Ogasawara Islands

2020 Conservation Outlook Assessment

SITE INFORMATION
Country: Japan
Inscribed in: 2011
Criteria: (ix)

The property numbers more than 30 islands clustered in three groups and covers surface area of 7,939 hectares. The islands offer a variety of landscapes and are home to a wealth of fauna, including the Bonin Flying Fox, a critically endangered bat, and 195 endangered bird species. Four-hundred and forty-one native plant taxa have been documented on the islands whose waters support numerous species of fish, cetaceans and corals. Ogasawara Islands' ecosystems reflect a range of evolutionary processes illustrated through its assemblage of plant species from both southeast and northwest Asia, alongside many endemic species. © UNESCO

SUMMARY

2020 Conservation Outlook
Finalised on 02 Dec 2020
GOOD WITH SOME CONCERNS

The Outstanding Universal Values of the site – high plant and land snail diversity with high levels of endemism and ongoing evolutionary processes – have been relatively well preserved to date. However, the invasion of black rats (Ratus ratus) and green anole (Anolis carolinensis) to Ani-jima Island and expansion of invasive flatworm (Platydemus manokwari) to the land snail habitat of Chichi-jima Island pose a high threat to these values. Commendable ongoing efforts to control invasive alien species have had some success, for example eradicating cats, goats and rats from some islands. However, some species are persistent and require sustained effort, such as green anole, flatworms and the invasive African big-headed ant (Pheidole megacephala). Increases in visitation, establishment of air services to the islands, and impacts from climate change are the main potential threats, especially as they may increase the risk of alien species invasions and alter the dynamics of these fragile oceanic island ecosystems. Biosecurity measures for the World Heritage site require improvement. Components of the site are protected as Wilderness Area, National Park, National Wildlife Protection Area, Forest Ecosystem Reserve and Natural Monument. The Ministry of the Environment, Forestry Agency and Agency for Cultural Affairs effectively enforce laws concerning the protection of Ogasawara Islands, but an increase in visitation may mean further efforts are required to prevent landings on some of the more isolated islands. Comprehensive management and action plans are in place. However, funding is currently not sufficient to sustain effective long-term invasive species control programmes.
FULL ASSESSMENT

Description of values

Values

World Heritage values

► Valuable evidence of fine-scale evolutionary processes

The Ogasawara Islands provide valuable evidence of evolutionary processes through their significant ongoing ecological processes of adaptive radiation in the evolution of endemic plants and the land snail fauna. When taking into account their small area, the Ogasawara Islands show exceptionally high levels of endemism in land snails and vascular plants. The examples of fine-scale adaptive radiation between and sometimes within the different islands of the archipelago are central to the study and understanding of speciation and ecological diversification. This is further enhanced by the relatively low extinction rates in taxa such as the land snails (World Heritage Committee, 2011).

► Exceptionally high levels of endemism in selected taxonomic groups

The World Heritage site has a very high percentage of endemic species in selected taxonomic groups, resulting from evolutionary processes. Within the flora, the site is an important centre for active, ongoing speciation with some 441 documented taxa of native plants including 161 taxa of endemic vascular plants and 88 taxa of endemic woody plants. The site also exhibits remarkably high levels of endemism among land snails. There are 134 land snail species, of which 100 are endemic. It is the combination of both the concentration of endemism and extent of adaptive radiation evident in the Ogasawara Islands that sets the site apart from other places illustrating evolutionary processes (IUCN, 2011; World Heritage Committee, 2011).

Other important biodiversity values

► Valuable birdlife habitat, especially for seabirds

The World Heritage site is an Endemic Bird Area (EBA) and five of Japan’s 167 Important Bird Areas (IBAs) are located in the Ogasawara Archipelago. Of the 195 recorded bird species, 14 are on the IUCN Red List (IUCN, 2011). A recent study proposed that a land bird, Chloris kittlitzi, is to be recognised as a new species endemic to Ogasawara (Saito et al., 2020).

