

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.

【UNESCO Operational Guidelines for the Implementation of the World Heritage Convention (excerpt)】

116. Where the intrinsic qualities of a property nominated are threatened by action of man and yet meet the criteria and the conditions of authenticity or integrity set out in paragraphs 78–95, an action plan outlining the corrective measures required should be submitted with the nomination file. Should the corrective measures submitted by the nominating State Party not be taken within the time proposed by the State Party, the property will be considered by the Committee for delisting in accordance with the procedure adopted by the Committee.

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.

【Management Plan “5. Management Measures”(excerpt)】

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.

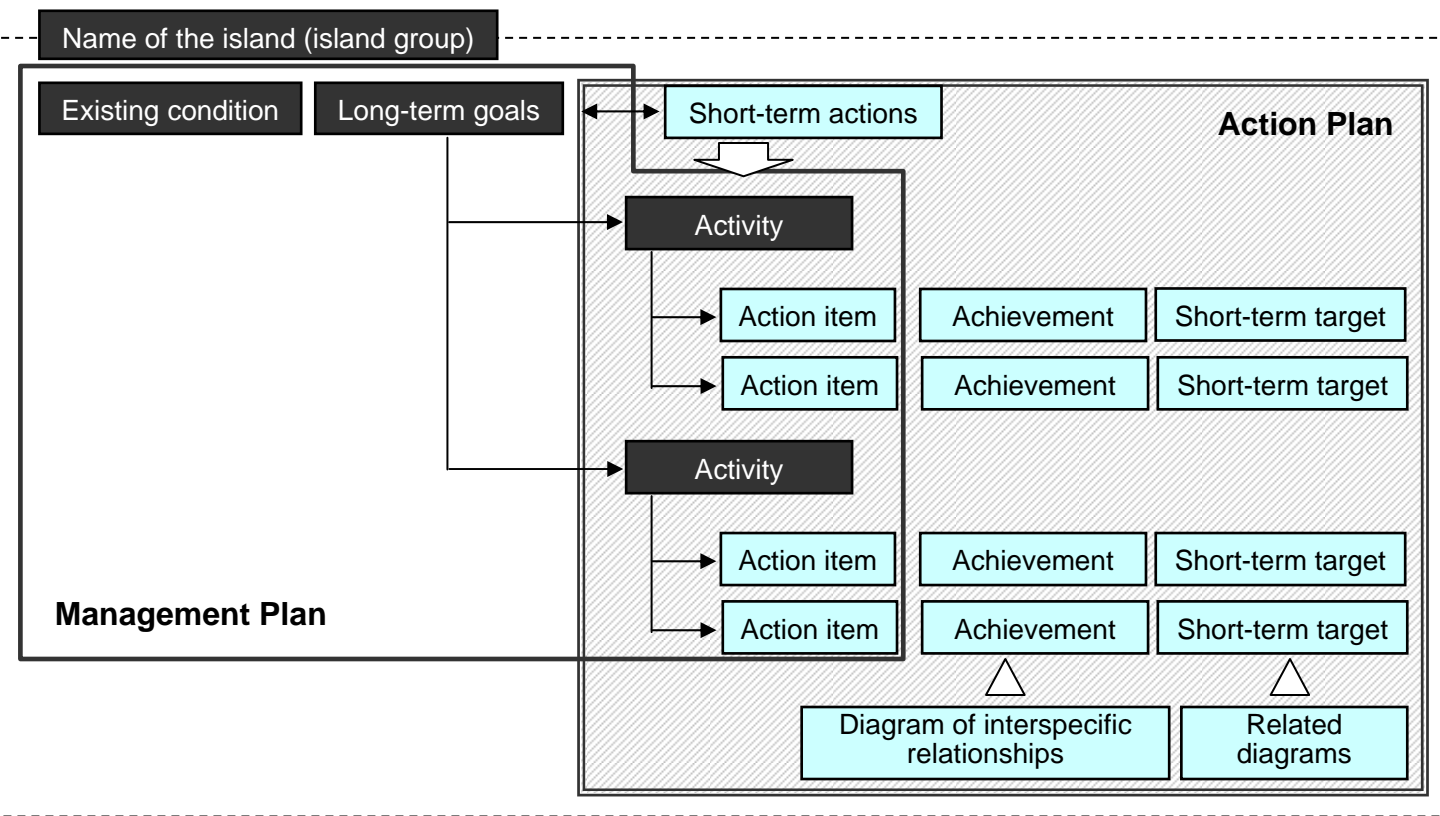
	Management Plan	Action Plan
Target Area	Comprehensive plan related to conservation and management of the natural environment of the Ogasawara Islands	Specific action plans to correct human influences (mainly plans concerning ecosystem conservation on each island).
Target Period	Demonstrate the activities 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.	Detailed plan that complements the Management Plan and demonstrates the priority sequence and process of short-term objectives and measures.
Promoting Agencies	All parties related to the Ogasawara Islands	Mainly the management authorities (bodies implementing the projects and surveys)

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 three regions of important conservation value on each island.

Chichijima Island Group	Chichijima, Anijima, Ototojima, Nishijima, Higashijima, Minamijima *On Chichijima, specific action plans are given for the Higashidaira Region, Yoakedaira and Nagasaki Region, and Southern Region.
Hahajima Island Group	Hahajima, Mukohjima, Anejima, Imotojima, Meijima, Hirajima *For Hahajima, specific action plans are given for the Sekimon Region, North-Central Region, and Minamizaki Region.
Mukojima Island Group and others	Mukojima, Kitanoshima, Nakodojima, Yomejima, Nishinoshima, Kita-iwoto, Minami-Iwoto

- 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.



* 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

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3. Island-by-Island Ecosystem Conservation Action Plan

Island	(Chichijima Island Group)	Short-term actions
Chichijima Island		

- Feral goats impact native and endemic vegetation and especially affect the sustainability of the sclerophyllous scrub ecosystem spread across the Higashidaira and Mt. Chuosan region of Chichijima, which contains endemic species such as *Callicarpa parvifolia* and *Crepidiastrum grandicollum*. 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. Chuosan 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 cat 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. Chuosan 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 lutchuensis* 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 lutchuensis* 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 *Ogasawarazo 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 *Ogasawarazo lineatus* habitat, areas near water bodies where natural replenishment of dragonflies such as *Hemicordulia ogasawarensis* 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 hereafter. 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.

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Post-2012
Tentative list			Submission of nomination dossier			Target year	Medium-and long-term actions
		Feral goat (Higashidaira: area exclusion)					
		Feral goat (Chichijima island-wide: consider exclusion methods→suppress to low density→eradication)					
		Feral cat (Higashidaira: area exclusion)					
		Feral cat (Chichijima island-wide: exclusion within the area surrounding the area exclusion zone→ low density→ exclusion)					
		Casuarina, <i>Pinus lutchuensis</i> , <i>Psidium littorale</i> and other alien plant species (Higashidaira & Yoakedaira)					Continue & expand
		Bischofia (Higashidaira)					
		Spatial management of alien species (Higashidaira)					
		Predatory flatworm (Yoakedaira, Toriyama, Tatsumizaki)					
							Green anole

(1) Chichijima Island (Chichijima Island Group)

Island (region)	(Chichijima Island Group)	Activity
Chichijima Island (Higashidaira and Mt. Chuosan 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 <i>Schima mertensiana</i> 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 <i>Schima mertensiana</i> forest will be conserved. For endemic plants such as <i>Rhododendron boninense</i> , <i>Symplocos kawakamii</i> , <i>Pittosporum parvifolium</i> , <i>Melastoma tetramerum</i> , and <i>Calanthe hattorii</i> , habitat conservation will involve the continuation of periodic patrols, monitoring, and alien species measures that build on already obtained results.
		2. Habitat conservation for wood-pigeon
		A sanctuary to conserve important habitat for the endemic subspecies of Japanese wood-pigeon (<i>Columba janthina nitens</i>) 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.
		5. Habitat restoration 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.

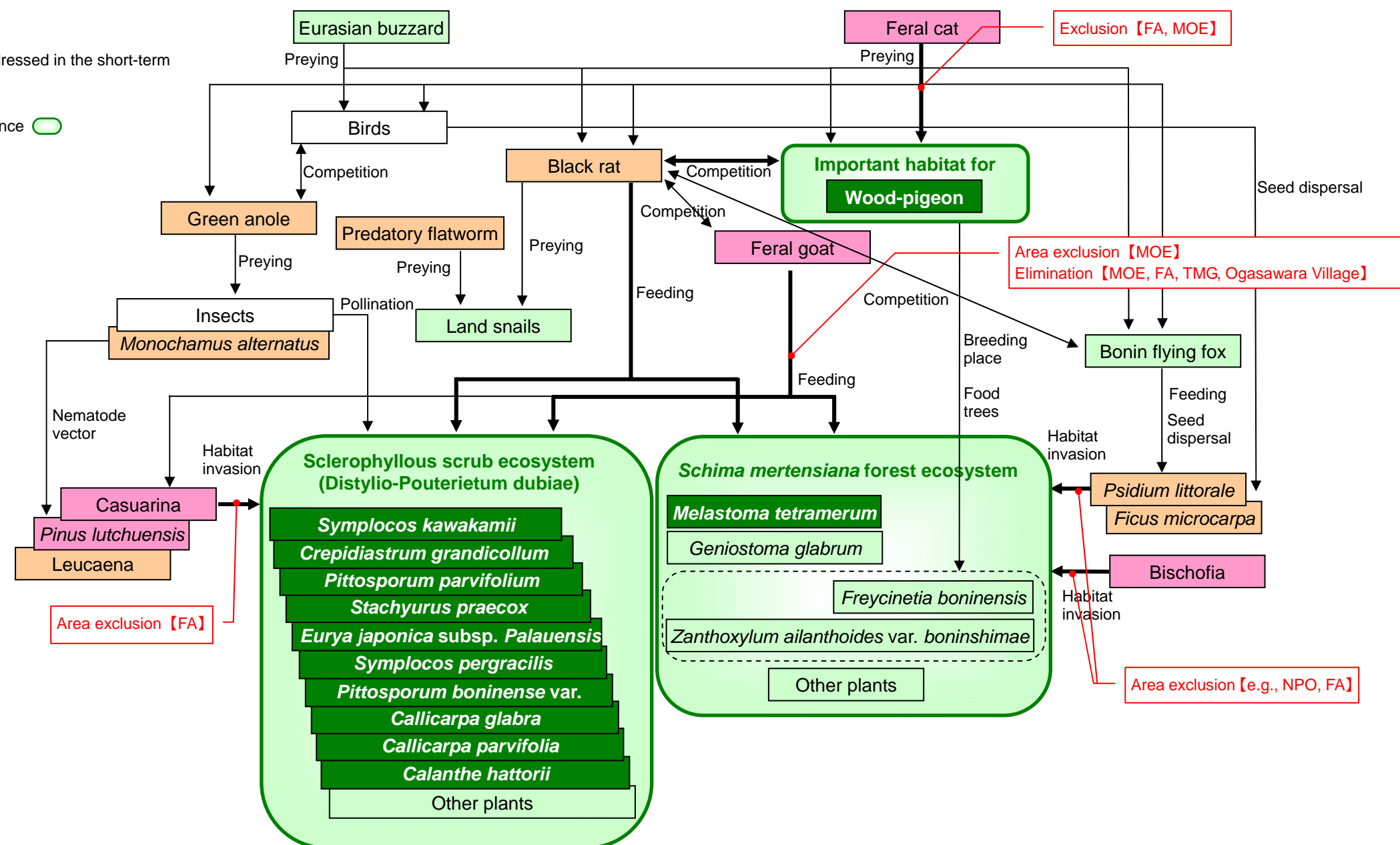
Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of sclerophyllous scrub and Schima mertensiana forest	Elimination of feral goats	➢ Initiating area exclusion ➢ Initiating strategic measures with cooperation among management authorities	➢ 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】 ➢ Implementation of elimination as a countermeasure against agricultural damage on Chichijima. 【Ogasawara Village】 ➢ Carrying out research on inhabitation status, and initiating studies of effective eradication procedures. 【MOE, FA, TMG, and Ogasawara Village】	➢ Complete area exclusion ➢ Initiate and continue elimination	➢ Implement feral goat elimination within fenced areas. 【MOE】 ➢ Continue with the activities listed on the left. 【Ogasawara Village】 ➢ Initiate strategic eradication activities (in the whole region) with cooperation among management authorities, starting from FY 2009.【MOE, FA, TMG, and Ogasawara Village】
	Elimination of Casuarina and Pinus lutchuensis	➢ Initiating area exclusion	➢ Beginning elimination of alien species such as Casuarina in the Higashidaira area, targeting area exclusion. Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before conducting elimination in Higashidaira and Yoakedaira. 【FA】	➢ Continue and expand area exclusion	➢ Continue with the activities listed on the left. 【NPO, FA, and others.】
	Elimination of Bischofia	➢ Completion of area exclusion	➢ Promoting area exclusion in Higashidaira. 【NGOs and others】	➢ Continue area exclusion	➢ Area exclusion planned to be completed by FY 2009, with germination treatment and other follow-up work thereafter. (Higashidaira wood-pigeon sanctuary) 【NPO, FA, and others.】
	Elimination of Psidium littorale	➢ Initiating a survey to determine the existing condition	➢ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】 ➢ Consideration of implementing elimination measures to be conducted during the elimination of species such as Casuarina. 【FA】	➢ Continue area exclusion	➢ Continue with the activities listed on the left. 【NPO, FA, and others 】
	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	➢ Continue with the activities listed on the left. 【MOE】
2. Habitat conservation for wood-pigeon	Exclusion of feral cats	➢ Initiating area exclusion ➢ Initiating exclusion	➢ 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】 ➢ Implementation of emergency captures of feral cats in cooperation with the Ogasawara Cat Liaison Committee (targeting all of Chichijima). 【FA】	➢ Complete area exclusion	➢ Complete feral cat exclusion within fences in the Higashidaira area.【MOE】 ➢ Based on the effectiveness of fencing and capturing measures in Higashidaira, consider exclusion measures of the island. 【MOE, FA, TME, Ogasawara Village】
	Elimination of black rats			(To be addressed on medium-and long-term bases)	
5. Habitat restoration for endemic insects	Elimination of the green anole			(To be addressed on medium-and long-term bases)	

*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

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



(1) Chichijima Island (Chichijima Island Group)










Island (region)	(Chichijima Island Group)	Activity
Chichijima Island (Yoakedaira and Nagasaki Region)		1. Conservation of sclerophyllous scrubs and <i>Schima mertensiana</i> forests
		3. Habitat conservation for land snails

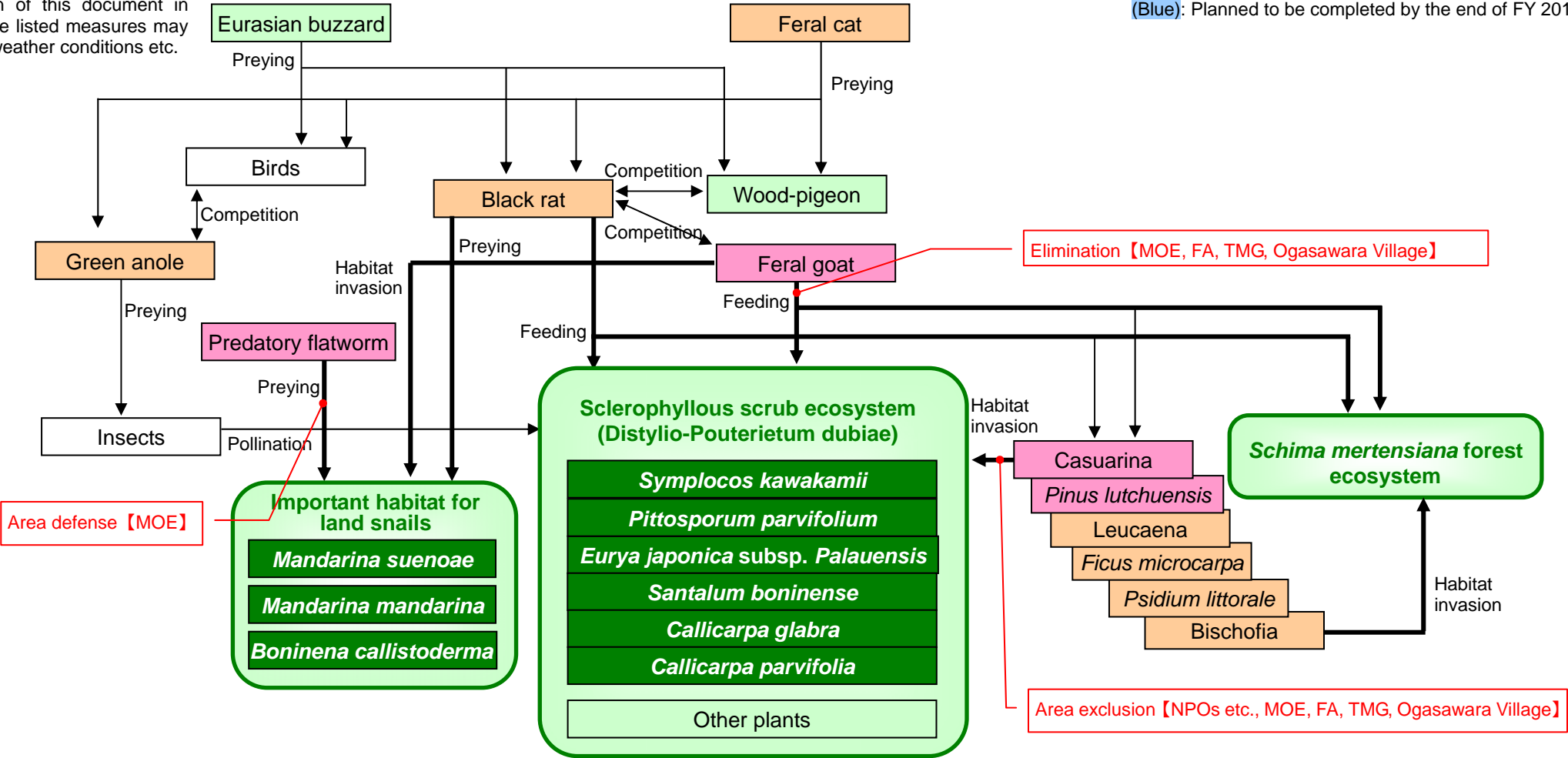
Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of sclerophyllous scrub and <i>Schima mertensiana</i> forest	Elimination of feral goats	➢ Initiating strategic measures with cooperation among management authorities	➢ Implementation of elimination as a countermeasure against agricultural damage on Chichijima. 【Ogasawara Village】 ➢ Carrying out research on inhabitation status, and initiating studies of effective eradication procedures. 【MOE, FA, TMG, and Ogasawara Village】	➢ Initiate and continue elimination	➢ Continue with the activities listed on the left. 【Ogasawara Village】 ➢ Initiate strategic eradication activities (in the whole region) with cooperation among management authorities, starting from FY 2009. 【MOE, FA, TMG, and Ogasawara Village】
	Elimination of <i>Casuarina</i> and <i>Pinus lutchuensis</i>	➢ Initiating area exclusion	➢ Implementation of elimination in the Nagasaki region of Chichijima. 【NPO】 ➢ Concluding a maintenance agreement with NPOs and other groups for Yoakedaira and promoting the elimination of <i>Casuarina</i> and other alien species. 【FA】 Implementation of monitoring surveys (e.g., of birds, insects, land snails, plants) before beginning elimination measures in Higashidaira and Yoakedaira. 【FA】	➢ Continue and expand area exclusion	➢ Continue with the activities listed on the left. 【NPO, FA, and others】
	Elimination of <i>Ficus microcarpa</i> , <i>Leucaena</i> , <i>Psidium littorale</i> , and other alien invasive species.	➢ Initiating a survey to determine the existing condition	➢ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】	➢ Initiate area exclusion	➢ With cooperation among management authorities, strategically initiate elimination where necessary. 【MOE, FA, TMG, Ogasawara Village】
3. Habitat conservation for land snails	Elimination of predatory flatworm	➢ Initiating area defense	➢ 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】	➢ Continue area defense measures	➢ Set up sanctuaries in land snail habitats (e.g., Yoakedaira), and implement preventive measures against introduction. 【MOE】
	Elimination of black rats			(To be addressed on medium- and long-term bases)	

*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

- 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 (region)	(Chichijima Island Group)	Activity
Chichijima Island (Southern Region)		1. Conservation of sclerophyllous scrub and <i>Schima mertensiana</i> forest
		The sclerophyllous scrub vegetation in the entire Higashidaira region, where Chichijima's original vegetation is still well preserved, will be appropriately conserved. In <i>Schima mertensiana</i> 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 <i>Casuarina</i> and <i>Bischofia</i> will be eliminated mainly in important regions for conservation, and sclerophyllous scrub and <i>Schima mertensiana</i> forest will be conserved.
		2. Habitat conservation for wood-pigeon
		A sanctuary to conserve important habitat for the endemic subspecies of Japanese wood-pigeon (<i>Columba janthina nitens</i>) 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 <i>Mandarina chichijimana</i> , 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.
		5. 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.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of sclerophyllous scrub and <i>Schima mertensiana</i> forest	Elimination of feral goats	➤ Initiating strategic measures with the cooperation among management authorities	➤ Implementation of elimination as a countermeasure against agricultural damage on Chichijima. 【Ogasawara Village】 ➤ Carrying out research on inhabitation status, and initiating studies of effective eradication procedures. 【MOE, FA, TMG, and Ogasawara Village】	➤ Initiate and continue elimination	➤ Continue with the activities listed on the left. 【Ogasawara Village】 ➤ Initiate strategic eradication activities (in the whole region) with cooperation among management authorities, starting from FY 2009. 【MOE, FA, TMG, and Ogasawara Village】
	Elimination of <i>Ficus microcarpa</i> , <i>Leucaena</i> , <i>Psidium littorale</i> , and other alien plants	➤ Initiating a survey to determine the existing condition	➤ Estimating the distribution status of alien woody plants based on aerial photographs. 【FA】	➤ Initiate area exclusion	➤ With cooperation among management authorities, initiate strategic elimination measures where necessary. 【MOE, FA, TMG, Ogasawara Village】
2. Habitat conservation for wood-pigeon	Exclusion of feral cats	➤ Initiating exclusion	➤ Implementation of emergency captures of feral cats in cooperation with the Ogasawara Cat Liaison Committee (targeting all of Chichijima). 【FA】	➤ Continue exclusion	➤ Implement exclusion of cats focusing on the important southern region (the known breeding ground of the wood-pigeon and –surrounding areas) and decrease feral cat density on Chichijima. 【MOE】
	Elimination of black rats			(To be addressed on medium- and long-term bases)	
3. Habitat conservation for land snails	Elimination of predatory flatworm	➤ Initiating area defense	➤ 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】	➤ Continue area defense	➤ Set up sanctuaries in land snail habitats (e.g., Tatsumizaki, Toriyama, Yoakedaira) and implement preventive measures against alien species introductions. 【MOE】
	Elimination of black rats			(To be addressed on medium- and long-term bases)	
5. Habitat conservation for endemic insects	Elimination of the green anole			(To be addressed on medium- and long-term bases)	










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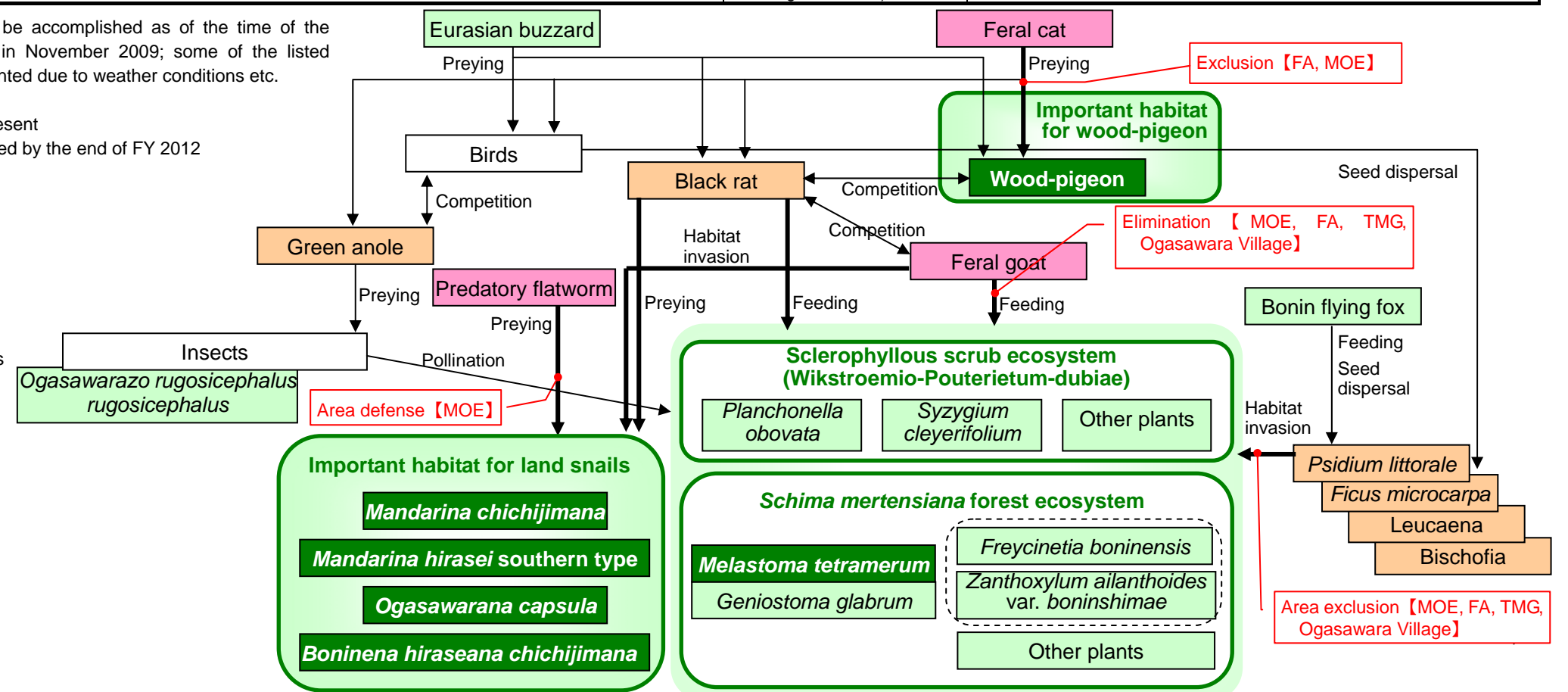
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present

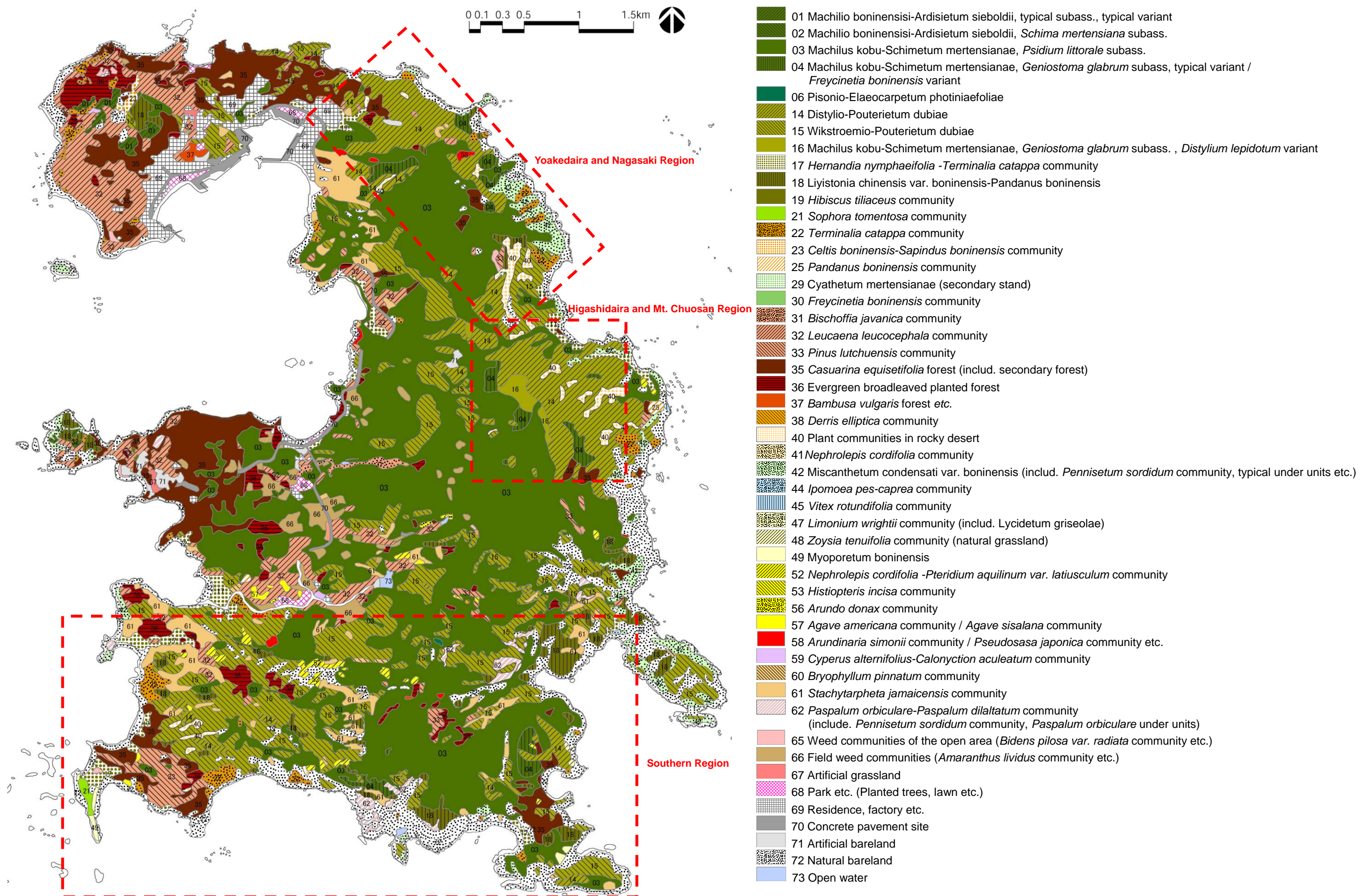
(Blue): Planned to be completed by the end of FY 2012

