Shirakami-Sanchi

2020 Conservation Outlook Assessment

SITE INFORMATION

Country: Japan
Inscribed in: 1993
Criteria: (ix)

Situated in the mountains of northern Honshu, this trackless site includes the last virgin remains of the cool-temperate forest of Siebold’s beech trees that once covered the hills and mountain slopes of northern Japan. The black bear, the serow and 87 species of birds can be found in this forest. © UNESCO

SUMMARY

GOOD 2020 Conservation Outlook

Finalised on 02 Dec 2020

Shirakami-Sanchi is a small but beautiful area of primeval forest with immense ecological importance. The Outstanding Universal Value of the World Heritage site is well protected through strong legislation, an effective management regime, and widespread reverence for the area's forests. Apart from the uncertain impacts posed by climate change, there are few significant threats evident and so the conservation outlook is good. Issues to address include providing more effective engagement with local communities, particularly the Matagi as traditional forest users, so as not to lose cultural links with the site. Other priorities include monitoring and acting upon the threats posed by climate change and the potential proliferation of sika deer on the site's ecosystem. Opportunities for enhancing the integrity of the site through judicious extension into neighbouring conservation lands could be explored.
FULL ASSESSMENT

Description of values

Values

World Heritage values

 ► Remnant old growth temperate forests in an undisturbed wild state

The World Heritage site comprises a trackless and undisturbed area of predominantly old-growth temperate forest, the largest remaining virgin beech forest in East Asia. Shirakami-Sanchi is dominated by beech accompanied by diverse vegetation that survived the last ice age by shifting its distribution towards the south, resulting in a virtually undisturbed, pristine climax forest. The undisturbed condition of the area is wild and rare in eastern Asia with few other protected areas in Japan containing a large unmodified beech forest like that found in the property. The extent of its pristine forest which has not suffered development impacts sets the site apart in densely populated, long-inhabited Japan and across Asia (World Heritage Committee, 2013).

 ► The last relic of cool-temperate beech forests of Northern Japan with associated species

The World Heritage site is the last and best remnant of the once more extensive cool-temperate beech forests that covered the hills and mountain slopes of northern Japan 8-10,000 years ago. Reflecting the distinct heavy-snow environment of the inland areas along the Sea of Japan, a rare climatic condition in the world, Shirakami-Sanchi has forests of monodominant Siebold’s Beech (Fagus crenata), a species endemic to Japan. The forest also sustains intact ecosystems for characteristic species such as black woodpecker (Dryocopus martius), Japanese serow (Capricornis crispus), Japanese black bear (Ursus thibetanus japonicas), Japanese macaque (Macaca fuscata) and dwarf bamboo (Sasa kurilensis) (World Heritage Committee, 2013).

Other important biodiversity values

 ► Scenic forested mountain landscape

Walking tracks provide opportunities for viewing extensive forested mountains in wilderness condition. The scenic attributes of dense intact forest are enhanced in winter with a usually very abundant snow cover on the main mountain range. Several impressive waterfalls add to the scenic beauty of the World Heritage site.

Assessment information

Threats

Current Threats

Very Low Threat

Concerns have been previously raised regarding logging in adjacent forests to the World Heritage site. Some impacts from tourism have been noted and are being monitored. That said, the site is in excellent condition and remains generally free of significant threats.
### Logging/ Wood Harvesting

*Forest logging operations in adjacent forests*

There are some reports of forestry operations in adjacent forests having a visual impact on the general Shirakami landscape (Law, 2011). Concerns about logging in adjunct forests in the mid-1990s were raised through state of conservation reporting; however, management responses appear to have addressed this threat (World Heritage Committee, 1997). The World Heritage site has been designated a Forest Ecosystem Reserve with logging restricted throughout the entire site (MoE, 2013).

### Tourism/ visitors/ recreation

*Tourism*

According to the Ministry of Environment's automatic counters on the number of visitors to the World Heritage site and its surrounding area, visitor numbers increased after the site's inscription on the World Heritage list. In 2004/2005 visitor numbers were at over 80,000 but numbers reportedly decreased gradually thereafter to 24,000 in 2018. The Ministry of the Environment began to monitor the effects of tourism on biodiversity in the property (Mason, 2015) but reports to the Scientific Committee does not express over-tourism as a threat at present (IUCN Consultation, 2020). The current management plan aims to promote ecotourism opportunities in the region (MoE, 2013).

### Potential Threats

#### Climate change

*Data Deficient*

Climate change is the most serious potential threat as it may impact on temperature and snow fall patterns resulting in ecological change; a thorough canvassing of potential impacts, necessary monitoring and potential mitigation measures are necessary. This should be described through reporting to formal World Heritage processes. There is also the threat of Japanese native sika deer proliferating within the World Heritage site and impacting on flora. The future ecological integrity of the site could also be threatened by changes in use of adjacent forest lands.

