there shall always be strict vigilance regarding the understanding that conflicts between presentation and promotion, on the one hand, and protection of the property, on the other, shall be avoided. Absolute priority has been granted hereby to the protection of the property.

5.j Staffing levels and expertise (professional, technical, maintenance)

In Germany the individual states are responsible for the care and preservation of ancient monuments. On the 16 December 2014 an administrative reform in the state of Baden-Württemberg came into effect, establishing a centrally organized State Office for Cultural Heritage (Landesamt für Denkmalpflege). Heritage protection within Baden-Württemberg is subdivided into a three-stage system, with the Ministry of Finance and Economics (Ministerium für Finanzen und Wirtschaft) as the supreme monument protection authority, the regional administrative councils (Regierungspräsidien) of Stuttgart, Tübingen, Karlsruhe and Freiburg, with the State Office for Cultural Heritage as part of the Regional Administrative Council Stuttgart (Regierungspräsidium Stuttgart) with state-wide authorities as the senior monument protection authorities, and a lower monument protection authority at the local level (Untere Denkmalschutzbehörden).
State-wide scientific support, administrative coordination and guidance are the central tasks of the State Office for Cultural Heritage. The State Office is organised in two main branches: “Architectural and art heritage” on the one hand and “Archaeology” on the other. In addition, there are the branches “Administration and law” and “Public relations and communication”, responsible for the work of the State Office as a whole. World Heritage sites in Baden-Württemberg are managed by staff of the department “Public relations and communication”. Yet, personnel from other departments are also concerned with World Heritage sites, especially when constructive measures or plans could affect the sites.

While the State Office as a whole is managed by the President, the respective departments are guided by different department heads, all experts in their respective fields. The branch “Architectural and art heritage” is subdivided into the departments “Policy, guidelines and heritage funding”, “Documentation and research” and “Consulting, maintenance and management”. The “Archaeology”-branch is subdivided into the departments “Policy, guidelines and research” and “Consulting, excavation and archiving”.

The departments concerned with the management of cultural heritage sites are organised by region (according to administrative districts) and by subject area (especially in the “Archaeology”-department). One of their main tasks is the consultation of clients - developers and constructors as well as private persons, politicians or representatives of the senior and lower monument protection authorities. The latter are responsible for granting permissions for constructive measures in accordance with cultural heritage protection. Experts of the State Office for Cultural Heritage with academic backgrounds in Archaeology, Art History or Architecture function as referees and consultants in plannings effectively or even possibly affecting cultural heritage sites. Personnel with an academic background in administration and law gives additional advise regarding the special needs of cultural heritage protection. Along with consultation and management, employees of the State Office for Cultural Heritage archive all known cultural heritage sites in a state-wide web-based database (“ADAB-Web”). For consultations they can draw on this permanently growing body of data. The database is available for all monument protection authorities, at state, regional and local level.

The State Office for Cultural Heritage is also responsible for representing the State’s cultural heritage management. It presents its daily work and especially new discoveries to the public. Furthermore, it is committed to the education of children and students, including regular tours for schools and the publication of teaching materials.

Senior monument protection authorities within the area of the property are the Regional Administrative Council of Tübingen, Regional Administrative Council of Stuttgart and the State Office for Cultural Heritage Baden-Württemberg. The State Office for Cultural Heritage is the competent expert authority responsible for technical preservation of monuments. It assumes the scientific, conservation and restoration work for all of Baden-Württemberg. The lowest official level form
the lower monument protection authorities, usually the lower planning law authorities in the district administrations, larger municipalities and administrative bodies. For the component part Lone Valley, these are made up of the District Administration Heidenheim - Department for Building and Environmental Protection (Landratsamt Heidenheim - Fachbereich Bau- und Umweltschutz), the Municipal Administration Herbrechtingen - Local Construction Rights Authority (Stadtverwaltung Herbrechtingen - Untere Baurechtsbehörde) and the Administrative Cooperation Langenau - Building Authority (Verwaltungsverband Langenau - Baurechtsamt). For the component part Ach Valley, the District Administration Alb-Donau District - Special Service Construction, Fire and Disaster Prevention (Landratsamt Alb-Donau-Kreis - Fachdienst Bauen, Brand- und Katastrophen-schutz) is responsible. Enforcement of said Cultural Heritage Protection Act lies in principle with these administrative officials. They make their decisions following technical statements from the senior monument protection authority.

With special regard to the “Caves with the oldest Ice Age art”, there are two different workgroups dealing with research and conservation of these sites. They are located at the State Office for Cultural Heritage Baden-Württemberg and at the Institute of Prehistory, Early History and Medieval Archaeology at the University of Tübingen.

The first workgroup at the State Office for Cultural Heritage Baden-Württemberg is directed by Prof. Dr. Claus Wolf (President of the State Office for Cultural Heritage) and Prof. Dr. Claus-Joachim Kind (specialist in palaeolithic archaeology at the State Office for Cultural Heritage and professor for palaeolithic archaeology at the University of Tübingen). The focus of the workgroup lies on the aspects of monument preservation. This involves, among other things, conservation, documentation and preparation of known and recently-discovered Palaeolithic and Mesolithic archaeological sites. Members of the workgroup monitor, furthermore, the condition of the caves and the archaeological layers discovered therein. Moreover, investigation of valley segments in the Swabian Jura for signs of Palaeolithic settlements is one of the tasks of the workgroup.

Included in the workgroup of the State Office for Cultural Heritage Baden-Württemberg are two subject specialists for the Palaeolithic. Since October 2012, a scientific employee at the State Office for Cultural Heritage Baden-Württemberg, who is a specialist for palaeolithic research, has been occupied exclusively with the nomination of the “Caves with the oldest Ice Age art”. Also, the Administrative Office shall be deployed here for the World Heritage site, which shall be led by the same scientific employee. He shall thus dedicate himself in the future, as coordinator for the World Heritage site, to management of the “Caves with the oldest Ice Age art”. Included in his areas of responsibility are, among other things, supervision of the nominated property, organisation of management and alliance of the various stakeholders. Therefore this scientific specialist at the State Office for Cultural Heritage will dedicate about 50% of his working hours at an office located near the nominated property. The location of the Adminis-
The administrative Office is in Esslingen (Baden-Württemberg) in the State Office for Cultural Heritage Baden-Württemberg. An additional scientist was hired (temporarily) in the beginning of 2015 for preparation of the nomination of the “Caves with the oldest Ice Age art”. As a specialist in palaeolithic research he contributes to the preparation of the nomination file and the management plan and further deals with production of the future World Heritage Site website as well as generation of a database for finds and literature. Moreover, archaeological aspects such as excavations within the area of the nominated property as well as the documentation thereof have been processed by a technical co-worker since 2010. Added to this list of personnel are the employees that are hired in the context of excavations and scientific evaluation projects. The number of employees and the budget for personnel costs can be increased to finance temporary projects.

For conservation purposes, surveys and excavations are conducted by the State Office for Cultural Heritage. Personnel at excavations are employed by the State Office for Cultural Heritage, and this includes archaeology students with short term contracts.

The second workgroup at the University of Tübingen is being managed by Prof. Nicholas Conard. The scientific co-workers in this group deal with investigation of the Palaeolithic, including the processes that led to the settlement of Europe by *Homo sapiens*.

Included in the list of co-workers in the workgroup at the University of Tübingen are: one professor, one academic senior councillor, MA and PhD students and post-docs. They dedicate their respective studies to one aspect of the overall topic, which entails, especially, investigation of the Palaeolithic in the Swabian Jura and, specifically, investigation of the “Caves with the oldest Ice Age art”. Moreover, two excavation technicians have been hired. During excavation work and evaluation projects, further co-workers, students and PhD students again among them, are temporarily employed.

Further research scientists in various institutions deal with examinations focussed on “Caves with the oldest Ice Age art”. Their field of activity spans from laboratory examinations, age determination to researches concerning the palaeoenvironment (see Chapter 5.g). These scientists are temporarily employed in the workgroups.

Trained specialists manage the various museums and information points. Additionally, guides are being hired for visitor support and for implementation of the pedagogical guidelines; these guides shall be able to provide appropriate scientific or expert qualifications. Plans have been made to offer training sessions in the form of workshops with expert leadership from the State Office for Cultural Heritage, Baden-Württemberg.

Within, or in close proximity to, the nominated property, the Urgeschichtliches Museum in Blaubeuren and the Archäopark Vogelherd are located. Both facilities provide information regarding the Palaeolithic with special reference to the “Caves with the oldest Ice Age art”. In both cases, there is a Scientific Director with a university degree in Archaeology and various trained full-time or temporarily employed employees. Additionally, further co-workers are being engaged for specific campaign days or guided tours.
Fig. 5-44 Organisational Structure of the State Office for Cultural Heritage Baden-Württemberg.
6. Monitoring

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6.b Administrative arrangements for monitoring property 354
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Survey work at Hohlenstein in the Lone Valley.
6. Monitoring

6.a Key indicators for measuring state of conservation

Because of the variable situations and layouts of the sites, a number of indicators have been determined for monitoring the state of conservation in the long term. Geological deposits, enclosed by karstic cave chambers, have conserved and continue to protect prehistoric remains at the “Caves with the oldest Ice Age art”. Regular documentation of the state of conservation is necessary to observe potential erosion processes. The karstic cave systems, in turn, are affected and regulated by natural processes, involving variables such as temperature and humidity. At the same time, the presence of visitors may have an effect on cave systems. Regular observation and conservation measures guarantee the stability of the caves. Moreover an increase of the population and thus an increase of the settled area in and around the property will be monitored. This measure functions as an indicator for population pressure and ensures a timely response to disadvantages for the property resulting from these threats.

Fig. 6-1 Laser scanning in front of Sirgenstein Cave.
Monitoring

Brief explanation of special procedures for recording data

Laser scanning and Structure from Motion (SfM)

In 2014 a start was made on documenting all the cave sites with outstanding universal value in the nominated component parts by means of laser scanning and SfM. With these methods, three-dimensional point distribution or scatter displays are produced, from which detailed 3D models of the caves can be generated (see Chapter 7.a). A repeated three-dimensional documentation of the caves allows for changes in the cave structures to be monitored.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Measure</th>
<th>Periodicity</th>
<th>Responsible authority</th>
<th>Location of records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability of cave ceilings and cave walls</td>
<td>Document stability of cave ceilings and walls through photographs</td>
<td>Annually</td>
<td>State Office for Cultural Heritage</td>
<td>WHS-Secretariat</td>
</tr>
<tr>
<td></td>
<td>Document stability of cave ceilings and walls through laser scanning</td>
<td>5-10 years</td>
<td>State Office for Cultural Heritage</td>
<td>WHS-Secretariat</td>
</tr>
<tr>
<td>State of erosion of sediments in and around the caves</td>
<td>Set markers and record coordinates, monitor movement of markers</td>
<td>3 years</td>
<td>State Office for Cultural Heritage</td>
<td>WHS-Secretariat</td>
</tr>
<tr>
<td></td>
<td>Photographic documentation of vegetation cover; assess potential changes / damage of vegetation to conservation of sediments and caves</td>
<td>Annually</td>
<td>State Office for Cultural Heritage</td>
<td>WHS-Secretariat</td>
</tr>
<tr>
<td></td>
<td>Estimate total numbers of visitors through recording the number of visitors in local museums; assess increase in number of tourists through recording number of overnight guests in the respective districts</td>
<td>Annually</td>
<td>State Office for Cultural Heritage</td>
<td>WHS-Secretariat</td>
</tr>
<tr>
<td>State of preservation of archaeological sites in the region</td>
<td>Archaeological surveys in the wider region, including the property, the buffer zones and the adjacent areas, in order to evaluate the preservation of archaeological, especially Palaeolithic sites</td>
<td>Permanently</td>
<td>State Office for Cultural Heritage, University of Tübingen</td>
<td>State Office for Cultural Heritage, University of Tübingen</td>
</tr>
<tr>
<td>Population development</td>
<td>Record increase and decrease of the local population in and around the property</td>
<td>5-10 years</td>
<td>State Office for Cultural Heritage, State Statistical Office of Baden-Württemberg</td>
<td>WHS-Secretariat, State Statistical Office of Baden-Württemberg</td>
</tr>
<tr>
<td>Change of use of areas used for agriculture and forestry to areas of settlement or commerce</td>
<td>Record increase and decrease of areas of the nominated property which current form of exploitation transfers into another (from agricultural use and forestry to areas of settlement or commerce and vice versa)</td>
<td>5-10 years</td>
<td>State Office for Cultural Heritage, State Statistical Office of Baden-Württemberg</td>
<td>WHS-Secretariat, State Statistical Office of Baden-Württemberg</td>
</tr>
</tbody>
</table>

Tab. 6-1 Key indicators for monitoring the state of conservation of the property.
Fig. 6-2 Laser scan of Hohle Fels, orthogonal top view.

Fig. 6-3 Laser scan of Hohlenstein, Bärenhöhle (left) and Stadel Cave (right), orthogonal top view.
Fig. 6-4  Laser scan of Hohle Fels, view into the cave.

Fig. 6-5  Laser scan of the Hohlenstein-Stadel Cave, view into the cave.
Fig. 6-6  Laser scan of Vogelherd Cave, view into the cave.

Fig. 6-7  Laser scan of Sirgenstein Cave, oblique top view.
Fig. 6-8  Laser scan of Bockstein Cave, front view of the entrance area.

Fig. 6-9  Laser scan of Bockstein Cave, view of the interior.
Mapping and surveying (local surveillance)
In 2013 a project was initiated at the State Office for Cultural Heritage Baden-Württemberg to survey the area of the nominated component parts. In this context GPS instruments and tachometers were employed to mark the exact position of known cave sites and of newly discovered (potentially Palaeolithic) sites in the area.

Especially useful in this regard is the use of LiDAR (Light detection and ranging) data. On the basis of maps generated from these airborne laser scanning data larger areas can be checked for potential archaeological sites. LiDAR data also make it possible to hide vegetation on the maps. It thus becomes easier to either directly identify archaeological sites visible on the surface or identify at least areas with a high potential for archaeological sites. Palaeolithic sites are generally expected at bluffs, potentially coupled with a cave or a rock shelter. LiDAR data, in contrast to conventional aerial photography, can uncover such situations.

Mapping and surveying (inventarisation)
Points at which there is a very high probability that artefacts will be found are currently being inventorised by personnel from the State Office for Cultural Heritage in a State-wide databank (ADAB-Web). For this purpose, aerial photographs, local records, and publications are evaluated. The sites which are identified in this way are notified and placed under cultural heritage protection.

Procedure and World Heritage compatibility (Quality assurance)
For the purposes of quality assurance and the associated examination of World Heritage compatibility of planning, construction, and restoration projects, innovative and integrative concepts are being drawn up under the professional planning and direction of universities and planning and architectural agencies. The task here is to take account primarily, within their planning, of the requirements for the protection of cultural heritage and conservation of nature. The quality assurance measures will be assessed by specialists from the State Office for Cultural Heritage of Baden-Württemberg, provided with scientific support, monitored, and regularly checked. On the basis of the existing provisions of cultural heritage legislation which pertain to the areas of the property and buffer zones, the State Office for Cultural Heritage adopts a supervisory function.

Regular monitoring
The continuous monitoring and management of the “Caves with the oldest Ice Age art” is undertaken by the State Office for Cultural Heritage Baden-Württemberg in cooperation with the municipalities, the University of Tübingen, and the local associations. First and foremost, the state of conservation of the caves and the strata contained in them is monitored. Specialist planners and profession-
Feldschütze - field protection officers) may also be appointed to check on the condition of the property.

The “Caves with the oldest Ice Age art” are regularly and continually inspected by measurements and documentation of different key indicators.

In order to verify the condition of the caves, precise documentation of their substance is necessary. In this context, both the preservation of the sediments which yield archaeological remains as well as the natural cave architecture are monitored regularly.

- Three-dimensional documentation of the condition of the cave roofs and walls by means of SfM (Structure from Motion) and laser scanning
- Inspection measurements points (with coordinates) are set. Photographs are taken annually of specific key positions
Key indicators for measuring state of conservation

- Statics measurements
- Photographic documentation of the vegetation around and in the cave, in order to assess possible changes and damage
- Archaeological prospecting in the area of the property, the buffer zone, and the adjacent areas, in order to discover further Palaeolithic sites and assess their potential, as well as initiating appropriate protective measures
- Evaluation of the visitor figures (data recording in the museums and information and visitor centres) and the number of overnight stays in the respective districts and municipalities

The documentation of the results is held in the Archive of the “World Heritage Coordination Office” (World Heritage Site-Secretariat at the State Office for Cultural Heritage Baden-Württemberg), and can be requested there. This serves as the basis for the regular reporting to UNESCO.
Reactive monitoring
The Manager who is appointed in the WHS-Secretariat of the State Office for Cultural Heritage Baden-Württemberg reports to the Ministry of Finance and Economics Baden-Württemberg with regard to any unusual circumstances and works which could prove a threat to the property and to the outstanding universal value. This information is forwarded to the Standing Representation of the Federal Republic of Germany at UNESCO. The Federal Republic of Germany undertakes the notification of reactive monitoring to the World Heritage Committee (in accordance with paragraph 172 of the Operational Guidelines for the Implementation of the World Heritage Convention).

Preventive monitoring
Among the special tasks of ICOMOS International is the assessment for inclusion on the World Heritage List of the items for which application is made, and to monitor the state of preservation of the cultural items of World Heritage (Ringbeck 2008, 41). For preventive monitoring, after successful inclusion on the World Heritage List, ICOMOS appoints two international experts.

Within Germany, the German National Committee of ICOMOS promotes the protection and preservation of monuments and cultural heritage of Baden-Württemberg. A preventive monitoring group advises on the management and organisation of German World Heritage sites.

6.b Administrative arrangements for monitoring property
The monitoring and controlling of the conservation of the sites is one of the tasks carried out by the authorities in charge of the maintenance of the archaeological heritage as outlined in the previous chapters. The State Office for Cultural Heritage Baden-Württemberg will make recommendations and develop strategies for the conservation, protection and monitoring of cave sites. The current state of conservation and research plans for the respective cave sites are outlined in Chapter 4.a. These procedures are regularly monitored by the State Office for Cultural Heritage in consultation with research institutions.

The State Office for Cultural Heritage Baden-Württemberg employs a team of Palaeolithic archaeologists who are trained and educated in the documentation, protection and monitoring of the Palaeolithic cultural heritage of the state. Members of this team form the WHS-Secretariat. The WHS-Secretariat is embedded within the Department for Public Relations and Communications (Department 82). The management and monitoring of all archaeological World Heritage sites in Baden-Württemberg are coordinated in this department.
Scientists from the University of Tübingen conduct archaeological surveys in the wider region, including the property, the buffer zones and the adjacent areas, in order to evaluate the preservation of archaeological, especially palaeolithic sites.

Organisation: Eberhard Karls Universität Tübingen, Institut für Ur- und Frühgeschichte und Archäologie des Mittelalters
Address: Burgsteige 11
D-72070 Tübingen
Tel: +49 (0) 7071/29-76457
E-mail: fatima.batalovic@uni-tuebingen.de

Statistical analysis concerning population development and land-use are conducted on a regular basis by the State Statistical Office of Baden-Württemberg.

Organisation: Statistisches Landesamt Baden-Württemberg
Address: Böblingen Straße 68, 70199 Stuttgart
Tel: +49 (0)711/ 641-0
E-mail: poststelle@stala.bwl.de

The WHS-Secretariat at the State Office for Cultural Heritage Baden-Württemberg cooperates with the relevant regional councils and their departments for nature conservation in Stuttgart and Tübingen (see Annex):

Organisation: Regierungspräsidium Stuttgart
Referat 56 Naturschutz und Landschaftspflege im Regierungsbezirk Stuttgart
Address: Ruppmannstraße 21
D-70565 Stuttgart
Tel: +49 (0) 711 904-15600
E-mail: ulrike.moeck@rps.bwl.de

Organisation: Regierungspräsidium Tübingen
Referat 56 Naturschutz und Landschaftspflege
Address: Konrad-Adenauer-Straße 20
D-72072 Tübingen
Tel: +49 (0) 7071 7575 306
E-mail: guido.waldenmeyer@rpt.bwl.de
6.c Results of previous reporting exercises

Monitoring and regular reporting on the state of conservation are constituent parts of the management plan which has been drawn up for the World Heritage sites (see Chapter 5.e and Volume II).

