

Monitoring Plan for  
Amami-Oshima Island, Tokunoshima Island,  
Northern Part of Okinawa Island, and Iriomote Island,  
nominated for Inscription on the World Heritage List  
(English translation)

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Ministry of the Environment, Forestry Agency, Agency for Cultural Affairs,  
Kagoshima Prefecture, Okinawa Prefecture,  
Amami City, Yamato Village, Uken Village, Setouchi Town, Tatsugo Town,  
Tokunoshima Town, Amagi Town, Isen Town,  
Kunigami Village, Ogimi Village, Higashi Village,  
Taketomi Town

## Table of Contents

Glossary .....	1
1. Purpose .....	5
2. Basic Concept .....	5
3. Period of the Plan .....	5
4. Target Scope of the Plan .....	6
5. Indicators for Monitoring .....	8
(1) Selection Criteria for Indicators .....	8
(2) List of Indicators .....	10
(3) Implementing Entities of the Survey .....	10
6. Evaluation of the State of Conservation .....	10
(1) Evaluation Regarding Respective Indicators .....	10
(2) Comprehensive Evaluation .....	10
7. Procedures to Reflect Evaluation Results on Management .....	12
8. Information Sharing and Disclosure .....	14
9. Revision of the Plan .....	14
(1) Changes, Removal, and Addition of Indicators for Monitoring .....	14
(2) Revision of the Entire Plan .....	14
Annex .....	15

## Glossary

Below are some of the terms that appear in the text and we tried to explain them in plain words for the users of the Plan. The terms are based on examples of the Comprehensive Management Plan for Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island, Nominated for Inscription on the World Heritage List (hereinafter, referred to as ‘the Comprehensive Management Plan’).

### Outstanding Universal Value (OUV)

- Cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.

### Nominated Property

- The whole area of ‘Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island’ (i.e. all of the five component parts in the four regions) nominated for inscription on the World Heritage List (Figure 1). The area is strictly protected by legal measures.

### Buffer Zones

- Areas adjoining and surrounding the nominated property (Figure 1). The conservation of the nominated property are enhanced by the restriction of resource use and development in buffer zones through laws and custom measures.

### Surrounding Conservation Areas

- Areas defined to surround the nominated property and buffer zones (Figure 1). A wide range of efforts that are considered necessary for protecting the nominated property shall be undertaken in this area, such as the conservation by legal and custom measures, measures against alien species, measures to prohibit illegal collection of endemic and threatened species.

### Target District of the Plan

- It refers to the nominated property, buffer zones, and surrounding conservation areas that are target scope of this Plan and the Comprehensive Management Plan (Figure 1).

### Component Parts

- They refer to five parts in the four regions within the nominated property: one in Amami-Oshima Island, two in Tokunoshima Island, one in Northern part of Okinawa Island, and one in Iriomote Island.

### Serial Properties

- Properties, including this nominated property, representing the OUV through plural component parts that are separately located but share a common value, are called ‘serial properties’.

### Threatened Species

- It refers to the following three categories that are defined as ‘threatened species’ on the IUCN Red List that International Union for Conservation of Nature (IUCN) prepares to specify worldwide threatened wildlife.
  - CR: Critically Endangered
  - EN: Endangered
  - VU: Vulnerable

### Administrative Organs

- Organizations that are in charge of relevant systems regarding the conservation of natural environment and its sustainable use in the target districts of this Plan, in accordance with the Plan and Comprehensive Management Plan. They include the Ministry of the Environment, Forestry Agency, Agency for Cultural Affairs, Kagoshima Prefecture, Okinawa Prefecture, Amami City, Yamato Village, Uken Village, Setouch Town, Tatsugo Town, Tokunoshima Town, Amagi Town, Isen Town, Kunigami Village, Ogimi Village, Higashi Village, and Taketomi Town.

### Comprehensive Management Plan

- It is a plan that clarifies basic directions regarding the operation of relevant systems and the promotion of respective projects, for the purpose of appropriate and smooth advancement of the conservation and management of natural environment in the target district of the Plan. This could be achieved by the administrative organs to closely coordinate and cooperate with various stakeholders, including local residents, tourism operators, those who are engaged in agriculture and forestry, researchers, local bodies, and other visitors.

#### Action Plan

- It is a plan to extract concrete issues to tackle with and to articulate their contents, implementing periods, role allocation, goals to achieve, and evaluation indicators, on the foundation of respective characteristics and challenges in the four regions, under the Comprehensive Management Plan that states the overall goals and basic management directions. It shall be operated as part of and in mutual coordination with the Comprehensive Management Plan.

#### Indicators for Monitoring

- These are indicators to continuously investigate and evaluate in the same method for a long-term period, as to whether or not the OUV of the nominated property is maintained into the future, together with the state of their conservation and impact factors. These indicators shall represent the OUV of the nominated property, in addition to items and phenomena that are considered to be of significant impacts on the OUV.

#### Adaptive Management

- It refers to a management method to appropriately operate, through continuous monitoring of conservation state of the OUV and relevant factors that impact on the OUV and thereby reviewing the Comprehensive Management Plan and Action Plans.

#### Invasive Alien Species

- It refers to alien species that considerably impact on local ecosystems and threaten, or might threaten biodiversity, such as small Indian mongoose (*Herpestes auropunctatus*), cats, etc.

