
Settlement and Artificial Mummification of the Chinchorro Culture (Chile) No 1634

Official name as proposed by the State Party

Settlement and Artificial Mummification of the Chinchorro Culture in the Arica and Parinacota Region

Location

Municipality of Arica and Municipality of Camarones
Arica and Parinacota Region
Chile

Brief description

The northern coast of the Atacama Desert, an arid and hostile habitat in northernmost Chile, was home to the Chinchorro, a society of marine hunter-gatherers who lived here from approximately 7,400 BP to 2,840 BP (5,450 BCE to 890 BCE). They successfully adapted to the extreme environmental conditions of a hyper-arid coastal desert in the rugged Coastal Cordillera by exploiting the nearby rich marine resources. Archaeological sites associated with the Chinchorro culture are best known for having the oldest known artificially mummified human bodies.

The nominated serial property is comprised of three components that contain natural and cultural evidence of the places along the Atacama Desert's coastline where, for about four millennia, the Chinchorro people lived and thrived. These components – Faldeo Norte del Morro de Arica, and Colón 10 (both located in an urban setting), and Desembocadura de Camarones (located in a rural setting) – include the archaeological remains of settlements, cemeteries, and dense shell middens. They provide evidence of sea harvesting activities and land occupation that illustrate the technological and spiritual complexity of this society from its coastal beginnings to its disappearance.

In this environment of contrasts, the Chinchorro people managed to prosper and develop a complex social structure. Of particular interest and scientific importance are the cultural remains and mummification techniques of the Chinchorro. Their long-practiced mortuary techniques created artificial mummies that presumably reflected the fundamental role of the dead in their society.

Category of property

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a serial nomination of 3 sites.

1 Basic data

Included in the Tentative List

1 September 1998

Background

This is a new nomination.

Consultations and Technical Evaluation Mission

Desk reviews have been provided by ICOMOS International Scientific Committees, members, and independent experts.

An ICOMOS technical evaluation mission visited the nominated property from 11 to 21 December 2020.

Additional information received by ICOMOS

A letter was sent to the State Party on 24 September 2020 requesting further information about the description of the archaeological sites, research, integrity, boundaries, buffer zones, legal protection, conservation, and management. A response was sent by the State Party on 13 November 2020 containing clarifications on the requested subjects.

On 29 January 2021, ICOMOS sent an Interim Report to the State Party, which requested additional clarification and elaboration of the archaeological evidence of settlements and adaptations to the environment, integrity, boundaries, conservation, legal protection, management, indigenous participation, and the ethics of exhibiting human remains. The State Party responded on 28 February 2021. All responses received throughout the evaluation process are incorporated into the relevant sections of this evaluation report.

Date of ICOMOS approval of this report

18 March 2021

2 Description of the property

Note: The nomination dossier and additional information contain detailed descriptions of this property, its history and its state of conservation. Due to limitations on the length of evaluation reports, this report only provides a short summary of the most relevant aspects.

Description and history

The nominated property Settlement and Artificial Mummification of the Chinchorro Culture in the Arica and Parinacota Region speaks to a society of marine hunter-gatherers who resided in the arid and hostile northern coast of the Atacama Desert in northernmost Chile from approximately 7,400 BP to 2,840 BP (5,450 BCE to 890 BCE). It is a serial nomination consisting of three components: Faldeo Norte del Morro de Arica (component 1), Colón 10 (component 2), and Desembocadura de Camarones (component 3). The first two are located in an urban area and the last in a rural area.

The Faldeo Norte del Morro de Arica and Colón 10 components are located in the southern part of the city of Arica. This urban area is near the coastline and the valleys and ravines associated with the San José River. The western and southwestern flanks of the Morro de Arica are marked by steep coastal cliffs. The rural Desembocadura de Camarones component, located about 100 kilometres south of Arica, encompasses a river mouth, ravine environment, and valley. It also includes the water sources that were essential to the development of Chinchorro settlements. Together, these three components reflect the habitat of the Chinchorro marine hunter-gatherers who lived along the gullies and wetlands of the Atacama coast.

The first component, Faldeo Norte del Morro de Arica, contains the largest excavated Chinchorro cemetery in Arica's Coastal Cordillera. It has provided a large amount of archaeological evidence, including mummified bodies. This cemetery has been the subject of numerous studies, the most important of which have enabled different types of mummification to be identified. Chinchorro mortuaries can also be found in other neighbouring areas of the Faldeo. There are four archaeological sites in this component.

The second component, Colón 10, is adjacent to the first. The only place where a sizable cemetery can be found in situ, this archaeological site was discovered in May 2004 as a result of construction work being carried out on a house at N°10 Colón street. An intensive archaeological excavation revealed 48 ancient mummified bodies, which were conserved in their place of burial. In 2006, the University of Tarapacá bought the property and created the Colón 10 Site Museum project. Reconstruction of the existing house as a museum was completed in 2009. There is one archaeological site in this component.

The third component, Desembocadura de Camarones, is in a rural area historically linked to the Hacienda Cuya. It contains evidence of an extensive temporary occupation, with overlapping funerary and domestic areas. It also provides the earliest examples of Chinchorro artificial mummification (7,000 BP). In the same area but a little farther south along the coast is evidence of these marine hunter-gatherers from the Archaic Period. Their progressive adaptation to society can also be observed, incorporating new cultural features from within the region. There are nine archaeological sites in this component, some of which have sub-sites.

These three components include the world's oldest known archaeological evidence of the artificial mummification of bodies. In the Chinchorro cemeteries are bodies that have been mummified due to the environment, and to artificial human mummification. The latter is notable because of complexity, age, and aesthetics. The Chinchorro were innovative regarding their practices of artificial mummification. Over time they perfected complex mortuary practices, systematically dismembering and reassembling bodies to create "artificial" mummies that possessed material, sculptural, and aesthetic qualities that presumably reflected the fundamental role of the dead in their society.

Also found in the nominated serial property are tools made from lithic and plant materials as well as simple instruments made of bone and shells that enabled an intensive exploitation of marine resources. Plant fibres used in textiles to make clothing and twine mats for domestic use and funerary rituals have also been unearthed.

The origin of the Chinchorro culture is debated by archaeologists and bio-anthropologists. Research has suggested that the original Chinchorro populations came from the Amazon region. Conversely, a local proposition for the emergence of the Chinchorro culture and population on the arid coast has also been suggested. The spatial distribution of the Chinchorro groups over the course of their history extended from the southern coast of Peru to the northern coast of Chile. Their cultural core appears to have been between Arica and the southern coast of Iquique. This coastal population inhabited the marine strip of fertile coast as well as the interfluvial coastal desert environment located between Pisagua and Chañaral. From about 7,000 BP, hundreds of generations of Chinchorro marine hunter-gatherers progressively developed a lifestyle and culture and, through mummification techniques, perpetuated the significance of death in this territory. The Chinchorro culture waned about 2,840 BP, when evidence indicates the arrival of culturally different people.

