Ogasawara Islands

Ecosystem Conservation Action Plan

(English translation for World Heritage nomination)

January 2010

Kanto Regional Environment Office of Japan
Kanto Regional Forest Office
Tokyo Metropolitan Government
Ogasawara Village
Japan
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1. What Is the Ecosystem Conservation Action Plan?

1) Background and Objective

- Human influences, including alien species introductions, threaten parts of the Ogasawara Islands. Therefore, to institute necessary measures for correcting such influences, the “Ecosystem Conservation Action Plan” providing specific action plans has been prepared according to Paragraph 116 of the “Operational Guidelines for the Implementation of the World Heritage Convention”.

- This Action Plan is supplemental material for the “Ogasawara Islands Management Plan” and will be attached to the nomination dossier.

2) Relation to Other Plans

- This action plan corresponds to the “Ecosystem Conservation Action Plan” provided in the Management Plan, and its effectiveness is thereby guaranteed.

2. Strategic Conservation of Ecosystems by Island

Various activities focused on alien species countermeasures have been initiated by management authorities on the Ogasawara Islands. Based on the results of these activities, the management authorities will continue effective conservation of Ogasawara ecosystems through cooperation and close coordination of stakeholders based on long-term goals and activities.

As a short-term strategy, an Ecosystem Conservation Action Plan under the Management Plan has been evaluated and prepared. The action plan presents short-term targets, priorities, and details of countermeasures based on knowledge of interspecific relationships that vary by island. Ecosystem conservation and management measures, including alien species countermeasures, will be appropriately and systematically implemented based on this action plan.

On the basis of the above description from the Management Plan, the Action Plan and Management Plan will play the following roles.

2.1) Management Plan

- Comprehensive plan related to conservation and management of the natural environment of the Ogasawara Islands

2.2) Action Plan

- Specific action plans to correct human influences (mainly plans concerning ecosystem conservation on each island).

2.3) Period

- Demonstrate the activities for the next approximately 5–10 years to achieve long-term goals. Revised as necessary, in response to changes in the natural environment and social circumstances.

2.4) Promoting Agencies

- All parties related to the Ogasawara Islands

3) Structure and Content

- According to the Management Plan, the following 19 islands, which are the main islands of the Ogasawara Islands, are set as the targets for the Action Plan.

- For Chichijima Island and Hahajima Island, specific action plans are given for regions of important conservation value on each island.

<table>
<thead>
<tr>
<th>Chichijima Island</th>
<th>Chichijima, Anijima, Ototojima, Nishijima, Higashijima, Minamijima</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>*On Chichijima, specific action plans are given for the Higashidaira Region, Yoakedaira and Nagasaki Region, and Southern Region.</td>
</tr>
<tr>
<td>Hahajima Island</td>
<td>Hahajima, Mukojima, Anejima, Imotojima, Meiijima, Hirajima</td>
</tr>
<tr>
<td>Group</td>
<td>*For Hahajima, specific action plans are given for the Sekimon Region, North-Central Region, and Minamizaki Region.</td>
</tr>
<tr>
<td>Mukojima Island</td>
<td>Mukojima, Kitanoshima, Nakodojima, Yomejima, Nishinoshima, Kita-iwoto, Minami-iwoto</td>
</tr>
<tr>
<td>Group and others</td>
<td>*</td>
</tr>
</tbody>
</table>

- The Action Plan for each target island is composed of two main components: “Short-term target up to FY 2012” and “Diagram of interspecific relationships”. In addition, “Activity” is also described and is linked to the Management Plan. “Envisaged achievement (e.g., completion or onset of measures)” is also described.

- The specific connections among the contents of the Management Plan and Action Plan are as follows.

3.1) Related diagrams

- To clearly connect the Management Plan and Action Plan, linked content is contained in both plans.

- : Content considered in the Management Plan

- : Content considered in the Action Plan
2. Short-term Approaches for the Entire Ogasawara Islands

- Schlerophyllous scrub (eastern part of Chichijima and on Anijima) and subtropical rainforest (Sekimoto region of Hahajima) foster a number of endemic species; these ecosystems are representative of the Ogasawara Islands and have extraordinary biodiversity value. Therefore, these islands serve as models for the conservation framework. On both of these islands, the aim is complete strategic eradication of alien animals and area exclusion of alien plants by FY 2012. Through application of adaptive management principles based on a plan-do-check-action (PDCA) cycle, including monitoring and evaluation, the effectiveness of the mechanisms will be demonstrated.

- Feral goats have had large impacts on the flora and distribution of seabird breeding habitat. Much time and effort have been invested in efforts to eradicate feral goats on many islands including those of the Chichijima Island Group. As eradication had been achieved on Anijima by FY 2008, elimination was also initiated on Ototojima in FY 2008, with eradication targeted to be completed by FY 2011. On Chichijima, area exclusion has been initiated since FY 2009 as a short-term approach. Eradication is planned through continuous implementation of strategic eradication targeting the whole island thereafter.

- Black rats have impacted native flora and fauna such as endemic land snails. The black rat is also considered to play a role in inhibiting vegetation recovery on islands where feral goat eradication had been completed. Black rat eradication was initiated on Nishijima in FY 2007. In FY 2008, elimination was also initiated on Mukojima, where vegetation had not recovered satisfactorily even after feral goat eradication, and on Higashijima, where black rat predation pressure on seabirds had been identified. For Higashijima, complete eradication is targeted by FY 2009. Elimination will continue on Nishijima and Mukojima with the aim of complete eradication by FY 2012. Elimination on Anijima and Ototojima, where vegetation recovery is expected after feral goat eradication, will be initiated by FY 2009. Following work on those islands, elimination will be initiated, one island at a time, on the other peripheral islands of Chichijima (e.g., Minamijima, Hitomarujima, and Hyotanjima), which are important breeding grounds for seabirds. According to completion status, elimination will then be carried out on peripheral islands such as Mokohjima, Imotojima, Nakodojima, and Yomejima, which are important habitat for endemic birds and seabirds. The black rat is an important food source of the endemic subspecies of Eurasian buzzard. Therefore, in areas of the Chichijima and Hahajima island groups where the Eurasian buzzard inhabitation has been identified, monitoring surveys of the Eurasian buzzard will be conducted with the island group as a survey unit, along with the black rat elimination.

- Feral cats inhabit Chichijima and Hahajima, with smaller numbers also living on Anijima and Ototojima. As the black rat in the major food source for feral cats, the exclusion of feral cats will be carried out simultaneously with the elimination of black rats on Anijima and Ototojima, to prevent birds such as the endemic subspecies of Japanese wood-pigeon becoming the next predation target of feral cats once black rats are eradicated. In addition, as Hitoshidaira on Chichijima and Minamizaki on Hahajima are important habitats for the wood-pigeon and seabirds, fences will be installed around these areas to prevent feral cat invasion from the outside. Exclusion will also be conducted by removing live animals from inside the fenced areas. For effective implementation of island-wide measures against feral cats on Chichijima and Hahajima, separate implementation plans will be established for each island, and proper measures for keeping domestic cats will be promoted.

- Albatrosses as well as many other seabirds breed in the Mokohjima Island Group. The black-footed albatross (Phoebastria nigripes) and the Laysan albatross (Phoebastria immutabilis) have known breeding grounds on Mokojima. Activities to create a new breeding ground for the short-tailed albatross (Phoebastria albatrus) have been conducted since FY2007 and are planned to be continued. Mukojima is also an important habitat for endemic forest insects of the Mokojima Island Group, and thus forest recovery is an important issue. Eradication of feral goats has already been completed on Mukojima, and elimination for the black rat has begun, with complete eradication targeted by FY 2012. At the same time, ongoing elimination is being carried out to remove alien plants, including Leucaena and alien bamboo and dwarf bamboo species. After the completion, other alien plants will be monitored and will be managed adaptively.

- Although feral goat eradication has been completed on Nakodojima as well as Mokojima, soil erosion due to vegetation damage caused by feral goat continues. Therefore, measures such as vegetation restoration have been implemented to recover the soil basement. Along with these measures, eradication of major alien plants such as Leucaena and alien bamboo and dwarf bamboo species is to be completed by FY 2012.

- Feral goats of the Hahajima Island Group in relatively healthy condition cover extensive portions of the Hahajima peripheral islands. Conservation of this vegetation is particularly important on Mokohjima for various reasons, including as Symplocos boninensis habitat. Therefore, elimination of Casuarina will be implemented on Mokohjima before on other Hahajima peripheral islands. The elimination will be preceded by and conducted on the basis of research on the dependency of species such as Carduelis sinica kiiitzi and endemic land snails on Casuarina.

- With regard to eradication of Kita-iwoto, necessary measures will be considered once black rat eradication efforts have been completed on other islands.

- Minami-iwoto has an extremely high heritage value as it remains in primeval condition, has experienced only small impact by alien species, and has not yet been invaded by the black rat. For this reason, in principle, human influences will continue to be excluded as much as possible, and long-term monitoring will be conducted.

- When eliminating alien species, the removal of one impact factor from the current interspecific relations may lead to unexpected problems such as expansion of new alien species. On the other hand, in some cases, the endemic or threatened species to be conserved have become dependent on an alien species as their habitat or food source. Therefore, when implementing measures against alien species, it is necessary to use an adaptive management approach based on monitoring conducted before and after the elimination.

- Currently, modeling of changes in interspecific relations due to alien species eliminations within the sclerophyllous scrub ecosystems of Anijima and Chichijima is being conducted by an expert working group project established by the FA. Results from these analyses will be applied to alien species elimination projects throughout the Ogasawara Islands, hereafter.
3. Island-by-Island Ecosystem Conservation Action Plan

<table>
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<tr>
<th>Island</th>
<th>Chichijima Island Group</th>
<th>Short-term actions</th>
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</thead>
</table>

- **Feral goats** impact native and endemic vegetation and especially affect the sustainability of the sclerophyllous scrub ecosystem spread across the Higashidaira and Mt. Chuoan region of Chichijima, which contains endemic species such as *Callicarpa parvifolia* and *Crepidiastrum grandifolium*. Therefore, the MOE is considering setting up feral goat and feral cat fences. The installation work is planned to begin from FY 2009, following coordination with related agencies and experts, with the aim of project completion by FY 2012. The fences will achieve area exclusion of feral goats within the Higashidaira and Mt. Chuoan region.

- With regard to island-wide feral goat measures on Chichijima, related agencies such as the MOE, FA, TMG, and Ogasawara Village are cooperating to consider feral goat elimination for the island. Coordination among agencies will be obtained, and starting in FY 2010, continuous implementation of strategic elimination will be initiated to rapidly decrease the number of individuals to a low density and ultimately achieve eradication.

- The entire area of Higashidaira is an important habitat and breeding ground for the endemic subspecies of Japanese wood-pigeon. Thus, the FA has designated the region as a wood-pigeon sanctuary. Local NPOs and other parties are cooperating to conserve and maintain suitable forest habitat for the wood-pigeon by activities such as elimination of alien species and promotion of appropriate forest use. These efforts will be continued. Furthermore, because feral cats present a predation risk, the MOE is planning to erect feral goat and feral cat fences to achieve complete area exclusion of both animals within the Higashidaira region by FY 2011. In addition, based on the implementation plan established by the Ogasawara Cat Liaison Committee, capturing of feral cats will be continuously implemented in the surrounding mountain region in parallel with the aim of achieving island-wide exclusion.

- On Chichijima and Hahajima, to cut off a source of new feral cats, appropriate measures for keeping domestic cats will also be strictly implemented by the Ogasawara Cat Liaison Committee, Tokyo Veterinary Medical Association, and other parties. Thus, the measures against feral cats will be conducted in cooperation with measures regarding domestic cats.

- As the sclerophyllous scrub in the Higashidaira and Mt. Chuoan region is a habitat for particularly threatened endemic plant species, the FA, in cooperation with local NGOs and other parties, has eliminated alien plants such as *Bischofia*, *Casuarina*, and *Pinus hutchuensis* and will continue this work. Area exclusion of *Bischofia* will be completed by FY 2009, and measures such as extraction of young trees will be carried out as necessary thereafter. In addition, implementation of elimination to achieve island-wide eradication of Bischofia will be considered.

- With regard to *Psidium littorale*, *Ficus microcarpa*, and *Leucaena*, conservation targets, and introduction status will be determined and their elimination along with species such as *Casuarina* will be considered. Elimination activities aimed at species such as *Casuarina* and *Pinus hutchuensis* will be expanded to the whole area of Yoakedaira where sclerophyllous scrub is distributed.

- With regard to predatory flatworm, area defense measures to block unaided movement of planaria species will be established, and area defense measures will be implemented in un-invaded areas that are still inhabited by endemic land snails (especially *Mandarina* species). These areas include Yoakedaira, Toriyama, Tatsumizaki, and Nishikaigan. These measures will be implemented by the target date of FY 2012.

- Habitat of the endemic species *Ogasawara zo lineatus* is found in the southern region of Chichijima, but is under predation pressure by the green anole. Measures against green anoles and cane toads will be considered for important areas for conservation. These include *Ogasawara lineatus* habitat, areas near water bodies where natural replenishment of dragonflies such as *Hemicordulia ogasawaren sis* from Anijima is expected, and rocky desert vegetation in the entire Higashidaira area where natural re-colonization of *Cicindela bonina* is anticipated.

- With regard to the *Bonin flying fox* on Chichijima, the population size is being continuously monitored, and measures to reduce agricultural damage by the flying fox are being tested. Awareness raising and supportive measures for farmers and other related parties will be continued thereafter. For conservation of *Bonin flying fox* group gregarious resting sites, measures for co-existence and coordination with tourism use in the surrounding region are being developed and expanded to include evaluation of the protective measures for regional conservation.

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<td>Tentative list</td>
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<td>Feral goat (Higashidaira: area exclusion)</td>
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<td>Feral goat (Chichijima island-wide: consider exclusion methods→suppress to low density→eradication)</td>
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<td>Feral cat (Higashidaira: area exclusion)</td>
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<td>Feral cat (Chichijima island-wide: exclusion within the area surrounding the area exclusion zone→low density→exclusion)</td>
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<td>Casuarina, Pinus lutchuensis, Psidium littorale and other alien plant species (Higashidaira &amp; Yoakedaira)</td>
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<td>Bischofia (Higashidaira)</td>
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<tr>
<td>Spatial management of alien species (Higashidaira)</td>
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<tr>
<td>Predatory flatworm (Yoakedaira, Toriyama, Tatsumizaki)</td>
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<td>Green anole</td>
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</tbody>
</table>
The sclerophyllous scrub vegetation in the entire Higashidaira region, where Chichijima's original vegetation is still well preserved, will be appropriately conserved. In forests, which are widely distributed in the central to southern parts of the island, conservation and management measures such as elimination of alien species will continue to be conducted in an adaptive manner, considering already established interspecific relationships. Feral goats are the major impact factor. Expulsion of goats will be conducted (e.g., by setting up fences) in conservation priority areas of endemic plant species. In addition, alien plants such as Casuarina and Bischofia will be eliminated mainly in important regions for conservation, and sclerophyllous scrub and Schima mertensiana forest will be conserved. For endemic plants such as Rhododendron boninense, Symptipicos kawakamii, Pittosporum parvifolium, Melastoma tetramerum, and Calanthe hattorii, habitat conservation will involve the continuation of periodic patrols, monitoring, and alien species measures that build on already obtained results.

Feral goats are the major impact factor. Expulsion of goats will be conducted (e.g., by setting up fences) in conservation priority areas of endemic plant species. In addition, alien plants such as Casuarina and Bischofia will be eliminated mainly in important regions for conservation, and sclerophyllous scrub and Schima mertensiana forest will be conserved. For endemic plants such as Rhododendron boninense, Symptipicos kawakamii, Pittosporum parvifolium, Melastoma tetramerum, and Calanthe hattorii, habitat conservation will involve the continuation of periodic patrols, monitoring, and alien species measures that build on already obtained results.

