Ogasawara Islands

2025 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

2025 Conservation Outlook

Finalised on 11 Oct 2025

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 feral cats, feral goats and rats from some islands. However, some species are persistent and require sustained effort, such as green anole, flatworms and the invasive 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** **Criterion:(ix)**

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** **Criterion:(ix)**

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). The critically endangered Bryan’s Shearwater Puffinus bryani, which was described as a new species in 2011 based on the record in the Midway Atoll (Pyle et al. 2011), was also found to breed in the Higashijima Island in Ogasawara (Kawakami et al. 2012, Kawakami 2019). A 2020 study proposed that the Bonin Greenfinch, Chloris kittlitzi, be recognised as a new species endemic to Ogasawara (Saito et al., 2020) and this was enacted by the IOC World Bird List in January 2021 in recognition of deep genetic divergence and morphological differences.

▶ **Valuable marine habitat**

The World Heritage site is a highly isolated oceanic archipelago, possessing unique faunal and floral biodiversity with a high level of endemism. Most of the biodiversity values of the site are linked to terrestrial ecosystems but recent studies have also indicated its importance for Marine species. 124 unique taxa of fish and 38 unique taxa of scleractinian corals were detected using e-DNA (Ackibas et al., 2023)

Assessment information

Threats

Current Threats

High Threat

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, Bipalium vagum) , carnivorous snail (Macrochlamys indica) and the potential for the introduced 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) and decline of the Bonin 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 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. 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. Repeated extreme weathers like typhoon and drought caused the decline of endemic tree species.

► Invasive Non-Native/ Alien Species

High Threat

Inside site, widespread(15-50%)
Outside site

(Invasive Non-Native / Alien Species)

Invasive/problematic species

Platydemus manokwari
Anolis carolinensis
Rattus rattus
Pheidole megacephala
Macrochlamys indica
Felis catus
Capra hircus

Other invasive species names

Bipalium vague, Technomyrmex brunneus

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 feral goats and black rats (Ogasawara Islands World Natural Heritage Scientific Council, 2011), along with increased erosion on areas of soil post feral 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 feral goats (IUCN Consultation, 2017). Efforts to control feral cat and feral goat populations 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 group, the Bonin Greenfinch (Chlolis kittlitzi), recently proposed as a separate species from other Oriental Greenfinches (Saito et al., 2020) is threatened by black rats (Kawakami, 2019; Ogasawara Islands World Natural Heritage Scientific Council, 2019) and the rats, along with feral goats, predate on the endemic Lobelia boninensis (Hata et al., 2024).
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 ogasawarensis and the tiger beetle – Cylindera 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 2020, 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).
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. In 2020 the Ministry of the Environment (MoE) decided to reinforce an ex-situ population of Mandarina to Tatsumi-jima (Mori et al., 2024), another of the last remaining habitats of endemic land snails in the Chichi-jima Island group (IUCN Consultation, 2020b).
MoE also undertook a reintroduction of an ex-situ population of Mandarina to Minami-jima Island in 2023.
On Haha-jima Island, where Platydemus manokwari has not yet been detected, another invasive flatworm (Bipalium vague) was identified in 2016. As damage to the land snails caused by the flatworm becomes more severe, MoE is developing breeding techniques for ex-situ conservation populations of the endemic land snails on Haha-jima Island (Ogasawara Islands World Natural Heritage Scientific Council, date unknown).
Research carried out in 2016 suggests that the invasive 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 prior to 2015. Major efforts have been undertaken to eradicate these ants. However, while the distribution of the ant is shrinking on southern Hahajima Island, eradication has not been finalised (IUCN consultation, 2024). It was reported that an another invasive ant species (Technomyrmex brunneus) has been found in Haha-jima Island in June 2024, even though the guidelines to prevent the introduction of new invasive species to Haha-jima was introduced from April 2024 (Hisasue and Tsuji. 2024, Ogasawara Islands World Natural Heritage Scientific Council, 2024).
In 2016, invasive carnivorous snail (Macrochlamys indica) was introduced in Haha-jima Island. It expands its distribution from the nursery to wider area within 5 -6 years and risks the survival of endemic land snails in Haha-jima Island. To stop the unintentional introduction of invasive species associated with the introduction of saplings, 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 in 2019 (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. The ordinance was reported as being put into force in phases starting in April 2021 (Ogasawara village, 2020).