Legend

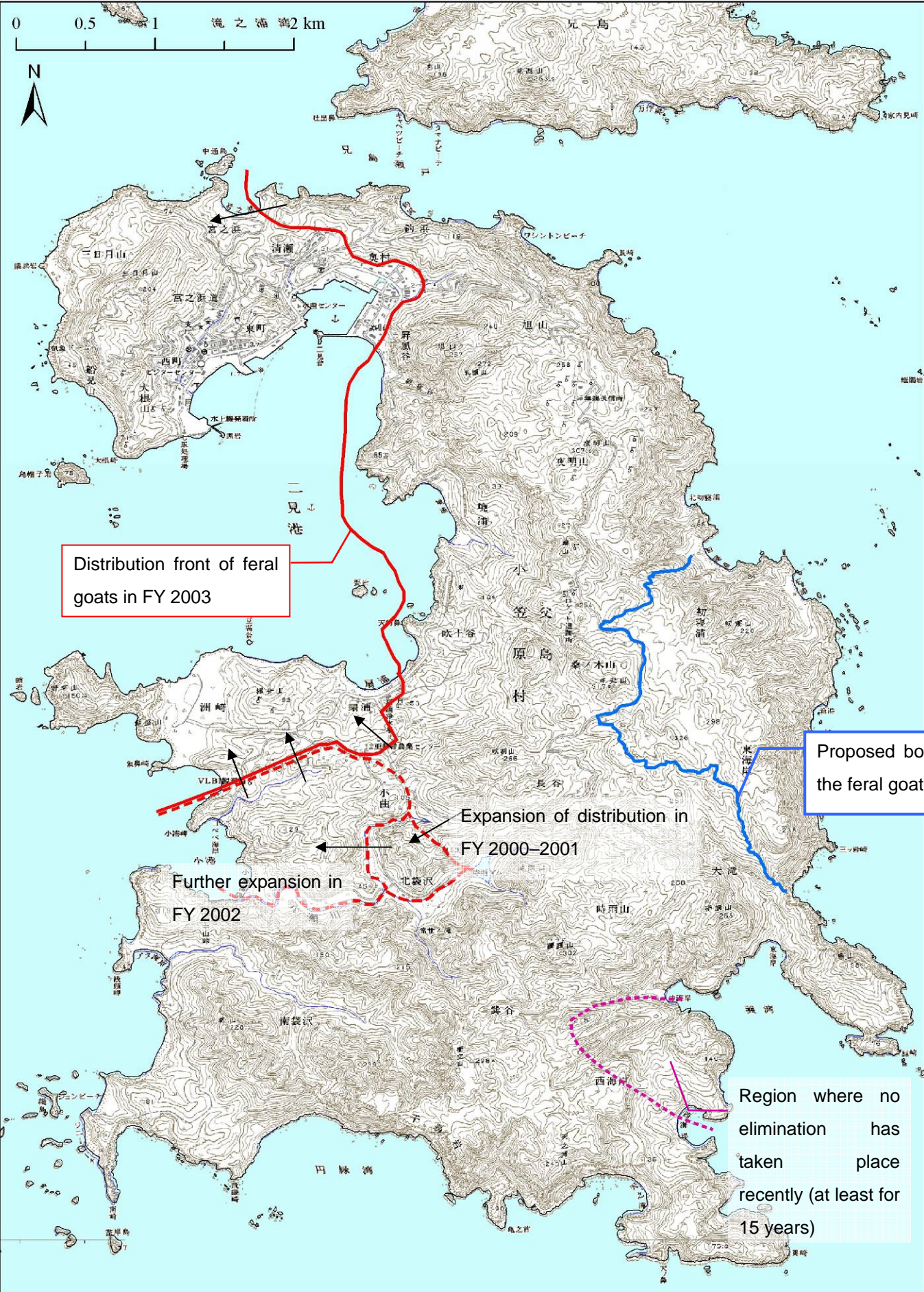
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【Reference】 Vegetation of Chichijima Island



【Reference】 Additional information pertaining to feral goats on Chichijima



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.

(2) Anijima Island (Chichijima Island Group)

Island	(Chichijima Island Group)	Short-term actions
Anijima Island		

- 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 parvifolia**, **Crepidiastrum grandicollum**, 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.

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Post-2012
Tentative list			Submission of nomination dossier			Target year	Medium- and long-term actions
Feral goat (eradication)							Continue & expand
Casuarina (gently sloped lands of the plateau)							
			Pinus lutchuensis (partial)				
			Lantana camara var. aculeate (on the plateau)				
			Leucaena (on the plateau)				
			Management of alien species (on the plateau)				
			Black rat (eradication)				
			Feral cat (island-wide exclusion)				

Island	(Chichijima Island Group)	Activity
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 <i>Schima mertensiana</i> forest distributed in surrounding hollows and ravine bottoms through the removal of impact factors, including the black rat, and monitoring. In addition, the habitats of precious endemic animal and plant species, including <i>Cicindela bonina</i> , <i>Crepidiastrum grandicollum</i> , and <i>Callicarpa parvifolia</i> , will be conserved by eliminating invasive plants such as <i>Casuarina</i> , focusing on areas where suppressive pressure by alien species is anticipated, and maintaining rocky desert vegetation.
	2. Habitat conservation for land snails	Anijima is an important habitat for many land snails, such as <i>Mandarina anijimana</i> , which are 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 (<i>Columba janthina nitens</i>). 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.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of sclerophyllous scrubs	Elimination of feral goats	➤ Completion of eradication	➤ Completion of eradication. 【TMG】	-	-
	Elimination of black rats	➤ Initiating elimination	➤ Initiating elimination in FY 2009 based on the status of elimination efforts on Mukojima. 【MOE】	➤ Complete eradication	➤ Complete eradication on the island and also on its peripheral islands. 【MOE】
	Elimination of Casuarina and other alien plants	➤ Completion and expansion of area exclusion	➤ Implementation of monitoring following experimental elimination on the Anijima plateau, and Initiating new elimination experiments. 【MOE】 ➤ Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before the elimination, and implementation of elimination, targeting area exclusion in the central region of Anijima. 【FA】	➤ Complete and expand area exclusion	➤ Implement elimination with the aim of complete area exclusion within the gently sloped land on the plateau. 【FA】
	Elimination of Leucaena	➤ Establishment of elimination methods ➤ Initiating a survey to determine the existing condition (on the plateau)	➤ Implementation of experiments to establish effective technical elimination methods using chemicals. 【MOE】 ➤ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】	➤ Complete area exclusion	➤ Initiate elimination in FY 2010, with the aim of complete area exclusion within the gently sloped land of the plateau by FY 2012. 【FA】
	Elimination of <i>Lantana camara</i> var. <i>aculeata</i>	➤ Establishment of elimination methods ➤ Initiating a survey to determine the existing condition on the plateau ➤ Initiating area exclusion (Takinoura Bay)	➤ Implementation of experiments to establish effective technical elimination methods using chemicals. 【MOE】 ➤ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】 ➤ Initiating elimination in Takinoura Bay. 【Resident volunteers and NPO】	➤ Complete area exclusion	➤ 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】 ➤ With cooperation among volunteers, NPOs, and management authorities, implement elimination in Takinoura Bay.
2. Habitat conservation for land snails	Elimination of black rats	➤ Initiating elimination	* Same as above	➤ Complete eradication	* Same as above
3. Habitat conservation for wood-pigeon	Elimination of black rats	➤ Initiating elimination	* Same as above	➤ Complete eradication	* Same as above
	Exclusion of feral cats	➤ Completion of exclusion	➤ Carrying out exclusion by FY 2009 on the basis of research on inhabitation status. 【MOE】	-	-

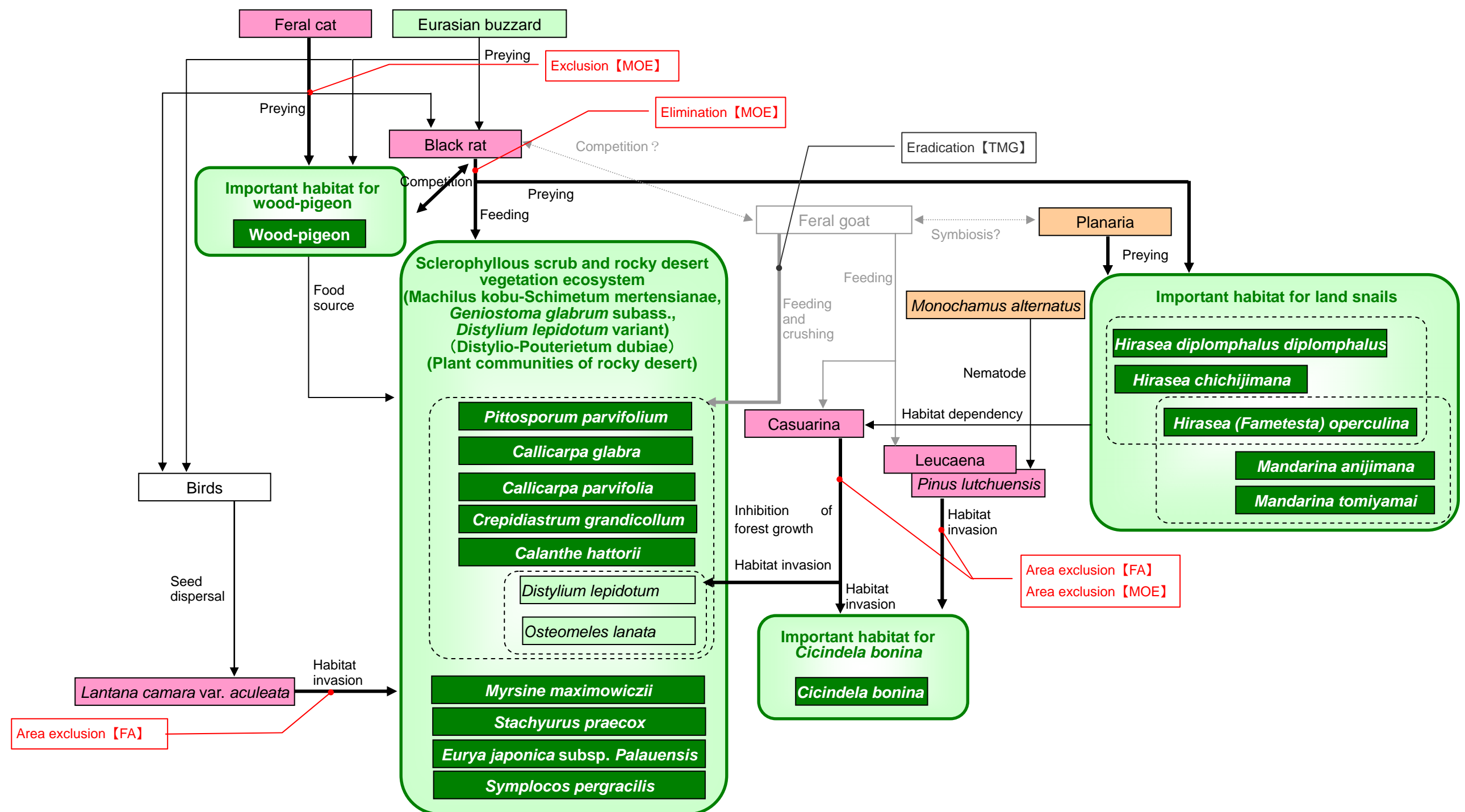
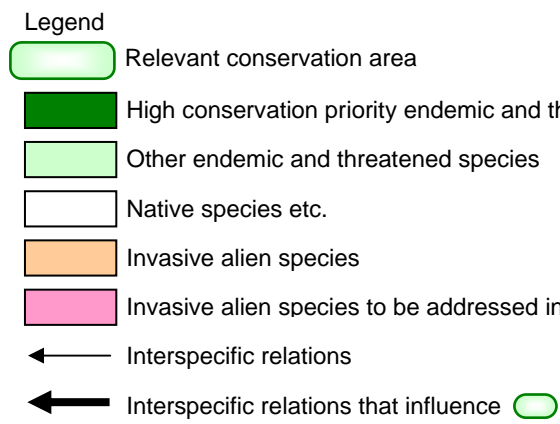


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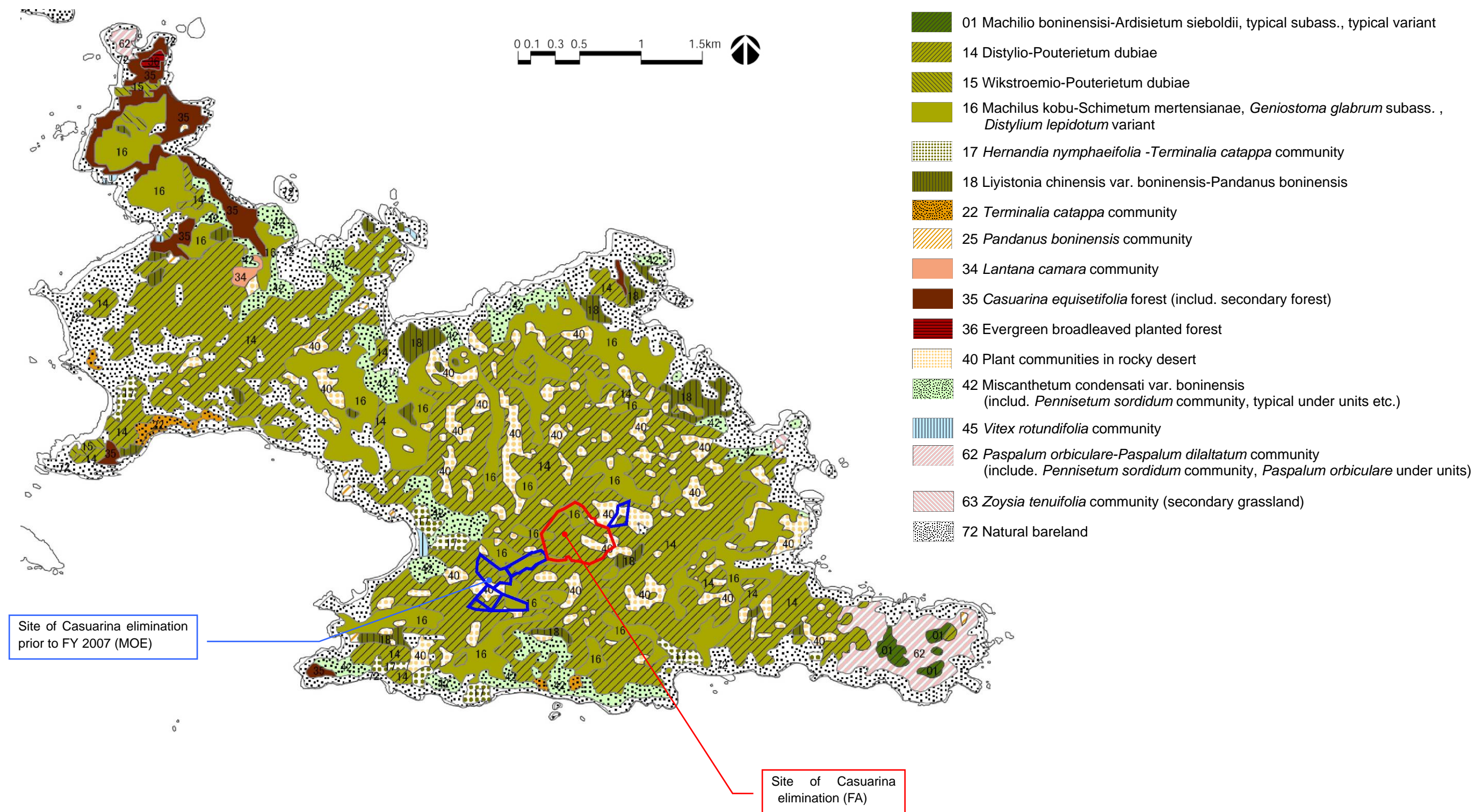
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

*(Gray):Almost complete at present

(Blue):Planned to be completed by the end of FY 2012



【Reference】 Vegetation of Anijima and related information



(3) Ototojima Island (Chichijima Island Group)

Island	(Chichijima Island Group)	Short-term actions
Ototojima Island		

- 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.

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Post-2012	
Tentative list			Submission of nomination dossier			Target year	Medium-long-term actions and	
	Bischofia (eradication)							
	Bullfrog (eradication)							
	Feral pig (eradication)							
	Feral goat (eradication)							
	Black rat (eradication)							
	Feral cat (exclusion)							
	Elimination of alien plants (areas of conservation importance)							

Island	(Chichijima Island Group)	Activity
Ototojima Island		1. Conservation of <i>Schima mertensiana</i> forests
		Activities such as exclusion of alien species will continue to be conducted in an adaptive manner in highly natural forests of <i>Schima mertensiana</i> that occupy a large area of Ototojima, particularly in the central part of the island, considering already established interspecific relationships. Extensive invasion by <i>Bischofia</i> was a concern. However, this species has been eradicated at the early stage of its invasion. Now, feral goat, black rat, and <i>Casuarina</i> 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 <i>Morus boninensis</i> .
		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 (<i>Columba janthina nitens</i>) 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.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination	(by the end of FY 2012) Description
1. Conservation of <i>Schima mertensiana</i> forests	Elimination of <i>Bischofia</i>	➤ Completion of eradication	➤ Achieving eradication by chemical injection at the initial stage of invasion. Implementation of monitoring. 【MOE】	-	-
	Elimination of feral goats	➤ Continuation of elimination	➤ Implementation of elimination, targeting eradication from Ototojima. 【TMG】	➤ Complete eradication	➤ Continue with the activities listed on the left. 【TMG】
	Elimination of black rats	➤ Initiating elimination	➤ Initiating elimination in FY 2009 based on the implementation status of elimination on Mukojima. 【MOE】	➤ Complete eradication	➤ Complete eradication on the island and also on its peripheral islands. 【MOE】
	Elimination of <i>Casuarina</i> , <i>Leucaena</i> , and other invasive alien plants	➤ Initiating a survey to determine the existing condition	➤ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】 ➤ Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before conducting elimination. 【FA】	➤ Initiate area exclusion	➤ With cooperation among management authorities, initiate elimination strategically where necessary. 【MOE, FA, TMG, Ogasawara Village】 ➤ Research the distribution status of alien species (e.g., <i>Casuarina</i> , <i>Leucaena</i>) in the national forest and analyze the effects of area exclusion based on the results of eliminating <i>Leucaena</i> and other alien species on Anijima and elsewhere. Initiate area exclusion beginning in FY 2010. 【FA】
2. Habitat conservation for endemic insects including five endemic species of dragonfly	Elimination of bullfrogs	➤ Completion of eradication	➤ Achieving eradication. 【MOE】	-	-
	Elimination of feral pigs	➤ Completion of eradication	➤ Achieving eradication. 【MOE】 ➤ Implementation of measures to recover vegetation, land snail fauna, and insect fauna. Implementing recovery projects for threatened insect species. 【MOE】	-	-
	Recovery of lentic environments	➤ Construction of lentic environments	➤ Construction of lentic environments to recovery the site together with the implementation of monitoring of aquatic insects, such as dragonflies. 【MOE】	➤ Construction of lentic environments	➤ Continue with the activities listed on the left. 【MOE】
	Elimination of <i>Casuarina</i> and other alien plants	➤ Initiating a survey to determine the existing condition	* Same as above	➤ Initiate area exclusion	* Same as above
3. Habitat conservation for wood-pigeon	Elimination of black rats	➤ Initiating elimination	* Same as above	➤ Complete eradication	* Same as above
	Exclusion of feral cats	➤ Initiating exclusion	➤ Implementation of exclusion prior to measures against black rats from FY 2009. 【MOE】	➤ Complete exclusion	➤ Complete exclusion by FY 2010. 【MOE】



*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.

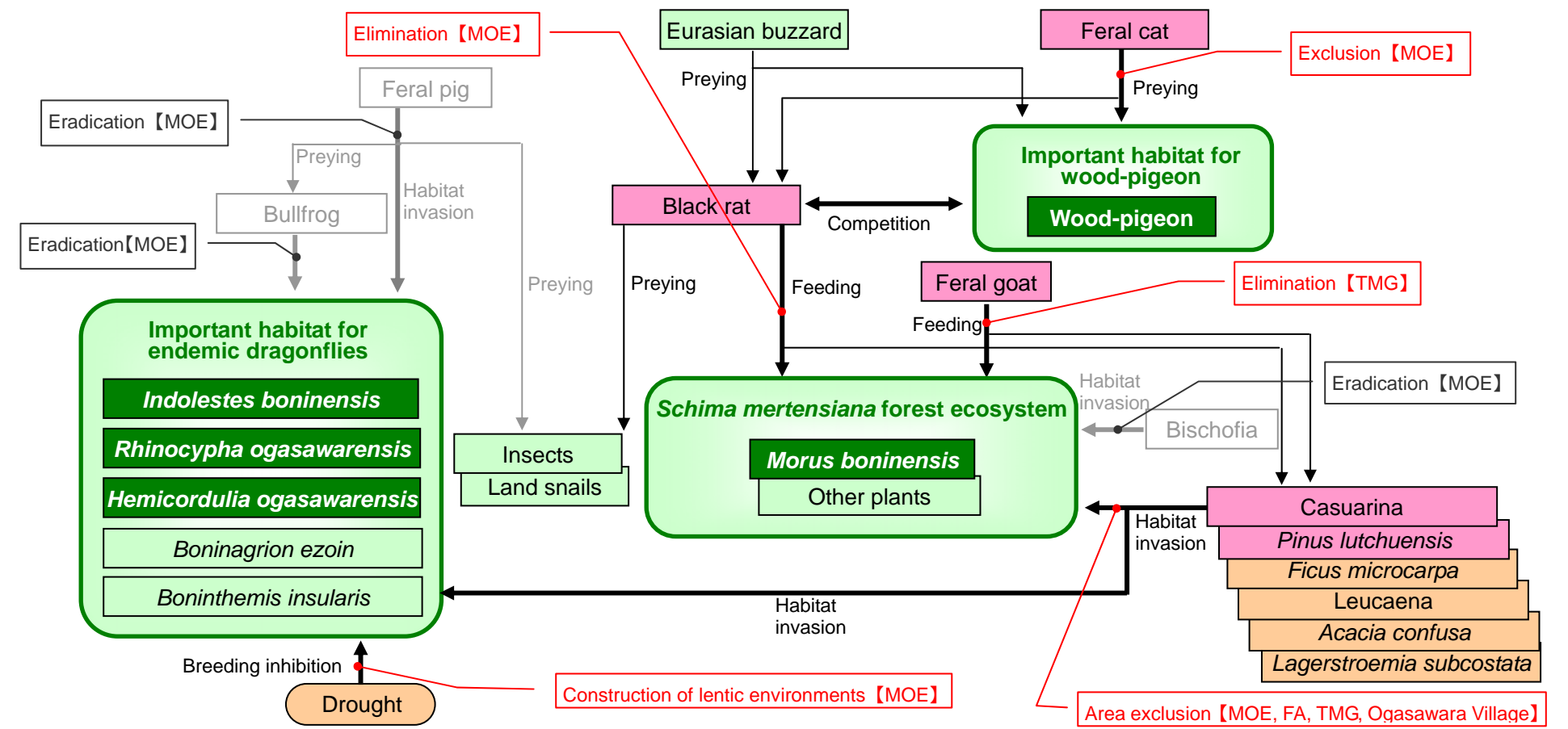
*【Gray】:Almost complete at present

【Blue】:Planned to be completed by the end of FY 2012

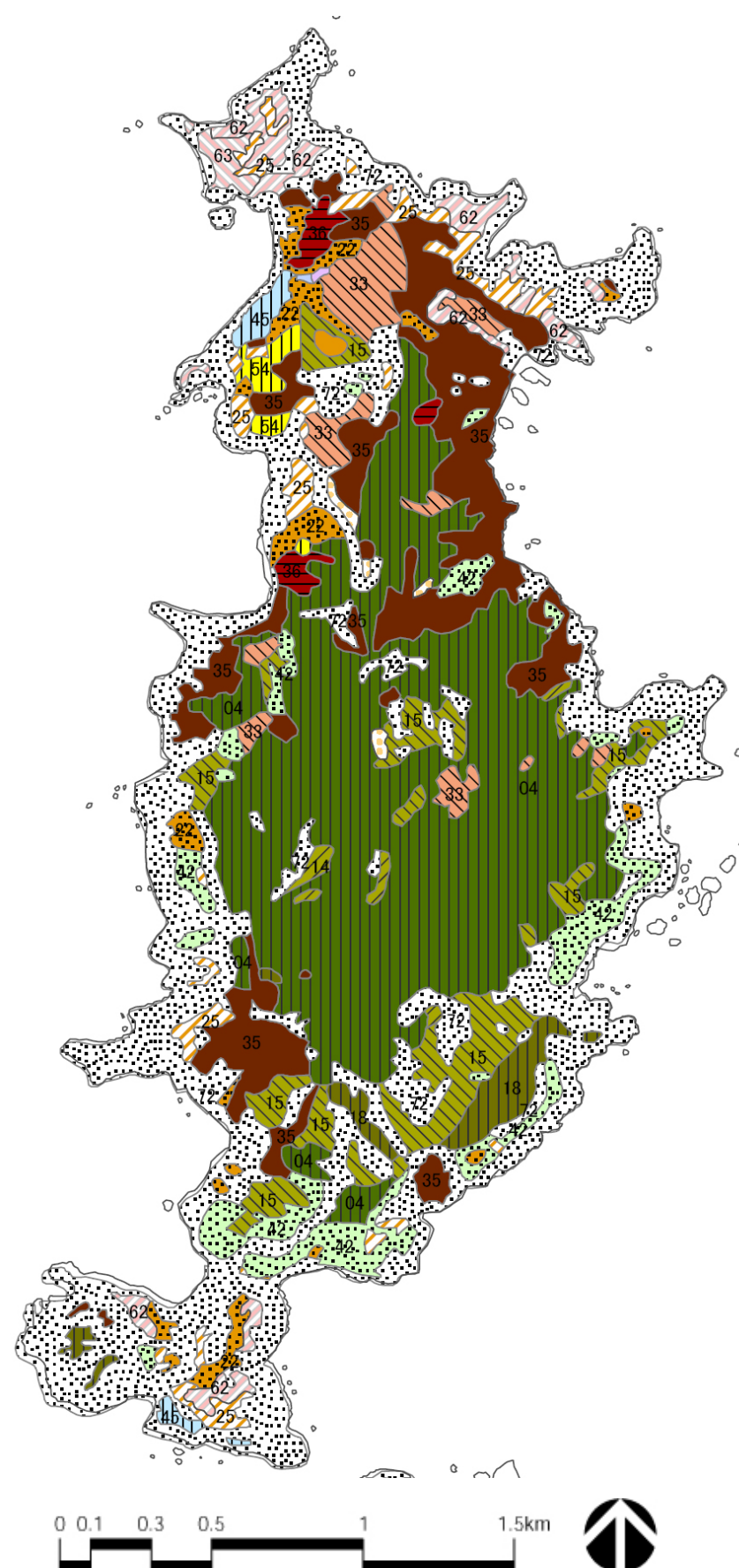
(3) Ototojima Island (Chichijima Island Group)

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



【Reference】 Vegetation of Ototojima




- 04 *Machilus kobu*-*Schimetum mertensianae*, *Geniostoma glabrum* subass, typical variant / *Freycinetia boninensis* variant
- 14 *Distylium*-*Pouterietum dubiae*
- 15 *Wikstroemia*-*Pouterietum dubiae*
- 18 *Livistonia 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

(4) Nishijima Island (Chichijima Island Group)

Island	(Chichijima Island Group)	Activity
Nishijima Island		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 <i>Cirsium boninense</i> .