#### Scientific Committee on Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island Natural World Heritage Nominated Property

- A committee consisting of experts regarding the conservation and management of natural environment in the target district of the Plan. It evaluates the state of conservation of the OUV in the Plan and provides advice on adaptive conservation and management in the Comprehensive Management Plan.

#### Regional Liaison Committee on Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island Natural World Heritage Nominated Property

- A committee that was established as a platform for communication and coordination among administrative organs, for the purpose of promoting integrated commitments of the administrative organs to implement appropriate conservation and control of the target

district of the Plan, in close coordination and collaboration among them, based on the Comprehensive Management Plan.

#### Sub-local Meetings

- Meetings established for the respective four regions, i.e. Amami-Oshima Island Sub-local Meeting, Tokunoshima Island Sub-local Meeting, Northern Part of Okinawa Island Sub-local Meeting, and Iriomote Island Sub-local Meeting, under the Regional Liaison Committee, as a platform of communication and coordination to consider opinions from local communities, for the administrative organs to implement the conservation and management based on the Comprehensive Management Plan. Participants of the Sub-local Meetings include the administrative organs, related bodies, NPOs, and other entities. The Sub-local Meetings are in charge of consensus building regarding the formulation and review of local action plans, communication and coordination, progress management, inspection of achievements, etc. to promote appropriate conservation and management of the target district of the Plan. The Sub-local Meetings shall report to and coordinate with Regional Liaison Committee, as necessary.

## 1. Purpose

‘Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island,’ nominated for inscription on the World Heritage List (hereinafter, referred to as “the nominated property”) is a ‘serial property’ consisting of five component parts in the four regions, i.e. Amami-Oshima Island, Tokunoshima Island, and Northern part of Okinawa Island that are located in Central Ryukyus, and Iriomote Island in South Ryukyus. With its unique speciation processes in Central Ryukyus and South Ryukyus that reflect Ryukyu Chain’s geological history, the nominated property has provided irreplaceable habitats to a number of terrestrial organisms including endemic and/or threatened species, such as Iriomote cat (*Prionailurus bengalensis iriomotensis*, IUCN Red List: CR), Okinawa woodpecker (*Sapheopipo noguchii*, CR), Amami rabbit (*Pentalagus furnessi*, EN), Okinawa rail (*Gallirallus okinawae*, EN), etc. The nominated property embraces Outstanding Universal Value (hereinafter, referred to as the ‘OUV’) that threatened species and their habitats possess in terms of academic or conservation senses; it is required to maintain or enhance the OUV for the future. Therefore, administrative organs shall promote their adaptive management based on scientific knowledge, in coordination with related government agencies and relevant bodies, in accordance with their Action Plans on the foundation of the Comprehensive Management Plan.

In this regard, the Monitoring Plan for Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island, nominated for inscription on the World Heritage List ((hereinafter, referred to as ‘the Plan’) clarifies basic policies regarding the monitoring of natural environments and human activities as part of the management of the nominated property. In addition, relevant procedures shall be stipulated to properly comprehend and evaluate the state of conservation of the nominated property and implement management on the basis of survey items and their contents, monitoring results, and so forth.

## 2. Basic Concept

In order to maintain and enhance the OUV for the future in the nominated property, monitoring shall be conducted on the conservation state of endemic and/or threatened species indicating the OUV, their habitats, and impact factors.

As impact factors for the OUV, there are two main factors: 1) factors that have possible impacts in the future, such as possibilities of new invasive alien species to enter, environmental loads by new tourism use, etc., and 2) factors that currently affect, such as negative impacts by invasive alien species that have already settled down, traffic accidents of main endemic and/or threatened species indicating the OUV, and their collection pressures. After extracting impact factors on the basis of these recognitions, effective data collection and appropriate scientific evaluation shall be

conducted to analyze and examine relevance between these impact factors and conservation conditions of the OUV.

In addition, in the four Islands including the nominated property, local residents have regarded mountains and forests as part of their living sphere through people's traditional livelihoods, faiths, and so forth. There is a historical background where local residents have used their natural environments over long period of time; people's lives have been supported by their natural environments. Based on these local characteristics, it is preferable for administrative organs to request local residents and local stakeholders to continuously and actively participate in monitoring processes, and such monitoring shall be considered, including the system that secures the opportunities to disclose and share monitoring results.

Since monitoring needs to be continuously conducted in the same method to comprehend long-term changes, respective indicators and survey methods should not be changed in principle. Meanwhile, it is important to review the Plan considering knowledge that will be obtained through actual operations, in order to enhance the Plan's effectiveness. Therefore, a certain flexibility shall be permitted in terms of changes, removal, and addition of indicators and changes in survey methods during the three years since the launching of the Plan's operation, as far as there are no significant impacts on the evaluation of conservation state of the OUV.

### 3. Period of the Plan

The Plan shall make a mid-term monitoring plan for the coming ten years from JFY2020 to JFY2029. The Plan shall be considered to be continued or changed around every five years.

### 4. Target Scope of the Plan

In addition to the nominated property, the Plan includes buffer zones and surrounding conservation areas as its target scope in order to maintain and enhance the OUV (Figure 1).