Habitat conservation for the endemic subspecies of Japanese wood-pigeon (Columba janthina nitens) has already been established in Higashidaira by the Forestry Agency. Various protective measures are being employed, such as securing water holes and conducting patrols. Other additional measures to recover and conserve the wood-pigeon breeding grounds and habitat will include a preliminary exclusion of feral cats, for example by setting up fences, and the removal of other alien species impacts. Because the wood-pigeon moves among islands, including Hahajima, Anijima, and Ototojima, unified conservation measures will be conducted for habitats in all these areas with the aim of achieving steady habitat.

Habitat conservation for the endemic subspecies of Japanese wood-pigeon (Columba janthina nitens) has already been established in Higashidaira by the Forestry Agency. Various protective measures are being employed, such as securing water holes and conducting patrols. Other additional measures to recover and conserve the wood-pigeon breeding grounds and habitat will include a preliminary exclusion of feral cats, for example by setting up fences, and the removal of other alien species impacts. Because the wood-pigeon moves among islands, including Hahajima, Anijima, and Ototojima, unified conservation measures will be conducted for habitats in all these areas with the aim of achieving steady habitat.

### Activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement* (by the end of FY 2009)</th>
<th>Short-term target after nomination (by the end of FY 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of sclerophyllous scrub and Schima mertensiana forest</td>
<td>Elimination of feral goats</td>
<td>Setting up and partially complete erection of fences to prevent the invasion of feral goats and feral cats in the Higashidaira area, targeting completion in 2010. [MOE]</td>
<td>Complete area exclusion</td>
</tr>
<tr>
<td></td>
<td>Elimination of Casuarina and Pinus kutchensis</td>
<td>Initiating area exclusion</td>
<td>Complete area exclusion</td>
</tr>
<tr>
<td></td>
<td>Elimination of Bischofia</td>
<td>Initiating survey to determine the existing condition</td>
<td>Continue protection</td>
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<tr>
<td></td>
<td>Protection of threatened plants</td>
<td>Setting up protective nets to protect threatened plants growing in Higashidaira to prevent them from feral goat grazing. [TMG]</td>
<td>Continue protection</td>
</tr>
<tr>
<td>2. Habitat conservation for wood-pigeon</td>
<td>Exclusion of feral cats</td>
<td>Establishment of fences to prevent invasion by feral goats and cats in Chichijima's Higashidaira region, targeting completion in 2010. Removing (excluding) feral cats from within and also at outside of the fenced areas. [MOE]</td>
<td>Complete area exclusion</td>
</tr>
<tr>
<td></td>
<td>Elimination of black rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
</tr>
<tr>
<td>3. Habitat restoration for endemic insects</td>
<td>Elimination of the green anole</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present (Blue): Planned to be completed by the end of FY 2012
Chichijima Island (Chichijima Island Group)

1. Conservation of sclerophyllous scrub and Schima mertensiana forests
   - The sclerophyllous scrub vegetation in the entire Higashidaira region, where Chichijima’s original vegetation is still well preserved, will be appropriately conserved. In Schima mertensiana forests, which are widely distributed in the central to southern parts of the island, conservation and management measures such as elimination of alien species will continue to be conducted in an adaptive manner, considering already established interspecific relationships.
   - Feral goats are the major impact factor. Expulsion of goats will be conducted (e.g., by setting up fences) in conservation priority areas of endemic plant species. In addition, alien plants such as Casuarina and Bischofia will be eliminated mainly in important regions for conservation, and sclerophyllous scrub and Schima mertensiana forest will be conserved.

2. Elimination of feral goats
   - Initiating strategic eradication activities (in the whole region) with cooperation among management authorities, starting from FY 2009. [MOE, FA, TMG, and Ogasawara Village]

3. Habitat conservation for land snails
   - The southern region and Yoakedaira are important habitat for land snails such as Mandarina chichijimana, which are valuable in ecological and evolutionary biology studies. In these regions, measures will focus on preventing the introduction of predatory flatworm and conserving the habitat of existing land snails.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>(by the end of FY 2005)</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>(by the end of FY 2012)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of sclerophyllous scrub and Schima mertensiana forests</td>
<td>Elimination of feral goats</td>
<td>Initiating strategic measures with cooperation among management authorities</td>
<td></td>
<td>Implementation of elimination as a countermeasure against agricultural damage on Chichijima. [Ogasawara Village]</td>
<td>Initiate and continue elimination</td>
<td>Continue with the activities listed on the left. [Ogasawara Village]</td>
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<tr>
<td></td>
<td>Elimination of Casuarina and Pinus lutchuensis</td>
<td>Initiating area exclusion</td>
<td></td>
<td>Implementation of elimination in the Nagasaki region of Chichijima. [NPO]</td>
<td>Continue and expand area exclusion</td>
<td>Continue with the activities listed on the left. [NPO, FA, and others]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elimination of Ficus microcarpa, Leucaena, Psidium littorale, and other alien invasive species.</td>
<td>Initiating a survey to determine the existing condition</td>
<td></td>
<td>Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate area exclusion</td>
<td></td>
<td></td>
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<tr>
<td>3. Habitat conservation for land snails</td>
<td>Elimination of predatory flatworm</td>
<td>Initiating area defense</td>
<td></td>
<td>Conducting trials of specific measures for area defense within the Yoakedaira region of Chichijima (installation of electric fences to interrupt unaided movement), examining the effectiveness of measures, and carrying out demonstration experiments to establish proven area defense measures. [MOE]</td>
<td>Continue area defense measures</td>
<td>Set up sanctuaries in land snail habitats (e.g., Yoakedaira), and implement preventive measures against introduction. [MOE]</td>
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<td></td>
<td>Elimination of black rats</td>
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<td>(To be addressed on medium- and long-term bases)</td>
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</tbody>
</table>

*Correspond to \[ \text{Legend} \] in the figure below

**Legend**
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

**Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.**

**Competition**
- Eurasian Buzzard
- Wood-pigeon
- Feral goat
- Feral cat

**Preying**
- Green anole
- Predatory flatworm
- Insects

**Pollination**
- Callicarpa parvifolia
- Mandarina suenoae
- Symlocos kawakamii
- Pittosporum parvifolium
- Eurya japonica subsp. Palauensis
- Santalum boninense
- Callicarpa glabra
- Callicarpa parvifolia

**Important habitat for land snails**
- Mandarina suenoae
- Mandarina mandarina
- Boninella callistoderma

**Sclerophyllous scrub ecosystem (Distylito-Pouterietum dubiae)**
- Santalum boninense
- Callicarpa glabra
- Callicarpa parvifolia
- Other plants

**Casuarina**
- Leucaena
- Ficus microcarpa
- Pittosporum parvifolium
- Eurya japonica subsp. Palauensis

**Schima mertensiana forest ecosystem**
- Pinus lutchuensis
- Santalum boninense
- Ficus microcarpa
- Leucaena

**Area exclusion**
- [NPOs etc., MOE, FA, TMG, Ogasawara Village]

**Area defense**
- [MOE]
Chichijima Island
(Southern Region)

1. Conservation of sclerophyllous scrub and Schima mertensiana forest
The sclerophyllous scrub vegetation in the entire Higashidaira region, where Chichijima's original vegetation is still well preserved, will be appropriately conserved. In Schima mertensiana forests, which are widely distributed in the central to southern parts of the island, conservation and management measures such as elimination of alien species will continue to be conducted in an adaptive manner, considering already established interspecific relationships. Feral goats are the major impact factor. Expulsion of goats will be conducted (e.g., by setting up fences) in conservation priority areas of endemic plant species. In addition, alien plants such as Casuarina and Bischofia will be eliminated mainly in important regions for conservation, and sclerophyllous scrub and Schima mertensiana forest will be conserved.

2. Habitat conservation for wood-pigeon
A sanctuary to conserve important habitat for the endemic subspecies of Japanese wood-pigeon (*Columba janthina nitens*) has already been established in Higashidaira by the Forestry Agency. Various protective measures are being employed, such as securing water holes and conducting patrols. Other additional measures to recover and conserve the wood-pigeon breeding grounds and habitat will include a preliminary exclusion of feral cats, for example by setting up fences, and the removal of other alien species impacts. Because the wood-pigeon moves among islands, including Hahajima, Anijima, and Ototojima, unified conservation measures will be conducted for habitats in all these areas with the aim of achieving steady habitation.

3. Habitat conservation for land snails
The southern region and Yoakedaira are important habitat for land snails such as *Mandarina chichijimana*, which are valuable in ecological and evolutionary biology studies. In these regions, measures will focus on preventing the introduction of predatory flatworm and conserving the habitat of existing land snails.

4. Habitat conservation for endemic insects
Habitat conservation for endemic insects will be promoted by area exclusions of the green anole and cane toad, and re-colonization by insects flying from nearby islands such as Anijima is anticipated.

### Table of Action Item and Envisaged Achievement

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<th>Action item</th>
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<tbody>
<tr>
<td>1. Conservation of sclerophyllous scrub and Schima mertensiana forest</td>
<td>Elimination of feral goats</td>
<td>Initiating strategic measures with the cooperation among management authorities</td>
<td>Implementation of elimination as a countermeasure against agricultural damage on Chichijima. [Ogasawara Village]</td>
<td>Initiate and continue elimination</td>
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<td></td>
<td>Elimination of Ficus microcarpa, Leucaena, Psidium littorale, and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Estimating the distribution status of alien woody plants based on aerial photographs. [FA]</td>
<td>Initiate area exclusion</td>
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<tr>
<td>2. Habitat conservation for wood-pigeon</td>
<td>Exclusion of feral cats</td>
<td>Initiating exclusion</td>
<td>Implementation of emergency captures of feral cats in cooperation with the Ogasawara Cat Liaison Committee (targeting all of Chichijima). [FA]</td>
<td>Continue exclusion</td>
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<td></td>
<td>Elimination of black rats</td>
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<tr>
<td>3. Habitat conservation for land snails</td>
<td>Elimination of predatory flatworm</td>
<td>Initiating area defense</td>
<td>Carrying out trials of specific measures for area defense at important areas within the un-invaded region of Chichijima, and examining the effectiveness of measures. [MOE]</td>
<td>Continue area defense</td>
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<td>Elimination of black rats</td>
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<tr>
<td>4. Habitat conservation for endemic insects</td>
<td>Elimination of the green anole</td>
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</tbody>
</table>

*Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

*Correspond to * in the figure below

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(1) Chichijima Island (Chichijima Island Group)
801 Machilus boninensis-Ardisietum sieboldii, typical subass., typical variant
02 Machilus boninensis-Ardisietum sieboldii, Schima mertensiana subass.
03 Machilus kobu-Schimetum mertensianae, Psidium littorale subass.
04 Machilus kobu-Schimetum mertensianae, Geniostoma glabrana subass, typical variant / Freycinetia boninensis variant
06 Pisonio-Elaeocarpetum photiniaefoliae
14 Distylium-Pouterietum dubiae
15 Wikstroemia-Pouterietum dubiae
16 Machilus kobu-Schimetum mertensianae, Geniostoma glabrana subass., Distylium lepidotum variant
17 Hernandia nymphaeifolia -Terminalia catappa community
18 Lyttonia chinensis var. boninensis-Pandanus boninensis community
19 Hibiscus tiliaceus community
21 Sophora tomentosa community
22 Terminalia catappa community
23 Celtis boninensis-Sapindetum boninensis community
25 Pandanus boninensis community
29 Cyatheta mertensianae (secondary stand)
30 Freycinetia boninensis community
31 Bischofia javanica community
32 Leucaena leucocephala community
33 Pinus lutchuensis community
35 Casuarina equisetifolia forest (incl. secondary forest)
36 Evergreen broadleaved planted forest
37 Bambusa vulgaris forest etc.
38 Denis elliptica community
40 Plant communities in rocky desert
41 Nephrolepis cordifolia community
42 Miscanthetum condensati var. boninensis (incl. Pennisetum sordidum, typical under units etc.)
44 Ipomoea pes-capreae community
45 Vitex rotundifolia community
47 Limonium wrightii community (incl. Lycidetum griseolae)
48 Zoysia tenuifolia community (natural grassland)
49 Myoporetum boninensis
50 Haplophyllum spinatum community
51 Histiopteris incisa community
56 Arundo donax community
57 Agave americana community / Agave sisalana community
58 Ananinaria simonii community / Pseudosasa japonica community etc.
59 Hyperus alternifolius-Calonyction aculeatum community
60 Bryophyllum pilinum community
61 Stachytarpheta jamaicensis community
62 Paspalum orbiculare-Paspalum dilatatum community (include. Pennisetum sordidum community, Paspalum orbiculare under units)
65 Weed communities of the open area (Bidens pilosa var. radatia community etc.)
66 Field weed communities (Amaranthus lividus community etc.)
67 Artificial grassland
68 Park etc. (Planted trees, lawn etc.)
69 Residence, factory etc.
70 Concrete pavement site
71 Artificial bareland
72 Natural bareland
73 Open water

【Reference】 Vegetation of Chichijima Island
(1) Chichijima Island (Chichijima Island Group)
Information on the fences for feral cat and goat exclusion in the Higashidaira area

1. Goals
   Prevent the invasion of feral cats to protect the wood-pigeon.
   Prevent the invasion of feral goats to protect rare plants.

2. Location
   Fences were installed in the vicinity of the Higashidaira wood-pigeon sanctuary, established inside the national forest (along a road), toward the coastline. (The initial route was modified to detour around sclerophyllous scrub and endemic land snail habitat.)

3. Structure
   The fences are 2.5 m tall and extend 4.6 km in total.
   To exclude feral cats, a climb-proof structure will be fixed at the top of the fence. The fences are designed using a simple framework of posts installed in the ground without a foundation; once the island-wide eradication and measures against domestic cat and others are completed, these fences will be removed.

4. The course to be taken
   - Construction partially completed in FY 2009.
   - From FY 2009, elimination of feral goats and feral cats will be implemented both within and outside the fences.
   - Once the effectiveness of the fences in Higashidaira has been verified, fences will be installed in the central mountain region.
Anijima Island (Chichijima Island Group)

- Anijima has the largest area of sclerophyllous scrub among the Ogasawara Islands, as well as many threatened endemic plants and insects. Therefore, it is a high-priority island for the elimination of alien species such as feral goats and Casuarina. Necessary conservation measures will be urgently promoted hereafter.

- Casuarina and Pinus lutchuensis are expanding in distribution and thereby stressing endemic plants within the sclerophyllous scrub and rocky desert vegetation; these invasive alien species are also stressing the habitat of Cicindela bonina by their leaf litter. Therefore, the MOE and FA are currently conducting area exclusion measures on the gently sloped land of the plateau.

- Feral goats have been eradicated by the TMG, and vegetation such as rocky desert vegetation and endemic plant species including Callicarpa parvisetosa, Crepidiastrum grandidens, and Aristida cumingiana are recovering as a result. It is also expected that seabirds will start breeding on the island again. On the other hand, since the grazing pressure of feral goats has been removed, plants such as Leucaena and Lantana camara var. aculeata have been increasing and invading the gently sloped land on the plateau.

- To address the above situation, area exclusion of alien plants such as Casuarina, Pinus lutchuensis, Leucaena, and Lantana camara var. aculeata on the gently sloped land of the plateau is targeted by FY 2012, based on monitoring (described below) of interspecific interactions and other information. As the soil seed bank of alien plants remains within the steeply sloped land on the seacoast, monitoring for new introduction and overgrowth of alien species and adaptive measures will be continued after area exclusions. With regard to Leucaena and Lantana camara var. aculeata, technical examinations of elimination methodologies will be conducted.