Up to now, there has been no comprehensive reporting procedure on the state of conservation of the whole of the property. The condition of the sediments in the caves has been documented and publicised by way of archaeological excavations. At Hohle Fels, Geißenklösterle, Vogelherd Cave and Hohlenstein Stadel Caves, this has been done by modern excavations and documentation techniques (see Chapters 2.b, 4.a and 7.e).
7. Documentation

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7.e Bibliography 457
Close-up of cross-incisions on the back of an ivory mammoth figurine discovered in Vogelherd Cave in 1931.
### 7. Documentation

#### 7.a Photographs and audiovisual image inventory and authorization form

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<td>Schätze des Südwestens / Treasures of the Southwest Part 1 and 2</td>
<td>Südwestrundfunk (SWR Media Services GmbH, Programmvertrieb Sekretariat/Clearingstelle Lizenzen)</td>
<td>Neckarstraße 230 70190 Stuttgart Phone: +49 711 929 0 E-mail: <a href="mailto:info@swr.de">info@swr.de</a></td>
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<td>Mov. 2</td>
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<td>1957</td>
<td>Abendschau SWR 22.10.1957, Höhlenausgrabungen im Loneval / Cave excavations in the Lone Valley</td>
<td>Südwestrundfunk (SWR Media Services GmbH, Programmvertrieb Sekretariat/Clearingstelle Lizenzen)</td>
<td>Neckarstraße 230 70190 Stuttgart Phone: +49 711 929 0 E-mail: <a href="mailto:info@swr.de">info@swr.de</a></td>
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<td>Project website</td>
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<td><a href="http://www.denkmalpflege-bw.de/denkmale/weltkulturerbe/proposal-ice-age-art.html">http://www.denkmalpflege-bw.de/denkmale/weltkulturerbe/proposal-ice-age-art.html</a></td>
<td>State Office for Cultural Heritage Baden-Württemberg</td>
<td>Berliner Straße 12 73728 Esslingen am Neckar Phone: +49 711 904 45 109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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**Tab. 7-1** Film material and website documenting and presenting the property and related finds.
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<td>J. Lipták / Universität Tübingen</td>
<td>Burggräfler Straße 11 D-72070 Tübingen Tel.: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Digital photograph</td>
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<td>Anthropomorphic figurine (&quot;Adorant&quot;) made of ivory from Geißenklösterle (length 3.8 cm.)</td>
<td>P. Frankenstein, H. Zwietasch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0) 711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>J. Lipták / Universität Tübingen</td>
<td>Burggräfler Straße 11 D-72070 Tübingen Tel.: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Y. Mühlstephan / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fragment of a bone flute made of a griffon vulture radius from Hohle Fels (length ca. 11 cm.)</td>
<td>H. Jensen / Universität Tübingen</td>
<td>Burggräfler Straße 11 D-72070 Tübingen Tel.: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Website image 6</td>
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<td>Personal ornaments (beads) from Vogelherd Cave, Hohle Fels and Singenstein Cave.</td>
<td>W. Binczik / Universität Tübingen</td>
<td>Burggräfler Straße 11 D-72070 Tübingen Tel.: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Riedhöfe 24 D-89129 Langenau Tel.: +49 (0) 7345/5700 E-mail: <a href="mailto:fotografie@hs53.de">fotografie@hs53.de</a></td>
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<td>Inside view of Bockstein Cave.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Front view of Hohlenstein Stadel Cave.</td>
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<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Website image 10</td>
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<td>2010</td>
<td>Inside view of Hohlenstein Stadel Cave in wintertime.</td>
<td>H. Schlaß</td>
<td>Riedhofe 24 D-89129 Langenau Tel: +49 (0)7345/5706 E-mail: <a href="mailto:fotografie@hs53.de">fotografie@hs53.de</a></td>
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<td>Front view of Hohle Fels.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel: +49 (0)7071 2972416 E-mail: <a href="mailto:fatma.batalovic@uni-tuebingen.de">fatma.batalovic@uni-tuebingen.de</a></td>
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<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>H. Schlaß</td>
<td>Riedhofe 24 D-89129 Langenau Tel: +49 (0)7345/5706 E-mail: <a href="mailto:fotografie@hs53.de">fotografie@hs53.de</a></td>
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<td>Website image 15</td>
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<td>View from the South-west into the Ach Valley with Hohle Fels on the right-hand side.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Feilchenfeld-Str. 11 D-50969 Cologne Tel: +49 (0)221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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Tab. 7-2 Photographs documenting and presenting the property and related finds. If non exclusive rights are not granted, images should be used only on the UNESCO Webpage.
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<td>Berliner Straße 12 D-73728 Esslingen (Nekkar) Tel.: +49 (0) 711/304-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>The corridor in Hohle Fels Cave with a bridge installation across the excavation area.</td>
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<td>Bernhard-Feilchenfeld-Str. 11 D-50969 Cologne Tel.: +49 (0) 221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilungL@rrps.bwl.de">abteilungL@rrps.bwl.de</a></td>
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<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilungL@rrps.bwl.de">abteilungL@rrps.bwl.de</a></td>
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<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilungL@rrps.bwl.de">abteilungL@rrps.bwl.de</a></td>
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<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilungL@rrps.bwl.de">abteilungL@rrps.bwl.de</a></td>
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<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>2015</td>
<td>Germany, location of the Swabian Jura and of the proposed component parts Ach and Lone Valley.</td>
<td>C. Meister / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 1-4</td>
<td>Digital map</td>
<td>2015</td>
<td>Location of the two proposed component parts Ach Valley (Id. N°. 1) and Lone Valley (Id. N°. 2) to the west and north-east of the city of Ulm (center of map).</td>
<td>C. Meister / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 1-5</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of the Ach Valley (component part Id N° 1), showing boundaries of the property and the buffer zone.</td>
<td>C. Meister / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 1-6</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of the Lone Valley (component part Id N° 2), showing boundaries of the property and the buffer zone.</td>
<td>C. Meister / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-1</td>
<td>Digital map</td>
<td>2015</td>
<td>Aerial view of the Ach Valley in Google Earth, looking north.</td>
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<td>Google Earth, 20 July 2015</td>
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<td>Fig. 2-2</td>
<td>Scanned diapositive</td>
<td>1992</td>
<td>Aerial photo of the Lone Valley, looking east.</td>
<td>O. Braasch / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-3</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Front view of the rock formation Bruckfels with the Geißenklösterle.</td>
<td>C. Meister / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-4</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Geißenklösterle.</td>
<td>S. M. Heidenreich, C. Meister (after J. Hahn 1988) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-5</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Front view of Sirgenstein Cave.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-6</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Sirgenstein Cave.</td>
<td>S. M. Heidenreich, C. Meister (after J. Hahn 1988) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-7</td>
<td>Digital photograph</td>
<td>2011</td>
<td>Front view of Hohle Fels.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-8</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Hohle Fels.</td>
<td>S.M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-9</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Front view of the south-west entrance of Vogelherd Cave.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-10</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Vogelherd Cave.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-11</td>
<td>Digital photograph</td>
<td>2010</td>
<td>Front view of Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-12</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Hohlenstein Stadel Cave (left) and Bärenhöhle (left).</td>
<td>S. M. Heidenreich, C. Meister (after E. Schmid 1989) / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-13</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Inside view of Bockstein Cave.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-14</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Bockstein Cave.</td>
<td>S. M. Heidenreich, C. Meister (after Halbach and Rahn 1991) / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-15</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Front view of Bärenhöhle.</td>
<td>C. Meister / Landesamt für Denkmalspflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-16</td>
<td>Digital photograph</td>
<td></td>
<td>Mammoth figurine made of ivory from Geißenklösterle (length 6.7 cm).</td>
<td>P. Frankenstein, H. Zwietarsch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0) 711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>Fig. 2-17</td>
<td>Digital photograph</td>
<td></td>
<td>Bison figurine made of ivory from Geißenklösterle (length 2.6 cm).</td>
<td>P. Frankenstein, H. Zwietarsch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0) 711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>Fig. 2-18</td>
<td>Digital photograph</td>
<td></td>
<td>(left) Bear figurine made of ivory from Geißenklösterle (length 4.9 cm).</td>
<td>changed after P. Frankenstein, H. Zwietarsch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0) 711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>Fig. 2-19</td>
<td>Digital photograph</td>
<td></td>
<td>(right) Anthropomorphic figurine (&quot;Adorant&quot;) made of ivory from Geißenklösterle (length 3.8 cm).</td>
<td>P. Frankenstein, H. Zwietarsch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0) 711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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| Fig. 2-20 | Digital photograph |            | (left) Fragment (head) of a horse figurine made of ivory from Hohle Fels (length 3.6 cm). | J. Lipták / Universität Tübingen                                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-21 | Digital photograph |            | (right) Water fowl figurine made of ivory from Hohle Fels (length 4.7 cm). | J. Lipták / Universität Tübingen                                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-22 | Digital photograph |            | (left) Anthropomorphic figurine made of ivory from Hohle Fels ("Small Lion Man"; length 2.6 cm). | changed after J. Lipták / Universität Tübingen                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-23 | Digital photograph |            | (right) Anthropomorphic figurine made of ivory from Hohle Fels ("Venus"; length 6.0 cm). | changed after J. Lipták / Universität Tübingen                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-24 | Digital photograph |            | Bison figurine made of ivory from Vogelherd Cave (length 6.0 cm). | changed after J. Lipták / Universität Tübingen                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-25 | Digital photograph |            | Lion figurine made of ivory from Vogelherd Cave (length 8.8 cm). | changed after H. Jensen / Universität Tübingen                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-26 | Digital photograph |            | Anthropomorphic figurine made of ivory from Vogelherd Cave (length 6.9 cm). | H. Jensen / Universität Tübingen                                  | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-27 | Digital photograph |            | Mammoth figurine made of ivory from Vogelherd Cave (length 5.0 cm). | changed after H. Jensen / Universität Tübingen                    | Burgsteige 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
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| Fig. 2-28 | Digital photograph | | Horse figurine made of ivory from Vogelherd Cave (length 4.8 cm). | H. Jensen / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-29 | Digital photograph | | Animal figurine without head (perhaps a lion) made of ivory from Vogelherd Cave (length 6.4 cm). | changed after E. Dutkiewicz / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-30 | Digital photograph | | Lion figurine made of ivory from Vogelherd Cave (length 6.8 cm). | H. Jensen / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-31 | Digital photograph | | Mammoth figurine made of ivory from Vogelherd Cave (picture not to scale; length 3.8 cm). | J. Lipták / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-32 | Digital photograph | | Lion figurine made of ivory from Vogelherd Cave (length 5.6 cm). | changed after E. Dutkiewicz / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-33 | Digital photograph | | Fish figurine made of ivory from Vogelherd Cave (length 7.0 cm). | J. Lipták / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-34 | Digital photograph | | Animal figurine (possibly a bovine) made of ivory from Vogelherd Cave (length 4.5 cm). | changed after E. Dutkiewicz / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
| Fig. 2-35 | Digital photograph | | Animal figurine (possibly a hedgehog) made of ivory from Vogelherd Cave (length 3.1 cm). | changed after E. Dutkiewicz / Universität Tübingen | Burgstrasse 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no |
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<td>Fig. 2-36</td>
<td>Digital photograph</td>
<td>Fragment (head) of a lion figurine made of ivory from Vogelherd Cave (length 1.2 cm).</td>
<td>P. Frankenstein, H. Zwietasch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0)711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>Fig. 2-37</td>
<td>Digital photograph</td>
<td>The &quot;Lion Man&quot; figurine made of ivory from Hohlenstein Stadel Cave (height 31.1 cm).</td>
<td>changed after Y. Mühleis / Landesamt für Denkmalpflege (LAD) im Regierungsrätsel Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/291-4-109 E-mail: <a href="mailto:abteilung7@rps.bwl.de">abteilung7@rps.bwl.de</a></td>
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<td>Fig. 2-38</td>
<td>Digital photograph</td>
<td>Fragment of a bone flute made of a swan radius from Geißenklösterle (length ca. 13 cm).</td>
<td>changed after H. Jensen / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-39</td>
<td>Digital photograph</td>
<td>(left) Fragment of a flute made of ivory from Geißenklösterle (length ca. 19 cm).</td>
<td>J. Liptáčik / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-40</td>
<td>Digital photograph</td>
<td>(right) Fragment of a bone flute made of a griffon vulture radius from Hohle Fels (length ca. 11 cm).</td>
<td>changed after H. Jensen / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-41</td>
<td>Digital diagram</td>
<td>2015 Calibrated radiocarbon dates from Aurignacian layers from the &quot;Caves with the oldest Ice Age art&quot;, calibrated with the IntCal13 calibration curve. The dates are correlated with the NGIP5 50 18 record on the GICC05 time scale as a climatic indicator (GS = Greenland Stadial, GI = Greenland Interstadial). Light grey bars highlight Heinrich events (H3, H4, HS), which signal ice flows surges during the Pleistocene.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungsrätsel Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/291-4-109 E-mail: <a href="mailto:abteilung7@rps.bwl.de">abteilung7@rps.bwl.de</a></td>
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</tbody>
</table>
| Fig. 2-42 | Digital photograph |            | Personal ornaments (beads) from Vogelherd Cave, Hohle Fels and Siregenstein Cave. | W. Binczik / Universität Tübingen                                                                                       | Burgstraße 11  
D-72070 Tübingen  
Tel.: +49 (0)7071 2972416  
E-mail: fatima.batalovic@uni-tuebingen.de | no                             |
| Fig. 2-43 | Digital photograph |            | Personal ornaments (animal teeth and ivory pendants) from Hohlenstein Stadel Cave. | Y. Mühleis / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                 | Berliner Straße 12  
D-73728 Esslingen (Neckar)  
Tel.: +49 (0)711/904-45-109  
E-mail: abteilung8@rps.bwl.de | yes                            |
| Fig. 2-44 | Scanned image |            | Glaciation in Europe during the last Ice Age (Würm-Weichsel-Glaciation). | M. Kucera / Archäologisches Landesmuseum Baden-Württemberg und Bardon - Art Direction & Design | Altes Schloss - Schillerplatz 6  
D-70173 Stuttgart  
Tel.: +49 (0)711 89 535 111  
E-mail: info@landesmuseum-stuttgart.de                                                                                   | no                             |
| Fig. 2-45 | Digital image |            | View across the ancient Danube Valley and the glaciers in the Alpine foothills (reconstruction). | Urgeschichtliches Museum Blaubeuren und Digitale Archäologie (Freiburg)                                                                 | Kirchplatz 10  
D-89143 Blaubeuren  
Tel.: +49 (0)73 44 / 96 69 90  
E-mail: info@urmu.de                                                                                                      | no                             |
<p>| Fig. 2-46 | Scanned image | 1979       | Formation of the Ach Valley: Early Pleistocene. The Danube flows ca. 80 m above today's valley floor. | E. Wagner 1979 (after R. Gradmann 1931 Gesellschaft für Archäologie in Württemberg und Hohenzollern e.V. und Konrad Theiss Verlag GmbH / WBG                             |                                                                                                                | no                             |
| Fig. 2-47 | Scanned image | 1979       | Formation of the Ach Valley: Beginning of the Riss Glaciation. | E. Wagner 1979 (after R. Gradmann 1931 Gesellschaft für Archäologie in Württemberg und Hohenzollern e.V. und Konrad Theiss Verlag GmbH / WBG                             |                                                                                                                | no                             |
| Fig. 2-48 | Scanned image | 1979       | Formation of the Ach Valley: Climax of the Riss Glaciation. The Danube flows in a different valley. | E. Wagner 1979 (after R. Gradmann 1931 Gesellschaft für Archäologie in Württemberg und Hohenzollern e.V. und Konrad Theiss Verlag GmbH / WBG                             |                                                                                                                | no                             |</p>
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<td>Fig. 2-49</td>
<td>Scanned image</td>
<td>1979</td>
<td>Formation of the Ach Valley: Late Pleistocene. Two separate river systems (Schmiech as well as Ach and Blau) flow in different directions through the old Danube valley.</td>
<td>E. Wagner 1979 (after R. Gradmann 1931 Gesellschaft für Archäologie in Württemberg und Hohenzollern e.V. und Konrad Theiss Verlag GmbH / WBG)</td>
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<td>Fig. 2-50</td>
<td>Digital image</td>
<td>2015</td>
<td>Formation of karst caves: 1. Water cave.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. 2-51</td>
<td>Digital image</td>
<td>2015</td>
<td>Formation of karst caves: 2. Transition to dry cave.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. 2-52</td>
<td>Digital image</td>
<td>2015</td>
<td>Formation of karst caves: 3. Dry cave.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. 2-53</td>
<td>Digital image</td>
<td>2015</td>
<td>Formation of karst caves: 4. Sedimentation.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. 2-54</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Chronological overview of the Palaeolithic and Mesolithic periods.</td>
<td>C. J. Kind, S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. 2-55</td>
<td>Scanned image</td>
<td>1977, 1988</td>
<td>Characteristic artefacts of the European Aurignaciain. 1-2 Carinated scraper, Geißenklösterle; 3 Blade with &quot;Aurignacian retouch&quot;, Hohlenstein Stadel Cave; 4 busked burin, Bockstein-Törl; 5 Carinated burin, Bockstein-Törl; 6-10 Dufour-bladelets, Krems-Hundstengl (Austria); 11 Split-base point, Bockstein Cave.</td>
<td>J. Hahn 1977 and J. Hahn 1988 / Böhlau Verlag GmbH &amp; Co. und Konrad Theiss Verlag / WBG</td>
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<td>Fig. 2-56</td>
<td>Digital image</td>
<td>2009</td>
<td>Sedimentation processes in caves. 1) Eroded sediment from the slope behind the cave rinses into the cave. 2) Dissolved particles seep into the cave through cracks in the rock. 3) Loose rocks may fall from the walls and the ceiling. 4) Water washes sediment into the caves. 5) Especially in the entrance area, windblown sediment is deposited in the cave.</td>
<td>C. Miller / Archäologisches Landesmuseum Baden-Württemberg und Jan Thorbecke Verlag der Schwabenverlag AG</td>
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<td>Fig. 2-57</td>
<td>Digital photograph</td>
<td>2002</td>
<td>Excavations at Geißenklösterle by the University of Tübingen in 2002.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-58</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Stratigraphy of Geißenklösterle (AH = Archaeological Horizon).</td>
<td>S. M. Heidenreich, C. Meister (after Conard and Bolus 2008) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-59</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Stratigraphy of Sirgenstein Cave.</td>
<td>S. M. Heidenreich, C. Meister (after Schmidt 1910) Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-60</td>
<td>Digital photograph</td>
<td>2008</td>
<td>Excavations in Hohle Fels by the University of Tübingen in 2008.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-61</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Stratigraphy of Hohle Fels (AH = Archaeological Horizon).</td>
<td>S. M. Heidenreich, C. Meister (after Conard and Bolus 2008) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-62</td>
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<td>2015</td>
<td>Stratigraphy of Vogelherd Cave.</td>
<td>S. M. Heidenreich, C. Meister (after Riek 1934a) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-63</td>
<td>Digital photograph</td>
<td>2011</td>
<td>Excavations at Vogelherd by the University of Tübingen in 2011.</td>
<td>M. Zeidi / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-64</td>
<td>Scanned diapositive</td>
<td>1931</td>
<td>Excavations at Vogelherd Cave by the University of Tübingen in 1931.</td>
<td>G. Riek / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 2-65</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Stratigraphy of Hohlenstein Stadel Cave (AH =Archaeological Horizon).</td>
<td>S. M. Heidenreich, C. Meister (nach Wetzel 1961) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-66</td>
<td>Scanned diapositive</td>
<td>1937</td>
<td>Excavations in Hohlenstein Stadel Cave by R. Wetzel in 1937.</td>
<td>R. Wetzel / Ulmer Museum</td>
<td>Marktplatz 9 D-89073 Ulm Tel.: +49 (0)731/161 43-30 E-mail: <a href="mailto:info.ulmer-museum@ulm.de">info.ulmer-museum@ulm.de</a></td>
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<td>Fig. 2-67</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Excavations in Hohlenstein Stadel Cave by the State Office for Cultural Heritage Baden-Württemberg in 2012.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-68</td>
<td>Scanned diapositive</td>
<td>1956</td>
<td>Excavations at Bockstein by R. Wetzel in 1956.</td>
<td>R. Wetzel / Ulmer Museum</td>
<td>Marktplatz 9 D-89073 Ulm Tel.: +49 (0)731/161 43-30 E-mail: <a href="mailto:info.ulmer-museum@ulm.de">info.ulmer-museum@ulm.de</a></td>
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<td>Fig. 2-69</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Stratigraphy of Bocksteinhöhle (AH = Archaeological Horizon).</td>
<td>S. M. Heidenreich, C. Meister (nach Wetzel 1954b) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 2-70</td>
<td>Digital photograph</td>
<td>2013</td>
<td>The &quot;Archäopark Vogelherd&quot; in Niederstotzingen.</td>
<td>G. Serino / Archäopark Vogelherd, Niederstotzingen</td>
<td>Im Städtle 26 D-89168 Niederstotzingen Tel: +49 (0) 7325/102-0 E-mail: <a href="mailto:info@niederstotzingen.de">info@niederstotzingen.de</a></td>
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<td>Fig. 3-1</td>
<td>Digital photograph</td>
<td>2015</td>
<td>View from the South-west into the Ach Valley with Hohle Fels on the right-hand side.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Feilchenfeld-Str. 11 D-50969 Cologne Tel: +49 (0) 221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Fig. 3-2</td>
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<td>2015</td>
<td>View from the West into the Lone Valley.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-3</td>
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<td>UNESCO World Heritage Center</td>
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<td>Fig. 3-4</td>
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<td>2013</td>
<td>Meeting in the framework of the HEADS Thematik Programme in Tübingen, 2013.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgeiste 11 D-72070 Tübingen Tel: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 3-5</td>
<td>Digital photograph</td>
<td>2015</td>
<td>View of the inside of Hohle Fels.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Feilchenfeld-Str. 11 D-50969 Cologne Tel: +49 (0) 221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Fig. 3-6</td>
<td>Digital photograph</td>
<td>2015</td>
<td>View from Geißenklösterle into the Ach Valley.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-7</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Excavation inside Hohlenstein Stadel Cave, 2012.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-8</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Hohle Fels in wintertime.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-9</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Hohlenstein Stadel Cave in wintertime.</td>
<td>C. J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>2013</td>
<td>Trellis fence inside Hohlenstein Stadel Cave.</td>
<td>C. J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-11</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Organisation of Monument Protection in the property.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-12</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Tourists during Open Monuments Day 2009 at Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-13</td>
<td>Digital diagram</td>
<td>2009</td>
<td>The stratigraphic positions of flutes 1−3 from Hohle Fels and associated radiocarbon dates.</td>
<td>Conard and Malina 2009 / Universität Tübingen</td>
<td>Burgstiege 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 3-14</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Preparations for laser scanning inside a cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-15</td>
<td>Digital photograph</td>
<td>2013</td>
<td>The restoration of the “Lion Man” from Hohlenstein Stadel Cave in 2013.</td>
<td>Y. Mühlis / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
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<td>Fig. 3-16</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Dating of key sites with Palaeolithic art. Red: figurative transportable art objects; yellow: cave and rock face art; green: painted rocks; blue: engraved stone plates.</td>
<td>C.-J. Kind, S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 3-17</td>
<td>Digital photograph</td>
<td></td>
<td>Grotte Chauvet-Pont d’Arc, France. Panel of the lions, Aurignacian.</td>
<td>M. Kneubühler / DRAC Rhône-Alpes</td>
<td>Le Gienvier d’abondance 6, quai Saint Vincent F-69283 VIZON cedex 01 Tel.: +33 (0)472004400</td>
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<td>Fig. 3-18</td>
<td>Digital photograph</td>
<td></td>
<td>Vogelherd Cave, Germany. Lion figurine with newly found adjoining fragment, Aurignacian.</td>
<td>changed after H. Jensen / Universität Tübingen</td>
<td>Burgs.711 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 3-19</td>
<td>Digital photograph</td>
<td></td>
<td>Grotte de Lascaux, France. Aurochs, Early Magdalenian.</td>
<td>Centre National de Préhistoire, Perigueux</td>
<td>182, rue Saint-Honoré F-75033 PARIS CEDEX 01 Tel.: +33 (0)140158000 E-mail: <a href="mailto:archeologie@culture.gouv.fr">archeologie@culture.gouv.fr</a></td>
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<td>Fig. 3-20</td>
<td>Digital photograph</td>
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<td>Grotte de Lascaux, France. The shaft of the Dead Man, Early Magdalenian.</td>
<td>M. Aujoulat / Centre National de Préhistoire, Perigueux</td>
<td>182, rue Saint-Honoré F-75033 PARIS CEDEX 01 Tel.: +33 (0)140158000 E-mail: <a href="mailto:archeologie@culture.gouv.fr">archeologie@culture.gouv.fr</a></td>
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<td>Fig. 3-21</td>
<td>Digital photograph</td>
<td></td>
<td>Abri Castanet, France. Engravings of vulvas, Aurignacian.</td>
<td>Musée National de la Préhistoire</td>
<td>1, rue du musée F-24620 Les Eyzies-de-Tayac Tel.: +33 (0)5 53 06 45 45 E-mail: <a href="mailto:mnp.eyzies@culture.gouv.fr">mnp.eyzies@culture.gouv.fr</a></td>
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<td>Fig. 3-22</td>
<td>Digital photograph</td>
<td>1978</td>
<td>Abri Cellier, France. Engraved animal head, Aurignacian.</td>
<td>G. and B. Delluc</td>
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<td>Fig. 3-23</td>
<td>Digital photograph</td>
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<td>Grotta di Fumane, Italy. Red painting of a therianthrope (?), Aurignacian.</td>
<td>R. Brandoli</td>
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<td>Fig. 3-24</td>
<td>Digital photograph</td>
<td></td>
<td>Venus of Willendorf, Austria, Gravettian.</td>
<td>Naturhistorisches Museum Wien</td>
<td>Burggraben 7 A-1010 Wien Tel.: +43 (0) 1 52177-0 E-mail: <a href="mailto:info@nhm-wien.ac.at">info@nhm-wien.ac.at</a></td>
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<td>Fig. 3-25</td>
<td>Digital photograph</td>
<td></td>
<td>Venus of Hohle Fels, Germany, Aurignacian.</td>
<td>H. Jensen / Universität Tübingen</td>
<td>Burgstr. 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 3-26</td>
<td>Digital photograph</td>
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<td>Gönnersdorf, Germany. Engraved female figurines, Magdalenian.</td>
<td>G. Bosinski</td>
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<td>Fig. 3-27</td>
<td>Digital photograph</td>
<td></td>
<td>Mas d’Ail, France. Spear thrower with the sculpture of an ibex, Magdalenian.</td>
<td>MAN St. Germain-en-Laye</td>
<td>Château - Place Charles de Gaulle F 78100 Saint-Germain-en-Laye Tel.: +33 (0)1 39 10 13 00 E-mail:</td>
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<td>Fig. 3-28</td>
<td>Digital photograph</td>
<td></td>
<td>Hohle Fels, Germany. Painted lime stones with red dots, Magdalenian.</td>
<td>H. Jensen / Universität Tübingen</td>
<td>Burgstr. 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 3-29</td>
<td>Digital photograph</td>
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<td>Stratzing Galgenberg, Austria. Female figurine, Aurignacian.</td>
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<td>Fig. 3-30</td>
<td>Digital photograph</td>
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<td>Dolni Věstonice, Czech Republic. Female figurine, Gravettian.</td>
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<td>Fig. 3-31</td>
<td>Digital photograph</td>
<td></td>
<td>Les Trois Frères, France. Painting of the „horned God“, Magdalenian.</td>
<td>photo and assembly by J. Vertut taken from R. Bégouën, J. Clottes, V. Feruglio, A. Pastoors 2014, 32; Fig. 17 (changed)</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)717/904-45-109 E-mail: <a href="mailto:abteilung8@rgs.bwl.de">abteilung8@rgs.bwl.de</a></td>
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<td>Fig. 3-32</td>
<td>Digital photograph</td>
<td></td>
<td>Hohlenstein Stadel Cave, Germany. Therianthrope figurine of the “Lion Man”, Aurignacian.</td>
<td>Y. Möhrle / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)717/904-45-109 E-mail: <a href="mailto:abteilung8@rgs.bwl.de">abteilung8@rgs.bwl.de</a></td>
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<td>Fig. 3-33</td>
<td>Digital map</td>
<td>2015</td>
<td>Map with some European key sites mentioned in the comparative analysis. 1-Willendorf / Stratzing Galgenberg 2-Grubgraben 3-Brassempouy, Grotte du Pape 4-Grotte d’Enlène / Les Trois Frères / Grotte du Mas d’Ail 5-Grotte d’Isturitz 6-La Marche 7-La Vache 8-Grotte de Gabillou / La Ferrassie / Rouffignac / La Mouthe / Font de Gaume / Les Combarelles / Abri Cellier / Abri Belcayre / Abri Blanchard / Lascaux / Lussel 9-Grotte des Riedaux, Lespugue 10-Gönnersdorf 11-Peters fels 12-Balzi Rossi 13-Cueva del Parpalló 14-Grotta di Fumane 15-Divié Babe 16-Dolni Věstonice 17-Colochoa 18-La Baume-Latronne 19-Grotte Chauvet-Pont d’Arc 20-Altamira / El Castillio / La Gama 21-Preña de Candasno 22-Elian 23-Atapuerca 24-Pair-non-pair 25-Avdrenov 26-Gegarino 27-Kostienki 28-Ma’ta 29-Kapova Cave 30-Sungir 31-Côa Valley / Siega Verde 32-Cresswell Cragi 33-Badanj Cave 34-Isernia-La Pineta 35-Dmanisi 36-Caves with the oldest Ice Age art.</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-1</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of Ach Valley component part, showing Palaeolithic sites in the property.</td>
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<td>Fig. 4-2</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of Lone Valley component part, showing Palaeolithic sites in the property.</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-3</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Geißenklösterle, highlighting the area of the current cave entrance where the latest excavations have been conducted. The cave passage and the northern cave entrance are completely unexcavated.</td>
<td>S. M. Heidenreich, C. Meister  (after J. Hahn 1988) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-4</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of the excavation area at Geißenklösterle, illustrating the progress of the last excavations. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 4-5</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Trellis fence in front of Geißenklösterle.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-6</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Safety measures taken for the preservation of sediments in Geißenklösterle.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-7</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Sirgenstein Cave.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-8</td>
<td>Digital photograph</td>
<td>2009</td>
<td>View of the Sirgenstein massif from the Ach Valley floor.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-9</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Sirgenstein Cave, highlighting the forecourt and the entrance areas where Schmidt’s excavations have presumably been conducted in 1906. The inner part of the cave is completely unexcavated.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
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<td>Fig. 4-10</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the laser scan of Singen-stein Cave, showing the different sections of the cave and the supposed location of Schmidt’s archaeological excavation in 1906.</td>
<td>S. M. Heidenreich, M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
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<td>Fig. 4-11</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Hohle Fels, highlighting the corridor area where the latest excavations have been conducted. Unknown is the exact position of the excavations in 1870–71 by Fraas in the hall.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-12</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the Laserscan of Hohle Fels Cave, showing the different sections of the cave and the location of archaeological excavations.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-13</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of the excavation area in the corridor of Hohle Fels Cave, illustrating the progress of excavation and planned extension of excavation units. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth. Numbered square metres in the bedrock area in the northeast are situated in a niche in the cave wall and have already been excavated.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgstraße 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 4-14</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Trellis fence at Hohle Fels.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-15</td>
<td>Digital photograph</td>
<td>2008</td>
<td>Excavation at Hohle Fels in 2008.</td>
<td>Universität Tübingen</td>
<td>Burgsteige 11, D-72070 Tübingen, Tel.: +49 (0)7071 2972416, E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 4-16</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Safety construction in Hohle Fels: A bridge installation crosses the excavation area in the corridor.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Feilchenfeld-Str. 11, D-50969 Cologne, Tel.: +49 (0)221-470 8645, E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Fig. 4-17</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Vogelherd Cave with recent excavation areas in front of the cave in the backdirt of Riel's excavation of 1931. The cave itself was completely excavated in 1931.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar), Tel.: +49 (0)711/904-45-109, E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-18</td>