Many of the nominated property's archaeological sites were discovered unexpectedly or by accident. Mummified bodies were discovered in the 1920s when large water tanks were being installed on the Faldeos del Morro. Nearly one hundred mummified individuals were excavated there by German archaeologist Max Uhle, who proposed the first typology of bodies with artificial treatment. Recovery of many more mummies took place in the 1980s, and relevant findings were unearthed as recently as 2004 at the Colón 10 site and in 2008 when a lookout point, Mirador La Virgen, was being remodelled. Archaeological excavations at the Desembocadura de Camarones component took place in the 1970s and 1980s; some sites there have not been extensively researched since.

Boundaries

The area of the three serial components totals 364.05 hectares, with two buffer zones totaling 672.31 hectares. The boundaries of the nominated serial property and its buffer zones have been delineated on the basis of legal protection mechanisms and the distribution of archaeological remains. For the rural Desembocadura de Camarones component, environmental and landscape aspects have also been considered.

The three components have been selected as collectively illustrating the coastal Chinchorro habitat. The boundaries of the Faldeo Norte del Morro de Arica component are defined according to the Legal Delimitation of National Assets Plan, the Morro de Arica Historic Monument's boundaries, and the current Municipal Regulatory Plan. The boundaries of the adjacent Colón 10 component correspond to the footprint of the Colón 10 Site Museum. These two components are located within the urban fabric of the city of Arica. The Desembocadura de Camarones

component is located about 100 kilometres south of Arica, in a rural location that includes natural terraces and hillsides where Chinchorro occupation occurred. Geomorphological criteria were used to delimit this component of the nominated property.

The two components in Arica are enclosed by a single buffer zone whose boundaries are based on those of the Morro de Arica Historic Monument and the archaeological finds that have been discovered in the area surrounding the Faldeos del Morro. The buffer zone of the third component, Desembocadura de Camarones, is determined by the area's geomorphology. It is intended to protect the landscape on both sides of the watercourse up to the top of the hills at the mouth of the Camarones River.

Despite additional information provided by the State Party in November 2020 and February 2021, ICOMOS considers that the rationale for the delineation of the nominated components and of their buffer zones remains unclear, in particular in relation to the rationale used to determine which features would be located in the nominated property and which would be located in the buffer zones.

In addition, the size of the Faldeos del Morro de Arica component is very limited, especially considering that no comprehensive and systematic archaeological surveys seem to have been carried out. At the Desembocadura de Camarones component, the nominated property and buffer zone do not coincide with the extent of land-use zoning (e.g., Archaeological Restriction Zone; Restriction Area due to glissade hazard). The area to the east of the Desembocadura de Camarones component where a poultry farm is located is not included in the buffer zone.

ICOMOS therefore recommends that the boundary of the Faldeo Norte del Morro de Arica component be extended to include all of what is now designated as "Zone 5 Damping," and that the boundary of the Desembocadura de Camarones component be extended as well to include all of the Archaeological Restriction Zones. In addition, the buffer zone of the Desembocadura de Camarones component should include the entire extent of the Restriction Area due to glissade hazard (ARRD) zone. The problem of the lack of a buffer zone between the nominated property and the poultry farm should also be resolved.

State of conservation

The state of conservation of organic material is generally very good due to the very dry and saline environment. Moreover, it is supposed that most of the nominated property's archaeological artefacts are unexcavated and thus in a good state of conservation.

Nevertheless, the State Party describes some sites in the Faldeo Norte del Morro de Arica component as being in no condition to be completely opened to the public. Visitors are restricted due to the fragility of the sites and their vulnerability to the influence of urban sprawl. ICOMOS notes that part of this component has also been affected by public works related to the Mirador de la Virgen and the nearby water tanks. There are also unprotected

archaeological remains on the surface, open excavations, vandalism, garbage deposition, and the activity of wild and domestic animals as well as trampling leading to compression of the deposits, erosion, and possible mass movements.

Furthermore, there is uncertainty regarding the state of conservation of the mummies at the Colón 10 component and in other museums where the material from the Chinchorro culture is exhibited, because complete inventories are lacking. The information provided on the state of conservation of mummies held at the Archaeological Museum of the University of Tarapacá, in Arica, seems to indicate that they are stable, but that they sustained mechanical and other damage in the past during their recovery, manipulation, transport or storage. Fewer than one-quarter of nearly 200 mummies are considered to be in a state suitable for museum exhibition. The additional information provided by the State Party in November 2020 describes the general situation of the mummified remains, but does not provide any inventory or detail.

The Desembocadura de Camarones component is described as a natural, non-urbanized environment that conserves most of the qualities of the time of Chinchorro occupation: its littoral, wetland, and coastal desert areas are considered to be a close approximation of the landscape of the past. Nevertheless, ICOMOS notes the presence of an illegal settlement and a road that cuts through this component and/or buffer zone.

Based on the information provided by the State Party and the observations of the technical evaluation mission, ICOMOS considers that the state of conservation is highly variable. There is an urgent need for a detailed analysis and measures, especially concerning unprotected archaeological remains on the surface and the general situation concerning access, inappropriate use, and illegal settlement within the nominated property.

Factors affecting the property

Based on the information provided by the State Party and the observations of the technical evaluation mission, ICOMOS considers that the main factors affecting the nominated property are development pressures, illegal occupation or use, fragmentation of the spatial continuum of the Chinchorro occupation because of intrusions associated with urban development (infrastructure) and rural development (connectivity), vandalism, garbage deposition, uncontrolled visitation, and domestic and wild/stray animals.

Some of these factors can result in compaction of the archaeological contexts, changes in humidity, or erosion and mass movements, and can affect the elements in situ or lead to their removal from their original contexts. One place that is apparently particularly prone to mass movements is the northwest face of the Morro hill, an area that was used as a quarry between 1960 and 1965.

Concerning Caleta Camarones, the illegal settlement in the Desembocadura de Camarones component, the State Party indicates in its response to the ICOMOS Interim Report that its inhabitants have been acting on occasions as defenders of the cultural remains, and that the Municipality of Camarones is negotiating the relocation of the settlement beyond the buffer zone. This move is considered necessary due to the lack of basic services in the area now occupied, among other reasons. The State Party has not supplied any maps showing the proposed location of the new settlement in relation to the nominated property. The relocation process is in the public consultation phase and if approved and financed, relocation could take place in the next three to five years.

