

**State of Conservation Report of Amami-Oshima Island,  
Tokunoshima Island, Northern part of Okinawa Island, and  
Iriomote Island (Japan) (N1574)**

In Response to the Decision at the 44th Session of the World Heritage Committee

**Government of Japan**

**November 2022**

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## 1. Executive summary of the report

The Government of Japan established task forces for each of the four requests pursuant to Decision 44 COM 8B.5 adopted by the 44th session of the World Heritage Committee and examined its responses to these requests.

- For tourism management, the existing basic visitor management plan is being revised into the Iriomote Island Tourism Management Plan, an integrated plan of various concepts, plans, and systems related to tourism on Iriomote Island, based on the evaluation of the projected impact of tourism use. Under this plan, the tourist visitation level will be managed and other measures will be implemented, including legally binding regulations on entry to the property and reducing visitor concentration during certain periods.
- For traffic management to reduce road fatalities, the current status in the four islands containing the property was compiled, including the roadkill incidents of threatened species, implementation of countermeasures, and their effectiveness. The result indicated that continued enhancement of roadkill prevention measures for threatened species is necessary on all four islands. In the locations where prioritized countermeasures were deemed necessary, traffic management measures were enhanced, or considered for enhancing. Ongoing monitoring of roadkills and examinations of the effectiveness of countermeasures will continue so as to adopt the optimal measures for each location. In addition, relevant organizations will work together to promote the development of more effective countermeasures based on the examination of roadkill reduction measures and the mechanism of roadkill occurrence.
- For river restoration, a comprehensive river restoration strategy, presenting the basic approach to and process of river restoration on the property, was developed. In line with this strategy, research on the impact of river structures on the property and analyses and examinations of causal relationships will commence.
- For forest management, actions concerning future logging operations in the buffer zones were examined and compiled through discussions with forestry operators, taking into account the status of various systems for logging operations on Amami-Oshima Island, Tokunoshima Island, and Northern part of Okinawa Island. Efforts with an enhanced consideration to the natural environment will be promoted, such as compliance with the forest management policy established for each region and regular information exchange and liaising between forestry operators and relevant government agencies, in addition to compliance with regulations such as the Natural Parks Act. Furthermore, research will be conducted to investigate whether logging operations in the buffer zones have any impact on the Outstanding Universal Value (OUV).

There are no other conservation issues identified nor development projects which may impact on OUV of the property.

Public access to the conservation report is acceptable.

## 2. Response to the Decision of the World Heritage Committee

The Government of Japan has established task forces consisting of relevant government organizations and experts in different fields under the Regional Liaison Committee (which comprises the administrative organs of the property, including Ministry of the Environment, Forestry Agency, Agency for Cultural Affairs, Kagoshima Prefecture, Okinawa Prefecture, and 12 municipalities), in response to the four requests pursuant to Decision 44 COM 8B.5, adopted by the 44th session of the World Heritage Committee. Under this structure, Japan's responses to these requests have been examined taking into account the scientific advice provided by the Scientific Committee (Figure 1).

The following is a report on the progress regarding the results of the review of each request.