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Ecosystem management considering endemic species	Elimination of black rats	➢ Initiation of elimination	➢ Rat poison being set out as an elimination effort. 【FFPRI】	➢ Complete the eradication	➢ Complete eradication. 【MOE】
	Elimination of Casuarina and Leucaena	➢ Initiation of a survey to determine the existing condition	➢ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】 ➢ Conducting a survey of Casuarina distribution in the central part of the island. 【FA】	➢ Initiate elimination	➢ With cooperation among management authorities, initiate strategic elimination where necessary. 【MOE, FA, TMG, Ogasawara Village】 ➢ 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. 【NPO, FA】

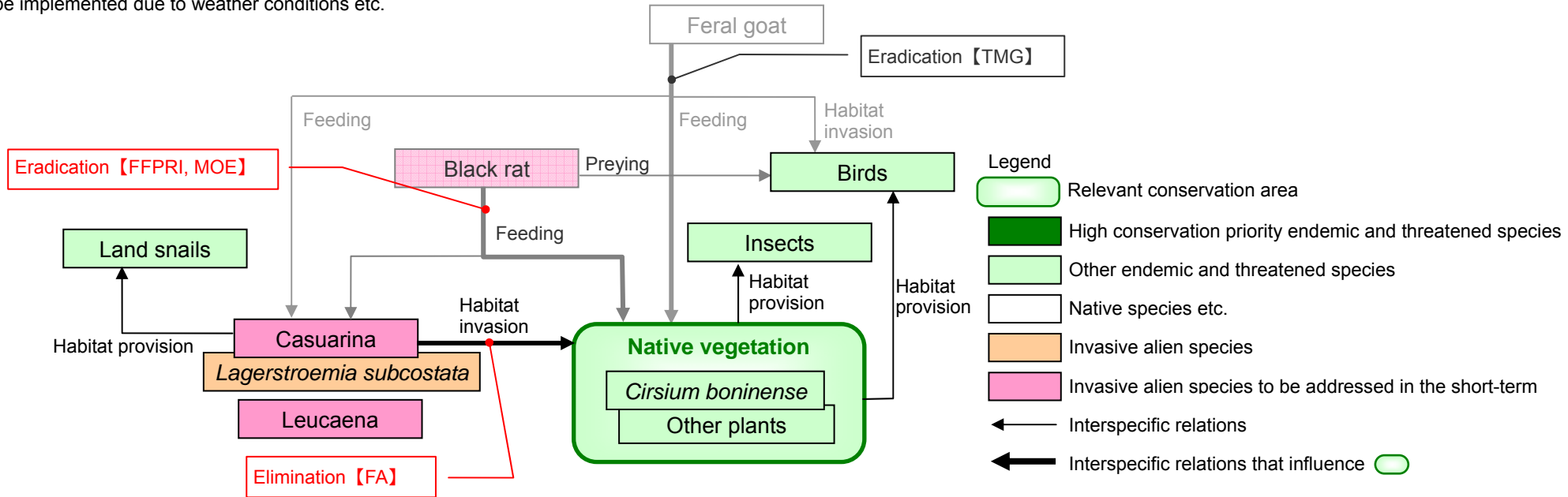
*Correspond to  in the figure below


* 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.

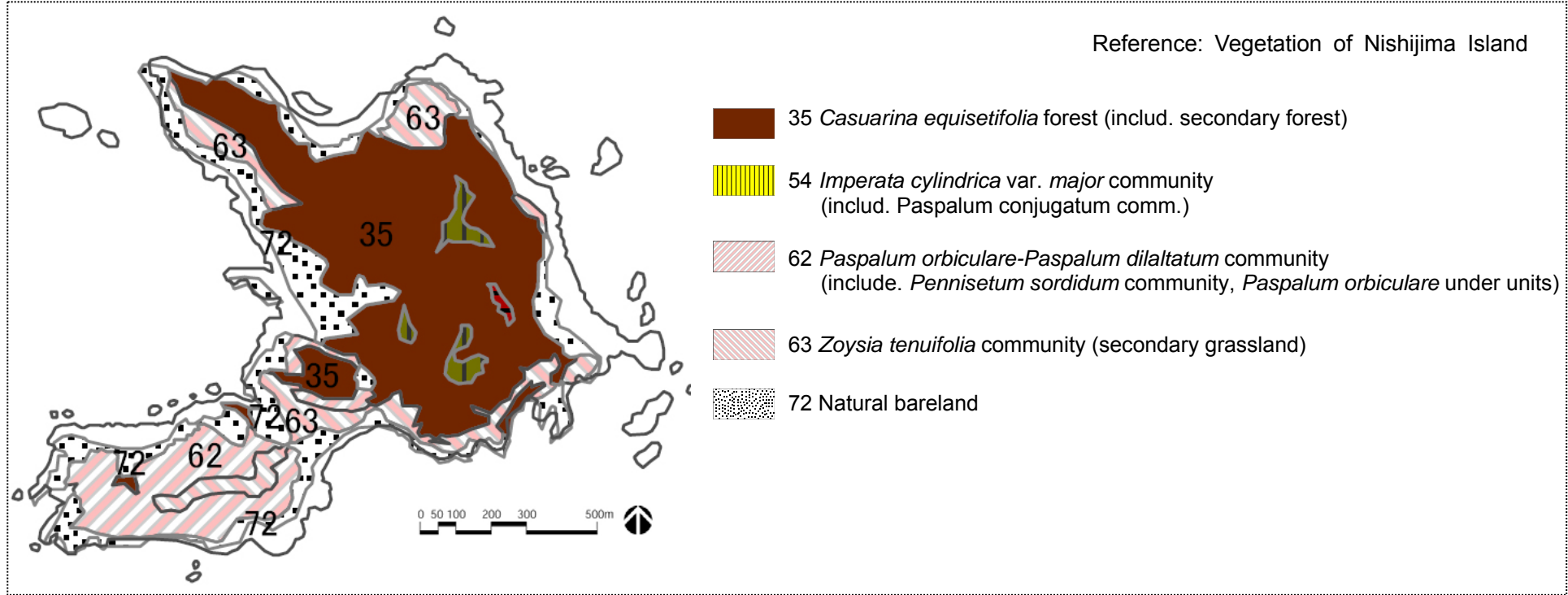
(Gray): Almost complete at present (Blue): Planned to be completed by the end of FY 2012

■ 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 **Casuarina** and **Leucaena** will be initiated.
- On the other hand, some **land snails** have become adapted to **Casuarina**. 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.



- 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	(Chichijima Island Group)	Activity
Higashijima Island		1. Conservation of seabird breeding grounds
		To conserve the breeding grounds of seabirds such as Audubon's shearwater (<i>Puffinus lherminieri bannermani</i>), the wedge-tailed shearwater (<i>Puffinus pacificus</i>), and Bulwer's petrel (<i>Bulweria bulwerii</i>) that currently breed on Higashijima, monitoring and follow-up measures will be conducted following the elimination of black rats, which preyed 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 <i>Lobelia boninensis</i> and <i>Ixeris longirostra</i> will be conserved.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
1. Conservation of seabird breeding grounds	Elimination of black rats	➤ Completion of eradication	➤ Conducting experimental elimination on Higashijima on a pilot basis. 【MOE】	—	—
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

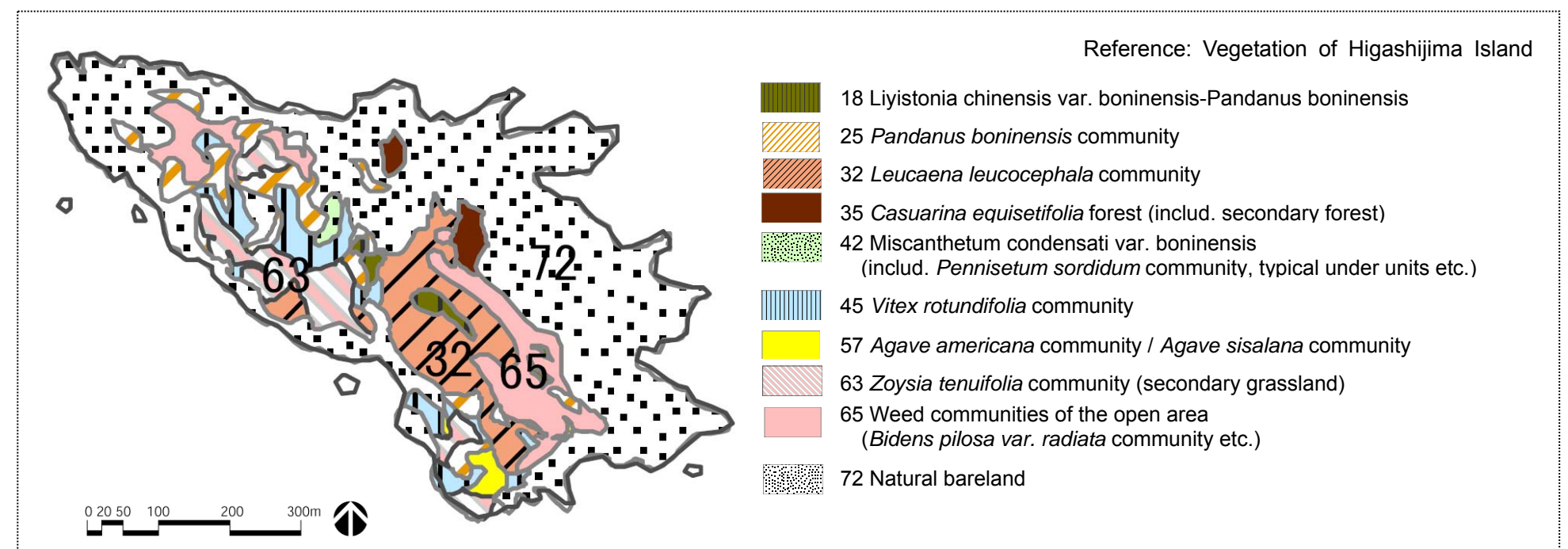
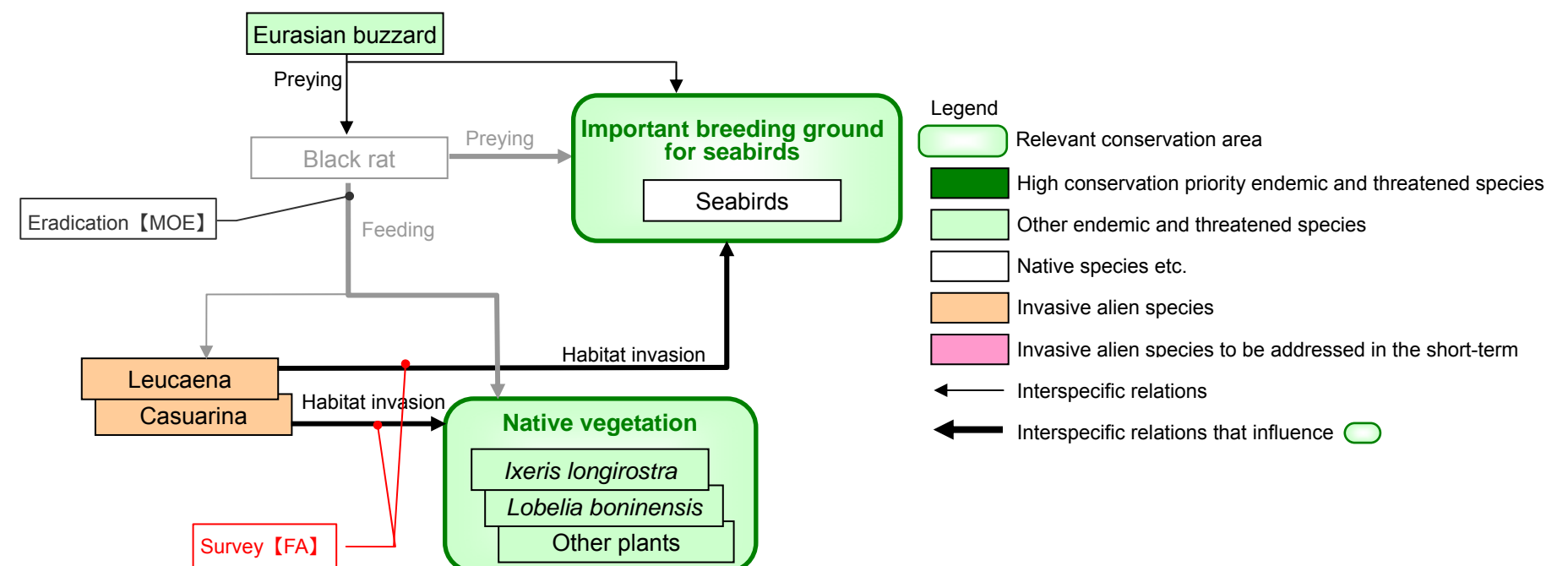
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present

(Blue): Planned to be completed by the end of FY 2012

■ 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.



(6) Minamijima Island (Chichijima Island Group)

Island	(Chichijima Island Group)	Activity
Minamijima Island		1. Conservation of seabird breeding grounds
		To conserve the breeding grounds of seabirds such as the wedge-tailed shearwater (<i>Puffinus pacificus</i>) and Bulwer's petrel (<i>Bulweria bulwerii</i>) 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 <i>Cenchrus echinatus</i> 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 <i>Lobelia boninensis</i> , <i>Ixeris longirostra</i> , and <i>Lycium sandwicense</i> will be conserved.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination	Description (by the end of FY 2012)
1. Conservation of seabird breeding grounds	Elimination of <i>Cenchrus echinatus</i> and other alien plants	Continuation of elimination	➢ Implementation of elimination of highly invasive alien plants on Minamijima. 【TMG, FA, Ogasawara Village, NPO】 ➢ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】	➢ Continue elimination	➢ Continue the activities listed on the left. 【TMG, FA】
2. Ecosystem management considering endemic species	Elimination of black rats			➢ Complete eradication	➢ After eradication is completed on Anijima and Ototojima, consider management measures. 【MOE】

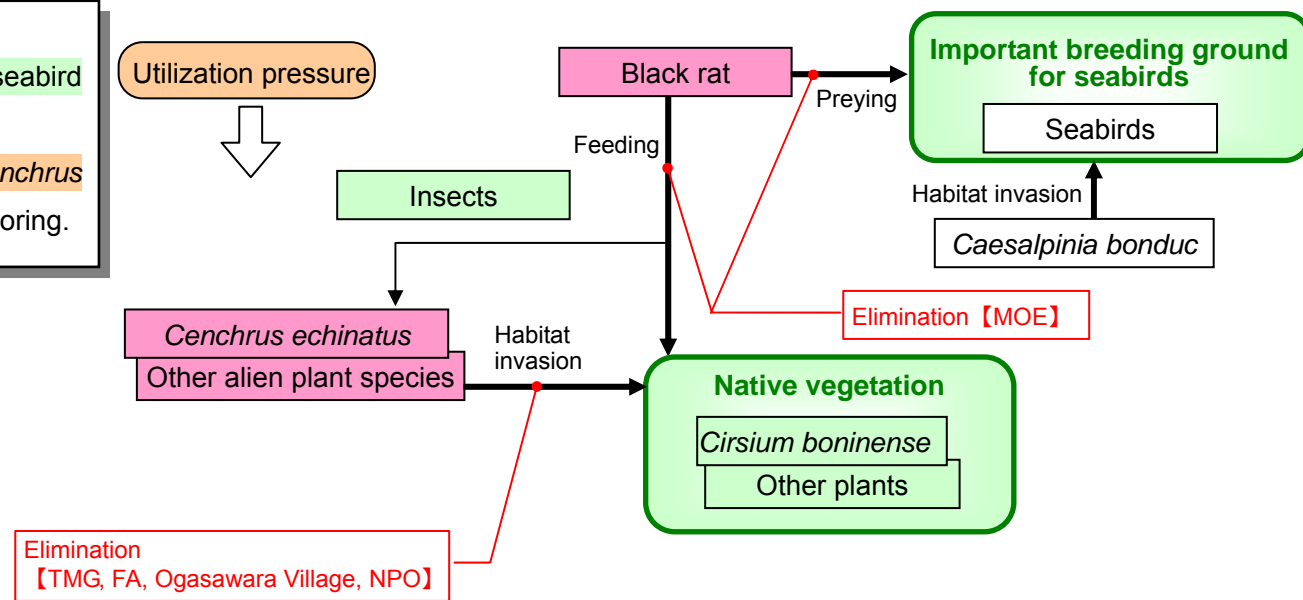
*Correspond to  in the figure below

* 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.

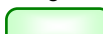

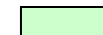
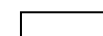





(Gray): Almost complete at present (Blue): Planned to be completed by the end of FY 2012











■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.



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 

-  20 *Scaevola sericea* community
-  25 *Pandanus boninensis* community
-  45 *Vitex rotundifolia* community
-  46 *Sporobolus virginicus* community
-  47 *Limonium wrightii* community (includ. *Lycidatum griseolae*)
-  48 *Zoysia tenuifolia* community (natural grassland)
-  49 *Myoporetum boninensis*
-  65 Weed communities of the open area (*Bidens pilosa* var. *radiata* community etc.)
-  72 Natural bareland
-  73 Open water

Reference: Vegetation of Minamijima Island



Island	(Hahajima Island Group)	Short-term actions
Hahajima Island		

- *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 kobu* 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 ikedai*, 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.

- 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.

FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Post-2012
Tentative list			Submission of nomination dossier			Target year	Medium- and long-term actions
Bischofia (northern part and Sekimon)							Continue & expand
Green anole (Shin-Yuhigaoka and Minamizaki)							Continue
Green anole (low-density management)							Continue
Cane toad (Minamizaki Hasuike Pond)							
Cane toad (breeding inhibition)							
Feral cat (Minamizaki : area exclusion)							
Feral cat (Minamizaki: continue exclusion, consider large-scale exclusion zone)							
Feral cat (Hahajima island-wide: surrounding exclusion→low density→exclusion)							

(7) Hahajima Island (Hahajima Island Group)

Island (region)	(Hahajima Island Group)	Activity
Hahajima Island (Sekimon Region)		1. Conservation of subtropical rainforest and <i>Ardisia sieboldii</i> 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 <i>Ardisia sieboldii</i> forest and the <i>Schima mertensiana</i> 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 <i>Piper postelsianum</i> , <i>Claoxylon centinarium</i> , <i>Morus boninensis</i> , <i>Hymenasplenium cardiophyllum</i> , <i>Dendrocacalia crepidifolia</i> , and <i>Calanthe hoshii</i> , and animals, such as endemic land snails.
		2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i> Although the green anole has impacted the endemic insects of Hahajima, precious endemic insects such as <i>Celastrina ogasawaraensis</i> , <i>Parnara ogasawarensis</i> , and <i>Rhinocypha ogasawarensis</i> 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.
		4. Habitat conservation for wood-pigeon In the Sekimon region, an important habitat for the endemic subspecies of Japanese wood-pigeon (<i>Columba janthina nitens</i>), 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.
		5. 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.

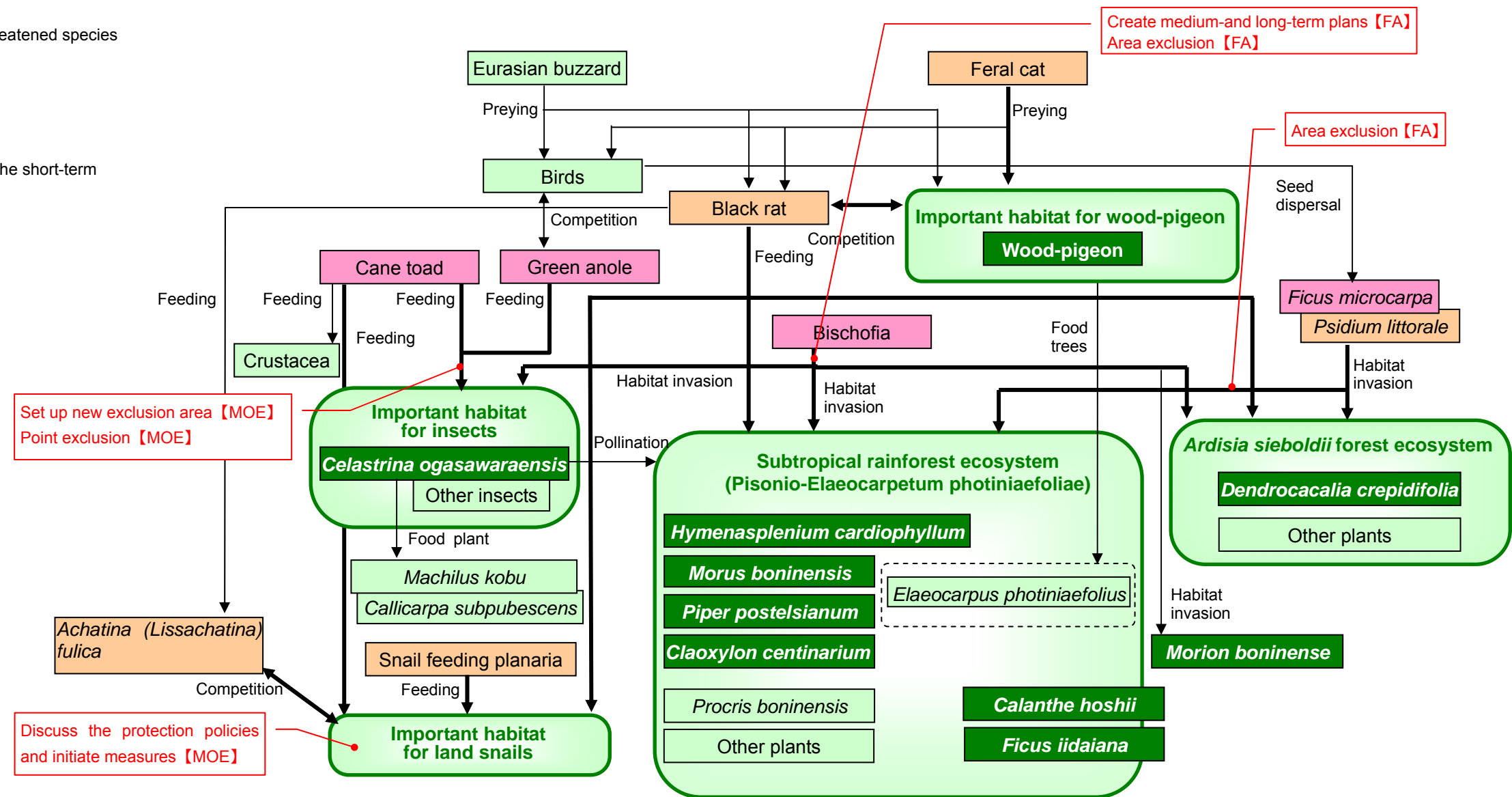
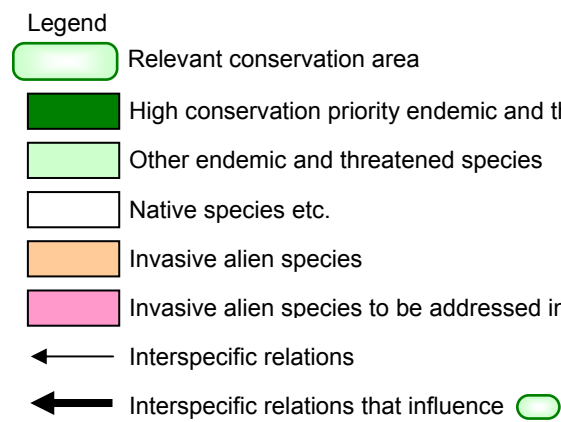
Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of subtropical rainforest and <i>Ardisia sieboldii</i> forest	Elimination of Bischofia	➤ Creation of medium- and long-term plans ➤ Initiating area exclusion	➤ Implementation of elimination cording to the created medium- and long-term plans (e.g., Bischofia Control Plan) to achieve area exclusion in the Sekimon basin. 【FA】 ➤ Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before initiating elimination in Sekimon and other areas. 【FA】	➤ Continue elimination	➤ Continue the activities listed on the left. 【FA】
	Elimination of <i>Ficus microcarpa</i>	➤ Initiating a survey to determine the existing condition	➤ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】	➤ Initiate area exclusion	➤ With cooperation among management authorities, initiate elimination strategically where necessary. 【MOE, FA, TMG, Ogasawara Village】
2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i>	Elimination of the green anole			➤ Set up new exclusion area ➤ Conduct point exclusions at the breeding grounds of threatened insects	➤ Set up new nature restoration areas (areas as yet undecided). 【MOE】 ➤ At the breeding ground of <i>Celastrina ogasawaraensis</i> , continue point exclusion during the breeding season (area as yet undecided) 【MOE】
4. Habitat conservation for wood-pigeon	Exclusion of feral cats			(To be addressed on medium- and long-term bases)	(Coordinating with the schedule for island-wide exclusion, continue discussion of conservation measures)
	Elimination black rats			(To be addressed on medium- and long-term bases)	
5. Habitat conservation for wood-pigeon	Discussing conservation policies for endemic land snails	➤ Discussion of conservation policies	➤ Determining the inhabitation status of endemic land snails on Hahajima, establishing the individual project review committee, and discussing conservation policies for land snails. 【MOE】	➤ Initiate specific measures	➤ Based on outcomes of conservation policies found by the review committee, implement specific measures as necessary. 【MOE】



*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



(7) Hahajima Island (Hahajima Island Group)

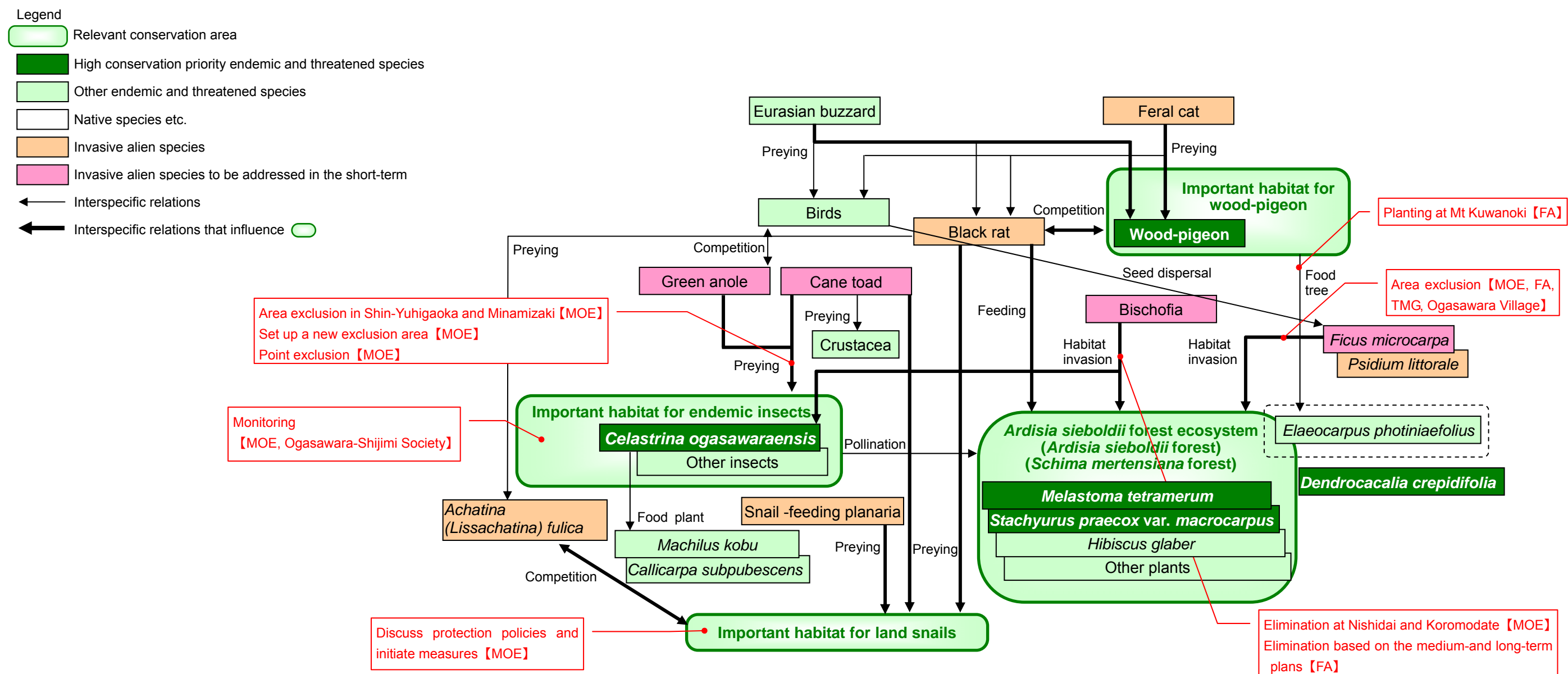
Island (region)	(Hahajima Island Group)	Activity
Hahajima Island (North-Central Region)		1. Conservation of <i>Ardisia sieboldii</i> forest Activities such as exclusion of alien species will continue in an adaptive manner considering the already established interspecific relationships in the following areas: subtropical rainforest covering the entire area of Sekimon, where Hahajima's original vegetation is still well preserved; the <i>Ardisia sieboldii</i> forest and the <i>Schima mertensiana</i> 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 <i>Piper postelsianum</i> , <i>Claoxylon centinarium</i> , <i>Morus boninensis</i> , <i>Hymenasplenium cardiophyllum</i> , <i>Dendrocacalia crepidifolia</i> , and <i>Calanthe hoshii</i> , and animals, such as endemic land snails.
		2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i> Although the green anole has impacted the endemic insects of Hahajima, precious endemic insects such as <i>Celastrina ogasawaraensis</i> , <i>Parnara ogasawarensis</i> , and <i>Rhinocypha ogasawarensis</i> 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.
		4. Habitat conservation for wood-pigeon In the Sekimon region, an important habitat for the endemic subspecies of Japanese wood-pigeon (<i>Columba janthina nitens</i>), 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.
		5. 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.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of <i>Ardisia sieboldii</i> forest	Elimination of Bischofia	➤ Creation of medium- and long-term plans ➤ Initiating area exclusions	➤ 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 【FA】 ➤ Implementation of a system to monitor persisting individuals in the Higashidai area of Hahajima. 【MOE】 ➤ Targeting area exclusion in the area north of the line between Hahajima Yashihama Beach and Nagahama Beach; implementation of elimination at Nishidai and Koromodate. In addition, partial implementation at Nishiura area. 【MOE】	➤ Continue elimination	➤ Continue with the activities listed on the left. 【FA】 ➤ By continuing the activities listed on the left, eliminate from private land in Nishidai and Koromodate; initiate elimination in the Koshinzuka region. 【MOE】
	Elimination of <i>Ficus microcarpa</i>	➤ Initiating a survey to determine the existing condition	➤ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】	➤ Initiate area exclusion	➤ With cooperation among management authorities, initiate elimination strategically where necessary. 【MOE, FA, TMG, Ogasawara Village】
2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i>	Elimination of the green anole	➤ Completion of area exclusion	➤ 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 Shin-Yuhigaoka and Minamizaki on Hahajima. In addition, consideration of establishing new nature restoration areas. 【MOE】	➤ Set up new exclusion area ➤ Point exclusions at the breeding grounds of threatened insects	➤ Set up a new nature restoration area (area undecided) 【MOE】 ➤ At breeding grounds of <i>Celastrina ogasawaraensis</i> , continue point exclusions during the breeding season (area as yet undecided). 【MOE】
	Elimination of the cane toad	➤ Completion of area exclusion	➤ Continuation of capture and exclusion measures within the nature restoration area set up in Shin-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)		
	Monitoring of the habitat for <i>Celastrina ogasawaraensis</i> and other endemic insects	➤ Continuation of monitoring	➤ Implementation of conservation and breeding measures for <i>Celastrina ogasawaraensis</i> and other endemic species, as well as continued monitoring of ecosystem recovery focusing on insects.【MOE, Ogasawara-Shijimi Society】	➤ Continue monitoring	➤ Continue the activities listed on the left. 【MOE, Ogasawara-Shijimi Society】
4. Habitat conservation for wood-pigeon	Exclusion of feral cats			(To be addressed on medium- and long-term bases)	(Coordinating with the schedule for island-wide exclusion, continue discussion of conservation measures)
	Elimination of black rats			(To be addressed on medium- and long-term bases)	
	Planting of food trees	➤ Continuation of elimination of Bischofia ➤ Planting of food trees	➤ 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】	➤ Continue elimination of Bischofia	➤ Continue elimination of juvenile trees and other measures listed on the left 【FA】
5. Habitat conservation for land snails	Discussing conservation policies for land snails	➤ Discussion of conservation policies	➤ Determining the inhabitation status of endemic land snails on Hahajima, establishing the individual project review committee, and discussing conservation policies for land snails. 【MOE】	➤ Initiate specific measures	➤ Based on the outcomes of the conservation policies found by the review committee, implement specific measures as necessary. 【MOE】

 *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.