#### Problematic Native Species

*Hyper-Abundant Species, loss of vegetation, competition with other fauna*

Sika deer (Cervus nippon) is native to Japan but has become an overabundant species in many areas due to, among other factors, the disappearance of natural predators such as wolves. There has been an expansion of the distribution of sika deer in surrounding areas of the World Heritage site. To date there has been no viable deer population established within the property, but camera trap data only observed low occurrence of deer in recent years and therefore the Ministry of the Environment and the Forest Agency consider this threat to be low within the site and monitoring is ongoing (IUCN Consultation, 2020). However, there are concerns for possible colonization of deer in the coastal areas outside the site (IUCN Consultation, 2020) which would fit with media reports indicating that the Aomori and Akita prefectural governments are preparing to cull deer from the region in an effort to stop the population surging and impacting on the World Heritage site (News on Japan, 2017).

#### Earthquakes/ Tsunamis

*Mountainous landscape vulnerable to earthquakes damage, particularly landslides*

All of Japan is vulnerable to frequent earthquakes. Shirakami is in a region less prone to earthquakes but it remains vulnerable. In a steep mountain landscape with high rainfall, landslides are the most likely impact of any earthquake. (Google Earth records) Earthquakes are of course part of the natural processes operating in this landscape.
Habitat Shifting/ Alteration, Temperature extremes
(Climate change impacting on temperature and precipitation patterns (heavy snow falls) and thus ecosystems)

Data Deficient
Inside site, throughout (>50%)
Outside site

The very high rainfall and snowfall that dominate the climate of Shirakami Sanchi are driven by the warm current up the west coast of this section of Honshu. Any change in the temperature or behaviour of the current could have significant threats to the existing ecology of the World Heritage site. Some models forecast that beech distribution will shift to higher elevations (Yoshida quoted in Law, 2011). Concerns about climate change impact on beech forest dynamics have been expressed in the scientific literature (Matsui et al., 2018; Teramoto et al., 2018; Matsui et al., 2007). Climate change is noted in the updated management plan and a commitment is given to better monitor this (MoE, 2013). However, a more thorough canvassing of potential impacts and necessary monitoring is desirable. Climate change has also been put forward as a possible explanation for the recent decline in black woodpecker, not only within the World Heritage site (where black woodpecker has not been observed in recent years) but more widely on Honshu (IUCN Consultation, 2020). Further careful monitoring and analyses will be required.

Overall assessment of threats

Shirakami-Sanchi is free of major current threats. Potential threats from climate change and invasion of problematic species remain either low or there is insufficient data available to make a fully informed assessment. The topographic constraints of the site combined with effective management and community reverence for Shirakami-Sanchi augur well for the future. Potential threats from climate change and the potential proliferation of the hyper-abundant sika deer into the World Heritage site are of concern and require ongoing monitoring and agile management responses.

Protection and management

Assessing Protection and Management

Management system

Highly Effective

Like all protected areas in Japan a complex array of agencies is responsible for management of the World Heritage site (Ministry of the Environment, the Forestry Agency, the Agency for Cultural Affairs and several prefectural and municipal authorities). Despite this complexity the system works well with strong links, communication and cooperation. The entire site of Shirakami-Sanchi is part of the national forests owned and managed by the National Government (World Heritage Committee, 2013). The management plan was updated in 2013 (MAFF 2013). While the plan is simple and lacking operational detail, it is clearly focused on strict protection of the site’s Outstanding Universal Value (OUV) with a greater emphasis on adaptive management (MoE, 2013). However, details on how adaptive management has subsequently occurred are unavailable.

Effectiveness of management system

Highly Effective

Management appears to be highly effective in maintenance of ecological and wilderness conditions of core area (various references in Law, 2011; IUCN Consultation, 2017).

Boundaries

Mostly Effective

Boundaries are acceptable for the most part but there are definite opportunities for improvement and for extension of the World Heritage site (Law, 2011; IUCN Consultation, 2013). The boundaries of the site were clarified in 2012 (World Heritage Committee, 2012). There is a buffer zone (MoE, 2013) but this is unusually included inside the inscribed area. The relative small size of the property could in time be a threat to the ecological integrity of the site, especially for larger mammals such as bear, as well as
far-ranging birds such as golden eagle and black woodpecker, depending particularly upon the land use of surrounding forests (Law, 2011).