- The FA is analyzing models and surveys of the sclerophyllous scrub ecosystem on Anijima to determine the interspecific interactions on Ogasawara Islands and to predict the impacts of alien species elimination. Based on monitoring data, researchers will predict, evaluate, and analyze the recovery status of endemic plants and the status of introduction and overgrowth by new alien species at sites where alien species such as feral goat and Casuarina have been eliminated. The results obtained from these analyses will be utilized for the area exclusion mentioned above.

- Black rats have impacted the overall vegetation and species such land snails. To increase the effect of feral goat eradication, elimination of black rats will also be initiated by the MOE from FY 2009, with eradication targeted by FY 2012. As black rat elimination involves risks as well as benefits, monitoring will be implemented, and measures will be considered throughout the processes as necessary. In addition, because the black rat is an important food source for the endemic subspecies of Eurasian buzzard, the impact of black rat eradication on the Eurasian buzzards will also be monitored.

- Although feral cats were not identified in the survey conducted by the MOE, and an extremely small number of (or no) feral cats are estimated to inhabit Anijima, monitoring to identify feral cats will continue and, if cats are found, exclusion measures will be implemented.

- The overgrowing colony of Lantana camara var. aculeata at Takinoura Bay, the landing port of the island, is also the seed source of this alien plant within the island. Therefore, elimination is currently being implemented by volunteers, NPOs, and other parties. This elimination will continue through cooperation among management authorities.
### Anijima Island

1. **Conservation of sclerophyllous scrub**
   - Among alien animals, feral goats, which had been the main impact factor for sclerophyllous scrub vegetation, have nearly been eradicated. Now, elimination of the black rat targeting its eradication is planned. Appropriate conservation measures will also be carried out for the sclerophyllous scrub including rocky desert vegetation intermingled within and natural Schima sclerophyllous scrub forest distributed in surrounding hollows and ravine bottoms through the removal of impact factors, including the black rat, and monitoring.

2. **Habitat conservation for land snails**
   - Anijima is an important habitat for many land snails, such as Mandarina anijimana, which is important for ecological and evolutionary biology studies. Elimination of the black rat, which is believed to cause grazing damage, is planned, targeting its eradication. However, the black rat is also a known food of the endemic subspecies of Eurasian buzzard; thus, careful and adequate measures are being conducted under continued monitoring.

3. **Habitat conservation for wood-pigeon**
   - Anijima is one of the habitats of the endemic subspecies of Japanese wood-pigeon (Columba janthina nitens). The wood-pigeon habitat is being conserved by excluding feral cats, which are assumed to inhabit the wood-pigeon habitat in small numbers. In addition, because the wood-pigeon moves among islands such as Chichijima and Ototojima, unified conservation measures are being conducted in these habitats with the goal of achieving steady habitation.

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<table>
<thead>
<tr>
<th>Activity</th>
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<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>(by the end of FY 2009)</th>
<th>(by the end of FY 2012)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of sclerophyllous scrub</td>
<td>Elimination of feral goats</td>
<td>* Completion of eradication</td>
<td>Completion of eradication. [TMG]</td>
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</tr>
<tr>
<td></td>
<td>Elimination of black rats</td>
<td>* Initiating elimination</td>
<td>Initiating elimination in FY 2009 based on the status of elimination efforts on Mukojima. [MOE]</td>
<td>Complete eradication</td>
<td>Complete eradication on the island and also on its peripheral islands. [MOE]</td>
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<tr>
<td></td>
<td>Elimination of Casuarina and other alien plants</td>
<td>* Completion and expansion of area exclusion</td>
<td>Implementation of monitoring following experimental elimination on the Anijima plateau, and initiating new elimination experiments. [MOE]</td>
<td>Complete and expand area exclusion</td>
<td>Implement elimination with the aim of complete area exclusion within the gently sloped land on the plateau. [FA]</td>
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<tr>
<td></td>
<td>Elimination of Leucaena</td>
<td>* Establishment of elimination methods</td>
<td>Implementation of experiments to establish effective technical elimination methods using chemicals. [MOE]</td>
<td>Complete area exclusion</td>
<td>Initiate elimination in FY 2010, with the aim of complete area exclusion within the gently sloped land of the plateau by FY 2012. [FA]</td>
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<tr>
<td></td>
<td>Elimination of Lantana camara var. aculeata</td>
<td>* Establishment of elimination methods</td>
<td>Implementing the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Complete area exclusion</td>
<td>From FY 2010 within the gently sloped land of the plateau, implement elimination of Casuarina and other plants as well as experimental elimination in a small area with monitoring thereafter. [FA]</td>
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<tr>
<td></td>
<td></td>
<td>* Initiating a survey to determine the existing condition (on the plateau)</td>
<td>Initiating elimination in Takinoura Bay. [Resident volunteers and NGO]</td>
<td></td>
<td>With cooperation among volunteers, NPOs, and management authorities, implement elimination in Takinoura Bay.</td>
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<tr>
<td>2. Habitat conservation for land snails</td>
<td>Elimination of black rats</td>
<td>* Same as above</td>
<td>* Same as above</td>
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<tr>
<td>3. Habitat conservation for wood-pigeon</td>
<td>Elimination of black rats</td>
<td>* Same as above</td>
<td>* Same as above</td>
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</tbody>
</table>

*Correspond to 🟢 in the figure below

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

[Gray] Almost complete at present  [Blue] Planned to be completed by the end of FY 2012
(2) Anijima Island (Chichijima Island Group)

**Legend**
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term

**Interspecific relations**
- Interspecific relations that influence

**Important habitat for land snails**
- H. diplomphalus diplomphalus
- *Hirasea chichijimana*
- *Hirasea (Famelestca) operculina*
- *Mandarina anijimana*
- *Mandarina tomiyamai*

**Important habitat for wood-pigeon**
- Wood-pigeon

**Important habitat for Cicindela bonina**
- *C. bonina*

**Sclerophyllous scrub and rocky desert vegetation ecosystem**
- (Machilus kobu-Schmetetum mertensianae, Geniostoma glabrum subass., Distylium lepidotum variant)
- (Distylio-Pouterietum dubiae)
- (Plant communities of rocky desert)

**Other endemic and threatened species**
- *Callicarpa glabra*
- *Callicarpa parvifolia*
- *Crepidiastrum grandicollum*
- *Distylium lepidotum*
- *Osteomeles lanata*
- *Symplocos pergracilis*

**Native species etc.**
- *Eurya japonica subsp. Paluensis*
- *Myrsine maximowiczii*
- *Stachyurus praecox*
- *Eurya japonica subsp. Paluensis*
- *Symphlocos pergracilis*

**Invasive alien species**
- *Leucaena*
- *Pinus lutchuensis*

**Invasive alien species to be addressed in the short-term**
- *Feral goat*
- *Feral cat*
- *Eurasian buzzard*
- *Black rat*

**Competition**
- *Pittosporum parvifolium*
- *Myrsine maximowiczii*
- *Callicarpa glabra*
- *Callicarpa parvifolia*
- *Crepidiastrum grandicollum*
- *Distylium lepidotum*
- *Osteomeles lanata*
- *Eurya japonica subsp. Paluensis*

**Food source**
- *Birds*

**Habitat invasion**
- *Lantana camara var. aculeata*

**Preying**
- *Nematode*
Vegetation of Anijima and related information

- 01 Machilus boninensis-Adonis sieboldii, typical subass., typical variant
- 14 Distylina-Pouterietum dubiae
- 15 Wiktostroma-Pouterietum dubiae
- 16 Machilus kobu-Schimenatum subass., Geniostoma glabrum subass., Distylina leptidium variant
- 17 Hernandia nymphaeifolia -Terminalia catappa community
- 18 Liistonia chinensis var. boninensis-Pandanus boninensis
- 22 Terminalia catappa community
- 25 Pandanus boninensis community
- 34 Lantana camara community
- 35 Casuarina equisetifolia forest (includ. secondary forest)
- 36 Evergreen broadleaved planted forest
- 40 Plant communities in rocky desert
- 42 Miscanthetum condensati var. boninensis (includ. Pennisetum sordidum community, typical under units etc.)
- 45 Vitex rotundifolia community
- 62 Paspalum orbiculare-Paspalum dilatatum community (includ. Pennisetum sordidum community, Paspalum orbiculare under units)
- 63 Zoysia tenuifolia community (secondary grassland)
- 72 Natural bareland
Short-term actions

- On Ototojima, the only island inhabited by the five endemic dragonflies of Ogasawara, the MOE has nearly achieved eradication of the bullfrog, followed by that of the feral pig. Therefore, the main alien-animal impact factors on this island have been removed. From now on, together with actions to secure and manage lentic environments to mitigate risks such as drought, conservation of the forest environment (mentioned below) will be carried out.

- Elimination of feral goats has also been started on Ototojima by the TMG, following the completion of feral goat eradication on Anijima. In the northern part of Ototojima, where a pure population of *Morus boninensis* is distributed (northwestern part of Mt. Hirone), soil erosion caused by feral goats has been observed. Therefore, strategic and adaptive elimination measures will be developed based on the feral goat exclusion plan, with the goal of rapid reduction in goat numbers. The aim is to reduce the goat population to a low density by FY 2010, with complete eradication aimed for by FY 2011. After that, measures to prevent soil erosion will be considered and implemented, as will monitoring for the introduction of *Morus australis*, which presents the potential risk of cross-fertilization.

- Black rats impact both flora and fauna, including endemic land snails. On Ototojima, the MOE initiated black rat elimination in FY 2009, with the aim of complete eradication by FY 2012. Because rat elimination has potential risks as well, the effects will be monitored, and measures will be considered as necessary. In addition, as the black rat is an important food source for the endemic subspecies of Eurasian buzzard, the impact of black rat eradication on the Eurasian buzzard will be monitored.

- Feral cats have a predation impact on birds including the endemic subspecies of Japanese wood-pigeon. Among the Chichijima Island Group, Ototojima is the second most important island for wood-pigeon habitat, following Chichijima. Feral cats have been found on the island, and complete exclusion of feral cats is targeted by FY 2010.

- To recover *Schima mertensiana* vegetation and avoid stress on the habitats of woodland endemic insects and land snails, the MOE has already completed the eradication of Bischofia at the early stage of its invasion. For other alien plants such as Casuarina, *Ficus microcarpa*, and Leucaena, once their distributions are understood, elimination will be initiated through agency cooperation, prioritizing areas of conservation importance.

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<tr>
<th>Tentative list</th>
<th>Submission of nomination dossier</th>
<th>Target year</th>
<th>Medium-long-term actions</th>
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<tbody>
<tr>
<td>Bischofia (eradication)</td>
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<tr>
<td>Bullfrog (eradication)</td>
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<td>Feral pig (eradication)</td>
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<td>Feral goat (eradication)</td>
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<tr>
<td>Black rat (eradication)</td>
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<tr>
<td>Feral cat (exclusion)</td>
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<tr>
<td>Elimination of alien plants (areas of conservation importance)</td>
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</table>
**Ototojima Island**

### 1. Conservation of Schima mertensiana forests

Activities such as exclusion of alien species will continue to be conducted in an adaptive manner in highly natural forests of Schima mertensiana that occupy a large area of Ototojima, particularly in the central part of the island, considering already established interspecific relationships. Extensive invasion by Bischofia was a concern. However, this species has been eradicated at the early stage of its invasion. Now, feral goat, black rat, and Casuarina will be eliminated. However, as the black rat is a food source of the endemic subspecies of Eurasian buzzard, an appropriate approach is required. In addition, the forests will be conserved as the habitats of other endemic species such as Morus boninensis.

### 2. Habitat conservation for endemic insects including five endemic species of dragonfly

Bullfrogs and feral pigs, which likely impacted endemic dragonfly species, have been eradicated. Endemic insect habitats will be conserved by removing alien impacts while conducting ongoing monitoring. Additional measures include preventing desiccation of waterside areas that serve as dragonfly breeding grounds.

### 3. Habitat conservation for wood-pigeon

Ototojima includes the endemic subspecies of Japanese wood-pigeon (Columba japonica nitens) habitat, which is being conserved by removing the impact of feral cats. Because the wood-pigeons move to other islands such as Chichijima and Anijima, unified conservation measures will be implemented to attain steady habitation.

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**Envisaged achievement** *(by the end of FY 2009)*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of Schima mertensiana forests</td>
<td>Elimination of Bischofia</td>
<td>Achieving eradication by chemical injection at the initial stage of invasion. Implementation of monitoring. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Elimination of feral goats</td>
<td>Implementation of elimination, targeting eradication from Ototojima. [TMG]</td>
</tr>
<tr>
<td></td>
<td>Elimination of black rats</td>
<td>Initiating elimination in FY 2009 based on the implementation status of elimination on Mukojima. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Elimination of Casuarina, Leucaena, and other invasive alien plants</td>
<td>Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
</tr>
</tbody>
</table>

**Short-term target after nomination** *(by the end of FY 2012)*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of Schima mertensiana forests</td>
<td>Elimination of Bischofia</td>
<td>Complete eradication</td>
</tr>
<tr>
<td></td>
<td>Elimination of feral goats</td>
<td>Continue with the activities listed on the top. [TMG]</td>
</tr>
<tr>
<td></td>
<td>Elimination of black rats</td>
<td>Complete eradication</td>
</tr>
<tr>
<td></td>
<td>Elimination of Casuarina, Leucaena, and other invasive alien plants</td>
<td>Complete eradication on the island and also on its peripheral islands. [MOE]</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Activity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2. Habitat conservation for endemic insects including five endemic species of dragonfly</td>
<td>Elimination of bullfrogs</td>
<td>Achieving eradication. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Elimination of feral pigs</td>
<td>Achieving eradication. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Recovery of lentic environments</td>
<td>Implementation of measures to recover vegetation, land snail fauna, and insect fauna. Implementing recovery projects for threatened insect species. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Recovery of Casuarina and other alien plants</td>
<td>Construction of lentic environments to recover the site together with the implementation of monitoring of aquatic insects, such as dragonflies. [MOE]</td>
</tr>
</tbody>
</table>

**Envisaged achievement** *(by the end of FY 2010)*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Habitat conservation for wood-pigeon</td>
<td>Elimination of black rats</td>
<td>Same as above</td>
</tr>
<tr>
<td></td>
<td>Exclusion of feral cats</td>
<td>Same as above</td>
</tr>
</tbody>
</table>

*Correspond to in the figure below

*Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

*Gray: Almost complete at present
Blue: Planned to be completed by the end of FY 2012
04 Machilus kobu-Schimetum mertensianae, Geniostoma glabrum subass, typical variant / Freycinetia boninensis variant
14 Distylio-Pouterietum dubiae
15 Wikstroemio-Pouterietum dubiae
18 Lyisotonia chinensis var. boninensis-Pandanus boninensis
22 Terminalia catappa community
24 Morus boninensis community
25 Pandanus boninensis community
33 Pinus lutchuensis community
35 Casuarina equisetifolia forest (includ. secondary forest)
36 Evergreen broadleaved planted forest
40 Plant communities in rocky desert
42 Miscanthetum condensati var. boninensis (includ. Pennisetum sordidum community, typical under units etc.)
45 Vitex rotundifolia community
54 Imperata cylindrica var. major community (includ. Paspalum conjugatum comm.)
62 Paspalum orbiculare-Paspalum dilatatum community (include. Pennisetum sordidum community, Paspalum orbiculare under units)
63 Zoysia tenuifolia community (secondary grassland)
72 Natural bareland
1. Ecosystem management considering endemic species

Endemic species such as land snails still inhabit Nishijima. For conservation of endemic species, elimination of alien species such as black rats, Casuarina species, and Leucaena will be conducted in an adaptive manner considering the already developed interspecific relationships on the island. In addition, ecosystems of this island will be conserved as the habitats of endemic plants such as Cirsium boninense.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>(by the end of FY 2009)</th>
<th>(by the end of FY 2012)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ecosystem management considering endemic species</td>
<td>Elimination of black rats</td>
<td>Initiation of elimination</td>
<td>&gt; Rat poison being set out as an elimination effort. [FFPRI]</td>
<td>Complete eradication</td>
<td>- Eradication. [MOE]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Initiation of a survey to determine the existing condition</td>
<td>&gt; Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate elimination</td>
<td>- For cooperation among management authorities, initiate strategic elimination where necessary. [MOE, FA, TMG, Ogasawara Village]</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Conducting a survey of Casuarna distribution in the central part of the island. [FA]</td>
<td></td>
<td>- For national forest areas, establish maintenance arrangements with NPOs and other groups to promote the elimination of Casuarna and other alien species starting in FY 2010. [NPO, FA]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

Short-term actions

- On Nishijima, eradication of feral goats, which had heavy impacts on the vegetation, has been achieved.
- It is important to recover the native vegetation, which will also benefit insect conservation. Therefore, in addition to ongoing efforts to eliminate black rats with the goal of complete eradication, elimination of alien plants such as Casuarna and Leucaena will be initiated.
- On the other hand, some land snails have become adapted to Casuarna. Therefore, care must be taken when conducting elimination of alien plants. For example, monitoring should be conducted, and activities such as clear-cutting should be avoided.