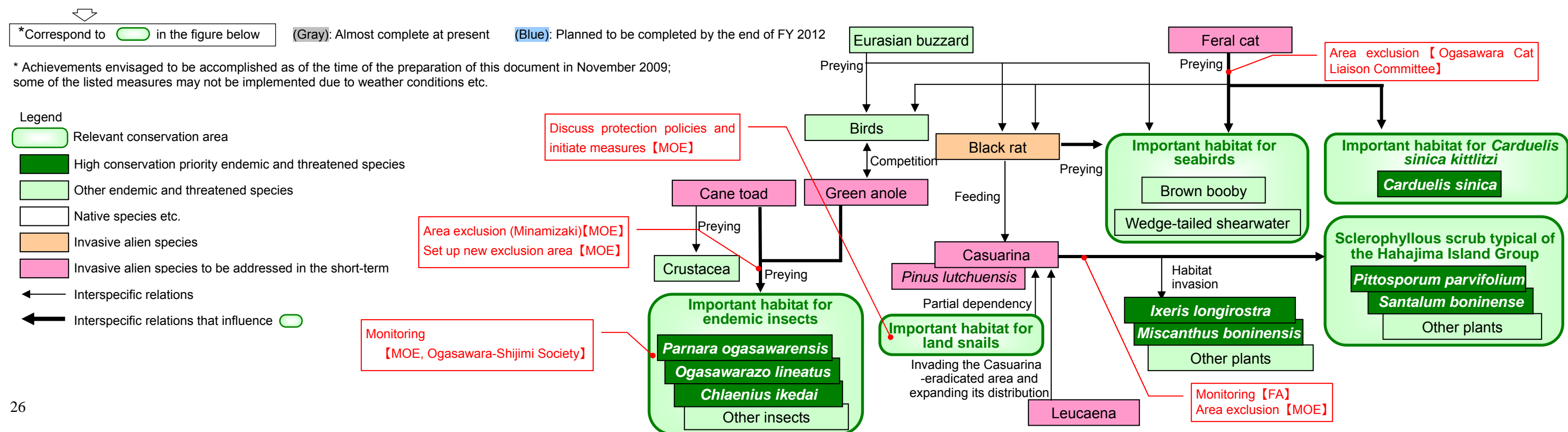
(Gray): Almost complete at present (Blue): Planned to be completed by the end of FY 2012



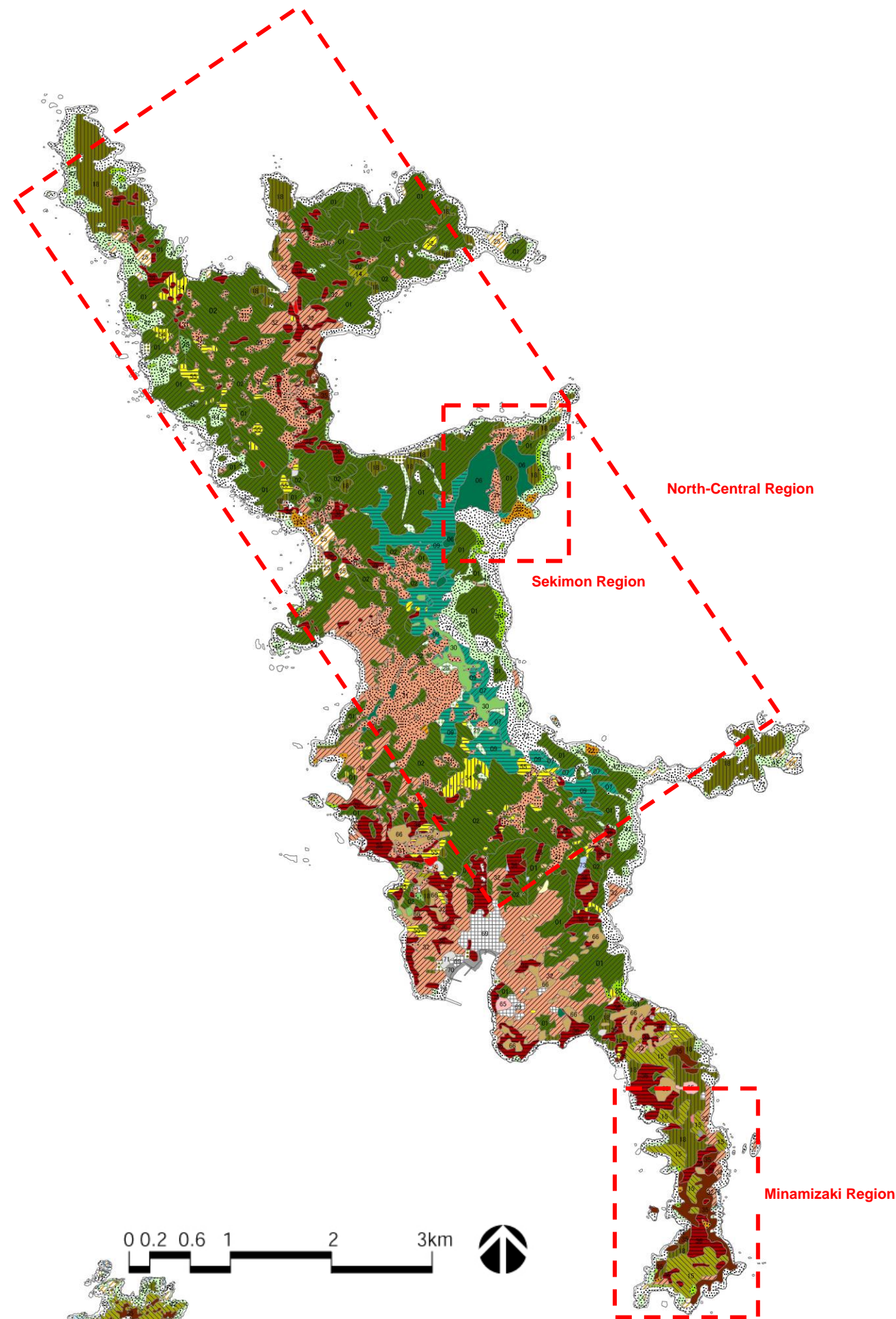
(7) Hahajima Island (Hahajima Island Group)

Island (region)	(Hahajima Island Group)	Activity
Hahajima Island (Minamizaki Region)		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, considering already established interspecific relationships, alien species such as Casuarina will continue to be eliminated.
		2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i>
		Although the green anole has impacted the endemic insects of Hahajima, precious endemic insects such as <i>Celastrina ogasawaraensis</i> , <i>Parnara ogasawarensis</i> , and <i>Rhinocypha ogasawarensis</i> 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 <i>Carduelis sinica kittlitzi</i> and seabirds
		Feral cats have been removed from certain areas of the Minamizaki region, which is an important habitat for <i>Carduelis sinica kittlitzi</i> and seabirds such as the wedge-tailed shearwater (<i>Puffinus pacificus</i>). As feral cat expulsion continues and expands, seabird habitat will be conserved.
		5. 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.

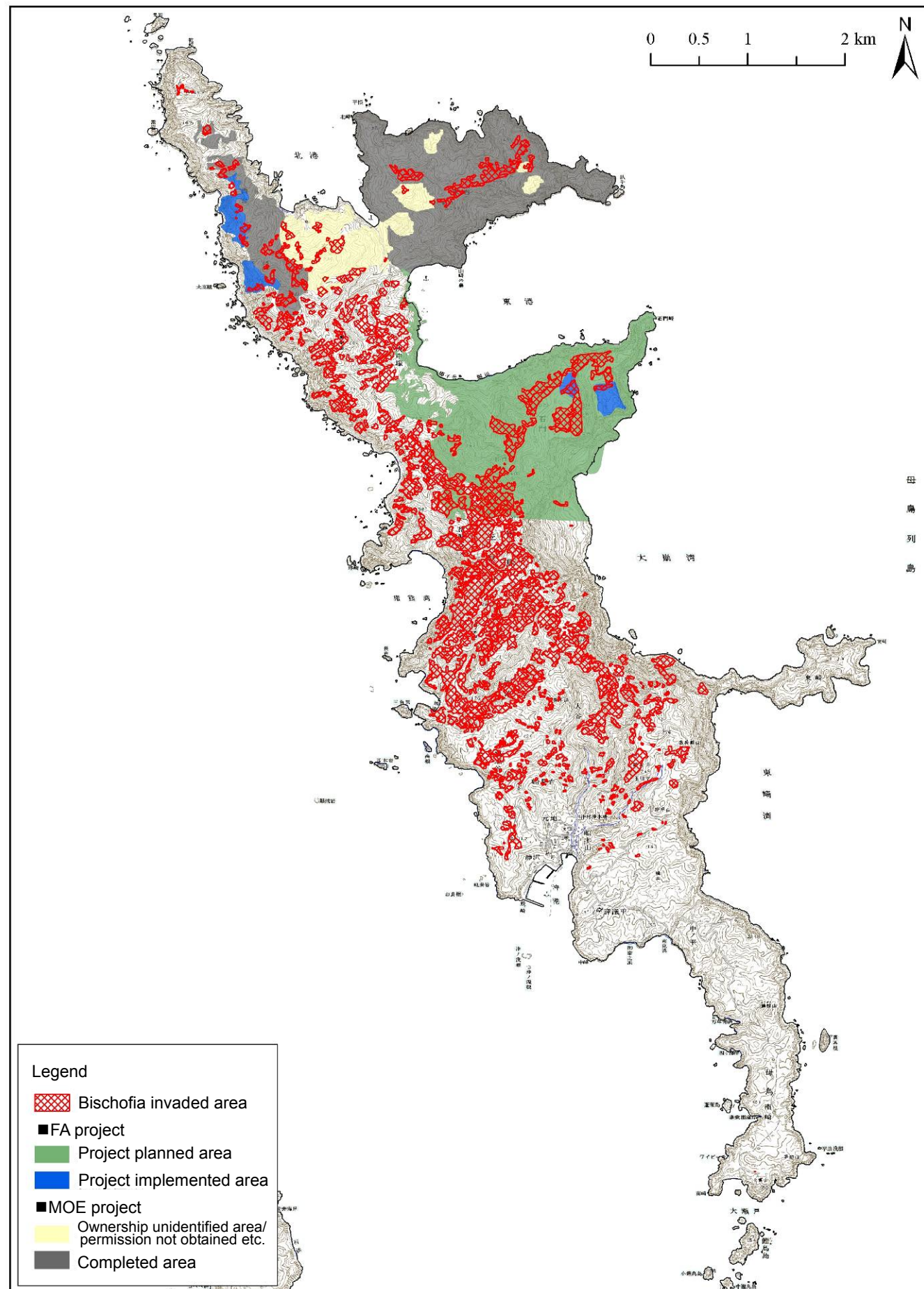
Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description	Description	Description
1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group	Elimination of Casuarina and Leucaena	➢ Initiate area exclusion	➢ Implementation of Casuarina elimination at Minamizaki on Hahajima, targeting area exclusion in FY 2007–2008. Elimination of Leucaena at the site where elimination of Casuarina was carried out in FY 2007 as Leucaena has invaded the site. Implementation of monitoring on the site. 【FA】	➢ Continue monitoring after the elimination	➢ Continue monitoring the introduction status of alien species, such as Casuarina, in excluded areas. (Minamizaki region) 【FA】
			➢ Estimating the distribution status of alien woody plants using aerial photographs. 【FA】		➢ With cooperation among management authorities, initiate elimination strategically where necessary. 【MOE, FA, TMG, Ogasawara Village】
2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i>	Elimination of green anole	➢ Complete area exclusion	➢ Achieving reduction of green anoles to an extremely low density having almost no negative impact on the insect ecosystem by FY 2009 within the nature restoration areas established in Shin-Yuhigaoka and Minamizaki on Hahajima. In addition, consideration of establishing new nature restoration areas. 【MOE】	➢ Set up new exclusion area	➢ Set up new nature restoration areas (area as yet undecided) 【MOE】
	Elimination of cane toad	➢ Complete area exclusion	➢ Implementation of capturing and exclusion within the nature restoration area set up in Shin-Yuhigaoka and Minamizaki in Hahajima. In addition, considering setting new nature restoration areas. 【MOE】 (These measures above are implemented together with those against the green anole)	➢ Complete area exclusion	➢ Almost complete area exclusion (Minamizaki Hasuike Pond area) 【MOE】
	Monitoring of <i>Celastrina ogasawaraensis</i> habitat	➢ Continue monitoring	➢ Implementation of conservation and breeding measures for <i>Celastrina ogasawaraensis</i> and other endemic species, as well as continuing to monitor ecosystem recovery focusing on endemic insects. 【MOE, Ogasawara-Shijimi Society】	➢ Continue monitoring	➢ Continue with the activities listed on the left. 【MOE, Ogasawara-Shijimi Society】
3. Habitat conservation for <i>Carduelis sinica kittlitzi</i> and seabirds	Exclusion of feral cats	➢ Complete and expand area exclusion	➢ Consideration of setting up a large-scale exclusion zone at Minamizaki. (an exclusion area has already been established at the point of Minamizaki and the exclusion has been completed). 【MOE, Ogasawara Cat Liaison Committee】	(To be addressed on medium- and long-term bases)	(Coordinating with the schedule for the island-wide exclusion, continue discussion of measures)
	Elimination of black rats			(*To be addressed on medium-and-long-term basis)	
5. Habitat conservation for land snails	Discussing conservation policies for land snails	➢ Discuss conservation policies	➢ Determining the inhabitation status of endemic land snails on Hahajima, establishment of the individual project review committee, and discussing conservation policies for land snails. 【MOE】	➢ Initiate specific measures	➢ Based on the outcomes of conservation policies found by the review committee, implement specific measures as necessary. 【MOE】



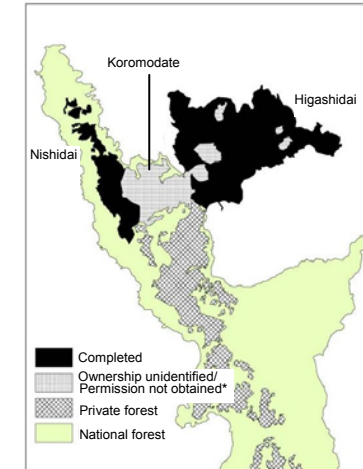
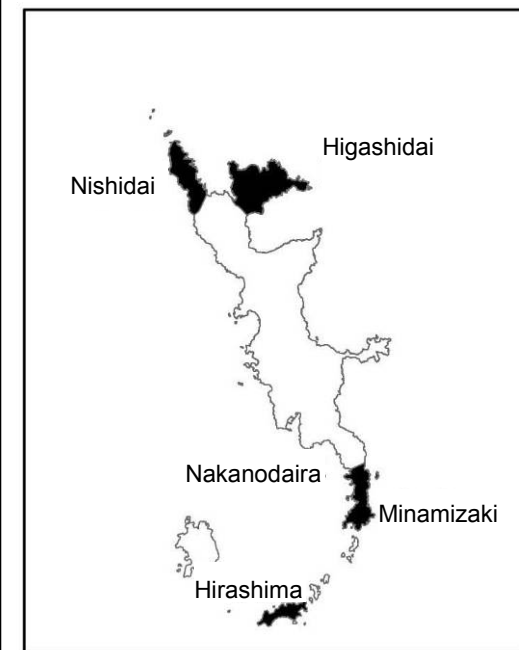
【Reference】 Vegetation of Hahajima and related information



- 01 *Machilio boninensis*-*Ardisietum sieboldii*, typical subass., typical variant
- 02 *Machilio boninensis*-*Ardisietum sieboldii*, *Schima mertensiana* subass.
- 06 *Pisonio-Elaeocarpetum photiniaefoliae*
- 07 *Dendrocacalietum crepidifoliae*
- 09 *Machilio boninensis*-*Ardisietum sieboldii*, typical subass., *Fatsia oligocarpella* variant
- 14 *Distylia-Pouterietum dubiae*
- 15 *Wikstroemia-Pouterietum dubiae*
- 17 *Hernandia nymphaeifolia* - *Terminalia catappa* community
- 18 *Livistonia chinensis* var. *boninensis*-*Pandanus boninensis*
- 20 *Scaevola sericea* community
- 22 *Terminalia catappa* community
- 25 *Pandanus boninensis* community
- 28 *Trema orientalis* community (includ. *Boehmeria boninensis* association)
- 29 *Cyathetum mertensianae* (secondary stand)
- 30 *Freycinetia boninensis* community
- 31 *Bischofia javanica* community
- 32 *Leucaena leucocephala* community
- 33 *Pinus lutchuensis* community
- 35 *Casuarina equisetifolia* forest (includ. 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* (includ. *Pennisetum sordidum* community, typical under units etc.)
- 46 *Sporobolus virginicus* community
- 49 *Myoporetum boninensis*
- 52 *Nephrolepis cordifolia* - *Pteridium aquilinum* var. *latiusculum* community
- 53 *Histiopteris incisa* community
- 54 *Imperata cylindrica* var. *major* community (includ. *Paspalum conjugatum* comm.)
- 55 *Miscanthus condensatus* community (includ. *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)

Island	(Hahajima Island Group)	Activity
Mukohjima Island		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 <i>Casuarina</i> 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 <i>Symplocos boninensis</i> .
		2. Habitat conservation for endemic birds
		Mukohjima is an important habitat for endemic birds such as <i>Carduelis sinica kittlitzi</i> and the Bonin honeyeater (<i>Apalopteron familiare</i>). The habitat will be conserved by excluding the impacts of alien species and by continued monitoring.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination	(by the end of FY 2012) Description
1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group 2. Habitat conservation for endemic birds	Elimination of <i>Casuarina</i> and other alien plants	➤ Initiating a survey to determine the existing condition	➤ Carrying out aerial photography. 【FA】 ➤ Implementation of surveys and other studies on the inhabitation status of <i>Carduelis sinica kittlitzi</i> 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】	➤ Initiate area exclusion	➤ 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】
	Elimination of black rats			➤ Complete eradication	➤ Considering the status of elimination throughout the Chichijima Island Group, initiate elimination as needed. 【MOE】

*Correspond to  in the figure below

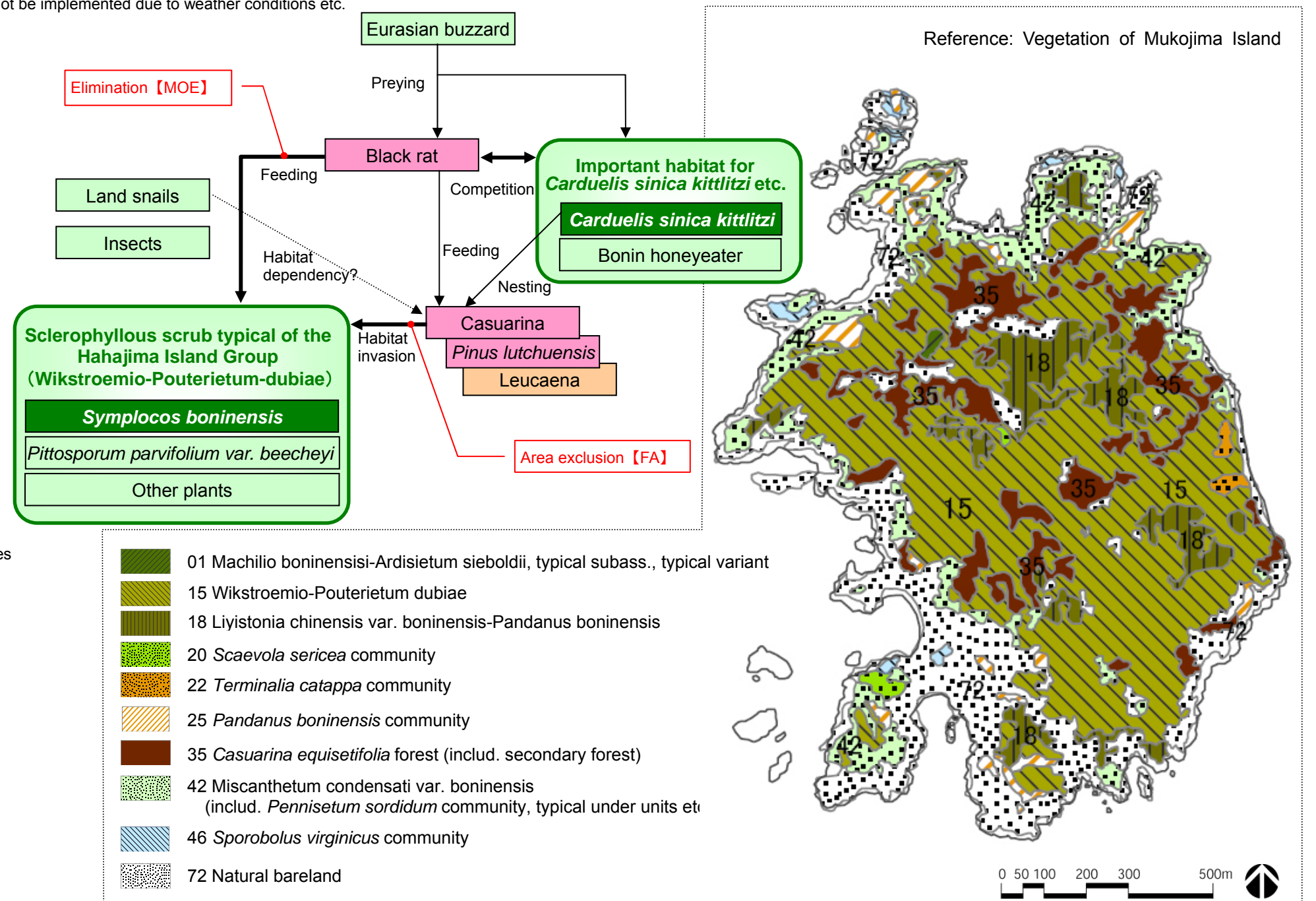
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present

(Blue): Planned to be completed by the end of FY 2012

■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.



(9) Anejima Island (Hahajima Island Group)

Island	(Hahajima Island Group)	Activity
Anejima Island	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 <i>Casuarina</i> 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 <i>Juniperus taxifolia</i> , <i>Lobelia boninensis</i> , and <i>Euonymus boninensis</i> will be conserved.

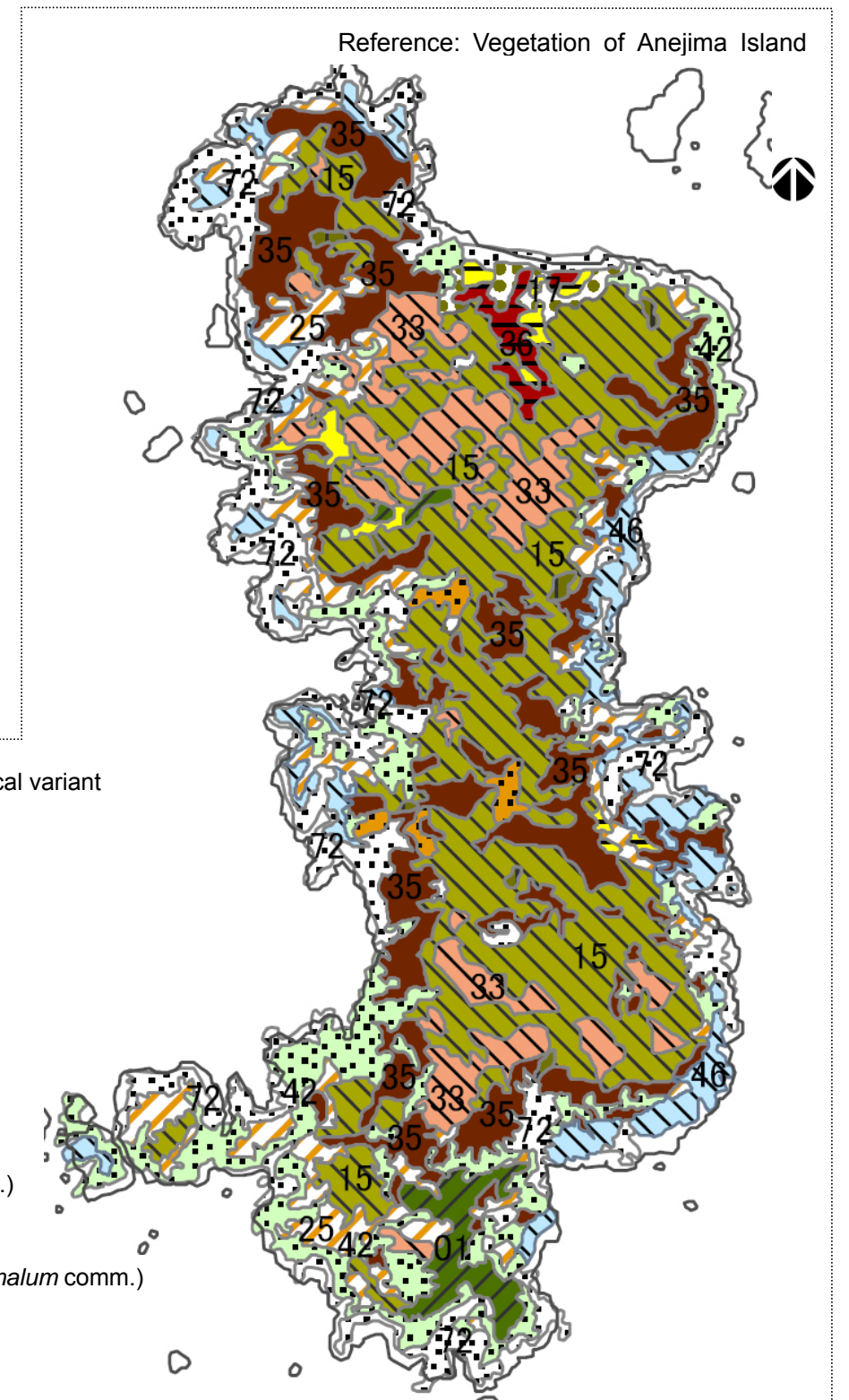
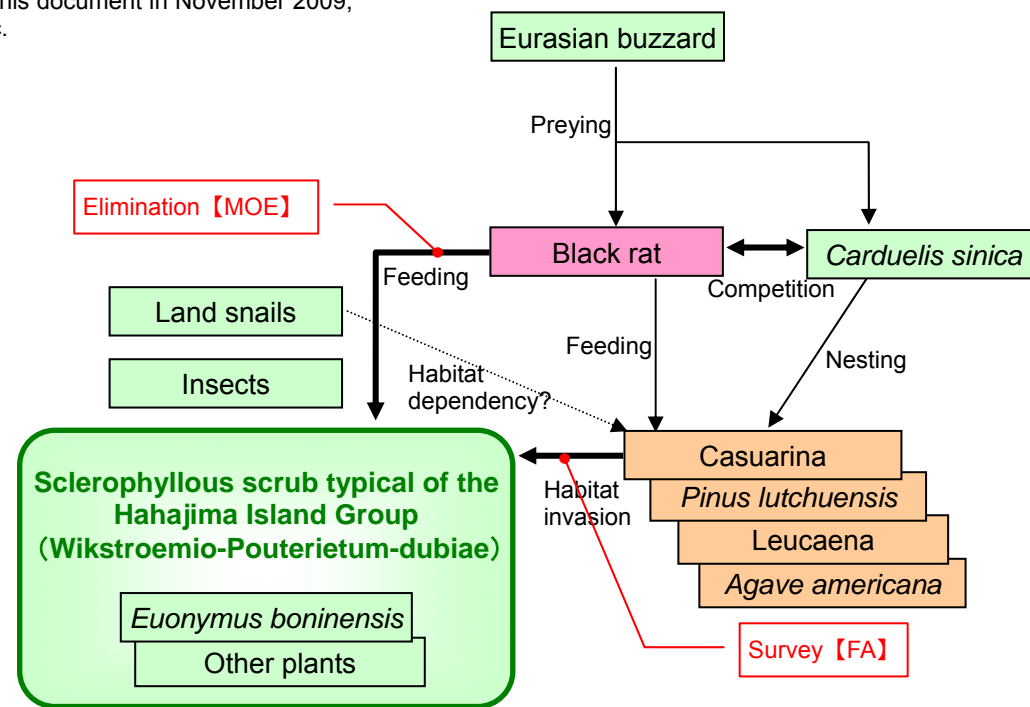
Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Short-term target after nomination (by the end of FY 2012)
1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group	Elimination of Casuarina and other alien plants	➤ Initiating a survey to determine the existing condition	➤ Carrying out aerial photography. 【FA】
	Elimination of black rats		➤ Determine the existing condition
			➤ Implement research on the distribution status of alien species (e.g., Casuarina and Leucaena). 【FA】
			➤ Complete eradication
			➤ Based on the completion status of elimination in the Chichijima Island Group, initiate elimination. 【MOE】










*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.

