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# Sado Island Gold Mines (Japan) No 1698

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## 1 Basic information

### Official name as proposed by the State Party

Sado Island Gold Mines

### Location

Niigata Prefecture  
Japan

### Brief description

The Sado Island Gold Mines are a serial property located on Sado Island, some thirty-five kilometres west of the Niigata Prefecture coast. It is formed of three component parts articulated around two main mining areas – the Nishimikawa Placer Gold Mine and the Aikawa-Tsurushi Gold and Silver Mine – illustrative of different unmechanised mining methods implemented during the Edo period (1603-1868). The first cluster covers a large mining area used for placer gold mining, settlement areas dating back to the Edo mining period, and several sections of waterways necessary for placer mining. The second cluster includes two component parts connected by a route today interrupted for a short section and corresponding to the Nishi-Ikari-michi and Tsurushi-michi Pass. The two component parts of the second cluster cover two different mining areas – the Tsurushi Silver Mine and the Aikawa Gold and Silver Mine Area. The latter also includes part of the Aikawa-Kamimachi Town, in which the remains of the Sado Magistrate's Office are found. Mostly tangible attributes reflecting mining activities and social and labour organisation are preserved as archaeological elements, both above and below ground, and landscape features.

### 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 three *sites*.

### Included in the Tentative List

22 November 2010

### 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 23 to 31 August 2023.

### Additional information received by ICOMOS

A letter was sent to the State Party on 13 October 2023 requesting further information about description and history, attributes, composition and conception of the nominated series, protection, management arrangements, development projects and interpretation.

Additional information was received from the State Party on 10 November 2023.

An interim report was provided to the State Party on 19 December 2023, summarising the issues identified by the ICOMOS World Heritage Panel.

Further information was requested in the interim report on: additional information on the nominated property and its component parts, clarification on the rationale for delineating the boundaries of the nominated component parts, state of the art of the research and of archaeological investigations, protection and management, and reduction of the fragmentation of the nominated series.

Additional information was received from the State Party on 27 February 2024.

All additional information received has been incorporated into the relevant sections of this evaluation report.

### Date of ICOMOS approval of this report

13 March 2024

## 2 Description of the nominated 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 briefly summarises the most relevant aspects.

### Description and history

The serial nominated property is grouped in two clusters, illustrating two mining areas, respective settlement zones, and different non-mechanised mining methods implemented during the Edo period (1603-1868): the Nishimikawa Placer Gold Mine (Nishimikawa Area) and the Aikawa-Tsurushi Gold and Silver Mine (Aikawa-Tsurushi Area). The nominated area also includes surviving standing structures of post-Edo mining and processing exploitation (19<sup>th</sup> and 20<sup>th</sup> centuries).

The two nominated mining areas illustrate different manifestations of the ore and deposits and, subsequently, of the mining strategies implemented to obtain gold and silver.

While gold placer deposits were exploited in Japan as early as the 8<sup>th</sup> century CE, mention of gold production in Sado Island are attested in 12<sup>th</sup>-century chronicles as the island was known for its riches in gold. During the 16<sup>th</sup> century – a period of political instability in Japan – local warlords developed their own gold mines during their feuds. At the end of the 16<sup>th</sup> century, extraction and production in Japan

grew thanks to the importation of more efficient metal extraction technology from China and the Korean peninsula (cupellation from China). With the establishment of the Tokugawa Shogunate, its isolationist policy, and efforts to establish a robust financial system based on the monopoly of coinage by the central state, gold mining in Japan flourished at an unprecedented scale. Due to the seclusion policy, new techniques (e.g. the cementation method and measurement techniques) were introduced via means of documents and acquired in a fragmentary and selective manner. Imported processing methods were applied repeatedly, and this increased the quality of the produced gold. In the 17<sup>th</sup> century, Japan became one of the main gold producers worldwide, and Sado Island emerged as one of the major gold mining sites. Because of its importance, both the Island and the mines were directly managed by the Shogunate.

Sado Island is of volcanic origin and features two parallel mountain ranges stretching from southwest to northeast – Osado and Kosado Mountains – and separated by one alluvial plain, the Kunitaka Plain. Gold and silver deposits were formed by the rising of hydrothermal water to the land surface and forming veins in the rock; tectonic activity first submerged the surface deposits to the seabed, which was later raised again by tectonic movements. Placer deposits were exploited in Nishimikawa Area, located on the north-western side of the Kosado Mountains. In addition, the weathering of the volcanic rock exposed ore veins, which were mined underground in the Aikawa-Tsurushi Area, at the southern end of the Osado Mountains range.

For the purpose of this report, the component parts are grouped and described according to the two above-mentioned areas. Both clusters include mining and settlement zones that reflect the social and technical systems of the mining activity, articulated in four main attributes defined by the nomination as reflecting the proposed Outstanding Universal Value: strategic management by the Tokugawa Shogunate and gold production system integrated on a large scale; mining culture nurtured in the mining community; traditional unmechanised mining technologies improved to apply to the characteristics of the deposits; and a series of production processes enabling high-purity gold production.

An extremely rich collection of written and iconographic records, such as management documents and picture scrolls of the mines, have survived, vividly documenting how mining operations were implemented during the Edo period.

The additional information provided by the State Party in November 2023 supplements the nomination dossier by describing how the Sado Magistrate's Office administered the island and the mines and oversaw efficient working conditions for production. It also explains more clearly the social and working organisation and arrangements, where settlements developed and how, as well as the provenance of the workforce, which, in the Edo period, was from all over Japan.

#### Nishimikawa Placer Gold Mine (Nishimikawa Area)

The revised component part is an extensive area including the key elements of the mining system: the *Onagashi* or great flow placer gold mining sites, reservoirs, sections of waterways, and settlement zones (two of them, Kinzan and Sasagawa). The initially separated nineteen stretches of water channels, reflecting key water channels of the system, have been connected to the mining area throughout the nomination process.

*Onagashi* was a mining method introduced towards the end of the 16<sup>th</sup> century that complemented the earlier method of obtaining gold from the river.

Placer gold mining at the mining sites was implemented through *Onagashi*, or the great flow method, which involved separating the placer gold from the gravel by washing the scraped off surface of the gold deposit with bursts of significant amounts of water. The key elements of this mining method include a headrace, a channel with a weir and a sluice to divert and drive water to a reservoir where water was stored; a race where water would run to the mining site, where ore would have been accumulated; stone structures, huts or workshops for maintenance; and a tailrace to let water flow away.

The settlements were built in former mining sites, on terraces made up of discarded stones from the placer mining selection process.

