

# **A 10-year Action Plan for the Amami Woodcock Protection and Recovery Program**

## **(2014 to 2024)**

December 2014

Naha Nature Conservation Office

Ministry of the Environment

### **I. Background**

#### **1. Scientific classification and ecology**

The Amami woodcock (*Scolopax mira*) is a wading bird in the family Scolopacidae that is distributed on some of the islands of the Nansei Islands. The species inhabits forests dominated by *Castanopsis sieboldii* and other species, but for reasons that include the deterioration of suitable habitat its population size and habitat are now limited. A decent-sized population is living and breeding on Amami-Oshima, Kakeroma, and Tokunoshima Islands. The species has also been observed on Kikai, Ukejima, Yoron and Okinawa Islands, but breeding has not been confirmed there. The total size of the population is estimated to be in the range of 3,500 to 15,000 individuals (BirdLife International, 2012).

#### **2. Legal position, etc.**

Act on Conservation of Endangered Species of Wild Fauna and Flora

- Designated as a National Endangered Species in 1993
- A plan for the species' Protection and Recovery Program was drawn up in 1999.

Wildlife Protection and Proper Hunting Act

- Part of the species' habitat was designated the Mt. Yuwandake National Wildlife Protection Area in 1965

Act on Protection of Cultural Properties

- Part of the species' habitat was designated the Kamiya–Yuwandake Natural Monument in 1968

Other

- Listed as Vulnerable (VU) on the IUCN Red List of Threatened Species (2012)

- Listed as Vulnerable (VU) on the 4th version of the Red List of Japan (2012)

### **3. Present results of the Protection and Recovery Program (Attachment; omitted)**

#### **(1) Understanding the species' status, monitoring, etc.**

Nighttime route censuses are conducted (from FY 2000 onwards) from a car during the breeding and rearing seasons on Amami-Oshima, Kakeroma, and Tokunoshima Islands (Attachment Figures 1 and 2; omitted attachment).

The species' behavior, home range, and so on are studied on Amami-Oshima Island through surveys that use bands to identify individuals, radio-tracking, trail cameras, and other methods (from FY 2001 onwards).

The relationship between forest physiognomy and environmental factors that make up suitable habitat for the species has been clarified. Analysis of the species' use of the environment during the breeding season has confirmed the use of a wide range of environments, from farm land to forests.

To determine the status of the species on Kakeroma and Tokunoshima Islands, monitoring surveys using trail cameras are being conducted on the two islands (on Kakeroma Island from FY 2013 onwards, and on Tokunoshima Island from FY 2012 onwards).

#### **(2) Habitat maintenance and improvement**

With the aim of maintaining and improving the environment suited for habitation and breeding of the species, discussions aimed at designating such areas as a protection area (National Park) were held on the basis of the species' status, expert opinion, and so on.

#### **(3) Captive breeding**

Information needed to rear the species has been accumulated through the care of sick or injured individuals.

#### **(4) Patrol, etc. of the habitat**

The areas including the species' habitats have been routinely monitored and information collected by local concerned parties, national and local public organizations, and others.

#### **(5) Promotion of education and awareness-raising activities**

Education and awareness-raising activities on the species' status, the need for protection, the current state of implementation of the Protection and Recovery Program, and so on have been promoted.

#### **(6) Consolidation of collaboration for effective promotion of the program**

Various entities have been collaboratively and effectively implementing the program in a wide range of situations through numerous surveys, research, and education and awareness-raising activities.

### **4. Points of concern in relation to protection of the species**

A workshop on the Protection and Recovery Program of the rare species in Amami was held with the participation of representatives from such organizations as universities, research institutes, administrative bodies, and NPOs on August 9 and 10, 2013. In this workshop, the Protection and Recovery Program that has been implemented since FY 2005 was reviewed and points of future concern in relation to protection of the species were identified. The identified points are summarized as follows:

**(1) Understanding the status of the species, monitoring, etc.**

Past monitoring results must be reassessed and the survey method needs to be revised for the future.

The factors causing the recent decline of the species have not been elucidated.

A target population size for the species has not been specified.

**(2) Habitat maintenance and improvement**

Important areas with suitable environmental conditions for the species are not assured of protection.

The negative impacts of human activities and alien species are not understood, and measures to eliminate or mitigate these impacts have not been taken.

**(3) Captive breeding**

The need for creating facilities that accept sick or injured individuals so as to collect pathological and other data, the need for conservation outside the species' habitat in rearing and exhibition facilities, and the need for behavioral observation, etc. have not been examined.