<td>Scanned diapositive</td>
<td>2012</td>
<td>Aerial photograph of Vogelherd Cave during the excavations in front of the cave in 2012.</td>
<td>O. Braasch / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar), Tel.: +49 (0)711/904-45-109, E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-19</td>
<td>Digital photograph</td>
<td>2014</td>
<td>The Hohlenstein massif with Stadel Cave (left) and Bärenhöhle (right).</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar), Tel.: +49 (0)711/904-45-109, E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-20</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Hohlenstein Stadel Cave with excavation areas. The area south of the “Chamber of the Lion Man” is completely unexcavated.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar), Tel.: +49 (0)711/904-45-109, E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-21</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the Laserscan of Hohlenstein Stadel Cave, showing the different sections of the cave and the location of excavated areas.</td>
<td>S. M. Heidenreich, M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar), Tel.: +49 (0)711/904-45-109, E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-22</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of the excavation area in the “Chamber of the Lion Man” in Hohlenstein Stadel Cave, illustrating the progress of excavation. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-23</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Trellis fence inside Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-24</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Preservation of sediments in Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-25</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Bockstein Cave with excavation area of Robert Wetzal at Bocksteinhörle. The inner part of the cave is completely excavated. Intact sediments are probably still present in front of the cave.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-26</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Bockstein Cave, view from the West.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-27</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Excavation at Frauenfels in 2014.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-28</td>
<td>Digital map</td>
<td>2014</td>
<td>Map of the Lone Valley component part (Lidar Scan). Area surveyed and potential sites highlighted.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-29</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Potential cave site discovered during prospection.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-30</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Buildings constructed in the vicinity of the Ach Valley component part.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-31</td>
<td>Digital map</td>
<td>2005</td>
<td>Map of Baden-Württemberg showing zones of earthquake intensity.</td>
<td>Landesamt für Geoinformation und Landentwicklung Baden-Württemberg</td>
<td>Büchenstraße 54 D-70174 Stuttgart Tel.: +49 (0) 711 959800 E-mail: <a href="mailto:poststelle@lgl.bwl.de">poststelle@lgl.bwl.de</a></td>
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<tr>
<td>Fig. 4-32</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Visitors in Hohlenstein Stadel Cave during Open Monuments Day 2012.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
<td>yes</td>
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<td>Fig. 4-33</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Presentation for children in the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel.: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
<td>no</td>
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<tr>
<td>Fig. 4-34</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Information board at walking trail to Höhle Fels.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-35</td>
<td>Digital diagram</td>
<td>2007</td>
<td>Information board for the Stone Age Trail in the Lone Valley.</td>
<td>B. Schuler / LEADER+ Brenzregion, Heidenheim</td>
<td>Felsenstraße 36 D-89518 Heidenheim Tel.: +49 (0) 7321 321 2494 E-mail: <a href="mailto:leader@landkreis-heidenheim.de">leader@landkreis-heidenheim.de</a></td>
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<tr>
<td>Fig. 4-36</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Visitors in the Archäopark Vogelherd, Niederstotzingen.</td>
<td>G. Serino / Archäopark Vogelherd, Niederstotzingen</td>
<td>Im Städtle 26 D-89568 Niederstotzingen Tel.: +49 (0) 7325/102-0 E-mail: <a href="mailto:info@niederstotzingen.de">info@niederstotzingen.de</a></td>
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<td>Fig. 4-37</td>
<td>Scanned diapositive</td>
<td>1931</td>
<td>Excavation at Vogelherd in 1931.</td>
<td>G. Riek / Universität Tübingen</td>
<td>Burgstraße 11 D-72070 Tübingen Tel: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<tr>
<td>Fig. 4-38</td>
<td>Digital photograph</td>
<td>2011</td>
<td>Recent excavation at Vogelherd in 2011.</td>
<td>N. J. Conard / Universität Tübingen</td>
<td>Burgstraße 11 D-72070 Tübingen Tel: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 4-39</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Profile section with intact sediments in front of Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<tr>
<td>Fig. 4-40</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Laser scanning inside Hohlenstein Stadel Cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-41</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Restoration and conservation of archaeological finds at the State Office for Cultural Heritage Baden-Württemberg.</td>
<td>Y. Möheis / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 4-42</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the CT scan of the “Lion Man” figurine.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-1</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Percentage of land ownership in the component parts.</td>
<td>C. Mester / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-2</td>
<td>Digital map</td>
<td>2015</td>
<td>Ach Valley component part (Id N°1): Excavation protection area mirroring the property.</td>
<td>C. Mester / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-3</td>
<td>Digital map</td>
<td>2015</td>
<td>Ach Valley component part (Id N°1): Cultural protection areas. World Heritage protection zone mirroring the property and the buffer zone.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-4</td>
<td>Digital map</td>
<td>2015</td>
<td>Ach Valley component part (Id N°1): Natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-5</td>
<td>Digital map</td>
<td>2015</td>
<td>Ach Valley component part (Id N°1): Further natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-6</td>
<td>Digital map</td>
<td>2015</td>
<td>Ach Valley component part (Id N°1): UNESCO Biosphere Reserve Area. Property (red) and buffer zone (blue) displayed as shaded surfaces.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-7</td>
<td>Digital map</td>
<td>2015</td>
<td>Lone Valley component part (Id N°2): Excavation protection area mirroring the property.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-8</td>
<td>Digital map</td>
<td>2015</td>
<td>Lone Valley component part (Id N°2): Cultural protection areas. World Heritage protection zone mirroring the property and the buffer zone.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-9</td>
<td>Digital map</td>
<td>2015</td>
<td>Lone Valley component part (Id N°2): Natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-10</td>
<td>Digital map</td>
<td>2015</td>
<td>Lone Valley component part (Id N°2): Further natural protection areas. Property (red) and buffer zone (blue) displayed as shaded surfaces.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-11</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Signs informing visitors at the entrance of Hohle Fels about the natural protection status of the cave.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Felschenfeld Str. 11 D-50969 Cologne Tel: +49 (0)221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Fig. 5-12</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Signs informing visitors at the Geißenklösterle about the natural protected area. Translation: Prohibition order to enter and climb. Throughout the year, for the protection of rare animals and plant species, it is prohibited to enter or climb the rock formation (District administration Alb-Donau - Lower Nature Protection Authority).</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-13</td>
<td>Digital map</td>
<td>2015</td>
<td>Center part of Swabian Jura showing the extension of the UNESCO Biosphere Reserve Area.</td>
<td>C. Meister / Landesamt für Denkkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-14</td>
<td>Digital image from website</td>
<td></td>
<td>Schwäbische Alb UNESCO Global Geopark. General information.</td>
<td>UNESCO World Heritage Centre</td>
<td></td>
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<td>Fig. 5-15</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of the Schwäbische Alb UNESCO Global Geopark and geological highlights. Component parts emphasised in red.</td>
<td>C. Meister (after <a href="http://www.geopark-alb.de/index.php">http://www.geopark-alb.de/index.php</a>) Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-16</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Tourism-related marketing of the Swabian Jura by the SAT under the slogan “Come and discover the land of the Lion Man”</td>
<td>W. Koller / Alb-Donau District administration</td>
<td>Schillerstraße 30 D-89077 Ulm Tel: +49 (0)731 / 1 85-0 E-mail: <a href="mailto:info@alb-donau-kreis.de">info@alb-donau-kreis.de</a></td>
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<td>Fig. 5-17</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Focus of the advertising campaign by the SAT on the “Lion Man”.</td>
<td>W. Koller / Alb-Donau District administration</td>
<td>Schillerstraße 30 D-89077 Ulm Tel: +49 (0)731 / 1 85-0 E-mail: <a href="mailto:info@alb-donau-kreis.de">info@alb-donau-kreis.de</a></td>
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<td>Fig. 5-18</td>
<td>Scanned image</td>
<td>2009</td>
<td>Example of the &quot;Archäologische Ausgrabungen in Baden-Württemberg&quot; (Archaeological excavations in Baden-Württemberg).</td>
<td>H. Jensen / Universität Tübingen and Y. Mühleis / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-19</td>
<td>Scanned image</td>
<td>2015</td>
<td>Recently published guide book.</td>
<td>J. Lipták / Universität Tübingen, Title page &quot;Eiszeitarchäologie auf der Schwäbischen Alb&quot; (2015), Kerns Verlag</td>
<td>Burgstr. 11 D-72070 Tübingen Tel.: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. 5-20</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Management structure of all stakeholders involved in the nomination process.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-21</td>
<td>Digital image</td>
<td>2015</td>
<td>View from the inside of Sirgenstein Cave.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-22</td>
<td>Digital image</td>
<td>2015</td>
<td>Travelling exhibition regarding Ice Age art in the caves of the Swabian Jura.</td>
<td>Braun Engels Gestaltung, Ulm</td>
<td>Sedanstr. 124 D-89077 Ulm Tel.: +49 (0) 731140 073 0 E-mail: <a href="mailto:gestaltung@braun-engels.de">gestaltung@braun-engels.de</a></td>
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<td>Fig. 5-23</td>
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<td>2015</td>
<td>Special exhibition at the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel.: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<td>Fig. 5-24</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Refitting the fragments of the &quot;Lion Man&quot; figurine in the laboratories of the State Office for Cultural Heritage.</td>
<td>Y. Mühleis / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-25</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Participants of the meeting of the Hugo-Obermaier Society 2015 at the Archäopark Vogelhied, Niederstotzingen.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Feilchenfeld-Str. 11 D-50969 Cologne Tel.: +49 (0) 221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Fig. 5-26</td>
<td>Digital map</td>
<td>2015</td>
<td>Locations of museums and information centers presenting finds from the property &quot;Caves with the oldest Ice Age art&quot;.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-27</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Visitor facilities at the Archäopark Vogelherd, Niederstotzingen.</td>
<td>G. Serino / Archäopark Vogelherd, Niederstotzingen</td>
<td>Im Städtle 26 D-89168 Niederstotzingen Tel: +49 (0) 7325/102-0 E-mail: <a href="mailto:info@niederstotzingen.de">info@niederstotzingen.de</a></td>
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<td>Fig. 5-28</td>
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<td>Flyer advertising the Archäopark Vogelherd, Niederstotzingen.</td>
<td>Archäopark Vogelherd, Niederstotzingen</td>
<td>Im Städtle 26 D-89168 Niederstotzingen Tel: +49 (0) 7325/102-0 E-mail: <a href="mailto:info@niederstotzingen.de">info@niederstotzingen.de</a></td>
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<td>Fig. 5-29</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Entrance area of the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<td>Fig. 5-30</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Exhibition room at the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<td>Fig. 5-31</td>
<td>Scanned image</td>
<td>2015</td>
<td>Flyer advertising the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<td>Fig. 5-32</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Frontal view of the Ulmer Museum.</td>
<td>N. Schölzel / Ulmer Museum</td>
<td>Marktplatz 9 D-89073 Ulm Tel: +49 (0) 731/161 43-30 E-mail: info@<a href="mailto:ulmer-museum@ulm.de">ulmer-museum@ulm.de</a></td>
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<td>Fig. 5-33</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Exhibition of the &quot;Lion Man&quot; figurine at the Ulmer Museum.</td>
<td>H. Schlaß</td>
<td>Riedhofer 24 D-89129 Langenau Tel: +49 (0) 7345/5706 E-mail: <a href="mailto:fotografie@hs53.de">fotografie@hs53.de</a></td>
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<td>Museum of the University of Tübingen at the castle Hohentübingen.</td>
<td>Museum Universität Tübingen, Schloss Hohentübingen</td>
<td>Burgstrasse 11 D-72070 Tübingen Tel.: +49 (0)7071 2977384 E-mail: <a href="mailto:museum@uni-tuebingen.de">museum@uni-tuebingen.de</a></td>
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<td>Fig. 5-35</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Exhibition room of the Vogelherd figurines in the Museum of the University of Tübingen at the castle Hohentübingen.</td>
<td>Museum Universität Tübingen, Schloss Hohentübingen</td>
<td>Burgstrasse 11 D-72070 Tübingen Tel.: +49 (0)7071 2977384 E-mail: <a href="mailto:museum@uni-tuebingen.de">museum@uni-tuebingen.de</a></td>
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<td>Fig. 5-36</td>
<td>Digital photograph</td>
<td>2008</td>
<td>Frontal view of the Altes Schloss (&quot;Ancient castle&quot;) with the collections of the Landesmuseum Württemberg Stuttgart.</td>
<td>H. Zwietsch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0)711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>Fig. 5-37</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Exhibition room at the Landesmuseum Württemberg Stuttgart.</td>
<td>H. Zwietsch / Landesmuseum Württemberg Stuttgart</td>
<td>Altes Schloss - Schillerplatz 6 D-70173 Stuttgart Tel.: +49 (0)711 89 535 111 E-mail: <a href="mailto:info@landesmuseum-stuttgart.de">info@landesmuseum-stuttgart.de</a></td>
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<td>Fig. 5-38</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Large state exhibition &quot;Eiszeit, Kunst und Kultur&quot; (Ice Age, Art and Culture) in Stuttgart, 2009.</td>
<td>M. Schreiner / Archäologisches Landesmuseum Baden-Württemberg</td>
<td>Benediktinerplatz 5 D-78467 Konstanz Tel.: +49 (0)7531 9804-0 E-mail: <a href="mailto:info@konstanzer-alm-bw.de">info@konstanzer-alm-bw.de</a></td>
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<td>Fig. 5-39</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Large state exhibition &quot;Eiszeit, Kunst und Kultur&quot; (Ice Age, Art and Culture) in Stuttgart, 2009.</td>
<td>M. Schreiner / Archäologisches Landesmuseum Baden-Württemberg</td>
<td>Benediktinerplatz 5 D-78467 Konstanz Tel.: +49 (0)7531 9804-0 E-mail: <a href="mailto:info@konstanzer-alm-bw.de">info@konstanzer-alm-bw.de</a></td>
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<td>Fig. 5-40</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Presentation of every day archaeological artefacts from the Palaeolithic at the Urgeschichtliches Museum Blaubeuren, 2013.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel.: +49 (0)7344 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<td>Fig. 5-41</td>
<td>Digital image from website</td>
<td>2015</td>
<td>Official website of the State Office for Cultural Heritage Baden-Württemberg concerning the nomination &quot;Caves with the oldest Ice Age art&quot;.</td>
<td>S. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-42</td>
<td>Digital photograph</td>
<td>2008</td>
<td>Art event with figurines of the “Lion Man” at a public space in Ulm, 2008.</td>
<td>J. Werner</td>
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<td>Fig. 5-43</td>
<td>Digital photograph</td>
<td>2009</td>
<td>European Heritage Days 2009 at Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 5-44</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Organisational Structure of the State Office for Cultural Heritage Baden-Württemberg.</td>
<td>S.M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-1</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Laser scanning in front of Sirgenstein Cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-2</td>
<td>Digital image</td>
<td>2014</td>
<td>Laser scan of Höhle Fels, orthogonal top view.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-3</td>
<td>Digital image</td>
<td>2013</td>
<td>Laser scan of Hohlenstein, Bärenhöhle (left) and Stadel Cave (right), orthogonal top view.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-4</td>
<td>Digital image</td>
<td>2014</td>
<td>Laser scan of Höhle Fels, view into the cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>2013</td>
<td>Laser scan of the Hohlenstein-Stadel Cave, view into the cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-6</td>
<td>Digital image</td>
<td>2015</td>
<td>Laser scan of Vogelherd Cave, view into the cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-7</td>
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<td>2015</td>
<td>Laser scan of Sirgenstein Cave, oblique top view.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Digital image</td>
<td>2014</td>
<td>Laser scan of Bockstein Cave, front view of the entrance area.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-9</td>
<td>Digital image</td>
<td>2014</td>
<td>Laser scan of Bockstein Cave, view of the interior.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-10</td>
<td>Digital map</td>
<td>2015</td>
<td>LIDAR scan of the Lone Valley with marked rocky outcrops as potential sites.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. 6-11</td>
<td>Digital photograph</td>
<td>2013</td>
<td>Octocopter used for aerial photography in front of the Hohlenstein massif.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-1</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Organisation of Monument Protection in the property.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-2</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Entrance of the Hohlenstein Stadel Cave, view from the North.</td>
<td>Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-3</td>
<td>Scanned diapositive</td>
<td>1960</td>
<td>Entrance of the Hohlenstein Stadel Cave during the 1960 excavation. In the lower center tracks for removing the sediment in wagons are visible.</td>
<td>R. Wetzel / Ulmer Museum</td>
<td>Marktplatz 9 D-89073 Ulm Tel: +49 (0) 731/161 43-30 E-mail: <a href="mailto:info.ulmer-museum@ulm.de">info.ulmer-museum@ulm.de</a></td>
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<tr>
<td>Fig. Volume II-4</td>
<td>Digital photograph</td>
<td></td>
<td>&quot;Lion Man&quot; figurine from Hohlenstein Stadel Cave (length 33.1 cm).</td>
<td>Y. Mühlies / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-5</td>
<td>Digital photograph</td>
<td></td>
<td>Vogelherd Cave lion figurine with body from the early excavations and refitted head discovered during the recent investigations (length 6.8 cm).</td>
<td>changed after H. Jensen / Universität Tübingen</td>
<td>Burgstr 11 D-72070 Tübingen Tel: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-6</td>
<td>Digital photograph</td>
<td></td>
<td>Fragment of a bone flute made of a swan radius from Geißenklösterle (length ca. 13 cm).</td>
<td>changed after H. Jensen / Universität Tübingen</td>
<td>Burgstr 11 D-72070 Tübingen Tel: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-7</td>
<td>Digital photograph</td>
<td></td>
<td>(left) Fragment of a bone flute made of a griffon vulture radius from Hohle Fels (length ca. 11 cm).</td>
<td>changed after H. Jensen / Universität Tübingen</td>
<td>Burgstr 11 D-72070 Tübingen Tel: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-8</td>
<td>Digital photograph</td>
<td></td>
<td>(right) Fragment of a flute made of ivory from Geißenklösterle (length ca. 19 cm).</td>
<td>changed after J. Lipták / Universität Tübingen</td>
<td>Burgstr 11 D-72070 Tübingen Tel: +49 (0) 7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-9</td>
<td>Digital map</td>
<td>2015</td>
<td>Part of the world, location of Europe.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-10</td>
<td>Digital map</td>
<td>2015</td>
<td>Europe, location of Germany.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-11</td>
<td>Digital map</td>
<td>2015</td>
<td>Germany, location of the Swabian Jura and of the proposed component parts Ach and Lone Valley.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-12</td>
<td>Digital map</td>
<td>2015</td>
<td>Location of the two proposed component parts Ach Valley (Id N° 1) and Lone Valley (Id N° 2) to the west and north-east to the town of Ulm (center of map).</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-13</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of the Ach Valley (component part Id N° 1), showing boundaries of the property and the buffer zone.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-14</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of the Lone Valley (component part Id N° 2), showing boundaries of the property and the buffer zone.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-15</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Percentage of land ownership in the component parts.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-16</td>
<td>Digital image from website</td>
<td>2015</td>
<td>User-surface of the ADABweb (databank) information portal.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-17</td>
<td>Scanned image</td>
<td>1982</td>
<td>Documentation of the 1892 excavation at the Bockstein Cave by Ludwig Bürger.</td>
<td>Bürger, L. 1892. Der Bockstein, das Fohlenhaus und das Salzbühl, drei prähistorische Wohnstätten im Lonethal. Um Oberschwaben 3., Drawing of the Bockstein area on page 1, plate IV and V.</td>
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<tr>
<td>Fig. Volume II-18</td>
<td>Scanned image</td>
<td></td>
<td>Wood engraving of the Hohle Fels as it was seen by Oscar Fraas in 1871.</td>
<td>Holzstich aus dem xylographischen Atelier von Friedrich Vieweg und Sohn in Braunschweig. In: Fraas, O. 1872. Beitrag zur Gliederung einer aus schwäbischen Höhlen entnommenen. Archiv für Anthropologie 5, 173-213, Fig. 25: Ansicht des Höhlenfels und des Eingangs der Höhle.</td>
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<td>Fig. Volume II-19</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Excavation at the Hohlenstein Stadel Cave in 2012.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49(0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. Volume II-20</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Geoarchaeological core drilling in front of the Hohlenstein massif in 2015.</td>
<td>A. Barbieri, Universität Tübingen Burgstrasse 11 D-72070 Tübingen Tel.: +49(0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-21</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Laser scanning inside Sirgenstein Cave.</td>
<td>M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49(0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. Volume II-22</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of Ach Valley component part, showing Palaeolithic sites in the property.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49(0)711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<td>Fig. Volume II-23</td>
<td>Digital map</td>
<td>2015</td>
<td>Map of Lone Valley component part, showing Palaeolithic sites in the property.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
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<td>Fig. Volume II-24</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Geißenklösterle, highlighting the area of the current cave entrance where the latest excavations have been conducted. The cave passage and the northern cave entrance are completely unexcavated.</td>
<td>S. M. Heidenreich, C. Meister (after J. Hahn 1988) / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-25</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of the excavation area at Geißenklösterle, illustrating the progress of the last excavations. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth.</td>
<td>M. Malina / Universität Tübingen Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-26</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Trellis fence in front of Geißenklösterle.</td>
<td>C. J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<tr>
<td>Fig. Volume II-27</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Safety measures taken for the preservation of sediments in Geißenklösterle: The area of the latest excavations has been covered with rocks.</td>
<td>C. J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-28</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Signstein Cave.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-29</td>
<td>Digital photograph</td>
<td>2015</td>
<td>View of the Sirgenstein massif from the Ach Valley floor.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-30</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Sirgenstein Cave, highlighting the forecourt and the entrance areas where Schmidt’s excavations have presumably been conducted in 1906. The inner part of the cave is completely unexcavated.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<tr>
<td>Fig. Volume II-31</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the laserscan of Sirgenstein Cave, showing the different sections of the cave and the supposed location of Schmidt’s archaeological excavation in 1906.</td>
<td>S. M. Heidenreich, M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-32</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Hohle Fels, highlighting the corridor area where the latest excavations have been conducted. Unknown is the exact position of the excavations in 1870–71 by Fraas in the hall.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-33</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the Laserscan of Hohle Fels Cave, showing the different sections of the cave and the location of archaeological excavations.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-34</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of the excavation area in the corridor of Hohle Fels Cave, illustrating the progress of excavation and planned extension of excavation units. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth. Numbered square metres in the bedrock area in the northeast are situated in a niche in the cave wall and have already been excavated.</td>
<td>M. Malina / Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-35</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Trellis fence at Hohle Fels.</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<tr>
<td>Fig. Volume II-36</td>
<td>Digital photograph</td>
<td>2008</td>
<td>Excavation in Hohle Fels in 2008.</td>
<td>Universität Tübingen</td>
<td>Burgsteige 11 D-72070 Tübingen Tel.: +49 (0)7071 2972416 E-mail: <a href="mailto:fatima.batalovic@uni-tuebingen.de">fatima.batalovic@uni-tuebingen.de</a></td>
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<td>Fig. Volume II-37</td>
<td>Digital photograph</td>
<td>2015</td>
<td>Safety construction in Hohle Fels: A bridge installation crosses the excavation area in the corridor.</td>
<td>H. Parow-Souchon</td>
<td>Bernhard-Feilchenfeld-Str. 11 D-50969 Cologne Tel.: +49 (0)221-470 8645 E-mail: <a href="mailto:h.parow-souchon@uni-koeln.de">h.parow-souchon@uni-koeln.de</a></td>
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<td>Fig. Volume II-38</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Vogelherd Cave with recent excavation areas in front of the cave in the backdirt of Riek’s excavation of 1931. The cave itself was completely excavated in 1931.</td>
<td>S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-39</td>
<td>Scanned diapositive</td>
<td>2012</td>
<td>Aerial photograph of Vogelherd Cave during the excavations in front of the cave in 2012.</td>
<td>O. Braasch / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-40</td>
<td>Digital photograph</td>
<td>2014</td>
<td>The Hohlenstein massif with Stadel Cave (left) and Bärenhöhle (right).</td>
<td>C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-41</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of Hohlenstein Stadel Cave with excavation areas. The area south of the “Chamber of the Lion Man” is completely unexcavated.</td>
<td>S. M. Heidenreich, C. Meider / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-42</td>
<td>Digital image</td>
<td>2015</td>
<td>Different views of the Laserscan of Hohlenstein Stadel Cave, showing the different sections of the cave and the location of excavated areas.</td>
<td>S. M. Heidenreich, M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-43</td>
<td>Digital drawing</td>
<td>2015</td>
<td>Ground plan of the excavation area in the “Chamber of the Lion Man” in Hohlenstein Stadel Cave, illustrating the progress of excavation. Note that the bedrock is indicated schematically at a specific height. Its actual extent changes depending on depth.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-44</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Trellis fence inside Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<td>Fig. Volume II-45</td>
<td>Digital photograph</td>
<td>2012</td>
<td>Preservation of sediments in Hohlenstein Stadel Cave.</td>
<td>T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12, D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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| Fig. Volume II-46 | Digital drawing | 2015 | Ground plan of Bockstein Cave with excavation area of Robert Wetzel at Bocksteintörle. The inner part of the cave is completely excavated. Intact sediments are probably still present in front of the cave. | S. M. Heidenreich, C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                           | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-47 | Digital photograph | 2009 | Bockstein Cave, View from the West.                                                                 | C.-J. Kind / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                                                       | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-48 | Digital photograph | 2014 | Excavation at Frauenfels in 2014.                                                                 | T. Beutelspacher / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                                               | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-49 | Digital map | 2014 | Map of the Lone Valley component part (Lidar Scan). Area surveyed and potential sites highlighted.                                                                 | C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                                               | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-50 | Digital photograph | 2013 | Potential cave site discovered during prospection.                                                                 | C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                                               | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-51 | Digital photograph | 2015 | Laserscanner inside Sirgenstein Cave.                                                                 | M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                                               | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-52 | Digital image | 2015 | Bird's eye view on the 3D-model of Sirgenstein Cave generated by a laser scan. The Entrance is situated in the lower part of the image.                                                                 | S. M. Heidenreich, C. Meister, M. Steffen / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                 | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
| Fig. Volume II-53 | Digital map | 2015 | Locations of museums and information centers presenting finds from the property “Caves with the oldest Ice Age art”.                                                                 | C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart                                                                                                                                                                               | Berliner Straße 12
D-73728 Esslingen (Neckar)
Tel.: +49 (0)711/904-45-109
E-mail: abteilung8@rps.bwl.de                                                                                                                                    | yes                                                                       |
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<tr>
<td>Fig. Volume II-54</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Exhibition room at the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel.: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
<td>no</td>
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<tr>
<td>Fig. Volume II-55</td>
<td>Digital photograph</td>
<td>2013</td>
<td>View from the Vogelherd Cave at visitor facilities of the Archäopark Vogelherd information centre.</td>
<td>G. Serino / Archäopark Vogelherd, Niederstotzingen</td>
<td>Im Städtle 26 D-89168 Niederstotzingen Tel.: +49 (0) 7325/102-0 E-mail: <a href="mailto:info@niederstotzingen.de">info@niederstotzingen.de</a></td>
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<tr>
<td>Fig. Volume II-56</td>
<td>Digital image from website</td>
<td>2015</td>
<td>Website “Virtual Archaeology” of the State Office for Cultural Heritage Baden-Württemberg presenting 3D models of archaeological sites.</td>
<td>S. M. Heidenreich / Landesamt für Denkmalpflege (LAD) im Regierungsspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0) 711/904-45-109 E-mail: <a href="mailto:abteilung@rps.bwl.de">abteilung@rps.bwl.de</a></td>
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<tr>
<td>Fig. Volume II-57</td>
<td>Digital photograph</td>
<td>2004</td>
<td>Open Cave Day organised and performed by the Urgeschichtliches Museum Blaubeuren in front of Geißenklösterle 2004.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel.: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<tr>
<td>Fig. Volume II-58</td>
<td>Digital photograph</td>
<td>2009</td>
<td>Replication of the excavations at the Höhlen Fels in the context of the large State exhibition, “Ice Age, Art and Culture” in Stuttgart, 2009.</td>
<td>M. Scheiner / Archäologisches Landesmuseum Baden-Württemberg</td>
<td>Benediktinerplatz 5 D-78467 Konstanz Tel.: +49 (0) 7531 9804-0 E-mail: <a href="mailto:info@konstanz.landesamt-bw.de">info@konstanz.landesamt-bw.de</a></td>
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<td>Fig. Volume II-59</td>
<td>Digital photograph</td>
<td>2014</td>
<td>Lecture for school children in the Urgeschichtliches Museum Blaubeuren.</td>
<td>Urgeschichtliches Museum Blaubeuren</td>
<td>Kirchplatz 10 D-89143 Blaubeuren Tel.: +49 (0) 73 44 / 96 69 90 E-mail: <a href="mailto:info@urmu.de">info@urmu.de</a></td>
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<tr>
<td>Fig. Volume II-60</td>
<td>Digital image</td>
<td>2015</td>
<td>Travelling exhibition regarding Ice Age art in the caves of the Swabian Jura.</td>
<td>Braun Engels Gestaltung, Ulm</td>
<td>Sedanstr. 124 D-89077 Ulm Tel.: +49 (0) 731140 073 0 E-mail: <a href="mailto:gestaltung@braun-engels.de">gestaltung@braun-engels.de</a></td>
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<tr>
<td>Fig. Volume II-61</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Management structure of all stakeholders involved in the nomination process.</td>
<td>C. Meister / Landesamt für Denkmalpflege (LAD) im Regierungspräsidium Stuttgart</td>
<td>Berliner Straße 12 D-73728 Esslingen (Neckar) Tel.: +49 (0)711/904-45-109 E-mail: <a href="mailto:abteilung8@rps.bwl.de">abteilung8@rps.bwl.de</a></td>
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<tr>
<td>Fig. Volume II-62</td>
<td>Digital diagram</td>
<td>2015</td>
<td>Organigram of the umbrella brand “Weltkultursprung” (World origin of culture).</td>
<td>J. Kiefer / executive board “Weltkultursprung”</td>
<td>Schillerstraße 30 D-89077 Ulm Tel.: +49 (0)731 / 185-0 E-mail: <a href="mailto:info@alb-donaukreis.de">info@alb-donaukreis.de</a></td>
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*Tab. 7-3* Images used in the nomination file representing the property.
7.b Texts relating to protective designation, copies of property management plans or documented management systems and extracts of other plans relevant to the property