**Integration into regional and national planning systems**  
Highly Effective

The site’s management plan was updated in 2013 and emphasizes the appropriate and efficient management of the World Heritage site in cooperation with local municipalities (Ajigasawa-machi, Fukaura-machi and Nishimeya-mura in Aomori Prefecture, and Noshiro City, Fujisato-machi and Happo-cho in Akita Prefecture) (MoE, 2013; MAFF, 2013). A Shirakami-sanchi World Heritage Area Liaison Committee has been established as a forum for liaison and cooperation (MoE, 2013). The 2013 management plan notes a range of measures from the surrounding municipalities aimed at harmonized development and use, however, details are lacking (MoE, 2013).

**Relationships with local people**  
Some Concern

Reports suggested an effective relationship with local people existed at the time of nomination and inscription of the World Heritage site. However, local people are now reported to be dissatisfied with the benefits from the site (IUCN, 1993; Law, 2011; IUCN Consultation, 2013). The Matagi people traditionally used Shirakami-Sanchi to hunt Japanese black bear and cut timber supplementing other livelihood activities such as farming. Some of the uses remain (MoE, 2013), but the Matagi, as traditional forest users, have been marginalized with their practices fast becoming ‘museum-like’. The regional branches of the Forestry Agency and Ministry of the Environment no longer acknowledge the presence of the Matagi. The Matagi participated in developing the original management plan for the site and had significant input at that time but over the succeeding two decades they have been denied access to the area’s resources (Mason, 2015). Following inscription as a World Heritage site the Forestry Agency abruptly implemented and enforced a policy of no access to the core beech forest area which led to confusion among local people and caused serious arguments over the legitimacy of the decision (Hara and Iwamoto, 2014). 2015 research concluded that Shirakami-Sanchi was a successful case of ecological preservation and an expanded governmental commitment to citizen engagement in protected-area planning, but that this had been accompanied by a marginalization of the small number of remaining traditional users of the forest’s resources (Mason, 2015). On the other hand, some of the locals who helped secure protection of the site back in the 1980s believe the main problem is the role in management by the Forestry Ministry due to its large debt (Law, 2011).

**Legal framework**  
Highly Effective

The legal framework appears adequate (IUCN, 1993). The Nature Conservation Law provides for administrative oversight by the Ministry of the Environment, which manages Nature Conservation Areas and National Parks. In the case of Shirakami-Sanchi, the strongest legal protection is provided by the Forest Ecosystem Reserve, where management and protection are led by the Forestry Agency. Forest Ecosystem Reserves have their legal foundation in the Act on the Administration and Management of National Forest (1951) and National Forest Administration and Management Bylaw (1999). The Preservation Zones of Forest Ecosystem Reserves are strictly protected, equivalent to IUCN protected area management category Ib.

**Law enforcement**  
Mostly Effective

There are at least three rangers and two assistant rangers working for the management authority under the Ministry of the Environment. In addition, several foresters are stationed nearby. Both the Ministry of the Environment and the Forestry Agency conduct law enforcement activities as well as monitoring.

**Implementation of Committee decisions and recommendations**  
Data Deficient

The one request of the Committee post-inscription, being an invitation to host a mission, was implemented (World Heritage Committee, 1997). The only other Committee decisions of the Committee were to adopt a retrospective Statement of OUV and a clarification of boundaries. There has therefore been insufficient interaction between the State Party and the Committee in the past 10 years to form a
Sustainable use

Mostly Effective

Use of the World Heritage site appears to be sustainable. According to the management plan some traditional uses continue in the site (MoE, 2013). The desire for economic development surrounding and within the site has resulted in local officials promoting small-scale industries, such as the production of maitake mushrooms; attempting to lure residents to the surrounding area by offering housing subsidies; and supporting the development of tourism (Mason, 2015). Management of visitors to the site's most popular attraction, Anmon Falls, is highly effective (Law, 2011). Restrictions on access to the core part of the site help protect this small area from degradation.

Sustainable finance

Mostly Effective

In 2010, USD 1.8 million were allocated by the central government for the management of the World Heritage site and additional funds came from other sources, such as a surcharge on use of boardwalks (Law 2011). Finance appears limited but adequate (IUCN Consultation, 2013). Direct financial support of the area is supplemented by numerous volunteer management activities (Law, 2011).

Staff capacity, training, and development

Mostly Effective

Training and development of staff and volunteers occur through a number of programs, including a scientific monitoring program within the park (IUCN Consultation, 2013; Law, 2011).

