

Aiming to Inscribe Sado Island Gold Mines

Areas of Sado Island Gold Mines"



Gold Ore

Aikawa-Tsurushi Gold and Silver Mine

In Aikawa-Tsurushi Gold and Silver Mine, various technical and social systems were established to obtain "invisible" gold in the hard gold ore.



Placer Gold

Nishimikawa Placer Gold Mine

This mine has been known as the oldest mine in Sado. The unique mining method "Onagashi (great flow)" was carried out to obtain "visible" placer gold effectively.

Characteristics of "Sado Island Gold Mines"

The "Sado Island Gold Mines" has four characteristics: characteristics 1 & 2 on the technical system of gold production and characteristics 3 & 4 on the social system of gold production. In the nomination document submitted to UNESCO in January, 2023, each characteristic is described as equivalent to criteria (iii) and (iv) for world cultural heritage inscription.

Traditional unmechanized mining technologies improved adapting to the characteristics of deposits

[Criterion(iv)]

Sado Island

Niigata

Prefecture

Introduction and development of technologies suited to the characterics of the mines in the two areas can be seen.

Nishimikawa Placer Gold Mine (Sediment placer gold deposit: placer gold mining method "Onagashi" [great flow]] Headrace Reservoir Mining site Tail race

Aikawa-Tsurushi Gold and Silver Mine

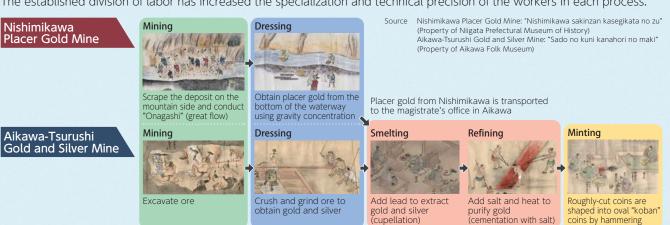
[Hard-rock lode deposits [ore]: from Tsurushi to Aikawa, large-scale mining and technical improvement) Aikawa area arge-scale surface mining Long deep tunnel mining (mabu) Surface mining Tsurushi area Chase mining Drainage tunnel

*See pages 3-4 for detailed information on mining technology

A series of production processes that enabled high-purity gold production

[Criterion(iv)]

The established division of labor has increased the specialization and technical precision of the workers in each process.



[Physical evidence illustrating significant stages in gold production technologies] *Criterion (iv) for world cultural heritage

The "Sado Island Gold Mines" is a physical evidence of the technological peak period that produced high-quality gold by improving traditional unmechanized mining, while technology and knowledge from abroad were limited.

as a UNESCO World Cultural Heritage Site

In the "Sado Island Gold Mines", a production organization suited to the characteristics of the mines in the two areas was established and was developed into a large-scale social system of traditional unmechanized technology under the management of the Tokugawa Shogunate*. Furthermore, a unique mining culture was nurtured by the people who gathered to the mine from all over Japan under the Shogunate's policy.

*The Tokugawa Shogunate was the final feudal government of Japan during the Edo period from 1603 to 1868. The reign of the Tokugawa Shogunate brought 250 years of peace and prosperity.

A testimony to the strategic management by the Tokugawa Shogunate and to the social system integrated on a large scale [Criterion (iii)]

Remains related to management of the mines and remains of settlements show the situation at the time.



 $\ensuremath{\mathbb{O}}$ It is clear that under the management of local magistrates, systematic production was commenced and a division of labor was established.

In the early 17th century, when the town was established, the living places were distributed by the occupation and people worked and lived in the same location, dotted with production facilities such as ore dressing and smelting. However, after the middle of the 18th century, ore dressing and smelting plants were concentrated in a production facility within the magistrate's office for efficiency and was shifted into the town where the people with various occupation lived next door each other.

4

Mining culture nurtured in the mining community

[Criterion(iii)]

The cultures and traditions brought in by the people gathered from across Japan were developed into a unique mining culture.