An industrial poultry farm is located just outside the Desembocadura de Camarones component. In response to a request by ICOMOS for additional information on this subject, the State Party indicates that the owner declares that all regulations are being observed.

The nominated property is located in an area prone to severe earthquakes, tsunamis, and flooding. The State Party has general disaster response mechanisms, but no specific plan seems to be operational for the nominated property. The Management Plan includes sub-programmes to manage risks, disasters, and social conflict, but the information supplied on these points is very limited.

3 Proposed justification for inscription

Proposed justification

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- It constitutes an exceptional testimony to a cultural tradition and a civilization that, over a span of about four millennia, succeeded to live in an extremely arid environment, developing a complex relationship between people, both living and dead, and the environment.
- The cultural remains left behind by the Chinchorro people stand as a testimony to their belief system and ideas about the afterlife. Their cemeteries reveal artificially mummified bodies that are unique because of their complexity, age, and aesthetics. The Chinchorro innovated continuously in their mummification practices to create artificial mummies that possessed extraordinary material, sculptural, and aesthetic qualities that reflected the fundamental social role of the dead in human society.
- The nominated property constitutes an exceptional testimony to land and sea use in extremely arid conditions, representative of a specific culture's interaction with the environment. These Archaic populations who lived on the fringe of one of the driest places in the world, the Atacama Desert, adapted to a harsh environment with minimal fresh water and plant resources, relying heavily on simple and

efficient technologies to harvest coastal and marine resources.

- The environmental context of desert, seacoast, ravines, and wetlands, the archaeological deposits, and the in situ stratigraphy reveal space occupation dynamics over time.

ICOMOS considers it necessary to describe in more detail the archaeological record that explains the Chinchorro culture, its technological and spiritual complexity, and its interaction with the environment. This explanation should include, for example, descriptions, photographs, drawings, and maps that show the distribution of the known shell middens, domestic areas, burials, etc. Clear topographical maps in particular are needed to show the distribution of different finds and the identified activity areas.

Comparative analysis

The comparative analysis is presented in two parts: a comparison with sites in the same region; and a comparison with World Heritage and Tentative List properties and other sites throughout the world.

The comparison of the Chinchorro archaeological sites with other sites is based principally on the Chinchorro culture's mortuary treatment, particularly of infants, and on the adaptation of their marine hunter-gatherer lifestyle to the coastal areas of the very dry environment of the Atacama Desert.

The State Party highlights that archaeological research carried out along the coast of the Atacama Desert has identified various Chinchorro sites ranging from the south coast of Ilo (Peru) to the north coast of the Loa River (Chile) in which archaeological remains have similar characteristics as the sites found in the nominated property's Faldeo Norte del Morro de Arica and Desembocadura de Camarones components. The State Party concludes that these latter two components have the largest number of Chinchorro archaeological sites with their material evidence in an excellent state of conservation, reflecting the lifestyle (settlements, cemeteries, and shell middens inserted in a natural landscape) and mortuary practices (all the different styles of Chinchorro mummification) of these ancient marine hunter-gatherers. Collective burials found outside the nominated serial property do not reflect the complex artificial mortuary treatment techniques, nor do they have the cultural or landscape features demonstrated at Camarones.

The nominated property is also compared globally to sites associated with archaeological deposits left by other marine hunter-gatherer cultures, with ancient communities specializing in consuming marine resources, and with cultures practicing early human mummification processes. Among these are Sacred City of Caral-Supe (Peru, 2009, criteria (ii), (iii) and (iv)), Sambaquis in Brazil, and the sites of Neolithic funerary traditions at Tell-Aswad, Syria. While these places offer some points of comparison, the differences (lack of mummification, use of agriculture) are considered by the State Party to be more determinant.

The nominated property is then compared very briefly to 13 properties from 12 countries on four different continents inscribed on the World Heritage List under criterion (iii). It is not clear why properties such as Rock Art of Alta (Norway, 1985, criterion (iii)) were retained for comparison. A brief comparison with ancient Egyptian mummification techniques, indicates that Chinchorro's practices preceded Egypt's by about 2,000 years, and unlike Egypt's were carried out on people from the entire social spectrum, rather than just the upper classes and royalty.

The State Party contends that, of all the properties selected for comparison, only Monumental Earthworks of Poverty Point (United States of America, 2014, criterion (iii)) is based on sedentary occupations of marine hunter-gatherers with adapted aquatic habitats – in this case, an inland riverine environment (ca. 3,700-3,100 BP). The differences, here again, are the lack of mummification and, in this case, the construction of large earthworks that cannot be found in the Chinchorro culture. The lack of post-mortem treatments of the dead is also mentioned as a difference in a brief comparison with Jomon Prehistoric Sites in Northern Japan (currently nominated for inscription on the basis of criteria (iii) and (v)). In general, the properties on the World Heritage List that contain ritual and symbolic aspects of the lifestyles of hunter-gatherers are based mainly on immovable aspects, such as cave art and monuments.

The State Party concludes that there are no other properties with the same combination of values and attributes within the context of the World Heritage List, and for that reason the cultural traditions of marine hunter-gatherers of the Chinchorro culture expressed in the nominated serial property's settlements and attributes of artificial post-mortem treatments are unique and outstanding.

ICOMOS considers that the comparative analysis could have benefitted from further comparisons beyond choosing only properties inscribed on the World Heritage List under criterion (iii). Nevertheless, the scientific evidence makes it possible to assert that the Chinchorro culture archaeological sites can be considered globally important as the earliest known testimonies to a civilization that long practiced human mummification.

For serial properties, the *Operational Guidelines for the Implementation of the World Heritage Convention* require that the nomination set out the rationale for choosing the component parts, in terms of comparing them with other similar components and justifying the choices made. The State Party implies that its rationale is based on covering the complete Chinchorro sequence and including the most representative of the Chinchorro sites. The Desembocadura de Camarones component was selected as where settlement traces were detected and the mummification of bodies most probably started around 7,000 BP, and the Faldeo Norte del Morro de Arica component as where artificial mummification reached its peak in terms of its aesthetic, plastic, technical, material, and social variability and complexity. The State Party highlights as well that the

sites included in the nominated property were selected because of the excellent state of preservation of its archaeological sites and the legal framework currently in place to protect them.

ICOMOS considers that the choice and justification of the component parts, while not explicitly addressed in the comparative analysis as is required, can be inferred from the nomination dossier's description of, and very brief summarized comparison with, other Chinchorro archaeological sites in the same region.