Education and interpretation programs

Highly Effective

Offsite education and interpretation are excellent (Law, 2011). Well-appointed visitors centres have been constructed close to the World Heritage site. Local governments promote forest products and other goods labelled "Shirakami"; a local train line is named Shirakami, and there is a Shirakami special-issue coin. The wider Shirakami region is being promoted throughout Japan to increase public recognition (Rothmar, 2015), however, relatively little is done to promote the region's living cultural heritage and the role of the Matagi (Mason, 2015). However, Matagi and local people continue their traditional activities outside the World Heritage site, and some of the Matagi groups have started to work as eco-tour guides, including transferring their traditional knowledge as Matagi hunters (IUCN Consultation, 2017). Some specific education and awareness-building priorities are identified in the 2013 management plan (MoE, 2013). A volunteer-run environmental school adjacent to the park runs interpretation tours to the fringes of the World Heritage site (Law, 2011).

Tourism and visitation management

Highly Effective

On-site tourism is limited both by very effective controls and by the limited opportunities available in the mainly trackless and undisturbed World Heritage site (Law, 2011; IUCN Consultation, 2013). Tourism access is restricted to warmer months when the heavy snow cover abates. The core areas of the site remain well protected with most tourism/recreation activity taking place in the internal buffer zone (Mason, 2015). The possible introduction of a standardized certification system for tour guides in the region may improve the overall quality of Eco tour guides (Hara and Iwamoto, 2014). The 2013 management plan emphasizes promotion of sustainable ecotourism for the site and region (MoE, 2013). Popular sites such as Anmon Falls are well managed through regulation, excellent infrastructure, and the provision of a management surcharge (Law, 2011).

Monitoring

Highly Effective

There are reports of active monitoring efforts within the World Heritage site but no formal information is available. According to sources, following the establishment of a Scientific Committee in 2010, a monitoring plan was reportedly created, which was subsequently modified in 2017. The Plan covers systematic monitoring activities, with the results reported to the Scientific Committee annually (IUCN Consultation, 2020). A volunteer/scientific program is included under this monitoring plan, and the group is active in the park involving local scientific institutions under the supervision of the Ministry of the Environment that carries out systematic botanical and other surveys (Law, 2011). The Scientific Committee makes recommendations based on the annual monitoring results and therefore the system
could be described as being highly effective (IUCN Consultation, 2020).

**Research**

Mostly Effective

The Shirakami-Sanchi World Heritage Area Scientific Council, comprised of experienced scientists, was set up in 2010 and the Scientific Council is promoting the adaptive conservation management of the World Heritage site and ensuring that management decisions are made within the context of the latest scientific knowledge available (World Heritage Committee, 2013). A volunteer/scientific program run by universities, other research institutions and the Ministry of Environment is active within the park (Law, 2011). The Hirosaki University, located close to the site is undertaking extensive research on Shirakami.

**Overall assessment of protection and management**

Highly Effective

Overall, the protection and management regime has been very effective in maintaining the wilderness condition and OUV of the World Heritage site. Nevertheless, there are some issues that deserve attention and there are some opportunities for improving the integrity of the site and fine-tuning management. The site’s relationship with traditional forest users, the Matagi remains a concern. The reported marginalization of traditional forest users can be addressed through greater consultation; it may be that they could play a role in culling excessive deer; it may be that some of their traditional uses can be accommodated in forest lands adjacent to the World Heritage site. The boundaries of the site could be reviewed for possible extension. The potential threat posed by climate change should be explicitly evaluated in reporting to World Heritage authorities.

**Assessment of the effectiveness of protection and management in addressing threats outside the site**

Mostly Effective

The one case of a perceived threat from outside the World Heritage site - clear felling in adjacent forest - appears to have been resolved. Although some of the adjacent lands remain under the ownership of the Forestry Agency, this is the case for all National Forests (including Forest Ecosystem Reserves) in Japan, and does not imply that these forests are intended for production purposes. There remain no serious internal threats to the integrity of the site but there are clear opportunities to improve the long-term ecological integrity, especially ecological integrity for larger animals and black woodpecker, by extending the site into adjacent reserved lands.

**Best practice examples**

Apart from suggestions for improvement above, Shirakami-Sanchi could serve as an example of world’s best practice when it comes to interpretation facilities and management of the impacts of visitors.