In the following sections laws affecting the property and the buffer zone are listed for an overview of all legal dispositions by site, explaining its effect and way of implementation. The listed articles have been translated for information purposes. Only the German versions are legally binding. Further, Id-files summarise the protective designation specifically for each component part.

Legal basis
Reproduced below are the bodies of legislation relating to the protection of monuments and nature in Germany and Baden-Württemberg, which apply within the property and the buffer zone.

BauGB – Federal Building Code

Article 1: Purpose, Concept, and Basic Principles of Land Use Planning

(1) The purpose of land use planning is to prepare and oversee building and other forms of use of plots of land in the municipality in accordance with the provisions of this Code.

(2) Land use plans are the land utilisation plan (preparatory land use plan) and the development or zoning plan (the binding land use plan).

(3) The municipalities are required to draw up the land use plans as soon as, and inasmuch as, this is required for town planning development and good order. There is no claim for requiring the preparation of land use plans or town planning statutes, nor can any basis for a claim be derived by contract.

(4) Land use plans are to be adapted to the aims of regional planning.

(5) Land use plans should ensure sustained town planning development, which brings into harmony the social, economic, and environmental protection requirements, including in respect of the responsibility towards future generations, and also ensure socially appropriate use of the land which serves the welfare of the general public. They should contribute to securing an environment which is fit for
humankind, to protecting and developing the natural foundation elements on which life and living are based, and favouring the protection of the climate and adaptation to the climate, in particular in the context of urban development, as well as maintaining and developing the overall concept of urban construction and the image of the locality and the landscape in terms of building cultural heritage.

In this situation, urban construction development should be put into effect, as a priority, by way of internal development measures.

(6) When drawing up land use plans, the following considerations are to be given particular attention:

1. The general requirements for healthy residential and working conditions, and the safety and security of the resident and working population,

2. The living requirements of the population, the creation and maintaining of socially stable resident structures, the establishment of ownership among broad sectors of the population, and the requirements of economical building, as well as population development,

3. The social and cultural requirements of the population, in particular the needs of families, of young, elderly, and disabled persons, differing effects on women and men, and the requirements of education and of sport, leisure, and recreation,

4. The maintaining, renewal, further development, adaptation, and conversion of the existing urban districts, as well as the retaining and development of central service sectors,

5. The needs of building cultural heritage, of the protection of monuments, the parts of localities which are worthy of preservation, of streets and urban spaces of historical, artistic, or urban development significance, and the formation of the locality and landscape images,

6. The requirements determined by churches and religious associations under public law in respect of religious services and spiritual welfare,

7. The requirements of environmental protection, including the protection of nature and the preservation of the landscape, in particular
a) the effects on animals, plants, soil, water, air, climate, and the effect structure between them and the landscape and biological diversity,

b) the preservation aims and protection purpose of the Natura 2000 regions in the meaning of the Federal Nature Conservation Act,

c) environment-related effects on individual persons and their health, as well as on the population as a whole,

d) environment-related effects on items of cultural heritage, and other material items,

e) the avoidance of emissions and the due and proper procedures in relation to waste materials and waste water,

f) the use of renewable sources of energy, and the economical and efficient utilization of the energy,

g) the presentations of landscape plans and of other plans, in particular in respect of legislation relating to water, waste, and immissions,

h) the maintaining of the best possible air quality in areas in which the immission limit values, determined by statutory ordinance for the fulfilment of the legislative instruments of the European Union, are not exceeded,

i) the reciprocal effects between the individual requirements of environmental protection in accordance with letters a, c, and d,

8. The needs

a) of the economy, including of its medium-sized company structure, in the interests of provision for the population closely linked to consumer requirements,

b) of agriculture and forestry,

c) of the maintaining, securing, and creation of employment,

d) of the post and telecommunications sector,

e) of supply, in particular with energy and water, including the securing of supply,

f) of the securing of reserves of raw materials.

9. The needs of transport of personnel and goods, and of the mobility of the population, including public personnel transport
and non-motorised means of transport, with particular consideration given to the avoidance and reduction of urban development focused on transport,

10. The requirements of national defence and of civil defence, and of the ancillary civil use of military installations,

11. The results of an urban construction development concept concluded by the municipality, or some other urban construction planning which has been adopted,

12. The requirements of defence against flooding.

13. The needs of refugees or asylum seekers and their accommodation.

(7) In the preparation of the land use plans, public and private needs and requirements are to be weighed and balanced fairly against one another.