ICOMOS notes that the comparative analysis could have been improved by broadening its scope and depth and structuring it more clearly, but considers that it justifies consideration of this property for the World Heritage List.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (iii) and (v).

Criterion (iii): *bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;*

This criterion is justified by the State Party on the grounds that the cultural remains left behind by the Chinchorro people, including their artefacts, mummies, and cemeteries, stand as a testimony to their belief system and ideas about the afterlife. The Chinchorro cemeteries reveal artificially as well as naturally mummified bodies, both in exceptionally good states of conservation due to the very dry environment. The Chinchorro innovated continuously in their artificial mummification practices, revealing technical ability by dismembering and reassembling bodies to create artificial mummies possessing extraordinary material, sculptural, and aesthetic qualities that reflected the fundamental social role of the dead in human society. Chinchorro mummification is considered to be the oldest in human history, and remarkably complex for an early group of marine hunter-gatherers.

ICOMOS considers that the nominated property bears a unique testimony to the complex spirituality of the Chinchorro culture, expressed through the cemeteries in which are found artificially mummified bodies. These archaeological sites can be considered globally important as repositories of the earliest known examples of human mummification. Involving the entire social spectrum of men, women, and children, this four millennia-long practice reflected the fundamental role of the dead in Chinchorro society.

Criterion (v): *be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures) or human interaction with the environment, especially when it has become vulnerable under the impact of irreversible change;*

This criterion is justified by the State Party on the grounds that the Chinchorro culture occupied one of the most arid places in the world, the coastal areas of the Atacama Desert. These populations lived on the desert fringe and relied heavily on coastal and marine resources. They adapted to a harsh environment that had minimal fresh water and plant resources, yet developed simple and efficient technologies to harvest from the ocean. Culturally, they flourished for thousands of years in a vast, hyper-dry territory, thus being an extraordinary example of early adaptation to desert and marine environments. The archaeological evidence of their sea harvesting and land occupation can be found in settlements, cemeteries, and shell middens located over an extensive area.

ICOMOS considers that the nominated property has the potential to be considered an outstanding example of the interaction of a marine hunter-gatherer group with one of the world's driest environments. The additional information received from the State Party in February 2021 supplies further archaeological evidence for this interaction. However, this evidence is very general in nature and must be linked more directly to the nominated property.

ICOMOS considers that the nominated property meets criterion (iii), and has the potential to meet criterion (v).

Integrity and authenticity

Integrity

The integrity of the nominated property is based on the cultural remains left behind by the Chinchorro people, particularly artificially mummified remains, and on this people's adaptation to one of the most arid places in the world, where they flourished for thousands of years.

The serial components were selected as the most representative and best preserved of all the Chinchorro sites in northern Chile and southern Peru, for their complementary nature, and for their tangible attributes that provide a comprehensive view of the Chinchorro culture, according to the State Party.

Issues with site encroachment in the Faldeo Norte del Morro de Arica serial component have been resolved, and are in the process of being addressed at the Desembocadura de Camarones component.

Part of the Faldeo Norte del Morro de Arica component has been affected by public works: drinking water tanks (no longer in use today) were constructed in 1920 on what is now the northeastern border of the component. A lookout point, the Mirador de la Virgen, was constructed just to the northwest of the tanks in 1915 and was remodelled in 2008. A footpath leads up to the viewpoint. These elements have a visual impact on the proposed Outstanding Universal Value of the nominated property.

The State Party advises that there is an industrial poultry farm located just outside the Desembocadura de Camarones component. The area closest to the farm (about 200 metres away) is not included in the buffer zone. The farm's potential impact on the proposed Outstanding Universal Value and integrity of the nominated property will need to be assessed.

Concerning the boundaries of the nominated property and its buffer zones, the various sites where archaeological excavations have taken place are marked on maps simply as points. The area that each site covers is not given. It is also unclear where the archaeological attributes (burials, shell middens, settlement remains) mentioned in support of the adaptation of the Chinchorro to their environment are located within the nominated property. Furthermore, it is mentioned on various occasions that the nominated property has the potential for future excavations (archaeological contexts still in situ), but no clear information is given on how that is known (what type of investigation was conducted) and where these areas with archaeological potential are located.

Despite additional information provided by the State Party, ICOMOS considers that the lack of clarity on these issues makes the assessment of the nominated property's integrity difficult. More information is needed on the extent (areas), distribution, and interrelationships of the archaeological sites, including the remains already removed as surface finds or through excavation, as well as those still in situ and detected through different surveying techniques.

As recommended in the Boundaries section of this report, revisions to the boundaries of the Faldeo Norte del Morro de Arica component and to the Desembocadura de Camarones component and buffer zone will enhance the integrity of the nominated serial property.

ICOMOS considers that the condition of integrity of the whole series and of the individual component parts has not been met at this stage.

Authenticity

The authenticity of the nominated property is based on the locations and (to a degree) the settings of the component parts, and to the materials and substances, uses and functions, traditions, and spirit of the attributes that support the proposed Outstanding Universal Value.

The State Party indicates that what is known about the Chinchorro culture from studies of their archaeological sites has been endorsed by a number of national and international scientific conferences and publications, and that more than one hundred of the latter validate the authenticity of the sites and the elements they contain.

In general terms, it can be said that archaeological sites where no reconstructions have been undertaken retain a high degree of authenticity. It is supposed that most of the nominated property's archaeological artefacts remain

in situ, unexcavated and untouched for thousands of years and therefore authentic. In addition, the State Party contends that the current environment still represents, in essence, the natural context that existed in the distant past.

ICOMOS considers that once excavation is undertaken, a balance has to be found between visual legibility, conservation, and authenticity of the context. This is the case in the presentation of the mummified bodies in the museum at the Colón 10 component, and in the removal of the mummies and artefacts from other parts of the nominated property. The authenticity in these cases can be said to be satisfactory.

ICOMOS considers that the condition of authenticity of the whole series and of the component parts is satisfactory.

In conclusion, ICOMOS considers that the condition of integrity of the whole series and of the individual component parts has not been met at this stage, and that the condition of authenticity of the whole series and of the individual component parts is satisfactory.

Evaluation of the proposed justification for inscription

While the comparative analysis could have been further substantiated by including comparisons beyond properties on the World Heritage List and sites in Latin America, the scientific evidence permits consideration of this serial property for the World Heritage List. This evidence indicates that the Chinchorro culture archaeological sites can be considered globally important as the earliest known and long-practiced examples human mummification.