Mining in this area was carried out by villagers cooperatively, and their working organisation was incorporated into the management system of the Sado Magistrate's Office. According to the nomination dossier, this is still legible in the surviving physical evidence, mostly archaeological, their spatial distribution and, above all, by the iconographic and documentary historical sources. Relevant sites for understanding mining activity at this component part include the Goshaya-yama Site, a mining site where all processes related to the *Onagashi* method can still be identified; the Toramaru-yama Site, a mining site including a mined rocky outcrop, a mining site, a headrace, upper and lower reservoirs, and remains of stone structures; the Tatenokoshi-yama Site, with mining site, headrace, reservoir, race and remains of stone structures and the surviving sections of Kinzan-e, Sugihira-yama, Chikugo-e, Utoge-yama, and Toramaru-yama waterways.

The residential districts of Kinzan and Sasagawa are located on terraces close to mining sites. In Kinzan, the Kaneko Kanzaburo House (19<sup>th</sup> century), the residence of the Kaneko family who played the role of intermediary between mining officials and the village, the Mine Official's House Site, and the Nishimikawa Oyamazumi-jinja Shrine and the Noh play stage, can be found along the main street.

The settlements were established before the 17<sup>th</sup> century but only took on their distinctive layout with the spread of the *Onagashi* method in the 17<sup>th</sup> century. Villagers carried out the mining work collectively, managed by the village head, Kaneko Kanzaburo. The Sado Magistrate's Office

was responsible for major infrastructure construction, such as waterways and water races.

Under the Tokugawa Shogunate, the mine was overseen by the Sado Magistrate's Office. An official was responsible for control, salary payment, maintenance of infrastructure and collecting the gold output. This was processed at the Sado Magistrate's Office and turned into *koban* coins and bullion to be sent to the capital. The village head acted as an intermediary between officials and villagers to carry out the operations.

The Nishimikawa Area ceased its operations in 1872, as output declined.

Aikawa-Tsurushi Gold and Silver Mine (Aikawa-Tsurushi Area)

This area is formed by the Tsurushi Silver Mine and the Aikawa Gold and Silver Mine, connected by a transport route, the Nishi-Ikari-michi and Tsurushi-michi Pass. The pass is interrupted for a short section, dividing the Aikawa-Tsurushi Area into two distinct component parts.

#### The Tsurushi Area

The nominated component part includes several silver mining sites that illustrate the transition from surface mining and chase-mining to tunnel mining in order to access multiple ore veins. The main mining zones reflect the respective mining methods. The Hyakumaidaira Mining Zone contains evidence of a high density of surface mining sites. Byobusawa-Shidekisawa Mining Zone exhibits evidence of small-scale surface mining and chase-mining operations (tunnels cut diagonally in the rock to follow the lode). The Otaki Mining Zone includes evidence of all three mining methods, with deep tunnels to reach the lodes from the mountain base. Here, some stone terraces, presumably for ore processing, are found.

The settlement zone comprised the Tsurushi-Aramachi District, where the Tsurushi Silver Mine Local Magistrate's Office Site can be found. The archaeological remains of the Office are found on a plateau surrounded by three water streams. Excavations have revealed the layout of the complex and its main spaces, offering an understanding of how it looked and operated. The district is today represented by irregularly-shaped terraces; archaeological investigations have revealed evidence of settlement expansion due to increased operations and traces of the cupellation smelting process. Based on the dating of ceramics, both the Office and the District appear to have ceased their functioning in the mid-17<sup>th</sup> century.

Full-scale mining was implemented in Tsurushi Area during the 16<sup>th</sup> century; after the discovery of gold-ore lodes in Aikawa Area in the early 17<sup>th</sup> century, the Sado Magistrate's Office was established at Aikawa and the Local Magistrate's Office was closed down, along with the settlement district. However, operations were maintained at some of the *mabu* tunnels, and the pass connecting Tsurushi Area and Aikawa Area was used to transport the metal ore for processing.

#### The Aikawa Area

This component part is located in mountainous terrain, with steep valleys and several rivers. Metal-rich ore veins carried gold and silver together. Key attributes demonstrating ore mining include the Doyu-no-warito and Tete-no-warito Opencut Sites, *mabu* tunnels (e.g., Sodayu-mabu, Ogiriyama-mabu Tunnel Sites), and drainage tunnels (e.g., Minamizawa Drainage Tunnel Site) which continue to fulfil a drainage function. The early settlement zone, Kami-Aikawa District, was located close to mining operations; the Aikawa-Kamimachi Town developed around the Sado Magistrate's Office. Altogether, these attributes illustrate the development of unmechanised technology adapted to the ore deposits and the social system that managed it for more than 250 years.

The mining zone contains evidence of large-scale surface mining but also of changing technology to underground mining, in an intricate network of tunnels of different sizes and functions (smaller tunnels were for exploration, larger ones for mining and transportation of ore, with regularly dug portals into the lodes and ventilation tunnels opened in parallel). Historical evidence attests that access to mines was controlled.

Aikawa-Kamimachi Town developed more systematically than the earlier residential districts and consolidated into a town still inhabited today. The Sado Magistrate's Office Site is on an elevated plateau with a commanding view over Aikawa Bay, well protected by water streams. The site was archaeologically excavated, and several functional spaces were found which yielded evidence of salt-cementation and cupellation processes, ore-dressing and refining, proving that the Sado Magistrate's Office was an administrative unit and a production facility.

When the Tokugawa Shogunate ended, the gold mine came under the control of the new government, and in 1896 it was transferred to the Mitsubishi Limited Partnership, which continued mining operations until 1989. At the site, Edo period-related remains coexist with the post-Edo period mining facilities.

ICOMOS requested clarification on the potential overlapping of Edo and post-Edo mining areas and changes caused by industrialised mining. In response to the interim report, the State Party explained that there is no post-Edo mining activity in the Nishimikawa Area; in the Tsurushi area, minor exploitations were tried, but there is almost no impact on archaeology or topography. In the Aikawa Area, exploitations of the Edo and post-Edo periods are located at different depths; hence, most of the Edo underground tunnels have been preserved, except for a few which were re-used and enlarged post-Edo. However, some standing mining-related structures dating to the post-Edo period still survive in the Aikawa Area, and substantial post-Edo mining-related facilities are clustered in Aikawa-Kamimachi Town.

The area of the three component parts totals 757.4 ha, with two buffer zones totalling 1,460.6 ha.

The buffer zone for the Aikawa-Tsurushi Area extends offshore for one kilometre. Onshore, the two buffer zones comprise the mainly wooded and mountainous landscape.