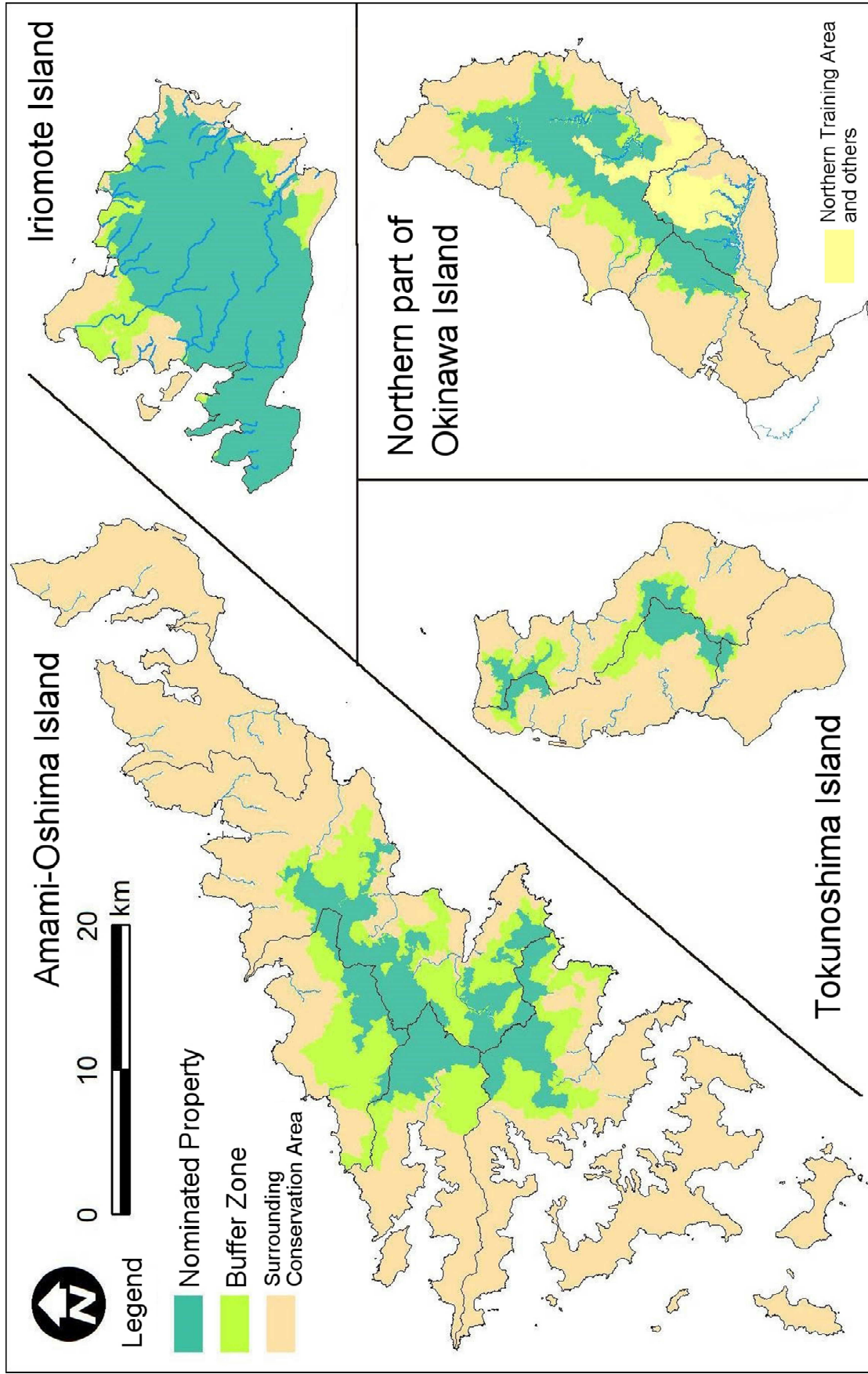


Figure 1. Target District of the Plan

5. Indicators for Monitoring

In order to secure sufficient and effective indicators to maintain and enhance the OUV in the future, selection criteria of indicators, a list of indicators, and implementing entities of the survey shall be defined. With regard to a policy for changes, removal, and addition of indicators, it shall be defined in ‘9. Revision of the Plan’.

(1) Selection Criteria for Indicators

On the foundation of the following five ‘monitoring perspectives’ that are described in the nomination document ‘6.a. Key Indicators for Measuring the State of Conservation’, indicators shall include state of endemic and/or threatened species that indicate the OUV, together with any factors that impact, or are considered to impact, on them. In addition to the main indicators that are written in the nomination document, any other matters that are considered necessary shall be examined as indicators. In selecting indicators, criteria for respective ‘monitoring perspectives’ are have been set (Table 1). Indicators shall be in accordance with these criteria; they shall be selected in light with their possibilities of continuous implementation and adopted in the Plan.