A shrine which enshrines a deity of mines and a rich culture based on the prosperity of the placer gold mine

(Nishimikawa Oyamazumi-jinja Shrine and Noh play stage, Nishimikawa Placer Gold Mine)



Various faiths of the people who gathered from across Japan (Variety of denominations gathered)

(Temple remains, Kami-Teramachi District, Aikawa Gold and Silver Mine)



The Shinto ritual performing art ("Yawaragi") related to mining

(Aikawa Gold and Silver Mine)



A festival held in a mining town

(Aikawa Gold and Silver Mine)

[A testimony to the prominence of social system]

*Criterion (iii) for world cultural heritage

The "Sado Island Gold Mines" bears exceptional testimony to the mining operation system which accomplished remarkable development based on traditional unmechanized mining technology and which was sustained for 250 years. This ensured the emergence and development of its own exceptional mining culture.

The value of "Sado Island Gold Mines" as World Heritage site

From the late 16th to the mid-19th century, a socio-technical system of gold production was developed on Sado Island, which is rich in gold mines. This system was a different type of system from Europe and the areas that are influenced by Europe, as technological exchange with other countries was limited due to the Tokugawa Shogunate's national seclusion policy. The "Sado Island Gold Mines" is an exceptional industrial heritage showing gold production system developed to achieve its world class quality and quantity (10% of world production, as pure as up to 99.54%) of gold production based on the traditional unmechanized mining, and it was sustained on a large scale over 250 years.

Gold from Sado supported the finance of the Tokugawa Shogunate

~Mining town of unprecedented development~

Koban coin minting was carried out using the gold produced in Sado. This is the only case in the mines in Japan. Koban coins were carried to Edo, current Tokyo, and supported the finance of the Tokugawa Shogunate.

The Shogunate put a great importance on the "Sado Island Gold Mines". Therefore, the Shogunate invested and developed the working environment in order to continue the gold production efficiently for a long time.

Particularly, the town of Aikawa, a small fishing village before the discovery of gold, became the center of the mine management and was developed into a large-scale town with systematic land plots and streets, growing into one of the major towns in the nation at the time with a population of up to 50,000 people.



"Sado koban coin" extant in the Netherlands
Property of Dutch National Numismatic Collection,
Amsterdam

The koban coins minted in Sado were carried to Edo. In the 17th century, a large amount of koban coins had been brought out, and some were even transported as far as Europe.

Overview of Nishimikawa Placer Gold Mine and Aikawa-Tsurushi Gold and Silver Mine

《Nishimikawa Placer Gold Mine; Placer Gold Deposit, "Onagashi" (great flow)》

- ©Nishimikawa Placer Gold Mine is a mine described on a record "Tales of Times Now Past" compiled in the 12th century as the oldest gold mine on Sado. Large-scale mining began at the end of the 16th century. In the early 17th century, when the mine came under the direct control of the Tokugawa Shogunate, villagers mined placer gold as a joint work under the control of the Sado Magistrate's Office.
- ©A distinctive mining technology called the "Onagashi" (great flow) method, in which the mountain stratum containing placer gold was scraped to have the placer gold collected by hydraulic power, was carried out. The remains demonstrating the whole image of the "Onagashi" operation such as headraces, reservoirs, races, mining sites and tail races still remain in good condition.
- ©Two residential districts were established on the flat lands of mining sites formed after the "Onagashi" operation. The features of the settlements are the layout and the forms of the houses and lands were irregular and didn't change significantly throughout the Edo period.
- ◎In the settlement, there remain the Mine Official's Residence Site related to management and the residence of Kaneko Kanzaburo Family who managed the mining operation as the village head, as well as the Nishimikawa Oyamazui-jinja Shrine which enshrined the deity of mining and Noh play theater. You can feel the atmosphere of a mining village in the period of mining operation.
- ©The placer gold mine was closed in 1872. However, the people stayed here without being discrete and shifted their occupation from mining to agriculture and forestry. The descendants are still residing here.



