

Ogasawara Islands

Outstanding Universal Value / Valeur universelle exceptionnelle

(ix) Ecosystem / Ecosystème

Remarkably high rate of endemic species and ongoing evolutionary process on the oceanic islands*

*Oceanic islands: Islands that have never been connected to a continent

Taux remarquablement élevé d'espèces endémiques, et processus d'évolution en cours sur ces îles océaniques*

*Îles océaniques : îles qui n'ont jamais été reliées au continent

A Treasure Trove of Endemic Species

The Ogasawara Islands are located about 1,000 km away from Tokyo to the south. They consist of islands that are surrounded by vertical cliffs and ocean whose beautiful color is referred to as "Bonin Blue".

Since the islands have never bordered a continent in their history, the wildlife species found in Ogasawara are the descendents of animals and plants that arrived there by chance. Some were carried by birds or the wind, while others were washed up by ocean currents or clung to driftwood. Those species have survived by adapting themselves to the environment of the islands. They then became established on the islands and evolved in their own unique ways in a long period of time within an environment far separated from the mainland. As a result, this led to the occurrence of many endemic species which are not to be seen anywhere else, such as *Melastoma tetramerum* and *Hemicordulia ogasawarensis*. Roughly 40% of the vascular plants, about 25% of the insects, and more than 90% of the land snails (roughly 100 species) are endemic to Ogasawara.

Ongoing Evolutionary Process

The evolutionary process on the Ogasawara Islands is presently ongoing. The land snails and plants in particular have repeatedly undergone speciation by changing their morphology in accordance with their environment. This type of evolutionary process is called "adaptive radiation."

What is more, important examples that suggest mechanisms whereby species adapting from the ocean to the land can also be observed. As an example, *Stenomelania boninensis* is thought to have expanded their habitats in coastal to brackish water and then on to purely freshwater environments.



Sclerophyllous scrub



Diverse land snails

Protection and Management of the Ogasawara Islands Protection du Patrimoine Naturel Mondial de Îles d'Ogasawara

Protected Areas in the Property

Ogasawara National Park	
Special Protection Zone :	4,934 ha
Special Zone :	996 ha
Minami-iwoto Wilderness Area :	355 ha

(Under jurisdiction of MOE)

The Ecosystem Conservation Action Plan, which denotes a specific plan of action for resolving ecosystem-related challenges on the Ogasawara Islands, was prepared by the national government, the Tokyo Metropolitan Government, and Ogasawara Village. On the basis of this plan, protection and management efforts are being promoted.

The large number of endemic species on the Ogasawara Islands is highly evaluated internationally. Yet many of those do not know how to protect themselves from the species artificially introduced to Ogasawara later on. The endemic species are being preyed upon by the alien species and deprived of the areas where they live, so their numbers are plunging precipitously. In order to preserve the Outstanding Universal Value of the Ogasawara Islands, it is extremely important that countermeasures be taken against alien species and that the protection of endemic species and other rare species be promoted. In line with the advice of the Scientific Committee, adaptive management is carried out that evaluates the current situation by considering the interaction of wildlife and accordingly adjusting countermeasures.

Examples of Efforts / Exemples d'actions



Green anole (alien species)

Measures for the Restoration of Endemic Insect Species

Mesures pour la restauration des espèces endémiques d'insectes

The invasive green anole is found throughout Chichijima and Hahajima islands. Preying on and reducing populations of rare endemic insect species including the endemic lycaenid butterfly, the green anole has had a devastating impact. In 2013, it was found to have reached the southern areas of Anijima Island, where unique endemic insect fauna remain, raising concerns about its impact on endemic tiger beetles and other endemic insect species.

To protect the ecosystem in the heritage site, enclosures to prevent incursion by green anoles have been set up at Shin-yuhigaoka on Hahajima Island. The intensive control measures within these enclosures have led to the recovery of endemic insects. On Anijima Island, in addition to setting up a fence across the island to keep green anoles from spreading from their habitat on the southern part of the island, adhesive traps have been deployed to capture green anoles in areas where they are numerous. These measures

aim to reduce their numbers to the extent that they have no impact on endemic insect fauna.



Fence across the island to prevent spreading of green anoles

Countermeasures against Alien Species for the Restoration of Native Vegetation

Mesures contre les espèces exotiques pour la restauration de la végétation indigène

Counter measures against Alien Plant Species

Mesures contre les espèces exotiques

The proliferation of alien plant species like sheoak, white leadtree, and Bishop wood inhibits native plant growth by altering the forest interior, including blocking out sunlight and breezes. These alien plant species also affect the habitat of endemic insect species—for example, by blocking sunlight and generating leaf litter.



Sheoak (alien species)

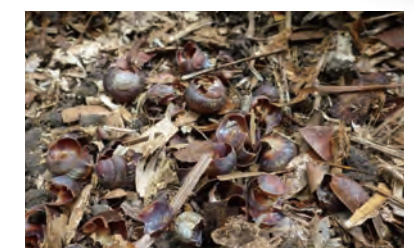
Countermeasures against Feral Goats

Mesures contre les chèvres férales

Feral goats trample and forage on endemic species and other plants, activities that have enormous impact on ecosystems. Feral goats have been successfully eradicated from the uninhabited islands of the Ogasawara, and endemic vegetation is recovering in some locations. Currently, feral goats are found only on Chichijima Island. In Higashidaira area, where numerous endemic plant species are found, enclosures to prevent incursion by feral goats have been set up. All goats have been eliminated from the area within these enclosures. Endemic plant species in this area are expected to recover.



Fence to prevent feral goats



Feeding damage on land snails by rats

Measures to Conserve Endemic Land Snails

Mesures pour la protection des espèces endémiques d'escargots terrestres

On the Ogasawara Islands, alien rodent species like the black rat and alien planarian species like the New Guinea flatworm (invading Chichijima Island) prey destructively on endemic land snails.

Various measures have been taken to prevent land snails from becoming extinct, including use of cage traps and rodenticide to eradicate black rats. At Toriyama, on Chichijima Island, enclosures to prevent incursion by planarians have been set up to protect land snail habitats. Visitors and island residents are encouraged to wash their footwear and to kill planarians with vinegar in order to prevent them spreading. Other measures to protect endangered land snails and increase their numbers include indoor and outdoor captive rearing on Chichijima Island, an example of *ex situ* conservation.



Mud washing mats