

Revival of the Ogasawara Islands' Forest

Eradication of *Bischofia*, an invasive alien plant

Deep *Bischofia* forests may appear rich in nature, but they are actually taking over Ogasawara's native forest.

Overlooking Mt. Chibusa in Hahajima, the highest peak of the Ogasawara Islands.



Ministry of the Environment

Hahajima - Bischofia dominated island

There are ongoing problems due to alien species brought by humans and their impact on the Ogasawara Islands. Regarding plants, *Bischofia* is the most problematic of all, for it rapidly spreads and replaces a huge area of forest, altering the native forest and its ecology.

● What is *Bischofia*?

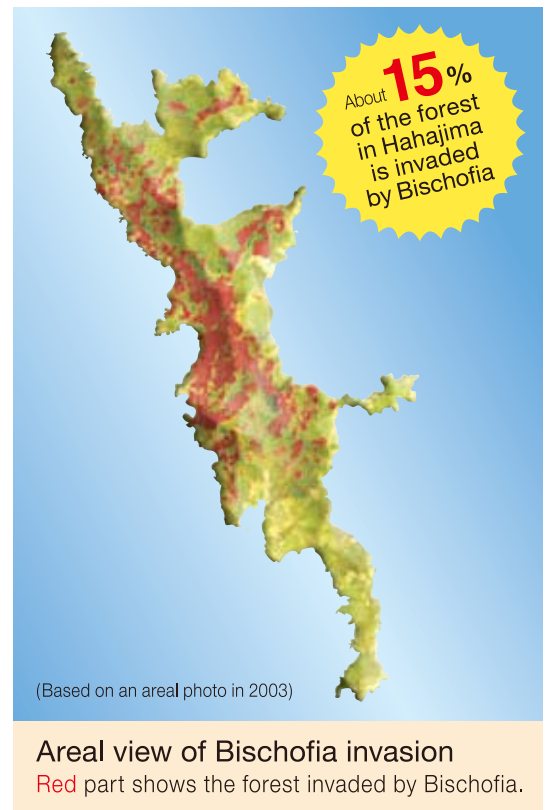
Bischofia (*Bischofia javanica*) is a plant species of the Euphorbiaceae family. It is an evergreen tree that grows taller than 20 meters. It was exploratory introduced to the Ogasawara Islands from Okinawa in 1905 for the provision of use as firewood. Although it was originally planted in limited areas, the *Bischofia* seeds have been dispersed by birds and explosively increased its covering area. Its distribution ranges from Okinawa, Taiwan, southern China to India, Malaysia, Polynesia, and to Australia.

Invasive *Bischofia*

Bischofia is a highly productive plant that rapidly invades and replaces native forests. *Bischofia* creates a broken-down forest ecosystem which is unable to nurture the native plants or animals of the Ogasawara Islands.



Bischofia dominant forest



Towards the recovery of Ogasawara Islands' forest

Bischofia eradication project is in progress protecting the native flora and fauna and recovering the natural forest of the Ogasawara Islands.



Bischofia and other alien plants are destroying the native forest ecosystem.



The native forest ecosystem gradually recovers as *Bischofia* and other alien plants are removed.



Native forest ecosystem will be regenerated in the Ogasawara Islands.

Valuable nature of the Ogasawara Islands

A treasure trove of precious wildlife

There are a lot of plants and animals that can only be found in the Ogasawara Islands and nowhere else in the world.

The reason for this high rate of endemism is that the Ogasawara Islands are comprised of remotely located oceanic islands 1,000km off-shore of mainland Japan. The islands' geological history and remoteness have enabled the species to uniquely evolve over time.

● Endemic Fauna



Columba janthina nitens, a subspecies of the Japanese wood-pigeon. Natural Monument / National Endangered Species of Wild Fauna and Flora / Critically Endangered



Ogasawara honeyeater (*Apalopteron familiare hahasima*). Natural Monument / National Endangered Species of Wild Fauna and Flora / Endangered



Meimuna Boninensis Natural Monument.

