Phase 2 Small Asian Mongoose Control Plan for Amami-Oshima Island (FY 2013 to 2022)[1]

April 1, 2013

Naha Nature Conservation Office, Ministry of the Environment

1. Subject of control

Small Asian Mongoose (*Herpestes javanicus*)

*The subject will change to the small Indian mongoose (*Herpestes auropunctatus*) following the revision of the relevant Cabinet Ordinance; hereinafter referred to as "mongoose."

2. Controlled area

Amami-Oshima Island, Kagoshima Prefecture

Figure1. Mongoose control area map (omitted)

3. Period of control

From April 1, 2013, to March 31, 2023

4. Control objective

The plan objective is to control mongooses and recover status of Amami rabbits (*Pentalagus furnessi*), Amami woodcocks (*Scolopax mira*), and other native species to Amami-Oshima Island; to further reduce mongoose density and promote local elimination; and ultimately, to achieve complete elimination of mongooses from Amami-Oshima Island.

5. Control system

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[1] This plan was established by the Ministry of the Environment in accordance with the notice "Regarding the control of small Indian mongooses" from the Ministry of Agriculture, Forestry and Fisheries and the Ministry of the Environment (Notice No.10 of 2005 of the Ministry of Agriculture, Forestry and Fisheries and the Ministry of the Environment) issued under the Invasive Alien Species Act (Article 11, paragraph 2).

Trapping and monitoring will be performed systematically by the organized structure known as Amami mongoose busters (mongoose control specialists engaged since 2005; "mongoose busters" hereinafter) and other specialists.

In addition, dogs to detect mongooses ("detection dogs" hereinafter) will be retained and trained in cooperation with handlers (detection dog trainers) chosen from among the specialists engaged.

6. Subsidiary objectives and action items

To achieve the plan objective, we set subsidiary objectives and action items.

6-1 Objective for completely eliminating mongooses

Objective 1

Further reduce mongoose density across the entire area of their distribution; achieve local elimination in each work area, starting from the northernmost area; and completely eliminate mongooses from Amami-Oshima Island by FY 2022.

Action to achieve Objective 1

(1) Control policy

Action 1: The following policies will be implemented to achieve complete elimination of mongooses from Amami-Oshima Island:

(i) Divide Amami-Oshima Island into areas of approximately 60 km^2, each based on geographical features and other characteristics.

(ii) Define the northernmost area of the mongoose distribution range as an "intensively controlled area," where intensive capture work will be undertaken to achieve elimination.

(iii) When the possibility of surviving mongooses is reduced through work under (ii), the intensively controlled area will be reclassified as a "monitored area," which will be further combed for surviving mongooses.

(iv) Upon reclassification as a "monitored area," the area to the south will then be defined as a new "intensively controlled area."

(v) Areas yet to be set as "intensively controlled areas" will be classified as "low density promotion areas," where capture work will be undertaken to further reduce mongoose density.

(vi) Through these steps, we will eliminate mongooses from a growing number of areas, from the northernmost to the southernmost, and ultimately achieve complete elimination of mongooses from the whole of Amami-Oshima Island.

Figure 2. Work areas (map omitted)

Area name	Size (km^2)
Akina, Yanyu	35.1
Honcha Pass	51.4
Toguchi, Hatohama	50.2
Kinsakubaru	41.4
Wase	41.3
Ongachi, Santaro	70.5
Naon	76.7
Mt. Yuwandake	46.6
Shinokawa	45.1
Uken Peninsula	51.3
Yanma	64.9
Koniya	73.1
Kasari	62.6

(2) Control methods

1) Capture and other measures

(i) Trapping

- Set traps at lines and places where deemed effective in view of the mongoose distribution, alongside other measures.

- The types of traps used will mainly be basket traps to catch mongooses alive and pipe traps to capture and kill them (including extended types). Appropriate types will be deployed in light of the status of native species, including Amami spiny rats (*Tokudaia osimensis*), Ryukyu long-haired rat (*Diplothrix legata*), and other native species. Any new and effective capture methods developed will be introduced.