**Table 1. Monitoring Perspectives and Criteria for Indicators**

<b>Monitoring Perspectives</b>	<b>Criteria</b>
1. Endemic and/or threatened species of the OUV are maintained.	<p>(1) State of Conservation of Species Indicators that qualitatively and/or quantitatively show species state, such as fluctuations in the number of individuals and their distributions. These indicators shall be selected from endemic and/or threatened species indicating the OUV that are mainly distributed in the nominated property and buffer zones. They shall represent conservation state of diverse habitats necessary for the maintenance of various endemic and/or threatened species indicating the OUV.</p>
	<p>(2) State of Conservation of Habitats Indicators that qualitatively and/or quantitatively show conservation state of biotic/non-biotic environments, such as old-aged forests and inland waters necessary for the maintenance of endemic and/or threatened species indicating the OUV in the target district of the Plan.</p>

<b>Monitoring Perspectives</b>	<b>Criteria</b>
2. Human impacts on endemic and/or threatened species of the OUV are reduced and past impacts are improved.	(1) Non-natural death of individuals Indicators that qualitatively and/or quantitatively show the number of traffic accidents, etc. that are visually discoverable. These indicators shall be selected from endemic and/or threatened species indicating the OUV in the target district of the Plan.
	(2) Capture and collection of individuals Indicators that qualitatively and/or quantitatively show the number of illegal capture and collection pressure in the target district of the Plan.
3. Threatening alien species are reduced	(1) State of invasive alien species Indicators that qualitatively and/or quantitatively show the state of alien species that are confirmed and/or concerned to have invaded and settled in the target district of the Plan, through fluctuations in the number of individuals and their distributions. These indicators shall be selected from alien species whose serious impacts on endemic /or threatened species indicating the OUV are confirmed and/or concerned.
4. Tourism use of the nominated property and its neighborhood is conducted in a sustainable manner	(1) State of tourism use Indicators that qualitatively and/or quantitatively show the state of tourism use that might affect on natural environments in the target district of the Plan.
	(2) Environmental loads caused by tourism use Indicators that qualitatively and/or quantitatively show the state of environmental loads and their scales in the target district of the Plan.
5. Impacts of climate change and disasters or their signs are grasped at an early stage	(1) Meteorological changes and areal changes of forests Indicators that qualitatively and/or quantitatively show areal conservation state of forests that are necessary for the maintenance of endemic and/or threatened species indicating the OUV and meteorological changes that might impact on them in the target district of the Plan.
	(2) Meteorological changes and changes in the fauna Indicators that qualitatively and/or quantitatively show changes in the avifauna in fixed sites that well represent the nominated property.

Meanwhile, when any sudden large-scale disasters, such as earthquakes, tsunamis, typhoons, accidents, etc. occur in the target district of the Plan, administrative organs shall set ‘emergency indicators’ in accordance with their impacts, as necessary, conduct surveys, and implement ‘6. Evaluation of the state of conservation’ considering the results.

## (2) List of Indicators

Indicators that are selected on the basis of monitoring perspectives and selection criteria in Table 1, survey items, evaluation periods, implementing entities, etc. for respective indicators shall be shown in Annex ‘List of indicators’.

In the meantime, with regard to the state of conservation of the nominated property, respective administrative organs shall exert their endeavors to collect and accumulate knowledge secondarily obtained from surveys of respective indicators, and expand referential information obtained from local residents’ cooperation and information offering; the obtained knowledge can be used as additional information for respective indicators.

## (3) Implementing Entities of the Survey

The main implementing entities in the surveys based on the Plan are administrative organs. Meanwhile, there are considerably many endemic and/or threatened species indicating the OUV in the nominated property, and they are diverse in taxonomic groups. Therefore, factors that might negatively affect on them are assumed to be diverse as well. In this regard, it is favorable to use relevant information obtained from people and organizations that have knowledge and experiences in various fields, from government agencies and researchers to local stakeholders, whereas the monitoring per se should be implemented by the responsibility of administrative organs. Based on this understanding, administrative organs shall call for active participation in the monitoring processes to local stakeholders, eco-tour guides, researchers, and local residents, conduct the communication and coordination with them, and attempt to expand those activities in the future. Meanwhile, local residents and research institutes, etc. are positioned as implementing entities in part of survey items and sites; in addition to these, a system, or a contact point, shall be established to enable the monitoring, such as reports, through the participation of many local residents, etc.

Respective surveys shall be conducted by implementing entities that are shown in Annex ‘List of indicators’, whereas administrative organs shall aggregate and compile survey results.

## 6. Evaluation of the State of Conservation

### (1) Evaluation Regarding Respective Indicators

With regard to survey results of respective indicators, administrative organs shall conduct a four-grade evaluation (Table 2) based on qualitative and quantitative criteria for respective areas, for every evaluation periods of respective indicators. The administrative organs shall set numerical goals (quantitative criteria), as required, together with qualitative criteria, for a comprehensive evaluation. When individual review committees based on project plans, etc. are

established, review results in these review committees shall be reflected on the evaluation. The administrative organs shall report monitoring results and evaluations to ‘the Scientific Committee on Amami-Oshima Island, Tokunoshima Island, the Northern Part of Okinawa Island, and Iriomote Island Natural World Heritage Nominated Property (hereinafter, referred to as ‘Scientific Committee’), to obtain scientific advice regarding the evaluation and, if necessary, review the evaluation.