(8) The provisions of this Code in relation to the preparation of land use plans also apply to their amendment, supplement, and suspension.

**Article 1a: Supplementary Provisions relating to Environmental Protection**

(1) In the preparation of the land use plans, the following provisions are to be applied in respect of environmental protection.

(2) Land and soil are to be treated in a manner which is both sparing and safeguarding. In this context, in order to reduce the additional demand for areas for use as construction, the possibilities of the development of the municipalities are to be exploited, in particular by rendering areas available for reuse, by redensification, and by other measures for internal development, as well by limiting the sealing of the ground only to the degree absolutely necessary. Areas which are used for agriculture, forestry, or the residential purposes should only undergo change of use to the extent necessary. The basic principles according to clauses 1 and 2 are to be taken into account in the weighing assessment according to Article 1, paragraph 7. Reasons should be provided in support of the need to change the use of areas used for agriculture or as woodland; in this situation, notifications regarding the possibilities of internal development should be taken as the basis, which may include in particular fallow land, empty building sites, gap sites, and other possibilities for redensification.
(3) The avoidance of and compensation for any anticipated impairments of the landscape image and of the ability of the balance of nature to achieve its performance and function in its constituent parts as designated in Article 1, paragraph 6, No. 7, letter a (intervention ruling in accordance with the Federal Nature Conservation Act) are to be taken into account in the weighing assessment. The compensation is to be provided by appropriate concepts and rulings in accordance with Articles 5 and 9, by way of compensatory areas of land or compensatory measures. Inasmuch as this is compatible with a sustained urban development and with the aims of zoning procedures, as well as with the protection of nature and the maintaining of the landscape, the concepts and rulings may also be put into effect at locations other than the place of intervention.

Instead of concepts and rulings, contractual agreements may be reached in accordance with Article 11 or other suitable measures for compensation on areas of land prepared by the municipality. Article 15, paragraph 3 of the Federal Nature Conservation Act applies accordingly. Compensation is not required if the interventions had already been put into effect before the planning decision, or were permissible.

(4) Inasmuch as an area in the meaning of Article 1, paragraph 6, No. 7, letter b might be substantially impaired in respect of its constituent parts which are determinant for its conservation aims or the protective purpose, the provisions of the Federal Nature Conservation Act are to be applied in respect of the permissibility and implementation of such interventions, including obtaining the expert opinion of the European Commission.

(5) The requirements of climate protection are to be taken into account by way of measures which will counteract climate change, as well as such as serve to adapt to climate change. The basic principle according to clause 1 is to be taken into consideration in the weighing assessment in accordance with Article 1, paragraph 7.

**Article 4: Participation by the Public Authorities**

(1) The public authorities and other agencies concerned with the requirements of the general public, whose scope of responsibility may be affected by the planning, are to be notified in accordance with Article 3, paragraph 1, clause 1, Half-clause 1, and also requested to state their opinion in respect of the extent and degree of detail required for
the examination of the environment in accordance with Article 2, paragraph 4. The procedure in accordance with paragraph 2 is also to be linked to this, if the opinion leads to a change in the planning.

(2) The municipality is to obtain the opinions from the public authorities and other agencies concerned with the requirements of the general public, whose scope of responsibility may be affected by the planning, with regard to the draft plan and the grounds being proposed. They are required to provide their opinions within one month; the municipality shall, however, extend this period by a reasonable amount if an important reason pertains. In the opinions, the public authorities and other agencies concerned with the requirements of the general public shall restrict themselves to their specific area of responsibility. They are also required to provide an explanation with regard to planning and other measures which they intend to apply or which have already been initiated, and to indicate the time these will take to implement, which could be of significance for the urban development and arrangements of the region. If they have information which could be of value in the determination and interpretation of the material for the weighing assessment procedure, they are to make this information available to the municipality.

(3) After the conclusion of the procedure for the preparation of the land use plan, the authorities are to inform the municipalities in the event of the findings in their possession indicating that the implementation of the plan would have substantial effects on the environment, in particular in the event of these being unforeseen or detrimental.
UVPG – Environmental Impact Assessment Law

Article 2: Definition of Terms

(1) The environmental impact assessment is a non-independent part of the administrative authority procedure, which is used to assist in the decision on the admissibility of particular undertakings. The environmental impact assessment comprises the determination, description, and assessment of the direct and indirect effects of an undertaking on:

1. Human beings, including human health, animals, plants, and biological diversity,
2. Soil, water, air, climate, and landscape,
3. Items of cultural heritage and other material items, and
4. The reciprocal effect between the items subject to protection as referred to.

The assessment is carried out with public participation. In the event of the permissibility of an undertaking being decided within the framework of several procedures, the part examinations conducted in these procedures will be compiled to provide an overall assessment of all the environmental effects.

(2) An undertaking is:

1. in accordance with the provisions of Annex 1
   a) the installation and operation of a technical system,
   b) the construction of another type of system,
   c) the conducting of another procedure which exerts an effect in another manner on nature and the landscape,

2. the modification, including the extension,
   a) of the location, the nature, or the operation of a technical system,
   b) of the location or the nature of another type of system,
   c) of the conducting of another procedure which exerts an effect in another manner on nature and the landscape.

(3) Decisions in the meaning of paragraph 1, clause 1 are:
1. Authorisation, permission, approval, a decision with regard to the determination of a plan, and other decisions by public authorities with regard to the permissibility of undertakings, which are taken as an administrative procedure, with the exception of notification procedures,

2. Guideline determinations and decisions in respect of undertakings submitted for consideration in accordance with Articles 15 and 16, Paragraphs 1 to 3,

3. Decisions in accordance with Article 10 of the Federal Building Code, in respect of the preparation, modification, or supplement of construction plans, by which the approval of specific undertakings is to be justified in the meaning of Annex 1, and decisions in accordance with Article 10 of the Federal Building Code in respect of development or zoning plans, which replace planning decisions for undertakings in the meaning of Annex 1.

(4) The Strategic Environmental Assessment is a non-independent part of the procedures by public authorities relating to the preparation or modification of plans and programmes, which are adopted by a public authority, a government body, or by way of a legislative procedure. paragraph 1, clauses 2 and 3 apply accordingly.

(5) Plans and programmes in the meaning of this Law are plans and programmes which are intended for implementation under Federal German law or by legislative transactions by the European Union, the preparation, acceptance, or modification of which is obligatory on a public authority by way of provisions of the law or of administrative procedures. Exception are plans and programmes which serve exclusively the aims of national defence or protection against natural disasters, as well as financial, fiscal, and budgetary plans and programmes.

(6) The public in the meaning of this Law are individual or a number of natural or legal persons and their associations. The affected public in the meaning of this Law, in respect of participation in the procedures in accordance with paragraph 1, clause 1, and paragraph 4, relates to any person whose interests are affected by a decision in the meaning of paragraph 3, or by a plan or programme in the meaning of paragraph 5; these also include associations of which the areas of responsibility, according to their statutes, are affected by a decision in the meaning of paragraph 3, or by a plan or programme in the
meaning of paragraph 5; this also includes associations for the promotion of environmental protection.

**Article 21: Decision; Incidental Provisions**

(1) The plan determination decision may only be issued if:

1. It has been ensured that the welfare of the general public is not impaired, in particular in that:

   a) No hazards can be incurred for the items subject to protection cited under Article 2, paragraph 1, clause 2, and

   b) Precautions have been taken against the impairment of the items subject to protection, in particular by way of construction, operational, or organizational measures in accordance with the state of the art,

2. The undertaking does not contravene any provisions of environmental law or other public law provisions,

3. The aims of zoning procedures have been respected and the basic principles and other requirements of zoning and area allocation have been duly taken into account,

4. The requirements of health and safety at work are safeguarded. Moreover, with regard to undertakings in the meaning of No. 19.3 of Annex 1, the plan determination decision may only be issued if there are no concerns with regard to a detrimental change in the quality and supply of water.

(2) The plan determination decision may be subject to special provisions, associated with stipulations, and subject to time limits, inasmuch as this may be necessary for the safeguarding of the welfare of the general public or for the fulfilment of the provisions of public law, which the undertaking might potentially contravene. The adoption, modification, or supplementing of stipulations for requirements imposed on the undertaking is also permissible even after the issue of the plan determination decision.

(3) Paragraphs 1 and 2 apply to the approval of the plan accordingly.

(4) The Federal German Government is empowered, after hearing the interested parties concerned, to issue provisions, by way of statutory ordinance, and with the approval of the Federal Council, for the fulfilment of the preconditions of paragraph 1, clause 1, No. 1, in respect of:

1. The construction, operational, or organizational measures in
accordance with the state of the art as precautions against the impairment of the items subject to protection,

2. The obligations of the parties conducting the undertaking, and of third parties:

   a) To inform the public authorities and the public,

   b) To present the public authorities with documentation,

   c) To enable the public authorities to carry out technical investigations and examinations, as well as providing them with working personnel and technical aids for this purpose,

2a. The entitlements of the public authorities,

   a) To undertake technical investigations and examinations,

   b) During working hours, to enter operational premises and areas, and properties which are immediately associated with such areas,

   c) If necessary to avert urgent threats to public safety or good order, to enter residential premises, and operational premises and areas outside working hours, as well as properties which are immediately associated with such areas,

   d) To enter at any time installations and properties which are not immediately associated areas in accordance with letters b and c,

3. To carry out the examination of undertakings by expert assessors, expert assessment organizations, and approved supervisory bodies, as well as of the requirements which these expert assessors, expert assessment organizations, and approved supervisory bodies are required to fulfil, and also of the undertaking which is the object of their recognition activity,

4. The adaptation of existing undertakings to the requirements of the applicable regulations,

5. The notification to the public authorities responsible of modifications which, according to Article 20, do not require either a plan determination or a plan approval,

6. The entitlement to establish arrangements under the auspices of the authorities in individual cases.
Regulations relating to the engagement of technical commissions may be adopted in legislation. The intention is that the commissions should advise the Federal Government or the Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety in technical matters. They propose appropriate rulings in accordance with the state of the art (technical rulings), taking account of the existing rulings in place for other protection aims, and, inasmuch as their areas of responsibility are affected, in agreement with the commission on plant safety in accordance with Article 51a, paragraph 1 of the Federal Emission Protection Law. The Commissions are to include representatives of the national Federal authorities and Federal State authorities concerned, of the expert assessors and expert assessor organizations and approved supervisory bodies, of the world of science, and of the manufacturers and operators of pipeline installations. Technical rulings may be published by the Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety in the Bundesanzeiger gazette. The statutory ordinance may also specify the substances which are potentially prone to cause detrimental change to water quality (substances hazardous to water in the meaning of No. 19.3 of Annex 1). The basic right of inviolability of the home (Article 13 of the Basic Law) is restricted by clause 1, No. 2a, letter c.

(5) The Federal Government is empowered, in respect of pipeline installations which do not require a plan determination or plan approval, and after hearing the interest groups concerned in the meaning of Article 23, paragraph 2 of the Water Resources Law, by way of statutory ordinance and with the agreement of the Federal Council:

1. To stipulate an obligation to provide notification,

2. To issue rulings in accordance with paragraph 4, clause 1, Nos. 1 to 4, 6, or in accordance with paragraph 4, clauses 2 and 7.

(6) The Federal Government is empowered, by statutory ordinance and with the agreement of the Federal Council, to rule that the implementation of Part 5 of this Law and of the statutory ordinances approved on the basis of Paras 4 and 5, shall be incumbent on the Federal authorities in respect of installations which serve the purpose of national defence.
Cultural Heritage Protection Act
The Baden-Württemberg Law relating to the Protection of Cultural Monuments (Cultural Heritage Protection Act – DSchG BW) states the following:

Chapter 1 - Monument protection and monument care

Article 1: Objective
(1) It is the objective of monument protection and monument care to protect and care for cultural monuments, in particular to monitor the condition of cultural monuments and to work for averting jeopardy to and salvaging cultural monuments.
(2) This objective is fulfilled by the Land and, within the bounds of their capabilities, by the local communities.

Chapter 2 - Object and organisation of monument protection

Article 2: Object of Monument Protection
(1) Cultural monuments within the meaning of this Act are items, collections of items and parts of items in the preservation of which there is a public interest for scientific, artistic or local historical reasons.
(2) A cultural monument also includes accessories provided that they constitute a unit of monument value with the main item.
(3) Likewise objects of monument protection are:
   1. the surroundings of a cultural monument, provided they are of significant importance for its appearance (Article 15, paragraph 3)
   2. entire fixtures (Article 19).

Article 3: Public Monument Protection Authorities
(1) Public monument protection authorities are
   1. the ministry of finance and economics as supreme monument protection authority,
   2. the regional administrations as senior monument protection authorities,
   3. the lower planning law authorities as lower monument protection authorities,
4. the State Office for Cultural Heritage, and

5. the Land archives as senior public authorities for monument protection in matters of archives.

(2) The supreme monument protection authority decides on all basic matters of monument protection and monument care as well as on other important matters of significance for the entire Land, in particular on setting up the monument promotion programme.

(3) The functions of the lower monument protection authority transferred to the local communities and administrative consortia under paragraph 1, numeral 3 are mandatory tasks by instruction; the right to instruct is not limited. The regulations applicable to government authorities apply to the obligation to pay fees as well as for the scope and amount of the fees.

(4) The lower monument protection authorities decide after hearing the senior monument protection authority under paragraph 1, numeral 4. Where the lower monument protection authority wishes to deviate from the pronouncement of the senior monument protection authority it must announce its intention to do so well in advance. In the field of archiving, the Land archives take the place of the senior monument protection authority.

(5) Where the Land is affected as owner or possessor, the lower monument protection authority decides in consultation with the Land authority with jurisdiction for administration of the cultural monument.

(6) Where a monument protection authority fails to comply within the deadline set with instructions issued to it any professional regulatory authority may in its stead take the required measures at the expense of the monument protection authority’s funding source. Article 129, paragraph 5 of the Local Community Statutes applies mutatis mutandis.

**Article 3a: State Office for Cultural Heritage**

The State Office for Cultural Heritage at the Regional Administrative Council of Stuttgart is the competent expert authority responsible for the preservation of cultural heritage. It provides support for the monument protection authorities in all matters relating to technical protection of monuments and other elements of cultural heritage in the implementation of this Law. In this context, within the framework of the supreme monument protection authority, it is entrusted in particular with these tasks:
1. Preparing the technical principles and guidelines for methodology and practice of cultural heritage preservation and protection, and ensuring their uniform implementation on a regional level,
2. the preparation and implementation of cultural heritage promotion programmes,
3. the acquisition of cultural heritage monuments and collective ensembles in lists, their documentation, and their research,
4. advising third parties about technical matters in respect of cultural heritage, in particular the owners and possessors of cultural monuments,
5. putting into effect the centralized public relations work with regard to cultural heritage protection, making known to the public the cultural heritage of the region which is encompassed by the protection of monuments, and also presenting to the public the measures being taken to safeguard this heritage,
6. maintaining central specialist libraries, documentation compilations, specialist databanks, as well as providing other centralized services, and
7. preparing tax certifications in accordance with Article 10g of the Income Tax Law, inasmuch as no responsibility rests with the Federal Land Archive.

**Article 4: Monument Council**

(1) Within the supreme monument protection authority a monument council is to be formed. The monument council should be heard by the supreme monument protection authority in all decisions of fundamental significance.

(2) The members of the monument council are appointed by the supreme monument protection authority for a period of five years. The number of members may be as many as forty persons. The monument council should in particular include representatives of the monument protection authorities, government above-ground planning administration, churches, Land associations of local communities and the cultural monument owners as well as other persons familiar with monument protection issues.

(3) The meetings are to be chaired by the supreme monument protection authority. The members of the Monument council are to serve pro bono.

(4) The supreme monument protection authority is to issue rules of procedure for the monument council that will also regulate the ap-
pointment procedure and the right to make proposals. The rules of procedure may stipulate that the monument council is to form specialised committees to which tasks may be delegated.

Article 5: Compensation
The supreme monument protection authority may with the consent of the Ministry of Finance regulate by way of legal ordinance the matter of compensation and travel expenses for agents of the monument protection authorities. In doing so, average rates may be set.

Chapter 3 - General protection regulations

Article 6: Obligation to Preserve
Owners and possessors of cultural monuments must within reasonable bounds maintain them and treat them with care. The Land will contribute to this with allowances within the framework of available budgetary resources.

Article 7: Actions by and Jurisdiction of Monument Protection Authorities

(1) The monument protection authorities are to take such actions to perform their tasks as appear necessary to them according to their conscientious discretion. The provisions of Articles 6, 7 and 9 of the Police Act apply mutatis mutandis.

(2) Where a project requires approval under this Act the latter may be tied to conditions or requirements.

(3) If a project requires approval under other regulations, the consent of the monument protection authority takes the place of approval under this act.

(4) Where not otherwise stipulated, the lower monument protection authority has jurisdiction. If in case of danger due to delay timely action by the State Office for Cultural Heritage having jurisdiction is not attainable the senior monument protection authority or, in the field of archives the Land archives, or, where these latter cannot take timely action, the police enforcement service may take the required preliminary actions. The authority having jurisdiction must be informed without undue delay.

(5) If a local community body is affected as owner or possessor then decision is taken by

1. the senior monument protection authority in urban and rural districts, major district towns as well as administrative consor-
tia under Article 17 of the Land Administration Act subject to legal supervision by the regional administration and the local communities belonging to them,

2. the district administrator’s office as lower monument protection authority for administrative consortia under Article 17 of the Land Administration Act subject to the legal supervision of the district administrator’s office and the local communities belonging to them and with other local communities with jurisdiction over construction law as well as with other administrative consortia with jurisdiction over construction law and the local communities belonging to them.

Article 8: General Protection of Cultural Monuments

(1) A cultural monument may only with approval by the monument protection authority

1. be destroyed or eliminated,

2. be impaired in its appearance, or

3. be removed from its surroundings where the latter are of significant importance for its monument value.

(2) This applies to movable cultural monuments if they are generally visible or accessible.

Article 9: Collections

Such cultural monuments are exempted from the obligation to have approval under this Act as are administered by a governmental collection. The supreme monument protection authority may exempt other collections from the obligation to have a permit provided that they are cared for professionally.

Article 10: Information and Forbearance Obligations

(1) Owners and possessors are obligated to provide information necessary to fulfil the tasks of monument protection.

(2) The monument protection authorities or their agents are entitled to enter grounds and to ward off impending jeopardy of cultural monuments to enter residences and to inspect cultural monuments. They are entitled to take the required scientific registration measures such as taking inventory; in particular they may inspect nationally important archives or archives of significance in the history of the
Land or the locality or other equivalent collections. Article 13 of the
Basic Law is to that extent limited.

(3) Churches not permanently accessible to the public may only be en-
tered with consent. Public church premises may only be inspected
outside of occasions of worship.

Article 11: Cultural Monuments serving Purposes of Worship

(1) The monument protection authorities must accord priority to re-
ligious considerations established by senior church ecclesiastical
authorities or the equivalent office of the religious community in
question. Prior to carrying out measures the monument protection
authorities must consult with senior ecclesiastical authorities or the
corresponding office of the religious community in question.

(2) Article 7, paragraph 1, Article 8 and Article 15, paragraphs 1 and 2
do not apply to cultural monuments owned by churches provided
they serve purposes of worship and the churches in consultation
with the supreme monument protection authority issue regulations
on the protection of such cultural monuments. Prior to carrying
out projects within the meaning of the previously cited provisions
the supreme monument protection authority must be heard. If no
agreement can be reached with the senior monument protection
authority the senior church authorities will decide in consultation
with the supreme monument protection authority.

(3) Chapter 8 of this Act does not apply to churches’ own cultural mon-
uments.

Chapter 4 - Additional protection for registered cultural monuments

Article 12: Cultural Monuments of Particular Importance

(1) Cultural monuments of particular importance enjoy additional pro-
tection through entry into the monument register.

(2) Movable cultural monuments are only registered

1. if the owner applies for registration, or

2. if they have a significance transcending the locality or have a
   special relation to the Land’s cultural field, or

3. if they constitute a nationally valuable cultural heritage, or

4. if they constitute nationally valuable archives or archives of
significance for the history of the Land or the locality, or

5. if they are to be protected due to an international recommendation.

(3) The registration is to be cancelled if the preconditions no longer pertain.

**Article 13: Registration Procedure**

(1) For registration and deletion the senior monument protection authority has jurisdiction.

(2) With an immovable cultural monument the local community where it is located must be heard.

(3) If there are significant doubts for factual or legal reasons who the owner of the cultural monument is administrative files of the monument protection authority may be publicly disclosed.

(4) Registration takes effect for and against the legal successor.

**Article 14: Monument Register**

(1) The monument register is kept by the senior monument protection authority.

(2) Anyone who is able to show a legitimate interest in doing so is allowed to inspect the monument register.

**Article 15: Effect of Registration**

(1) A registered cultural monument may only with approval of the monument protection authority

1. be restored or repaired,

2. be modified in its appearance or in its substance,

3. be provided with annexes or superstructures, inscriptions or advertising fixtures,

4. be removed from its permanent location or place where it is kept to the extent that when being registered it was determined for reasons of monument protection that the cultural monument may not be removed.

Rescinding its status as an accessory within the meaning of Article 2, paragraph 2 also requires a permit.

(2) Individual items may only be removed from a registered entirety of items, in particular from a collection, with approval by the monu-
ment protection authority. The senior monument protection authority may provide general approval for individual items being removed in the context of proper administration.

(3) Building structures in the vicinity of a registered cultural monument, provided that they are of significant importance, may only be erected, modified or eliminated with the approval of the monument protection authority. Other projects require such approval if utilisation of the grounds heretofore is changed. Approval is to be granted if the protect would only modify the monument’s appearance to an insignificant extent or only impair it temporarily or if overriding reasons of public interest inevitably demand that they be considered.