#### **State of conservation**

The nomination dossier notes that some sections of the waterways and the two passes have been lost. At some places (Nishimikawa Area), vegetation has taken over, covering the remains of the former mining activity, but measures have been undertaken to manage the vegetation cover. Rockfalls at the Doyu-no-warito Opencut Site have been addressed with temporary shoring structures. The tunnels are overall in good condition.

ICOMOS considers that, predominantly, the physical archaeological fabric of the nominated property and its significant features are in good condition. They are mostly preserved underground or as landscape modifications such as traces of waterways and terracing. The disturbance or destruction of parts of the waterways is discussed above. Overall, the most deteriorated elements are the small, worked-stone features located in sites across the nominated property. This is evident at multiple places where such elements are found, including in the Tsurushi-Aramachi District and along the Nishi-Ikari-michi and Tsurushi-michi Pass.

Development does not seem to have impacted the nominated serial property, except for Aikawa-Kamimachi Town. Here, most of the urban development has occurred to the west and in the south waterfront area, in the buffer zone, causing considerable visual impact. Other parts of the buffer zone have been subject to various levels of urban development. For instance, the Sado Hospital was built not far from the site of the Sado Magistrate's Office, in the urban area dating back to the Edo period, so it has been excluded from the nominated property.

More recent planning controls are in place to moderate and mitigate development impacts in the buffer zone.

Based on the information provided by the State Party and the observations of the ICOMOS technical evaluation mission, ICOMOS considers that the state of conservation of the nominated property is overall good. However, development and changes have occurred in some areas of the buffer zone and in some sections of the nominated property, impacting on its integrity and authenticity.

#### **Factors affecting the nominated property**

Based on the information provided by the State Party and the observations of the ICOMOS technical evaluation mission, ICOMOS considers that the main factors affecting the nominated property are landslides, overgrowth of vegetation, fires, potential forestry large-scale logging, and offshore wind farm development.

Measures to address these factors have been devised and implemented or are being implemented. It will be essential to ensure that a heritage impact assessment approach is

applied to logging and forestry management, and to offshore wind farm developments.

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Despite some modern developments that have occurred essentially in Aikawa-Kamimachi Town, ICOMOS considers that overall the state of conservation is good, and that the factors affecting the nominated property are landslides, vegetation, wildfires, potential logging, and offshore wind farm development.

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### **3 Proposed justification for inscription**

#### **Proposed justification**

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

- The Sado Island Gold Mines were the largest and most important gold mining operations supporting the stability of the rule of the Tokugawa Shogunate. Due to the seclusion policy of the Shogunate, mining relied on unmechanised methods which were implemented at a large scale.
- Mining at Sado was based on a strategic management system which addressed both the technical and the social facets of the mining undertaking and included a great variety of arrangements that sustained mining for more than 250 years.

The nomination dossier maintains that four factors have been central to the longevity of the mining operations: the geographic location of the island, its geological features which influenced the forms of the mineral deposits, the land use and function, but above all, the technical and social systems of gold production. The nomination dossier defines four attributes in relation to the latter factor: the strategic management of the Tokugawa Shogunate and the gold production system integrated on a large scale; a mining culture nurtured in the mining community; traditional unmechanised mining technologies adapted and improved for the characteristics of the deposits; and a series of production processes enabling high-purity gold production.

ICOMOS considers that some attributes identified by the nomination dossier could be seen more as factors that made the Sado Gold Mines particularly successful in extracting and producing gold rather than attributes. These alone cannot suffice to convey the significance of the nominated property. Furthermore, due to the ending of traditional mining and the subsequent obsolescence of Edo-period mining infrastructure, intangible attributes appear documented and intelligible mostly from the rich historical documentation that survived from the Shogunate, rather than in the surviving physical attributes, which are essentially archaeological remains, mostly preserved underground, and landscape features, testimonies of human-made land arrangements.

ICOMOS further observes that, based on the nomination dossier, the key tangible attributes of the nominated property can be grouped as follows: human-modified landforms, terracing, landscape features, remains of waterways, races, gold placer deposits, layout of settlement zones, archaeological vestiges of mining, ore-dressing and smelting sites, mining sites of the Magistrate's Offices that have been archaeologically investigated, drainage and mining tunnels.

### Comparative analysis

The comparative analysis has been developed around the following parameters: the presence of gold or other precious metals, unmechanised mining technology attested at the site, and still-existing traces of a socio-technical system. It has examined properties within Japan and East Asia, the region, and the world. The comparison has considered properties inscribed on the World Heritage List, included in Tentative Lists of States Parties, and other properties.

Seventy-nine relevant potential comparators have been identified: twenty-seven precious metal mines on the World Heritage List and on the Tentative Lists of States Parties, thirty-seven major gold mines not on the World Heritage List or Tentative Lists of States Parties, and fifteen precious metal mines in East Asia and Japan.

The comparative analysis presents an interesting outline of the mining of gold and other precious metals worldwide and at different periods. This review could have been used as a basis to further contextualise the nominated property.

In Japan, a number of mining sites in operation during the Edo period have been compared, which led to the conclusion that the tangible evidence of the overall socio-technical management system is not as complete as those observed in the Sado gold mines. Furthermore, the nominated mines are the only ones in which the Tokugawa Shogunate invested consistently throughout its rule.

The comparative analysis concludes that among the sites where unmechanised mining was carried out, the nominated property represents a rare case of persistence of mining methods that in Europe and the Americas began to be supplanted by more efficient mechanised systems in the period of significance of the nominated property (17<sup>th</sup>-19<sup>th</sup> centuries). Essentially, comparable sites date back to antiquity. At most of the mining sites that survive, among which many are on the World Heritage List, the technical-social system through which mining was managed is not reflected in its entirety: prevalently, it is the social system and the wealth that was generated by mining operations which is reflected in mining towns. In some cases, the working social system can still be read, but this was different from the one illustrated by the nominated property, due to significantly different historical and social conditions. Where the technical system is clearly illustrated, this, in most cases, relates to mechanised methods. According to the conclusions of the comparative analysis, the nominated property is the only one with physical evidence

demonstrating the transition, sophistication and specialisation in production processes.

ICOMOS observes that the comparative analysis could have been further developed for properties exhibiting evidence of unmechanised mining and ore processing to make a more robust case. Nevertheless, despite shortcomings in the comparative analysis, ICOMOS considers that the nominated property may justify consideration for the World Heritage List as an outstanding example of the continuation and perfection of traditional unmechanised mining and processing technology in a period when, elsewhere, mechanisation was spreading in the industry.