**Table 2. Evaluation Criteria**

Evaluation	Qualitative Criteria	Quantitative Criteria (partial)
S	Continuous enhancement of the OUV are expected with no negative impacts or potential impacts.	With regard to respective survey items, numerical goals shall be set in four stages, as necessary, based on experts’ advice. In case of evaluation, the level of achievement of numerical goals, together with qualitative evaluation criteria, shall be comprehensively evaluated.
A	There are no negative impacts or potential impacts on the OUV. Otherwise, minor negative impacts or potential impacts on the OUV are recognized, but the situation is expected to improve through current efforts.	
B	A certain level of negative impacts or potential impacts on the OUV are recognized. The situation is expected to improve through current efforts, however, it is desirable to review project plans, etc. regarding the conservation and management. If there is no related project plan, it is required to formulate one.	
C	More than a certain level of impacts or potential impacts on the OUV are recognized, and the situation is not expected to improve through current efforts, together with a risk to damage the OUV in the future; therefore, project plans, etc. regarding the conservation	

Evaluation	Qualitative Criteria	Quantitative Criteria (partial)
	and management need to be considerably revised. If there is no related project plan, it is strongly required to formulate one.	

## (2) Comprehensive Evaluation

The administrative organs shall conduct a four-grade evaluation (Table 2) in respective areas, every five years in general, on the basis of qualitative and quantitative criteria that are the same as ‘(1) Evaluation Regarding Respective Indicator’, for respective ‘monitoring perspectives’, as comprehensive evaluations for respective monitoring indicators. In addition, the administrative organs shall report these comprehensive evaluation results to the Scientific Committee, and obtain scientific advice. The evaluation shall be reviewed, as required.

## 7. Procedures to Reflect Evaluation Results on Management

Every year, the administrative organs shall report results of ‘6. Evaluation of the State of Conservation’ and relevant advice from the Scientific Committee regarding the management of the nominated property to the Regional Liaison Committee on Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island Natural World Heritage Nominated Property (hereinafter, referred to as ‘the Regional Liaison Committee’) and Sub-local Meetings in the four regions. The Regional Liaison Committee shall review the Comprehensive Management Plan and Action Plans for respective areas, on the basis of reports’ contents and opinions of Sub-local Meetings, as necessary. Based on changes in respective plans, responsible organizations shall implement the reviewed project contents and manage the nominated property (Figure 2).