Assessment information

Threats

Current Threats

Invasive alien species represent the most serious current threat to the ongoing ecological processes on the Ogasawara Islands. Significant progress has been achieved in mitigation and eradication. However, the level of threat remains high as evidenced by the spread of green anole (Anolis carolinensis), further expansion of the invasive flatworm (Platydemus manokwari) and the potential for the introduced African big-headed ant (Pheidole megacephala) to have a serious impact on land snails. The presence of feral cats on inhabited islands continues to pose a threat to nesting sea birds, and the possible extinction of the Lycaenid butterfly (Celastrina ogasawaraensis) in the wild (with extinction of an ex-situ population) and decline of the Ogasawara Greenfinch (Chlolis kittlitzi) population should also be noted. Biosecurity measures, policies and procedures for incoming tourists and inter-island movements could be improved.
Studies have shown an increase in temperatures over the last 40 years, impacting vegetation dynamics on the islands (Abrams et al., 2018), and climate change is likely to also cause more extreme weather events and impact on oceanic systems by affecting currents, ocean acidity levels, nutrient availability and species distribution.

**Invasive Non-Native/ Alien Species**

(Invades Alien Species)

Invasive alien species continue to present one the most significant immediate and future threats to the values of the site (IUCN, 2011; IUCN Consultation, 2017; Kachi, 2010; Sugiura, 2016). Incidences of invasive plant occurrence were observed after eradication of goat and black rat (Ogasawara Islands World Natural Heritage Scientific Council, 2011), along with increased erosion on areas of soil post goat eradication (Hata et al., 2019). Rats were eradicated from some uninhabited islands using poison baits in 2011. However, the rat population recovered on the uninhabited Ani-jima Island after the eradication of goats (IUCN Consultation, 2017). Efforts to control cats and goats on the islands, uninhabited and inhabited, have been more successful, but problems still remain in attaining complete eradication. Rats cause severe damage to endemic land snails, as well as to the regeneration of native plants after eradication of invasive alien trees (IUCN Consultation, 2020a). On Haha-jima Island, the Ogasawara Greenfinch (Chloilis kittilitzi), recently proposed as a separate species from other Oriental Greenfinches (Saito et al., 2020) is threatened by black rat invasion (Kawakami, 2019; Ogasawara Islands World Natural Heritage Scientific Council, 2019).

The invasive flatworm (Platydemus manokwari) continues to expand to the snail habitats on Chichi-jima Island (Ogasawara Islands World Natural Heritage Scientific Council, 2012). In 2018, it had expanded its distribution to Tori-yama, one of the remaining habitats of endemic Mandarina land snails on Chichi-jima Island, and in 2020 the Ministry of the Environment (MoE) decided to release an ex-situ population of Mandarina to Tatsumi-jima, another of the last remaining habitats of endemic land snails in the Chichi-jima Island group (IUCN Consultation, 2020b).

Research carried out in 2016 suggests that the invasive African big-headed ant (Pheidole megacephala) is a more significant threat to land snails than initially realised (Uchida et al., 2016). Pheidole megacephala expanded its distribution from Chichi-jima to Haha-jima Island in 2015. A major effort was undertaken to eradicate these ants. However, eradication of the last remaining nest on southern Hahajima Island has not been finalised (IUCN Consultation, 2017).

In 2013, the green anole (Anolis carolinensis) was found to have spread to the uninhabited Ani-jima Island, only 500 m from the inhabited Chichi-jima Island. The lizard threatens the ecology of the Island, including two endemic insect species (a dragonfly – Hemicordulia ogasawaraensis and the tiger beetle – Cicindela bonina), which are reported to be on the verge of extinction (Kawakami, 2010). Fencing and sticky traps to control green anole on Ani-jima Island are ongoing, but have so far failed to eradicate this species (IUCN Consultation, 2017; Japan News/World News, 2016) and it remains a threat to endemic insect species on Ani-jima. On Haha-jima Island, predation by green anole is one of the threats to the endangered Lycaenid butterfly (Celastrina ogasawaraensis). Since 2018, no observation has been confirmed in the wild (Ogasawara Islands World Natural Heritage Scientific Council, 2019). An ex-situ conservation program has been carried out in Tokyo, however, MoE announced that all the ex-situ population had died by August 2020 (Ministry of the Environment, 2020). If there is continuously no observations in the wild, the Lycaenid butterfly will be the first endangered species that will be extinct after the inscription on the World Heritage list.