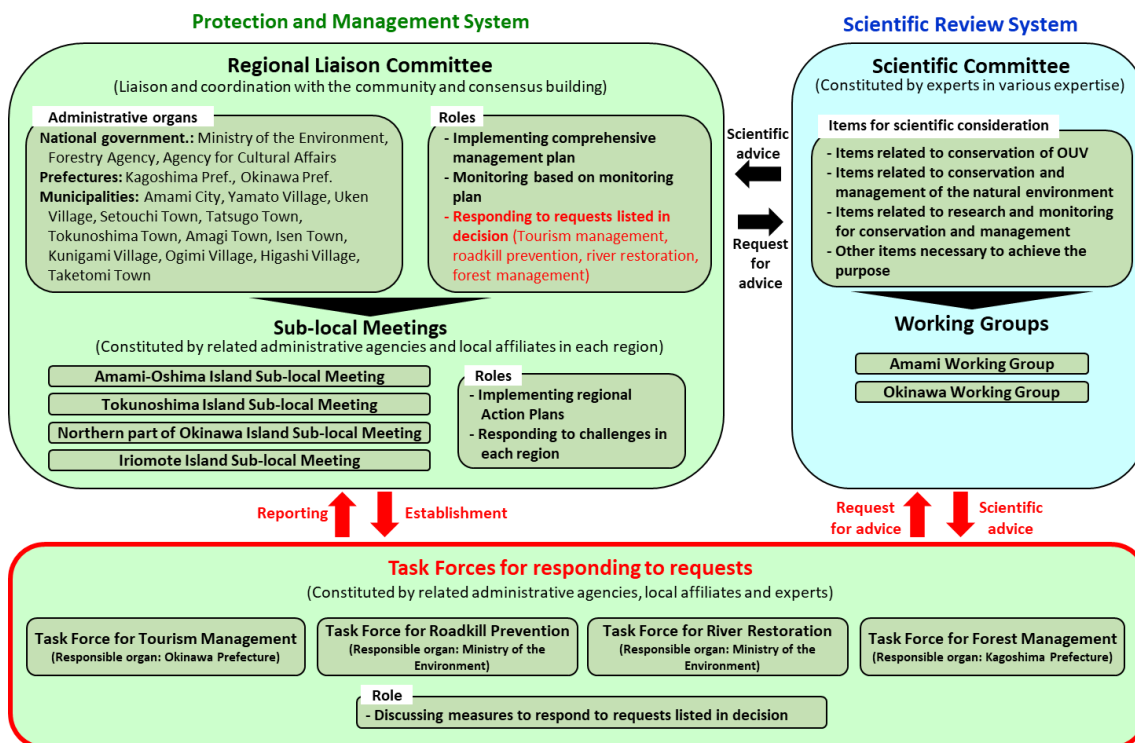


Figure 1: Comprehensive management system of the property



## 2.1 Tourism management

*a) Capping or reducing levels of tourist visitation from current levels, especially on Iriomote Island, until a critical evaluation of tourism carrying capacity and impacts can be conducted and integrated into a revised tourism management plan.*

### 2.1.1 Report on Iriomote Island

#### (1) The current status of tourism uses and tourism management on Iriomote Island

- On Iriomote Island, visitors to the island are managed based on the Basic Visitor Management Plan for a Sustainable Iriomote Island established in January 2020, and monitoring on the status of tourism uses and their environmental loads is conducted in cooperation with experts.
- The annual number of tourists visiting Iriomote Island averaged 330,000 for the ten years leading up to 2019 (excluding 2011 data, which was affected by the Great East Japan Earthquake). It peaked at 390,000 in 2015, and then showed a gradual downward trend. Since 2020, that number has fallen by 50% or more of the pre-2019 level due to the impact of movement restrictions in response to the COVID-19 pandemic. Accordingly, this report uses the number of tourists in 2019, the year immediately preceding the COVID-19 pandemic, as the current level.
- Tourism on Iriomote Island can be generally divided into the following two types: circular tours where tourists move around the island on large buses or motor-driven vessels; and nature experience-oriented tours where tourists enjoy canoeing, trekking and other nature-based activities. While the former often attracts group travelers, the latter is popular with individual travelers. The trend in recent years has been for group tours to decrease and individual travel to increase. For both travel types, a small number of tourists stay overnight on Iriomote Island. According to a survey conducted from 2015 to 2016, the proportion of tourists staying overnight on Iriomote Island was 23%.
- The number of tourists who visited Iriomote Island in 2019 was 290,000. Of these, a cumulative total of approximately 70,000 people (24%) participated in canoeing, trekking and other eco tours led by tour guides to visit fields within the property. A cumulative total of approximately 150,000 people (52%) participated in sightseeing tours using motor-driven vessels on the Nakama and Urauchi Rivers. In addition, tourists also used facilities and fields in the Surrounding Conservation Area and marine areas.
- The number of tourists visiting Iriomote Island fluctuates greatly from day to day. In 2019, it peaked at 1,543 people a day, averaged 862 people a day, with a standard deviation of 250 people a day, and trends indicate that tourism use is concentrated in certain periods.