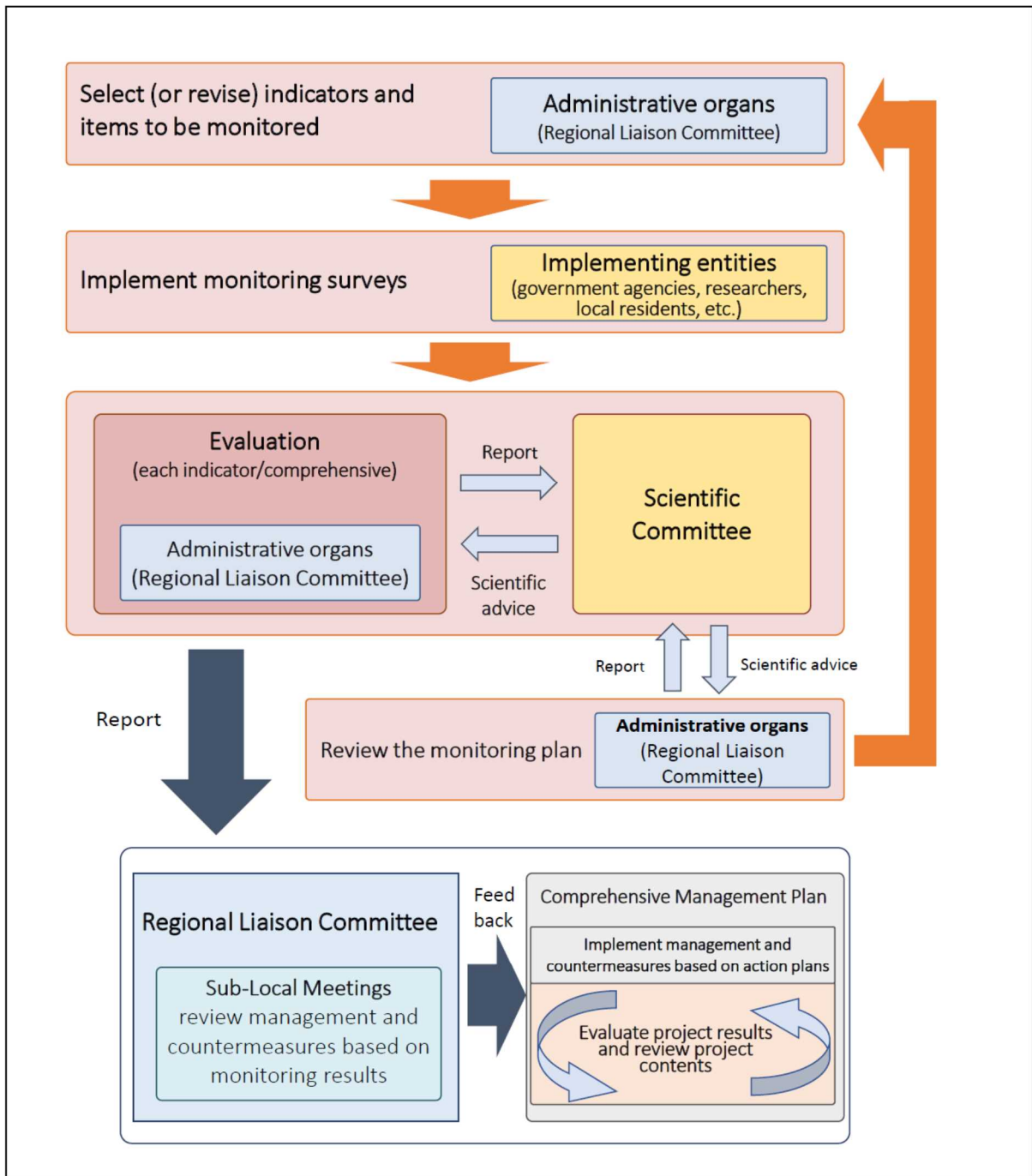


Figure 2. Outline of the system for reflecting evaluation results in management

## 8. Information Sharing and Disclosure

The administrative organs shall exert their endeavors to share relevant information among related government agencies, related bodies, and researchers, and to promote effective use of the information for its appropriate conservation and management of the nominated property.

The official website of the nominated property (<http://kyushu.env.go.jp/okinawa/amami-okinawa/index.html>) shall disclose monitoring results and evaluations based on the Plan. It shall not include any information regarding habitats of rare species, since its disclosure is likely to negatively affect on the state of conservation.

## 9. Revision of the Plan

### (1) Changes, Removal, and Addition of Indicators for Monitoring

Changes, removal, and addition of indicators shall be conducted, as required. The administrative organs shall change and remove indicators, at the Regional Liaison Committee on the basis of advice from the Scientific Committee. Especially for any removal of indicators, it is required to fully consider its necessity beforehand. As for any addition of indicators, administrative organs can add, as required, new monitoring indicators that meet ‘5. (1) Selection Criteria for Indicators for Monitoring’ to the Plan, at the Regional Liaison Committee on the basis of advice from the Scientific Committee.

### (2) Revision of the Entire Plan

After five years, the midpoint of the Plan’s period, the continuation/change of the entire Plan shall be considered, and revision shall be made, as required. In addition, a plan for the next period shall be formulated before the end of the Plan’s period.



I. Maintenance of endemic and/or threatened species of the OUV											
Category	No.	Indicators	Survey items	Survey objectives	Survey/evaluation cycle	Implementing entities	Areas				
							Amami-Oshima Is.	Tokunoshima Is. (a) (b)	Northern Part of Okinawa Is.	Iriomote Is.	
A. Species conservation state	1	Status of the Amami rabbit	Number of pellets counted based on line transect surveys	Pellet count surveys shall be conducted in around 20 transect lines set on Amami-Oshima Island and around 10 transect lines set on Tokunoshima Island, for the purpose of understanding the population trend.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓			
	2	Status of the Amami thrush	Number of birds based on a simultaneous census	The simultaneous census based on visual observation and birdcalls shall be conducted by MOE officers, staff members of Amami ornithologists' club, and volunteering students, for the purpose of understanding the population trends.	Annually	Okinawa Amami Nature Conservation Office, MOE Amami ornithologists' club	✓				
	3	Status of the Okinawa rail	Distribution and population estimates based on play-back surveys	Play-back surveys shall be conducted at around 250 sites in Northern part of Okinawa Island, for the purpose of estimating the population and distribution.	Annually	Okinawa Amami Nature Conservation Office, MOE Nature Conservation Division, Okinawa Prefecture			✓		
	4	Status of the Okinawa woodpecker	Distribution based on play-back surveys	Play-back surveys shall be conducted at around 50 sites in Northern part of Okinawa Island, for the purpose of understanding the distribution.	Annually	Okinawa Amami Nature Conservation Office, MOE			✓		
	5	Status of frogs	Frequency of occurrence based on line transect surveys	Line transect surveys at night shall be conducted in Okuni forestry road (Okuni-rindo), for the purpose of understanding the population trend of each frog species.	Annually	Okinawa Amami Nature Conservation Office, MOE Nature Conservation Division, Okinawa Prefecture			✓		
	6	Status of the Iriomote cat	Use of territories based on camera surveys at multiple fixed sites	Camera surveys shall be conducted at around 20 sites on Iriomote Island, for the purpose of confirming the health conditions and reproductive status of individual cats.	Annually	Okinawa Amami Nature Conservation Office, MOE Kyushu Regional Forest Office, Forestry Agency					✓
	7	Status of the crested serpent eagle	Number of birds based on line transect surveys	Line transect surveys shall be conducted based on visual observation and birdcalls in four transect lines set on Iriomote Island, for the purpose of understanding the population trend.	Annually	Okinawa Amami Nature Conservation Office, MOE Okinawa Regional Research Center, Tokai University					✓