■ Short-term actions

- Determine the present condition of alien plants such as *Casuarina* on Anejima. It is possible that *Carduelis sinica kittlitzi* 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 kittlitzi* 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 

- | | |
|---|--|
|  | 01 <i>Machilio boninensis</i> - <i>Ardisietum sieboldii</i> , typical subass., typical variant |
|  | 15 <i>Wikstroemia</i> - <i>Pouterietum dubiae</i> |
|  | 17 <i>Hernandia nymphaeifolia</i> - <i>Terminalia catappa</i> community |
|  | 22 <i>Terminalia catappa</i> community |
|  | 25 <i>Pandanus boninensis</i> community |
|  | 33 <i>Pinus lutchuensis</i> community |
|  | 35 <i>Casuarina equisetifolia</i> forest (includ. secondary forest) |
|  | 36 Evergreen broadleaved planted forest |
|  | 42 <i>Miscantheum condensatum</i> var. <i>boninensis</i>
(includ. <i>Pennisetum sordidum</i> community, typical under units etc.) |
|  | 46 <i>Sporobolus virginicus</i> community |
|  | 55 <i>Miscanthus condensatus</i> community (includ. <i>Saccharum officinale</i> comm.) |
|  | 57 <i>Agave americana</i> community / <i>Agave sisalana</i> community |
|  | 72 Natural bareland |

Island	(Hahajima Island Group)	Activity
Imotojima Island		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 <i>Leucaena</i> 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 <i>Crepidiastrum linguifolium</i> , <i>Crepidiastrum ameristophyllum</i> , and <i>Ajuga boninsimae</i> .
		2. Habitat conservation for endemic birds
		Imotojima is an important habitat for endemic birds such as <i>Carduelis sinica kittlitzi</i> and the Bonin honeyeater (<i>Apalopteron familiare</i>). Their habitats will be conserved by excluding the impacts of alien species and by continued monitoring.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination	Description (by the end of FY 2012)
1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group	Elimination of <i>Leucaena</i> and other alien plants	➤ Initiating a survey to determine existing condition	➤ Carrying out aerial photography. 【FA】	➤ Determine the existing condition	➤ Implement research on the distribution status of alien species (e.g., <i>Casuarina</i> and <i>Leucaena</i>). 【FA】
	Elimination of black rats			➤ Complete eradication	➤ Based on the completion status of elimination in the Chichijima Island Group, initiate elimination. 【MOE】

*Correspond to  in the figure below

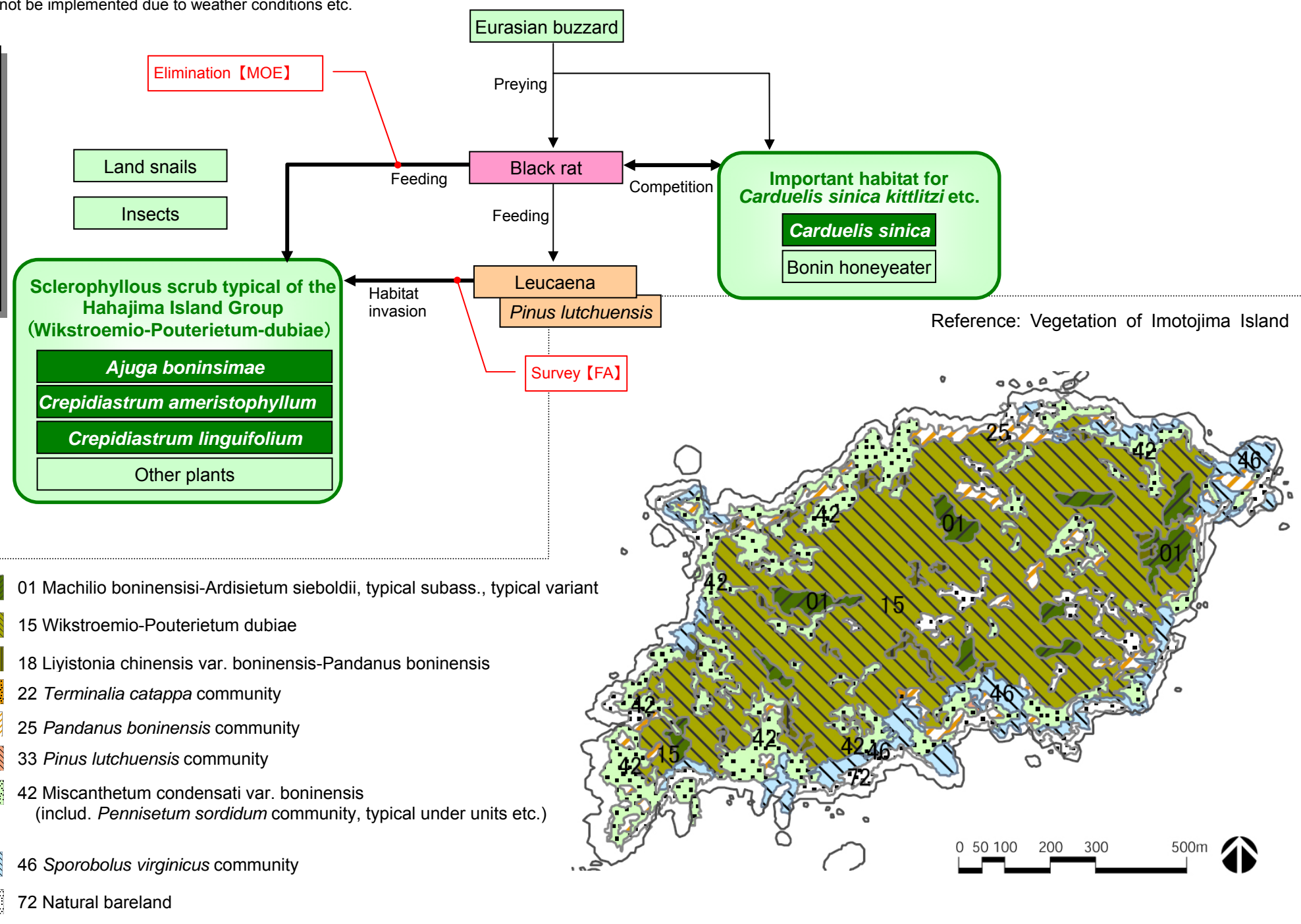
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present

(Blue): Planned to be completed by the end of FY 2012


■ 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.



Island	(Hahajima Island Group)	Activity
Meijima Island		1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group 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 <i>Leucaena</i> 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 <i>Juniperus taxifolia</i> , <i>Lobelia boninensis</i> , and <i>Crepidiastrum linguifolium</i> , and endemic insect fauna.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination	Description (by the end of FY 2012)
1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group	Elimination of <i>Leucaena</i> and other alien plants	➢ Initiating a survey to determine the existing condition	➢ Carrying out aerial photography. 【FA】	➢ Determine the existing condition	➢ Implement research on the distribution status of alien species (e.g., <i>Casuarina</i> and <i>Leucaena</i>). 【FA】
	Elimination of black rats			➢ Complete eradication	➢ Based on the completion status of elimination in the Chichijima Island Group, initiate elimination. 【MOE】

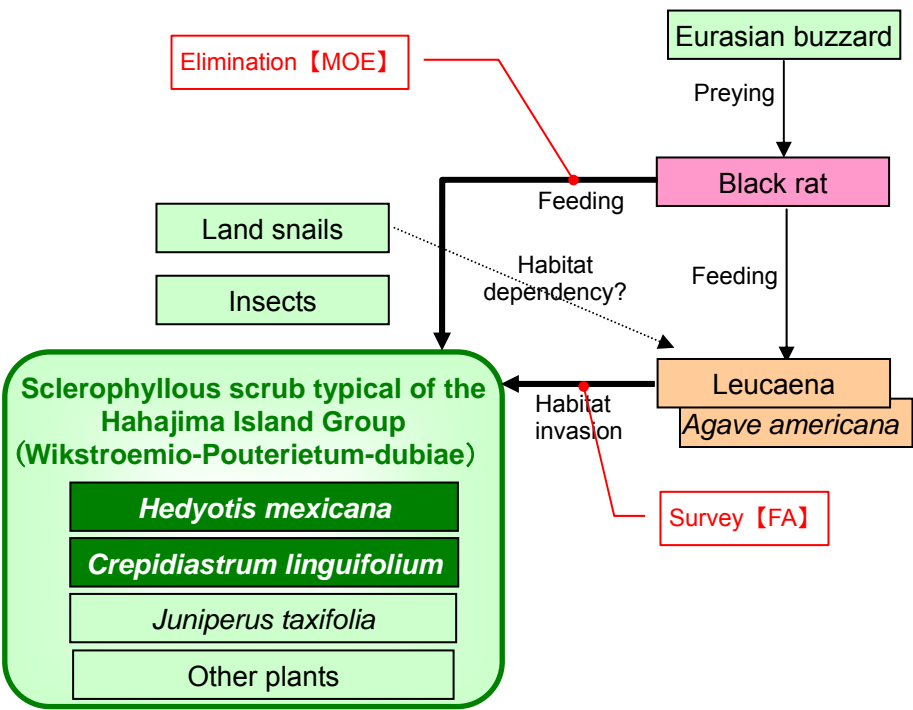
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





* 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

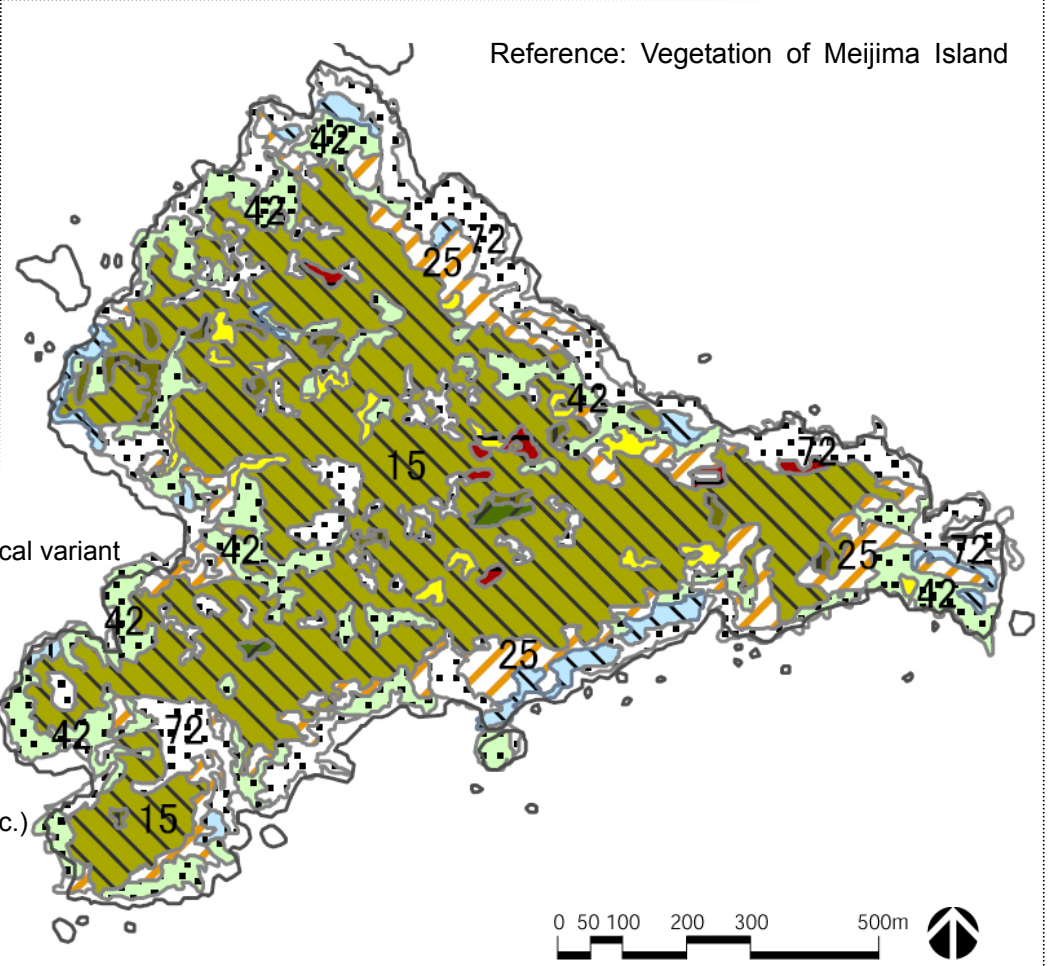
■ Short-term actions

- Determine the existing condition of alien plants such as *Leucaena* on Meijima. Elimination will be initiated as necessary considering already established interspecific interactions, based on scientific research and knowledge.
- Elimination of *black rats*, which compete with *land birds* such as *Carduelis sinica kittitzi* 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 

- 01 *Machilio 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* (includ. *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)	Activity
Hirajima Island		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.

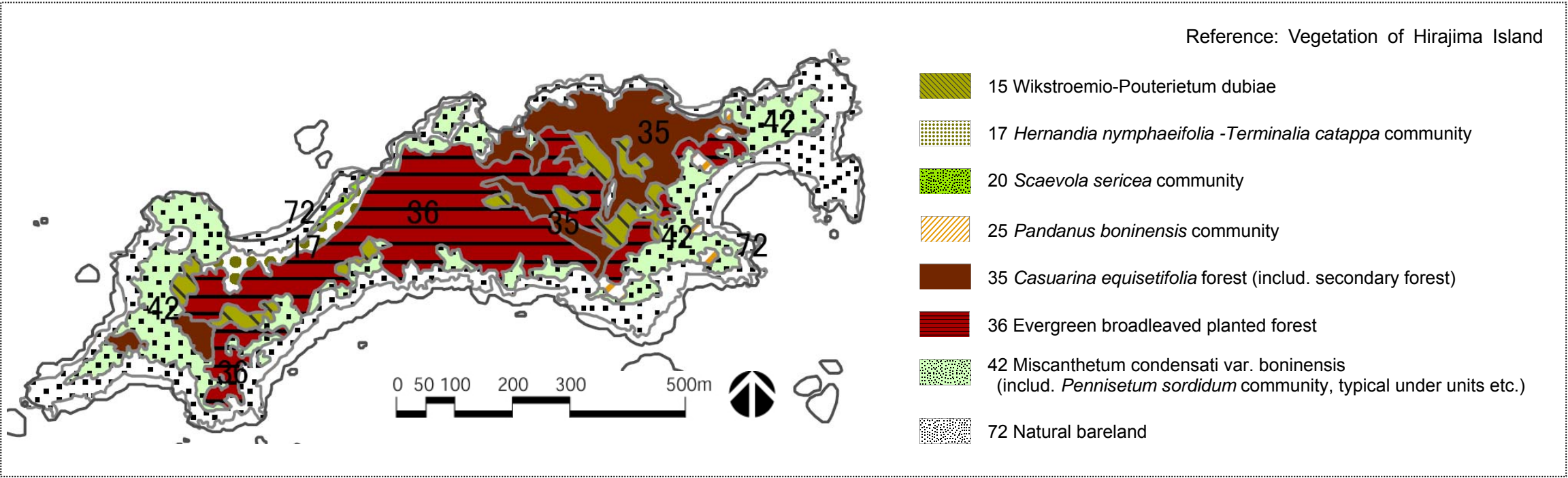
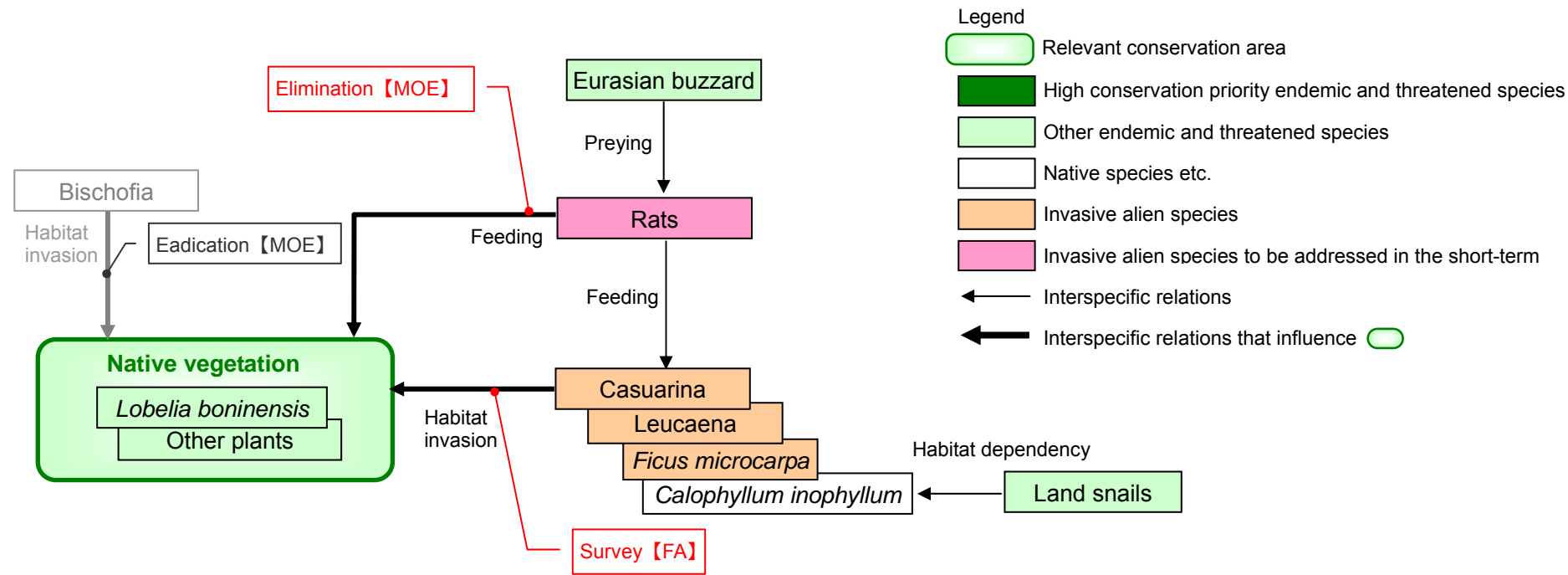
Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Ecosystem management considering endemic species	Elimination of Bischofia	➢ Completion of eradication	➢ Elimination being completed and eradication achieved; approximately 20 individual plants were removed. 【MOE】	—	—
	Elimination of Casuarina and other alien plants	➢ Initiating a survey to determine the existing condition	➢ Carrying out aerial photography. 【FA】	➢ Determine existing condition	➢ Implement research on the distribution status of alien species (e.g. Casuarina and Leucaena). 【FA】
	Elimination of black rats and other alien animals			➢ Complete eradication	➢ Based on the completion status of elimination in the Chichijima Island Group, initiate elimination. 【MOE】

*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

- 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 kittlitzii* and also impact vegetation, will be implemented.



(13) Mukojima Island (Mukojima Island Group)

Island	(Mukojima Island Group)	Activity
Mukojima including Torishima Island		1. Ecosystem management of <i>Ardisia sieboldii</i> forest and other habitats
		On Mukojima, ecosystem management of <i>Ardisia sieboldii</i> 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, <i>Leucaena</i> , 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 <i>Chlorophorus kusamai</i> and <i>Tamamushia virida fujitai</i> (a Mukojima subspecies), both of which are forest insects. Therefore, insect habitat will be conserved by removing the impacts of alien species.
		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 (<i>Phoebastria immutabilis</i>) and black-footed albatross (<i>Phoebastria nigripes</i>). 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 (<i>Phoebastria albatrus</i>) 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.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination	Description (by the end of FY 2012)
1. Ecosystem management of <i>Ardisia sieboldii</i> forest and other habitats	Elimination of <i>Leucaena</i>	➢ Continuation of elimination	➢ Implementation of elimination on <i>Leucaena</i> and alien bamboo and dwarf bamboo species to conserve the remaining forest on Mukojima. 【TMG】	➢ Complete eradication	➢ Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest 【TMG】
	Elimination of alien bamboo and dwarf bamboo species	➢ Continuation of elimination	➢ Implementation of elimination on <i>Leucaena</i> and alien bamboo and dwarf bamboo species to conserve the remaining forest on Mukojima. 【TMG】	➢ Complete eradication	➢ Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest 【TMG】
2. Habitat conservation for endemic insects	Elimination of <i>Ficus microcarpa</i>	➢ Initiating a survey to determine the existing condition	➢ Carrying out aerial photography. 【FA】	➢ Initiate area exclusion	➢ With cooperation among management authorities, initiate elimination strategically where necessary. 【MOE, FA, TMG, Ogasawara Village】
	Elimination of black rats	➢ Initiating elimination	➢ Implementation of preliminary experimental elimination on Mukojima. 【MOE】	➢ Complete eradication	➢ Complete the eradication on Mukojima. 【MOE】
3. Conservation and creation of breeding grounds for three albatross species	Creation of new albatross breeding ground	➢ Continuation of activities	➢ Transferring and releasing young albatrosses from the breeding ground on the island of Torishima in the Izu Island Group to Mukojima during the breeding season and implementing artificial rearing until the birds leave the nest. 【MOE】	➢ Continue	➢ Continue the activities listed on the left. 【MOE】
	Elimination of <i>Lantana camara</i> var. <i>aculeata</i>	➢ Initiating a survey to determine the existing condition	➢ Carrying out aerial photography. 【FA】	➢ Determine the existing condition	➢ Estimate the distribution status of alien woody plants using aerial photographs. 【FA】 ➢ With cooperation among agencies, initiate eliminations strategically where necessary. 【MOE, FA, TMG, Ogasawara Village】

*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.










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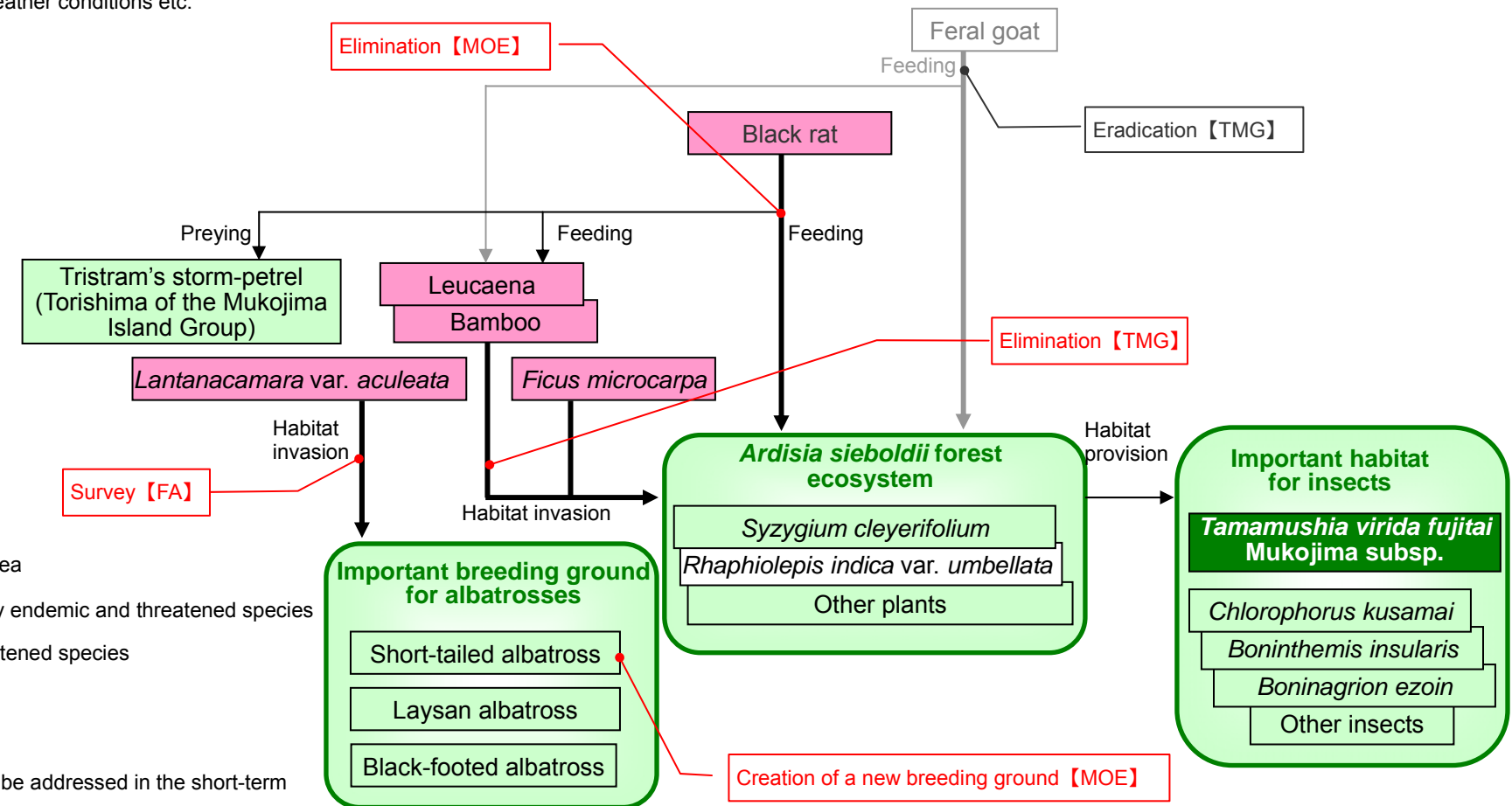
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■Flow of short-term approaches

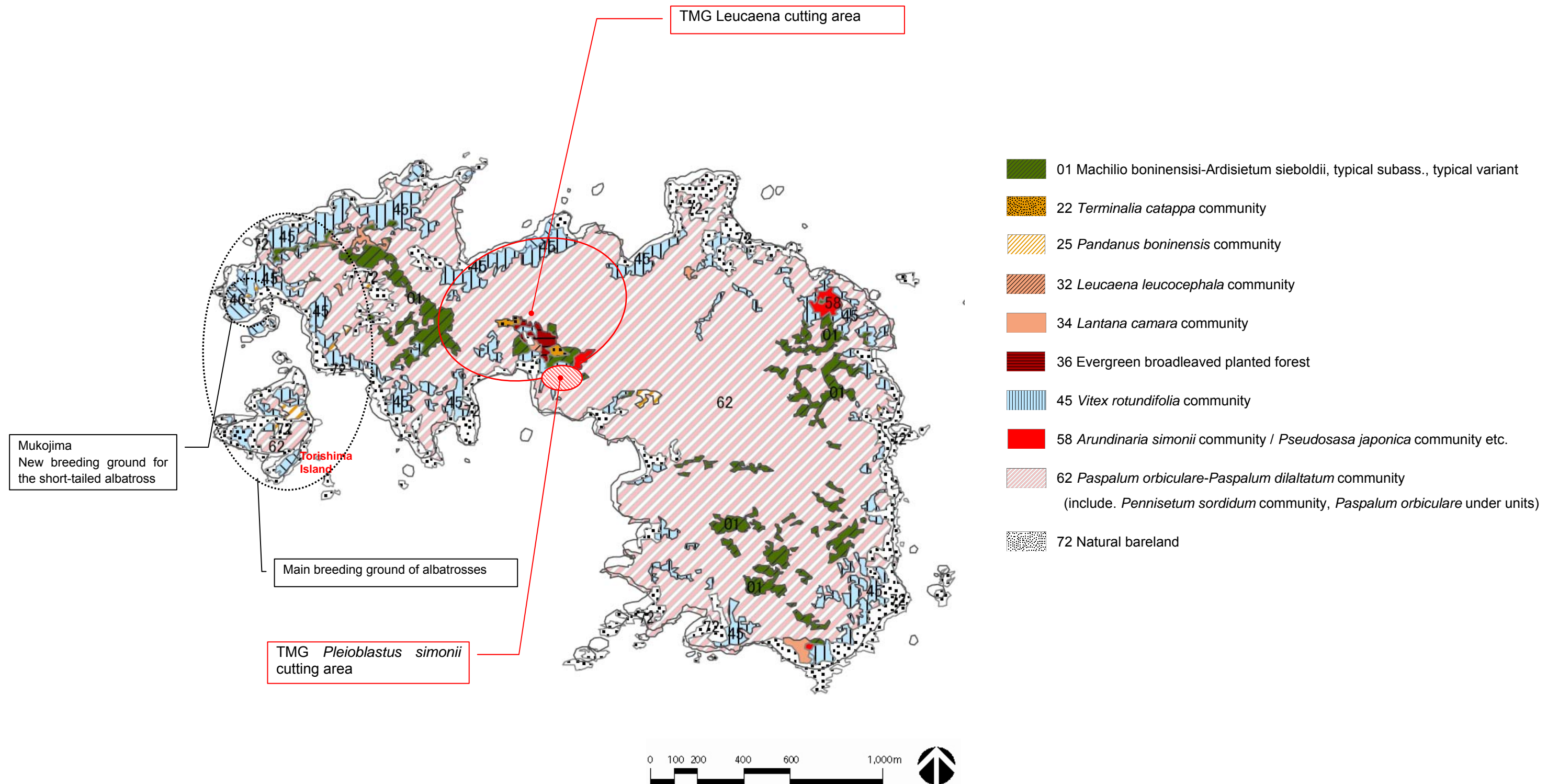
- On Mukojima, eradication of **feral goats**, which were heavily impacting the vegetation, has already been completed.
- Elimination of **black rats** was begun in FY 2008 by the MOE, with the aim of eradication by FY 2012. As there are risks, such as overgrowth by alien plant species, as well as positive 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.