**(4) Patrol, etc. of the habitat**

Collaboration with relevant organizations, local residents, and others needs to be strengthened so that the habitat can be continuously monitored and information shared.

**(5) Promotion of education and awareness-raising activities**

Local residents' levels of awareness are low; this is an indication of a lack of education and awareness-raising activities.

Trends that support active and autonomous efforts by the local community need to be generated.

**(6) Consolidation of collaboration for effective promotion of the program**

The roles and responsibilities of relevant organizations are not specified.

Sharing of information on various survey results held by relevant organizations and collaboration with the local community are necessary.

Information on development plans needs to be shared with local governments and businesses.

**5. Background leading to creation of the Action Plan**

More than 10 years have passed since the launch of the Protection and Recovery Program. Through this program, results have been achieved in a wide range of areas. These include improved understanding of the status and biological characteristics of the species; understanding of environmental factors, such as small Indian mongooses, that may place pressure on the population; the implementation of roadkill-prevention measures; and the promotion of education and awareness-raising activities. One of the most important outcomes of the program has been the accumulation of knowledge on, for example, the status and biological characteristics of the species. Information on both of these factors is elemental to planning for species conservation and has been collected through the cooperation and collaboration of researchers and many others. Furthermore, on Amami-Oshima Island, as a result of the mongoose control program, the population size and distribution area of the species are in a recovery trend.

However, as summarized above in “4. Points of concern in relation to protection of the species,” to succeed in maintaining a stable population of the species some of these points of concern still require attention. Included in the National Biodiversity Strategy of Japan 2012–2020 is National Target C-2: “Increase the number of threatened species whose status on the Red List of Japan has been changed to a lower category of threat.” In addition, with the ultimate aim of having “Amami-Oshima, Tokunoshima, the northern part of Okinawa Island, and Iriomote Island” inscribed on the Natural World Heritage List, Japan decided to add this property to the Tentative World Heritage List at the end of January 2013 and submitted the documents required to the UNESCO World Heritage Centre in February. Amami-Oshima and Tokunoshima Islands are candidate sites as part of the nomination of this property for inscription on the Natural World Heritage List. The Amami woodcock provides indispensable proof of the Outstanding Universal Value of these sites. To be able to meet the target set in the National Biodiversity Strategy of Japan 2012–2020, as well as to have these sites inscribed on the Natural World Heritage List, and to ensure and strengthen their protection, the Protection and Recovery Program must be implemented in such a way that the intended results can be more effectively achieved.

In light of the above, the decision was made to draw up a 10-year plan (from 2014 to 2024) titled “A 10-year Action Plan for the Amami Woodcock Protection and Recovery Program” (hereinafter referred to as “the Action Plan”).

## **II. Objectives of the Action Plan**

The objectives of the Action Plan are elimination or mitigation of factors that cause species decline, including alien species, roadkills, and development; expansion of the distribution areas and population size of the species on Amami-Oshima and Tokunoshima Islands; and removal by the end of March 2024 from the Red List of Japan as a species for which there is fear of extinction (i.e. Threatened Species).

## **III. Action period**

December 1, 2014 to March 31, 2024

#### **IV. Details of the activities needed to achieve the Action Plan objectives, and their expected results and indicators**

##### **1. Understanding the species' status and monitoring, etc.**

Target 1: Along with continuation of the present monitoring survey, new survey methods will be established so that information on the species, including status, ecology, and genetics, will be more effectively collected and accumulated and then used to assess population size etc.

##### Activity 1

Activity 1: Understand the status and ecology of the species through continued implementation of the present monitoring survey and through the establishment and introduction of a more effective survey method.

Activity 1-1: Continue to monitor the status of the nesting grounds and the changes over the years in population distribution and size to accumulate information on the species' status and ecology.

From FY 2014 to 2023: Accumulate information on the species status through continued implementation of the monitoring survey.

Note: From FY 2017 onwards, conduct the survey by using the revised method (see Activity 1-2).

Activity 1-2: Reevaluate past monitoring results; study the improvements that can be made to the monitoring survey method in connection with the population size estimation method that is to be examined in Activity 1-4; and conduct more effective monitoring by taking the survey system and other factors into consideration.

From FY 2014 to 2016: Evaluate the monitoring results and revise the survey method.

Activity 1-3: Use tissues sampled from captured and other individuals to determine the genetic diversity and phylogenetic relationships of the species; assess the health of the population; set units of conservation based on phylogenetic relationships; determine the causes of death; and so on.

From FY 2014 to 2023: Establish a framework for tissue sampling, preservation, and genetic analysis.

Activity 1-4: Set a target population size for the species; examine and develop a more accurate and efficient population-size estimation method; and assess the population size of the species.