	8	Overall status of the species of the OUV	Locations of rare animal occurrences recorded in camera surveys, patrols, and distribution surveys, etc.	Data of animal species indicating the OUV shall be accumulated based on information including visual observation of individual animals, hearing of animals, and information from local residents. With regard to some species, such as ground geckoes and Ryukyu black-breasted leaf turtles, the distributions shall be investigated, as necessary.	Annually	Okinawa Amami Nature Conservation Office, MOE Kyushu Regional Forest Office, Forestry Agency	✓	✓	✓	✓
			Location of rare plant occurrences recorded in inspections, patrols, and distribution surveys, etc.	Data of plant species indicating the OUV shall be accumulated based on information including findings of individual plants and information from local residents. With regard to epiphytes such as <i>Dendrobium okinawense</i> that grows in cloud forests, and some rheophytes such as <i>Platanthera sonoharae</i> that grows in mountain streams, the distributions shall be investigated, as necessary.	Annually	Okinawa Amami Nature Conservation Office, MOE Kyushu Regional Forest Office, Forestry Agency	✓	✓	✓	✓
			Changes in RL categories of major species that are selected from the species of the OUV, based on experts advice	Quantitative analyses shall be conducted every five years regarding changes in the RL categories, for the purposes of regularly overviewing changes in the state of conservation regarding the entire species indicating the OUV and utilizing the information to undertake necessary measures.	Every 5 years	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
B. Habitat conservation status	9	Changes in the total area of forests	Satellite images	Forest status shall be assessed based on satellite landscape images, together with analyses of meteorological data including temperatures, precipitations, and typhoons, etc., for the purpose of detecting the vegetation changes and gap formations.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
			Unmanned aerial vehicle (UAV) images	Aerial high-resolution movies shall be taken using Unmanned Aerial Vehicle (UAV), for the purpose of understanding the changes in the forest conservation status.	Every 5 years	Kyushu Regional Forest Office, Forestry Agency			✓	✓
	10	Environmental changes in major habitats	Landscape photos at fixed sites	Landscape assessments shall be conducted based on camera surveys at several fixed sites in old-growth forests, mountain streams, and cloud belts, together with analyses of meteorological data including temperatures, precipitations, typhoons, etc., for the purpose of understanding environmental changes.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓

II. Mitigation of anthropogenic impacts and improvement on past impacts on endemic species and/or threatened species of the OUV										
A. Animal deaths from unnatural causes	11	Occurrences of road accidents	Number of road accidents involving the Amami rabbit, Okinawa rail, long-haired rat, and Iriomote cat	Necropsies shall be conducted when dead or injured individuals are found by inspections, patrols, and reports from municipalities and local residents, for the purpose of understanding the trend in traffic accident damages.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
	12	Predation by alien species	Number of predation damages by dogs and cats on the Amami rabbit, Okinawa rail, long-haired rat, and Okinawa woodpecker	Necropsies and DNA analyses shall be conducted when dead or injured individuals are found by inspections, patrols, and reports from municipalities and local residents, for the purpose of understanding the trend in predation damages by dogs and cats.	Annually	Okinawa Amami Nature Conservation Office, MOE Conservation & Animal Welfare Trust National Institute for Environmental Studies	✓	✓	✓	
B. Capture and collection of animals and plants	13	Information on poaching and smuggling of animals and plants	Number of cases/suspected cases of poaching and smuggling (illegal capture/collection and taking out)	The number of poaching and smuggling of rare animals and plants shall be investigated by inspections, patrols, and reports from related agencies, municipalities, and local residents, for the purpose of understanding the trend in damages and discussing measures at the liaison meetings comprised of administrative organs and private companies.	Annually	Liaison meeting on measures against poaching and smuggling of rare wildlife species in the Amami Island Group region Liaison meeting on measures against poaching and smuggling of rare wildlife species in Okinawa region	✓	✓	✓	✓
			Number of traps to catch animals	The number of traps (insect collection traps, etc.) shall be investigated by inspections, patrols, and reports from municipalities and local residents, for the purpose of understanding the trend in the capture pressure.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
III. Decrease of alien species that pose threats										
	14	Status of the small Indian mongoose	CPUE (relative abundance) and distribution of the mongoose	The trend and range of CPUE (Catch Per Unit Effort) of mongoose control projects shall be understood.	Annually	Okinawa Amami Nature Conservation Office, MOE Nature Conservation Division, Okinawa Prefecture	✓		✓	
			Distribution status of cats in the nominated property and buffer zones	Information shall be collected on camera shooting, capture status, and abandonment of cats, for the purpose of understanding the trend in invasions of cats into the nominated property and the buffer zones.	Annually	Okinawa Amami Nature Conservation Office, Nature Conservation Division, Okinawa Prefecture	✓	✓	✓	

A. Status of invasive alien species	15	Distribution status of cats and cat keeping	Number of pet cats	The number of new registrations of pet cats and microchipped cats shall be investigated, for the purpose of understanding the trend in numbers of pet cats as the source of feral and stray cats.	Annually	Amami City, Yamato Village, Uken Village, Setouchi Town, Tatsugo Town, Tokunoshima Town, Amagi Town, Isen Town, Kunigami Village, Ogimi Village, Higashi Village, Taketomi Town, and Veterinary Medical Association of the Oshima region	✓	✓	✓	✓
	16	Invasion status of alien species	Number and locations of alien species found in the nominated property and buffer zones	Information shall be gathered from patrols conducted by officers of MOE and Forestry Agency as well as reports from municipalities and local residents, for the purpose of understanding distributions and invasions of alien species.	Annually	Okinawa Amami Nature Conservation Office, MOE  Kyushu Regional Forest Office, Forestry Agency  Okinawa Prefecture, Kagoshima Prefecture, municipalities, and local residents	✓	✓	✓	✓
			Number and locations of alien species found in the surrounding conservation area	Line transect surveys extending to several kilometers per site at around 100-200 sites in total shall be conducted in places within the vicinity of the nominated property, where unintentional invasions are expected from outside and inside the country. The surveys are for the purpose of understanding the invasion status of alien species listed in the List of Invasive Alien Species, which has been created according to the degrees of priorities.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓

**IV. Sustainable tourism use in the nominated property and its surrounding areas**

			Number of entries and visitors for each island (tourism statistics)	The trend in the number of entries and visitors shall be investigated.	Annually	Planning Division, Oshima Branch Office, Kagoshima Prefecture  Department of Culture, Tourism, and Sport, Tourism Policy Division, Okinawa Prefecture	✓	✓		✓
			Total capacity of accommodations	The trend in the number of entries and visitors shall be investigated.	Annually	Department of Culture, Tourism, and Sport, Tourism Policy Division, Okinawa Prefecture			✓	✓
			Number of visitors to Northern part of Okinawa Island (National Transportation Census)	The trend in the number of passing vehicles that enter into Northern part of Okinawa Island shall be investigated.	Every 5 years	Okinawa General Bureau, Cabinet Office			✓	

A. Status of tourism use	17	Status of tourism use, including ecotourism	Users of facilities related to natural environments	The trend in the number of facility users whose main purpose of tourism is related to natural environment among all entries shall be investigated.	Annually	Okinawa Amami Nature Conservation Office, MOE Kagoshima Prefecture, Amami City, Yamato Village, Tatsugo Town, Kunigami Village	✓		✓	✓
			Number of registered ecotour guides and entities that have signed a conservation use agreement	The trend in the number of registered ecotour guides (or entities) and the entities that have signed a conservation use agreement (Northern part of Okinawa Island and Iriomote Island) shall be investigated.	Annually	Liaison meeting of ecotour guides on Amami-Oshima Island, Liaison meeting of ecotour guides on Tokunoshima Island, Amami-Oshima Islands ecotourism promotion meeting, Okinawa Prefecture, Yambaru three villages forest tourism meeting, and Taketomi Town	✓	✓	✓	✓
			Number of visitors at the major ecotour sites	The trend in the number of visitors shall be investigated by user counters, etc. at major ecotour sites.	Annually	Okinawa Amami Nature Conservation Office, MOE Kyushu Regional Forest Office, Forestry Agency Kagoshima Prefecture, Yamato Village, Uken Village, and Kunigami Village Tropical Biosphere Research Center, University of the Ryukyus	✓	✓	✓	✓
			Status of ecotour use at the major locations on each island	The trend in use status and tourism types shall be investigated by identifying the ecotour sites inside the islands and visualizing them on a map.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
B. Environmental impact of tourism	18	Environmental changes in ecotour sites	Landscape photos at fixed ecotour sites	Landscape assessment shall be conducted.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
			Monitoring at fixed major ecotour sites	Monitoring shall be conducted at major ecotour sites and along footpaths, for the purpose of understanding the changes in natural environment, such as changes in vegetation due to tourism use.	Annually	Okinawa Amami Nature Conservation Office, MOE Tropical Biosphere Research Center, University of the Ryukyus				✓

V. Early detection of the impacts or signs of climate change and disasters										
A. Climate change and flora	9	Changes in the total area of forests	Satellite images	Forest status shall be assessed based on satellite landscape images, together with analyses of meteorological data including temperatures, precipitations, and typhoons, etc., for the purpose of detecting the vegetation changes and gap formations.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
			Unmanned aerial vehicle (UAV) images	Aerial high-resolution movies shall be taken using Unmanned Aerial Vehicle (UAV), for the purpose of understanding the changes in the forest conservation status.	Every 5 years	Kyushu Regional Forest Office, Forestry Agency			✓	✓
	19	Changes of forests and vegetation in model areas	Number of woody plant species, species composition, above-ground carbon stocks, coverage of forest floor and shrubs, at a fixed site in nominated property on each island	The secular changes shall be compared with the trends at the fixed sites across the country, for the purpose of detecting responses to climate change and impacts of typhoons in the nominated property.	Annually to every 5 years	Biodiversity Center of Japan, MOE	✓		✓	✓
			Monitoring on terrestrial plants	Monitoring of the specified plant communities in the target district of the Plan shall be conducted based on climate change adaption plan.	Every 5 years	National Institute for Environmental Studies, Kagoshima University, and Ryukyu University	✓	✓	✓	✓
B. Climate change and fauna	20	Fauna and changes in main habitats	Number of bird species, species composition, and biomass at a fixed site in the nominated property	The secular changes shall be compared with the trends at the fixed sites across the country, for the purpose of detecting the impacts of climate change in the nominated property.	Annually to every 5 years	Biodiversity Center of Japan, MOE	✓		✓	✓
	10	Environmental changes in major habitats	Landscape photos at fixed sites	Landscape assessments shall be conducted based on camera surveys at several fixed sites in old-growth forests, mountain streams, and cloud belts, together with analyses of meteorological data including temperatures, precipitations, typhoons, etc., for the purpose of understanding environmental changes.	Annually	Okinawa Amami Nature Conservation Office, MOE	✓	✓	✓	✓
<b>Other</b>										
Regardless of the abovementioned matters, a system (contact point) which enables monitoring (reporting, etc.) through participation of many local residents shall be established.						Okinawa Amami Nature Conservation Office, MOE and local residents	✓	✓	✓	✓