**Article 16: Obligation to Notify**

(1) Owners and possessors must notify a monument protection authority without undue delay of any damages or defects appearing on a registered cultural monument and capable of jeopardising its preservation.

(2) If a registered cultural monument is sold seller and buyer must notify a monument protection authority of the change in ownership within one month.

**Article 17: Temporary Protection**

The senior monument protection authority may make arrangements for items, collections of items or parts of items whose registration in the monument register as cultural monument is expected to be provisionally considered as registered. The arrangement loses its effect if registration is not initiated within one month and at the latest is not completed after six months. Where there are important reasons this deadline may be extended by a maximum of three months.

**Article 18: Special Protection in Disasters**

(1) The supreme monument protection authority is authorised to issue required regulations by way of legal ordinance for the protection of registered cultural monuments in the event of disasters. In doing so, owners and possessors may in particular be put under an obligation

1. to report where cultural monuments are being kept,

2. to provide cultural monuments with the identification marks provided for in international treaties,

3. to salvage and particularly to secure cultural monuments, or to
have them salvaged and so secured or to surrender them for purposes of temporary safekeeping to salvage points on the orders of the monument protection authority,

4. to tolerate scientific registration of cultural monuments or other measures ordered by the monument protection authority for their documentation, securing or restoration.

Where in the legal ordinance an obligation to surrender is provided for arrangements are to be made to have the item surrendered returned to the entitled parties without undue delay as soon as further safekeeping at a salvage point is no longer required for protection of the cultural monuments.

(2) The authorisation pursuant to paragraph (1) may be transferred by legal ordinance from the supreme monument protection authority to subordinate monument protection authorities.

Chapter 5 - Entire fixtures

Article 19:

(1) The local communities may in consultation with the State Office for Cultural Heritage may by statute place entire fixtures, in particular the appearance of streets, squares or localities under monument protection if there is a special public interest in their preservation for scientific, artistic or local historical reasons.

(2) Modifications of the protected appearance of the entire fixtures require approval by the lower monument protection authority. Approval is to be granted if modification would only insignificantly change the appearance of the entire fixtures or only impair it temporarily or if overriding reasons of public interest inevitably demand that they be considered. The monument protection authority must hear the local community prior to its decision.

Chapter 6 - Discovery of cultural monuments

Article 20: Incidental Discoveries

(1) Anyone discovering items, collections of items or parts of items of which it must be surmised that there is a public interest in their preservation for scientific, artistic or local historical reasons must notify a monument protection authority or the local community of this without undue delay. The discovery and the place of discovery must be kept in unchanged condition up to the end of the fourth working
day after notification unless the monument protection authority is in agreement with shortening the deadline. This obligation does not apply if it would entail disproportionately high costs or disadvantages and the monument protection authority declines to pay compensation for this.

(2) The State Office for Cultural Heritage and its agents are entitled to evaluate the discovery and, where it involved a movable cultural monument, to salvage it and take possession of it for scientific evaluation.

(3) The local communities are obligated to inform the State Office for Cultural Heritage without undue delay of any discovery they become aware of.

**Article 21: Investigations**

Investigations, in particular excavations with the objective of discovering cultural monuments require a permit. The State Office for Cultural Heritage issues the permission in consultation with the senior monument protection authority.

**Article 22: Excavation Protection Areas**

(1) The lower monument protection authority is authorised to declare by way of legal ordinance areas harbouring a justified assumption of cultural monuments of particular importance to be excavation protection areas.

(2) In excavation protection areas work by means of which hidden cultural monuments may be brought to the surface or jeopardised may only be undertaken with permission. The State Office for Cultural Heritage issues the permission in consultation with the senior monument protection authority. Previous agricultural and forestry usage is not affected by this.

**Article 23: Government Entitlement to Treasures**

Movable cultural monuments that have no owner and that have been hidden for so long that their owner can no longer be determined become the property of the Land upon their discovery if they are discovered in government investigations or in excavation protection areas or if they have an extraordinary scientific value.

**Chapter 7 - Compensation**

**Article 24:**

(1) Where actions taken on the basis of this Act have an expropriation effect appropriate compensation must be paid. Articles 7 through 13
Chapter 8 - Formal expropriation

Article 25: Prerequisites for Expropriation

(1) Expropriation is admissible where preservation of a registered cultural monument or its appearance or preservation of an entire protected fixtures cannot be secured in any other reasonable way.

(2) Expropriation is additionally admissible
   1. with discoveries provided that it cannot otherwise be ensured that a cultural monument can be scientifically evaluated or is generally accessible,
   2. with cultural monuments provided it cannot otherwise be ensured that they can be scientifically recorded.

(3) For the purpose of scheduled investigations expropriation is admissible if there is a justified assumption that cultural monuments can be discovered by means of such investigations.

Article 26: Expropriation of Movable Items

(1) If the object of expropriation is a movable item, a right to a movable item or a right entitling to acquisition, possession or usage of the movable item or restricting the party bound in its use of the movable item, Articles 4, 5, 7 through 13, 22, paragraph 1, 3 and 4 and Articles 23, 27 through 36, 39, 40, 42 and 43 of the Land Expropriation Act apply mutatis mutandis. In the implementing ordinance the owner and possessor may be put under an obligation to surrender the item to the party favoured by expropriation.

(2) If immediate surrender to the applicant is imperative for preservation, scientific recording or evaluation of a cultural monument the expropriating authority may put the owner or possessor under an obligation to surrender the item to the applicant. Beyond that, Article 37, paragraphs 2 through 5 and Article 38, paragraphs 2 and 3 of the Land Expropriation Act apply mutatis mutandis.

Article 27: Summary Offences

(1) A person commits a summary offence who intentionally or negligently
1. without approval by the monument protection authority undertakes the actions cited in Articles 8, 15, paragraph 1, paragraph 2, sentence 1, paragraph 3, sentences 1 and 2, 21 and 22, paragraph 2, sentence 1 or who contravenes the enforceable conditions contained in permits,

2. contravenes the obligations incumbent upon him under Article 16 and 20, paragraph 1,

3. contravenes measures of the monument protection authorities under Article 7, paragraph 1 or 4 provided the authority makes reference to this civil penalty,

4. contravenes the provisions of a legal ordinance issued under Article 18 provided that the legal ordinance makes reference to this civil penalty,

5. undertakes to modify the protected appearance of the entire fixtures without approval by the monument protection authority in violation to Article 19, paragraph 2, sentence 1 or contravenes the enforceable conditions contained in permits provided that the entire fixtures have been placed under monument protection by means of legal ordinance under § 19, paragraph 1 of this Act in the version applicable up through 31 December 1983.

6. contravenes the provisions of a statute issued under Article 19, paragraph 1 provided the statute makes reference for a specific act to that civil penalty provision.

(2) The summary offence may be punished with a civil penalty up to 250,000 Euro and in particular serious cases up to 500,000 Euro.

(3) Items to which the summary offence refers under Article 1, item 1, 3 or 4 may be confiscated.

(4) Administrative authority within the meaning of Article 36, paragraph 1, item 1 of the Act on Summary Offences is the lower monument protection authority.

**Article 28: Transitional Provisions**

(1) Deemed to be registration in the monument register pursuant to Article 12 is registration in

1. the monument register and the register of buried antiquities under the Baden Land Act to Protect Cultural Monuments,
2. the Land directory of building monuments set up under Article 97, paragraph 7 of the Württemberg Building Code,

3. the directory of building monuments set up under Article 34 of the Baden Land Building Code,

4. the directory of monuments under Articles 8 and 10 of the Hesse Act relating to Monument Protection of 16 July 1902 (Government Gazette, p. 275),

5. the monument directory pursuant to the order of the Württemberg Ministry of Church and School Affairs relating to Protection of Monuments and Local Historical Art Property of 25 May 1920 (Government Gazette, p. 317).

(2) Registrations under paragraph 1 should be transferred to the monument register to be set up under this Act according to the provisions applicable to fresh registrations.

(3) Appearances of streets, squares and localities that were protected under the Baden Monument Protection Act retain their status under Article 19 provided the protection has been ordered in consultation with the local community. Areas that were declared to be excavation protection areas under the Baden Monument Protection Act become excavation protection areas under Article 22.

(4) Cultural monuments owned by the government and by public-law entities, agencies or foundations not registered with the monument register but having special significance are equated up through the end of ten years after this Act takes effect with registered cultural monuments.

(5) Actions affected in connection with the disentailment of estates for the protection of items and item collections of special artistic, scientific, historical or local historic value are not affected by this Act. Such actions may be changed, adapted to the provisions of this Act or rescinded. The senior monument protection authorities have jurisdiction in this matter. They must also make arrangements required to enforce such actions. Where for the effectiveness of a legal transaction or to undertake an action approval was required by the disentailment court the jurisdiction for approval passes to the senior monument protection authority.

Article 29: Entry into Force

(1) This Act enters into force as of 1 January 1972* [* The provision re-
lates to the Act in its original version of 25 May 1971 (Law Gazette, p. 209).]

(2) Simultaneously all provisions corresponding to or in contradiction to this Act go out of force, especially

1. the Baden Land Act to Protect Cultural Monuments (Baden Monument Protection Act) of 12 July 1949 (Law and ordinance Gazette. p. 303),

2. the Württemberg Law relating to the preliminary Protection of Monuments in the Ownership of Civil or Ecclesial Communities and Public Foundations of 14 March 1914 (Government Gazette p. 45),

3. the Württemberg Law relating to the preliminary Protection of Monuments and Local Historical Art Property of 14 May 1920 (Government Gazette p. 305),

4. the order of the Württemberg Ministry of Church and School Affairs relating to Protection of Monuments and Local Historical Art Property of 25 May 1920 (Government Gazette p. 317),

5. Article 131 of the police criminal code for Baden of 31 October 1863 in the amended version as of 25 July 1923 (Government Gazette p. 216),

6. the Baden ordinance of 27 November 1914, concerning excavations and finds (Government Gazette p. 290),

7. the Prussian Excavation Law of 26 March 1914 (Corpus Juris p. 41),

8. the Württemberg ordinance of the Ministry of the Interior on historic buildings of 14 January 1912 (Government Gazette p. 10),


10. Articles 6 and 7 of the Law relating to the Dissolution of Entailed Estates and Other Associated Assets of 6 July 1938 (Imperial Law Gazette I p. 825) and Article 7 of the Ordinance for the Implementation and Supplementing of the Law relating to the Dissolution of Entailed Estates and Other Associated Assets of 20 March 1939 (Imperial Law Gazette I p. 509), inasmuch
as this relates to the protection and securing of objects and aggregations of material items of particular artistic, scientific, historical, and cultural historical value,

Federal Nature Conservation Act
The Law relating to the protection of nature and landscape conservation (Federal Nature Conservation Act – BNatSchG) states in Articles 20, 23, 25, 26, 28, 30 and 32:

Article 20: General Principles
(1) A network of linked biotopes (biotope network) is to be created that is to cover at least 10 percent of the area of each Land.
(2) Parts of nature and landscape may be protected
   1. pursuant to Article 23, as nature conservation area,
   2. pursuant to Article 24, as national park or national nature monument,
   3. as biosphere reserve,
   4. pursuant to Article 26, as landscape protection area,
   5. as nature park,
   6. as natural monument, or
   7. as protected landscape element.
(3) The parts of nature and landscape referred to in (2) shall be parts of the biotope network, to the extent they are suited for that purpose.

Article 23: Nature Conservation Areas
(1) Nature conservation areas are areas that have been designated in a legally binding manner and in which the special protection of nature and landscape as a whole, or of individual parts thereof, is required for the following reasons:
   1. in order to conserve, develop or restore living sites, biotopes or communities of certain species of wild fauna and flora,
   2. for reasons of science, natural history or national heritage, or
   3. because of their rarity, special characteristics or outstanding beauty.
(2) All actions which may lead to the destruction of, damage to, or changes in, a nature conservation area, or parts thereof, or which may cause permanent disturbance thereto, shall be prohibited, in
keeping with more specific provisions to be adopted. Nature conservation areas can be opened to the public, as long as this does not counter their protection purposes.

Article 25: Biosphere Reserves

(1) Biosphere reserves are areas that are to be protected and developed in a consistent way and that

1. are large and are typical representatives of certain landscape types,

2. fulfil the requirements for nature conservation areas in essential parts of their territory, and the requirements for landscape protection areas throughout the greater part of the rest of their territory,

3. serve the primary purpose of conserving, developing or restoring landscapes shaped by traditional, diverse forms of use, along with their species and biotope diversity as evolved over time, including wild forms and formerly cultivated forms of commercially used or usable animal and plant species, and

4. illustrate ways of developing and testing forms of economic activity that are especially conserving of natural resources.

(2) To the extent permitted by their protection purpose, biosphere reserves also serve purposes of research, of observation of nature and landscape and of education for sustainable development.

(3) Biosphere reserves are to be developed via a system of core zones, maintenance zones and development zones, with due regard for the exceptions required as a result of biospheres’ large size and inclusion of populated areas, and are to be protected in the same manner as nature conservation areas or landscape protection areas.

(4) Biosphere reserves may also be referred to as “biosphere areas” or “biosphere regions”.

Article 26: Landscape Protection Areas

(1) Landscape protection areas are areas that have been designated in a legally binding manner and in which special protection of nature and landscape is required for the following reasons:

1. in order to conserve, develop or restore the efficiency and proper functioning of the natural balance, or the capability of natural resources to regenerate themselves and to be available
for sustainable use, and to protect living sites and habitats of certain wild fauna and flora species,

2. because of the diversity, special characteristics, beauty or special cultural historical significance of their landscapes, or

3. because of their special importance for recreation.

(2) In a landscape protection area, all actions which alter the character of the area or which are not compatible with the purpose of its protection shall be prohibited, with particular consideration for Article 5 (1) and in keeping with more specific provisions to be adopted.

Article 28: Natural Monuments

(1) Natural monuments are unique creations of nature, or corresponding areas of up to 5 ha, that have been designated in a legally binding manner and that require special protection for the following reasons:

1. for reasons of science, natural history or national heritage, or

2. because of their rarity, special characteristics or beauty.

(2) The removal of natural monuments, as well as any action which may lead to their destruction, damage or alteration, shall be prohibited, in keeping with more specific provisions to be adopted.

Article 30: Legally Protected Biotopes

(1) Certain parts of nature and landscape that have special importance as biotopes shall be legally protected (general principle).

(2) Actions that could lead to the destruction or other significant adverse effects on the following biotopes shall be prohibited:

1. natural or semi-natural areas of flowing and standing inland water bodies, including their banks and the relevant natural or semi-natural vegetation associated with the banks, together with their natural or semi-natural sedimentation areas, backwaters and areas that are regularly flooded,

2. bogs, swamps, reeds and large-sedge reed beds, wetland meadows rich in sedges and rushes, springs and inland salt deposits,

3. open inland dunes, open natural boulder, rubble and scree slopes, clay and loess walls, dwarf-shrub, broom and juniper heaths, matgrass communities, dry meadows, heavy metal
grassland, forests and bushes in xerothermic locations,

4. fen and bog woodlands, riparian forests, forests of ravines, slopes and screes, subalpine larch forests and riparian larch forests,

5. open rock formations, alpine grassland, snowbeds and elfin woodland,

6. rocky shores and cliffs, coastal dunes and beach ridges, coastal lakes, bodden with terrestrialisation zones, salt meadows and tidal shallows in the coastal region, seagrass meadows and other marine macrophyte populations, reefs, sublittoral sand-banks and silty bottoms with boring bottom megafauna and species-rich gravel, coarse-sand and shell layers in marine and coastal regions.

The prohibitions of Sentence 1 shall also apply to other biotopes that are legally protected by the Länder.

(3) Exemptions to the prohibitions set forth in (2) may be permitted, upon application, if the relevant adverse effects can be compensated for.

(4) If actions within the meaning of (2) are anticipated as a result of preparation, modification of supplementation of binding land-use plans, a decision may be made, by application of the relevant municipality and prior to preparation of the pertinent binding land-use plan, regarding a necessary exception to, or exemption from, the prohibitions of (2). If an exception has been permitted, or an exemption granted, no further exception or exemption shall be required for the implementation of a project that is otherwise permissible, if the implementation of the project begins within seven years following the entry into force of the relevant binding land-use plan.

(5) In the case of legally protected biotopes that have arisen during the term of a contractual agreement or during participation in public programmes for restriction of cultivation, (2) shall not apply for resumption of a permissible agricultural, forestry or fishing use within ten years after the termination of the relevant contractual agreement or participation in the relevant public programmes.

(6) In the case of legally protected biotopes that have arisen on areas in which permissible extraction of mineral resources was restricted or interrupted, (2) shall not apply to resumption of extraction within five years after the relevant restriction or interruption.
(7) Legally protected biotopes shall be registered, and such registration shall be made accessible to the public, by suitable means. Such registration, and access to it, shall be determined pursuant to the legislation of the Länder.

(8) More extensive protection provisions, including provisions regarding exceptions and exemptions, shall not be affected.

Article 32: Protected Areas (Article 2, “Natura 2000” Network)

(1) The Länder shall select the sites that, pursuant to Article 4 (1) of Directive 92/43/EEC and Article 4 (1) and (2) of Directive 79/409/EEC, are to be notified to the Commission, and shall do so in keeping with the provisions set forth in these directives. To this end, they shall consult with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). That ministry shall arrange for the participation of the other Federal ministries whose areas of competence are concerned, and shall notify the relevant selected sites to the Commission. That ministry shall also communicate to the Commission estimates regarding the financial participation of the Community that is required for fulfilment of obligations pursuant to Article 6 (1) of Directive 92/43/EEC, including payment of relevant financial compensation, especially compensation for the agriculture and forestry sectors.

(2) The sites included in the list pursuant to Article 4 (2) subparagraph 3 of Directive 92/43/EEC are to be declared protected parts of nature and landscape within the meaning of Article 20 (2), in keeping with Article 4 (4) of that Directive, and the areas notified pursuant to Article 4 (1) and (2) of Directive 79/409/EEC are to be declared protected parts of nature and landscape within the meaning of Article 20 (2), in keeping with the relevant conservation objectives.

(3) Declaration as a protected area shall set forth the relevant protection purpose, in keeping with the relevant conservation objectives, and the required site boundary definitions. It shall also stipulate whether priority natural habitat types or priority species are to be protected. Suitable orders and prohibitions shall be issued, and suitable management and development measures carried out, to ensure that the requirements of Article 6 of Directive 92/43/EEC are fulfilled. More extensive protection provisions shall remain unaffected.

(4) The placing of sites under protection as set forth in (2) and (3) shall
not be mandatory if protection of equal value is guaranteed by other statutory regulations, including this Act and area-oriented provisions of the legislation of the Länder, by administrative provisions, via authorisation of a public or non-profit responsible agency, or via contractual agreements.

(5) For Natura 2000 sites, management plans may be established either as separate, stand-alone plans or as parts of other plans.

(6) Selection and declaration of sites within the meaning of (1) Sentence 1 and (2), within the German exclusive economic zone and on the continental shelf, as protected parts of nature and landscape within the meaning of Article 20 (2), shall be in accordance with Article 57.
Baden-Württemberg Nature Conservation Act

The Baden-Württemberg Law for the protection of nature, preservation of the landscape, and provision of recreation in the free landscape (Nature Conservation Act – NatSchG BW) states in Articles 26, 28, 29, 31-32 and 36:

Article 26: Nature Conservation Areas

(1) Areas in which the conservation and protection of nature and landscape are necessary to a particularly high degree, in their entirety or in individual parts:

1. for the maintaining, development, or restoration of biotopes and of communities of certain specific wild plant and animal species,
2. for reasons of ecology, science, natural history, social or cultural reasons, or
3. due to the rareness, variety, particular uniqueness, or outstanding beauty of their natural setting,

can be declared as nature conservation areas by way of statutory ordinance.

(2) The statutory ordinance is required to specify the object of protection, the essential purpose of the protection, and the prohibitions necessary to achieve this, as well as the measures for protection and care. It may also contain rulings in respect of necessary restrictions:

1. on economic exploitation,
2. on the communal use of surface bodies of water,
3. authorisation to enter the area.

(3) In the nature conservation area, in accordance with the terms of the statutory ordinance, all actions are prohibited which could destroy, damage, alter, or in the long term interfere with the area, its natural balance, or its individual component parts, or with scientific research.

(4) It is also possible for the nature protection authority, in individual cases and in agreement with the specialist authorities concerned, to prohibit actions outside a nature conservation area which could be prone to setting at risk the substance of the nature conservation area or of individual parts of it. If damage has already been incurred, the nature protection authorities may take the necessary steps against the perpetrators or the owner of the actual instrument of the damage, in order to redress the damage.

(5) Inasmuch as may be necessary to secure and safeguard the object of protection and to attain the purpose of protection, adjacent areas should also be designated as landscape conservation areas.
**Article 28: Biosphere Areas**

(1) Areas to be unitarily protected and developed, which

1. are of large extent and are characteristic of specific cultural landscapes with rich natural ambience,

2. fulfil in substantial parts the preconditions of a nature protection area, and otherwise predominantly of a landscape protection area,

3. predominantly serve the preservation, development, or restoration of a landscape shaped by versatility of use, and of the wide variety of types and biotopes which have historically grown within it, including types of animals and plants, whether wild or in earlier domesticated forms, economically used or usable,

4. serve as prime examples of the development and testing of forms of management which are particularly beneficial to the natural landscape content, and

5. serve the purposes of instruction and education with regard to the environment, ecological research, and long-term environmental observation,


... can be declared to be biosphere areas by way of statutory ordinance. Biosphere areas are to be classified and developed, taking into consideration the exceptions incurred by the dictates of size and settlement, into core zones, preservation zones, and development zones. Core zones are protected in the manner of nature protection areas, and the other zones predominantly as landscape protection areas. Article 26, paragraphs 2 and 3, applies accordingly.