Biosecurity policies and procedures for incoming tourists and inter-island movements are still in need of improvement (IUCN Consultation, 2017). In 2019, the MoE introduced a voluntary quarantine measure for introduction of plants to Haha-jima Island, and the use of an electric hot tub to kill invasive alien species in soil (Yoshida, 2019). In March 2020, Ogasawara village assembly adopted a new ordinance to control the introduction of all animals, except registered pets such as dogs and cats, not only for villagers but for all visitors to Ogasawara Islands. It will be put into force in April 2021 (Ogasawara village, 2020).
Housing/ Urban Areas

(Impacts from urban settlements)

Only two islands are inhabited (Chichi-jima and Haha-jima), and both have small resident populations living in urban settlements. There are likely impacts from these settlements (possible encroachment and pollution). The IUCN Evaluation mission found no evidence of adverse impacts and the urban interface is mostly well managed. Recent surveys show strong environmental awareness and stewardship among the residents, which has increased following World Heritage listing (Havas et al., 2016). There are two small development plans in the area adjacent to the World Heritage site on Chichi-jima and Haha-jima Islands. On Chichi-jima, a tsunami evacuation route to connect Oku-mura and Kiyose is being planned. On Haha-jima, solar power plants are planned in three sites. However, the sites are carefully selected to avoid natural vegetation and the habitats of endemic species, and discussions with scientists and the local community on the details of the plans are ongoing (IUCN Consultation, 2020b).

Habitat Shifting/ Alteration, Droughts, Ocean acidification, Temperature extremes, Storms/Flooding

(Temperature extremes)

Global climate changes are likely to not only have an impact on temperatures, frequency and intensity of weather events and habitat distribution, but it is also likely to impact on oceanic systems by affecting currents, ocean acidity levels, nutrient availability and organism distribution. Increased rainfall induced by climate change may also impact on the flora of the site and increase the risk of erosion. It is recognized that as global temperatures increase, new habitats, both terrestrial and marine, could potentially become more suitable for introduced species, upsetting any current balance between native and introduced species and allowing the establishment of new species, further modifying these fragile ecosystems. The marine ecosystem of the site, including seabirds, relies heavily on oceanic nutrients and any change is likely to negatively impact both individual species and the overall ecosystem. The potential for increased impacts from invasive species in the future due to climate change is a key reason for developing, implementing and maintaining the highest bio-security possible to avoid new species, which are not currently deemed a major threat, from establishing. How species already present on the island will be affected by changing climate will require further research. It is difficult to establish the impacts from climate change on the site, but they are likely to increase, as is the case for other World Heritage sites. Some research has already been undertaken on the impacts of climate change on the vegetation of the islands, with studies detecting a link between drought tolerance, species dominance and climate change (Abrams et al., 2018). In addition, due to high water temperatures, the frequency and intensity of typhoons have changed recently. In 2019, Ogasawara Islands were directly hit by a big typhoon and fences to prevent the spread of invasive alien species were severely damaged (Ogasawara Islands World Natural Heritage Scientific Council, 2019).

Potential Threats

Increase in visitation and establishment of air services to the islands continue to be a key potential threat alongside the impacts on island ecosystems from climate change. Evidence suggests dramatically increasing interest in the site following World Heritage listing. However, the long sea journey to reach the islands continues to limit visitation to manageable levels, although independent vessels has the potential to increase visitation and threaten biosecurity. Plans for an air service between the islands and Tokyo are still in place. One of the two aircraft options that was unveiled at the Ogasawara Island Airport Consulting Committee of Tokyo Metropolitan Government meeting held in July 2020 would have significant impact on the area including topographic change of the Nakayama Pass, which is adjacent to the World Heritage site. There is a need for a strategic impact assessment of this project.