● Endemic Flora



Dendrocacalia crepidifolia Nakai Vulnerable



Calanthe hoshii National Endangered Species of Wild Fauna and Flora / Critically Endangered



Melastoma tetramerum Hayata var. *pentapetalum* Toyoda Endangered

Signs of nature recovery: Progress in conservation

Some of the species affected by invasive alien species have shown several signs of recovery as a result of the *Bischofia* eradication.



Celastrina ogasawaraensis

A butterfly that is endemic to the Ogasawara Islands. It is also one of the most endangered butterflies in Japan. The *Bischofia* eradication has resulted as an increase in the number of butterflies observed in Hahajima.



Boninthemis insularis

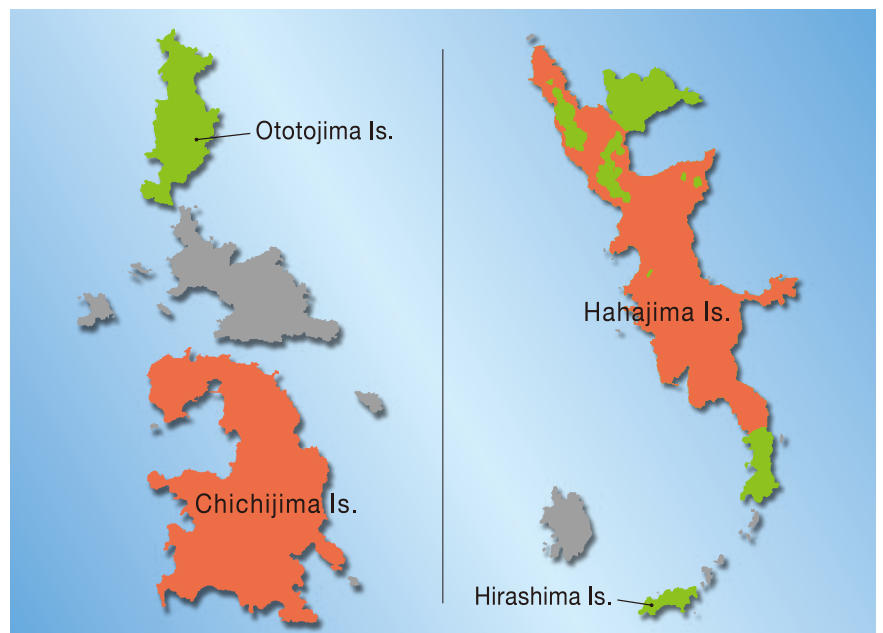
A dragonfly that is endemic to the Ogasawara Islands. It was extinct in Chichijima and their numbers have considerably decreased in Hahajima. In Hahajima, the dragonfly has returned to streams where the *Bischofia* was removed.

Bischofia eradication

Progress of the *Bischofia* eradication

There are 4 islands invaded by *Bischofia*; Chichijima, Hahajima, Ototojima, and Hirashima islands. Of these 4 islands, the eradication has almost been completed in Ototojima and Hirashima. The eradication is in progress in Hahajima and Chichijima. In the future, the eradication and monitoring will be continued to restore the forests of the Ogasawara Islands.

- : Islands or areas where the *Bischofia* eradication are in progress (Eradication in Ototojima and Hirashima has mostly been completed)
- : No *Bischofia* recorded
- : *Bischofia* distributed islands (It does not indicate that *Bischofia* grows in all of the area)



Based on the data in 2010

How to eradicate Bischofia

Bischofia trees are high in vitality. They are hard to eradicate because cut down stumps soon begin to regenerate.

For this reason, the Bischofia eradication project uses a herbicide injection method, which injects chemical substances through the holes on the tree's trunk.



A Cut down Bischofia tree



Leaf buds grow right back from the stump

Eradicating from the root without cutting down

● Chemical eradication by withering



Drill holes into the trunk.



Inject chemical into the holes and plug them with corks.



Withered Bischofia trees. The chemical does not affect the surrounding environment.

The chemical used in the eradication is a commercial herbicide product called Roundup Max Road (active ingredient: glyphosate). It is widely used and sold in Ogasawara. In the process of eradicating Bischofia, the herbicide only clears the eradication target and does not affect the surrounding vegetation.



◆ For more information



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