(2) The statutory ordinance is to specify the object of protection, the purpose of protection, differentiated according to zones, the provisions required for the realisation of the protection purposes, including the measures for protection, care, and development, or the empowerment to undertake this.

**Article 29: Landscape Protection Areas**

(1) Areas in which particular protection of nature and landscape is called for, in their entirety, in individual parts, or due to special measures for care or development, in order to retain, develop, or restore
1. the capacity for production and function of a balanced natural setting,

2. the capacity for regeneration and sustained utilisation of the natural objects,

3. the versatility, uniqueness, or beauty of the natural ambience and landscape, or

4. their particular importance for general public recreation in a manner compatible with nature

can be declared as landscape protection areas by statutory ordinance. Areas may be incorporated in which habitats and locations of specific animal and plant types are to be protected. Landscape protection areas can be classified according to their protection purposes into zones with appropriately scaled degrees of protection.

(2) The statutory ordinance should specify the object of protection, the essential purpose of protection, and the prohibitions and reservations stipulated in the approval required for these purposes, as well as the measures for protection, development, and care. The availments for access and the land utilisation within the framework of good professional practice in agricultural, forestry, and fishery management should not be restricted.

(3) In the landscape protection area, under the more detailed provisions of the statutory ordinance, all undertakings are prohibited which change the character of the area or run contrary to the protection purpose, in particular if these

1. damage the balance of nature,

2. cause sustained disruption to the capacity for utilisation of the natural resources,

3. cause long-lasting change to the protected use of an area,

4. cause disadvantageous change to the landscape image,

5. impair enjoyment of nature, or

6. in the instance of paragraph 1, clause 2, cause disadvantageous change to the quality of life of the sites.
**Article 31: Natural Monuments**

(1) Areas with a surface extent of up to 5 ha (natural monuments in the form of surfaces) or individual formations of nature (natural formations), of which the protection and preservation is required

   1. for the securing and development of living communities or habitats of specific types of wild animals and plants,

   2. for scientific, ecological, natural historical, regional historical or cultural reasons, or

   3. due to their uniqueness, rarity, beauty, or typical landscape identification,

   can be declared as natural monuments by statutory ordinance. Inasmuch as may be required, with regard to natural structural image, the surrounding area may also be protected.

(2) The statutory ordinance is to specify the object of protection, the essential purpose of protection, the prohibitions and reservations in approvals required for this, and protection and care measures for the natural monument and its protected surroundings. Article 26, paragraph 2, clause 2, applies accordingly.

(3) The nature protection authority can also impose prohibitions and measures for protection and care by way of individual ordinances.

(4) The removal of the natural monument, and any actions which could lead to the destruction, change, or impairment of the natural monument or its protected surroundings, are to be prohibited by provisions of the statutory ordinance.

**Article 32: Biotopes Subject to Special Protection**

(1) The following biotopes, in the characterisation described in the Annex to this Law, are subject to particular protection:

   1. moors, marshland, fenwood, marshland wood, and lowland woodlands close to their natural state, wet meadowlands, reedbeds, wetlands rich in sedge and rushes;

   2. natural and close to natural areas of flowing and static bodies of water, including their banks and the natural or close to natural bankside vegetation, as well as their natural or close to natural sedimentation areas, old river courses and regularly flooded areas, stream areas, watercourse bank areas close to natural
conditions, and close to natural areas of the shallow water area of Lake Constance;

3. exposed inland dunes, heathland with low bushes, broom, and juniper, dry and sparse grassland, scrubland, and close to natural woodlands of hot-dry locations, in each case including their shrubs and knee timber growth;

4. exposed rock formations, exposed natural block and rubble deposits, scree slopes, and loam and loess walls;

5. caves, dolines;

6. hedges, thickets, ravines, drystone walls and clearance cairns, in each case in the free landscape.

(2) Any actions which could lead to the destruction or substantial or long-term detriment of the specially protected biotopes are prohibited. More extensive prohibitions in statutory ordinances and standing regulations relating to protected areas and objects remain unaffected.

(3) As a departure from paragraph 2, clause 1, it is permissible:

1. to undertake care and upkeep measures which are necessary for the preservation or restoration of specially protected biotopes;

2. to pursue the agricultural and forestry utilisation in the manner and on the scale as was being exercised in the due and proper manner as at 31 December 1991;

3. to resume the agricultural, forestry, and fishery utilisation which had been temporarily restricted or suspended due to contractual management restrictions, or participation in a programme of extensification or suspension, within a period of five years after the expiry of the contractual arrangement or participation in the programme. This period may, on application, be extended once by a further five years;

4. to continue or resume the forms of utilisation which were allowed to be exercised or commenced on 31 December 1991 on the basis of an approval from a public authority or an express ruling in a statutory ordinance in accordance with Articles 26 or 31;

5. to carry out projects in the meaning of Article 35, paragraph 1, Nos. 1 and 2 of the Building Code, which are in immediate spa-
tial proximity to an agricultural facility or a branch of activity
which has been taken out of operation.

(4) The nature protection authority may allow for exceptions from the
prohibitions of paragraph 2, clause 1, if:
1. predominant grounds of public welfare require this, or
2. no substantial or sustained impairments to the biotope and the
habitats of animal or plant species at risk are to be anticipated, or
3. if a biotope of the same type can be created within a reasona-
able time by compensatory measures.

With regard to exceptions in accordance with clause 1, No. 1, Article
21, paragraphs 1 to 5 apply accordingly. In nature protection ar-
eas, the senior nature protection authority may approve exceptions.
The exception is replaced by an official approval required in accord-
ance with other regulations if this has been issued in agreement
with the nature protection authority.

(5) Approvals and permissions which are issued with a time limit, which
were exercised or were permitted to be begun on 31 December
1991, should be extended or renewed if this does not run contrary
to predominant grounds of public welfare.

(6) Article 26, paragraph 4 applies accordingly.

(7) The nature protection authority assesses the biotopes which are in par-
cular need of protection, and enters them on lists and maps, which
have declaratory effect. The lists and maps are held at the nature protec-
tion authority and at the municipalities, available for inspection by any-
one. The municipalities draw attention to the fact that the maps and lists
are available for anyone to view by the usual means of local notification.

(8) The nature protection authority informs owners and other parties
entitled to make use of the areas, on enquiry, whether there is a bio-
tope on their property which requires special protection, or whether
a particular form of activity is prohibited.

(9) For areas which, in accordance with paragraph 1, Nos. 2 to 4, by way
of this law are for the first time becoming a biotope under particu-
lar protection, or part of such a biotope, as a departure from par-
agraph 3, Nos. 2 and 4, and paragraph 5, the determinant point of
time is taken as 01 January 2006.
**Article 36: Establishment of the “Natura 2000” European Ecological Network**

(1) The State is contributing to the setting up and protection of the European Ecological Network for special protection areas, which is designated as “Natura 2000”.

(2) At the proposal of the Ministry, and in accordance with the criteria set forth in the Directives 79/409/EEC and 92/43/EEC, and the procedure in accordance with Article 33, paragraph 1, clause 2 of the Federal Nature Conservation Act, the State government selects the areas which are of significance to the community, and the European bird protection areas. The Ministry then makes known the areas which have been selected by the State government to the Federal Government department responsible, for nomination to the Commission.

(3) The Ministry is empowered to designate, by statutory ordinance, the European bird protection areas selected by the State government in accordance with paragraph 2, as well as the delineations of the areas, the types of birds concerned, and the conservation aims of these areas. The replacement notification of the area delineations is put into effect in accordance with Article 3 of the Promulgation Law.

(4) Areas of significance to the community are designated in accordance with the criteria of Article 4, paragraph 4, of Directive 92/43/EEC, and European bird protection areas in accordance with the criteria of Article 4, paragraphs 1 to 3 of Directive 79/409/EEC, corresponding to the respective conservation aims as protected parts of nature and the landscape in the meaning of the Fourth Section. The protection area designation specifies the protection purpose corresponding to the respective conservation aims and the area delineations required. It sets forth whether priority biotopes or priority types are to be protected. By way of appropriate precepts and prohibitions, as well as measures for care and development, it is to be ensured that the requirements of Article 6 of Directive 92/43/EEC are respected. Inasmuch as a statutory ordinance in accordance with paragraph 3 is in place for European bird protection areas, the protection ordinance is required to respect the provisions contained in it. More extensive protection provisions remain unaffected. A separate protection area designation is not required, if an existing protection area designation in the meaning of the Fourth Section guarantees adequate protection.
(5) The placement under protection in accordance with paragraph 4 can be dispensed with, provided that protection of equivalent value is guaranteed by way of other statutory regulations, administration provisions, by the power of disposition of a public or public welfare body, or by contractual agreements.
Federal Forest Act
The Act on the Preservation of Forests and the Furtherance of Forest Management (Federal Forest Act – BWaldG) states in Article 11:

Article 11: Management of Forests

(1) The forest should be managed in a due and proper and sustainable manner, within the framework of its intended purpose. The law of the Federal State is to specify as a minimum the obligation for the woodland owners, in respect of cleared woodland areas or thinned stands of woodland, within a reasonable period of time:

1. To carry out re-forestation, or

2. To provide supplementary planting, inasmuch as natural restocking remains incomplete, if the conversion to another form of use has not been approved, or is not being otherwise permissible.

(2) In respect of management, appropriate attention is to be paid to:

1. The function of the forest as an archive of natural and cultural history, and

2. In situations involving parklands, gardens, and cemeteries, the requirement to provide due care for cultural heritage and monuments.
State Forestry Act
The Forestry Act of Baden-Württemberg (State Forestry Act – LWaldG BW) states, in Articles 9, 30a and 32:

Article 9: Maintaining of Forests

(1) Woodlands may only be converted to another form of use with the approval of the higher forestry authority (conversion). In respect of conversions which fall within the scope of application of the Federal Environmental Impact Assessment Act, the approval procedure must accord with the requirements specified by that Law. Conversions which are implemented in direct connection with the realization of a project which is subject to an environmental impact assessment will be incorporated into this environmental impact assessment. The decision will be made in concordance with the authorities concerned; the possibility of further stipulations being imposed remains unaffected.

(2) In taking the decision in respect of an application for conversion, the rights, obligations, and economic interests of the woodland owners and the interests of the general public are to be weighed against one another. Approval should be withheld if the conversion is not compatible with the aims of spatial configuration and regional planning, or if the retaining of the woodland is predominantly in the public interest, and in particular if the woodland is of substantial significance for the effectiveness of the balance of nature, forestry production, or the recreation of the general public.

(3) For the full or partial compensation of disadvantageous effects of a conversion on the protective or recreational function of the woodland, it may in particular be stipulated that:

1. In the close vicinity, as a replacement, reforestation of suitable areas of land is to be carried out within a specified period of time,
2. A protective stand of woodland is to be retained,
3. Other protective and configuration measures are to be taken.
4. Inasmuch as the disadvantageous effects of a conversion cannot be compensated for, a fee charge on deforestation is to be imposed. The Ministry of Food and Agriculture (Ministry),
in agreement with the Ministry of the Interior, the Ministry of Finance, and the Ministry of Economics, determines the amount of the fee charge on deforestation and the procedure for imposing it. The amount is to be determined in accordance with the seriousness of the detriment, the value or advantage for the originator, and in accordance with the economic acceptability; in insignificant cases, the charge may be waived. Article 21 paragraph 5 of the Nature Protection Act remains unaffected.

5. If the conversion is approved, an appropriate period of time is to be specified for its implementation. The approval will be withdrawn if the conversion has not commenced after the expiry of the period.

6. If the conversion is commenced without approval, the area is to be reforested within a period of time to be specified by the forestry authority, unless the approval is issued subsequently. To compensate for impairments to the protective or recreational function, stipulations may be issued in respect of the nature of the reforestation.

7. The removal of the tree population in order to establish forestry operational facilities, including recreational facilities (Article 4, No. 4), and the provision of firebreaks or rides, do not constitute conversion. The provision, however, requires approval of the forestry authority if the areas of the woodland paths exceed one hectare in size.

**Article 30a: Biotope Protection Woodland includes**

(1) Biotope protection woodland is woodland which serves to protect and conserve rare woodland communities and habitats of rare wild plants and animals.

(2) Biotope protection woodland comprises:

1. ravine, block spoil, and talus woodlands, close to the natural state,

2. regional rare woodland communities, close to the natural state,

3. ravine, clink stones, cirques, and dead ice kettles in woodland with accompanying vegetation close to the natural state,

4. woodlands as residues of historic forms of cultivation and rich-ly-structured woodland peripheries
in the formulation described in the Annex to this Law. The protection of other biotopes in the woodlands, in particular of fenwood, marshland wood, and lowland woodlands close to their natural state, and close to natural woodlands of hot-dry locations, including their herbaceous growth, is based on Article 32 of the Nature Conservation Act.

(3) Any actions which could lead to the destruction or substantial or sustained impairment of biotope protection woodland are prohibited. More extensive prohibitions in statutory ordinances and bodies of regulations relating to protected areas and items in accordance with the Nature Conservation Act and Articles 29 to 33 and Article 36 remain unaffected.

(4) The care of biotope protection woodland and of biotopes in woodland in need of special protection in accordance with Article 32 of the Nature Conservation Act is put into effect irrespective of any special designations of purpose within the framework of the management of the woodland in accordance with the provisions of Article 12. It is also permissible for care and upkeep measures to be carried out which are necessary for the conservation or restoration of biotope protection woodlands.

(5) The forestry authority may approve exemptions to the prohibitions under paragraph 3, clause 1, if:

1. predominant grounds of public welfare require this,

2. no substantial or sustained impairments to the biotope protection woodland and the habitats of endangered animal and plant types are to be anticipated or

3. compensatory measures are taken in appropriate time to create a biotope protection woodland of the same type.

In nature protection areas the senior nature protection authority may allow for exemptions. The exemption is replaced by an official consent required under other regulations if this is issued in agreement with the authority responsible for the issue of the exemption.

(6) If the maintaining of the previous type of biotope protection woodland is not economically feasible for the owner of the woodlands, the detrimental effects should be paid for contractually within the framework of the available budgetary resources, or otherwise com-
pensated in a reasonable manner. Contractual rulings have priority. Compensation is also to be granted if the owner of the woodlands is subjected to restrictions in the interests of the sustained safeguarding of the biotope protection woodland or in the undertaking of actions. Article 30, paragraph 2, clause 2 applies accordingly.

(7) Biotope protection woodland is delineated and described by the woodland biotope mapping (Article 7, paragraph 4), as well as being entered with declaratory significance on maps and in schedules, which should then be promulgated. The maps and schedules are available at the forestry authorities and at the municipalities for anyone to inspect. The municipalities draw attention to the fact that the maps and lists are available for anyone to view by the usual means of local notification.

(8) The Ministry regulates the procedure for the incorporation in woodland biotope mapping of specially protected biotopes in woodland, in accordance with Article 32 of the Nature Conservation Act, and for the participation of the owners of the woodlands in the delineation of these biotopes by way of administration regulations.

(9) The nature protection authority informs owners and other parties entitled to make use of the areas, on enquiry, whether there is a biotope protection woodland on their property which requires special protection, or whether a particular form of activity is prohibited.

Article 32: Woodland Protection Areas

(1) With the agreement of the owners, woodland may, by statutory declaration by the senior forestry authority, be declared to be a woodland protection area (protected or protection woodland), if it seems requisite, in order to safeguard the undisturbed natural development of a woodland habitat with its types of animals and plants, or to conserve or revive a specific woodland habitat with its types of animals and plants, or a specific species requires sustaining, for forestry procedures to be refrained from or carried out. The protection purpose is to be specified in the statutory ordinance. Inasmuch as the statutory ordinance contains provisions with regard to the protection of types, these are to be agreed with the senior nature protection authority.

(2) Protected woodland is a woodland reserve which is left to itself. Care measures are not permitted; fallen timber may not be removed. The forestry authority may allow or order preventive measures if pests
or natural events incur a substantial risk to adjacent woodlands. The establishment of footpaths is permissible.

(3) Protection woodland is a woodland reserve in which a specific woodland habitat, with its types of animals and plants, a specific species requiring sustaining, or a specific biotope, is to be conserved, developed, or revived. The forestry authority imposes care measures with the agreement of the owner of the woodland.

(4) Adjacent woodland is to be managed in such a way that woodland protection areas are not impaired.

(5) The statutory ordinance according to paragraph 1 may
   1. specify care measures in the woodland according to type and extent,
   2. issue regulations regarding the behaviour of visitors to the woodlands,
   3. stipulate special rulings with regard to the practice of hunting.

(6) Woodland protection areas which have been designated by declaration from the senior forestry authority are to be re-classified within a period of ten years after the enactment of this Law by way of statutory ordinance. The involvement of bodies concerned with the public interest or of owners of adjacent woodlands is not necessary, provided that the delineation of the woodland protection areas is not changed, or only insubstantially. Article 36, paragraphs 2, 3 and 4, shall not apply in these cases.
Bird protection areas

Article 3: Directive 2009/147/EG (European Bird Protection Areas)

1. In the light of the requirements referred to in Article 2, Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.
2. The preservation, maintenance and re-establishment of biotopes and habitats shall include primarily the following measures:
   (a) creation of protected areas;
   (b) upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones;
   (c) re-establishment of destroyed biotopes;
   (d) creation of biotopes.

With regard to the designation of European bird protection areas (Directive 2009/147/EG) the ordinance issued by the Ministry of Food and Agricultural Areas of Baden-Württemberg (VSG-VO) states in Article 3:

Article 3: Bird Protection Ordinance (Conservation aims)

(1) The conservation aims of the European bird protection areas are the conservation or restoration of a favourable conservation state of the populations and habitats of the breeding bird types listed in Annex 1, and of the bird types, comprised in groups or cited individually, which rest, moult, or spend the winter in the bird protection area. In Annex 1, in addition, the area-related conservation aims for the individual bird types are designated.

(2) The conservation status of a type of bird encompasses the whole of the influences which can take effect in the long term on the propagation and size of the populations of the types concerned in the respective area. The conservation status is regarded as favourable if:
   1. on the basis of the data relating to the population dynamics of the type, it may be assumed that this type of bird forms an
element readily capable of living in the natural habitat to which it belongs, and will continue to do so in the long term, and

2. the natural propagation area of this type is neither shrinking, nor is it presumed likely to shrink in the foreseeable future, and

3. a suitably large habitat is available, and will probably continue to remain so, in order to secure the long-term survival of the populations of this type.
Federal Soil Protection Law

The law for protection against harmful soil changes and for the remediation of historical environmental burdens (Federal Soil Protection Law – BBodSchG) states in Article 2:

Article 2:

(1) Soil in the meaning of this Law is the upper layer of the earth’s crust, inasmuch as it is the agent of the soil functions cited in paragraph 2, including the fluid constituents (soil solution) and the gaseous constituents (soil or ground air), excluding ground water and bodies of water.

(2) In the meaning of this Law, soil fulfils:

1. Natural functions as
   a) the basis for life and habitat for human beings, animals, plants, and soil organisms,
   b) a constituent part of the balance of nature, in particular with its water and nutrient cycles,
   c) a medium for decomposition, compensation, and propagation for substance effects based on filter, buffer, and substance conversion properties, in particular also for the protection of the ground water,

2. Functions as an archive of natural history and cultural history, as well as

3. Utilisation functions as
   a) a repository for raw materials,
   b) a place for settlement and recreation,
   c) a location for agricultural and forestry usage,
   d) a location for other economic and public purposes, transport, supply and disposal.

(3) Harmful soil changes in the meaning of this Law are impairments in the soil functions which are prone to incur hazards, substantial detriments, or substantial burdens for the individual or for the public in general.

(4) Suspect areas in the meaning of this Law are sites where the suspicion pertains of the existence of harmful soil changes.
(5) Historical burdens in the meaning of this Law are:

1. waste disposal installations which have been taken out of service or other sites on which waste has been treated, stored, or deposited (old deposits), and

2. sites of installations which have been taken out of service and other sites on which environmentally hazardous substances have been handled, with the exception of installations which require approval in accordance with the Atomic Law in order to be taken out of service (old locations, due to which damaging changes to the soil or other hazards to individuals or to the general public have been incurred.

(6) Areas which are suspected of being historical burdens in the meaning of this Law are old tips and old sites with regard to which there is the suspicion that hazardous soil contamination is present, or other risks to individuals or to the general public.

(7) Remediation in the meaning of this Law relates to measures:

1. for the elimination or reduction of the contaminants (decontamination measures),

2. which will prevent or reduce the propagation of the contaminants in the long term, without actually eliminating them (safety measures),

3. for the elimination or reduction of hazardous changes to the physical, chemical, or biological condition of the soil.

(8) Protective and restrictive measures in the meaning of this Law are other measures which prevent or reduce the hazards, substantial detriments, or substantial burdens with regard to individuals or to the general public, in particular restrictions on use.

State Soil Protection Act (BodSchG BW)

Article 2:

(3) Undertakings which lead to an impairment of the natural soil functions as well as the function of the soil as an archive of natural and cultural history (Article 2, paragraph 2, No. 2 BBodSchG) or which can affect concerns of remediation to a considerable degree, the authority for soil conservation and remediation is to be included. Official permissions must be approved by the authority for soil conservation and remediation.
Existing plans related to municipality and region in which the proposed property is located

The nominated property of “Caves with the oldest Ice Age art” is embedded in a versatile natural landscape. Besides legislation relating to the preservation of monuments, mechanisms of protection of nature contribute to the preservation of the property. Appropriate plans for the protection of nature and research have been presented over the past few years, and will be extended further in the future. In addition to this, there exist a number of regional plans for the enhancement of the protection of nature, to strengthen structurally weak regions, and to pursue archaeological research. These plans provide not only protection of natural, but also of cultural monuments in the property. The property and its special touristic features will be promoted and marketed by different regional and cross-regional tourism associations. All representatives of touristic interests are networked within the Coordination Group “Tourism”, and act in harmony with the State Office for Cultural Heritage Baden-Württemberg. A summary of the relevant plans is provided in Chapter 5.d.