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ICOMOS considers that the comparative analysis justifies consideration of this property for the World Heritage List.

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### Criteria under which inscription is proposed

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

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 nominated property bears exceptional testimony to the mining operation system based on unmechanised mining technology that sustained mining activity throughout the 250 years of strategic management by the Tokugawa Shogunate and gave rise to a specific mining culture.

Based on the characteristics of ore deposits found on Sado Island, the Shogunate applied and integrated production organisation and methods most suitable for extracting and processing the ore. To guarantee the efficiency of operation, settlement, mining and processing functions coexisted in the same areas or in close proximity to one another. Skilled miners and other professionals from all over Japan were brought to Sado to support the development of mining and gold production.

ICOMOS considers that the first part of the justification presented for this criterion is not adequately reflected by sufficient tangible evidence. The attributes of the nominated property cannot be seen as exceptional testimony to a cultural tradition. While many archival documents provide information about the management system of the mines during the Tokugawa Shogunate, this system cannot be considered as a cultural tradition and is not represented by tangible attributes. ICOMOS also considers that the second part of the justification presented for this criterion better suits the justification for criterion (iv), as the management approach of the Shogunate is reflected by the typology of the technological and settlement ensemble in the landscape.

ICOMOS considers that this criterion has not been justified.

Criterion (iv): *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

This criterion is justified by the State Party on the grounds that the nominated serial property offers exceptional tangible evidence of the culmination of traditional unmechanised mining technologies in gold production. This was achieved under conditions that limited the importation of advanced technology, given the seclusion policy of the Shogunate. The tangible evidence of the *Onagashi* mining method carried out on a large scale is rare evidence of placer mining that previously only the Romans utilised, and it is not known anywhere else in the world.

ICOMOS considers that the nominated property can be seen as an exceptional example in the Asian context of the continuity of manual mining and smelting technology in a period when mechanisation was progressively being introduced elsewhere. The management system and social and work organisation deployed by the Tokugawa Shogunate at Sado made it possible to extract and process considerable quantities of high-quality gold for global standards in the 17<sup>th</sup> century. This is reflected in the mining area and settlement organisation.

ICOMOS considers that this criterion is justified.

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ICOMOS considers that the nominated property meets cultural criterion (iv), but that criterion (iii) has not been justified.

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### **Integrity and authenticity**

#### **Integrity**

The nomination dossier states that the integrity of the nominated serial property is demonstrated because it comprises the most important areas reflecting mining methods applied on Sado Island during the Tokugawa Shogunate, such as technical systems adapted to different types of deposits, a series of production processes, and the transition process of the controlled settlement system, reflecting the social system. These are supported by tangible evidence *in situ* and corroborated by a wealth of historical documents. The component parts still retain their key features, as past mining and settlement zones, and have not been destroyed or significantly altered. Only some sections of the headraces and waterways have been destroyed by later development, but their route is still recognisable.

ICOMOS observes that historical records and iconographic sources, such as historical drawings, scrolls, and other documents, are essential sources of information concerning authenticity rather than attributes for integrity.

The State Party and ICOMOS have discussed about the opportunity to avoid fragmentation of the component parts, and the eventual decision to reduce such fragmentation is

welcome as it has contributed towards improving the integrity of the nominated property.

An additional issue concerning the integrity of the nominated property emerged during the evaluation procedure based on additional information received from the State Party in February 2024, revealing the overlapping between Edo and post-Edo periods of mining/processing exploitation and related tangible evidence, particularly in the area of Aikawa-Kamimachi Town, corresponding to the zones indicated as Shimo-Yamanokami, Sakashita, Kitazawa, and Yajuro in the nomination dossier.

The additional information confirms that the above-mentioned area is almost entirely occupied by post-Edo mining-related and processing facilities. The State Party has included the area within the nominated component part, arguing that iconographic sources indicate that it was used for smelting during the Edo period, and archaeological relics of that period are expected by the State Party to still remain.

However, ICOMOS considers that the accumulated evidence of post-Edo period mining in this area is overwhelming, and archaeological remains from the Edo period are not proven. Given the profound transformations caused by post-Edo mining activity, the inclusion of this area within the nominated property does not appear justified as it does not include attributes supporting the proposed justification for inscription. It detracts from the integrity of the whole nominated property.

Therefore, to demonstrate conditions of integrity, ICOMOS considers that the State Party should apply the same rationale used for the exclusion of the Sado Hospital from the nominated property and exclude the area of Aikawa-Kamimachi Town encompassing the zones Shimo-Yamanokami, Sakashita, Kitazawa, and Yajuro, which preserve standing vestiges of post-Edo processing plants.

For the above reasons, the integrity of the nominated property, in its current configuration, and as defined by the *Operational Guidelines for the Implementation of the World Heritage Convention*, is not demonstrated at this stage.

#### **Authenticity**

According to the nomination dossier, the authenticity of the serial nominated property relies essentially on its form and design, material and substance, location and setting, use and function, traditions, techniques and management systems. Physical evidence has been retained as archaeological sites without substantial destruction by subsequent mining activity, investigations, and excavations, and distribution surveys have proven the authenticity of the remains.

ICOMOS observes that the key sources of information for the authenticity and understanding of the functioning of the nominated series are represented by ancient documentary records, especially drawings and images. These documents are crucial for understanding and interpreting the remains still on site. At the site level, the location of the key activities, the layout of land arrangements and modifications to carry out mining activities or to adapt them for residential or production purposes, physical traces of mining-related operations such as tunnels, waterways, and headraces, terraces, post-holes, landforms, as well as of ore-processing and administrative functions, can reflect, if interpreted by expert knowledge, the past use and functions carried out at these sites. Use and function do not represent a strong category of attributes in this case, as historical, unmechanised mining activity has ceased. Similarly, techniques and management systems characterising the Tokugawa Shogunate are no longer applied.

ICOMOS further notes that the settlement zones have maintained their original layout, although their built fabric has changed, as well as the way in which spaces are used, as there are no longer active mining activities performed. Members of local communities are no longer engaged in mining.

In a context in which attributes conveying the proposed justification for inscription are essentially archaeological elements, partly below ground, the inclusion of areas within the nominated property that include standing structures reflecting mining activities carried out in the post-Edo period leads to a confusing message and undermines the authenticity of the nominated property.