► Residential Areas

Low Threat

(Impacts from Urban Settlements)

Inside site, localised(<5%)
Outside site

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. Previous 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 was planned and has been under construction since 2023, aiming to be complete in 2032. Assessments of the landscape and natural environment were conducted prior to construction, and environmental protection measures are also implemented during construction based on prior assessments (Tokyo Metropolitan Government, 2024).

On Haha-jima, solar power plants were planned in three sites. The sites had been 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 were ongoing (IUCN Consultation, 2020b). In March 2024, it was reported that threatened Red-headed wood pigeon (Columba Janthina nitense) has been bred inside the one of the solar power plant construction sites in Haha-jima (Ogasawara Village, 2024).

▶ Changes in Physical & Chemical Regimes, Changes in Temperature Regimes, Changes in Precipitation & Hydrological Regime

High Threat
Inside site, throughout(>50%)
Outside site

(Temperature extremes, Storms/Flooding, Habitat Shifts / Alteration, Droughts, Ocean acidification)

Global climate changes are likely to not only have an impact on temperatures, frequency and intensity of weather events and habitat distribution, but are 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). Repeated extreme weathers like typhoon and drought caused the decline of endemic tree species (Nakamura et al. 2024). 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). After the typhoon the strength of the fences was improved through fence reconstruction, but continued attention should be paid to the impact of typhoons on the ecosystem. On the other hand, severe drought has impacted on endemic flora and fauna of Ogasawara Islands (Karube et al., 2019). In 2024, Ogasawara Islands faced severe drought from spring to summer and it caused the decline of the population of Bonin Greenfinch (Chloris kittlitzi) (Ogasawara Islands Forest Ecosystem Conservation Center / Islands Care, 2024).

Potential Threats

High Threat

Increase in visitation and establishment of air services to the islands continue to be a key potential threat linked to the potential for further introduction of alien species and increased impacts from visitation, alongside the impacts on island ecosystems from climate change. Evidence suggests increasing interest in the site following World Heritage listing. However, the long sea journey to reach the islands combined with the isolation of important islands, continues to limit visitation to manageable levels, although independent vessels have the potential to increase visitation and threaten biosecurity. Plans for an air service between the islands and Tokyo appear to still be 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. Subsequently, the development of the aircraft that was planned to be used for this option has been cancelled.

▶ Utility & Service Lines, Atmospheric & Space Activities

High Threat
Outside site

(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 continues 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 did not appear to progress further as they were awaiting budget and an Environment Impact Assessment in 2017 (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 was 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 the highest place of the Nakayama Pass, which is adjacent to the World Heritage site, would need to be cut. The second option was a 9 seat 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). The most recent Council discussions indicate a continued discussion regarding the options for aircrafts but is only available in Japanese.
Ogasawara World Natural Heritage Scientific Council discussed the need for 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). A survey of the present environmental condition was being conducted in 2020 as a preliminary step to the environmental impact assessment (Council for the Study of Ogasawara Air Routes, 2020).
It was announced that ATR Company decided to stop the development of its short take-off and landing variant (ATR42-600s) in November 2024.

► **Recreational Activities** **Low Threat**

(Increased visitation) Inside site, extent of threat not known

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 also 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) and appears to have remained stable since then.
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 the capacity of the cruise ship (Tokyo Metropolitan Government, 2020). However, after 2022 with the decrease in coronavirus and the lifting of travel restrictions, the number of visitors has once again recovered to the same level as pre 2019 visitation.