Reference: Vegetation of Nishijima Island

- 35 Casuarna equisetifolia forest (incl. secondary forest)
- 54 Imperata cylindrica var. major community (incl. Paspalum conjugatum comm.)
- 62 Paspalum orbiculare-Paspalum dilatatum community (incl. Pennisetum sordidum community, Paspalum orbiculare under units)
- 63 Zoysia terifolium community (secondary grassland)
- 72 Natural bareland
Island (Chichijima Island Group) Activity

**Higashijima Island**

1. Conservation of seabird breeding grounds

   To conserve the breeding grounds of seabirds such as Audubon's shearwater (*Puffinus lherminieri bannermani*), the wedge-tailed shearwater (*Puffinus pacificus*), and Bulwer's petrel (*Bulweria bulwerii*) that currently breed on Higashijima, monitoring and follow-up measures will be conducted following the elimination of black rats, which prey on seabirds.

   **Higashijima Island**

   2. Ecosystem management considering endemic species

   For conservation of endemic species still inhabiting the island, measures such as elimination of alien plants will be conducted in an adaptive manner considering the already established interspecific relationships. Habitats and colonies of endemic plants such as *Lobelia boninensis* and *Ixeris longirostra* will be conserved.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>(by the end of FY 2009)</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>(by the end of FY 2012)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of seabird breeding grounds</td>
<td>Elimination of black rats</td>
<td>✔️ Completion of eradication</td>
<td>✔️ Conducting experimental elimination on Higashijima on a pilot basis. [MOE]</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 2. Ecosystem management considering endemic species | Elimination of Casuarina and Leucaena | ✔️ Initiating a survey to determine the existing condition | ✔️ Estimating the distribution status of alien woody plants using aerial photographs. [FA] | -                                                              | ✔️ Initiate elimination          | Based on the results from elimination of Leucaena and other alien species on islands such as Anijima, consider whether to implement experimental elimination with the aim of achieving area exclusions. [FA] |}

*Correspond to [ ] in the figure below
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

**Short-term actions**

- On Higashijima, eradication of black rats, which were impacting seabirds and vegetation, has been completed.
- The distributions of alien plants such as *Casuarina* and *Leucaena* will be determined and implementation of measures including experimental elimination aimed at achieving area exclusions will be discussed.

**Legend**

- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

**Reference:** Vegetation of Higashijima Island

- 18 *Liystonia chinensis var. boninensis-Pandanus boninensis*
- 25 *Pandanus boninensis* community
- 32 *Leucaena leucocephala* community
- 35 *Casuarina equisetifolia* forest (incl. secondary forest)
- 42 *Miscanthemum condensati var. boninensis* (incl. *Pennisetum sordidum* community, typical under units etc.)
- 45 *Vitex rotundifolia* community
- 57 *Agave americana* community / *Agave sisalana* community
- 63 *Zoysia tenuifolia* community (secondary grassland)
- 65 *Weed communities of the open area* (*Bidens pilosa var. radiata* community etc.)
- 72 *Natural bareland*
Minamijima Island

1. Conservation of seabird breeding grounds
   To conserve the breeding grounds of seabirds such as the wedge-tailed shearwater (*Puffinus pacificus*) and Bulwer's petrel (*Bulweria bulwerii*) that breed on Minamijima, appropriate conservation will be promoted by elimination of alien species such as the black rat, which creates predation pressure on seabirds, with continued monitoring, and by complying with the current utilization rules to avoid impacts from human use.

2. Ecosystem management considering endemic species
   For conservation of endemic species still inhabiting the island, elimination of alien plants such as *Cenchrus echinatus* will be continued in an adaptive manner, considering already established interspecific relations. Approaches such as limiting utilization will also be enforced.

   - **Habitats of endemic and threatened plants** such as *Lobelia boninensis*, *Ixeris longirostra*, and *Lycium sandwicense* will be conserved.

   - **(by the end of FY 2009)**
   - **(by the end of FY 2012)**

### Activity

<table>
<thead>
<tr>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of seabird breeding grounds</td>
<td>Elimination of <em>Cenchrus echinatus</em> and other alien plants</td>
<td>Continuation of elimination</td>
<td>Implementation of elimination of highly invasive alien plants on Minamijima.</td>
</tr>
<tr>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of black rats</td>
<td>Compliances with current utilization rules</td>
<td>Continue the activities listed on the left.</td>
</tr>
</tbody>
</table>

*Correspond to in the figure below

**Short-term actions**
- Implement **black rat** eradication to protect important **seabird** habitats on Minamijima.
- Continue to eliminate alien plants such as **Cenchrus echinatus** in an adaptive manner under ongoing monitoring.
As Hahajima is an important habitat for endemic land snails, the MOE will determine the inhabitation of endemic land snails on Hahajima, establish an individual project review committee, and discuss conservation policies for the land snails. Predatory flatworms, which are assumed to have a great impact on endemic land snails, have not yet invaded Hahajima. Therefore, after obtaining the understanding and cooperation of Hahajima islanders, measures to prevent the introduction from Chichijima will be enforced. When conducting elimination projects for other alien species, workers will enter important habitat of endemic land snails, such as the entire Sekimon and Minamizaki areas. Therefore, such work should be designed to minimize impacts (e.g., such as soil movement) on endemic land snails. Dispersion of snail-eating planaria attached to equipment and clothing should be strictly prevented.

**Table:**

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</thead>
<tbody>
<tr>
<td>Tentative list</td>
<td>Submission of nomination dossier</td>
<td>Target year</td>
<td>Medium-long term actions and</td>
<td>Continue &amp; expand</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Bischofia (northern part and Sekimon)</td>
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</tr>
<tr>
<td>Green anole (Sekimon and Minamizaki)</td>
<td>Continue</td>
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<tr>
<td>Green anole (low-density management)</td>
<td>Continue</td>
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<tr>
<td>Cane toad (Minamizaki Hasuike Pond)</td>
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<tr>
<td>Cane toad (breeding inhibition)</td>
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<tr>
<td>Feral cat (Minamizaki: area exclusion)</td>
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<tr>
<td>Feral cat (Minamizaki: continue exclusion, consider large-scale exclusion zone)</td>
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<tr>
<td>Feral cat (Hahajima island-wide: surrounding exclusion zone)</td>
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</tbody>
</table>

**Notes:**

- **Bischofia** is distributed throughout Sekimon and has large impacts on the sustainability of the subtropical rainforest and Ardisia sieboldii forest distributed widely in the north-central part of Hahajima. Based on the land ownership structure, the FA, MOE, and other parties are sharing in the work of eliminating Bischofia. The FA is conducting Bischofia exclusion in the entire areas of Sekimon and Nishidai, and the MOE is expanding its exclusion area from the northern part of the island (Higashidai and Nishidai) toward the south. The elimination will be continued in cooperation between the FA and MOE. Adaptive management will be carried out, while monitoring the impacts of elimination and the recovery of endemic vegetation. To achieve eradication of Bischofia, which is the long-term goal, actions such as extracting young trees will also be continued in parallel.

- Although **endemic insects** have been greatly impacted by green anole and cane toad predation pressures, threatened insects such as lycaenid butterfly (*Celastrina ogasawaraensis*), *Parnara ogasawarensis*, and *Ogasawarazo lineatus* still remain on the island. The MOE has set up fences around nature restoration areas to exclude green anole in Shin-Yuhigaoka and Minamizaki (fences in Minamizaki are also designed to exclude feral cat). Extremely low alien species densities having no damaging impact on the insect ecosystem was achieved in FY 2009. Hereafter, management will continue to keep the density low. Vegetation and ecosystem management such as elimination of alien plants will also be conducted. Within sites and areas important for conservation, traps will be set up intensively as an urgent measure to reduce the population density of green anole. In addition, elimination of alien species such as Bischofia will be implemented to conserve *Machilus kou* and *Callicarpa subpubescens*, which are the food trees for *Celastrina ogasawaraensis*.

- By setting up fences around lentic environments that serve as breeding grounds of the cane toad and thereby preventing its breeding, habitat will be conserved for endemic dragonflies and land snails, as well as *Chlaenius isekai*, in Minamizaki. Fences have already been set up at Minamizaki Hasuike Pond by the MOE. Considering the importance and urgency of conservation of target species, the fence installation work will continue to be carried out to prevent cane toad breeding; a cane toad capture-and-kill program will also be promoted. The target date for certain parts of the project is FY 2012.

- Hahajima is a habitat for the endemic subspecies of Japanese wood pigeon, and the area around Sekimon, Mt Chibusa, and Kitako is especially important. Sekimon is also an important habitat for the Bonin honeyeater. In addition, Minamizaki is an important habitat for *Carduelis sinica kittlitzi* and seabirds. To achieve habitat conservation for these birds, measures against feral cats are necessary.

- On Minamizaki, although area exclusion of feral cats has already been completed by a local NPO, from the viewpoint of conserving the habitats of *Carduelis sinica kittlitzi* and seabirds, the MOE is considering the establishment and implantation of a large-scale exclusion zone including areas surrounding the existing area exclusion zone. In addition, based on the implementation plan established by the Ogasawara Cat Liaison Committee, capturing activities will be continuously implemented in the surrounding mountain region to achieve island-wide eradication.

- On Chichijima and Hahajima, approaches to cut off a source of new feral cats through strict implementation of appropriate domestic cat-keeping measures are also being implemented by the Ogasawara Cat Liaison Committee, Tokyo Veterinary Medical Association, and other related parties. Therefore, the measures against feral cats will be conducted in conjunction with measures for domestic cats.
# Conservation of subtropical rainforest and Ardisia sieboldii forest

Activities such as exclusion of alien species will continue in an adaptive manner considering the already established interspecific relationships in the following areas: subtropical rainforest covering the entire area of Sekimon, where Hahajima’s original vegetation is still well preserved; the Ardisia sieboldii forest and the Schima mertensiana forest, which occupy a large area and widely distributed in the north-central part of the island.

Among these activities, minimizing the impact of Bischofia, the major impact factor, is particularly important. Through cooperation among related agencies, Bischofia elimination is being strategically carried out.

In addition, conservation of the island protects the habitats of threatened and endemic plants, including *Piper postelsianum, Claoxylon centinarianum, Morus boninensis, Hymenasplenium cardinthyum, Dentrococcalia crepidifolia,* and *Calanthe hoshii,* and animals, such as endemic land snails.

## Activity

### 1. Conservation of subtropical rainforest and Ardisia sieboldii forest

- **Description:** Activities such as exclusion of alien species will continue in an adaptive manner considering the already established interspecific relationships in the following areas: subtropical rainforest covering the entire area of Sekimon, where Hahajima’s original vegetation is still well preserved; the Ardisia sieboldii forest and the Schima mertensiana forest, which occupy a large area and widely distributed in the north-central part of the island.

- **Envisaged achievement:** Activities such as exclusion of alien species will continue in an adaptive manner.

- **Short-term target after nomination:** Continue elimination

### 2. Habitat conservation for endemic insects including Celastrina ogasawaraensis

Although the green anole has impacted the endemic insects of Hahajima, precious endemic insects such as *Celastrina ogasawaraensis,* *Panna ogasawarenensis,* and *Rhinocyptha ogasawarenensis* still inhabit the island. Area exclusions of the green anole, as well as of the cane toad, have already been carried out. Conservation measures for the food plants of these insects have also been conducted. As these activities continue and expand, the existing habitat for endemic insects on the island will be conserved.

### 3. Habitat conservation for wood-pigeon

In the Sekimon region, an important habitat for the endemic subspecies of Japanese wood-pigeon (*Columba janthina nitens,* no major impact by alien species has been observed to date. However, because the wood-pigeons move between the Hahajima and Chichijima island groups, impacts of feral cats and other alien species will be removed to achieve steady wood-pigeon habitation within the Ogasawara Islands as a whole.

### 4. Habitat conservation for land snails

On Hahajima, the entire southern area around Minamizaki, the ridge area including the Sekimon region, and the western coastal area are important habitat for land snails. By removing the impacts of alien species such as black rats and by continuing to conduct monitoring, habitat for the characteristic land snails will be conserved.