In the additional information received in February 2024, ICOMOS observes that the Kitazawa area in the Aikawa-Kamimachi Town is built up with processing facilities and mining-related infrastructure dating back to the 19<sup>th</sup> and 20<sup>th</sup> centuries, in the post-Edo period, which is not the focus of the present nomination. Even if the State Party considers that archaeological evidence is expected to still remain, ICOMOS does not consider that this part of the nominated property credibly conveys the proposed justification for inscription that revolves around mining during the Edo Period (Tokugawa Shogunate 17<sup>th</sup>-mid 19<sup>th</sup> century); instead, it speaks about the late 19<sup>th</sup> and 20<sup>th</sup>-century mining activity and its historical context. ICOMOS, therefore, considers that this area of the nominated property should be excluded from the nomination and moved into the buffer zone, for the nominated property to meet the conditions of authenticity.

Therefore, at this stage and with the current configuration of the nominated property, authenticity, as defined by the *Operational Guidelines for the Implementation of the World Heritage Convention*, is not demonstrated.

In conclusion, ICOMOS considers that the conditions of integrity and authenticity of the whole series and some of the individual component parts have not been met at this stage.

## Boundaries

The boundaries of the nominated serial property cover three mining areas: the Nishimikawa Placer Gold Mine, the Aikawa Area and the Tsurushi Area (both forming the Aikawa-Tsurushi Gold and Silver Mine). The first area includes an expansive mountainous landscape with traces of placer mining activities and settlement sites located in correspondence with mining zones. In the nomination dossier, this was complemented by nineteen much smaller component parts that contain the documented remaining sections of waterways and water races used for placer mining. The second area is formed by two large zones covering the Tsurushi Gold Mine and the Aikawa Gold and Silver Mine, connected by a historic pass. Aikawa Area also includes the still-inhabited Aikawa-Kamimachi Town.

For the most part, the delineation of the boundaries is based on topographic features defined by view-line assessment, particularly ridgelines.

ICOMOS observed that the fragmentation of the component parts in the Nishimikawa Area posed issues regarding the capacity of each component part to reflect all facets of the proposed Outstanding Universal Value. After exchanges with ICOMOS on exploring ways to reduce the fragmentation of the nominated series, the State Party decided to link all sections of water channels to the main component. ICOMOS welcomes this effort.

However, a major issue has emerged concerning the delineation of the boundaries of the Aikawa Area nominated component part. The area of the nominated property in Aikawa-Kamimachi Town encompassing the zones named in some maps of the nomination dossier as Shimo-Yamanokami, Sakashita, Kitazawa and Yajuro include substantial built structures and facilities dating back to the post-Edo period of mining exploitation in Sado Island, which is not considered relevant for the purpose of the nomination and should therefore be removed from the nominated property.

Japan has selected Sado Island as a pilot case for addressing climate change, and plans for offshore wind farm installations were adopted in 2020. Therefore, ICOMOS considers that the western offshore buffer zone should be extended to better control the potential installation of offshore wind farms.

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## Evaluation of the proposed justification for inscription

In summary, ICOMOS considers that the nominated property deserves consideration for the World Heritage List as an exceptional mining ensemble and landscape demonstrating the continuation and perfection of unmechanised mining and processing technology in a period when, elsewhere, mechanisation was spreading in the industry. ICOMOS considers that attributes of the nominated property support criterion (iv) but criterion (iii) has not been justified. The initial fragmentation of the nominated serial property has been revised by the State Party by connecting all sections of the water channels in the Nishimikawa Area. However, the additional information

received in February 2024 clarified that the nominated property includes a substantial cluster of post-Edo mining-related facilities in Aikawa-Kamimachi Town. The area corresponding to the area identified as Shimo-Yamanokami, Sakashita, Kitazawa and Yajuro contains overwhelming standing evidence of post-Edo period mining. It does not reflect in any discernible way the mining technology and socio-cultural system of the Tokugawa Shogunate (or Edo) period. This inclusion undermines the conditions of integrity and authenticity, as well as the coherence of the boundaries of the Aikawa Area. Therefore, ICOMOS considers that the conditions of integrity and authenticity could be met only if this delimited area is excluded from the nominated property and put in the buffer zone, applying the same rationale that the State Party has used to exclude the Sado Hospital. The buffer zone of the Aikawa Area should be expanded offshore to strengthen protection from the potential development of offshore wind farms.

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## 4 Conservation measures and monitoring

### Documentation

Extensive archival documentation, including rich iconography, exists for the nominated property, which has formed the basis for understanding the way mining functioned on the island during the Edo Period and for field research, greatly assisting in the appraisal of the cultural significance of the nominated property. Preserving this documentation is crucial as a source of information on the nominated property; developing a digital archive of this documentation and making it accessible to the public would also assist in communicating the values of the nominated property.

The nominated property has been comprehensively inventoried, with GIS mapping and survey of the mining sites and all archaeological sites and landscapes. This documentation is available in a digital Asset Management System, which is regularly updated. In addition, 3D mapping has been undertaken for many of the accessible tunnels. Photographic records also provide baseline data.

All conservation work is documented, as are the research excavations. All excavated material is catalogued and stored in the Sado Museum. Most reports available have been undertaken post-2000 and are listed in the nomination dossier.

One of the major documentary projects relates to the cross-referencing of modern maps with the historical scrolls and other documents from the Edo period, which record the layout of settlements and mining works with considerable accuracy. The research value of these scrolls cannot be underestimated in terms of information on spatial relationships, mining functions and processes, commercial and lifestyle activities, and rites and ceremonies.

Research partnerships exist with the tertiary sector and various technical colleges, including (for example) the 3D tunnel mapping project teams.

Further archaeological investigation is identified as a major research task. Sub-surface investigation is a primary interest for research across the nominated property. However, due to the size of the area, the programming is based more on reactive response to maintenance or other conservation works.

In its interim report, ICOMOS requested additional information on archaeological research, and the State Party provided some details on the state of the art of archaeological investigations being carried out in the mining areas and component parts.

### Conservation measures

Active conservation measures are directed by a set of plans and scheduled maintenance work and they appear appropriate for the required protection of the attributes of the nominated property.

Two major individual projects were underway at the time this report was finalised: the restoration of the 19<sup>th</sup>-century Kaneko Kanzaburo House and ancillary structures in Nishimikawa; the completion of the reconstruction of the Sado Magistrate's Office in Aikawa. The latter was destroyed five times by fire in the past, and the current reconstruction follows post-Edo floor plans as this is the last documented layout of the complex. The precinct is primarily an archaeological site and is interpreted as such.

The majority of the regular ground and vegetation maintenance in the mining areas is undertaken by community volunteer groups, under the direction of Sado City heritage staff. This occurs every six months and appears to be well-managed and attended.