ICOMOS considers that the nominated property meets criterion (iii), and has the potential to meet criterion (v). The archaeological remains found at the nominated property bear testimony to the complex spirituality of the Chinchorro culture, expressed through the cemeteries in which are found artificially mummified bodies. Furthermore, the archaeological finds suggest that the nominated property has the potential to be considered an outstanding example of the interaction of a marine hunter-gatherer group with one of the world's driest environments. However, specific archaeological evidence needs to be linked more directly to the nominated property.

While the condition of authenticity of the whole series and of the individual component parts has been met, the condition of integrity of the whole series and of the individual component parts is difficult to assess due to insufficient information concerning the extent (areas), distribution, and interrelationships of the archaeological sites, finds, and areas of archaeological potential. Regarding the boundaries, revisions to the nominated property and one buffer zone are recommended.

Attributes

The attributes related to the proposed Outstanding Universal Value of the nominated serial property include the archaeological remains of cemeteries and habitational areas that attest to the spiritual complexity of the marine hunter-gatherer society, particularly as exemplified by artificially mummified bodies; and the natural environment that contextualized and shaped the cultural dynamics of the Chinchorro people during its prolonged existence in the coastal areas of the Atacama Desert, including the in situ archaeological deposits and stratigraphy that reveal the dynamics of how the nominated property was occupied over time.

While the mummies and the mummification processes seem well studied and well documented, there is not enough detailed information (supported by distribution maps, find inventories, etc.) provided by the State Party on the settlement and adaptation aspects of the Chinchorro culture. Attributes that illustrate these aspects have not yet been clearly associated with the proposed Outstanding Universal Value of the nominated property.

ICOMOS considers that the identified attributes contribute to the justification for inscription. However, a more complete and detailed understanding of the settlement and adaptation aspects of the Chinchorro culture is required, in order to clearly associate attributes related to these aspects with the proposed Outstanding Universal Value of the nominated property.

4 Conservation measures and monitoring

Conservation measures

Illegal constructions along the northeastern border of the urban Faldeo Norte del Morro de Arica component have been removed. The buildings were of lightweight materials, supposedly leaving few traces, and the activity was coordinated with the local population as represented by neighbourhood leaders.

To avoid future encroachments in the Faldeo Norte del Morro de Arica component, the State Party mentions in the additional information sent in November 2020 a project called "Construction of a Perimeter Closure for the Archaeological Reserves of the Water Tank Sector and Sites No. 1 and No. 2, of the University of Tarapacá." ICOMOS observes that some fencing currently exists, and the State Party indicates that additional parts of this component will be protected by fences in the future. The rationale for selecting the areas to be fenced is not specified.

Concerning the removal of the illegal settlement at the rural Desembocadura de Camarones component, no agreement has been reached yet, but municipal authorities are working on a relocation proposal, which according to the State Party is supported by a majority of the settlers. If the proposed plan is approved and financed, the relocation could take place in three to five years. In terms of preventive conservation at this component, only some roped off areas

and a retaining wall along the road have been observed by ICOMOS.

The additional information sent by the State Party in November 2020 mentions that an exhaustive cleaning of the Faldeo Norte del Morro de Arica component has been completed as part of the Management Plan implementation. ICOMOS considers garbage to be one of the problems for this component.

In July 2018, an international workshop on “Guidelines for the Conservation of the Archaeological Settlements of the Chinchorro Culture in the Region of Arica and Parinacota” was held in the city of Arica. Based on the experience and opinions of the interdisciplinary group of national and international experts, a theoretical and methodological analysis was carried out on how the archaeological sites should be conserved. A document with principles and strategies to guide future administrators’ decisions was drafted. Many of the proposed conservation activities mentioned in the nomination dossier seem to be based on these guidelines, such as a ground stability study, the design of an onsite conservation procedure, and the comprehensive management of the Chinchorro archaeological and bio-anthropological collection.

In 2012, systematic monitoring of the environment close to the mummified bodies at the Colón 10 Site Museum component began, and important climatic fluctuations were found. In order to generate a more stable environment, the sectors where the mummified bodies are located were isolated in order to reduce air currents, and the roof and side tarpaulins were improved to minimize drafts, external pollutants, and direct exposure to sunlight.

While the state of conservation of the excavated mummies in the different museums (Colón 10, San Miguel de Azapa, and the National Museum of Natural History Collection in Santiago) and their storage facilities are not without challenges (see State of Conservation), the installations and conservation processes have been improved over the years and the bio-archaeological material seems to be stable now. ICOMOS notes the quality of the infrastructure and the presence of highly trained professional staff at the Colón 10 and San Miguel de Azapa museums. Nevertheless, it will be necessary to continuously evaluate and adjust the conservation process.

In the future, the Chinchorro Marka Corporation, the entity dedicated exclusively to the nominated property’s management, plans to develop a research programme focused on archeology, conservation, bio-anthropology, taphonomy, and environmental and heritage studies. This programme is preliminarily indicated in the Management Plan, and would collect the vast amount of data gathered by previous investigations that have addressed the Chinchorro culture.

ICOMOS considers that processes focused on basic maintenance (such as garbage collection), visitor and use control, and the identification and rescue of archaeological material should be put in place at the earliest possible opportunity.

Monitoring

The State Party mentions “poor monitoring” as an internal and underlying factor of some of the nominated property’s detected problems, such as site encroachment. In the same diagnosis, “frequent monitoring” is mentioned on several occasions as a suggested preventative measure.

The additional information supplied by the State Party in November 2020 indicates that the University of Tarapacá and the Chinchorro Marka Corporation are currently developing monitoring activities. A six-year monitoring cycle is proposed and a series of indicators related to conservation, management, governance, synergy, and sustainable development aims are presented. It is not clear how well the planned indicators will be linked to the attributes that support the proposed Outstanding Universal Value and to the identified threats.

It is not clear if there will be a centralized monitoring system for the mummies and artefacts housed in the different museums.

ICOMOS considers that the conservation measures and monitoring are not fully satisfactory at this stage. Conservation measures focused on general maintenance and the identification and rescue of archaeological material should be activated at the earliest possible opportunity. The projected monitoring system must be completed and made operational, with indicators that are linked to the attributes that support the proposed Outstanding Universal Value and to the identified threats.

5 Protection and management

Documentation

The University of Tarapacá’s Department of Anthropology has undertaken a number of important studies related to the Chinchorro culture. However, many of the archaeological finds in the nominated property, buffer zones, and beyond were discovered during construction activities related to the development of the city of Arica. The recovery of the finds has not always been systematic, and in many cases not part of a research programme. In addition, it seems that inventories are not always undertaken as a basis for documentation and follow-up of the state of conservation of the archaeological finds and mummies.

The proposed Management Plan therefore projects a sub-programme of archaeological investigation focused in large part on producing baseline data for the archaeological information observable in the field as well as in the format of textual and graphic documentation.