Overall assessment of threats **High Threat**

The site’s World Heritage values are subject to a number of significant threats. The fact that the site is comprised of relatively separate and isolated islands provides its greatest protection from a number of these threats, including key invasive species. 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 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 feral cats, feral goats and rats. However, the level of threat remains high as evidenced by further infestations of green anole, the flatworm (Platydemus manokwari and Bipalium vague) , carnivorous snail (Macrochlamys indica) and invasive ants (Pheidole megacephala), continued threats posed by feral cats, feral goats, and rats on the island ecosystem and its species, concerns about invasive ant species and potential weaknesses in the biosecurity measures for visitors to the islands and for inter-island movements. Impacts from climate change are also a concern. Studies have shown an increase in temperatures over the last 40 years, impacting vegetation dynamics on the

islands 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. Increases in visitation and establishment of air services to the islands remain ongoing potential high threats.

Protection and management

Assessing Protection and Management

▶ **Involvement of stakeholders and rightsholders, including indigenous peoples and local communities, in decision-making processes** — **Highly Effective**

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). Overall community engagement remains high and stakeholders can actively engage in decision making.

▶ **Legal framework** — **Highly 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.

▶ **Governance arrangements** — **Mostly Effective**

The multi-agency management system combining three central agencies and two local administrations (Ministry of the Environment, the Forestry Agency, the Agency for Cultural Affairs, the Tokyo Metropolitan Government and
Ogasawara Village) is complex. While the Regional Liaison Committee provides a mechanism for coordination (Havas et al., 2016), good participatory management approaches are limited (IUCN Consultation, 2020a) and are complicated by the complex layers of governance for the site. The revised Management Plan for the World Heritage site (Ministry of Environment, 2024) outlines the conservation strategy for the ecosystems on each island and roadmaps for implementation.

▶ **Integration into local, regional and national planning systems (including sea/landscape connectivity)** — **Highly Effective**

Action plans under the Management Plan, updated in 2024 (Ministry of Environment, 2024), are integrated within the policies and plans of the Tokyo Metropolitan Government and Ogasawara Village at regional and local scales.

▶ **Boundaries** — **Mostly Effective**

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 site, which has been erupting since 1973, but was silent when Ogasawara Islands was inscribed on the World Heritage list, remains active. 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,

showcasing the creation of a continent by the subduction of the marine plate. If the State Party were to request a boundary modification of the World Heritage site, the possibility of Nishino-shima Island's values also meeting criterion (viii) should be re-evaluated (IUCN Consultation, 2020b).

► Overlapping international designations — Data Deficient

No overlap with other international designations.

► Implementation of World Heritage Committee decisions and recommendations — Mostly Effective

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 was to conduct a survey of the sea area around the Ogasawara Islands (Ogasawara Island Branch Office, 2017) but whether this was completed is unclear.

► Climate action — Some Concern

Global climate changes are likely to not only have an impact on temperatures, frequency and intensity of weather events and habitat distribution, but are 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.
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). After the typhoon the strength of the fences was improved through fence reconstruction, but continued attention should be paid to the impact of typhoons on the ecosystem.
Given the majority of climate change impacts will originate from outside the site there is limited management that can be done within the site at this time, beyond establishing baselines and monitoring for any impacts.
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.

► Management plan and overall management system — Mostly Effective

The Management Plan has been updated in 2024 (Ministry of Environment, 2024). 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.

► 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).

► 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 was basically 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). The Management Plan for the site has been revised (2024) but is only available in Japanese at the time of this Outlook assessment and so details of the current budget are not available.

▶ 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 programmes — Mostly Effective

A visitor centre run by the Tokyo Metropolitan Government and the World Heritage Center operated by the Ministry of the Environment, as well as tourism organisations such as Ogasawara Whale Watching Association, provide education and interpretation programmes. Tourism operators are introducing improved guide qualification systems to ensure protection of sensitive areas. The Ministry of the Environment runs a website named “Ogasawara World Heritage Centre", which contains current information as well as regulations for the site in both Japanese and English.