From FY 2014 to 2016: Set a target population size for the species and examine and develop a population-size estimation method.

From FY 2017 onwards: Assess the population size of the species by using the new population-size estimation method.

##### Result 1

Result 1-a: Reports and academic papers are published on the status, ecology, and genetics of the species.

Result 1-b: Survey methods are improved or newly introduced to determine the status of the species with greater accuracy; survey reports are produced by using these methods.

#### Effect 1

Effect 1: Accumulated knowledge on the status, ecology, genetics, etc. of the species is utilized in conservation measures.

Effects indicator 1: The type of conservation measures and the number of cases in which data and results based on Result 1 are used.

## **2. Habitat maintenance and improvement**

Target 2: Important areas with suitable environmental conditions for the species will be maintained, with adequate protection and management. The species' population will be increased, and the distribution area expanded, by the promotion of measures aimed at eliminating, mitigating, etc. the factors causing population reduction (e.g. the presence of alien species).

#### Activity 2

Activity 2-1: Designate habitat with conditions suitable for the species as National Park, and maintain the species' living environment through adequate protection and management of the wildlife protection area and National Park.

Activity 2-1-1: Designate, as far as possible, habitat with suitable conditions for the species as a National Park sSpecial Protection Zone or a Class I Special Zone; designate the rest of the species' habitat as National Park so that the species can be adequately protected and managed.

From FY 2014 onwards: Implement the work required for National Park designation.

Activity 2-1-2: Regulate development plans and activities that may have an impact on the species' living environment through proper implementation of the Natural Parks Act and other legislation.

From FY 2014 onwards: Properly enforce the Wildlife Protection, Control, and Hunting Management Act and the Natural Parks Act (after the designation as a National Park).

Activity 2-2: Eliminate, or implement mitigation measures against, alien species such as small Indian mongooses and feral cats so as to increase the species' population size and expand its area of distribution.

Activity 2-2-1: As scheduled in the Second Amami-Oshima Island Small Indian Mongoose Control Implementation Plan, completely eliminate small Indian mongooses by FY 2022.

From FY 2014 to 2022: Completely eliminate small Indian mongooses.

Activity 2-2-2: Draw up a policy for the capture and handling of feral cats in coordination with local governments, veterinary medical associations, and concerned bodies. Capture feral cats in accordance with this policy and reduce their population size.

FY2014: Discuss and decide on a feral cat capture and handling policy.

From FY 2015 onwards: Implement capture of feral cats in accordance with the policy.

## Result 2

Result 2-1-1: The National Park designation plan designates the habitat as National Park.

Results indicator 2-1-1: The percentage of the habitat designated as National Park.

Result 2-1-2: Development plans and activities that have negative impacts on the species' survival are regulated in accordance with the National Park designation plan.

Results indicator 2-1-2: The number of adequate prior adjustments, authorizations, and law enforcement cases processed in relation to development plans and activities that could have an impact on the species' survival, as determined by examination of the National Park designation plan.

Result 2-2-1: Small Indian mongooses are completely eliminated.

Results indicator 2-2-1: The population size, relative density, and distribution area of small Indian mongooses

Result 2-2-2: The policy to capture feral cats is decided on, and capture is implemented in accordance with the policy.

Results indicator 2-2-2: The policy to capture feral cats, the number of feral cats captured, and the capture effort.

## Effect 2

Effect 2-1-1: The size of the species' habitat and population within the confines of the area designated as National Park is maintained or increased.

Effects indicator 2-1-1: The size of the species' habitat, the population density, and the size of the population inside the National Park.

Effect 2-2-1: Complete elimination of small Indian mongooses results in an increase in the population density and population size of Amami woodcocks.

Effects indicator 2-2-1: The population density and population size of Amami woodcocks in areas where the density of small Indian mongooses has been reduced or where small Indian mongooses have been completely eliminated.

Effect 2-2-2: The population of feral cats is reduced, and the population size or population density of Amami woodcocks is increased in areas where the population of feral cats has been decreased.

Effects indicator 2-2-2: The population density and population size of Amami woodcocks in areas where feral cats have been eliminated.

### **3. Captive breeding**

Target 3: A rescue system for sick or injured individuals will be constructed. Discussions will be held on a system for rearing those individuals that may never be returned to the wild and on the policy for collecting ecological, physiological, and pathological information by using reared individuals. Discussions will also be held on the policy for education and awareness-raising activities.