ICOMOS considers that the systematic documentation and inventorying of the archaeological information already collected, as well as the documentation of the areas of potential interest for future investigation through systematic surface surveys, geophysical investigation, etc., are of utmost importance. They are an essential part of presenting and justifying the proposed Outstanding Universal Value of the nominated property and should be put in place as soon as possible.

Legal protection

The current and proposed legal protection of the nominated serial property is complex. At the national level, Law No. 17,288 of National Monuments (1970, substantially modified in 2005 and currently under additional review) establishes five categories of National Monuments, including Archaeological Monuments and Historical Monuments. The Faldeo Norte del Morro de Arica component is included in the area of a larger Historical Monument, the Morro de Arica. The adjacent Colón 10 component is protected as an Archaeological Monument. The surveyed archaeological sites in the third component, Desembocadura de Camarones, are protected as Archaeological Monuments under Law No. 17,288.

At the regional level, Decree No. 4867 (1967) of the Ministry of Education declares all archaeological and palaeontological sites in the Arica and Parinacota Region to be Historical Monuments. The protection established by this Decree reaches the archaeological sites in all three components of the serial nomination.

The proposed common buffer zone for the Faldeo Norte del Morro de Arica and Colón 10 components is, in part, protected by the Regulatory Plan of the city of Arica, in force since 2009, which establishes norms related to urban limits, zoning, land use, conditions of property subdivision, building, and roads. This plan is currently being renewed. The information supplied by the State Party on the new plan in relation to the protection of the archaeological remains is not clear, and no timeframe for its approval has been provided.

The Desembocadura de Camarones component and its buffer zone will be protected in the future under the Nature Sanctuary category of Law No. 17,288 of National Monuments; this declaration was expected to be adopted during the second half of 2020. There is also a Sectional Plan that controls urban measures applicable to the part of that component located in the Municipality of Camarones. This Sectional Plan is currently under revision. Furthermore, the Desembocadura de Camarones component is protected by Decree No. 240 (2014) of the Ministry of National Defence and the Armed Forces Undersecretariat, which regulates the use of the seashore by non-industrial fishers.

In terms of ownership, the Faldeo Norte del Morro de Arica component is owned by the Government of Chile (some areas have been granted to the University of Tarapacá, an independent public corporation); the Colón 10 component belongs to the University of Tarapacá; and part of the

Desembocadura de Camarones component is owned by the Government of Chile and part by the private Agrícola Lluta S.A. company. The two buffer zones have a combination of public and private ownership.

ICOMOS considers that, in general, the different legal protection mechanisms are adequate. Nevertheless, it is important to conclude the processes that are still pending, including the nature sanctuary declaration, the renewal of the Regulatory Plan of the city of Arica, the Cuya-Caleta Camarones Sectional Plan, and the legal issues concerning the Desembocadura de Camarones component and buffer zone. Furthermore, it is necessary to clarify whether the protection afforded by Law No. 17,288 is applicable to the entire polygons of the nominated property and their buffer zones, or only to the parts defined as “archaeological sites.” This question is relevant for the Desembocadura de Camarones component and its buffer zone (before it is declared a nature sanctuary), and for the part of the buffer zone of the Faldeo Norte del Morro de Arica component that is not included in the Historical Monument of the Morro de Arica. Finally, the impact of the review of the current legislation on the protection of the serial property should be made explicit.

Management system

The nominated property’s Management Plan (2020 – 2026) is a work in progress. It will be based on two previous instruments: the Caleta de Camarones Archaeological Reserves Management Plan (2012) from the University of Tarapacá’s Department of Anthropology and the Municipality of Camarones; and the Basic Diagnosis and Management Plan for the Chinchorro Archaeological Reserves in Arica (2012) from the Regional Government of Arica and Parinacota and the University of Tarapacá. The two existing plans and their operational sub-programmes are being unified under a joint governance model for the nominated serial property, maintaining each of its component’s unique characteristics.

The governance system combines the actions of national and regional stakeholders with a shared understanding of the nominated serial property and its requirements if inscribed on the World Heritage List. The State Party mentions delays due to the pandemic (finalization by mid-2021 instead of 2020), but highlights that important advances have been made, such as in the conservation and zoning section of the document – though no documentation of these advances has been provided.

The management system that will be used to implement the Management Plan is still in development, but was being adopted progressively during the preparation of the nomination dossier. It was expected at that time to be fully operational in the first half of 2020.

At the national level, the Ministry of Culture, the Arts and Heritage is officially in charge of Chile’s cultural heritage. The Cultural Heritage Undersecretariat is in charge of developing cultural policies, including those associated with World Heritage properties. The National Monuments Council, which is part of the Ministry of Culture, the Arts and

Heritage, is the technical body in charge of supervising and maintaining National Monuments, which is the legal category protecting the Chinchorro archaeological sites. Any changes to the sites must be authorized by this council. The National Cultural Heritage Service acts as technical advisor to World Heritage properties in Chilean territory through the National Centre for World Heritage Sites, which supports the work of site administrators.

At the local level, the Chinchorro Marka Corporation is the body in charge of the nominated property's management system. The Corporation was founded on 5 December 2019 as a non-profit private law corporation and has three founding partners, the University of Tarapacá, the Municipal Corporation for Productive Development of Arica (*Corporación Municipal de Fomento Productivo de Arica*), and the Municipal Corporation of Culture and Arts of Camarones (*Corporación Municipal de la Cultura y Artes de Camarones*). Other bodies may be added in the future, according to the corporation's bylaws.

The State Party states that the management system seeks to encourage broad engagement, and that the management of the surrounding areas, including the buffer zones, is fundamental to preserving the nominated property's proposed Outstanding Universal Value. Community participation is ensured by involving local citizens and organizations such as neighbourhood boards and cultural communities in the management system, both as members of the corporation and as agents in the Management Plan's programmes and sub-programmes.

ICOMOS considers that the Management Plan and the management system are well thought out and complete in terms of subjects covered as well as stakeholder involvement. However, most of what is mentioned in the nomination dossier about the Plan is still a work in progress and has not been tested. It is important to have a finalized, approved, and operational Management Plan, as well as a clearer idea of the financial aspects of the functioning of the management system, since a large part of the budget seems to depend on grants that have yet to be approved (including for 2022).

The State Party mentions the existence of an Environmental Impact Assessment system that aims, *inter alia*, to protect and preserve the archaeological heritage. ICOMOS recommends that a complementary Heritage Impact Assessment process be developed within the frameworks for legal protection and management of the property.