Utility / Service Lines

(Construction of an airport)

The establishment of air services to the islands through an airstrip on Chichi-jima Island has in the past
been under discussion and will likely continue to be debated. Most residents seem strongly supportive, but appear to favour a small-scale solution for residential and emergency use (IUCN, 2011). Stakeholder reports suggest that plans for an airstrip (for residents only) remain current. Government supported proposals linked to the 5th anniversary of the World Heritage inscription in 2016 are reported to be on hold awaiting budget and an Environment Impact Assessment (IUCN Consultation, 2017).

A meeting of the Council for the Study of Ogasawara Air Routes of Tokyo Metropolitan Government held in July 2020 unveiled two options of aircrafts. The first option is a 48 seats ATR42-600s aircraft, requiring a 1000m long runway. This would mean construction of a runway that protrudes from the north and south seashore of Susaki cape and that the highest place of the Nakayama Pass, which is adjacent to the World Heritage site, would need to be cut. The second option is a 9 seats AW609 aircraft that can land and take-off vertically, and therefore only requires an approx. 400m long runway. With the AW609 aircraft, it is assumed that there are no topographic changes needed of the Nakayama Pass (Council for the Study of Ogasawara Air Routes, 2020; IUCN Consultation, 2020b).

Ogasawara World Natural Heritage Scientific Council discussed the need of a strategic impact assessment or heritage impact assessment introduced by the revised article of the operational guidelines of the World Heritage Convention (Ogasawara Islands World Natural Heritage Scientific Council, 2019). Currently, a survey of the present environmental condition is being conducted as a preliminary step to the environmental impact assessment (Council for the Study of Ogasawara Air Routes, 2020).

Tourism/ visitors/ recreation

(Potential increase in visitation)

The site is very well protected through a strict access control regime with many sensitive areas off-limits to visitors or only accessible through guided tours (IUCN, 2011). Predictions at the time of inscription were that tourism interest would increase and this appears to have happened. Media reports indicate a surge in interest in the World Heritage site following inscription, with the number of visitors having dramatically increased since World Heritage listing, rising from just under 21,000 in the 12 months before to 31,000 in the year after, and more than doubling during peak months. The number of cruises too has surged, tripling to 12 in 2011 and set to nearly quadruple in 2012 to 47 (Japan Times, 2012), but after 2013 the number of tourists arriving by cruise ships decreased to the level of 2011 (IUCN Consultation, 2020a).

In order to prevent the spread of the coronavirus, Tokyo Metropolitan Government and Ogasawara Village introduced stronger quarantine methods with testing before boarding the ship. The Ogasawara cruise ship company also reduced the number of passengers to half of the capacity of the cruise ship (Tokyo Metropolitan Government, 2020).

Habitat Shifting/ Alteration, Droughts, Ocean acidification, Temperature extremes

(Climate change impacts on sensitive island ecosystems)

There are likely impacts of climate change, such as on species compositions, ranges, seasonal cycles and habitat preferences, and trophic dynamics with alien invasive species, etc. In addition, a higher frequency and intensity of natural disasters such as landslides, typhoons and droughts could impact the islands in future (IUCN, 2011; Sugiura, 2016). Oceanic island ecosystems often have limited adaptive capacity and these systems may be more susceptible to climate related change.

Overall assessment of threats

High Threat

The site’s World Heritage values are subject to a number of significant threats. The fact that it comprises relatively separate and isolated islands provides its greatest protection. Currently the major threats to the World Heritage site come from outside, including climate change and invasive species. Ongoing strict biosecurity and removal of the remaining introduced species are seen as top priorities for the protection of the site.

Invasive species represent by far the most serious threat to the ongoing ecological processes on the islands. Commendable progress has been achieved in mitigation and eradication, particularly for
larger mammal pests such as cats, goats and rats. However, the level of threat remains high as evidenced by further infestations of green anole and the flatworm (Platydemus manokwari), continued threats posed by cats, goats and rats on the island ecosystem and its species, concerns about invasive ant species and weaknesses in the biosecurity measures for visitors to the islands and for inter-island movements. Impacts from climate change and increases in visitation and establishment of air services to the islands are the main potential threats, however, the level of both threats is, for the moment, low.