(ii) Monitoring

- To collect information on mongoose inhabitation, monitoring will be performed with hair traps, trail cameras, detection dogs, and other methods.

- Detection dogs will search for feces, odors, and other traces of mongooses. If they find mongooses, they will be prompted to chase when appropriate in view of site conditions and other factors to allow handlers to catch mongooses.

2) Details of control measures in each work area

Pursuant to the policy set forth in (1) above, the following control measures will be implemented in each work area (Attachment).

(i) Low density promotion area

The objective here is to "further reduce mongoose density in the work area." This goal will be pursued primarily with permanent traps. Hair traps and trail cameras will be systematically installed to gather information on mongoose inhabitation.

(ii) Intensively controlled area

The objective here is to "eliminate mongooses from the work area." We will strengthen capture efforts relative to low density promotion areas, including increasing the number of permanent trap lines and monitoring frequency. At places where mongooses are likely to be surviving, we will carry out intensive capture work, including pinpoint captures (carefully setting traps at certain points whose environmental conditions deem favorable to mongooses, around locations where surviving mongooses have been reported) and use of detection dogs for search and capture. More hair traps and trail cameras will be installed to collect information on mongooses surviving at low density.

(iii) Monitored area

The objective here is to "confirm the elimination of mongooses in the work area." While maintaining a certain level of capture efforts using permanent traps, we will place a primary emphasis on monitoring to confirm the elimination of mongooses through area searches with detection dogs, as well as with hair traps and sensors.

6-2 Objective for effective control

Objective 2

Promote the development and enhancement of capture and other techniques

Action to achieve Objective 2

Action 2: In cooperation with universities, research institutes, business enterprises, and other entities, we will promote improvements in capture techniques, including trap improvements, studies of effective trap baits, and efforts to establish capture methods for detection dogs and handlers, as well as improvements in and studies of ways to enhance the accuracy of monitoring with hair traps, trail cameras, detection dogs, and other methods.

Objective 3

Evaluate native species recovery and examine the measures needed.

Action to achieve Objective 3

Action 3-1: We will evaluate native species recovery at regular intervals, assembling and organizing native species monitoring by mongoose busters, by-catch results, and photographs from trail cameras, findings under protection and recovery programs, and academic research.

Action 3-2: This evaluation will take place at the review committee set forth below. Based on the evaluation results, we will examine the measures needed to further promote native species recovery (e.g., protection and recovery programs).

Objective 4

Promote public awareness and secure greater public understanding and cooperation.

Action to achieve Objective 4

Action 4: In cooperation with the organizations concerned, we will promote public awareness on the need for, progress on, and the details and results of control measures through the websites, brochures, and other media, thereby promoting understanding and cooperation among the general public, including local residents.

Objective 5

Evaluate the status of control measures at regular intervals and make necessary improvements.

Action to achieve Objective 5

Action 5-1: We will establish a review committee composed of specialists to perform periodic scientific evaluations of control measures under this plan and elimination achievements in each work area. We will then make necessary improvements in control systems and methods.

Action 5-2: To completely eliminate mongooses, we must employ adaptive management measures based on their status and local conditions; therefore, this program will be reviewed whenever necessary based on the committee's discussions.

Area name	Size (km^2)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Kasari	62.6										
Akina, Yanyu	35.1										
Honcha Pass	51.4										
Toguchi, Hatohama	50.2										
Kinsakubaru	41.4										
Wase	41.3										
Ongachi, Santaro	70.5	★									
Naon	76.7										
Mt. Yuwandake	46.6	★									
Shinokawa	45.4	★	★	★	★						
Uken Peninsula	51.3	★	★	★	★						
Yanma	64.9	★	★	★	★						
Koniya	73.1	★	★	★	★						

■ (blue)	monitored area (1st year)
■ (light blue)	monitored area (after 2nd year)
■ (yellow)	intensively controlled area
■ (light gray)	low density promotion area
■ (dark gray)	low density promotion area (preparing for intensive control)
★	permanent traplines