Distant view of Nishimikawa Placer Gold Mine



Placer gold mining sites and mining settlement

《Aikawa-Tsurushi Gold and Silver Mine; Lode Deposit, Mining Hard Rock》

- ©The Aikawa-Tsurushi Gold and Silver Mine is the mine in which the gold and silver in the hard rocks (ore) called lode deposits were extracted. In the Tsurushi area, mining commenced in the mid-16th century, and the full-scale mining began in the latter half of the 16th century like the Nishimikawa Placer Gold Mine.
- OIn the Tsurushi area, we can see the transition of mining methods: from "surface mining", mining an outcropping of veins on the surface, and "chase mining", digging for narrow veins on the ground surface; to "tunnel mining", digging for multiple veins. The remains of "ore-dressing", crushing and sorting the excavated ore; and "smelting", extracting metals with chemical treatment ("cupellation", using lead) are left, showing the introduction of the mining technology and the period of establishment of the processes of gold production. We can see the situation in the early mining settlements, when production began with an organized division of labor.
- On the Aikawa area, which was discovered by some miners from the Tsurushi area, the full-scale mining began at the beginning of the 17th century. The mine had one of the largest and deepest concentrations of deep underground veins in the country. Therefore, it soon became the center of the development and mining operations covered an extensive area.
- ©The veins in the Aikawa area were electrum, which contain much silver in gold. Therefore, complex processes to separate silver from gold in the ore-dressing, smelting and refining were developed. In order to produce high quality gold (as pure as up to 99.54%) in the only mine in Japan where koban coin minting was permitted, the Shogunate continued the investment to improve the technology and working environment.
- ©The Sado Magistrate's Office was established in the Aikawa area, which was the center of the management of Sado Island Gold Mines by the Tokugawa Shogunate. A large-scale mining town was also established along the main street connecting the mine and the magistrate's office.
- ©Sado Island is rich in its unique mining cultures, such as Oyamazumi-jinjya Shrine Site, which enshrined the mining deity, temple sites of various denominations, rituals in the mine and festivals held in the mining town. These revitalized the local people and strengthened the human bond in the organization as the place of emotional support, playing an important role to support for continuing the production organizations for a long period.



Distant view of Aikawa-Tsurushi Gold and Silver Mine (From the southwest)



Tunnel mining site (Ogiriyama-mabu Tunnel Site, Aikawa area)

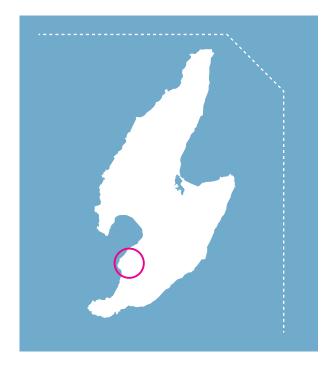


Townscape of Aikawa-Kamimachi Town (foreground) and mountains where mines are located (background)



Sado Magistrate's Office Site (The base for management of the Tokugawa Shogunate)

Map of Nishimikawa Placer Gold Mine Leading to Mano/Sawata Enlarged Map⇒p6 Toki no sato Golf Club Sasagawa River Nishimikawa-gawa River Nishimikawa Gold Park 500m 1km Leading to Ogi



- Nishimikawa Area (Sasagawa Settlement) is the place where the local residents still live and work mainly for agriculture. Unlike the general sightseeing spots, facility for tourists are not installed except for the signs and interpretive signboards.
- Since it is difficult to secure a safe route to the mining sites in the mountains, please refrain from entering the sites for the time being.





"Sado Island Gold Mines" Introduction of main spots in the Nishimikawa Placer Gold Mine

1. Toramaru-yama Site

Open to the public
*Due to the risk of rockfall and other hazards at the base of the mountain, please have a look from the viewpoint.



This is the largest mining site in the Nishimikawa Placer Gold Mine. This is also a symbolic site at which the reddish mined outcrop can still be seen formed by scraping the mountainside from the "Onagashi" operation. A picture map shows that mining was carried out up and down the

2. Tatenokoshi-yama Site «open to the public»



This is one of the placer gold mining sites. On the steep slopes and at the foot of the mountain you can see the remains of large waterways that were formed by scraping the mountainsides from both sides of the

You can also see the remains of piled-up stone waterways and reservoirs that supplied water to the mining sites.

《limited public access》 *Open for guided-tours only. Goshaya-yama Site



The Goshaya-yama Site is a place where placer gold mining was carried out throughout the Edo period. Remains showing a series of the entire processes of placer gold mining by the "Onagashi" method, such as the sites of headraces, reservoir, race, mining sites, and piled-up stone structures, are concentrated in a small area.

Kaneko Kanzaburo House (open to the public*) **Currently conservation and repair work is being carried out



This is the residence of the Kaneko family who acted as the village head of the gold mine from the late Edo period until 1872. They served as intermediaries between the officials from the magistrate's office and the settlements with responsibility for assembling the mine workers and managing the work of the "Onagashi" method. It is comprised of the wooden main building, storehouse, shed and cow barn, all of which were constructed around the 19th century. You can understand how they managed the operation of the "Onagashi" as well as the process of occupational change from mining to agriculture and forestry after the closure of the placer gold mine.