**Protection and management**

**Assessing Protection and Management**

▶ **Management system**

The multi-agency management system combining three central agencies and two local administrations is complex. In some cases, the Regional Liaison Committee provides an effective mechanism for coordination (Havas et al., 2016). However, good participatory management approaches are limited (IUCN Consultation, 2020a). The revision of the Management Plan for the World Heritage site and the Ogasawara Islands Ecosystem Conservation Action Plan, which shows the conservation strategy for the ecosystems on each island and roadmaps for implementation, are ongoing topics of discussion in the Scientific Council and the Ogasawara Regional Liaison Committee. In 2017, Ogasawara World Heritage Centre was established by the Ministry of the Environment as a base for the conservation of rare species that are among the attributes of Outstanding Universal Value, and for countermeasures to invasive alien species. The centre has started its operations with the cooperation of related parties.

▶ **Effectiveness of management system**

A formal evaluation of management effectiveness has not been carried out. However, there is evidence of significant investment in management, particularly targeting invasive alien species (IUCN, 2011; IUCN Consultation, 2017). Some concerns can be raised around budget cuts for future invasive species actions (IUCN Consultation, 2020a), but overall the management system itself seems largely effective.

▶ **Boundaries**

Boundaries are clearly defined and understood, with the delineation of boundaries benefitting from the isolation of the World Heritage site and a resident community that is fully supportive of the protection of the area and the World Heritage listing.

Nishino-shima Island, one of the properties of the Ogasawara Islands World Heritage, which has been erupting since 1973, but was silent when Ogasawara Islands was inscribed on the World Heritage list. However, a new crater under the sea erupted near the Nishino-shima Island in 2013 and swallowed up the existing Nishino-shima Island in 2020. Nishino-shima Island has continuously grown to 12-times the size of the former island inscribed on the World Heritage list. Geologists investigating the volcano have shown that it erupted andesite lava as opposed to basalt, which means the eruption of Nishino-shima Island showcases the creation of continent by the subduction of the marine plate. If the State Party request a boundary modification of the World Heritage site, the possibility of Nishino-shima Island’s values meeting also criterion (viii) should be re-evaluated. (IUCN Consultation, 2020b)

▶ **Integration into regional and national planning systems**

Action plans under the Management Plan are integrated within the policies and plans of the Tokyo Metropolitan Government and Ogasawara Village at regional and local scales.

▶ **Relationships with local people**

A Regional Liaison Committee was established in 2006 and meets annually to facilitate the community’s participation in management decisions. Research conducted since inscription regarding residents’
attitudes reveals good levels of awareness of World Heritage, a strong sense of stewardship and environmental responsibility and relatively high levels of community engagement in active management (Havas et al., 2016). However, more effective contributions of the Regional Liaison Committee to conservation practice are required (IUCN Consultation, 2020a).

Legal framework  
Mostly Effective  
The components of the World Heritage site are protected as Wilderness Area, National Park, National Wildlife Protection Area, Forest Ecosystem Reserve and Natural Monument. The Ministry of the Environment, Forestry Agency and Agency for Cultural Affairs effectively enforce laws concerning the protection of Ogasawara Islands.

Law enforcement  
Mostly Effective  
Much of the World Heritage site is inaccessible and, whilst visitation has increased since listing, it remains generally low. Some incidents of vandalism to vegetation have been reported in Chibusayama and some unaccompanied tourists visiting the Sekimon area (Japan Times, 2012).

Implementation of Committee decisions and recommendations  
Some Concern  
Committee decisions and recommendations have mostly been implemented. The control of invasive alien species has experienced both successes and setbacks, such as the emerging invasions of green anole and invasive flatworm. In the preparatory process of reviewing the Ogasawara National Park Plan, the Ministry of the Environment will seek a possibility for further expansion of the Marine Park Zones of the World Heritage site, as strongly encouraged by the Committee. The Tokyo Metropolitan Government is conducting a survey of the sea area around the Ogasawara Islands (Ogasawara Island Branch Office, 2017).