## Action item

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of subtropical rainforest and Ardisia sieboldii forest</td>
<td>Elimination of Bischofia</td>
<td>Creation of medium- and long-term plans</td>
<td>Continue elimination</td>
<td>Continue the activities listed on the left. [FA]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Initiating area exclusion</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Estimation of the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td></td>
<td></td>
<td>With cooperation among management authorities, initiate elimination strategically where necessary. [MOE, FA, TMG, Ogasawara Village]</td>
</tr>
<tr>
<td>2. Habitat conservation for endemic insects including Celastrina ogasawaraensis</td>
<td>Elimination of the green anole</td>
<td></td>
<td></td>
<td>Set up new exclusion area</td>
</tr>
<tr>
<td></td>
<td>Initiating a survey to determine the existing condition</td>
<td></td>
<td></td>
<td>Conduct point exclusions at the breeding grounds of threatened insects</td>
</tr>
<tr>
<td></td>
<td>Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td></td>
<td></td>
<td>At the breeding ground of Celastrina ogasawaraensis, continue point exclusion during the breeding season (area as yet undecided). [MOE]</td>
</tr>
<tr>
<td>3. Habitat conservation for wood-pigeon</td>
<td>Exclusion of feral cats</td>
<td></td>
<td></td>
<td>Based on outcomes of conservation policies found by the review committee, implement specific measures as necessary. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Elimination black rats</td>
<td></td>
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<tr>
<td></td>
<td>(To be addressed on medium- and long-term bases)</td>
<td></td>
<td></td>
<td>(Coordinating with the schedule for island-wide exclusion, continue discussion of conservation measures)</td>
</tr>
<tr>
<td>4. Habitat conservation for wood-pigeon</td>
<td>Discussing conservation policies for endemic land snails</td>
<td></td>
<td></td>
<td>Based on outcomes of conservation policies found by the review committee, implement specific measures as necessary. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Determining the inhabitation status of endemic land snails on Hahajima, establishing the individual project review committee, and discussing conservation policies for land snails. [MOE]</td>
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</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

*Correspond to [image in the figure below]*

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(Gray) Almost complete at present  
(Blue) Planned to be completed by the end of FY 2012
[Legend]
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

(?) Hahajima Island (Hahajima Island Group)

- Create medium-and long-term plans [FA]
- Area exclusion [FA]
- Set up new exclusion area [MOE]
- Point exclusion [MOE]
- Discuss the protection policies and initiate measures [MOE]
<table>
<thead>
<tr>
<th>Island (region)</th>
<th>Activity</th>
<th>Description</th>
<th>Short-term target after</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hahajima Island (North-Central Region)</td>
<td>1. Conservation of Ardisia sieboldii forest</td>
<td>Activities such as exclusion of alien species will continue in an adaptive manner considering the already established interspecific relationships in the following areas: subtropical rainforest covering the entire area of Sekimon, where Hahajima’s original vegetation is still well preserved; the Ardisia sieboldii forest and the Schima mertensiana forest, which occupy a large area and widely distributed in the north-central part of the island.</td>
<td>Continue elimination</td>
<td>Continue with the activities listed on the left. [FA]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Among these activities, minimizing the impact of Bischofia, the major impact factor, is particularly important. Through cooperation among related agencies, Bischofia elimination is being strategically carried out.</td>
<td>Continue elimination</td>
<td>By continuing the activities listed on the left, eliminate from private land in Nishidai and Koromodate; initiate elimination in the Koshinzuka region. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In addition, conservation of the island protects the habitats of threatened and endemic plants, including Piper postelsianum, Claoxylon centnarium, Morus boninensis, Hymenasplenium candidiophyllum, Dendrocalacca cristidolica, and Calathrhe hoshii, and animals, such as endemic land snails.</td>
<td>Continue elimination</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Although the green anole has impacted the endemic insects of Hahajima, precious endemic insects such as Celastrina ogasawaraensis, Parmara ogasawarenai, and Rhinocypha ogasawarenai still inhabit the island. Area exclusions of the green anole, as well as of the cane toad, have already been carried out. Conservation measures for the food plants of these insects have also been conducted. As these activities continue and expand, the existing habitat for endemic insects on the island will be conserved.</td>
<td>Continue elimination</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In the Sekimon region, an important habitat for the endemic subspecies of Japanese wood-pigeon (Columba japonica nitens), no major impact by alien species has been observed to date. However, because the wood-pigeons move between the Hahajima and Chichijima island groups, impacts of feral cats and other alien species will be removed to achieve steady wood-pigeon inhabitation within the Ogasawara Islands as a whole.</td>
<td>Continue elimination</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>On Hahajima, the entire southern area around Minamizaki, the ridge area including the Sekimon region, and the western coastal area are important habitat for land snails. By removing the impacts of alien species such as black rats and by continuing to conduct monitoring, habitat for the characteristic land snails will be conserved.</td>
<td>Continue elimination</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>(by the end of FY 2009)</th>
<th>Description</th>
<th>(by the end of FY 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of Ardisia sieboldii forest</td>
<td>Elimination of Bischofia</td>
<td>Creation of medium- and long-term plans</td>
<td>Implementation of elimination according to the created medium- and long-term plans (e.g., Bischofia Control Plan) targeting area exclusion in the Sekimon region of Hahajima</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Initiating area exclusions</td>
<td>Implementation of a system to monitor persisting individuals in the Higashihada area of Hahajima. [MOE]</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sorting area exclusion in the area north of the line between Hahajima Yashihama Beach and Nagahama Beach; implementation of elimination in Nishidai and Koromodate. In addition, partial implementation at Nishihara area. [MOE]</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elimination of Ficus microcarpa</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td>2. Habitat conservation for endemic insects including Celastrina ogasawaraensis</td>
<td>Elimination of the green anole</td>
<td>Completion of area exclusion</td>
<td>Achieving extremely low density of green anoles having almost no negative impact on the insect ecosystem by FY 2009 within the nature restoration area set up in Shir-Yuhigaoka and Minamizaki on Hahajima.</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td></td>
<td>Elimination of the cane toad</td>
<td>Completion of area exclusion</td>
<td>Continuation of capture and exclusion measures within the nature restoration area set up in Shir-Yuhigaoka and Minamizaki on Hahajima. In addition, consider establishing new nature restoration areas. [MOE] (The measures above are implemented together with those against the green anole)</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td></td>
<td>Monitoring of the habitat for Celastrina ogasawaraensis and other endemic insects</td>
<td>Continuation of monitoring</td>
<td>Implementation of conservation and breeding measures for Celastrina ogasawaraensis and other endemic species, as well as continued monitoring of ecosystem recovery focusing on insects [MOE, Ogasawara-Shijimi Society]</td>
<td>Continue monitoring</td>
<td>Continue monitoring</td>
</tr>
<tr>
<td>4. Habitat conservation for wood-pigeon</td>
<td>Exclusion of feral cats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td></td>
<td>Elimination of black rats</td>
<td></td>
<td></td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td></td>
<td>Planting of food trees</td>
<td>Continuation of elimination of Bischofia</td>
<td>Continuation of eliminating competing juvenile trees of Bischofia on Mt Kuwanoki on Hahajima, in addition to eliminating Bischofia and planting food trees of wood-pigeon. In addition, creation of a manual for propagation techniques based on the achievements so far. [FA]</td>
<td>Continue elimination</td>
<td>Continue elimination</td>
</tr>
<tr>
<td>5. Habitat conservation for land snails</td>
<td>Discussing conservation policies for endemic land snails</td>
<td></td>
<td></td>
<td>Based on the outcomes of the conservation policies found by the review committee, implement specific measures as necessary. [MOE]</td>
<td></td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.
High conservation priority endemic and threatened species
Other endemic and threatened species
Native species etc.
Invasive alien species
Invasive alien species to be addressed in the short-term
Interspecific relations
Interspecific relations that influence

Legend
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

(7) Hahajima Island (Hahajima Island Group)
### Island (region) (Hahajima Island Group)

**Activity**

1. **Conservation of sclerophyllous scrub typical of the Hahajima Island Group**
   - In the Minamizaki region, which tends to be a relatively dry part of Hahajima, sclerophyllous scrub typical of the Hahajima Island Group is found, similar to on many of the peripheral islands of Hahajima. To conserve existing endemic species such as land snails, conservation measures for the food plants of these insects are also in place. As these activities continue and expand, the existing habitat for land snails will be conserved.

2. **Habitat conservation for endemic insects including Celastrina ogasawaraensis**
   - Although the green anole has impacted the endemic insects of Hahajima, precious endemic insects such as Celastrina ogasawaraensis, Parmaura ogasawarensis, and Rhinocypha ogasawarenae still inhabit the island. Area exclusions of the green anole, as well as of the cane toad, have already been carried out. Conservation measures for the food plants of these insects have also been expanded. As these activities continue and expand, the existing habitat for weeds of these insects will be conserved.

3. **Habitat conservation for Carduelis sinica kitititzi and seabirds**
   - Feral cats have been removed from certain areas of the Minamizaki region, which is an important habitat for Carduelis sinica kitititzi and seabirds such as the wedge-tailed shearwater (Puffinus pacificus). As feral cat expulsions continue and expand, seabird habitat will be conserved.

4. **Habitat conservation for land snails**
   - On Hahajima, the entire southern area around Minamizaki, the ridge area including the Sekimon region, and the western coastal area are important habitats for land snails. By removing the impacts of alien species such as black rats and by continuing to conduct monitoring, habitat for the characteristic land snails will be conserved.

### Activity

<table>
<thead>
<tr>
<th>Action item</th>
<th>Envisaged achievement* (by the end of FY 2009)</th>
<th>Description</th>
<th>Short-term target after nomination (by the end of FY 2012)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group</td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Complete area exclusion</td>
<td>Continue monitoring after the elimination</td>
<td>Continue monitoring the introduction status of alien species, such as Casuarina, in excluded areas. (Minamizaki region) [FA] With cooperation among management authorities, initiate elimination strategically where necessary. [MOE, FA, TMG, Ogasawara Village]</td>
</tr>
<tr>
<td>2. Habitat conservation for endemic insects including Celastrina ogasawaraensis</td>
<td>Elimination of green anole</td>
<td>Complete area exclusion</td>
<td>Set up new exclusion area</td>
<td>Set up new nature restoration areas (area as yet undecided): [MOE]</td>
</tr>
<tr>
<td></td>
<td>Elimination of cane toad</td>
<td>Complete area exclusion</td>
<td>Set up new nature restoration areas (area as yet undecided): [MOE]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monitoring of Celastrina ogasawaraensis habitat</td>
<td>Continue monitoring</td>
<td>Continue with the activities listed on the left. [MOE, Ogasawara-Shijimi Society]</td>
<td></td>
</tr>
<tr>
<td>3. Habitat conservation for Carduelis sinica kitititzi and seabirds</td>
<td>Exclusion of feral cats</td>
<td>Complete and expand area exclusion</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(Coordinating with the schedule for the island-wide exclusion, continue discussion of measures)</td>
</tr>
<tr>
<td></td>
<td>Elimination of black rats</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Legend

- **Relevant conservation area**
- **High conservation priority endemic and threatened species**
- **Other endemic and threatened species**
- **Native species etc.**
- **Invasive alien species**
- **Invasive alien species to be addressed in the short-term**
- **Interspecific relations**
- **Interspecific relations that influence**

*Correspond to in the figure below*<br>Gray: Almost complete at present  <br>Blue: Planned to be completed by the end of FY 2012

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

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**Diagram:**

- **Eurasian buzzard**
- **Preying**
- **Birds**
- **Black rat**
- **Feeding**
- **Cane toad**
- **Green anole**
- **Crustacea**
- **Preying**
- **Important habitat for endemics**
- **Partial dependency**
- **Vulnerable species**
- **Monitoring**
- **[MOE, Ogasawara-Shijimi Society]**
- **[FA]**
- **[MOE]**
- **[TMG, Ogasawara Village]**
- **[Ogasawara Cat Liaison Committee]**
- **Important habitat for land snails**
- **Sclerophyllous scrub typical of the Hahajima Island Group**
- **Pittosporum parvifolium**
- **Santalum boninense**
- **Other plants**
- **Preying**
- **Wedge-tailed shearwater**
- **Importantly habitat for Carduelis sinica kitititzi**
- **Carduelis sinica**
- **Black rat**
- **Feeding**
- **Cane toad**
- **Green anole**
- **Crustacea**
- **Preying**
- **Important habitat for land snails**
- **Sclerophyllous scrub typical of the Hahajima Island Group**
- **Pittosporum parvifolium**
- **Santalum boninense**
- **Other plants**
- **Preying**
- **Wedge-tailed shearwater**
- **Importantly habitat for Carduelis sinica kitititzi**
- **Carduelis sinica**
- **Black rat**
- **Feeding**
- **Cane toad**
- **Green anole**
- **Crustacea**
- **Preying**
- **Important habitat for land snails**
- **Sclerophyllous scrub typical of the Hahajima Island Group**
- **Pittosporum parvifolium**
- **Santalum boninense**
- **Other plants**
- **Preying**
- **Wedge-tailed shearwater**
- **Importantly habitat for Carduelis sinica kitititzi**
- **Carduelis sinica**
- **Black rat**
- **Feeding**
- **Cane toad**
- **Green anole**
- **Crustacea**
- **Preying**
- **Important habitat for land snails**
- **Sclerophyllous scrub typical of the Hahajima Island Group**
- **Pittosporum parvifolium**
- **Santalum boninense**
- **Other plants**
- **Preying**
- **Wedge-tailed shearwater**
- **Importantly habitat for Carduelis sinica kitititzi**
- **Carduelis sinica**
- **Black rat**
- **Feeding**
- **Cane toad**
- **Green anole**
- **Crustacea**
- **Preying**
- **Importantly habitat for land snails**
27
01 Machiloo boninensi-Ardisieum sieboldii, typical subass., typical variant
02 Machiloo boninensi-Ardisieum sieboldii, Schima mertensi subass.
06 Pisonio-Elaeocarpetum photiniaefoliae
07 Dendrocacalietum crepidifoliae
09 Machiloo boninensi-Ardisieum sieboldii, typical subass., Fatsia oligocarpella variant
14 Distyllo-Pouterietum dubiae
15 Wikstroemio-Pouterietum dubiae
17 Hernandia nymphaefolia-Terminalia catappa community
18 Listonia chinensis var. boninensis-Pandanus boninensis
20 Scaevola sericea community
22 Terminalia catappa community
25 Pandanus boninensis community
28 Trena orientalis community (incl. Boehmeria boninensis association)
29 Cyathetum mertensi anae (secondary stand)
30 Freycinetia boninensis community
31 Bischoffia javanica community
32 Leucaena leucocephala community
33 Pinus lutchuensis community
35 Casuarina equisetifolia forest (incl. secondary forest)
36 Evergreen broadleaved planted forest
38 Derris elliptica community
39 Thunbergia laurifolia community
40 Plant communities in rocky desert
42 Miscanthetum condensati var. boninensis (incl. Pennisetum sordidum community, typical under units etc.)
46 Sporobolus virginicus community
49 Myoporetum boninensis
52 Nephopectis cordifolia-Pteridium aquilinum var. latiusculum community
53 Histiopteris incisa community
54 Imperata cylindrica var. major community (incl. Paspalum conjugatum comm.)
55 Miscanthus condensatus community (incl. Saccharum officinalum comm.)
58 Arundinaria simonii community / Pseudosasa japonica community etc.
60 Bryophyllum pinnatum community
65 Weed communities of the open area (Bidens pilosa var. radiata community etc.)
66 Field weed communities (Amaranthus lividus community etc.)
69 Residence, factory etc.
70 Concrete pavement site
71 Artificial bareland
72 Natural bareland
73 Open water
Progress of surveys related to Bischofia measures

*It has not been possible to obtain written permission from owners of some of the land within the Koromodate region; such land is distributed in a stepping-stone fashion. As it is difficult to identify the land boundaries on site, topographical boundaries were used to distinguish the lands where permission has not yet been obtained (the use of the topographic boundaries explains why the area is large).

Figure  Places in which elimination experiments were implemented (MOE)
To conserve the sclerophyllous scrub typical of the Hahajima Island Group, which remains in good condition, the impacts of alien species such as Casuarina will be removed in an adaptive manner considering already established interspecific relationships. In addition, the forest will be conserved as the habitats of endemic plants such as Symplocos boninensis.

Mukohjima Island is an important habitat for endemic birds such as Carduelis sinica kittlitzi and the Bonin honeyeater (Apalopteron familiare). The habitat will be conserved by excluding the impacts of alien species and by continued monitoring.

### Activity

<table>
<thead>
<tr>
<th>Island</th>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>(by the end of FY 2012)</th>
<th>(2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mukohjima Island</td>
<td>1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group</td>
<td>Elimination of Casuarina and other alien plants</td>
<td>• Carrying out aerial photography. [FA] • Implementation of surveys and other studies on the inhabitation status of Carduelis sinica kittlitzi and considering the elimination of alien species. [FA] • Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before beginning elimination. [FA]</td>
<td>&gt; Initiate area exclusion</td>
<td>• Estimate the distribution status of alien woody plants using aerial photographs; based on the survey results, plan for area exclusions to be initiated in FY 2011. [FA]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Habitat conservation for endemic birds</td>
<td>Elimination of black rats</td>
<td></td>
<td>&gt; Complete eradication</td>
<td>• Considering the status of elimination throughout the Chichijima Island Group, initiate elimination as needed. [MOE]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

#### Short-term actions

- Conservation of Mukohjima is particularly crucial because important species such as *Symplocos boninensis* inhabit this island. Elimination of *Casuarina* will be initiated on the island. However, *Carduelis sinica kittlitzi* and endemic land snails may have become dependent on *Casuarina*. Therefore, elimination should consider this possibility and pay close attention to interspecific interactions, based on research and scientific knowledge.

- Elimination of black rats, which compete with land birds such as *Carduelis sinica kittlitzi* and also impact vegetation, will be implemented.