Mine Official's Residence Site (open to the public)



The Mine Administration Office was established at the Nishimikawa Placer Gold Mine and two officials were dispatched for management of the mine from the Sado Magistrate's Office. The Mine Official's Residence Site is a residence site for the officials dispatched to the Mine Administration Office. A terrace surrounded by the stone walls remains in the exact place depicted in the picture maps of the Edo period, and the field across from the Residence Site is presumed to have been the Mine Administration Office Site.

6. Oyamazumi-jinja Shrine and Noh play stage (open to the public)



This shrine was enshrined in 1593, wishing for the prosperity of the placer gold mine and for the safety of the mining operations. The main building of the shrine and its related facilities have been rebuilt over time. The present shrine building was reconstructed in 1928. It is said that the precinct of the shrine was dug down and lowered by placer gold mining. In the precinct, located is Noh play stage that was constructed in the late

7. Sasagawa Settlement (Kinzan and Sasagawa) (open to the public*)



This is the settlement run by the people involved in placer gold mining and it is still the living and working area for their descendants. It was originally two residential districts called Sasagawa and Kinzan, and started to be called the "Sasagawa-juhachimai-mura Village" around the end of 16th century and came to function as one settlement. It is located in the mountains surrounded by placer gold mining sites. The residents changed their occupation to agriculture after the closure of the mine, but it still retains traces of the mining settlement of those days without alteration to the land plotting and form of life from the Edo period.

"Onagashi" Placer Gold Mining Method in the Nishimikawa Placer Gold Mine (Property of Niigata Prefectural Museum of History)

"Pictures of Gold and Silver Mines in Sado"

The Nishimikawa Placer Gold Mine had a sedimentary placer gold deposit containing placer gold in the sediment layer of the mountain, so it was essential to scrape the sediment layer and get rid of unwanted gravels to obtain gold. Therefore, the "Onagashi" mining method was carried out in this area by scraping the layers of the mountainsides by hand and washing away the gravels with gravity concentration using the force of accumulated water from a distant water source. "Onagashi" was conducted every month, and all the gold collected there was taken to Aikawa for refining.



Scrape off the gravels containing placer gold toward the race built at the foot of the mountain.



and release the water from the reservoir to flush out the unwanted dirt. Heavy placer gold remains at the bottom of the race



3) Remove the stones which the water cannot wash away.



4) Gather the sand collected at the bottom of the race on Nekoda mat, a woven straw mat, and collect the minute sand by sifting through the mesh of the Nekodá mat.

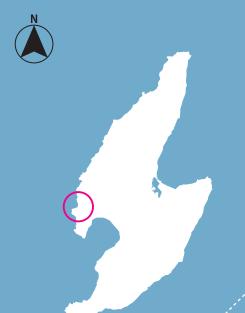


5) Put the collected sand on the Yuriita panning board and catch placer gold in the water with gravity concentration. It is tallied and sealed.



On the last day of each month, the sealed of of the data day of each month, the seated placer gold is opened at the Mine Official's Office, and the share for the magistrate's office and the mine workers is determined. (Payment to the workers is made in silver and all the gold is carried to the magistrate's office).