#### Activity 3

Activity 3: In cooperation with relevant organizations, local governments, veterinary medical associations, and concerned bodies, discuss and decide on a policy for the rescue of sick or injured individuals and their return to the wild, and construct a rescue and return system accordingly. Also, at the same time, discuss the manner in which those individuals that are difficult to return to the wild should be handled.

From FY 2014 to 2015: Discuss and decide on a policy for the rescue and return to the wild of sick or injured individuals.

From FY 2016 onwards: Implement the rescue and return to the wild of sick or injured individuals in accordance with the policy and system.

#### Result 3

Result 3: A policy that lays out, among other things, the rescue system and the criteria for the sick or injured individual's return to the wild is decided on; the rescue system is constructed; and rescue is implemented in accordance with this policy and system.

Results indicator 3: A policy document on the rescue and return to the wild of sick or injured individuals; an organizational chart of the rescue system; actual results of the rescue and return to the wild of sick or injured individuals; the amount of pathological data; the number of reports and papers published on the rescue and return to the wild of sick or injured individuals; and the number of reports and papers published on pathological data.

#### Effect 3

Effect 3: The survival rate of rescued individuals and the rate of their return to the wild are increased owing to fast and adequate rescue of sick or injured individuals. Pathological data are also accumulated and utilized.

Effects indicator 3: The survival rate and the rate of return to the wild of rescued individuals.

### **4. Patrol, etc. of the habitat**



Target 4: The habitat will be continuously patrolled and information shared among various local entities.

Activity 4

Activity 4: Various local entities continuously patrol the habitat (from FY 2014 to 2023).

Result 4

Result 4: Sighting information is accumulated and shared among concerned parties.

Results indicator 4: The number of patrols performed and the number of entities that participated.

Effect 4

Effect 4: Actions that may have a negative impact on maintaining the population (e.g. unintentional intrusion of humans into the species' nesting grounds) are prevented.

Effects indicator 4: The number of cases in which activities are revised after certain instructions.

## **5. Promotion of education and awareness-raising activities**

Target 5: Education and awareness-raising activities aimed at conservation of the species will be promoted so that local residents' and others' understanding of the need for conservation will increase.

Activity 5

Activity 5-1: Deepen local residents' and tourists' understanding of the need for conservation of this species by carrying out education and awareness-raising activities via setting up a website; creating and distributing pamphlets; press releases aimed at the mass media; and conducting volunteer participatory surveys.

From FY 2014 onwards: Set up (FY 2014) and update (FY 2015 onwards) a website; create and distribute pamphlets (between FY 2015 and 2017 and again between FY 2020 and 2022); and discuss and conduct volunteer participatory surveys (discussions to take place between FY 2015 and 2016 and trial surveys to be conducted sometime after FY 2017).

Activity 5-2: Conduct a questionnaire survey every five years targeting local residents and tourists to measure the level of their understanding of the conservation of the species.

FY 2015, 2018, and 2023: Conduct the questionnaire survey.

Result 5

Result 5: The website is created, pamphlets are created and distributed, and volunteer participatory surveys and questionnaire surveys are conducted.

Results indicator 5: The website interpretation and the number of times it is updated; the number of pamphlets issued; the number of times the volunteer participatory survey is conducted; the number of

volunteer participants; the number of times the questionnaire survey is conducted; and the number of questionnaires collected.

#### Effect 5

Effect 5: Levels of awareness and understanding among local residents and tourists in regard to conservation of the species are increased.

Effects indicator 5: The results of the questionnaire survey on the level of awareness and understanding of the need for conservation.

### **6. Consolidation of collaboration for effective promotion of the program**

Target 6-1: Collaboration among relevant organizations and bodies, local governments, and concerned parties will be strengthened so that conservation measures for the species can be effectively promoted.

#### Activity 6-1

Activity 6-1: Through relevant meetings such as review committee meetings on the Amami Woodcock Protection and Recovery Program, and through coordination meetings and other ad hoc meetings held as needed, share and consolidate a wide range of survey results held by, and information on protection measures taken by, relevant organizations and bodies, local governments, and concerned parties, to strengthen collaboration on conservation measures and also to strengthen the consideration that needs to be given to conservation of the species in connection to development plans, etc.

From FY 2014 onwards: Hold annual review meetings and other necessary meetings such as coordination meetings; consolidate data such as those on habitat distribution held by concerned parties, convert them to GIS, and publish them; and share survey and other reports.

#### Result 6-1

Result 6-1: Information on survey results, protection measures, development plans, and other matters is shared and review, coordination, and other meetings aimed at collaboration are held. Data on distribution, etc. are consolidated and converted to GIS and reports on survey results are shared.

Results indicator 6-1: The number of review and coordination meetings held; the amount of GIS and other data consolidated; and the number of shared reports of survey results.