Visitor management

While several important visitor management elements are included in the planning documents (interpretation, paths, scripts, museography, exterior support design, museum interiors, visitor centre, services for visitors), few of them are in place now. The activities associated with enhancing the visitor experience are predicted to be implemented in the fifth year of a five-year plan, though in some sectors of the components interpretive panels with Quick Response (QR) codes have already been installed to provide visitors

with information about the archaeological sites. The only place onsite where more complete information is available is the Colón 10 Site Museum.

As reported in the additional information by the State Party in February 2021, visitors now have the possibility of participating in walking tours organized and promoted by the Regional Directorate of the National Tourism Service. In addition, the Chinchorro Marka Corporation is building the museum and interpretation centre nearby. No information about the finalization of this project has been provided. And in a recent development, an onsite office representing the Regional Heritage Management Centre of the University of Tarapacá and the Chinchorro Marka Corporation has been installed. ICOMOS welcomes this step, but regrets that no information was provided about the work being done at this office, or its exact location.

ICOMOS notes that some of the most basic installations to assure the safety of visitors and the security of the nominated property are not yet in place. It is not clear how the State Party will deal with an increase in the number of visitors should the nominated property be inscribed on the World Heritage List. Furthermore, at an archaeological site where nearly all the in situ elements are invisible underground, and most of the excavated artefacts and mummified bodies are stored or exhibited offsite, interpretation aids for the visiting public are of utmost importance. Formalization of the presentation of the nominated property is also important for its protection against damage or destruction due to a possible lack of knowledge and/or interest on the part of the public.

There is no single approach to excavating, curating, and exhibiting human remains, as discussions by organizations such as of the World Archaeological Congress have indicated. ICOMOS considers that it is necessary to address these ethical issues in nominations such as this, where human bodies are central to the nomination, and to do so in a sensitive and open-minded way.

Community involvement

The State Party highlights the importance of the Chinchorro culture for collective identity-building processes and empowerment of the local population. A total of 285 people resides inside the buffer zones and make up the main group interested in the nominated property and citizen participation. Talks and discussions related to World Heritage have been held for and with the local community organizations during the nomination process. Links have also been strengthened with the school community and with different educational establishments in Arica, with talks, workshops, temporary exhibitions, and visits to archaeological sites. Conflict resolution and security measures that were applied to re-establish order and improve the living conditions of the people residing in the area of the nominated property have also tightened the bond of the local community with their heritage. Clean-up has been carried out involving teams from the Municipality of Arica, the University of Tarapacá, and organized groups of neighbours who support the nomination process.

The State Party states that one of the main social aims of the Management Plan will be to inform, create a dialogue with, and include the local community in any decision-making related to the nomination process. The success of this approach can already be seen at the Desembocadura de Camarones component, where the residents of the illegal settlement of Caleta Camarones began acting as the archaeological heritage's 'guardians', in some cases restricting people's access to the archaeological sites in order to protect and conserve them. The community's interest in cultural heritage has gone hand-in-hand with local scientific research and institutional policies that aim to raise awareness of the importance of protecting archaeological finds in the area. The Chinchorro culture is currently perceived by the local population as an opportunity for social, economic, and cultural development, according to the State Party. ICOMOS acknowledges the support given by the neighbourhood community in general and by the local and national authorities in the nomination process for the cultural property.

ICOMOS considers that community outreach activities are central to the success of future management of the nominated property, and highlights the importance of continuing these efforts and including local stakeholders in the decision-making processes.

ICOMOS also emphasizes the need to include living indigenous communities that may have an interest in and connection with the nominated property and that are not involved yet in the protection and management of the property, in line with paragraphs 40 and 117 of the *Operational Guidelines for the Implementation of the World Heritage Convention*.

Evaluation of the effectiveness of the protection and management of the nominated property

Legal protection of the nominated serial property at the national and local levels appears adequate and will improve once Nature Sanctuary status is declared for the Desembocadura de Camarones component. However, the applicability of Law No. 17,288 to the whole property will have to be confirmed and the potential impact on the protection and management of the nominated property should be described in detail. The Regulatory Plan of the city of Arica and the Cuya-Caleta Camarones Sectional Plan are currently being renewed. The new versions of these plans and their impact on the protection and conservation of the nominated property will have to be considered.

The proposed Management Plan and management system is comprehensive, well structured, and generally inclusive in terms of stakeholder participation, but they are still works in progress. Priority should be given to finalizing, approving, and making operational the Management Plan and system.

While there are plans for future improvements, at the moment most of the nominated property is not prepared to welcome visitors. Basic installations to assure the safety of visitors and the security of the nominated property should be put in place. Documentation of the archaeological work

already done and of the potential of the areas not yet fully investigated should be presented in a systematic way.

The excavation, curation, and exhibition of human remains being central to the nomination, it is important to address the ethical issues related to the treatment of human remains.

Community outreach activities are key to the success of future management of the nominated property. It will be important to continue these efforts and include in the decision-making processes local stakeholders as well as any living indigenous communities that may have an interest in and connection with the nominated property.

ICOMOS considers that while all the central elements of legal protection and management are in place, it is important to verify their applicability to the whole property and to finalize the pending management measures and make them operational. More information on the new or updated heritage legislation and land use plans is needed.

6 Conclusion

The northern coast of the Atacama Desert, an arid and hostile habitat in northernmost Chile, was home to the Chinchorro, a society of marine hunter-gatherers who lived here from about 7,400 BP to 2,840 BP. They successfully adapted to extreme environmental conditions that juxtaposed rich coastal marine resources with a very arid coastal desert and the rugged relief of the Coastal Cordillera. This culture is best known for having the oldest known artificially mummified human bodies.

ICOMOS considers that the comparative analysis supports consideration of the nominated serial property for the World Heritage List, though the analysis could be improved by broadening its scope and depth and structuring it more clearly.

ICOMOS considers that the nominated property meets criterion (iii), and has the potential to meet criterion (v). The archaeological remains bear a unique testimony to the complex spirituality of the Chinchorro culture, expressed through the cemeteries in which are found artificially mummified bodies. Furthermore, the archaeological finds suggest that the nominated property has the potential to be considered an outstanding example of the interaction of a marine hunter-gatherer group with one of the world's driest environments.

The condition of authenticity of the whole series and of the individual component parts has been met, but the condition of integrity of the whole series and of the individual component parts has not been met at this stage, as there is insufficient information concerning the extent, distribution, and interrelationships of the archaeological sites, finds, and areas of archaeological potential.

Revisions to the boundaries of the Faldeo Norte del Morro de Arica component and to the Desembocadura de Camarones component and buffer zone are needed.