Map of Aikawa-Tsurushi Gold and Silver Mine



Enlarged Map②⇒p11

Aikawa area

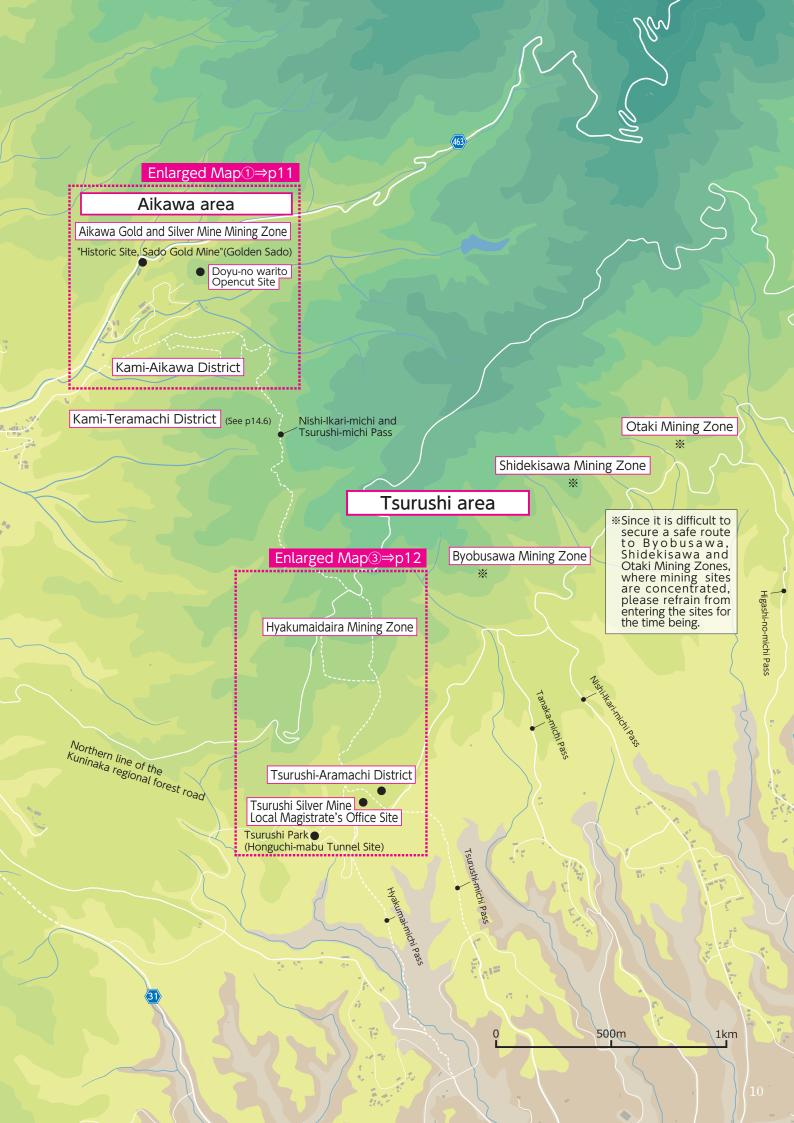
Sado Magistrate's Office Site

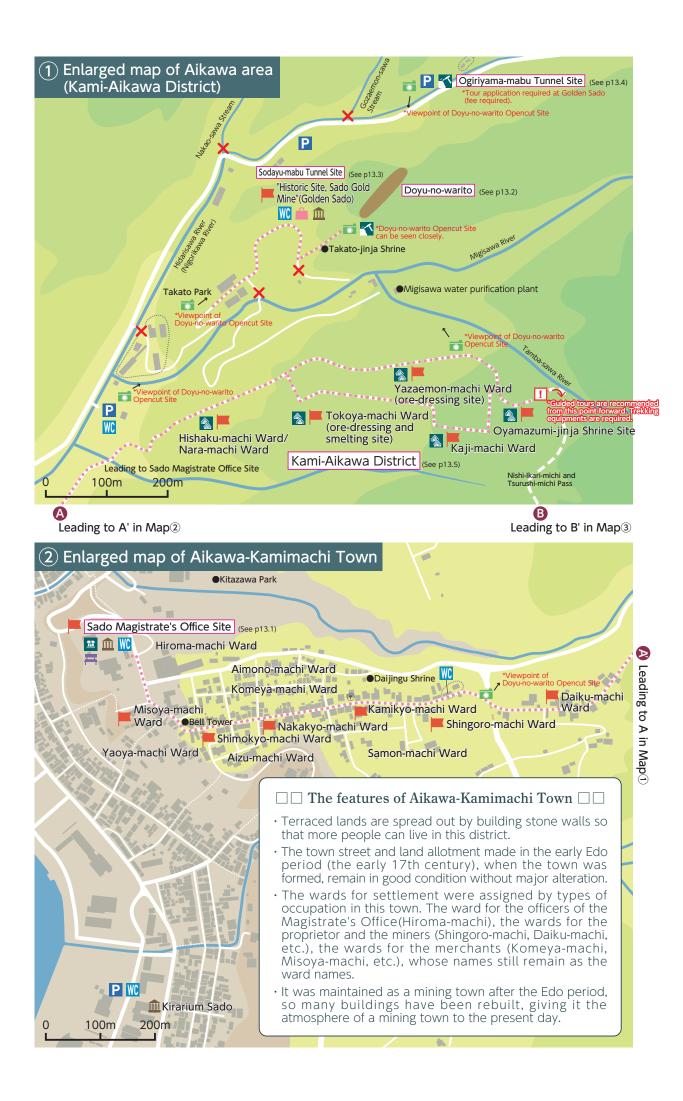
Aikawa-Kamimachi Town

Kirarium Sado

Kasuga-zaki (Viewpoint of Aikawa area and townscape)