### Monitoring

The monitoring system is based on a set of indicators that address the condition of the attributes that convey the proposed justification for inscription, affecting factors and potential impacts on these attributes and the strategies for dissemination of the proposed Outstanding Universal Value. This resulted in a set of indicators tied to the objective of monitoring, the frequency, the responsible agency, and the location of records. Monitoring findings will be examined by the Niigata Prefecture World Heritage Council. Data will be collected and recorded annually, whilst a report will be prepared and submitted to the World Heritage Committee periodically. Guidance and advice on monitoring are planned to be provided by the Agency for Cultural Affairs and the Sado Gold and Silver Mine World Cultural Heritage Scientific Committee.

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ICOMOS considers that documentation and conservation are adequate; however, given the mainly archaeological nature of the attributes of the proposed Outstanding Universal Value, ICOMOS considers that the development of a long-term archaeology strategy for the nominated property with clear research priorities,



questions and knowledge gaps to be addressed would greatly assist the State Party in improving the understanding of the nominated property, strengthening and developing targeted protection measures, and reinforcing the interpretation and communication of its values to the public. ICOMOS considers that specific attention needs to be paid to methods of stabilising the undulating landscape in the absence of trees. ICOMOS also considers that it would be of great added value if a digital repository of all archival documentation could be prepared for research, interpretation and preservation purposes. ICOMOS considers that it would be advisable to further develop the monitoring system to better address the attributes of the proposed Outstanding Universal Value.

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## **5 Protection and management**

### **Legal protection**

All component parts are designated as Important Cultural Landscapes or Historic Sites under the national Law for the Protection of Cultural Heritage. The Important Cultural Landscapes designation relates to the inhabited areas, such as Sasagawa and Aikawa-Kamimachi Town, while the Historic Sites designation covers the mining areas. Protection is extended also to natural or artificial topographic features. Activities in both types of designation are regulated by the Agency for Cultural Affairs, which operates at the national level. Sado Municipality has issued guidelines to provide support in case of interventions within protected landscapes. For projects that may have the potential to have negative impacts on the attributes of the proposed Outstanding Universal Value, heritage impact assessments will have to be carried out by the implementing body (in this case Sado City).

The buffer zone of Nishimikawa Area is currently protected as Landscape Special District under the Landscape Act. Considerable parts of the buffer zone are also included under the Landscape Act as an Important Cultural Landscape. For the remaining portions of the buffer zone – predominantly that which includes the waterways and hence part of the nominated property – the finalisation as an Important Cultural Landscape under the Cultural Properties Act was pending at the time of the ICOMOS technical evaluation mission. The designation as Important Cultural Landscape has been processed as a legal amendment and all necessary procedures were completed on 28<sup>th</sup> September 2023. As a result, the entirety of the Nishimikawa buffer zone is covered by the national legislation.

The buffer zone for the Aikawa-Tsurushi component part is protected as Landscape Special District through the Landscape Act, including the portion encompassing the western offshore region of the buffer zone. A considerable portion of the land-based buffer zone to the west of Aikawa is also identified as an Important Cultural Landscape and hence protected under the Cultural Properties Act. This extends into the offshore region.

However, the rest of the buffer zone, notably the portion surrounding the Tsurushi Area, is not. It is also noted that this area includes substantial land areas designated as Forest Reserves under the Forest Act (national). As Forest Reserves, these areas are managed by the national Ministry of Agriculture, Forestry and Fisheries (MAFF). According to the State Party and given the current statutory processes and protocols under the Landscape Act – and engagement with both the Niigata prefecture and the Agency of Cultural Affairs – these areas enjoy the necessary heritage protection measures.

In its interim report, ICOMOS requested further information regarding protection mechanisms in place for the wider setting and how the use of forest resources is regulated. Moreover, ICOMOS asked for clarification about requirements concerning mining licencing and exploitation and the commitment made by Golden Sado not to operate the mines. The State Party replied that there is no plan for major cultivation or replanting in the nominated property, only management activities such as removing dead or fallen trees for safety reasons. Any major tree-felling would need to be authorised by the Agency for Cultural Affairs Commissioner, which the State Party excludes. The wider setting is protected through the Landscape Plan that covers the entirety of Sado Island and notification and permission-release mechanisms exist based on the size of the proposed projects. Sado City has a Landscape Council which advises on whether certain developments are in line with existing codes; if projects do not comply with legislation and policies, the Mayor advises or orders how the project could meet legislation. The State Party states that building offshore wind turbines requires positive decisions from both the Governor of Niigata Prefecture and the Mayor of Sado City. No such decision would be issued if a project negatively impacted the nominated property. Finally, concerning whether Golden Sado has expressed a formal commitment not to use mining licencing and leave mines non-operational, the State Party replied that the owner accepted the designation of the land as national cultural property and of Sado City as the custodial body, but this acceptance is not mentioned explicitly.

### **Management system**

The heritage management system has established processes and protocols for ensuring connection at the national, prefectural and local government levels. The legislative and institutional frameworks ensure the protection of all three areas with a transparent hierarchy and referral of controls and decisions. Community engagement is enshrined in social processes and approaches from the national level down. Under the Law for the Protection of Cultural Properties, Sado City has been appointed as the Custodial Body for the management of the nominated property. The Sado City government structure allows for conservation activities to be complemented with programmes across other divisional areas, such as museums and tourism. It also allows for engagement with stakeholder entities, including the commercial and private sectors. In case of inscription, a World Heritage Council will be established as a decision-

making collegial body regarding World Heritage matters. The Council will be administered by Niigata Prefecture. Putting into operation decisions taken by the Council will be the responsibility of the World Heritage departments of the Niigata Prefecture and Sado City.

The Comprehensive Management Plan (CMP, January 2023) has been prepared as an umbrella document to clarify policies, procedures, concrete measures and the administrative management system. This plan is supported by existing preservation and management plans for the component parts (i.e. Nishimikawa, Tsurushi and Aikawa).

In the context of multiple land ownerships, both government and private, and local residents across the nominated property, the CMP provides guidance through flowcharts on decision-making processes and the operation of activities such as heritage impact assessments. It includes a section that provides for the roles of various stakeholders, including each level of government responsibility. Regarding some key stakeholders, such as Golden Sado, it is indicated that appropriate agreements will be made, including aspects such as management, public access and use.

ICOMOS requested additional information on such agreements, and the State Party has replied that the agreement in the context did not mean a formal contract, but that consent by the parties would be obtained based on the Japanese legal framework. For instance, consent was obtained for the protection designation of privately-owned land. The management system is based on such agreements and will enter into force once the property is inscribed on the World Heritage List. Further clarification on the matter was provided in February 2024.