Legal protection of the nominated property is adequate in general terms, but the applicability of the legal protection to the areas of archaeological potential has to be verified. More information on the implications of the new or updated heritage law is needed. Furthermore, it is important that the processes that are still pending be concluded, including the nature sanctuary declaration, the renewal of the Regulatory Plan of the city of Arica, the Cuya-Caleta Camarones Sectional Plan, and the legal issues at the Desembocadura de Camarones component and buffer zone.

The Management Plan and management system is complete, well structured, and inclusive in terms of stakeholder participation, but they are still works in progress and untested. Priority should be given to finalizing, approving, and making operational the Management Plan and system.

7 Recommendations

Recommendations with respect to inscription

ICOMOS recommends that the nomination of Settlement and Artificial Mummification of the Chinchorro Culture in the Arica and Parinacota Region, Chile, be **referred back** to the State Party to allow it to:

- Provide a more complete and detailed understanding of how the settlement and adaptation aspects of the Chinchorro culture are expressed through the attributes of the serial property, in support of criterion (v);
- Ensure that the highest available level of legal protection is in place for each of the nominated serial components;
- Confirm that the new Regulatory Plan of the city of Arica provides protection to the archaeological remains that might be discovered in the urban area, and that the land uses permitted in the zones within the nominated property and its buffer zones are compatible with the proposed Outstanding Universal Value of the nominated property;
- Provide more information on the foreseen changes to the current cultural heritage legislation (Law No. 17,288 of National Monuments);
- Finalize an agreement and timetable to relocate the illegal settlement in the Desembocadura de Camarones component outside the buffer zone;
- Further address the integrity of the nominated serial property by providing more information on the extent, distribution, and interrelationships of the different types of archaeological sites (settlements, burials, shell middens, etc.), finds,

and areas of archaeological potential, particularly by means of topographical maps of the nominated property, buffer zones, and surrounding areas;

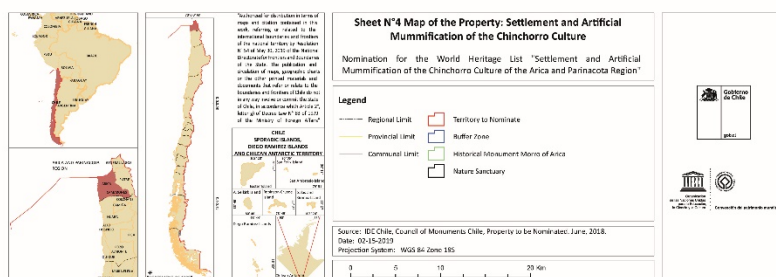
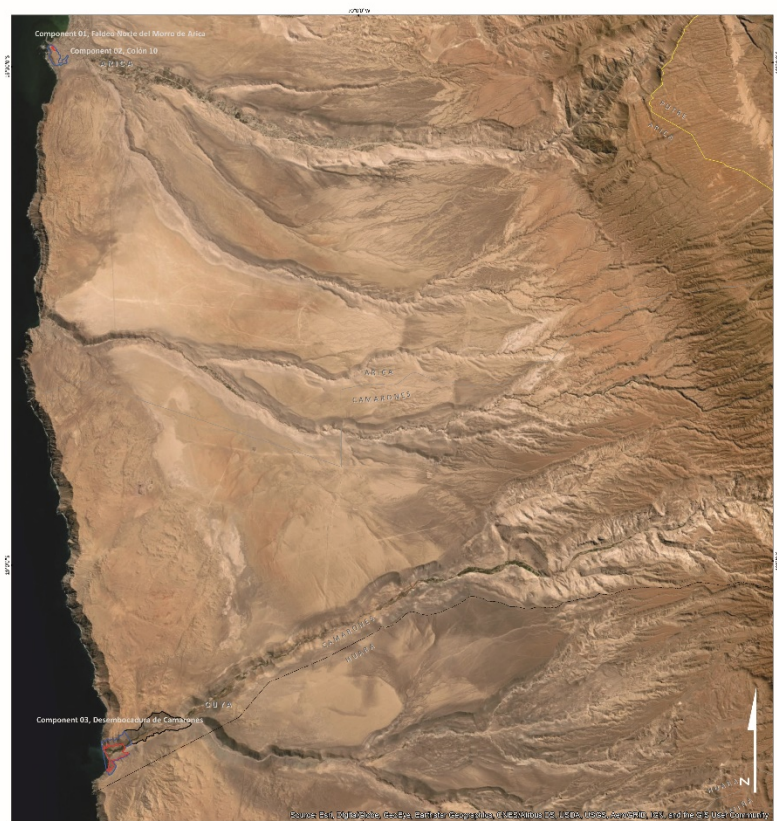
- Extend the boundary of the Faldeo Norte del Morro de Arica component to include all of what is now designated as “Zone 5 Damping”;
- Extend the boundary of the Desembocadura de Camarones component in order to include all of the Archaeological Restriction Zones;
- Extend the buffer zone of the Desembocadura de Camarones component to include the entire extent of the Restriction Area due to glissade hazard (ARRD) zone, and resolve the problem of the lack of a buffer zone between the nominated property and the industrial poultry farm. This is especially important in view of the proposed relocation of the illegal settlement now located in an area adjacent to the agro-industrial complex;
- Finalize, approve, and make operational the Management Plan and management system.

Additional recommendations

ICOMOS further recommends that the State Party give consideration to the following:

- a) Completing basic installations such as fences to further assure the safety of visitors and the protection of the nominated property,
- b) Resolving the legal disputes in the Desembocadura de Camarones component and its buffer zone,
- c) Undertaking the systematic documentation and inventorying of the archaeological information already collected, as well as the documentation of the areas of potential interest for future investigation through systematic surface surveys, geophysical investigation, etc.,
- d) Completing and making operational the projected monitoring system, including for the mummified bodies and artefacts preserved in the different museums, and identifying indicators that are linked to all the attributes that support the proposed Outstanding Universal Value as well as to the identified threats,
- e) Undertaking at the earliest possible opportunity conservation measures focused on general maintenance and on the identification and rescue of unprotected archaeological remains on the surface,
- f) Addressing the ethical issues regarding the excavation, curation, and exhibition of human remains,

- g) Adhering to the principles of good governance by maintaining an open mind concerning the inclusion of stakeholders not yet participating in the protection and management of the property, in line with paragraphs 40 and 117 of the *Operational Guidelines*,
- h) Developing a Heritage Impact Assessment process within the frameworks for legal protection and management of the nominated property,
- i) Assessing and mitigating any impacts the industrial poultry farm located in the Camarones River valley may have on the proposed Outstanding Universal Value and integrity of the nominated property;



Map showing the location of the nominated components