Sustainable use  
Mostly Effective  
The Ecotourism Master Plan includes regulation of the number of visitors to Minami-jima Island, Sekimon Trail on Haha-jima Island and specifies a certification program required for tour guides.

Sustainable finance  
Some Concern  
Budgets appear to have dropped significantly from those reported at the time of evaluation (IUCN, 2011; Japan News/World News, 2016). Although funding from the Ministry of the Environment, Forestry Agency, Tokyo Metropolitan Government and Ogasawara Village has basically been maintained for the period 2017 and 2019, the budget is not enough to address threats from invasive species (IUCN Consultation, 2020a). Stakeholders have also raised concerns about the need to increase funding commensurate with the scale of required invasive alien species work (IUCN Consultation, 2017).

Staff capacity, training, and development  
Data Deficient  
Evaluation of effectiveness of staff training in Ogasawara Islands has not yet been carried out. While it is difficult to assess capacity, training and development without a more formal assessment, staffing appears to be adequate largely due to the isolation of the World Heritage site and the support from the residents.

Education and interpretation programs  
Mostly Effective  
A visitor centre run by the Tokyo Metropolitan Government, as well as tourism organisations such as Ogasawara Whale Watching Association, provide education and interpretation programmes. Tourism operators are receptive to introducing improved guide qualification systems to ensure protection of sensitive areas (IUCN Consultation, 2017). The Ministry of the Environment runs a website named "Ogasawara Islands Nature Information Centre", which contains current information as well as regulations for the site in both Japanese and English.
Tourism and visitation management

Ecotourism operations provide an opportunity to interpret the values of Ogasawara Islands to visitors under an Ecotourism Master Plan, which has been prepared for the islands. Tourism demand has increased since World Heritage listing. Control measures include a strict ceiling on the number of hotels and beds in Ogasawara Islands imposed up to now. A new vessel was introduced for the trip between Tokyo and the Islands, and the shipping operators have voluntarily imposed a reduced capacity (750 from 1,000 passengers) to limit impacts. Some concerns have been raised about independent vessels arriving at Futami Port in Chichi-jima Island (IUCN Consultation, 2017) and there is a general need to improve biosecurity policies and procedures (IUCN, 2011).

Monitoring

Monitoring of tourism impact on sensitive ecosystems, such as Minami-jima Island, Sekimon Trail and Higashi-daira Trail, has been carried out by the Tokyo Metropolitan Government, Forestry Agency and Ministry of the Environment with the participation of scientists and NGOs. The Ministry of the Environment was reportedly planning to investigate the ecological impact of increased tourism on Japan’s four natural World Heritage sites: Yakushima, Shiretoko, Shirakami and Ogasawara (Japan Times, 2012).

Research

Research on the conservation of endemic species and eradication of invasive alien species has mainly been carried out by scientists and NGOs including the Institute of Boninology (IBO), and to some degree by government agencies (Ministry of the Environment, Forestry Agency and the Tokyo Metropolitan Government). Research is continuing to investigate species diversity including plants (e.g. Abe et al., 2018) and a number of new species and those previously thought to be extinct have been rediscovered on the islands (e.g. da Cruz et al., 2018; Hirano et al., 2018; Koeda and Motomura, 2018; Naruse and Yoshida, 2018; Sotome et al., 2019). Additional research focus is needed on climate change impacts (IUCN, 2011). Some climate change work has been completed on impacts and response of plant species (Abrams et al., 2018).

Overall assessment of protection and management

The component parts of this serial World Heritage site are protected under different designations, with the Ministry of the Environment, Forestry Agency and Agency for Cultural Affairs effectively responsible for law enforcement concerning the protection of Ogasawara Islands. The Management Plan and Action Plan for the protection and management of the site are being implemented effectively by the Ministry of the Environment, Forestry Agency, Tokyo Metropolitan Government and Ogasawara Village, with the local community’s participation facilitated through a Regional Liaison Committee. The management authorities have made impressive efforts to address invasive species threats to the islands’ fragile ecology. However, stakeholders have advocated additional funding to match the magnitude of the invasive species control challenge. Further monitoring and research is required to fully assess the impacts of climate change on the site.