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 Mukojima and related information



(14) Kitanoshima Island (Mukojima Island Group)

Island	(Mukojima Island Group)	Activity
Kitanoshima Island		1. Conservation of seabird breeding grounds Kitanoshima is an important breeding ground for seabirds such as the wedge-tailed shearwater (<i>Puffinus pacificus</i>) and Bulwer's petrel (<i>Bulweria bulwerii</i>). 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.

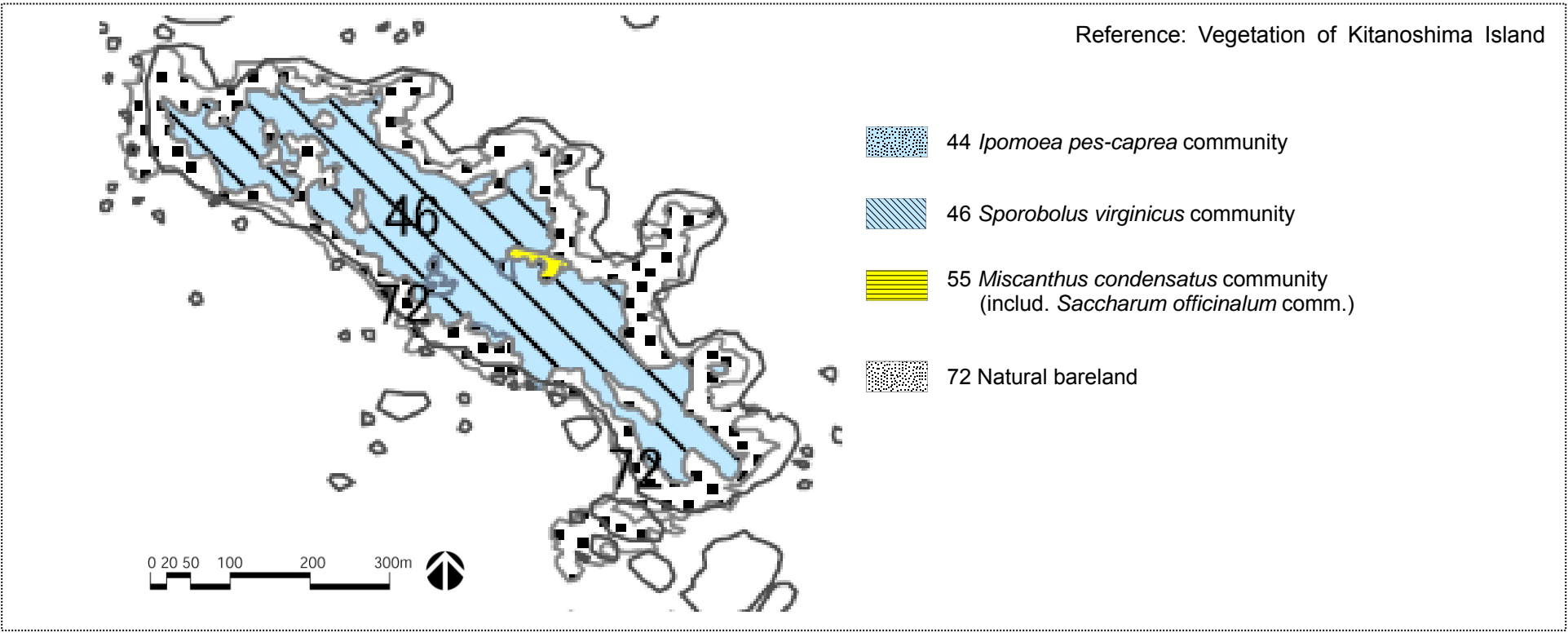
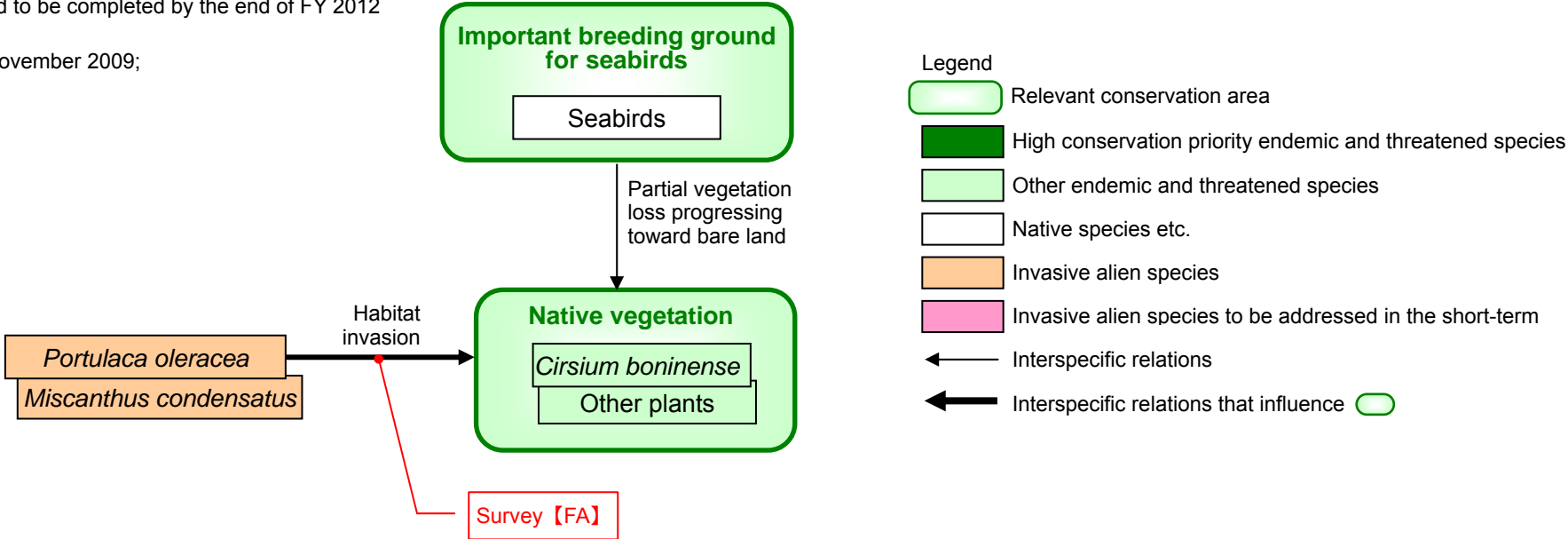
Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination (by the end of FY 2012)	Description
1. Conservation of seabird breeding grounds 2. Ecosystem management considering endemic species	Elimination of alien plants and other related measures	➢ Initiating a survey to determine the existing condition	➢ Carry out aerial photography. 【FA】	➢ Determine existing condition	➢ Estimate the distribution status of alien woody plants using aerial photographs. 【FA】

*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.

■Short-term actions

- Starting in FY 2009, work to determine the distribution status of alien species based on aerial photography will be carried out.



Island	(Mukojima Island Group)	Activity
Nakodojima Island		1. Conservation of seabird breeding grounds
		Nakodojima is a breeding ground for seabirds such as the black-footed albatross (<i>Phoebastria nigripes</i>) and brown booby (<i>Sula leucogaster</i>). 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.
		2. Ecosystem management considering endemic species
		Following feral goat eradication, measures to prevent soil erosion and to eliminate alien plants have been conducted to recover vegetation and conserve endemic species. These activities will continue in an adaptive manner considering the already established interspecific relationships.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description	Description	Description
1. Conservation of seabird breeding grounds	Elimination of Leucaena	Continuation elimination	On Nakodojima, in addition to measures to prevent soil erosion, the elimination of alien species such as Leucaena being implemented. 【TMG】	Complete eradication	Continue the activities listed on the left and implement adaptive management to prevent soil erosion and conserve the remaining forest. 【TMG】
	Elimination of alien bamboo and dwarf bamboo species.	Continuation elimination	On Nakodojima, as well as measures to prevent soil erosion, elimination of alien bamboo and dwarf bamboo species being implemented. 【TMG】	Complete eradication	Continue the activities listed on the left and implement adaptive management to prevent soil erosion and conserve the remaining forest. 【TMG】
2. Ecosystem management considering endemic species	Elimination of black rats			Complete eradication	Initiate elimination, considering the completion status of elimination efforts in the Chichijima Island Group. 【MOE】

*Correspond to  in the figure below

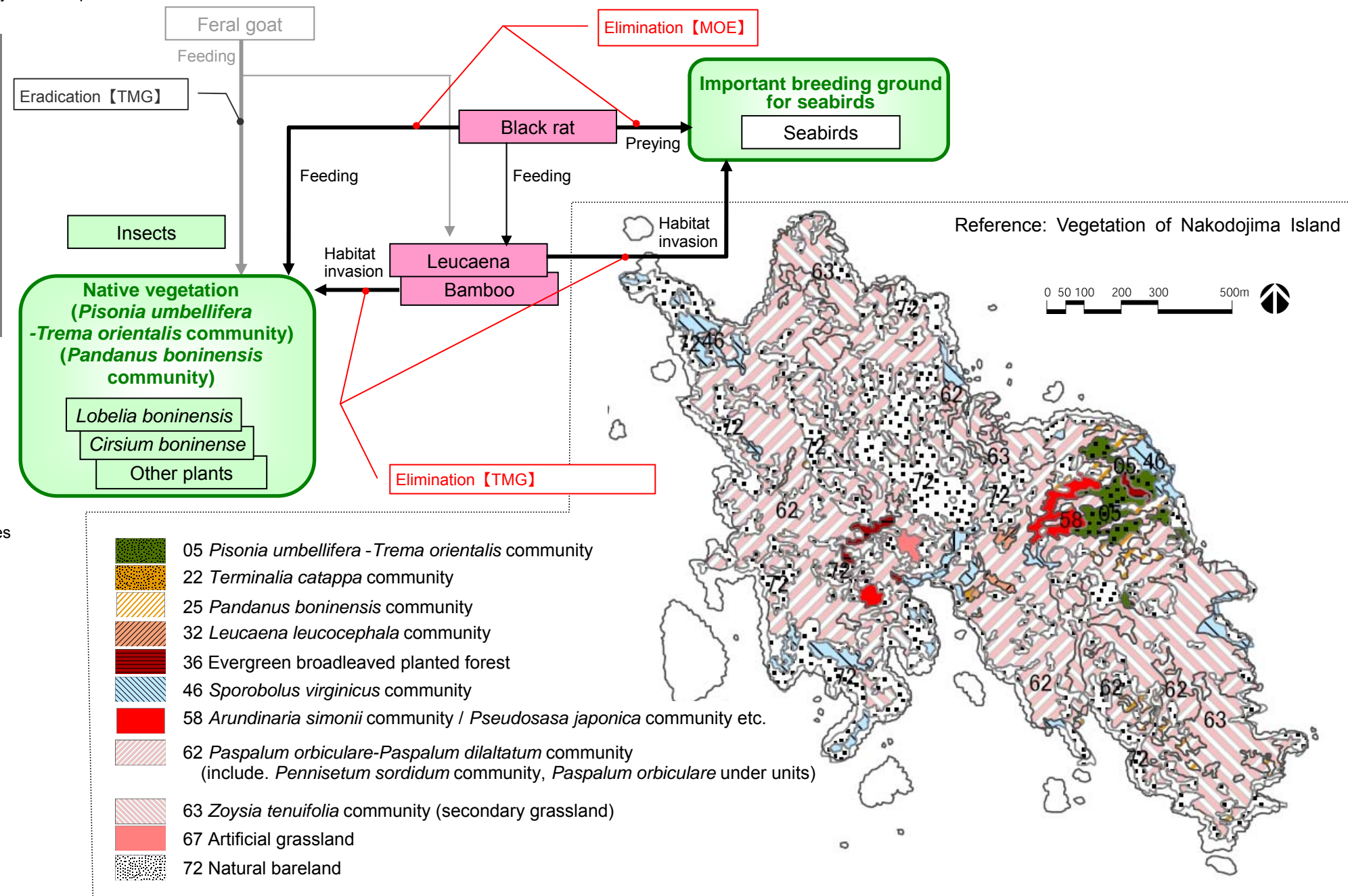
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present

(Blue): Planned to be completed by the end of FY 2012

■ 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.



(16) Yomejima Island (Mukojima Island Group)

Island	(Mukojima Island Group)	Activity
Yomejima Island		1. Conservation of seabird breeding grounds
		Yomejima is a breeding ground for seabirds such as the black-footed albatross (<i>Phoebastria nigripes</i>) and wedge-tailed shearwater (<i>Puffinus pacificus</i>). 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.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Conservation of seabird breeding grounds 2. Ecosystem management considering endemic species	Elimination of alien bamboo, dwarf bamboo species and other alien plants	➢ Initiating a survey to determine the existing condition	➢ Carrying out aerial photography. 【FA】	➢ Initiate elimination	➢ Estimate the distribution status of alien woody plants using aerial photographs. 【FA】 ➢ Conclude maintenance arrangements with NPOs and other groups and promote the elimination of alien bamboo and dwarf bamboo species starting in FY 2010. 【NPO, FA】
	Elimination of black rats			➢ Complete eradication	➢ Initiate elimination considering the completion status of elimination in the Chichijima Island Group. 【MOE】

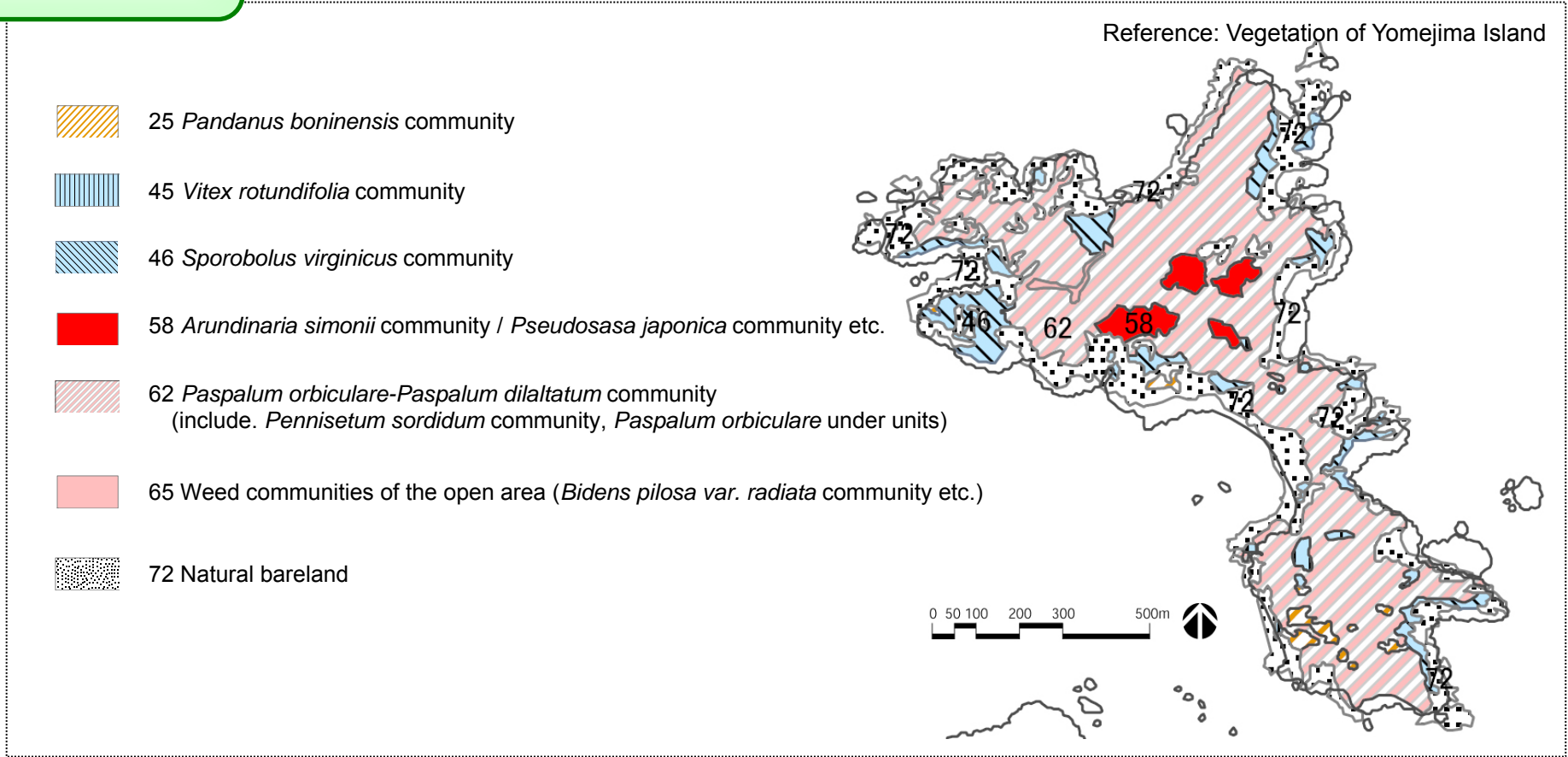
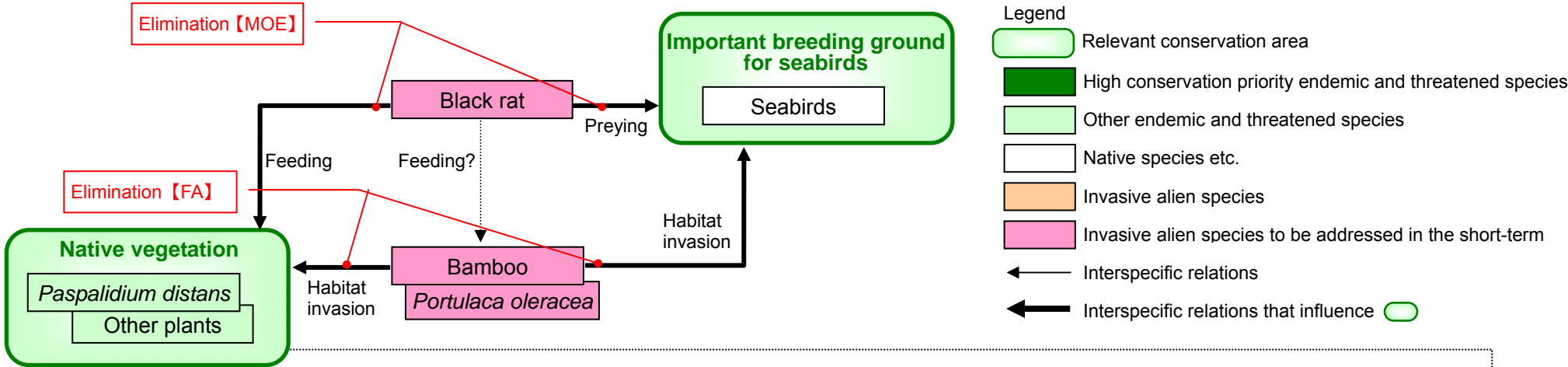
*Correspond to  in the figure below

* 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


■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.



Island	(Volcano Islands and Others)	Activity
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.

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination (by the end of FY 2012)	Description
1. Determine the existing condition	Implementation of a survey to determine the existing condition	➤ Initiating a survey to determine the existing condition	➤ Carrying out aerial photography. 【FA】	➤ Determine the existing condition	➤ Monitor the introduction status of alien species based on the existing condition. 【FA】

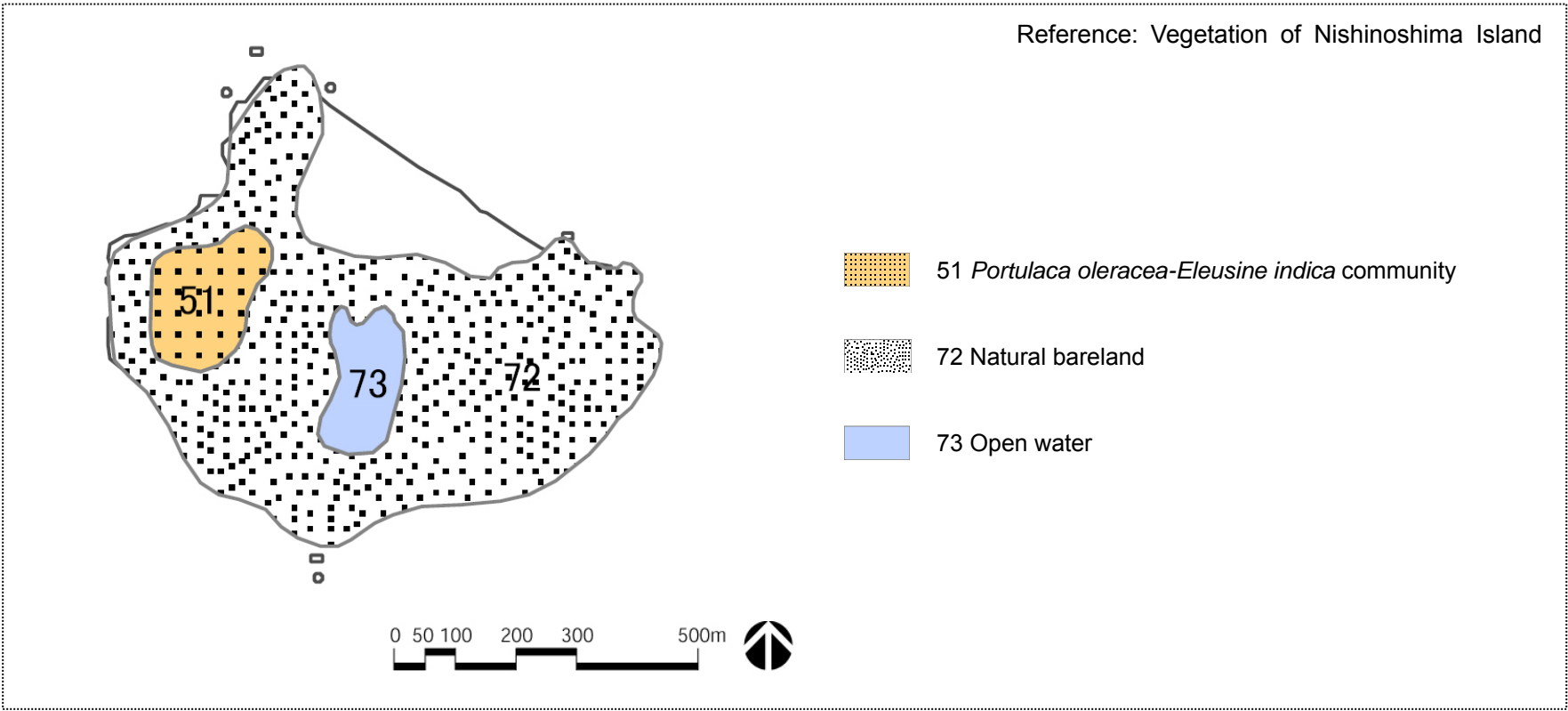
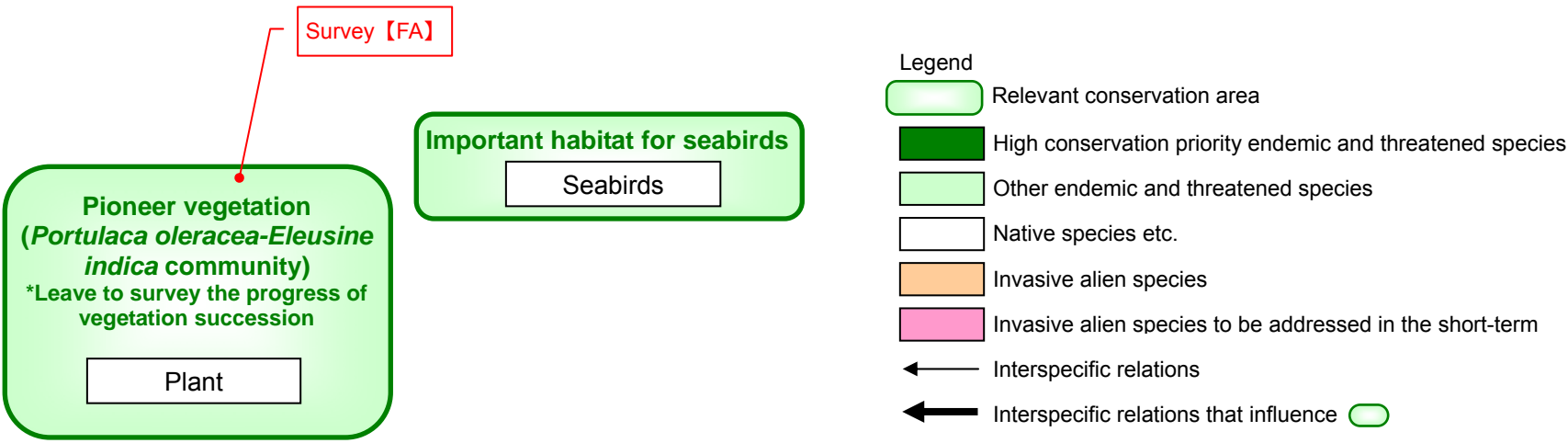
*Correspond to  in the figure below

* 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.

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

■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.



Island	(Volcano Islands and Others)	Activity
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.