▶ Tourism and visitation management — Some Concern

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).

▶ Sustainable use — Highly 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. There have been no reports of issues related to use of animal or plant species found within the site and no conflicts with sustainable use of natural products. In 2023, some restrictions about the number of visitors and visiting time were released under the rules of using the specific pathways with tour guides, which led to a recovery of the natural vegetation.

▶ Monitoring — Mostly Effective

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) but the status of this work is unclear. Monitoring of climate change impacts on the site will be important going forward as this is only expected to increase.

▶ Research — Mostly Effective

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). Status of genetic diversity and effect of the inbreeding depression on species vulnerability are studied for several endangered species including plants (Hamabata et al. 2019), birds (Ando et al. 2014) and insects (Nakahama et al. 2024), indicating the importance of in-situ and ex-situ genetic management. 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, Nakamura et al. 2024).

▶ Effectiveness of management system and governance in addressing threats outside the site

Some Concern

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.

▶ Effectiveness of management system and governance in addressing threats inside the site

Mostly Effective

The management system in place for the site and the current governance arrangements have been largely effective at addressing threats inside the site, despite the complex nature of governance arrangements. Protection of the site benefits somewhat from its limited visitation, which has likely protected it from further invasive species. The primary long-term threats come from outside the World Heritage site, with many being beyond the control of the management agency. Impressive efforts have taken place to eradicate invasive species, or where eradication was not entirely possible protect key areas of the site. Other threats including increasing tourism will need close monitoring, especially given the ongoing discussions around establishment of an airstrip, which has the potential to increase tourism numbers while also facilitating further invasive species.

Overall assessment of protection and management

Mostly Effective

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.

▶ Good practice examples

Programmes to control invasive alien species have been developed based on assessing and adapting global best practice island ecosystem management and public perception of efforts to control feral cats (Mitsui et al., 2018). The cat control successfully led to increase the population of an endemic subspecies of the Red-headed Wood Pigeon Columba janthina nitens (Horikoshi et al. 2020). Following the PHVA Workshop on Red-headed Wood Pigeon held in 2008, similar participatory workshop was held for the sake of Bonin Green Finch in 2021 -2024 (Suzuki, 2022). 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).

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**

High 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 2022, the Ministry of the Environment formulated plans for the Programmes for Rehabilitation of Natural Habitats and Maintenance of Viable Populations for 20 species of land snails on Ogasawara Islands, based on the Act on Conservation of Endangered Species of Wild Fauna and Flora (Ministry of the Environment, 2016; IUCN Consultation, 2024). For 10 of these species, ex-situ breeding is ongoing (IUCN Consultation, 2024).

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 serious 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 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 collaborative conservation efforts are on-going by the Ministry of the Environment, Forestry Agency, Tokyo Metropolitan Government and Ogasawara Village (IUCN Consultation, 2024).

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

№	Organization	Brief description of Active Projects	Website
1	Ministry of the Environment	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 family Camaenidae on Ogasawara Islands in 2016, based on the Act on Conservation of Endangered Species of Wild Fauna and Flora. Two species of the family Succineidae and four species of the family Enid were added to this plan in 2022. For 10 of these species, ex-situ breeding is ongoing.	http://www.env.go.jp/nature/kisho/hogozoushoku/maimai14.html
2	Ministry of the Environment	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).	Reported in Japan Times 2012.
3	Ministry of the Environment	The Ministry of the Environment is conducting 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. Due to a large-scale eruption in 2020, most of the island is covered in lava, providing a valuable place for the observation and study of ecosystem regeneration and succession.	http://www.comp.tmu.ac.jp/ogasawara/research_report.html (in Japanese with English summary)
4	Tokyo Metropolitan Government	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.	http://www.comp.tmu.ac.jp/ogasawara/research_report.html (in Japanese with English summary)

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