Aikawa area seen from Kasuga-zaki









"Sado Island Gold Mines" Introduction of main spots in the Aikawa-Tsurushi Gold and Silver Mine

1. Sado Magistrate's Office Site open to the public/fee required



The Tokugawa Shogunate dispatched their officials as magistrates to Sado Island to manage the mines, as well as to manage the entire island under its direct control. The office was established in 1603 for the base of the management. In addition to facilities related to administration, the site also housed a plant to produce gold and silver, including ore-dressing, smelting and refining. Five fires destroyed the building, and it was reconstructed each time. The present building is a reconstruction of the magistrate's office at the end of the Edo period.

2. Doyu-no-warito Opencut Site



This is the largest surface mining site in Japan (120 meters long, 10-30 meters wide, and 74 meters deep). The central part of the mountain is cut into a V-shape because only the part of veins was dug out by hand. The chasm appears to literally slice the mountain in two also in 18th-century picture scrolls. The peculiar landscape of the Doyu-no-warito Opencut Site is a symbol of the Aikawa Gold and Silver Mine that can be seen from various places in Aikawa.

3. Sodayu-mabu Tunnel Site open to the public/fee required



This is a representative example of the large, inclined mining tunnels of the early Edo period. The tunnel was excavated with a gentle inclination at the shortest distance and at the most efficient slope for ore transport and drainage operations. You can see traces of excavation by hand with chisels left within the tunnel. Tanuki-bori (small tunnels to explore veins) and mining tunnels branching out at many points and so on help understand the procedures of exploitation in those days.

"Historic Site, Sado Gold Mine" (Golden Sado Inc.) makes use of the tunnels from those days to faithfully recreate the workings with moving robots and open them to the public today.

4. Ogiriyama-mabu Tunnel Site (limited public access/fee required)



It is said that work on the tunnel began in 1634, finally reaching a vein 14 years later. The main feature of this tunnel is that another ventilation tunnel was excavated in parallel with the main tunnel where people work and pass through. The two were connected by connection vents to improve air circulation within the tunnel.

"Historic Site, Sado Gold Mine" provides limited public access to the tunnel through a guided tour course.

5. Kami-Aikawa District open to the public* ** ** ** ** ** ** ** ** ** ** ** Guided tours and other activities are available.



The district was a mining settlement developed on a slope of 800 meters from east to west, 300 meters from north to south, and with a height difference of approximately 100 meters between east and west, with streets and terraces systematically laid out. The district was at its peak from the end of the 16th century to the 17th century, when the Aikawa Gold and Silver Mine was in the early stages of development. Afterwards, it declined until it was abandoned after the Edo period.

Remains and artifacts related to ore-dressing and smelting can be found throughout the district. They indicate that it was a mining town where engineers and workers led by mine proprietors (mining engineers and managers) worked and lived together.

Kami-Teramachi District

《partially open to the public[∗]**》** **Please check public information at Kirarium Sado.



This is a district where temples were built side by side along the steeply graded land of a mountain. The temples are said to have been built by priests and people who migrated to Sado Island from all over Japan. In addition to being religious facilities, they are said to have functioned as community shared places for people to gather. By comparing the site with drawings and records, we have identified the location and ruins of six temples in addition to the existing Mansho-ji Temple, including the foundations of the temple buildings, stone walls, and stone steps, as well as numerous gravestones.

Aikawa-Kamimachi Town (open to the public*) *This is the living area for residents



This is a mining town established on a ridge to the south of the Aikawa Gold and Silver Mine. In the early 17th century, Okubo Nagayasu, a Sado magistrate, established a magistrate's office in Aikawa. Also, he promoted the development of a town with a highly standardized and planned land allotment along a main road connecting the magistrate's office and mining sites. Then, the town was divided into wards for different occupations, such as management, production, and commerce, and people were arranged to live in these wards. There still remain the streets and land allotment that show the vestiges of these establishment days, and ward names that indicate occupations and people related to the mines. They convey the atmosphere of the mining town.