## **(2) Evaluation of tourism carrying capacity and its impact**

- Okinawa Prefecture has identified all the potential impacts (i.e. threats) of tourism within and outside the property on Iriomote Island, and for each threat, the prefecture evaluated the current risk level and its fluctuations based on the level of importance and tourism carrying capacity of the affected areas. The results of the evaluation of major threats are as follows.
  - (i) With respect to nature experience-oriented tours in the property, the number of fields used and the number of people entering each field have been on the rise in recent years. For the most heavily used Hinai River, the number of people entering the field on a peak day far exceeded the river's tourism carrying capacity calculated from the spatial volume of the visited area. The current level of risk is therefore evaluated as high and on the rise with respect to the number of the fields used, the number of visitors entering each field, and the impact of visitor activities. On the other hand, with respect to circular tours using motor-driven vessels on the Nakama and Urauchi Rivers, which are also in the property, the current level of risk is evaluated as low and the likelihood of future increase in the risk is also low, given that measures to reduce their impact have already been taken and the number of tourists using these services has been declining in recent years.
  - (ii) As for the total number of tourists to Iriomote Island, including outside the property, the island's tourism carrying capacity has been examined from the viewpoint of its capacities of transport, waste and sewage treatment, clean water supply, and so on. The island's clean water supply capacity was identified as a factor in restricting the daily number of tourists visiting the island, given the situation where water supply capacity approaches its limit and there is concern that the lives of local residents could be temporarily affected by tourism during certain periods of concentrated tourism use. At the current tourist visitation level, the island's tourism carrying capacity calculated from its clean water supply capacity was exceeded on 24 days a year (approx. 7%). However, given that the actual water shortage was not severe and the actions taken so far have been limited to making requests to save water, the current level of risk is evaluated to be medium and there is no clear sign of it rising.
  - (iii) On changes to the travel type of tourists, no direct causal relationship has been identified between the occurrence of Iriomote cat roadkill and an increase in traffic on the island as well as the diversification of tourists' behavior due to an increase in individual travelers. However, judging from the severity of fatal traffic accidents involving this species, the current level of risk has been evaluated to be high and on the rise.

## **(3) Management methods of tourist visitation levels on Iriomote Island**

- Tourist visitation levels are managed by the following methods in response to the risks and threats identified in the above evaluation.
  - (i) To manage nature experience-oriented tours in the property, based on the Ecotourism Promotion Act of Japan, the Taketomi Town Iriomote Island Ecotourism Promotion Council has established appropriate management standards for the number of fields to be used, the number of people entering each field, and visitors' behaviors within the field. In fields where there is an especially strong concern over the impact of tourism, entry is restricted by establishing the maximum number of visitors per day below the current visitation level. With respect to other fields, ceilings are also set on the number of tourists per tour guide and total daily number of tourists per business operator. In accordance with the Ecotourism Promotion Act, those who intend to enter the site must apply in advance to the Mayor of Taketomi Town, and only those who are approved are allowed to enter, within the maximum number of visitors. Those who fail to comply with this provision will be penalized. With regard to the limitation on the number of tourists per tour guide and business operator, compliance with management standards is required in the licensing system based on the Ordinance Concerning Tourism Guides in Taketomi Town. Administrative penalties shall be imposed on violators. By combining the provisions of the Ecotourism Promotion Act and this Ordinance, nature experience-oriented tours is regulated and legally bound. Additionally, the Iriomote Foundation, established mainly by local people, is expected to be commissioned by Taketomi Town to operate the entry regulation and guide licensing system.
  - (ii) To manage the daily number of tourists visiting Iriomote Island, the island's tourism carrying capacity calculated from its clean water supply capacity (1,200 people/day)\* is used as the management standard. To adhere to this standard, the daily number of tourists visiting the island is controlled at or below the current visitation level, and visitor concentration in certain periods is mitigated by encouraging individual travelers to visit the island during the off-season through the enhancement of information dissemination by measures such as an ethical tourism calendar that predicts congestion on Iriomote Island. The visiting periods of group tours are also coordinated in advance at liaison meetings with tourism-related businesses (airlines, shipping companies, travel agents) transporting tourists to Iriomote Island.