Activity	Action item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
			Description		Description
1. Determine the existing condition	Implementation of a survey to determine the existing condition	➤ Initiating a survey to determine the existing condition	➤ Carrying out aerial photography. 【FA】	(To be addressed on medium- and long-term bases)	
2. Conservation of seabird breeding grounds	Elimination of rats			(To be addressed on medium- and long-term bases)	

*Correspond to  in the figure below

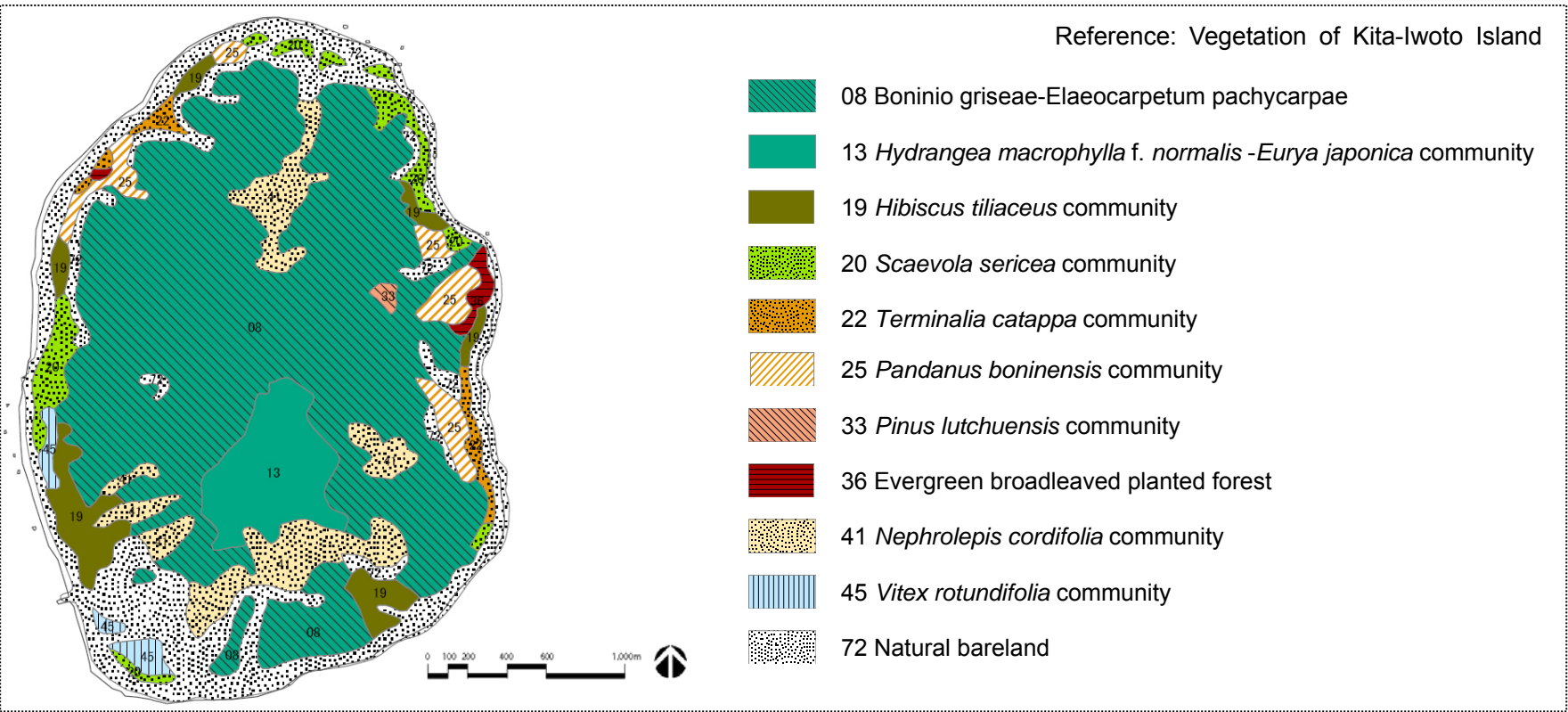
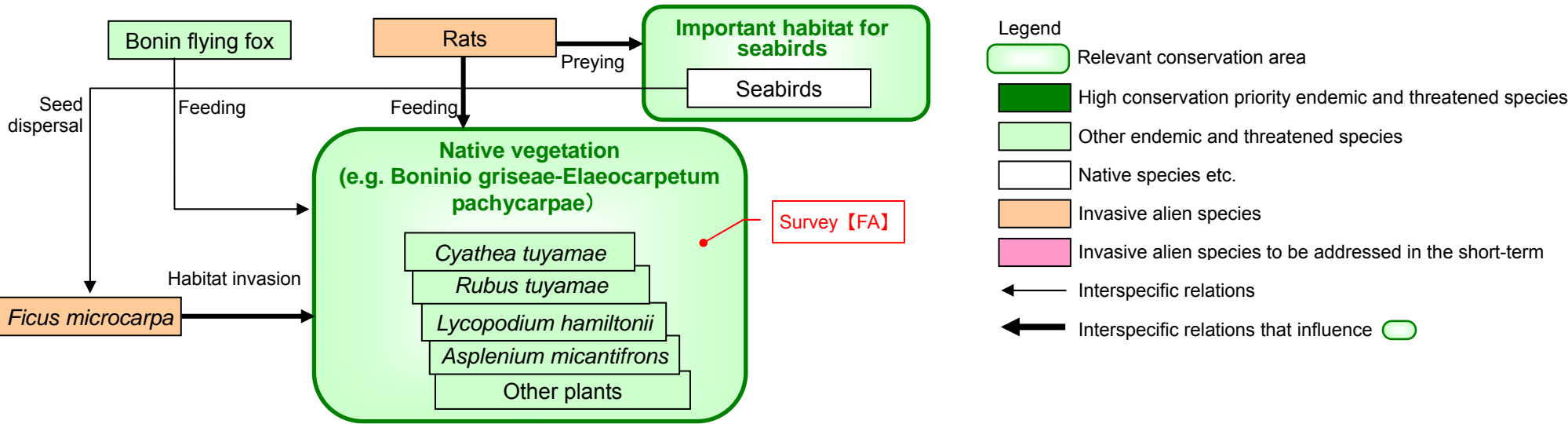
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray):Almost complete at present

(Blue):Planned to be completed by the end of FY 2012

■ Short-term actions

- Policies on the elimination of rats and reactive actions will be discussed on medium- and long-term bases.



Island	(Volcano Islands and Others)	Activity
Minami-Iwoto Island		1. Determine the existing condition <p>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.</p>

Activity	Action item	Envisaged achievement* (by the end of FY 2009)	Description	Short-term target after nomination (by the end of FY 2012)	Description
1. Determine the existing condition	Implementation of a survey to determine the existing condition	➤ Initiating a survey to determine the existing condition	➤ Carrying out aerial photography. 【FA】	(To be addressed on medium- and long-term bases)	

*Correspond to  in the figure below

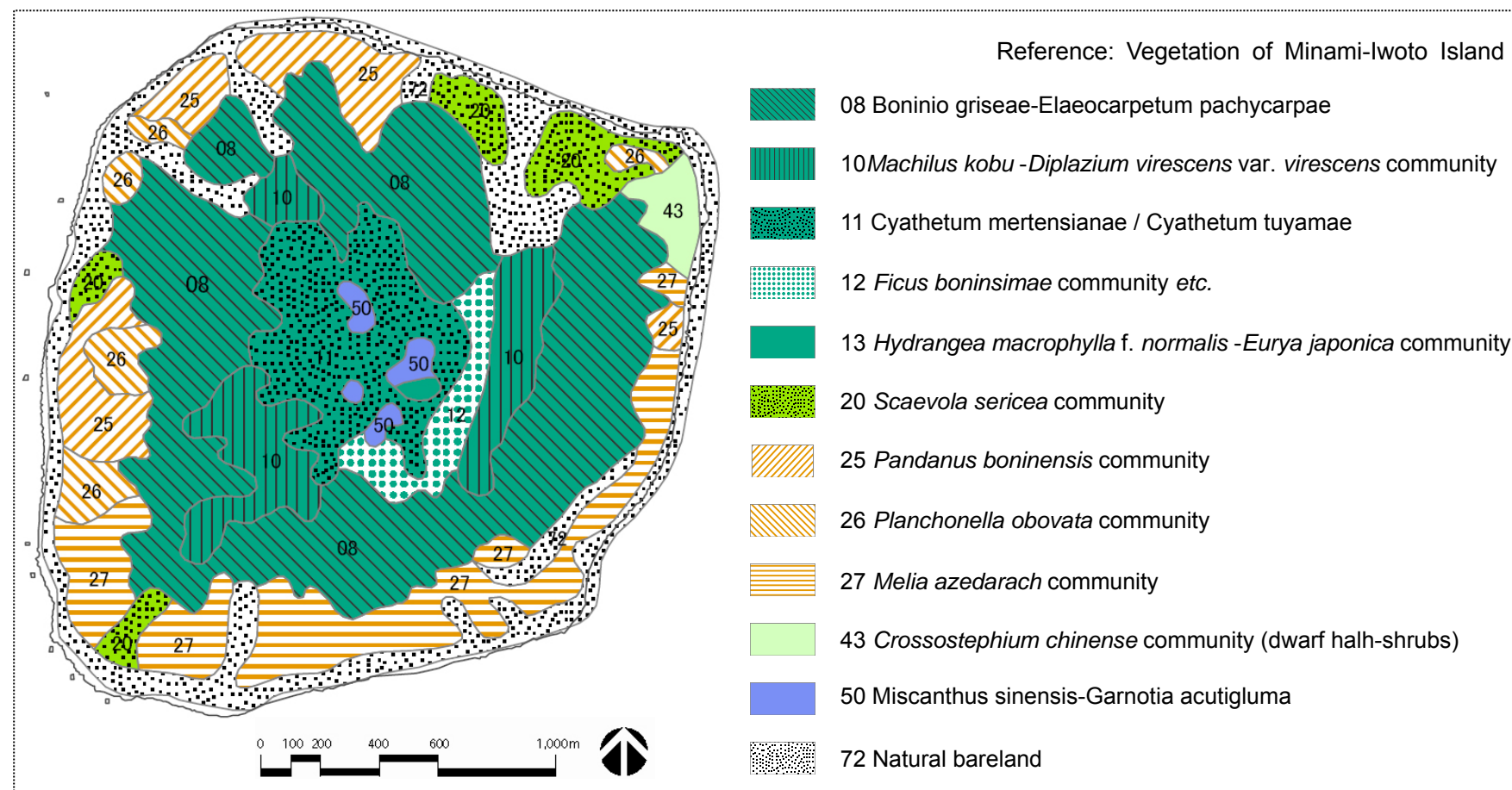
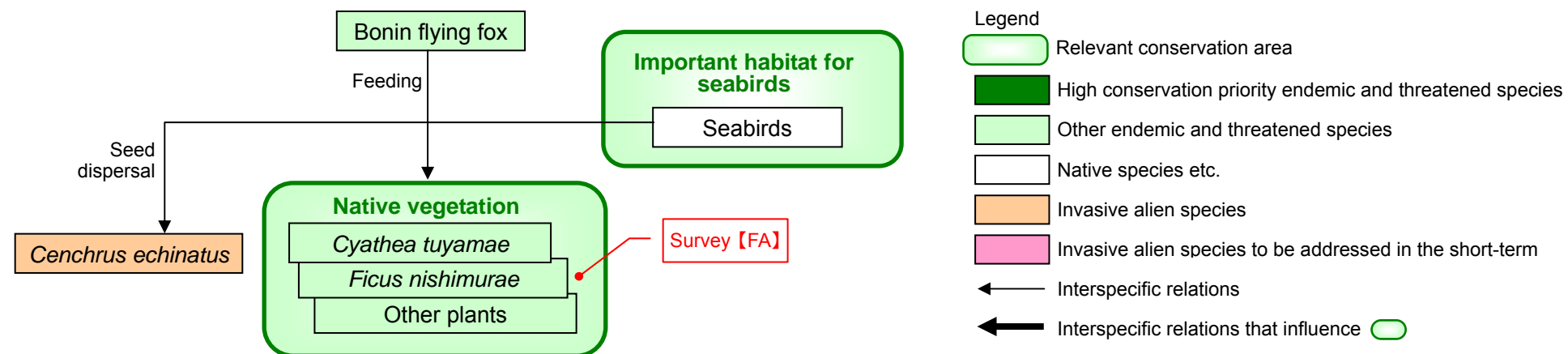
* Achievements envisaged to be accomplished as of the time of the preparation of this document in November 2009; some of the listed measures may not be implemented due to weather conditions etc.

(Gray): Almost complete at present

(Blue): Planned to be completed by the end of FY 2012

■ Short-term actions

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



Schedule 1. Summary Table of Actions by Island
(1) Chichijima Island Group

Island	Activity	Action Item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
				Description		Description
Chichijima	1. Conservation of sclerophyllous scrub and Schima mertensiana forest	Elimination of feral goats	> Initiating area exclusion > Initiating strategic measures with cooperation among agencies	> 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] > Implementation of elimination as a countermeasure against agricultural damage on Chichijima. [Ogasawara Village] > Carrying out research on inhabitation status, and initiating studies of effective eradication procedures. [MOE, FA, TMG, and Ogasawara Village]	> Complete area exclusion > Initiate and continue elimination	> Implement feral goat elimination within fenced areas.[MOE] > Continue with the activities listed on the left.[Ogasawara Village] > Initiate strategic eradication activities (in the whole region) with cooperation among management authorities, starting from FY 2009.[MOE, FA, TMG, and Ogasawara Village]
		Elimination of <i>Casuarina</i> and <i>Pinus lutchuensis</i>	> Initiating area exclusion	> Beginning elimination of alien species such as <i>Casuarina</i> in the Higashidaira area, targeting area exclusion. Concluding a maintenance agreement with NPOs and other groups for Yoakedaira and promoting the elimination of <i>Casuarina</i> and other alien species.[FA] > Implementation of elimination in the Nagasaki region of Chichijima.[NPO] > Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before conducting elimination in Higashidaira and Yoakedaira.[FA]	> Continue and expand area exclusion	> Continue with the activities listed on the left. [NPO, FA, and others.]
		Elimination of <i>Bischofia</i>	> Completion of area exclusion	> Promoting area exclusion in Higashidaira.[NGOs and others]	> Continue area exclusion	> Area exclusion planned to be completed by FY 2009, with germination treatment and other follow-up work thereafter. (Higashidaira wood-pigeon sanctuary)[NPO, FA, and others.]
		Elimination of <i>Psidium littorale</i>	> Initiating a survey to determine the existing condition	> Estimating the distribution status of alien woody plants using aerial photographs.[FA] > Consideration of implementing elimination measures to be conducted during the elimination of species such as <i>Casuarina</i> . [FA]	> Continue area exclusion	> With cooperation among agencies, strategically initiate elimination where necessary.[MOE, FA, TMG, Ogasawara Village]
		Elimination of <i>Ficus microcarpa</i>	> Initiating a survey to determine the existing condition	> Estimating the distribution status of alien woody plants using aerial photographs.[FA]	> Initiate area exclusion	> With cooperation among agencies, strategically initiate elimination where necessary.[MOE, FA, TMG, Ogasawara Village]
		Elimination of <i>Leucaena</i>	> Initiating a survey to determine the existing condition	> Estimating the distribution status of alien woody plants using aerial photographs.[FA]	> Initiate area exclusion	> With cooperation among agencies, strategically initiate elimination where necessary.[MOE, FA, TMG, Ogasawara Village]
		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	> Continue with the activities listed on the left.[MOE]
	2. Habitat conservation for wood-pigeon	Exclusion of feral cats	> Initiating area exclusion > Initiating exclusion	> 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] > Implementation of emergency captures of feral cats in cooperation with the Ogasawara Cat Liaison Committee (targeting all of Chichijima).[FA]	> Complete area exclusion > Continue exclusion	> Complete feral cat exclusion within fences in the Higashidaira area.[MOE] > Based on the effectiveness of fencing and capturing measures in Higashidaira, consider exclusion measures of the island. [MOE, FA, TME, Ogasawara Village] > Implement exclusion of cats focusing on the important southern region (the known breeding ground of the wood-pigeon and surrounding areas) and decrease feral cat density on Chichijima.[MOE]
	3. Habitat conservation for land snails	Elimination of predatory flatworm	> Initiating area defense	> 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] > Carrying out trials of specific measures for area defense at important areas within the southern region, the un-invaded region of Chichijima, and examining the effectiveness of measures. [MOE]	> Continue area defense	> Set up sanctuaries in land snail habitats (e.g., Yoakedaira), and implement preventive measures against introduction. [MOE]
		Elimination of black rats			(To be addressed on medium- and long-term bases)	
	4. Habitat conservation for the Bonin flying fox	Conservation measures for the Bonin flying fox	>Implementation of protective measures	>Achive compatibility with measures for agricultural damage and raising awareness among the local people. [Agency for Cultural Affairs, TMG, Ogasawara Village] >Designation of region covering the winter roost area as a wildlife protection area. [MOE]	> Expand protective measures	> Expand measures (e.g. discussing protective measures). [MOE, FA, Agency for Cultural Affairs, TMG, Ogasawara Village]
	5. Habitat restoration for endemic insects	Elimination of the green anole			(To be addressed on medium- and long-term bases)	
		Elimination of <i>Casuarina</i> and <i>Pinus lutchuensis</i>	> Completion and expansion of area exclusion	* Same as above	> Continue and expand area exclusion	* Same as above
	6. Other measures	Elimination of the green anole	> Continue area exclusion (prevent dispersion)	> Implementation of elimination, monitoring, and awareness-raising within the area surrounding Futami Port on Chichijima to prevent dispersion to peripheral islands. 【MOE】	> Continue area exclusion (prevent dispersion)	> Continue with the activities listed on the left.[MOE]
		Elimination of cane toad	> Continuation of efforts to prevent dispersion	> Implementation of elimination, monitoring, and awareness-raising within the area surrounding Futami Port on Chichijima to prevent dispersion to peripheral islands. 【MOE】 (This measure is implemented together with those against the green anole)	> Continue area exclusion (prevent dispersion)	> Continue with the activities listed on the left.[MOE]
		Exclusion of feral cats	> Raising awareness of proper pet care	> Raising awareness of proper domestic cat keeping on Chichijima and Hahajima. [Ogasawara Cat Liaison Committee]	> Enforce the ordinance and enhance management	> Conduct measures to manage domestic and feral cats (achieving more than 95% castration, 60% microchip implantation, and revision of the cat ordinance) [Ogasawara Village, Ogasawara Cat Liaison Committee, Tokyc
		Dispersion prevention of predatory flatworm	> Continuation of raising awareness and working to prevent dispersion	> Implementation of awareness-raising activities led by TMG rangers and other groups to prevent dispersion to Hahajima. 【TMG】	> Continue work to prevent dispersion and raise awareness	> Continue with the activities listed on the left.[TMG]
Anijima	1. Conservation of sclerophyllous scrubs	Elimination of feral goats	> Completion of eradication	> Completion of eradication.[TMG]	-	-
		Elimination of black rats	> Initiating elimination	> Initiating elimination in FY 2009 based on the status of elimination efforts on Mukojima.[MOE]	> Complete eradication	> Complete eradication on the island and also on its peripheral islands.[MOE]
		Elimination of <i>Casuarina</i> and other alien plants	> Completion and expansion of area exclusion	> Implementation of monitoring following experimental elimination on the Anijima plateau, and Initiating new elimination experiments.[MOE] > Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before the elimination, and implementation of elimination, targeting area exclusion in the central region of Anijima. [FA]	> Complete and expand area exclusion	> Implement elimination with the aim of complete area exclusion within the gently sloped land on the plateau[FA]
		Elimination of <i>Leucaena</i>	> Establishment of elimination methods > Initiating a survey to determine the existing condition	> Implementation of experiments to establish effective technical elimination methods using chemicals. [MOE] > Estimating the distribution status of alien woody plants using aerial photographs.[FA]	> Complete area exclusion	> Initiate elimination in FY 2010, with the aim of complete area exclusion within the gently sloped land of the plateau by FY 2012. [FA]
		Elimination of <i>Lantana camara</i> var. <i>aculeata</i>	> Establishment of elimination methods > Initiating a survey to determine the existing condition (on the plateau) > Initiating area exclusion (Takinoura Bay)	> Implementation of experiments to establish effective technical elimination methods using chemicals. 【MOE】 > Estimating the distribution status of alien woody plants using aerial photographs. 【FA】 > Initiating elimination in Takinoura Bay. 【Resident volunteers and NPO】	> Complete area exclusion	> From FY 2010 within the gently sloped land of the plateau, implement elimination of <i>Casuarina</i> and other plants as well as experimental elimination in a small area with monitoring thereafter. 【FA】 > With cooperation among volunteers, NPOs, and other agencies, implement elimination in Takinoura Bay.
	2. Habitat conservation for land snails	Elimination of black rats	> Initiating elimination	* Same as above	> Complete eradication	* Same as above
	3. Habitat conservation for wood-pigeon	Elimination of black rats	> Initiating elimination	* Same as above	> Complete eradication	* Same as above
		Exclusion of feral cats	> Completion of exclusion	> Carrying out exclusion by FY 2009 on the basis of research on inhabitation status[MOE]	-	-

* 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.

: Almost complete at present

: Planned to be completed by the end of FY 2012

Island	Activity	Action Item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
				Description		Description
Oototojima	1. Conservation of Schima mertensiana forests	Elimination of Bischofia	> Completion of eradication	> Achieving eradication by chemical injection at the initial stage of invasion. Implementation of monitoring. [MOE]	-	-
		Elimination of feral goats	> Continuation of elimination	> Implementation of elimination, targeting eradication from Oototojima.[TMG]	> Complete eradication	> Continue with the activities listed on the left.[TMG]
		Elimination of black rats	> Initiating elimination	> Initiating elimination in FY 2009 based on the implementation status of elimination on Mukojima. [MOE]	> Complete eradication	> Complete eradication on the island and also on its peripheral islands.[MOE]
		Elimination of Casuarina, Leucaena, and other invasive alien plants	> Initiating a survey to determine the existing condition	> Estimating the distribution status of alien woody plants using aerial photographs.[FA] > Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before conducting elimination. [FA]	> Initiate area exclusion	> With cooperation among management authorities, strategically initiate elimination where necessary.[MOE, FA, TMG, Ogasawara Village] > 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]
	2. Habitat conservation for endemic insects including five endemic species of dragonfly	Elimination of bullfrogs	> Completion of eradication	> Achieving eradication.[MOE]	-	-
		Elimination of feral pigs	> Completion of eradication	> Achieving eradication. 【 MOE 】 > Implementation of measures to recover vegetation, land snail fauna, and insect fauna. Implementing recovery projects for threatened insect species. 【 MOE 】	-	-
		Recovery of lentic environments	> Construction of lentic environments	> Construction of lentic environments to recovery the site together with the implementation of monitoring of aquatic insects, such as dragonflies.[MOE]	> Construction of lentic environments	> Continue with the activities listed on the left.[MOE]
		Elimination of Casuarina and other invasive alien plants	> Initiating a survey to determine the existing condition	* Same as above	> Initiate area exclusion	* Same as above
	3. Habitat conservation for wood-pigeon	Elimination of black rats	> Initiating elimination	* Same as above	> Complete eradication	* Same as above
		Exclusion of feral cats	> Initiating exclusion	> Implementation of exclusion prior to measures against black rats from FY 2009.[MOE]	> Complete exclusion	> Complete exclusion by FY 2010.[MOE]
Nishijima	1. Ecosystem management considering endemic species	Elimination of black rats	> Initiating elimination	> Rat poison being set out as an elimination effort.[FFPRI]	> Complete eradication	> Complete eradication. 【MOE】
		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] > Conducting a survey of Casuarina distribution in the central part of the island.[FA]	> Initiate elimination	> With cooperation among management authorities, initiate strategic elimination where necessary.[MOE, FA, TMG, Ogasawara Village] > 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.[NPO, FA]
Higashijima	1. Conservation of seabird breeding grounds	Elimination of black rats	> Completion of eradication	> Conducting experimental elimination on Higashijima on a pilot basis.[MOE]	-	-
	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]
Minamijima	1. Conservation of seabird breeding grounds 2. Ecosystem management considering endemic species	Elimination of <i>Cenchrus echinatus</i> and other alien plants	> Continuation of elimination	> Implementation of elimination of highly invasive alien plants on Minamijima.[TMG, FA, Ogasawara Village, NPO] > Estimating the distribution status of alien woody plants using aerial photographs.[FA]	> Continue elimination	> Continue with the activities listed on the left.[TMG, FA]
		Elimination of black rats			> Complete eradication	> After eradication is completed on Anijima and Oototojima, consider management measures.[MOE]

* 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.

: Almost complete at present
: Planned to be completed by the end of FY 2012

(2) Hahajima Island Group

Island	Activity	Action Item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
				Description		Description
Hahajima	1. Conservation of subtropical rainforest, <i>Ardisia sieboldii</i> forest, and sclerophyllous scrub typical of the Hahajima Island Group	Elimination of <i>Bischofia</i>	> Creation of medium- and long-term plans > Initiating area exclusion	> Implementation of elimination cording to the created medium- and long-term plans [e.g., “ <i>Bischofia</i> Control Plan”) to achieve area exclusion in the Sekimon basin.[FA] > Implementation of monitoring surveys (e.g., of birds, insects, land snails, and plants) before initiating elimination in Sekimon and other areas.[FA] > Implementation of a system to monitor persisting individuals in the Higashidai area of Hahajima. [MOE] > Targeting area exclusion in the area north of the line between Hahajima Yashihama Beach and Nagahama Beach; implementation of elimination at Nishidai and Koromodate. In addition, partial implementation at Nishiura area. [MOE]	> Continue elimination	> Continue with the activities listed on the left.[FA] > By continuing the activities listed on the left, eliminate from private land in Nishidai and Koromodate; initiate elimination in the Koshinzuka region. [MOE]
		Elimination of <i>Ficus microcarpa</i>	> Initiating a survey to determine the existing condition	> Estimating the distribution status of alien woody plants using aerial photographs.[FA]	> Initiate area exclusion	> With cooperation among management authorities, strategically initiate elimination where necessary.[MOE, FA, TMG, Ogasawara Village]
		Elimination of <i>Casuarina</i> and <i>Leucaena</i>	> Initiating area exclusion	> Implementation of <i>Casuarina</i> elimination at Minamizaki on Hahajima, targeting area exclusion in FY 2007–2008. Elimination of <i>Leucaena</i> at the site where elimination of <i>Casuarina</i> was carried out in FY 2007 as <i>Leucaena</i> has invaded the site. Implementation of monitoring on the site. [FA] > Estimating the distribution status of alien woody plants using aerial photographs.[FA]	> Continue monitoring after the elimination	> Continue monitoring the introduction status of alien species, such as <i>Casuarina</i> , in excluded areas. (Minamizaki region) 【FA】 > With cooperation among agencies, strategically initiate elimination where necessary. 【MOE, FA, TMG, Ogasawara Village】
	2. Habitat conservation for endemic insects including <i>Celastrina ogasawaraensis</i>	Elimination of the green anole	> Completion of area exclusion	> 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 Shin-Yuhigaoka and Minamizaki on Hahajima. In addition, consideration of establishing new nature restoration areas [MOE]	> Set up new exclusion area > Conduct point exclusions at the breeding grounds of threatened insects	> Set up new nature restoration areas (areas as yet undecided).[MOE] > At the breeding ground of <i>Celastrina ogasawaraensis</i> , continue point exclusion during the breeding season (area as yet undecided)[MOE]
		Elimination of the cane toad	> Completion of area exclusion	> Continuation of capture and exclusion measures within the nature restoration area set up in Shin-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)	> Complete area exclusion	> Almost complete area exclusion (Minamizaki Hasuike Pond area) [MOE]
		Monitoring of the habitat for <i>Celastrina ogasawaraensis</i> and other endemic insects	> Continuation of monitoring	> Implementation of conservation and breeding measures for <i>Celastrina ogasawaraensis</i> and other endemic species, as well as continued monitoring of ecosystem recovery focusing on insects. [MOE, Ogasawara-Shijimi Society]	> Continue monitoring	> Continue with the activities listed on the left.[MOE, Ogasawara-Shijimi Society]
	3. Habitat conservation for <i>Carduelis sinica kittlitzii</i> and seabirds	Exclusion of feral cats	> Complete and expand area exclusion	> Consideration of setting up a large-scale exclusion zone at Minamizaki. (an exclusion area has already been established at the point of Minamizaki and the exclusion has been completed) [MOE, Ogasawara Cat Liaison Committee]	(To be addressed on medium- and long-term bases)	(Coordinating with the schedule for the island-wide exclusion, continue discussion of measures)
		Elimination of black rats			(To be addressed on medium- and long-term bases)	
	4. Habitat conservation for wood-pigeon	Elimination of <i>Bischofia</i>	> Creation of medium- and long-term plans > Initiating area exclusion	* Same as above	>Continue elimination	* Same as above
		Exclusion of feral cats			(To be addressed on medium- and long-term bases)	* Same as above
		Elimination of black rats			(To be addressed on medium- and long-term bases)	* Same as above
		Planting of food trees	> Continuation of elimination of <i>Bischofia</i> > Planting of food trees	> Continuation of eliminating competing juvenile trees of <i>Bischofia</i> on Mt Kuwanoki on Hahajima, in addition to eliminating <i>Bischofia</i> and planting food trees of wood-pigeon. In addition, creation of a manual for propagation techniques based on the achievements so far. [FA]	> Continue elimination of <i>Bischofia</i>	> Continue elimination of juvenile trees and other measures listed on the left[FA]
	5. Habitat conservation for land snails	Discussing conservation policies for endemic land snails	> Discussion of conservation policies	> Determining the inhabitation status of endemic land snails on Hahajima, establishing the individual project review committee, and discussing conservation policies for land snails.[MOE]	> Initiate specific measures	> Based on outcomes of conservation policies found by the review committee, implement specific measures as necessary. [MOE]
	6. Other measures	Exclusion of feral cats	> Raising awareness of proper pet care	> Raising awareness of proper domestic cat keeping. [Ogasawara Cat Liaison Committee]	> Enforce the ordinance and enhance management	> Conduct measures to manage domestic and feral cats (achieving more than 95% castration, 60% microchip implantation, and revision of the cat ordinance) [Ogasawara Village, Ogasawara Cat Liaison Committee, Tokyo Veterinary Medical Association, NPO]
		Elimination of predatory flatworm	> Continuation of raising awareness and working to prevent dispersion	>Implementation of awareness-raising activities led by TMG rangers and other groups to prevent dispersion to Hahajima and peripheral islands and a measure of washing shoe soles when disembarking from the transport ship Hahajima Maru. 【TMG】	> Continue work to prevent dispersion and raise awareness	> Continue with the activities listed on the left.[TMG]
Mukohjima	1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group 2. Habitat conservation for endemic birds	Elimination of <i>Casuarina</i> and other alien plants	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA] > Implementation of surveys and other studies on the inhabitation status of <i>Carduelis sinica kittlitzii</i> 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]	> Initiate area exclusion	> 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]
		Elimination of black rats			> Complete eradication	> Considering the status of elimination throughout the Chichijima Island Group, initiate elimination as needed.[MOE]
Anejima	1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group	Elimination of <i>Casuarina</i> and other alien plants	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Implement research on the distribution status of alien species (e.g., <i>Casuarina</i> and <i>Leucaena</i>).[FA]
		Elimination of black rats			> Complete eradication	> Based on the completion status of elimination in the Chichijima Island Group, initiate elimination.[MOE]
Imotojima	1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group 2. Habitat conservation for endemic birds	Elimination of <i>Leucaena</i> and other alien plants	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Implement research on the distribution status of alien species (e.g., <i>Casuarina</i> and <i>Leucaena</i>).[FA]
		Elimination of black rats			> Complete eradication	> Based on the completion status of elimination in the Chichijima Island Group, initiate elimination.[MOE]
Meijima	1. Conservation of sclerophyllous scrub typical of the Hahajima Island Group	Elimination of <i>Leucaena</i> and other alien plants	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Implement research on the distribution status of alien species (e.g., <i>Casuarina</i> and <i>Leucaena</i>).[FA]
		Elimination of black rats			> Complete eradication	> Based on the completion status of elimination in the Chichijima Island Group, initiate elimination.[MOE]
Hirajima	1. Ecosystem management considering endemic species	Elimination of <i>Bischofia</i>	> Completion of eradication	> Elimination being completed and eradication achieved; approximately 20 individual plants were removed. [MOE]	-	-
		Elimination of <i>Casuarina</i> and other alien plants	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Implement research on the distribution status of alien species (e.g., <i>Casuarina</i> and <i>Leucaena</i>).[FA]
		Elimination of black rats and other alien animals			> Complete eradication	> Based on the completion status of elimination in the Chichijima Island Group, initiate elimination.[MOE]

* 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.