Tsurushi Silver Mine Local Magistrate's Office Site (open to the public)



The office was established at the end of the 16th century for the management of the silver mine by the local magistrate in accordance with the rule of the daimyo warlord Üesugi clan over Sado Island. When the Tokugawa Shogunate took over in 1603, the management functions were transferred to Aikawa. However, it is believed that the office continued to serve as a local agency of the magistrate's office in Aikawa until the mid-17th century. An excavation survey has revealed that the office site consists of three areas with different functions (upper: ore-dressing workshop, middle: smelting workshop, and lower: management facility).

Tsurushi-Aramachi District (open to the public)



The district is the site of a mining settlement adjacent to the east side of the Tsurushi Silver Mine Local Magistrate's Office Site. Irregularly shaped terraces in various sizes were created on gentle slopes along the mountain ridge without significant change to the slopes. This shows the rapid establishment and expansion of the settlement as the number of mine workers increased in the late 16th century, when operations expanded. It is thought that the district has been abandoned in the mid-17th century with the decline of the silver mine, and many people have moved to the Aikawa Gold and Silver Mine.

Hyakumaidaira Mining Zone (open to the public*) *A guided tour is recommended. Equipment for trekking is required.



In the Tsurushi Silver Mine, the distribution survey revealed 556 surface mining sites, four chase mining sites, and 108 tunnel mining sites (mabu tunnel sites). Among them, the Hyakumaidaira Mining Zone is a representative mining site that is thought to be the earliest to be developed in the Tsurushi Silver Mine. Large surface mining sites in the early stages of mining are concentrated around the ridge called Hyakumaidaira.

Let's start from "Kirarium Sado" (Sado Gold and Silver Mines Information Facility) for a tour of "Sado Island Gold Mines"!

As the gateway to the Sado Island Gold Mines, the facility introduces the property and provides information about visiting the sites.

The facility's exhibition rooms provide easy-to-understand explanations of the value and appeal of the property through large videos, models, and graphics. There is also a tourist information center in the facility to provide bicycle rental services, information for guided tours and apps for site visits.

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Opening Hours: 8:30 a.m.-5:00 p.m. (Last entry at 4:30 p.m.)

Holidays: Dec. 29-Jan. 3

Admission Fee: Free (Paid entry only for viewing the exhibition room) Individual Entry: Adults ¥300, Elementary/Junior high school students ¥150 Group Entry (Groups of 15 or more people): Adults ¥250, Elementary/Junior high school students ¥100



Exterior of "Kirarium Sado"



Inside the exhibition room

(Transport Access)

■From Niigata Port to Ryotsu Port (Sado Steam Ship Co,. Ltd.)

2 hr. and 30 min. by car ferry 67 min. by jetfoil

■From Naoetsu Port to Ogi Port 2 hr. and 40 min. by car ferry

■When using a private car or rental car

About 50 min. from Ryotsu Port About 75 min. from Ogi Port

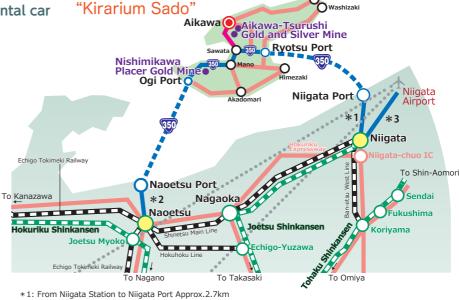
Please use the free parking lot of Kirarium Sado if you come by car.



■When using a route bus

About 55 min. ride on the "Hon-sen (main) Line" from Ryotsu Port About 80 min. ride on the "Ogi Line" from Ogi Port (Transfer at Sawada Bus Center)

Near to "Kirarium Sado" bus stop



- *2: From Nagetsu Station to Nagetsu Port Approx 1.8km
- *3: From Niigata Airport to Niigata Station (South Exit) Approx.9km (Airport Limousine Bus)

World Heritage Inscription Promotion Office, Culture Division, Department of Tourism, Culture and Sports, Niigata Prefecture

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"Sado Island Gold Mines" website (Culture Division, Department of Tourism, Culture and Sports, Niigata Prefecture) https://www.sado-goldmine.jp/en/



"Sado, for World Heritage" website (Sado City Office)

https://www.city.sado.niigata.jp/site/mine/