*\*: If the proportion of tourists staying overnight on the island rises, the island's tourism carrying capacity calculated from its clean water supply capacity will fall. The tourism carrying capacity must therefore be reviewed according to the monitoring results of the overnight stay.*
  - (iii) In response to the growing trend towards individual travel, for the time being, measures are being taken, such as installing devices in rental cars to alert against exceeding the statutory speed limit, placing warning signs in areas where roadkills have been found, and enhancing public awareness activities. Going forward, we will analyze the relationship between tourists

and traffic accidents involving Iriomote cats. Based on the results of this analysis, more effective measures will be considered in national, prefectural, and other projects.

- In addition to the management methods described in (i) to (iii) above, administrative organs will accelerate efforts to introduce the followings as new mechanisms to nurture tourists' awareness about the environmental load of tourism and to encourage them to act responsibly.
  - Taketomi Town will establish a Taketomi Town Visitor Tax (provisional name) to equitably collect from tourists a fee for entering Iriomote Island. The tax collected will be used to pay for operating various systems for tourism management, monitoring activities and improving infrastructure to reduce the impact of tourism, and so on.
  - Okinawa Prefecture will introduce and utilize an Eco-certification System (provisional name), under which government agencies and others certify, award, and advertise tourism operators and local people who are operating ethical tours with smaller environmental loads and/or who conduct environmental conservation activities. The system will be used as an incentive to promote the reduction of tourism's environmental load. The prefectural government is going to consider toward the establishment of the system and preparation of a budget.

#### **(4) Integration with and revision to the Iriomote Island Tourism Management Plan**

- To systematically implement the tourism management methods presented in (3) above, based on the evaluation of the island's tourism carrying capacity and so on described in (2), Okinawa Prefecture is revising its Basic Visitor Management Plan for a Sustainable Iriomote Island established in January 2020, to create the Iriomote Island Tourism Management Plan as a comprehensive plan having various concepts, plans, and systems related to Iriomote Island tourism which have so far been discussed separately.
- In order to securely implement projects based on the plan and confirm outcome, the Iriomote Island Tourism Management Plan will grant the Iriomote Island Sub-local Meeting under the Regional Liaison Committee the function to review and update the plan based on continuous monitoring and objective evaluations.
- Revision to create the Iriomote Island Tourism Management Plan began in August 2021 with the establishment of a task force consisting of experts, relevant local groups and businesses, and administrative organs. The task force examined the plan and a draft plan was approved by the Iriomote Island Sub-local Meeting in July 2022. As of November 2022, hearings of opinions and adjustments to details are taking place with respect to the draft plan. The Iriomote Island Tourism Management Plan is scheduled to be finalized at the Iriomote Island Sub-local Meeting in February 2023. An outline of the draft Iriomote Island Tourism Management Plan as of July 2022

is attached to this report. (Attachment a-1)

### 2.1.2 Report on other three regions

- With respect to Amami-Oshima Island, Tokunoshima Island, and Northern part of Okinawa Island, we have not seen any rapid increase in tourists at present and have not confirmed any problem that requires urgent actions, partly due to the impact of the movement restrictions in response to COVID-19. We will continue to closely monitor the actual status of tourism uses both within and outside the property.
- Further efforts will be made based on the Master Plan of the Amami Island Group Sustainable Tourism and the Master Plan of the Northern Part of Okinawa Island Sustainable Tourism. Confirmation and coordination is to be carried out in the relevant Sub-local Meetings and expert committees to ensure that the plan is appropriately operated, reviewed, and updated in accordance with the actual situation in each region.
- An overview of tourism management on Amami-Oshima Island, Tokunoshima Island, and Northern Part of Okinawa Island is attached to this report. (Attachment a-2)

## 2.2 Traffic management to reduce road fatalities

*b) Urgently reviewing the effectiveness and strengthening if necessary the traffic management measures designed to reduce road fatalities of endangered species (including but not limited to Amami Rabbit, Iriomote Cat, and Okinawa Rail)*