: Almost complete at present
 : Planned to be completed by the end of FY 2012

(3) Mukojima Island Group and Other Islands

Island	Activity	Action Item	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)
				Description		Description
Mukojima	1. Ecosystem management of Ardisia sieboldii forest and other habitats	Elimination of Leucaena	>Continue elimination	> Implementation of elimination on Leucaena and alien bamboo and dwarf bamboo species to conserve the remaining forest on Mukojima.[TMG]	> Complete eradication	> Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest[TMG]
		Elimination of alien bamboo and dwarf bamboo species	>Continue elimination	> Implementation of elimination on Leucaena and alien bamboo and dwarf bamboo species to conserve the remaining forest on Mukojima.[TMG]	> Complete eradication	> Continue the activities listed on the left and implement adaptive management, aiming to conserve the remaining forest[TMG]
	2. Habitat conservation for endemic insects	Elimination of <i>Ficus microcarpa</i>	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Initiate area exclusion	> With cooperation among management authorities, initiate elimination strategically where necessary.[MOE, FA, TMG, Ogasawara Village]
		Elimination of black rats	> Initiating elimination	> Implementation of preliminary experimental elimination on Mukojima.[MOE]	> Complete eradication	> Complete the eradication on Mukojima.[MOE]
	3. Conservation and creation of breeding grounds for three albatross species	Creation of new albatross breeding ground	> Continuation of activities	> Transferring and releasing young albatrosses from the breeding ground on the island of Torishima in the Izu Island Group to Mukojima during the breeding season and implementing artificial rearing until the birds leave the nest.[MOE]	> Continue	> Continue with the activities listed on the left.[MOE]
		Elimination of <i>Lantana camara</i> var. <i>aculeata</i>	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Estimate the distribution status of alien woody plants using aerial photographs.[FA] > With cooperation among agencies, strategically initiate elimination where necessary.[MOE, FA, TMG, Ogasawara Village]
Kitanoshima	1. Conservation of seabird breeding grounds 2. Ecosystem management considering endemic species	Elimination of alien plants and other related measures	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Estimate the distribution status of alien woody plants using aerial photographs.[FA]
Nakodajima	1. Conservation of seabird breeding grounds 2. Ecosystem management considering endemic species	Elimination of Leucaena	>Continue elimination	> On Nakodajima, in addition to measures to prevent soil erosion, the elimination of alien species such as Leucaena being implemented.[TMG]	> Complete eradication	> Continue the activities listed on the left and implement adaptive management to prevent soil erosion and conserve the remaining forest. [TMG]
		Elimination of alien bamboo and dwarf bamboo species	>Continue elimination	> On Nakodajima, as well as measures to prevent soil erosion, elimination of alien bamboo and dwarf bamboo species being implemented.[TMG]	> Complete eradication	> Continue the activities listed on the left and implement adaptive management to prevent soil erosion and conserve the remaining forest. [TMG]
		Elimination of black rats			> Complete eradication	> Initiate elimination, considering the completion status of elimination efforts in the Chichijima Island Group.[MOE]
Yomejima	1. Conservation of seabird breeding grounds 2. Ecosystem management considering endemic species	Elimination of alien bamboo and dwarf bamboo species	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Initiate elimination	> Estimate the distribution status of alien woody plants using aerial photographs.[FA] > Conclude maintenance arrangements with NPOs and other groups and promote the elimination of alien bamboo and dwarf bamboo species starting in FY 2010.[NPO, FA]
		Elimination of black rats			> Complete eradication	> Initiate elimination considering the completion status of elimination in the Chichijima Island Group.[MOE]
Nishinoshima	1. Determine the existing condition	Implementation of a survey to determine the existing condition	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	> Determine the existing condition	> Monitor the introduction status of alien species based on the existing condition.[FA]
Kita-iwoto	1. Determine the existing condition	Implementation of a survey to determine the existing condition	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	(To be addressed on medium- and long-term bases)	
	2. Conservation of seabird breeding grounds	Elimination of rats			(To be addressed on medium- and long-term bases)	
Minami-iwoto	1. Determine the existing condition	Implementation of a survey to determine the existing condition	> Initiating a survey to determine the existing condition	> Carrying out aerial photography.[FA]	(To be addressed on medium- and long-term bases)	

* 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.

: Almost complete at present

: Planned to be completed by the end of FY 2012

Schedule 2. Summary Table of Actions by Alien Species

Bottom row: As of three years after the nomination (end of FY 2012)																																	
Name of alien species	Activity	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)	Time period	Stages of the activities				Progress of the measures on each island																						
			Description		Description		Research	Verification	Experiment	Project Development	Chichijima Is. Group				Hahajima Is. Group				Mukojima Is. Group				Others										
											Chichijima	Anijima	Otojima	Nishijima	Higashijima	Minamijima	Hahajima	Hirajima	Mukojima	Anejima	Imotojima	Meijima	Mukojima	Kitanoshima	Nakodajima	Yomejima	Nishinoshima	Kita-iwoto	Minami-iwoto				
Feral goat	>The ultimate goal is eradication of feral goats on each island. >Island-wide eradication will be conducted, prioritizing Anijima, followed by Ototojima. >For the time being, on Chichijima, endemic species and threatened species will be conserved by erecting fences to prevent goat invasion. Once eradication measures are completed on Anijima and Ototojima, island-wide eradication will be conducted on Chichijima in coordination with other projects related to agriculture.	>Anijima: Completion of eradication >Ototojima: Continuation of elimination >Chichijima: Initiating area exclusions >Chichijima: Initiating strategic measures with cooperation among various agencies	>Completion of eradication on Anijima. 【TMG】 >Conducting elimination aimed at eradicating feral goats on Ototojima. 【TMG】 >Setting up and partially complete erection of fences to prevent feral goat and cat invasions in the Higashidaira area of Chichijima, targeting completion in 2010. Achieving exclusion within the fenced areas. 【MOE】 >Implementation of elimination work as a measure against agricultural damage on Chichijima. 【Ogasawara Village】 >Carrying out research on inhabitation status, and initiating studies of effective eradication procedures. 【MOE, FA, TMG, Ogasawara Village】	>Ototojima: Complete eradication >Chichijima: Complete area exclusion >Chichijima: Initiate and continue elimination	>On Ototojima, continue with the activities listed on the left. 【TMG】 >In the Higashidaira area of Chichijima, complete feral goat elimination within fenced areas. 【MOE】 >Continue with the activities listed on the left. 【Ogasawara Village】 >From FY 2009, initiate measures strategically with the cooperation of each agency. (Whole region) 【MOE, FA, TMG, Ogasawara Village】	~ End of FY 2006					◆	●	×	○	○	○	-	○	-	-	-	-	○	-	○	○	-	-	-				
						~ End of FY 2009										◇	○	●	○	○	○	-	○	-	-	-	-	○	-	○	○	-	-
						~ End of FY 2012											◇	○	○	○	○	○	-	○	-	-	-	-	○	-	○	○	-
Feral cat	>As an ultimate goal, eradication will be achieved on each island. >Fences will be set up to prevent feral cat invasion and protect endemic and threatened species. >Awareness raising will be promoted regarding the keeping of domestic cats and measures to control feral cats. >On Anijima and Ototojima, feral cat eradication will be conducted in parallel with black rat eradication measures. >On Chichijima and Hahajima, obtaining agreement on issues including adequate measures regarding domestic cats will be promoted. Once public agreement is obtained, future measures for feral cat exclusion and black rat elimination will be implemented.	>Anijima: Completion of exclusion >Ototojima: Initiating exclusion >Chichijima: Initiating area exclusion >Hahajima: Completion and expansion of area exclusion >Chichijima and Hahajima: Raising awareness of proper pet care	>Implementation of exclusion work on Anijima by FY 2009, based on the survey on feral cat inhabitation status. 【MOE】 >Implementation of feral cat exclusion prior to black rat measures on Ototojima from FY 2009. 【MOE】 >Erecting fences to prevent feral goat and cat invasions in the Higashidaira area of Chichijima, targeting completion in 2010. Removing (exclude) individuals within and outside the fences. 【MOE】 >Implementation of emergency captures of feral cats in cooperation with the Ogasawara Cat Liaison Committee. (Targeting the entire Chichijima Is.) 【FA】 >Considering to set up a large-scale exclusion zone at Minamizaki (an exclusion area has already been established at the point of Minamizaki and exclusion has been achieved). 【MOE, Ogasawara Cat Liaison Committee】 >Raising awareness of proper domestic cat keeping on Chichijima and Hahajima. 【Ogasawara Cat Liaison Committee】	>Ototojima: Complete exclusion >Chichijima: Complete area exclusion >Chichijima: Continue exclusion >Chichijima and Hahajima: Enforce the ordinance and enhance management	>On Ototojima, complete exclusion by FY 2010. 【MOE】 >On Chichijima, complete exclusion within fenced areas in Higashidaira. In addition, implement feral cat exclusion in the important southern region of the island and decrease the inhabitation density on the island. 【MOE】 >Based on verification of fence and capturing effectiveness in Higashidaira, discuss the exclusion measures on the island. 【MOE, FA, TMG, Ogasawara Village】 >Conduct measures to manage domestic and feral cats (e.g., microchip implantation, revision of the cat ordinance) 【Ogasawara Village, Ogasawara Cat Liaison Committee, Tokyo Veterinary Medical Association, NPO】	~ End of FY 2006					×	×	×	-	-	-	◇	-	-	-	-	-	-	-	-	-	-	-	-				
						~ End of FY 2009																											
						~ End of FY 2012																											
Feral pig	>To eradicate feral pigs, elimination schemes will be initiated after completion of bullfrog elimination. >Because feral pigs may become more difficult to capture if they become warier of humans, the exclusion work will be carried out intensively over a short period. >The feral pig measures will be given priority over feral goat measures (to avoid exclusion work becoming more difficult due to vegetation recovery).	>Ototojima: Completion of eradication	>Completion of eradication. 【MOE】 >Implementation of measures to allow for recovery of native vegetation, land snail fauna, and insect fauna. Initiating threatened insect recovery projects. 【MOE】	-	-	~ End of FY 2006					○	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
						~ End of FY 2009																											
						~ End of FY 2012																											
Black rat	>As an ultimate goal, eradication will be achieved on each island. >Technical methods for eradication will be discussed and established, based on results from Nishijima and cases overseas. >On important peripheral islands for conservation (Anijima, Ototojima), elimination work will be conducted with the goal of eradication. >On Chichijima and Hahajima, area exclusions will implemented using fences to prevent invasion within important areas for conservation.	>Higashijima: Completion of eradication work >Mukojima, Nishijima, Anijima and Ototojima: Initiating elimination	>Implementation of preliminary experimental elimination areas on Mukojima and Higashijima. 【MOE】 Rat poison being set out as an elimination effort. 【FFPRI】 >Initiating elimination on Anijima and Ototojima in FY 2009, based on the status of the elimination effort on Mukojima. 【MOE】	>Mukojima, Nishijima, Anijima and Ototojima: Complete eradication >Other peripheral islands: Complete eradication	>On Mukojima, Nishijima, Anijima and Ototojima, complete the eradication. 【MOE】 >Discuss measures for peripheral islands of the Chichijima Island Group, such as Minamijima, after eradication is completed on Anijima and Ototojima. For other islands, initiate elimination, based on the completion status in the Chichijima Island Group. 【MOE】	~ End of FY 2006					×	×	×	●	×	×	×	×	×	×	×	×	×	△	×	×	-	×	-				
						~ End of FY 2009																											
						~ End of FY 2012																											
Green anole	>As an ultimate goal, eradication will be achieved on each island. >Dispersion of green anoles to islands other than Chichijima and Hahajima will be prevented. >Prevention of dispersion to Anijima, Ototojima, and Minamijima will be particularly enforced. >On Chichijima and Hahajima, areas important for conservation will be designated nature restoration areas, and anole invasion control, anole exclusion, and conservation measures for arthropods targeted for conservation will be carried out .	>Establishing elimination methods >Chichijima: Continue area exclusion (prevent dispersion) >Hahajima: Completion of area exclusion	>Implementation of elimination, monitoring and awareness raising within the area surrounding Futami Port on Chichijima to prevent the dispersion to peripheral islands . 【MOE】 >Decreasing green anole inhabitation to an extremely low density and achieving a condition in which no damaging impacts are observed within the nature restoration areas in Shin-Yuhigaoka and Minamizaki on Hahajima by FY 2009. In addition, considered the establishment of new nature restoration areas. 【MOE】 >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. 【MOE, Ogasawara-Shijimi Society】	>Chichijima: Continue area exclusion (to prevent the dispersion of green anoles) >Hahajima: Set up a new exclusion areas >Hahajima: Implement point exclusions at the breeding sites of threatened insects	>On Chichijima, continue with the activities listed on the left. 【MOE】 >On Hahajima, establish new nature restoration areas. (Areas not yet decided) 【MOE】 >Within Celastrina ogasawaraensis breeding sites on Hahajima, continue point exclusion during the breeding season. (Areas not yet decided) 【MOE】	~ End of FY 2006					◆	-	-	-	-	◆	-	-	-	-	-	-	-	-	-	-	-	-					
						~ End of FY 2009																											
						~ End of FY 2012	Discuss																										
Cane toad	>As the ultimate goal, eradication will be achieved on every island. >Dispersion of cane toad to other islands other than Chichijima and Hahajima will be prevented. >To prevent breeding, cane toad invasion of lentic environments will be prevented using exclusion fences. >On Chichijima and Hahajima, areas important for conservation will be designated nature restoration areas, where cane toad populations will be diminished or completely excluded.	>Chichijima: Continuation of efforts to prevent dispersion >Hahajima: Completion of area exclusion	>Implementation of elimination, monitoring, and awareness-raising within the area surrounding Futami Port on Chichijima to prevent dispersion to peripheral islands. 【MOE】 >Implementation of capture and exclusion measures within the nature restoration area established in the Shin-Yuhigaoka and Minamizaki areas of Hahajima. In addition, considering the designation of new nature restoration areas. 【MOE】 (The above measures are implemented together with those against the green anole)	>Chichijima: Continue area exclusion (prevent dispersion) >Hahajima: Complete area exclusion	>On Chichijima, continue with the activities listed on the left. 【MOE】 >On Hahajima, target almost complete area exclusion (Minamizaki Hasuike Pond area). 【MOE】	~ End of FY 2006					◆	-	-	-	-	◆	-	-	-	-	-	-	-	-	-	-	-	-					
						~ End of FY 2009																											
						~ End of FY 2012																											
Bullfrog	>Continue elimination work with the goal of eradication (Past actions have already reduced the population size to near eradication)	>Ototojima: Completion of eradication	>Completion of eradication. 【MOE】	-	-	~ End of FY 2006					-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
						~ End of FY 2009																											
						~ End of FY 2012																											
Predatory flatworm	>To prevent the dispersion of predatory flatworm from Chichijima to Hahajima and peripheral islands, measures for transporting soil (ideally, involving prohibition of transport) and goods (e.g., freezing treatment), and practices such as washing shoe soles prior to boarding transport ships will be promoted. >For areas of conservation importance within the uninvaded zone of Chichijima, technical methodologies will be examined and established with the goal of area defense.	>Chichijima and Hahajima: Continuation of raising awareness and working to prevent dispersion >Establishing area defense measures >Chichijima: Initiating area defense measures	>Implementation of awareness-raising activities led by TMG rangers and other groups to prevent dispersion to Hahajima and peripheral islands and a measure of washing shoe soles when disembarking from the transport ship Hahajima Maru. 【TMG】 >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】 >Conducting trials of specific defense measures in important areas within the southern region, the un-invaded region of Chichijima, and examining their effectiveness. 【MOE】	>Chichijima and Hahajima: Continue work to prevent dispersion and raise awareness >Chichijima: Continue area defense	>On Chichijima and Hahajima, continue with the activities listed on the left. 【TMG】 >On Chichijima, establish sanctuaries of land snail habitats (e.g., in Tatsumizaki, Toriyama, Yoakedaira), and implement measures for area prevention. 【MOE】	~ End of FY 2006					×	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
						~ End of FY 2009																											
						~ 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.

- No distribution of the alien species
- Eradication nearly complete (Not distributed) → Continue monitoring
- ◇ Alien exclusion nearly complete (Not distributed in some areas) → Continue monitoring
- Measures to achieve eradication already initiated
- ◇ Measures to achieve alien exclusion already initiated
- × Serious damage to endemic species
- △ Damage to endemic species unknown (lack of surveys on existing conditions, alien species declining, etc.)

Schedule 2. Summary Table of Actions by Alien Species

Schedule 2. Summary Table of Actions by Alien Species						Top row: As of the time when the tentative list was submitted (end of FY 2006) Middle row: As of the nomination time (end of FY 2009) Bottom row: As of three years after the nomination (end of FY 2012)																										
Name of alien species	Activity	Envisaged achievement*	(by the end of FY 2009)	Short-term target after nomination	(by the end of FY 2012)	Time period	Stages of the activities				Progress of the measures on each island																					
			Description		Description		Research	Verification	Experiment	Project Development	Chichijima Is. Group				Hahajima Is. Group				Mukojima Is. Group		Others											
											Chichijima	Anijima	Otojima	Nishijima	Higashijima	Minamijima	Hahajima	Hirajima	Mukohijima	Anejima	Imotojima	Meijima	Mukojima	Kitanoshima	Nakodojima	Yomejima	Nishinoshima	Kita-Iwoto	Minami-Iwoto			
Bischofia	>As the ultimate goal, achieve eradication on each island. >Implement urgent and focused measures on Hahajima. >Give priority to elimination work in important regions of highly natural conditions (e.g., subtropical rainforest) and where measures are expected to be highly effective, such as forest areas with relatively little invasion by Bischofia and areas surrounding invaded points.	>Otojima and Hirajima: Completion of eradication >Hahajima: Creation of medium- and long-term plans >Hahajima: Initiating area exclusion >Chichijima: Continuation of area exclusion	>Completion of eradication at the early stage of invasion on Otojima and Hirajima. [MOE] >Implementation of elimination with the target of area exclusion in the Sekimon basin of Hahajima, according to the established medium- and long-term plans [e.g., "Removal plan of the alien plant (Bischofia)"]. [FA] >Implementation of monitoring of remaining individuals at Higashidai on Hahajima Island. [MOE] >Implementation of elimination at Nishidai and Koromodate targeting area exclusion in the area north of the line between Yashihama Beach and Nagahama Beach on Hahajima. In addition, partial implementation at Nishiura area. [MOE] >Promoting area exclusion in the Higashidaira region of Chichijima. [NGOs and others]	>Hahajima: Continue elimination >Chichijima: Continue area exclusion	>On Hahajima, continue the activities listed on the left based on the medium- and long-term plans. [FA] In addition, continue with the activities listed on the left and eliminate Bischofia from private land in Nishidai and Koromodate, initiate exclusion in the Koshinzuka region. [MOE] >The activities on Chichijima listed on the left are planned to be completed in FY 2009. Initiate measures to maintain exclusion (e.g., against germination) thereafter. (Higashidaira wood-pigeon sanctuary) [NPO, FA, etc.]	~ End of FY 2006					x	-	x	-	-	-	◆	x	-	-	-	-	-	-	-	-	-	-	-	-		
						~ End of FY 2009							◆	-	●	-	-	-	◇	●	-	-	-	-	-	-	-	-	-	-	-	-
						~ End of FY 2012							◇	-	●	-	-	-	◇	●	-	-	-	-	-	-	-	-	-	-	-	-
Casuarina (and Pinus lutchuensis)	>As an ultimate goal, achieve eradication on each island. >For elimination on peripheral islands, prioritize work on gentle slopes over areas that are difficult to access such as cliffs. >For elimination on abraded cliffs and steep slopes, consider the adequacy of measures and coordinate with fishery parties.	>Anijima: Completion of and expansion of area exclusion >Chichijima: Initiating area exclusion >Hahajima: Initiating area exclusion >All islands: Initiating a survey to determine the existing condition.	>Implementation of monitoring following experimental elimination on the plateau area of Anijima, and initiating new elimination experiments. [MOE] >Implementation of monitoring surveys (e.g., of birds, insects, land snails, plants) before starting elimination work; implementation of elimination with the goal of area exclusion in the central region of Anijima. [FA] >Implementation of elimination of Casuarina and other alien invasive plants in the Higashidaira region of Chichijima, targeting area exclusion. Also concluding a maintenance agreement with NPOs and other relevant parties to promote elimination of Casuarina and Pinus lutchuensis in Yoakedaira. Conducting monitoring surveys (e.g., of birds, insects, land snails, plants) before beginning elimination work in Higashidaira and Yoakedaira. [FA] >Implementation of elimination in the Nagasaki region of Chichijima Island. [NPO] > At Minamizaki of Hahajima Island, conducting monitoring of the site where elimination was conducted in FY 2007–2008. [FA] >On Mukohjima, implementation of surveys and other studies on the inhabitation status of Carduelis sinica kittitzi and considering the elimination of alien species. Implementation of monitoring surveys before the elimination. [FA] >Carrying out aerial photography on each island. [FA]	>Anijima: Complete and expand area exclusion >Chichijima: Continue and expand area exclusion >Hahajima: Continue monitoring after the elimination >Mukohjima: Initiate area exclusion >Nishijima: Initiate elimination >Otojima: Initiate area exclusion >All islands: Initiate surveys to determine the existing condition	>On Anijima, complete area exclusion (within the gently sloped land on the plateau). 【FA】 >On Chichijima, continue conducting the activities listed on the left. 【FA and others】 >At Minamizaki on Hahajima, continue monitoring the invasion status of alien species in eliminated areas. [FA] > On Mukohjima, determine the distribution status using aerial photographs; based on the survey results, plan for area exclusions to be initiated from FY 2011. [FA] >On Nishijima, conclude the maintenance arrangement with NPOs and other groups and promote elimination from FY 2010. [NPO, FA] > With cooperation among agencies, initiate strategic elimination where necessary. [MOE, FA, TMG, Ogawasara Village] >On each island, determine the distribution status of alien woody plants using aerial photographs. 【FA】	~ End of FY 2006					◇	◆	x	x	x	x	x	x	x	x	-	-	-	-	-	-	-	-	-	-		
						~ End of FY 2009							◇	◇	x	x	x	x	◇	x	◆	x	-	-	-	-	-	-	-	-	-	-
						~ End of FY 2012							◇	◇	◆	◆	Survey	Survey	◇	Survey	◆	Survey	Survey	Survey	Survey	Survey	Survey	Survey	Survey	Survey	Survey	Survey
Leucaena	>As an ultimate goal, achieve eradication on each island. >In areas where urgent treatment is expected to be highly effective, such as peripheral islands in the early stage of invasion, determine the existing condition and implement measures.	>Establishing elimination methods >Mukojima: Continuation of elimination >Nakodojima: Continuation of elimination >Hahajima: Initiating elimination >All islands: Initiating surveys to determine existing conditions	>Implementation of experiments to establish effective technical elimination methods using chemicals on Anijima. [MOE] >Implementation of exclusion to conserve the remaining forest on Mukojima. [TMG] >Implementation of Leucaena exclusion on Nakodojima, as well as taking measures to prevent soil erosion. [TMG] >Elimination of Leucaena that re-invaded the site where elimination was carried out in FY 2007 at Minamizaki of Hahajima. [FA] >Carrying out aerial photography on each island. [FA]	>Anijima: Complete area exclusion >Mukojima and Nakodojima: Complete eradication >Hahajima: Continue monitoring >Nishijima: Initiate elimination >Otojima: Initiate area exclusion >All islands: Initiate surveys to determine existing conditions	>On Anijima, initiate elimination in FY 2010, with the aim of complete area exclusion by FY 2012. (on gently sloped land of the plateau) [FA] >On Mukojima and Nakodojima, continue with the activities listed on the left and implement adaptive management measures to prevent soil erosion and conserve the remaining forest. [TMG] >On Hahajima, continue monitoring the invasion status of alien species into Casuarina-eliminated areas. (Minamizaki region) [FA] >On Nishijima, conclude a maintenance arrangement with NPOs and other groups and promote elimination from FY 2010. [NPO, FA] >On Otojima, with cooperation among agencies, initiate elimination strategically where necessary. [MOE, FA, TMG, Ogawasara Village] >On each island, determine the distribution status of alien woody plants using aerial photographs. [FA]	~ End of FY 2006					x	x	x	x	x	x	x	x	x	x	x	◆	-	◆	-	-	-	-	-			
						~ End of FY 2009							x	x	x	x	x	◆	x	x	x	x	x	◆	-	◆	-	-	-	-	-	
						~ End of FY 2012							Survey	◇	◆	◆	Survey	Survey	◇	Survey	Survey	Survey	Survey	Survey	Survey	●	Survey	●	Survey	-	-	-
Bamboo and dwarf bamboo species, Lantana camara var. aculeata , Ficus microcarpa , Cenchrus echinatus , etc. (Other alien plants)	>As the ultimate goal, achieve eradication on each island. >For areas in which urgent treatments are expected to be highly effective, such as peripheral islands in the early stage of invasion, determine the condition and implement appropriate measures.	>Establishing elimination methods for Lantana camara var. aculeata >Minamijima: Continuation of elimination of Cenchrus echinatus etc. >Mukojima: Continuation of elimination of bamboo and dwarf bamboo species >Nakodojima: Continuation of elimination of bamboo and dwarf bamboo species >All islands: Initiating surveys to determine the existing conditions	>Implementation of experiments to establish effective technical methodologies for eliminating Lantana camara var. aculeata using chemicals on Anijima. [MOE] >Implementation of elimination of highly invasive alien plants on Minamijima. [TMG, FA, Ogasawara Village, NPO] >Implementation of elimination of alien bamboo and dwarf bamboo species on Mukojima to conserve the remaining forest. [TMG] >Implementation of elimination of alien species such as bamboo and dwarf bamboo species on Nakodojima, in addition to taking measures to prevent soil erosion. [TMG] >Carrying out aerial photography on each island. [FA]	>Anijima: Complete area exclusion of Lantana camara var. aculeata >Minamijima: Continue alien plant elimination >Mukojima and Nakodojima: Complete eradication of bamboo and dwarf bamboo species >Yomejima: Initiate elimination of bamboo and dwarf bamboo species and other alien plants >All islands: Initiate surveys to determine the existing conditions	>Implement small-scale elimination experiments of Lantana camara var. aculeata within the gently sloped land on the plateau on Anijima, together with the elimination of Casuarina and other alien plants, from FY 2010. Implement monitoring following the elimination. 【FA and others】 >On Minamijima, continue with the activities listed on the left. 【TMG】 >On Mukojima and Nakodojima, continue with the activities listed on the left and to prevent soil erosion and implement adaptive management to conserve the remaining forest and to prevent soil erosion. 【TMG】 >On Yomejima, conclude a maintenance arrangement with NPOs and other parties and promote the elimination of alien bamboo and dwarf bamboo species from FY 2010. 【NPO, FA】 >On each island, determine the distribution status of alien woody plants using aerial photographs. 【FA】	~ End of FY 2006					x	x				◆	x					◆		◆	x							
						~ End of FY 2009							x	x				◆	x					◆		◆	x					
						~ End of FY 2012							◆	◇	Survey	Survey	Survey	Survey	◆	◆	Survey	Survey	Survey	Survey	Survey	●	Survey	●	◆	Survey	Survey	Survey

* 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.

- No distribution of the alien species
- Eradication nearly complete (Not distributed) → Continue monitoring
- ◇ Area exclusion nearly complete (Not distributed in some areas) → Continue monitoring
- Measures to achieve eradication already initiated
- ◇ Measures to achieve area exclusion already initiated
- × Serious damage to endemic species
- △ Damage to endemic species unknown (lack of surveys on existing conditions, alien species declining, etc.)