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

The principal threats to the World Heritage site’s values relates to invasive alien species and increasing impacts from climate change. Biosecurity measures need to be improved to mitigate the threat of further human induced introductions. There is evidence of significant increase in tourism demand and increasing numbers of independent vessels accessing the islands. In addition, proposed air services entail potential changes to the accessibility of the islands. This could change both the numbers and the type of visitors to the site, as the current journey by boat requires a greater investment of time and effort than a short flight from the Japanese mainland (IUCN, 2011). Managing impacts of increased visitation and the potential increase in arrival of invasive species
will be even more important in the face of climate change impacts on the site.

▶ **Best practice examples**

Programmes to control invasive alien species have been developed based on assessing and adapting global best practice island ecosystem management and research has been conducted on options for invasive species control (e.g., the use of dogs to detect Green Anoles (Fukuzawa and Sasahara, 2019) and public perception of efforts to control feral cats (Mitsui et al., 2018)). The Ogasawara Islands have established a number of excellent cooperative programmes with other countries expert in island invasive species control such as New Zealand (IUCN, 2011).

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### State and trend of values

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

**World Heritage values**

▶ **Valuable evidence of fine-scale evolutionary processes**

**Low Concern**

**Trend:** Stable

Despite significant concerns regarding the impact of invasive species on certain endemic species, the fine-scale evolutionary processes for which the islands were inscribed continue to function. However, managing impacts of invasive alien species will be even more important in the face of climate change impacts on the World Heritage site.

▶ **Exceptionally high levels of endemism in selected taxonomic groups**

**Low Concern**

**Trend:** Stable

High levels of endemism are a product of the islands’ biogeographic isolation and evolutionary history. These high levels of endemism persist, but are dependent on vigilant quarantining and access controls to prevent introduction of new species, as well as ongoing effective invasive species control programmes.

In 2016, the Ministry of the Environment formulated plans for the Programmes for Rehabilitation of Natural Habitats and Maintenance of Viable Populations for 14 species of land snails of the genus Mandarina on Ogasawara Islands, based on the Act on Conservation of Endangered Species of Wild Fauna and Flora (Ministry of the Environment, 2016). For five of these species, ex-situ farming and breeding are ongoing (IUCN Consultation, 2017).

### Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**

**Low Concern**

**Trend:** Stable

The World Heritage values of the site, namely ongoing ecological and evolutionary processes and high levels of endemism, have so far been well preserved. However, these values remain under high threat from invasive alien species. The fragile ecology of these oceanic islands could be further threatened by increasing tourism demand and access, which is evident following the inscription of the islands onto the World Heritage list. The impact of climate change might also become a more serious threat in the future.

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

**Low Concern**

**Trend:** Data Deficient

Evidence at the time of the IUCN evaluation suggests that the island’s birdlife values remain intact, especially on the more remote islands within the World Heritage site. There is very little data...
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Ogasawara Islands - 2020 Conservation Outlook Assessment

available on these populations, but no indication of a change in the birdlife values. Efforts have also been made to reintroduce some bird species to the islands including short-tailed albatrosses (Deguchi et al., 2017). A recent study suggested that a Greenfinch (Chloris kittlitzi), is to be recognised as a new species endemic to Ogasawara Islands (Saito et al., 2020). The birds inhabiting the Haha-jima Island group are under a high threat of extinction and conservation efforts are ongoing by the Forestry Agency of Japan in collaboration with Tokyo Metropolitan Government and the Ministry of the Environment (IUCN Consultation, 2020a).

Additional information

Benefits

Understanding Benefits

► Importance for research,
Contribution to education,
Collection of genetic material

Triggered by the World Heritage nomination and inscription, the site has been the focus of research and action on controlling invasive species. Excellent engagement with the community, as well as the presence of the site-level Institute of Boninology (IBO), has contributed to a major cooperative effort from governments, communities, academics and NGOs. Communities receive benefits from this programme, for example, the control of feral cats increased the number of iconic species such as Japanese wood pigeon (Columba janthina nitens).