#### **Visitor management**

A visitor centre was opened in 2019 in the Aikawa Area – Kirarium Sado – to provide information on mining technology and to prepare visitors to the mining sites. In addition, museums already existing in the Nishimikawa Area and Aikawa Area act as satellite facilities for presentation and interpretation. Visitor and parking facilities are distributed within the nominated property to facilitate access; signboards have been installed, but further interpretive signage is expected.

In a letter requesting additional information, ICOMOS asked for clarification concerning interpretation programmes and whether these cover the entire history of mining exploitation of the nominated property, including through the late 19<sup>th</sup> and the 20<sup>th</sup> centuries. The State Party replied providing information on the changes in technology, the provenance of the labour force in the 20<sup>th</sup> century, which included workers from Korea, through a variety of recruitment methods, as well as on working conditions as ascertained from official archival documents.

Concerning interpretation programmes, the State Party considers that the focus of the interpretation should be on understanding the proposed Outstanding Universal Value of the nominated property and the related period of significance. The later stages, from the 19<sup>th</sup> century

onwards, do not contribute to the proposed Outstanding Universal Value and, therefore, are not intended to be the focus of the interpretation efforts at the nominated property, even though information on later stages on various aspects will be provided. Finally, the State Party reports that there is a facility that exhibits the history of the diffusion of mechanisation in Japan, including the role played by civilian workers who were moved from the Korean Peninsula to Japan during wartime.

#### **Community involvement**

The nomination dossier reports that local communities have a long-standing participation in the preservation of the nominated property, in its classification as protected heritage as well as in surveys and research. Community organisations and groups of volunteers co-operate with Niigata Prefecture and Sado City, are active in all main mining areas, and carry out maintenance activities, communication activities, visits, and revitalisation initiatives.

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#### **Effectiveness of the protection and management of the nominated property**

In conclusion, ICOMOS considers that the tiered articulation of legislative protection at the national, prefectural and Sado City levels seems to afford sufficient protection of the cultural heritage significance and the proposed Outstanding Universal Value of the nominated property. However, to further strengthen protection, ICOMOS considers that the designation of clearly identified former mining areas as nationally designated historic sites should be considered in the future. ICOMOS further considers it advisable that the entirety of the buffer zone of the Aikawa-Tsurushi Area be protected as an Important Cultural Landscape, as is the case for the buffer zone of the Nishimikawa component part. A heritage impact assessment approach and processes should be integrated into the Landscape Plan mechanisms based on the potential impact on the attributes of the proposed Outstanding Universal Value and not only on the size of the projects.

Whilst the management system, responsibilities and processes are clearly set out and appear fit for purpose, ICOMOS considers that it would be desirable for a revision of the plans to be adopted before the Comprehensive Management Plan is implemented, to ensure that the provisions are consistent with the aim of sustaining the proposed Outstanding Universal Value. Vigilance through governance mechanisms is needed to avoid the possibility, remote but not definitively ruled out, of potential reactivation of mining exploitation that may negatively impact the attributes of the nominated property, its integrity and authenticity. Potential proposals for tree felling, even for small forest plots, will need to be carefully monitored, given the high archaeological potential of the landscape. In this regard, ICOMOS considers that guidelines for forestry management would need to be developed to ensure that disturbance to sub-surface archaeological remains will be minimised.

In relation to the interpretation and presentation of the nominated property, ICOMOS considers that, even though the nomination only focuses on the Edo period of mining activity, mining operations continued until the late 20<sup>th</sup> century and have left visible and substantial built tangible evidence of post-Edo mining exploitation in the form of mining or processing facilities, installations, and equipment within the nominated property, some of which are used for presentation and display. On the other hand, the remains of the Edo period are less visible and less understandable without accessible explanations and presentation based on expert knowledge. Therefore, it is essential to develop an interpretation and presentation programme of the Edo period archaeological remains and how they convey the proposed Outstanding Universal Value.

However, given the above-ground spatial overlapping of the Edo and post-Edo periods of mining exploitation, the presentation and interpretation of mining exploitation cannot be limited only to the Edo phase, but need to include the post-Edo period to ensure the full understanding of the various phases of mining and their historic contexts. As the *Joint ICOMOS-TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas, and Landscapes* recommends, interpretation strategies and facilities should be located at the nominated property so that presentation and interpretation can be best communicated. They will need to comprehensively address the full history of the nominated property throughout the period of mining exploitation. Such an interpretation strategy and narrative will need to address international, national and local audiences.

A carrying-capacity study and visitor management are necessary and should be promptly prepared to ensure that a potential increase in tourism does not negatively affect the nominated property.

Finally, ICOMOS considers that the involvement of local communities in further researching the nominated property and presenting its proposed Outstanding Universal Value and its history comprehensively is essential and should be sustained in the long term.

## 6 Conclusion

The Sado Island Gold Mines are nominated as a serial property that bears witness to the most important gold mining operations that contributed to the stability of the rule of the Tokugawa Shogunate (Edo Period), based on the large-scale application of unmechanised mining methods. Its success is rooted in a management system that governed mining operations from a technical and social perspective, and has been maintained for over 250 years. A significant body of archival material and iconography has survived, providing a basis for understanding the nominated property and its significance, as well as for archaeological field research. Tangible evidence of the mining operations that occurred during the Edo Period are essentially archaeological remains (mostly preserved underground), landscape

features, testimonies of human-made land arrangements, and settlement layouts.

ICOMOS considers that the nominated property deserves consideration for the World Heritage List as an exceptional mining ensemble and landscape that testifies to the continuation and perfection of unmechanised mining and processing technology in a period when, elsewhere, mechanisation was spreading in the industry. Of the two proposed criteria – (iii) and (iv) – ICOMOS considers that only criterion (iv) is demonstrated and supported by surviving attributes. Initial issues of fragmentation of the component part at Nishimikawa Area have been resolved through the evaluation procedure. Mining operations continued in the post-Edo period until the late 20<sup>th</sup> century using mechanisation, and the area and some sections of the nominated property also include mining-related standing structures dating from later stages. Whilst these are confined to some delimited areas in the Aikawa Area and have mostly not encroached upon the Edo Period mining remains, a substantial cluster of standing post-Edo mining-related facilities in Aikawa-Kamimachi Town undermines the conditions of integrity and authenticity of the nominated property, as it does not reflect in any discernible way the mining technology and socio-cultural system of the Tokugawa Shogunate (or Edo) period. Therefore, ICOMOS considers that the conditions of integrity and authenticity could be met only if this delimited area is excluded from the nominated property and put in the buffer zone.