---

**Legend**

- **High conservation priority endemic and threatened species**
- **Other endemic and threatened species**
- **Native species etc.**
- **Invasive alien species**
- **Invasive alien species to be addressed in the short-term**
- **Interspecific relations**
- **Interspecific relations that influence**

**Reference:** Vegetation of Mukojima Island
**Anejima Island (Hahajima Island Group)**

**Activity**

1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group

Sclerophyllous scrub typical of the Hahajima Island Group is distributed on the plateau. This scrub forest will be conserved through activities such as removing the impacts of alien species such as Casuarina in an adaptive manner, considering the already established interspecific relationships. In addition, the forest will be conserved as the habitats of endemic plants such as *Juniperus taxifolia*, *Lobelia boninensis*, and *Euonymus boninensis* will be conserved.

**Short-term actions**

- Determine the present condition of alien plants such as *Casuarina* on Anejima. It is possible that *Carduelis sinica* and endemic land snails have become dependent on *Casuarina*. Therefore, *Casuarina* elimination will consider and account for interspecific interactions based on scientific research and knowledge.
- Elimination of black rats, which compete with land birds such as *Carduelis sinica* and also impact vegetation, will be implemented.

*Correspond to  in the figure below*  
(Gray): Almost complete at present  
(Blue): Planned to be completed by the end of FY 2012

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

**Legend**

- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence
Island: (Hahajima Island Group)

Imotojima Island

Activity
1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group
To conserve the sclerophyllous scrub typical of the Hahajima Island Group, which remains in good condition, the impacts of alien species such as Leucaena will be removed in an adaptive manner considering already established interspecific relationships. In addition, the forest will be conserved as the habitats of endemic plants such as Crepidastrum lingulifolium, Crepidastrum ameristophyllum, and Ajuga boninsimae.

2. Habitat conservation for endemic birds
Imotojima is an important habitat for endemic birds such as Carduelis sinica kittlitzi and the Bonin honeyeater (Apalopteron familiare). Their habitats will be conserved by excluding the impacts of alien species and by continued monitoring.

Short-term actions
- The existing condition of alien plants such as Leucaena will be determined on Imotojima. Elimination will be initiated as necessary considering interspecific interactions and based on scientific research and knowledge.
- Implement elimination of black rats, which compete with land birds such as Carduelis sinica kittlitzi and also impact vegetation.

Legend
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term

Interspecific relations

Interspecific relations that influence

Eurasian buzzard
Black rat
Land snails
Insects
Sclerophyllous scrub typical of the Hahajima Island Group (Wikstroemia-Pouterietum-dubiae)
Ajuga boninsimae
Crepidastrum ameristophyllum
Crepidastrum lingulifolium
Other plants

Survey [FA]
Habitat invasion
Preying
Feeding
Elimination [MOE]

Reference: Vegetation of Imotojima Island
Sclerophyllous scrub typical of the Hahajima Island Group is distributed on the plateau of Meijima. To conserve the scrub forest, which remains in good condition, the impacts of alien species such as Leucaena will be removed in an adaptive manner considering already established interspecific relationships. In addition, the forest will be conserved as the habitats of endemic plants such as *Juniperus taxifolia*, *Lobelia boninensis*, and *Crepidiastrum linguifolium*, and endemic insect fauna.

### Activity

**1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group**

<table>
<thead>
<tr>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of Leucaena and other alien plants</td>
<td>By the end of FY 2009</td>
<td>Initiating a survey to determine the existing condition</td>
</tr>
<tr>
<td>Elimination of black rats</td>
<td>By the end of FY 2012</td>
<td>Determine the existing condition</td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

![Diagram](https://via.placeholder.com/150)

**Legend**

- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

**Reference:** Vegetation of Meijima Island

- **01** Machilus boninensis-Ardisietum sieboldii, typical subass., typical variant
- **15** Wikstroemio-Pouterietum dubiae
- **25** Pandanus boninensis community
- **36** Evergreen broadleaved planted forest
- **42** Miscanthetum condensati var. boninensis (incl. *Pennisetum sordidum* community, typical under units etc.)
- **45** Vitex rotundifolia community
- **46** Sporobolus virginicus community
- **57** Agave americana community / Agave sisalana community
- **72** Natural bareland
Island (Hahajima Island Group)  

Hirajima Island

Activity

1. Ecosystem management considering endemic species

To conserve endemic species still inhabiting the island, the impacts of alien species will be removed in an adaptive manner considering already established interspecific relationships. This activity will be accompanied by ongoing monitoring.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ecosystem management considering endemic species</td>
<td>Elimination of Bischofia</td>
<td>Completion of eradication</td>
<td>(by the end of FY 2009)</td>
<td>Elimination being completed and eradication achieved; approximately 20 individual plants were removed. [MOE]</td>
</tr>
<tr>
<td></td>
<td>Elimination of Casuarina and other alien plans</td>
<td>Initiating a survey to determine the existing condition</td>
<td>(by the end of FY 2012)</td>
<td>Carrying out aerial photography. [FA]</td>
</tr>
<tr>
<td></td>
<td>Elimination of black rats and other alien animals</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

**Short-term actions**
- The existing condition of alien plants such as *Casuarina* will be determined on Hirajima. However, it is possible that endemic land snails have become dependent on *Casuarina*. Therefore, elimination will be initiated as necessary considering and making arrangements for already established interspecific interactions based on scientific research and knowledge.
- Elimination of black rats, which compete with land birds such as *Carduelis sinica kitlitzi* and also impact vegetation, will be implemented.

Legend
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

Reference: Vegetation of Hirajima Island

- 15Wikstroemia-Ploutrietum dubiae
- 17Hernandia nymphaeifoliaterminalia catappa community
- 20Scaevola sericea community
- 25Pandanus boninensis community
- 35Casuarina equisetifolia forest (includ. secondary forest)
- 36Evergreen broadleaved planted forest
- 42Miscanthetum condensati var. boninensis (includ. Pennisetum sordidum community, typical under units etc.)
- 72Natural bareland
1. Ecosystem management of Ardisia sieboldii forest and other habitats

On Mukojima, ecosystem management of Ardisia sieboldii forest and other habitats will be carried out in an adaptive manner. Feral goats, a major impact factor, have been eradicated, and other alien species will also be eliminated, including black rats, Leucaena, and alien bamboo and dwarf bamboo species; these species are inhibiting factors for forest recovery. Feral goats, a major impact factor, have been eradicated, and other alien species will also be eliminated, including black rats, Leucaena, and alien bamboo and dwarf bamboo species; these species are inhibiting factors for forest recovery. Feral goats, a major impact factor, have been eradicated, and other alien species will also be eliminated, including black rats, Leucaena, and alien bamboo and dwarf bamboo species; these species are inhibiting factors for forest recovery. Feral goats, a major impact factor, have been eradicated, and other alien species will also be eliminated, including black rats, Leucaena, and alien bamboo and dwarf bamboo species; these species are inhibiting factors for forest recovery.

2. Habitat conservation for endemic insects

Mukojima is an important habitat for endemic insect species of the Mukojima Island Group, such as Chlorophorus kusamaei and Tamamushi vinta fujitai (a Mukojima subspecies), both of which are forest insects. Therefore, insect habitat will be conserved by removing the impacts of alien species. On Mukojima, the Albatross Protection and Breeding Project Plan, continuous activities have been carried out to create a new breeding ground for the short-tailed albatross (Phoebastria albatrus) that formerly bred on the island. Toward the goal of steady breeding and habitation by the three albatross species, overgrowth by alien plants will be removed and the site will be conserved to serve as a persistent breeding ground.

3. Conservation and creation of breeding grounds for three albatross species

Mukojima and the adjacent island of Torishima are breeding grounds of two species of albatross, the Laysan albatross (Phoebastria immutabilis) and black-footed albatross (Phoebastria nigripes). On Mukojima, following the Albatross Protection and Breeding Project Plan, continuous activities have been carried out to create a new breeding ground for the short-tailed albatross (Phoebastria albatrus) that formerly bred on the island. Toward the goal of steady breeding and habitation by the three albatross species, overgrowth by alien plants will be removed and the site will be conserved to serve as a persistent breeding ground.

**Flow of short-term approaches**

- On Mukojima, eradication of feral goats, which were heavily impacting the vegetation, has already been completed.
- Elimination of black rats was begun in FY 2008 by the MOE, with the aim of eradication by FY 2012. As there are risks, such as overgrowth by alien plant species, as well as positive effects associated with black rat elimination, monitoring will be implemented, and measures will be considered as necessary.
- Great change in vegetation, including alien species, is anticipated in the future. Therefore, as well as completing the ongoing elimination of Leucaena and alien bamboo and dwarf bamboo species by FY 2012, other alien plants will also be managed adaptively while monitoring is carried out.

**Important birds**

- Black-footed albatross (Phoebastria nigripes)
- Laysan albatross (Phoebastria immutabilis)
- Short-tailed albatross (Phoebastria albatrus)

**Important plants**

- Ardisia sieboldii forest
- Syzygium cleyerifolium
- Tristram’s storm-petrel (Torishima of the Mukojima Island Group)

**Important breeding ground**

- High conservation priority endemic and threatened species

**Survey**

- Leucaena
- Ficus microcarpa
- Lantana camara var. aculeata

**Interspecific relations**

- Feeding
- Preying
- Habitat invasion
- Creation of a new breeding ground [MOE]

**Legend**

- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term

**Important habitat for insects**

- Chlorophorus kusamaei
- Boninagrion ezoin
- Other insects
**Mukojima Island (Mukojima Island Group)**

**Reference**  Vegetation of Mukojima and related information

- **Mukojima Island**: New breeding ground for the short-tailed albatross
- **Toshima Island**: Main breeding ground of albatrosses
- **TMG Leucaena cutting area**
- **TMG Pleoblastus simonii cutting area**

Vegetation:
- **01 Machilus boninensis-Ardisietum sieboldii**, typical subass., typical variant
- **22 Terminalia catappa community**
- **25 Pandanus boninensis community**
- **32 Leucaena leucocephala community**
- **34 Lantana camara community**
- **36 Evergreen broadleaved planted forest**
- **45 Vitex rotundifolia community**
- **58 Arundinaria simonii community / Pseudosasa japonica community etc.**
- **62 Paspalum orbiculare-Paspalum dilatatum community**
  (include: Pennisetum sordidum community, Paspalum orbiculare under units)
- **72 Natural bareland**
### Island (Mukojima Island Group)

**Kitanoshima Island**

**Activity**

1. **Conservation of seabird breeding grounds**
   - Kitanoshima is an important breeding ground for seabirds such as the wedge-tailed shearwater (*Puffinus pacificus*) and Bulwer’s petrel (*Bulweria bulwerii*). Ongoing monitoring is being conducted to conserve their breeding grounds.

2. **Ecosystem management considering endemic species.**
   - For conservation of endemic species currently inhabiting the island, suppressing factors will be excluded in an adaptive manner considering already established interspecific relationships.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>(by the end of FY 2009)</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>Description</th>
<th>(by the end of FY 2012)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of seabird breeding grounds</td>
<td>Elimination of alien plants and other related measures</td>
<td>Initiate a survey to determine the existing condition</td>
<td>Carry out aerial photography. [FA]</td>
<td>Determine condition existing</td>
<td>Estimate the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Ecosystem management considering endemic species</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

**Legend**

- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

**Important breeding ground for seabirds**

- **Seabirds**
- Partial vegetation loss progressing toward bare land
- Native vegetation
  - *Cirsium boninense*
  - *Ipomoea pes-caprea*
  - Other plants
- Invasion

**Survey [FA]**

**Reference:** Vegetation of Kitanoshima Island

- 44 *Ipomoea pes-caprea* community
- 46 *Sporobolus virginicus* community
- 55 *Miscanthus condensatus* community (incl. *Saccharum officinarum* comm.)
- 72 Natural bareland
Nakodojima is a breeding ground for seabirds such as the black-footed albatross (*Phoebastria nigripes*) and brown booby (*Sula leucogaster*). To conserve their breeding grounds, the impacts of alien species such as black rats, which cause predation damage, will be removed, and ongoing monitoring will be conducted.

### Activity

<table>
<thead>
<tr>
<th>Island</th>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nakodojima Island</td>
<td>1. Conservation of seabird breeding grounds</td>
<td>Elimination of Leucaena</td>
<td>Continuation of elimination</td>
<td>On Nakodojima, in addition to measures to prevent soil erosion, the elimination of alien species such as Leucaena being implemented. [TMG]</td>
<td>Complete eradication</td>
<td>Continue the activities listed on the left and implement adaptive management to prevent soil erosion and conserve the remaining forest. [TMG]</td>
</tr>
<tr>
<td></td>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of alien bamboo and dwarf bamboo species.</td>
<td>Continuation of elimination</td>
<td>On Nakodojima, as well as measures to prevent soil erosion, elimination of alien bamboo and dwarf bamboo species being implemented. [TMG]</td>
<td>Complete eradication</td>
<td>Continue the activities listed on the left and implement adaptive management to prevent soil erosion and conserve the remaining forest. [TMG]</td>
</tr>
</tbody>
</table>

#### Short-term actions

- Since the completion of feral goat eradication on Nakodojima, measures including vegetation recovery have been taken.
- By FY 2012, eradication of Leucaena and alien bamboo and dwarf bamboo species, which have been spreading rapidly since the feral goat eradication, will be completed.
- Elimination of black rats, which prey on the offspring and eggs of the seabirds and also act as a suffocating factor for vegetation recovery, will be implemented.

### Diagram

Reference: Vegetation of Nakodojima Island

Legend
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

- 05 *Pisonia umbellifera* - *Trema orientalis* community
- 22 *Terminalia catappa* community
- 25 *Pandanus boninensis* community
- 32 *Leucaena leucocephala* community
- 36 Evergreen broadleaved planted forest
- 46 *Sporobolus virginicus* community
- 58 *Arundinaria simoni* community / *Pseudosasa japonica* community etc.
- 62 *Paspalum orbiculare* - *Paspalum dilatatum* community
- (include *Pennisetum sordidum* community, *Paspalum orbiculare* under units)
- 63 *Zoysia tenuifolia* community (secondary grassland)
- 67 Artificial grassland
- 72 Natural bareland
Yomejima Island

1. Conservation of seabird breeding grounds

Yomejima is a breeding ground for seabirds such as the black-footed albatross (Phoebastria nigripes) and wedge-tailed shearwater (Puffinus pacificus). To conserve their breeding grounds, predation impacts by alien species such as black rats will be removed, and monitoring will continue.

2. Ecosystem management considering endemic species

To conserve endemic species that still inhabit the island, elimination of alien species such as black rats will be conducted considering the already established interspecific relationships, in an adaptive manner.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conservation of seabird breeding grounds</td>
<td>Elimination of alien bamboo, dwarf bamboo species and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography. [FA]</td>
<td>Complete eradication</td>
<td>Initiate elimination considering the completion status of elimination in the Chichijima Island Group. [MOE]</td>
</tr>
<tr>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of black rats</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Correspond to in the figure below

Short-term actions
- Elimination of alien plants such as alien bamboo and dwarf bamboo species will be continued on Yomejima.
- Elimination of black rats, which prey on the offspring and eggs of seabirds, will be implemented.