#### Effect 6-1

Effect 6-1: The number of cases in which development plans and others are revised out of consideration to the species is increased. The number of protection measures implemented through the collaboration of relevant organizations and bodies is increased. The use of data such as GIS and survey results by relevant organizations and bodies and by others is increased.

Effects indicator 6-1: The number of development plans and other plans revised out of consideration for the species; the number of protection measures implemented through the collaboration of relevant organizations and bodies; and the amounts of information on the species status and GIS data shared.

Target 6-2: In addition to annual reporting on the progress of the Action Plan at the Protection and Recovery Program review committee meeting, the state of progress of the Action Plan will be evaluated every five years and the Action Plan will be revised accordingly.

#### Activity 6-2

Activity 6-2-1: Annually report the implementation results of the Action Plan for the Amami Woodcock Protection and Recovery Program at the Protection and Recovery Program review committee meeting; seek the review committee members' advice on points that need to be improved and on other matters; and make the improvements needed for more effective and efficient implementation of the program.

Activity 6-2-2: In FY 2018, comprehensively evaluate the state of progress of the Action Plan on the basis of the results and effect indicators, and revise the Action Plan if necessary. In the final fiscal year, FY 2023, similarly evaluate the level of target achievement of the program's 10-year Action Plan and draw up a new 10-year plan.

#### Result 6-2

Result 6-2-1: The Protection and Recovery Program review committee meetings are held; the implementation results are reported; and appropriate improvements are made to the program in response to the committee members' advice.

Results indicator 6-2-1: Annual holding of the review committee meeting and the improvements made to the program in response to the committee members' advice.

Result 6-2-2: The progress of the program's Action Plan is evaluated on the basis of the results and effect indicators; the Action Plan is revised accordingly; and a new Action Plan is formulated.

Results indicator 6-2-2: Progress evaluation results, revisions made to the Action Plan, and formulation of a new Action Plan.

#### Effect 6-2

Effect 6-2-1: The program is implemented with increased effectiveness and efficiency.

Effects indicator 6-2-1: Improvement of the results and effect indicators for those activities that have been improved.

Effect 6-2-2: The level of target achievement of the Action Plan is comprehensively evaluated according to each result and effect indicator; revisions deemed necessary from the perspective of effectiveness and efficiency are made to the Action Plan; and a new Action Plan is drawn up.

Effects indicator 6-2-2: Improvement of the results and effect indicators, and improvement of the level of target achievement of the Action Plan.

**V. Activity implementation schedule (thickness of the arrow indicates the activity's level of importance)**

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1-1: Determination of the changes in distribution and number of confirmed individuals over the years	→	→	→	→	→	→	→	→	→	→
1-2: Reevaluation of past survey results and revision of the survey method	→	→	→							
1-3: Genetic surveys	Sampling →	→	→							
1-4: Population size estimation and assessment of the species status	Setting targets and developing methods →	→	→	→	→	→	→	→	→	→
2-1-1: Work toward designation as a National Park	-- →									
2-1-2: Enforcement of regulations	→	→	→	→	→	→	→	→	→	→
2-2-1: Elimination of small Indian mongooses	Elimination based on the mongoose Control Plan →	→	→	→	→	→	→	→	→	→
2-2-2: Measures against feral cats	Deciding on a policy →									
		Implementation of capture in accordance with the policy →	→	→	→	→	→	→	→	→
3: Construction of a rescue system for sick or injured individuals, and implementation of rescue, etc.	Construction of a structure →	→								
			Implementation of rescue and return to the wild of sick or injured individuals →	→	→	→	→	→	→	→
4: Patrol of habitat	→	→	→	→	→	→	→	→	→	→
5-1: Education and awareness-raising activities through a website, pamphlets, etc. and volunteer participatory surveys	Website creation →	updating →	→	→	→	→	→	→	→	→
		Pamphlet creation →	→	→	→	→	Pamphlet creation →	→	→	→
		Discussions on volunteer participatory surveys →	→	→	→	→				
			trial surveys →	→	→	→				
5-2: Questionnaire survey		→			→					→

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
6-1: Consolidation of various survey and other results from relevant organizations and others, and strengthening of collaboration	→	→	→	→	→	→	→	→	→	→
6-2-1: Holding of Protection and Recovery Program review committee meetings	→	→	→	→	→	→	→	→	→	→
6-2-2: Evaluation and revision of the Action Plan					→					→

## VI. References

BirdLife International (2012) *Scolopax mira*. The IUCN Red List of Threatened Species. Version 2014.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Accessed on 27 August 2015.