### 2.2.1 Status of roadkills and their impact on the species survival and the ecosystem functions

- Roadkill incidents of threatened species, the causes, and the impact on their populations on the four islands have been reviewed based on the information obtained to date. For all species, roadkill incidents have been on the rise or have remained at high levels over a long time. The potential causes of this situation are changes in tourism dynamics and a recovery in, and greater distribution of, the populations of threatened species in recent years due to measures taken against alien species.
- With regard to the Iriomote cat, which is the top predator with a small population, roadkills are considered to have a material impact on the species population and on the ecosystem of Iriomote Island. As for the Amami rabbit and the Okinawa rail, it is estimated that the population and distribution of both species are on a recovery trend. Nonetheless, given their high rankings on the IUCN Red List, it is necessary to continue reducing the impact of roadkills on these species. For

the Amami rabbit on Tokunoshima Island, the habitat is fragmented between the southern and northern parts of the island, and the impact of roadkill is of greater concern.

- In addition to these three species, an analysis was conducted on the roadkill trend of the Ryukyu long-haired rat. Furthermore, roadkills of animals on Iriomote Island, including common species, were analyzed. In addition, roadkill data for other endangered species are being collected, including the Okinawa robin, Okinawa woodpecker, Ryukyu black-breasted leaf turtle, and spiny rats. The collected data will be analyzed further.

### **2.2.2 Review of the effectiveness of traffic management measures and future approach**

- To review the effectiveness of traffic management measures, a list of the existing measures was organized and examination results of the effectiveness of some of these measures in reducing roadkills were compiled. The results showed that many of the measures were effective, but that in some areas the measures were not fully implemented despite the high risk of roadkill. In response to these results, the enhancement of existing measures and implementation of additional measures are under consideration. These include the installation of animal blocking fences on Amami-Oshima Island and Tokunoshima Island, and an examination of the construction of new underpasses and further traffic surveys on Iriomote Island.
- The roadkill prevention measures will be enhanced, including the installation of additional structures and raising driver awareness on the four islands, while maintaining a collaborative relationship with various entities, such as relevant government organizations, interested parties, and experts, bearing in mind that roads are essential to the livelihoods of local people.
- In enhancing roadkill prevention measures, the identification of the locations and content of measures that require such enhancement will continue, based on the status of roadkill incidents, traffic conditions, and road structures, in order to adopt the optimal measures for each of these locations. In addition, the effectiveness of the measures taken will be examined through, for instance, an analysis of their degree of impact on threatened species. Furthermore, actions such as an examination of the mechanism of roadkill occurrence will be facilitated to develop more effective countermeasures and approaches.

### **2.3 River restoration**

*c) Developing a comprehensive river restoration strategy in order to transition wherever possible from hard, engineered infrastructure to employ nature-based techniques and rehabilitation approaches such as replenishment, vegetation, and the formation of different habitat types;*

### 2.3.1 Formulation of river restoration strategy

- The Task Force for River Restoration has developed a comprehensive river restoration strategy that indicates the basic approach and process of river restoration on the property, based on discussions and reviews from a scientific perspective among relevant government organizations and six experts in river engineering, disaster prevention engineering, and biology (Attachment c-1).

### 2.3.2 Future approach

- The implementing of the strategy will start with a survey on the impact of river structures on the property and an analysis and examination of their causal relationship, in collaboration among relevant government organizations, entities managing river structures, entities managing rivers, and experts.
- Based on the results of such survey, analysis, and examination, improvement measures for the river structures will be reviewed. Various risks, including the risks to disaster prevention after the adoption of such improvement measures, will be researched and evaluated in order to consider restoration policy while building consensus with the local people. Upon establishment of the restoration policy, adaptive management will be undertaken through implementing necessary measures and examining their effectiveness.

## 2.4 Forest management

*d) Capping or reducing logging operations in the buffer zones from current levels, both in number and combined size of individual harvesting areas, and ensuring that any logging remains strictly limited to the buffer zones.*

### 2.4.1 Introduction

Amami-Oshima Island, Tokunoshima Island, and Northern part of Okinawa Island (hereinafter, the “Three Regions”) have a long-standing practice of logging and using forest resources to produce wood products and for other purposes (pp. 123-124 of the nomination document). Forests in these regions demonstrate rapid regrowth and have a high regeneration capacity (Box 5 on pp. 113-114 of the nomination document). Wild animals and plants, including rare species, also use the secondary natural environment that emerges after logging as habitat (p. 1 of the Supplementary information of February 2020).