The articulation of legislative protection at the national, prefectural and Sado City levels seems to provide sufficient integrated protection to the cultural heritage significance and the proposed Outstanding Universal Value of the nominated property. However, in view of the possible development of offshore wind farms, it is recommended that the buffer zone of the Aikawa-Tsurushi gold and silver mine be extended offshore. As mining rights are still in force, ICOMOS considers that an explicit commitment from the mining rights holders not to reactivate commercial mining operations on the land included in the nominated property and its buffer zones is necessary to ensure that the attributes of the proposed Outstanding Universal Value will remain protected.

ICOMOS also considers that the protection system could be strengthened by developing a combination of measures detailed in the draft recommendations.

Even though the nomination only focuses on mining during the Edo period, mining operations continued until the late 20<sup>th</sup> century and have left visible and substantial tangible evidence of post-Edo mining exploitation in the form of mining or processing facilities, installations, and equipment within the nominated property. In addition, the remains of the Edo period are less visible and less understandable without accessible explanations and presentation based on expert knowledge. Therefore, ICOMOS considers that it is essential to develop a careful interpretation and presentation programme of the Edo period archaeological

remains and of the way they convey the proposed Outstanding Universal Value.

Given the above-ground spatial overlapping of the Edo and post-Edo periods of mining exploitation, the presentation and interpretation of mining exploitation need to offer clarity and a good understanding of Edo and Post-Edo mining activities and structures. As the *Joint ICOMOS-TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas, and Landscapes* recommends, interpretation strategies and facilities should be located at the nominated property to ensure that presentation and interpretation are communicated in the most effective way. They will need to comprehensively reflect the full history of the nominated property throughout the period of mining exploitation and address international, national and local audiences.

## 7 Recommendations

### Recommendations with respect to inscription

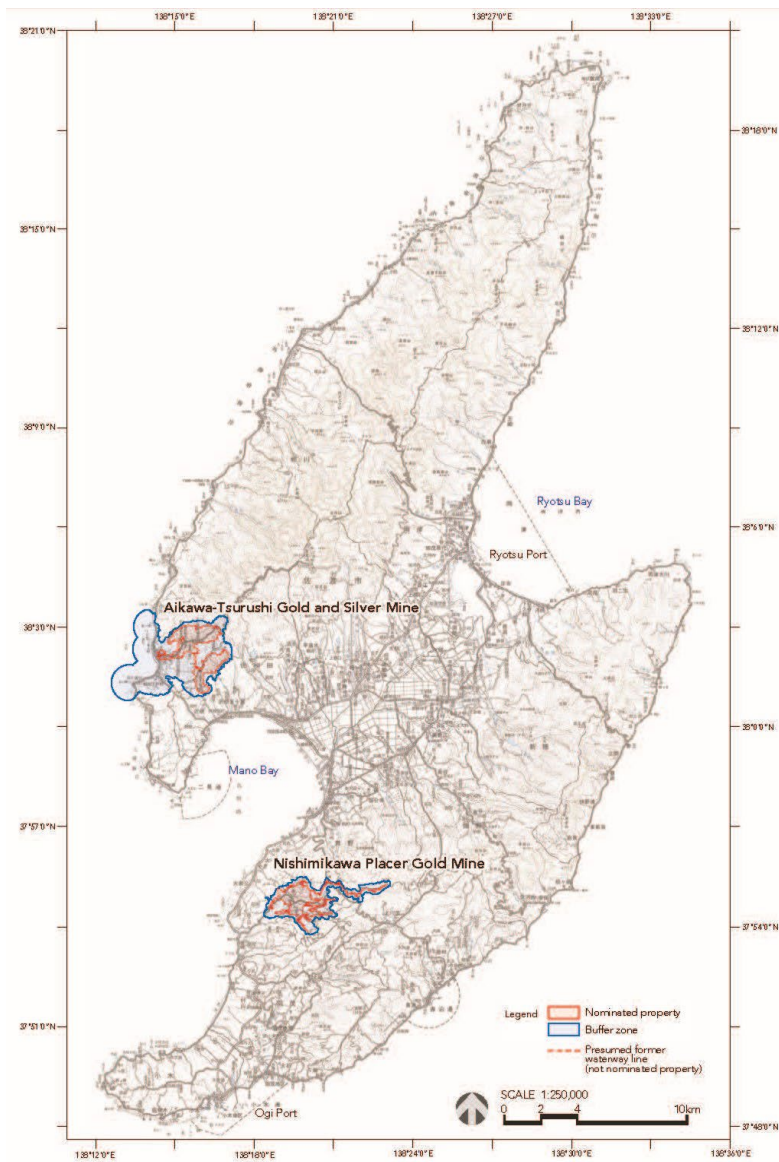
ICOMOS recommends that the nomination of the Sado Island Gold Mines, Japan, be **referred back** to the State Party to allow it to:

- Modify the boundaries of the nominated property to exclude the area in Aikawa-Kamimachi Town corresponding to the zones identified as Shimo-Yamanokami, Sakashita, Kitazawa and Yajuro which contains many evidence of post-Edo period mining, which is not the focus of the nomination, to meet the conditions of integrity and authenticity,
- Expand the buffer zone of the Aikawa-Tsurushi Gold and Silver Mine component part offshore,
- Provide an explicit commitment from the holders of the mining rights not to reactivate commercial mining on the land of the nominated property and the buffer zones;

### Additional recommendations

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

- a) Strengthening the protection of the entirety of the buffer zone of the Aikawa-Tsurushi Gold and Silver Mine component part by designating it as Important Cultural Landscape,
- b) Embedding Heritage Impact Assessment mechanisms into the Landscape Plan that are based on the potential impacts on the attributes of the proposed Outstanding Universal Value and not on the size of the projects,
- c) Developing a long-term archaeology strategy to ensure that future archaeological research is undertaken in a consistent and informed manner,
- d) Developing guidelines for forestry management to ensure that disturbance of sub-surface archaeology is minimal,
- e) Developing an interpretation and presentation strategy and facilities that comprehensively address, at the site level, the whole history of the nominated property throughout all periods of mining exploitation,
- f) Developing a carrying-capacity study and visitor management to ensure that a potential increase in tourism does not negatively affect the nominated property,
- g) Reviewing the plans adopted before the Comprehensive Management Plan to verify that their provisions are coherent with the aim of protecting the proposed Outstanding Universal Value in the long term,
- h) Considering, in the future, the designation of clearly identified former mining areas as nationally designated historic sites.



Map showing the location of the nominated component parts