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

► Outdoor recreation and tourism

Since 1988, Ogasawara Islands have been recognised as ideal sites for ecotourism including whale-watching operations. World Heritage inscription promotes this practice including regulation of visitor numbers to important habitats. A certification system for tour guides has been in operation since Ogasawara Islands were recognised as a potential World Heritage site in 2003. Communities receive benefit from tourism.

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

Strict carrying capacities for visitors are needed or protect the natural amenity of the World Heritage site and not jeopardise the tourism values.

► Natural beauty and scenery

All components are legally protected with nature conservation objectives foremost. Recent research indicates island residents value nature and appreciate the related tourism benefits that derive from this (Havas et al., 2016).
Factors negatively affecting provision of this benefit:
- Climate change: Impact level - Low, Trend - Increasing
- Pollution: Impact level - Low, Trend - Continuing
- Overexploitation: Impact level - Low, Trend - Continuing
- Invasive species: Impact level - High, Trend - Continuing
- Habitat change: Impact level - Low, Trend - Continuing

Invasive species and climate change impacts could seriously undermine the natural landscape values of the islands.

Summary of benefits

The World Heritage site, with careful management of tourism including biosecurity and access, has great potential to provide ongoing tourism benefits to local people and businesses, as well as expanding the wider tourism offerings in Japan. Attitude research conducted among local residents since inscription reveals good levels of awareness of World Heritage, a strong sense of stewardship and environmental responsibility and relatively high levels of community engagement in active management (Havas et al., 2016). The site is also an invaluable centre of research on oceanic island ecology and has been a recent focus of best practice in the management of challenging invasive alien species problems.

Projects

Compilation of active conservation projects

<table>
<thead>
<tr>
<th>№</th>
<th>Organization</th>
<th>Brief description of Active Projects</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Ministry of the Environment</td>
<td>Plans to investigate the ecological impact of increased tourism on Japan’s four natural World Heritage sites: Yakushima, Shiretoko, Shirakami and Ogasawara (Japan Times, 2012).</td>
<td>Reported in Japan Times 2012.</td>
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<tr>
<td>3</td>
<td>Ministry of the Environment</td>
<td>The Ministry of the Environment decided to conduct a comprehensive academic study to assess the value of the ecosystem on Nishinoshima Island, which has seen ongoing intermittent lava eruption and deposition since 2013. Most of the island is covered in lava, providing a valuable place for the observation and study of ecosystem regeneration and succession. An academic study has been carried out in 2019, however continuous eruption prevent the following monitoring study.</td>
<td><a href="http://www.comp.tmu.ac.jp/ogasawara/research_report.html">http://www.comp.tmu.ac.jp/ogasawara/research_report.html</a> (in Japanese with English summary)</td>
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<td>4</td>
<td>Tokyo Metropolitan Government</td>
<td>For Minami-iwoto Island, which is designated as a Wilderness Area based on the Nature Conservation Law, a comprehensive study on the natural environment is ongoing by Tokyo Metropolitan Government, 10 years since the last study in 2007, with the aim of understanding the current situation and collecting basic information for the conservation management of the Island.</td>
<td><a href="http://www.comp.tmu.ac.jp/ogasawara/research_report.html">http://www.comp.tmu.ac.jp/ogasawara/research_report.html</a> (in Japanese with English summary)</td>
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<td>Hydrographic and Oceanographic Department (2020). Nishinoshima (<a href="https://www1.kaiho.mlit.go.jp/GIJUTSUKOKUSAI/kaiikiDB/kaiyo">https://www1.kaiho.mlit.go.jp/GIJUTSUKOKUSAI/kaiikiDB/kaiyo</a>...)</td>
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<td>IUCN Consultation (2020a). IUCN World Heritage Confidential Consultation: Ogasawara Islands, Japan.</td>
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