<table>
<thead>
<tr>
<th>Plan</th>
<th>summarized / annexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regionalplan Regionalverband Donau-Iller (Regional plan of the Donau-Iller Regional Association)</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>Regionalplan Ostwürttemberg (East Württemberg Regional Plan)</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>UNESCO Biosphere Reserve Area</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>Natura 2000</td>
<td>summarized in Chapter 5.d</td>
</tr>
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<td>Geopark Swabian Alb assisted by UNESCO (since 2015 Schwäbische Alb UNESCO Global Geopark)</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>LEADER and LEADER+</td>
<td>summarized in Chapter 5.d</td>
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<tr>
<td>Tourism plan Schwäbische Alb Tourismusverband e.V.</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>Tourism plan Ulm / Neu-Ulm Touristik GmbH</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>Weltkultursprung (World origin of culture)</td>
<td>summarized in Chapter 5.d</td>
</tr>
<tr>
<td>Research plan University of Tübingen</td>
<td>summarized in Chapter 5.d, annexed in Chapter 7.b (see next page), also see Chapter 4.a</td>
</tr>
<tr>
<td>Management Plan “Caves with the oldest Ice Age art”</td>
<td>summarized in Chapter 5.e / annexed as Volume II</td>
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Tab. 7-4 Plans relevant to the property.
Existing plans related to research

Research plan for "Caves of the Oldest Ice Age Art"

In connection with the application for UNESCO World Cultural Heritage (WCH) status for the "Caves of the Oldest Ice Age Art", I summarize here the key elements for a research plan for the coming years.

First and most importantly, WCH and an active, state-of-the-art research program go hand in hand. The outstanding universal value (OUV) of the caves of the Swabian Jura is clearly documented. In the coming years and in future generations, conditions must be established to foster and intensify research on the evolution of art and music and on the adaptations of Aurignacian societies within the core and buffer zones defined in the application for WCH status.

Only through an active research program can our heritage and our OUV exist in a positive and dynamic equilibrium with our changing society. This position is in keeping with the recommendations of the UNESCO World Heritage Thematic Program for Human Evolution, Adaptations and Social Developments (HEADS), of which I am founding member.

The research plan for the "Caves of the Oldest Ice Age Art" must include regular fieldwork, laboratory research, analysis and publication to foster the acquisition of knowledge and to contextualize the OUV of the nomination. Researchers from the University of Tübingen and the State Heritage Office of Baden-Württemberg will continue to work together with scholars from around the world to maintain the highest standards of international research. Building on our long tradition of funding from local, state, national and international organizations, as well as from public and private partnerships of the kind that are firmly established in our region, we are well positioned to achieve these ambitious goals.

I can assure you of my full support in this endeavor, and I look back with satisfaction upon what we have accomplished and with high expectations for how the University of Tübingen and its many partners can continue to contribute to the study of the Ice Age archaeology of the Swabian caves and to the OUV of the sites and study area described in the application for World Cultural Heritage status.

Prof. Nicholas J. Conard Ph.D.
Director of the Institute of Archaeological Sciences &
Chair of Early Prehistory and Quaternary Ecology
7.c Form and date of most recent records or inventory of property

All known cultural monuments in Baden-Württemberg, including those within the nominated property, are registered in the cultural monuments database (ADAB) of the State Office for Cultural Heritage Baden-Württemberg. The database is continuously updated. Recently discovered archaeological sites are, for example, thus registered in the database through ongoing surveying work. The ADABWeb also serves as an information portal for the lower monument protection authority. A list of cultural monuments in the nominated property can be made available at the State Office for Cultural Heritage by a dedicated person.

All archaeological sites within the nominated property were either excavated by archaeologists by the State Office for Cultural Heritage Baden-Württemberg or the University of Tübingen (or its precursors). Assemblage and archaeological finds that originate from sites within the property are administered by the State Office for Cultural Heritage Baden-Württemberg, the University of Tübingen, the Landesmuseum Württemberg, the Urgeschichtliches Museum Blaubeuren, the Archäopark Vogelherd and the Ulmer Museum. Complete archiving of the assemblage from all previously excavated cave sites was begun in 2015.

Some artefacts discovered in the „Caves with the oldest Ice Age art“ are on display in several museums of Baden-Württemberg. Others have been preserved in different storage facilities, depending on the excavator of the respective site.

The following inventories and records exist:

The written excavation records are usually housed in the institutions which were at the time responsible for the excavations. An exception is the documentation of the excavations carried out by R. Wetzel and O. Völzing at the Hohlenstein sites and those of R. Wetzel at the Bockstein sites. The complete inventories along with the documentation are stored in the archives of the Ulmer Museum.

The State of Baden-Württemberg owns all new finds. They are transferred to the Archäologisches Landesmuseum Baden-Württemberg after completion of their scientific evaluation.

Transportable cultural monuments that have no owner or that have been buried for so long that their owner can no longer be ascertained, become property of the State of Baden-Württemberg with their discovery, if they are discovered in the context of federal investigations, or are discovered in excavation protection areas, or if they possess outstanding scientific value (Article 23 DSchG BW).

Concerning the assignation of tangibles, in which the state acquires pursuant Article 23 DSchG BW, or expropriates (Article 25 DSchG BW), or retracts (Article 27 paragraph 3 DSchG Baden-Württemberg) ownership, the State Office for Cultural Heritage Baden-Württemberg decides; and concerning archival material, the State Archive decides after consultation with the senior monument
protection authority. Transportable tangibles are to be allocated to the central artefact archive of the Archäologisches Landesmuseum, archive materials to an archive, and library materials to a library. Prior to allocation to non-federal museums, archives or libraries, the respective federal institution (museum or state library) is to be consulted. In cases of doubt, the decision is to be referred to the supreme monument protection authority.

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<th>Current place of storage</th>
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<td>University of Tübingen; Landesmuseum Württemberg, Stuttgart; Urgeschichtliches Museum Blaubeuren</td>
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<tr>
<td>Sirgenstein Cave (1-2)</td>
<td>University of Tübingen</td>
<td>University of Tübingen; Urgeschichtliches Museum Blaubeuren</td>
</tr>
<tr>
<td>Hohle Fels (1-3)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen; Urgeschichtliches Museum Blaubeuren</td>
</tr>
<tr>
<td>Vogelherd Cave (earlier excavation) (2-1)</td>
<td>University of Tübingen</td>
<td>University of Tübingen; Urgeschichtliches Museum Blaubeuren; Landesmuseum Württemberg, Stuttgart</td>
</tr>
<tr>
<td>Vogelherd Cave (new excavation) (2-1)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen; Archäopark Vogelherd, Niederstotzingen; Urgeschichtliches Museum Blaubeuren</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (earlier excavation) (2-2)</td>
<td>Ulmer Museum (Township of Ulm)</td>
<td>Ulmer Museum</td>
</tr>
<tr>
<td>Hohlenstein Stadel Cave (new excavation) (2-2)</td>
<td>State of Baden-Württemberg; Ulmer Museum (Township of Ulm)</td>
<td>State Office for Cultural Heritage Baden-Württemberg, Esslingen; Ulmer Museum</td>
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<tr>
<td>Bockstein Cave / Bocksteinhöhrle (2-3)</td>
<td>Ulmer Museum (Township of Ulm)</td>
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<td>Fetzershaldenhöhle (2)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen</td>
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<tr>
<td>Lindenöhle (2)</td>
<td>State of Baden-Württemberg</td>
<td>University of Tübingen</td>
</tr>
<tr>
<td>Frauenfels (2)</td>
<td>State of Baden-Württemberg</td>
<td>State Office for Cultural Heritage Baden-Württemberg, Esslingen</td>
</tr>
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</table>

Tab. 7-5 Owner structures and current storage location for the recovered specimens from the “Caves with the oldest Ice Age art”. All objects, of which the State of Baden-Württemberg wins possession, are sent to the central artefact archive at the Archäologisches Landesmuseum after completion of scientific processing.
7.d  Address where inventory, records and archives are held

Organisation: Ulmer Museum
Address: Marktplatz 9
D-89073 Ulm
Germany
Tel: +49 (0) 731 161-4330
Fax: +49 (0) 731 161-1626
E-mail: info.ulmer-museum@ulm.de

Organisation: Urgeschichtliches Museum Blaubeuren
Address: Kirchplatz 10
D-89143 Blaubeuren
Germany
Tel: +49 (0) 7344 9669-90
Fax: +49 (0) 7344 9669-915
E-mail: info@urmu.de

Organisation: University of Tübingen / Museum der Universität Tübingen (Institut für Ur- und Frühgeschichte und Archäologie des Mittelalters der Eberhard Karls Universität Tübingen and Museum der Universität Tübingen Sammlungen im Schloss Hohentübingen)
Address: Burgsteige 11
D-72070 Tübingen
Germany
Tel: +49 (0) 7071 29-77384
Fax: +49 (0) 7071 29-5659
E-mail: museum@uni-tuebingen.de

Organisation: Archäopark Vogelherd
Address: Am Vogelherd 1
D-89168 Niederstotzingen – Stetten ob Lonetal
Germany
Tel: +49 (0) 7325 952 800-0
Fax: +49 (0) 7325 952 800-20
E-mail: info@archaeopark-vogelherd.de

Organisation: Landesmuseum Württemberg Stuttgart
Address: Altes Schloss
Schillerplatz 6
D-70173 Stuttgart
Germany
Tel: +49 (0) 711 89535-111
Fax: +49 (0) 711 89535-444
E-mail: info@landesmuseum-stuttgart.de
7.e Bibliography

7.e.1 Literature concerning the property (until 2014)


Bolus, M. 2015. The transition from the Middle to the Upper Paleolithic in the Swabian Jura, Southwestern Germany. Anthropologie (Brno) 53, 167 - 179.


Hahn, J. 1971b. La statuette masculine de la grotte du Hohlenstein-Stadel (Württemberg). L’ Anthropologie 75, 233–244.

Hahn, J. 1972, Aurignacian signs, pendants and art objects in Central and Eastern Europe. World Archaeology 3, 252–266.


Hahn, J. 1981b. Die Ausgrabung des Jahres 1980 im Geißenklösterle, Gemein- 
de Blaubeuren-Weiler, Alb-Donau-Kreis. Archäologische Ausgrabungen in 

Hahn, J. 1981c. Das Felsschutzdach Helga-Abri, Gemeinde Schelklingen, Alb-
Donau-Kreis. Ergebnisse der Grabung 1980. Archäologische Ausgrabungen in 

Hahn, J. 1982a. Eine menschliche Halbreliefdarstellung aus der Geißenkläster-

Hahn, J. 1982b. Neue Funde aus dem Geißenklösterle bei Blaubeuren, Alb-Donau-

Hahn, J. 1982c. Demi-relief aurignacien en ivoire de la grotte Geissenklästerle,
près d’Ulm (Allemagne Fédérale). Bulletin de la Société préhistorique française 
79 (3), 73–77.

Hahn, J. 1983. Eiszeitliche Jäger zwischen 35 000 und 15 000 Jahren vor heute. 
273–330.

Hahn, J. 1984a. Schlaginstrumente des Aurignacien aus dem Geißenklästerle bei 

Hahn, J. 1984b. Ausgrabung der Höhle Geißenklästerle bei Blaubeuren und Aus-
wertung der urgeschichtlichen Funde. Mitteilungen des Verbandes deutscher 
Höhlen- und Karstforscher 30 (3), 53–57.

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sai d’analyse zoologique et ethnologique. In: Bandi, H.-G., Huber, W. and 
Sauter, M.-R. (Eds.) 1984. La contribution de la zoologie et de l’ethnologie à l’in-
terpretation de l’art des peuples chasseurs préhistoriques. Fribourg, 283–293.

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Jungpaläolithische Siedlungsstrukturen in Europa. Urgeschichtliche Material-

Hahn, J. 1985. Zum Abschluß der Arbeiten im Helga-Abri, Gemeinde Schelklä-
ingen, Alb-Donau-Kreis. Archäologische Ausgrabungen in Baden-Württemberg 
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7.e.2 Selected literature concerning the Comparative Analysis (Chapter 3.2)


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8. CONTACT INFORMATION OF THE RESPONSIBLE AUTHORITIES

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Icicles forming in the Hohlenstein Stadel Cave.
8. Contact information of responsible authorities

8.a Preparer

Organisation: Landesamt für Denkmalpflege im Regierungspräsidium Stuttgart
(State Office for Cultural Heritage Baden-Württemberg)

Address: Berliner Straße 12
D-73728 Esslingen am Neckar
Germany

Tel: +49 (0) 711 904 45-109
Fax: +49 (0) 711 904 45-444
E-mail: abteilung8@rps.bwl.de

Contact persons:

- Prof. Dr. Claus Wolf: President of the State Office for Cultural Heritage Baden-Württemberg
- Prof. Dr. Claus-Joachim Kind: Coordinator of the working group at the State Office for Cultural Heritage Baden-Württemberg
- Conny Meister M.Sc.: Coordinator of the nominated sites (State Office for Cultural Heritage Baden-Württemberg)

Members of the working group at the State Office for Cultural Heritage Baden-Württemberg responsible for the preparation of the nomination file:

- Prof. Dr. Claus Wolf
- Prof. Dr. Claus-Joachim Kind
- Conny Meister M.Sc.
- Dr. Stephan M. Heidenreich
- Thomas Beutelspacher M.A.
8.b Official local institution / agency

Supreme monument protection authority)

Organisation: Ministerium für Finanzen und Wirtschaft Baden-Württemberg
(Ministry of Finance and Economics Baden-Württemberg)
Address: Neues Schloss
Schlossplatz 4
D-70173 Stuttgart
Germany
Tel: +49 (0) 711 123-0
Fax: +49 (0) 711 123-4791
E-mail: poststelle@mfw.bwl.de

Competent expert authority responsible for monument protection

Organisation: Landesamt für Denkmalpflege im Regierungspräsidium Stuttgart
(State Office for Cultural Heritage Baden-Württemberg)
Address: Berliner Straße 12
D-73728 Esslingen am Neckar
Germany
Tel: +49 (0) 711 904 45-109
Fax: +49 (0) 711 904 45-444
E-mail: abteilung8@rps.bwl.de

8.c Other local institutions

Municipalities and other regional authorities

Senior Monument Protection Authority

Organisation: Regierungspräsidium Stuttgart, Abteilung 2, Referat 21 Raumordnung, Baurecht, Denkmalschutz
Address: Ruppmannstr. 21
D-70565 Stuttgart
Germany
Tel: +49 (0) 711 904-0
Fax: +49 (0) 711 904-1190
E-mail: poststelle@rps.bwl.de
Organisation: Regierungspräsidium Tübingen, Abteilung 2, Referat 21
Grenzüberschreitende Zusammenarbeit, Raumordnung, Baurecht, Denkmalschutz
Address: Konrad-Adenauer-Straße 20
D-72072 Tübingen
Germany
Tel: +49 (0) 7071 757-0
Fax: +49 (0) 7071 757-3190
E-mail: poststelle@rpt.bwl.de

Lower Monument Protection Authorities
Organisation: Landratsamt Heidenheim, Fachbereich Bau- und Umweltschutz
Address: Brenzstr. 30
D-89518 Heidenheim an der Brenz
Germany
Tel: +49 (0) 7321 321-0
Fax: +49 (0) 7321 321-1320
E-mail: bauamt@landkreis-heidenheim.de

Organisation: Stadtverwaltung Herbrechtingen, Untere Baurechtsbehörde
Address: Lange Straße 58
D-89542 Herbrechtingen
Germany
Tel: +49 (0) 7324 9550
Fax: +49 (0) 7324 955 1212
E-mail: info@herbrechtingen.de

Organisation: Verwaltungsverband Langenau, Baurechtsamt
Address: Kuftenstr. 19
D-80129 Langenau
Germany
Tel: +49 (0) 7345 964-0550
Fax: +49 (0) 7345 964-0560
E-mail: info@vv-langenau.de

Organisation: Landratsamt Alb-Donau-Kreis, Fachdienst Kreisentwicklung Bauen, Brand- und Katastrophenschutz
Address: Schillerstr. 30
D-89077 Ulm
Germany
Tel: +49 (0) 731 185-1292
Fax: +49 (0) 731 185-1477
E-mail: info@alb-donau-kreis.de
Participating districts
Organisation: Landratsamt Heidenheim
Address: Felsenstr. 36
D-89518 Heidenheim an der Brenz
Germany
Tel: +49 (0) 7321 321-0
Fax: +49 (0) 7321 321-2410
E-mail: post@landkreis-heidenheim.de
Organisation: Landratsamt Alb-Donau-Kreis
Address: Schillerstr. 30
D-89077 Ulm
Germany
Tel: +49 (0) 731 185-0
Fax: +49 (0) 731 185-1236
E-mail: info@alb-donau-kreis.de

Participating municipalities
Municipality: Asselfingen
Address: Lindenstr. 6
D-89176 Asselfingen
Germany
Tel: +49 (0) 7345-5306
Fax: +49 (0) 7345-22517
E-mail: info@asselfingen.de
City: Blaubeuren
Address: Karlstraße 2
D-89143 Blaubeuren
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Tel: +49 (0) 7344 9669-0
Fax: +49 (0) 7344 9669-36
E-mail: info@blaubeuren.de
City: Herbrechtingen
Address: Lange Str.58
D-89542 Herbrechtingen
Germany
Tel: +49 (0) 07324 955-0
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E-mail: info@herbrechtingen.de
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<td>Tel:</td>
<td>+49 (0) 7394 248-0</td>
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<td>Fax:</td>
<td>+49 (0) 7394 248-50</td>
</tr>
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<td>E-mail:</td>
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**Local associations**

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<th>Gesellschaft für Urgeschichte GfU e.V.</th>
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<tr>
<td>Tel:</td>
<td>+49 (0) 7344 9669-90</td>
</tr>
<tr>
<td>Fax:</td>
<td>+49 (0) 7344 9669-915</td>
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<tr>
<td>E-mail:</td>
<td><a href="mailto:Info@GfU-Blaubeuren.de">Info@GfU-Blaubeuren.de</a></td>
</tr>
<tr>
<td>Organisation</td>
<td>Museumsgesellschaft Schelklingen Verein für Heimatgeschichte e.V.</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Address      | Reiner Blumentritt  
               Merowingerstraße 8  
               D-89601 Schelklingen  
               Germany            |
| Tel          | +49 (0) 7394 1640                                              |
| Fax          | ---                                                            |
| E-mail       | blumentritt@museum-schelklingen.de                              |

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Lonetal Verein e.V.</th>
</tr>
</thead>
</table>
| Address      | Lange Lemppen 34  
               D-89075 Ulm  
               Germany  |
| Tel          | +49 (0) 731 52224   |
| Fax          | +49 (0) 731 9509225 |
| E-mail       | info@lonetal-verein.de                                      |

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Förderverein Eiszeitkunst Lonetal e.V.</th>
</tr>
</thead>
</table>
| Address      | c/o Landratsamt Heidenheim  
               Felsenstraße 36  
               D-89518 Heidenheim  
               Germany            |
| Tel          | +49 (0) 7321 321-2294                 |
| Fax          | +49 (0) 7321 321-2450                 |
| E-mail       | eiszeitkunst@landkreis-heidenheim.de  |

**Museums and collections of archaeological finds**

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Archäopark Vogelherd</th>
</tr>
</thead>
</table>
| Address      | Am Vogelherd 1  
               D-89168 Niederstotzingen – Stetten ob Lonetal  
               Germany            |
| Tel          | +49 (0) 7325 952 800-0 |
| Fax          | +49 (0) 7325 952 800-20 |
| E-mail       | info@archaeopark-vogelherd.de         |
| Website      | http://www.archaeopark-vogelherd.de/  |
Organisation: Landesmuseum Württemberg Stuttgart
Address: Altes Schloss
         Schillerplatz 6
         D-70173 Stuttgart
         Germany
Tel: +49 (0) 711 89535-111
Fax: +49 (0) 711 89535-444
E-mail: info@landesmuseum-stuttgart.de
Website: https://www.landesmuseum-stuttgart.de/

Organisation: Museum der Universität Tübingen (Sammlungen im Schloss Hohentübingen)
Address: Burgsteige 11
         D-72070 Tübingen
         Germany
Tel: +49 (0) 7071 29-77384
Fax: +49 (0) 7071 29-5659
E-mail: museum@uni-tuebingen.de
Website: http://www.uni-tuebingen.de/uni/qms/

Organisation: Ulmer Museum
Address: Marktplatz 9
         D-89073 Ulm
         Germany
Tel: +49 (0) 731 161-4330
Fax: +49 (0) 731 161-1626
E-mail: info.ulmer-museum@ulm.de
Website: http://www.ulm.de/kultur_tourismus/museen_und_bildende_kunst/aktuelles.109222.3076,3963,3850,3586,109222.htm

Organisation: Urgeschichtliches Museum Blaubeuren
Address: Kirchplatz 10
         D-89143 Blaubeuren
         Germany
Tel: +49 (0) 7344 9669-90
Fax: +49 (0) 7344 9669-915
E-mail: info@urmu.de
Website: www.urmu.de
8.d Official web address

English:  http://www.denkmalpflege-bw.de/denkmale/weltkulturerbe/proposal-ice-age-art.html

German:  http://www.denkmalpflege-bw.de/denkmale/weltkulturerbe/in-vorbereitung-eiszeitkunst.html

Contact:  Conny Meister / Stephan M. Heidenreich

E-mail:    Conny.Meister@rps.bwl.de / Stephan.Heidenreich@rps.bwl.de
9. SIGNATURE ON BEHALF OF THE STATE PARTY
Incised lion figurine made of ivory from the Vogelherd Cave with refitted head.
For the State of Baden-Württemberg

Dr. Nils Schmid MdL
Deputy Minister President and Minister of Finance and Economics

Stuttgart,  .  .2015