Legend
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

Reference: Vegetation of Yomejima Island

- 25 Pandanus boninensis community
- 45 Vitex rotundifolia community
- 46 Sporobolus virginicus community
- 58 Arundinaria simonii community / Pseudosasa japonica community etc.
- 62 Paspalum orbiculare-Paspalum dilatatum community (include. Pennisetum sortidum community. Paspalum orbiculare under units)
- 65 Weed communities of the open area (Bidens pilosa var. radiata community etc.)
- 72 Natural bareland
Nishinoshima Island

1. Determine the existing condition

Nishinoshima is a young island. Thus, it is expected that vegetation succession has been progressing since land formation and will eventually create a complex ecosystem. The ecosystem will be maintained appropriately, with surveys conducted as necessary to determine the existing condition. By these surveys, successional changes in vegetation will be observed, and the status of possible alien species introduction will be monitored.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Determine the existing condition</td>
<td>Implementation of a survey to determine the existing condition</td>
<td>Carrying out aerial photography. [FA]</td>
<td>Determine the existing condition</td>
<td>Monitor the introduction status of alien species based on the existing condition. [FA]</td>
<td></td>
</tr>
</tbody>
</table>

*Correspond to in the figure below

Short-term actions
- To secure the breeding environment for seabirds, the existing condition will first be determined using methods such as aerial photography; the introduction status of alien species will also be monitored.

Legend
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

Reference: Vegetation of Nishinoshima Island

- 51 Portulaca oleracea-Eleusine indica community
- 72 Natural bareland
- 73 Open water
Kita-Iwoto Island

1. Determine the existing condition
   - Kita-Iwoto features ecosystems characteristic of oceanic islands. Research to determine the existing condition will be continued.

2. Conservation of seabird breeding grounds
   - Seabirds are an extremely important characteristic of the oceanic island ecosystem found on Kita-Iwoto. Seabird habitat will be conserved by eliminating alien species such as black and brown rats and also by continued monitoring.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Action item</th>
<th>Envisaged achievement*</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Determine the existing condition</td>
<td>Implementation of a survey to determine the existing condition</td>
<td>Initiating a survey to determine the existing condition</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Carrying out aerial photography: [FA]</td>
</tr>
<tr>
<td>2. Conservation of seabird breeding grounds</td>
<td>Elimination of rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>—</td>
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</tr>
</tbody>
</table>

*Correspond to □ in the figure below

**Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

Reference: Vegetation of Kita-Iwoto Island

- 08 Boninio griseae-Elaeocarpetum pachycarpae
- 13 Hydrangea macrophylla f. normalis -Eurya japonica community
- 19 Hibiscus tiliaceus community
- 20 Scaevola sericea community
- 22 Terminalia catappa community
- 25 Pandanus boninensis community
- 33 Pinus lutchuensis community
- 36 Evergreen broadleaved planted forest
- 41 Nephrolepis cordifolia community
- 45 Vitex rotundifolia community
- 72 Natural bareland

Legend:
- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence
**Minami-iwoto Island**

**Activity**

1. **Determine the existing condition**

   On Minami-iwoto, an ecosystem characteristic of oceanic islands is maintained in primeval condition. Any possibility of human influence on the environment will continue to be avoided as much as possible, and surveys will be conducted as necessary to determine the existing condition. By clarifying the mechanisms of the primeval ecosystem of oceanic islands through these activities and also by continuously monitoring the introduction of alien species, the ecosystem of Minami-iwoto will be maintained.

<table>
<thead>
<tr>
<th>Activity (Volcano Islands and Others)</th>
<th>Activity</th>
<th>Envisaged achievement*</th>
<th>(by the end of FY 2009)</th>
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<th>(by the end of FY 2012)</th>
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</thead>
<tbody>
<tr>
<td>1. Determine the existing condition</td>
<td>Implementation of a survey to determine the existing condition</td>
<td>Carrying out aerial photography. [FA]</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Correspond to ❌ in the figure below

**Short-term actions**

- Human influence will continue to be excluded as much as possible, and long-term monitoring will be conducted.

---

**Legend**

- Relevant conservation area
- High conservation priority endemic and threatened species
- Other endemic and threatened species
- Native species etc.
- Invasive alien species
- Invasive alien species to be addressed in the short-term
- Interspecific relations
- Interspecific relations that influence

**Reference:** Vegetation of Minami-Iwoto Island

- 08 Boninio griseae-Elaeocarpetum pachycarpae
- 10 Machilus kobu - Diplazium virescens var. virescens community
- 11 Cyatethum mertensianae / Cyatethum tuyamae
- 12 Ficus boninsimae community etc.
- 13 Hydrangea macrophylla f. normalis - Eurya japonica community
- 20 Scaevola sericea community
- 25 Pandanus boninensis community
- 26 Planchonella obovata community
- 27 Melia azedarach community
- 43 Crossostephium chinense community (dwarf halh-shrubs)
- 50 Miscanthus sinensis-Garnotia acutigluma
- 72 Natural bareland

* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

**Important habitat for seabirds**

- Seabirds
- Bonin flying fox
- Feeding
- Seed dispersal

**Native vegetation**

- Cyathea tuyamae
- Ficus nishimurae
- Other plants

**Survey [FA]**
## Schedule 1. Summary Table of Actions by Island
### (1) Chichijima Island Group

#### 1. Conservation of sclerophyllous scrub and Schima wertensiana forest
- **Elimination of feral goats**
  - Initiating area exclusion
  - Initiating strategic measures with cooperation among agencies
  - Setting up and partially complete erosion of fences to prevent the invasion of feral goats and feral cats in the Higashidaira area. Target completion in FY 2010. [MOE] [TMG, Ogasawara Village]
  - Implementation of elimination as a countermeasure against agricultural damage on Chichijima. Ogasawara Village
  - Complete area exclusion

- **Elimination of Casuarina and Ficus bithchurus**
  - Initiating area exclusion
  - Initiating area exclusion
  - Initiating and continued elimination measures to be conducted during the elimination of alien species such as Casuarina. [Ogasawara Village]
  - Continue and expand area exclusion

- **Elimination of Bischiera**
  - Completing area exclusion
  - Setting up and partially complete erection of fences to prevent the invasion of feral goats and feral cats in the Higashidaira area. Targeting completion in 2010. [MOE, FA, TMG, and Ogasawara Village]
  - Complete area exclusion

- **Elimination of Paucidium littoralis**
  - Initiating an area to determine the existing condition
  - Estimating the distribution status of alien woody plants using aerial photographs. [FA]
  - Complete area exclusion

- **Elimination of Ficus microcarpa**
  - Initiating an area to determine the existing condition
  - Estimating the distribution status of alien woody plants using aerial photographs. [FA]
  - Continue exclusion

- **Elimination of Luecaena**
  - Initiating an area to determine the existing condition
  - Estimating the distribution status of alien woody plants using aerial photographs. [FA]
  - Initiate area exclusion

- **Protection of threatened plants**
  - Setting up protective nets
  - Setting up protective nets around threatened plants growing in Higashidaira to protect them from feral goat grazing. [TMG]
  - Continue protection

#### 2. Habitat conservation for wood-pigeon
- **Exclusion of feral cats**
  - Initiating area exclusion
  - Setting up protective nets
  - Establishment of fences to prevent invasion by feral goats and cats in Chichijima’s Higashidaira region, targeting completion in 2010. Removing (excluding) feral cats from within and also outside of the fenced areas. [MOE]
  - Continue protection

- **Exclusion of black rats**
  - Initiating area exclusion
  - Initiating a survey to determine the existing condition
  - Establishment of fences to prevent invasion by feral goats and cats in Chichijima’s Higashidaira region, targeting completion in 2010. Removing (excluding) feral cats from within and also outside of the fenced areas. [MOE]
  - Continue area exclusion

#### 3. Habitat conservation for land snails
- **Elimination of predatory flatworms**
  - Initiating area defense
  - Conducting trials of specific measures for area defense within the Yokoeda area. (Installation of electric fences to interrupt unaided movement), examining the effectiveness of measures, and carrying out demonstration experiments to prove effective area defense measures. [MOE]
  - Continue area defense

- **Dispersion prevention of predatory flatworm**
  - Initiating area exclusion
  - Initiating a survey to determine the existing condition
  - Implementation of emergency capture of feral cats in cooperation with the Ogasawara Cat Liaison Committee (targeting all of Chichijima). [FA]
  - Continue area exclusion

- **Protection of threatened plants**
  - Setting up protective nets
  - Setting up protective nets around threatened plants growing in Higashidaira to protect them from feral goat grazing. [TMG]
  - Continue protection

#### 4. Habitat restoration for the Bonin flying fox
- **Conservation measures for the Bonin flying fox**
  - Implementation of protective measures
  - Active compatibility with measures for agricultural damage and raising awareness among the local people. Agency for Cultural Affairs, TMG, Ogasawara Village
  - Continue work to prevent dispersion to peripheral islands. [MOE]

- **Conservation measures for the Bonin flying fox**
  - Implementation of protective measures
  - Continue work to prevent dispersion to peripheral islands. [MOE]

#### 5. Habitat restoration for endemic insects
- **Elimination of the green anole**
  - Initiating area exclusion
  - Initiating area exclusion
  - Initiating area exclusion
  - Estimation of area coverage of the western forest area as a wildlife protection area. [MOE]
  - Continue protection

- **Exclusion of feral cats**
  - Initiating area exclusion
  - Establishing fences to prevent invasion by feral goats and cats in Chichijima’s Higashidaira region, targeting completion in 2010. Removing (excluding) feral cats from within and also outside of the fenced areas. [MOE]
  - Complete area exclusion

- **Exclusion of predatory flatworms**
  - Initiating area exclusion
  - Initiating area exclusion
  - Initiating area exclusion
  - Estimation of area coverage of the western forest area as a wildlife protection area. [MOE]
  - Continue area exclusion

- **Exclusion of black rats**
  - Initiating area exclusion
  - Initiating area exclusion
  - Initiating area exclusion
  - Estimation of area coverage of the western forest area as a wildlife protection area. [MOE]
  - Continue area exclusion

## Anijima
### 1. Conservation of sclerophyllous scrub
- **Elimination of feral goats**
  - Initiating elimination
  - Initiating elimination in FY 2009 based on the status of feral goat efforts on Mokuina. [TMG]
  - Complete eradication

- **Elimination of Casuarina and other alien plants**
  - Initiating elimination
  - Initiating elimination in FY 2009 based on the status of feral goat efforts on Mokuina. [TMG]
  - Complete eradication

- **Elimination of Luecaena**
  - Initiating elimination
  - Initiating elimination in FY 2010, with the aim of complete area exclusion within the gently sloped land of the plateau. [MOE]
  - Complete area exclusion

- **Elimination of Lantana camara var. aculeata**
  - Initiating elimination
  - Initiating elimination in FY 2010, with the aim of complete area exclusion within the gently sloped land of the plateau. [MOE]
  - Complete area exclusion

## Acknowledgment
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<tr>
<th>Island</th>
<th>Activity</th>
<th>Action Item</th>
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<th>Description</th>
<th>Short-term target after nomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ototojima</td>
<td>1. Conservation of Schima mertensiana forests</td>
<td>Elimination of Bischofia</td>
<td>Completion of eradication</td>
<td>- Achieving eradication by chemical injection at the initial stage of invasion. Implementation of monitoring. [MOE]</td>
<td>By the end of FY 2009</td>
<td>- Continue the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of feral goats</td>
<td>Completion of elimination</td>
<td>- Implementation of elimination, targeting eradication from Ototojima. [MOE]</td>
<td>Complete eradication</td>
<td>- Complete eradication on the island and also on its peripheral islands. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>Initiating elimination</td>
<td>- Initiating elimination in FY 2009 based on the implementation status of eradication on Mukojima. [MEJ]</td>
<td>Complete eradication</td>
<td>- With cooperation among management authorities, strategically initiate elimination where necessary. [OE, FA, TMG, Ogasawara Village]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Casuarina, Leucaena, and other invasive alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate area exclusion</td>
<td>- Research the distribution status of alien species (e.g., Casuarina, Leucaena) in the national forest and analyze the effects of area exclusion based on the results of eliminating Leucaena and other alien species on Anijima and elsewhere. Initiate area exclusion beginning in FY 2010. [FA]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before conducting elimination. [FA]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Habitat conservation for endemic insects including five endemic species of dragonfly</td>
<td>Elimination of bullfrogs</td>
<td>Completion of eradication</td>
<td>- Achieving eradication. [MOE]</td>
<td>By the end of FY 2012</td>
<td>- Continue with the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of feral pigs</td>
<td>Completion of eradication</td>
<td>- Implementation of measures to recover vegetation, land snail fauna, and insect fauna. Implementing recovery projects for threatened insect species. [MOE]</td>
<td>Complete eradication</td>
<td>- Continue with the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recovery of lentic environments</td>
<td>Construction of lentic environments</td>
<td>- Construction of lentic environments to recover the site together with the implementation of monitoring of aquatic insects, such as dragonflies. [MOE]</td>
<td>Initiate area exclusion</td>
<td>- Continue with the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td>3. Habitat conservation for wood-pigeon</td>
<td>Elimination of Casuarina and other invasive alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Same as above</td>
<td>- Continue elimination &gt; Continue with the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before conducting elimination. [FA]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nishijima</td>
<td>1. Ecosystem management considering endemic species</td>
<td>Elimination of black rats</td>
<td>Initiating elimination</td>
<td>- Rat poison being set out as an elimination effort. [FFPRI]</td>
<td>Complete eradication</td>
<td>- Complete eradication. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Initiating a survey to determine the existing condition</td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate elimination</td>
<td>- Continue the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Conducting a survey of Casuarina distribution in the central part of the island. [A]</td>
<td></td>
<td>- For national forest areas, establish maintenance arrangements with NPOs and other groups to promote the elimination of Casuarina and other alien species starting in FY 2010. [PPO, FA]</td>
</tr>
<tr>
<td></td>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Initiating a survey to determine the existing condition</td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate elimination</td>
<td>- Continue the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Conducting a survey of Casuarina distribution in the central part of the island. [A]</td>
<td></td>
<td>- For national forest areas, establish maintenance arrangements with NPOs and other groups to promote the elimination of Casuarina and other alien species starting in FY 2010. [PPO, FA]</td>
</tr>
<tr>
<td></td>
<td>1. Conservation of seabird breeding grounds</td>
<td>Elimination of black rats</td>
<td>Completion of eradication</td>
<td>- Conducting experimental elimination on Nishijima on a pilot basis. [OE]</td>
<td>By the end of FY 2010</td>
<td>- Complete eradication &gt; Complete eradication. [MOE]</td>
</tr>
<tr>
<td></td>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Initiating a survey to determine the existing condition</td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate elimination</td>
<td>- Continue the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Conducting a survey of Casuarina distribution in the central part of the island. [A]</td>
<td></td>
<td>- For national forest areas, establish maintenance arrangements with NPOs and other groups to promote the elimination of Casuarina and other alien species starting in FY 2010. [PPO, FA]</td>
</tr>
<tr>
<td></td>
<td>3. Conservation of seabird breeding grounds</td>
<td>Elimination of black rats</td>
<td>Completion of eradication</td>
<td>- Conducting experimental elimination on Higashijima on a pilot basis. [OE]</td>
<td>By the end of FY 2010</td>
<td>- Complete eradication &gt; Complete eradication. [MOE]</td>
</tr>
<tr>
<td></td>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Initiating a survey to determine the existing condition</td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td>Initiate elimination</td>
<td>- Continue the activities listed on the left. [MOE]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Conducting a survey of Casuarina distribution in the central part of the island. [A]</td>
<td></td>
<td>- For national forest areas, establish maintenance arrangements with NPOs and other groups to promote the elimination of Casuarina and other alien species starting in FY 2010. [PPO, FA]</td>
</tr>
<tr>
<td>Minamijima</td>
<td>1. Conservation of Casuarina echinatus and other alien plants</td>
<td>Elimination of black rats</td>
<td>Completion of eradication</td>
<td>- Implementation of elimination of highly invasive alien plants on Minamijima. [MG, FA, Ogasawara Village, NPO]</td>
<td>Continue eradication</td>
<td>- Continue the activities listed on the left. [MG, FA]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Estimating the distribution status of alien woody plants using aerial photographs. [FA]</td>
<td></td>
<td>- Complete eradication &gt; Complete eradication on the island and also on its peripheral islands. [MOE]</td>
</tr>
<tr>
<td></td>
<td>2. Ecosystem management considering endemic species</td>
<td>Elimination of black rats</td>
<td>Completion of eradication</td>
<td>- Implementation of highly invasive alien plants on Minamijima. [MG, FA, Ogasawara Village, NPO]</td>
<td>Continue eradication</td>
<td>- Continue with the activities listed on the left. [MG, FA]</td>
</tr>
</tbody>
</table>

Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.
<table>
<thead>
<tr>
<th>Island</th>
<th>Activity</th>
<th>Action Item</th>
<th>Envisioned achievement*</th>
<th>Description</th>
<th>Short-term target after elimination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hahajima</td>
<td>1. Conservation of subtropical rainforest: Artisia sieboldii forest, and sclerophyllous scrub type of the Hahajima Island Group</td>
<td>Elimination of Bischofia</td>
<td>Creation of medium- and long-term plans; Initiating area exclusion</td>
<td>Implementation of elimination constituting to the created medium- and long-term plans (e.g., &quot;Bischofia Control Plan&quot;) to achieve area exclusion in the Sakaino basin.</td>
<td>Continue elimination</td>
<td>Continue with the activities listed on the left.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Ficus microcarpa</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Estimating the distribution status of alien woody plants using aerial photographs.</td>
<td>Initiate area exclusion</td>
<td>With cooperation among management authorities, strategically initiate elimination where necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Casuarina and Leucaena</td>
<td>Initiating area exclusion</td>
<td>Implementation of Casuarina elimination at Minamizaki on Hahajima, targeting area exclusion in FY 2007–2008.</td>
<td>Continue monitoring after the elimination</td>
<td>Continue monitoring the introduction status of alien species, such as Casuarina, in excluded areas. (Minamizaki region)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of the green anole</td>
<td>Completion of area exclusion</td>
<td>Monitoring surveys of birds, insects, land snails, and plants, before initiating elimination in Sakaino and other areas.</td>
<td></td>
<td>With cooperation among agencies, strategically initiate elimination where necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of the cane load</td>
<td>Completion of area exclusion</td>
<td>Implementation of surveys and other studies on the initiation status of Carduelia sinica kittenlitzi in Hahajima, in addition, considering elimination of alien species.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Habitat conservation for endemic birds including Cealatimia ogasawaramis</td>
<td>Monitoring of the habitat for Casuarina ogasawaramis and other endemic insects</td>
<td>Continental monitoring</td>
<td>Implementation of conservation and breeding measures for Casuarina ogasawaramis and other alien species, as well as continued monitoring of ecosystem recovery focusing on insects.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exclusion of feral cats</td>
<td>Complete and expand area exclusion</td>
<td>To be addressed on medium- and long-term bases.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Habitat conservation for wood-pigeon</td>
<td>Elimination of black rats</td>
<td>Creation of medium- and long-term plans; Initiating area exclusion</td>
<td>Implementation of elimination constituting to the created medium- and long-term plans (e.g., &quot;Bischofia Control Plan&quot;) to achieve area exclusion in the Sakaino basin.</td>
<td>Continue elimination</td>
<td>Continue elimination.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exclusion of feral cats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Same as above</td>
<td>Same as above.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Same as above</td>
<td>Same as above.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planting of food trees</td>
<td>Creation of elimination of Bischofia</td>
<td>Creation of elimination of Bischofia and planting food trees of wood-pigeon.</td>
<td>Continue elimination</td>
<td>Continue elimination.</td>
</tr>
<tr>
<td></td>
<td>5. Habitat conservation for land snails</td>
<td>Discussion on conservation policies for endemic land snails</td>
<td>Discussion of conservation policies</td>
<td>Determining the inhabitat status of endemic land snails on Hahajima, establishing the individual project review committees, and discussing conservation policies for land snails.</td>
<td>Initiate specific measures</td>
<td>Based on outcomes of conservation policies found by the review committee. implement specific measures as necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exclusion of feral cats</td>
<td>Raising awareness of proper practices</td>
<td>Raising awareness of proper domestic cat keeping.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Other measures</td>
<td>Elimination of predatory flatworms</td>
<td>Continuing raising awareness and working to prevent dispersion</td>
<td>Implementation of awareness raising activities led by TRS, rangers and other groups to prevent dispersion to Hahajima and peripheral islands and a measure of weaving shoes sides when disassembling from the transport ship Hahajima flies.</td>
<td>Complete work to prevent dispersion and raise awareness</td>
<td>With the activities listed on the left.</td>
</tr>
<tr>
<td>Mukojima</td>
<td>1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group</td>
<td>Elimination of Casuarina and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography.</td>
<td>Initiate area exclusion</td>
<td>Estimate the distribution status of alien wood species using aerial photographs. based on the survey results, plan for area exclusions to be initiated in FY 2011.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Habitat conservation for endemic birds</td>
<td>Elimination of Casuarina and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography.</td>
<td>Complete eradication</td>
<td>Considering the status of elimination throughout the Chichijima Island Group, initiate eradication as needed.</td>
</tr>
<tr>
<td></td>
<td>3. Conservation of sclerophyllous scrub typical of the Hahajima Island Group</td>
<td>Elimination of Leucaena and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography.</td>
<td>Complete eradication</td>
<td>Based on the completion status of elimination in the Chichijima Island Group, initiate eradication.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Conservation of sclerophyllous scrub typical of the Hahajima Island Group</td>
<td>Elimination of Leucaena and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography.</td>
<td>Complete eradication</td>
<td>Based on the completion status of elimination in the Chichijima Island Group, initiate eradication.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Habitat conservation for land snails</td>
<td>Elimination of Leucaena and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography.</td>
<td>Complete eradication</td>
<td>Based on the completion status of elimination in the Chichijima Island Group, initiate eradication.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>(To be addressed on medium- and long-term bases)</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Ecosystem management considering endemic species</td>
<td>Elimination of Bischofia</td>
<td>Completion of eradication</td>
<td>Elimination being completed and eradication achieved, approximately 20 individual plants were removed.</td>
<td>Complete eradication</td>
<td>Based on the completion status of elimination in the Chichijima Island Group, initiate eradication.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Casuarina and other alien plants</td>
<td>Initiating a survey to determine the existing condition</td>
<td>Carrying out aerial photography.</td>
<td>Complete eradication</td>
<td>Based on the completion status of elimination in the Chichijima Island Group, initiate eradication.</td>
</tr>
</tbody>
</table>

Some of the measures listed may not be implemented due to weather conditions.
### Mukojima Island Group and Other Islands

<table>
<thead>
<tr>
<th>Island</th>
<th>Activity</th>
<th>Action Item</th>
<th>Envisaged achievement*</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>By the end of FY 2009</th>
<th>By the end of FY 2012</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mukojima</strong></td>
<td>1. Ecosystem management of Ardisia sieboldii forest and other habitats</td>
<td>Elimination of Ardisia sieboldii and other alien species</td>
<td>Complete eradication</td>
<td>&gt; Continue eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of Leucaena and alien bamboo and dwarf bamboo species to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>&gt; Continue eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Leucaena and alien bamboo and dwarf bamboo species to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>&gt; Continue eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of other alien bamboo and dwarf bamboo species being implemented.</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td>2. Habitat conservation for endemic insects</td>
<td>Elimination of other alien bamboo and dwarf bamboo species</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Ficus microcarpa (Taiwanese black bamboo)</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of black rats</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
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<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of other alien bamboo and dwarf bamboo species</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td>3. Conservation and creation of breeding grounds for three albatross species</td>
<td>Creation of new albatross breeding grounds</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of Leucaena</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of another alien bamboo and dwarf bamboo species</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elimination of other alien bamboo and dwarf bamboo species being implemented.</td>
<td>Complete eradication</td>
<td>&gt; Complete eradication &gt; Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
<td>Complete eradication</td>
<td>[MSG]</td>
<td>[MSG]</td>
<td>Complete eradication &gt; Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest.</td>
</tr>
</tbody>
</table>

**Note:**
- *Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2006.*
- *Some of the listed measures may not be implemented due to weather conditions and other factors.*

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## Schedule 2. Summary Table of Actions by Alien Species

<table>
<thead>
<tr>
<th>Name of alien species</th>
<th>Activity</th>
<th>Envisioned achievement*</th>
<th>Description</th>
<th>Short-term target after eradication</th>
<th>Time period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Feral goat</strong></td>
<td>Anijima: Completion of eradication</td>
<td>Completion of eradication on Anijima. <strong>[ENG]</strong></td>
<td>-</td>
<td>Completion of eradication on Anijima. <strong>[ENG]</strong></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ototojima: Continuation of eradication</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Chichijima: Initiating area exclusion</td>
<td>Implementation of exclusion work on Chichijima, FY 2009. Based on the status of extinction measures on Mukojima and Higashijima.</td>
<td>-</td>
<td>Implementation of exclusion work on Chichijima, FY 2009. Based on the status of extinction measures on Mukojima and Higashijima.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Chichijima: Initiating strategic extermination among various agencies</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Feral cat</strong></td>
<td>Anijima: Completion of eradication</td>
<td>Completion of eradication on Anijima. <strong>[ENG]</strong></td>
<td>-</td>
<td>Completion of eradication on Anijima. <strong>[ENG]</strong></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ototojima: Initiating eradication</td>
<td>Continuation of eradication. <strong>[ENG]</strong></td>
<td>-</td>
<td>Continuation of eradication. <strong>[ENG]</strong></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Mukojima: Initiating area exclusion</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Chichijima: Create area exclusion on Minamijima. Continue monitoring.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Feral pig</strong></td>
<td>Anijima: Completion of eradication</td>
<td>Completion of eradication. <strong>[ENG]</strong></td>
<td>-</td>
<td>Completion of eradication. <strong>[ENG]</strong></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ototojima: Continuation of eradication (prevent dispersal)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Establishing exclusion methods. Continue area exclusion (prevent dispersal). Chichijima: Completion of area exclusion.</td>
<td>Implementation of exclusion methods, monitoring and awareness raising within the area surrounding Fushigijima on Chichijima to prevent dispersion to peripheral islands. <strong>[ENG]</strong></td>
<td>-</td>
<td>Implementation of exclusion methods, monitoring and awareness raising within the area surrounding Fushigijima on Chichijima to prevent dispersion to peripheral islands. <strong>[ENG]</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Black rat</strong></td>
<td>Anijima, Nishijima, Anijima and Ototojima: Initialing eradication.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Implementation of preliminary experimental elimination areas on Mukojima and Higashijima. <strong>[FJP]</strong> Feral rat poisons being set out as an eradication effort. <strong>[FJP]</strong></td>
<td>-</td>
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<td></td>
<td>Chichijima: Continue area exclusion (prevent dispersion)&gt;Hahajima: Completion of area exclusion&gt;Chichijima and Hahajima: Enforce the ordinance and enhance management</td>
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<td></td>
<td>In addition to continued monitoring of ecosystem restoration, mainly in regard to insects, implementing measures for the protection and proliferation of Celastrina ogasawaraensis and other insect species. <strong>[MOE, Ogasawara Cat Liaison Committee, Tokyo Veterinary Medical Association, NPO]</strong></td>
<td>-</td>
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<tr>
<td><strong>Green anole</strong></td>
<td>Anijima, Anijima and Ototojima: Preventive measures</td>
<td>Implementation of exclusion on Chichijima to prevent dispersal to peripheral islands. <strong>[ENG]</strong></td>
<td>-</td>
<td>Implementation of exclusion on Chichijima to prevent dispersal to peripheral islands. <strong>[ENG]</strong></td>
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<tr>
<td></td>
<td>Ototojima: Initiating area exclusion</td>
<td>-</td>
<td>-</td>
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<td></td>
<td>Chichijima: Completion of area exclusion</td>
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<td></td>
<td>To prevent the dispersion of predatory flatworm from Chichijima to Anijima and peripheral islands, measures are being taken to prevent invasion.</td>
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<tr>
<td><strong>Cane toad</strong></td>
<td>Anijima: Continuation of eradication</td>
<td>Continuation of eradication on Anijima. <strong>[ENG]</strong></td>
<td>-</td>
<td>Continuation of eradication on Anijima. <strong>[ENG]</strong></td>
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<tr>
<td></td>
<td>Continuation of eradication to Anijima and peripheral islands. Chichijima: Completion of area exclusion.</td>
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<tr>
<td></td>
<td>The above measures are implemented together with those against the green anole.</td>
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<tr>
<td><strong>BuProp</strong></td>
<td>Anijima: Completion of eradication</td>
<td>Completion of eradication. <strong>[ENG]</strong></td>
<td>-</td>
<td>Completion of eradication. <strong>[ENG]</strong></td>
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<tr>
<td></td>
<td>Continue elimination work with the goal of eradication (Past actions not clearly listed yet).</td>
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</tr>
<tr>
<td><strong>Predatory flatworm</strong></td>
<td>Chichijima and Higashijima: Completion of eradication</td>
<td>Implementation of control and eradication measures for predatory flatworm. <strong>[ENG]</strong></td>
<td>-</td>
<td>Implementation of control and eradication measures for predatory flatworm. <strong>[ENG]</strong></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>To prevent the dispersion of predatory flatworm from Chichijima to Anijima and peripheral islands, measures to prevent invasion are being taken.</td>
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</tr>
</tbody>
</table>

*Note: All measures are implemented in collaboration with local governments and other organizations.*
## Schedule 2. Summary Table of Actions by Alien Species

<table>
<thead>
<tr>
<th>Name of alien species</th>
<th>Activity</th>
<th>Description</th>
<th>Short-term target after nomination</th>
<th>Time period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bios_TA</strong></td>
<td>Ventilation, Elimination</td>
<td>Implementation of ventilation and elimination</td>
<td>Higashidaira Higashijima Minami-iwoto Nakodojima</td>
<td>FY 2009</td>
</tr>
<tr>
<td><strong>Cassanea and Ailanthus</strong></td>
<td>Ventilation, Elimination</td>
<td>Implementation of ventilation and elimination</td>
<td>Higashidaira Higashijima Minami-iwoto Nakodojima</td>
<td>FY 2009</td>
</tr>
<tr>
<td><strong>Laurus</strong></td>
<td>Ventilation, Elimination</td>
<td>Implementation of ventilation and elimination</td>
<td>Higashidaira Higashijima Minami-iwoto Nakodojima</td>
<td>FY 2009</td>
</tr>
<tr>
<td><strong>Bambusa</strong></td>
<td>Ventilation, Elimination</td>
<td>Implementation of ventilation and elimination</td>
<td>Higashidaira Higashijima Minami-iwoto Nakodojima</td>
<td>FY 2009</td>
</tr>
<tr>
<td><strong>Bischofia</strong></td>
<td>Ventilation, Elimination</td>
<td>Implementation of ventilation and elimination</td>
<td>Higashidaira Higashijima Minami-iwoto Nakodojima</td>
<td>FY 2009</td>
</tr>
</tbody>
</table>

### Notes
- BR: Implementation of alien elimination methods
- ER: Implementation of alien elimination
- AN: Implementation of alien elimination on non-territorial islands for alien invasion
- Methods: Various methods
- Monitoring surveys: Monitoring of the distribution status of alien woody plants using aerial photographs
- Meetings and cooperation: Meetings and cooperation with NGOs and other groups
- Responses: Various responses
- Survey: Various surveys
- Monitoring: Various monitoring
- Implementation of alien elimination methods
- Implementation of alien elimination
- Monitoring of the distribution status of alien woody plants using aerial photographs
- Meetings and cooperation
- Various surveys
- Various monitoring
- Various responses
- Various methods