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**State and trend of values**

**Assessing the current state and trend of values**

**World Heritage values**

**Remnant old growth temperate forests in an undisturbed wild state**

Good

Trend: Stable

The World Heritage site comprises a sizable area of predominantly old-growth temperate forest, the largest remaining virgin beech forest in East Asia. All reports indicate that the undisturbed, wild state of the site’s condition has been maintained (Law, 2011; IUCN Consultation, 2013). The establishment of management arrangements (2013 management plan and liaison committee) is evidence of the Japanese Government’s commitment to maintaining the Outstanding Universal Value (OUV) of the site.
The last relic of cool-temperate beech forests of Northern Japan with associated species

The broader values of the site’s ecosystem remain intact (IUCN Consultation, 2017). The World Heritage site is the habitat of rare bird species such as the black woodpecker (Mahoro, 2008a, b) and large mammals such as the Japanese serow and Japanese black bear, which require a diverse forest environment including old-growth forest. There is some concern, given the small size of the site, that protection of these species could be enhanced through judicious extensions of the site into adjacent conservation lands (Law, 2011). Potential threats posed by climate change (Matsui et al., 2018; Teramoto et al., 2018) and proliferation of problematic species (MoE, 2013) could be more thoroughly and transparently canvassed through formal World Heritage processes.

Summary of the Values

Assessment of the current state and trend of World Heritage values

It is apparent that the undisturbed and pristine condition of the virgin beech forests in the World Heritage site are being well maintained. Ecologically, the beech forests include the full range of diversity including some larger mammals (bear and serow) and a threatened species of bird (black woodpecker). While their presence in the site has been maintained, there is concern that their long-term viability is dependent on the contribution made by suitable habitat in surrounding forests, and therefore it is crucial that on-going forestry operations and other uses in those forests do not, in future, threaten the ecological integrity of the site. The future influence of climate change (a globally ubiquitous threatening process) is difficult to assess and requires further monitoring and canvassing of management responses.

Assessment of the current state and trend of other important biodiversity values

The wilderness condition of the World Heritage site has been well maintained and the trajectory is stable. Broader biodiversity values face no significant threats other than the globally ubiquitous one of climate change, an issue requiring more explicit investigation in formal World Heritage processes.

Additional information

Benefits

Understanding Benefits

Sacred natural sites or landscapes

The undisturbed, wild state of the World Heritage site is valued by locals and nationals and was the basis for initial protection of the area. This reverence is articulated on some trails by the tasteful placement of haiku.

Factors negatively affecting provision of this benefit:
- Climate change: Impact level - Low, Trend - Increasing
- Invasive species: Impact level - Moderate, Trend - Continuing

"Invasive species" in this case refers to the potential for undesirable proliferation of sika deer.

Outdoor recreation and tourism

There is a sustainable level of tourism to the World Heritage site, largely restricted to walking of designated trails. Additional walking opportunities are available for those with more curiosity or spirit of
Factors negatively affecting provision of this benefit:
- Climate change: Impact level - Moderate

► Contribution to education

The visitor centres provide an outstanding education service to visitors and, through websites and publications, to the wider community. Well-organised volunteer research programs carried out by scientific institutions in partnership with management authorities enhance knowledge of the site’s ecological attributes.

Factors negatively affecting provision of this benefit:
- Climate change: Impact level - Low, Trend - Continuing

Climate change is a globally ubiquitous threatening process that has the potential to adversely affect attributes subject to study.

► Soil stabilisation

Much of the World Heritage site is very steep and the forest cover provides a valuable soil stabilisation service.

Factors negatively affecting provision of this benefit:
- Climate change: Impact level - Moderate

► Water provision (importance for water quantity and quality)

The pristine forest conditions serve a valuable service in maintenance of water quality to adjacent communities.

Factors negatively affecting provision of this benefit:
- Climate change: Impact level - Low, Trend - Continuing
- Overexploitation: Impact level - Low
- Invasive species: Impact level - Low, Trend - Continuing
- Habitat change: Impact level - Low, Trend - Continuing

Impacts of climate change, logging in adjacent forest lands, and proliferating browsing species could have negative impacts on catchments.

► Wilderness and iconic features

The World Heritage site serves both the purposes of preserving a large tract of primeval forest as well as giving visitors the opportunity to follow a cascading stream to a spectacular set of waterfalls.

Factors negatively affecting provision of this benefit:
- Overexploitation: Impact level - Low, Trend - Continuing

Summary of benefits

The site’s undisturbed and pristine state is valued by both local and national stakeholders. Traditional use of the World Heritage site by Matagi people has in the past been seen as a significant benefit and more could be done to enhance those benefits in a sustainable and culturally sensitive manner, perhaps by involving them in supervised control of problematic species such as deer. Ecological services in the form of soil stabilisation and water-catchment protection are provided by the site. Jobs are generated by tourism, interpretation and park management.

Projects
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<td>Long-term monitoring based on Shirakami-Sanchi World Heritage Area Monitoring Plan (Available in English by March 2021).</td>
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# REFERENCES

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<td>4</td>
<td>IUCN Consultation (2013). IUCN Stakeholder Consultation IUCN Gland, Switzerland.</td>
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