After peaking in the 1970s, logging operations in the Three Regions have been on a declining trend due to a combination of factors. These include the changing demand for timber and cooperative conservation efforts by local communities, forestry operators, administrations, and others.

As the request made by the World Heritage Committee is related to the future of the forestry industry, the administrative organs of the property again had discussion with and interviewed forestry operators about the future of logging activities after receiving the request. Such conversations and interviews confirmed the desire of forestry operators to continue practicing sustainable forestry operations that respect the natural environment of the area into the future. In addition, forestry operators raised a concern about the report submitted in February 2020 which presented an overview of the latest status of logging operations in the buffer zones of the Three Regions (Appendix 1-2-2 on pp. 9-12 of the Supplementary information of February 2020). They were apprehensive about the use of the report as a standard of future harvesting areas because the harvested area presented in that report was based on data from a period of stagnant demand for timber; hence the use of the report as a benchmark may cause problems for the future of the forestry industry. While receiving such views, discussions also took place on further initiatives that should be taken in response to the request.

Based on the results of these discussions with forestry operators and the status of systems concerning logging operations, with advice from experts, the administrative organs examined and organized responses to the request made on logging operations in the buffer zones.

In the buffer zones on Iriomote Island, no large scale forestry operations have taken place except that island residents used timber in their daily lives in the past. There is also no plan for future logging.

#### **2.4.2 Status of systems concerning logging operations**

The property and buffer zones in the Three Regions are designated as National Park (Amami-Oshima Island and Tokunoshima Island: designated in 2017, Northern part of Okinawa Island: designated in 2016 and expanded in 2018). Regulations on logging/timber extraction activities have become effective by these designations, requiring prior approval from the Japanese Government (Ministry of the Environment) for any logging operations under the Natural Parks Act (pp. 1-3 of the Supplementary information of February 2020).

The property is strictly protected as a Special Protection Zone and Class I Special Zone of a national park through the prohibition, in principle, of various acts that impact the preservation of evergreen broadleaved forests as these forests provide important habitats for wildlife, which characterize the nature of the said area. Most of the buffer zones are designated as Class II or III Special Zone of a national park; actions taken there are hence subject to regulation. To obtain approval, it is necessary to satisfy the approval standards stipulated in the Natural Parks Act.

In the buffer zones on Tokunoshima Island and in Northern part of Okinawa Island, the size of



individual harvesting areas is restricted up to 2 ha, in principle. An application must be made to the Ministry of the Environment before logging starts (p. 12 of the Supplementary information of February 2020).

As for Amami-Oshima Island, a special provision to the standards prescribed in the Natural Parks Act was introduced in March 2020, following the exchange of opinions and liaising with forestry operators, experts, and other parties. This special provision was designed to enable sustainable forestry operations which would conserve biodiversity and the habitats of rare species, while considering economic rationales, based on scientific insights into the high regeneration capacity of subtropical laurel forests (Box 5 on pp. 113-114 of the nomination document). Due to this special provision, the size of individual harvesting areas on Amami-Oshima Island is greater than those on Tokunoshima Island and Northern part of Okinawa Island, with a maximum of 10 ha. The provision, however, also sets out in detail matters requiring consideration. These include the establishment of the reserved belts of forests (e.g., no logging in the forests within 20 m from a Special Protection Zone and Class I Special Zone and within 20 m on each side of major ridges, and so on) and the use of the cable yarding method as the basic method so as not to cause soil damage. Logging operations will not be permitted unless these rules are observed. In addition, forestry operations are conducted in consideration of the natural environment and ecosystem; for instance, no logging around user facilities and the adoption of a logging method with less disturbance to forest land (e.g., use of chainsaws instead of heavy harvesting machineries) (pp. 1-2, 10 of the Supplementary information of February 2020).

In addition to the Natural Parks Act, the Forest Act prescribes matters such as a notification system for logging and post-logging reforestation. Notification of logging and other such acts must therefore be submitted to the municipality in which the forest is located.

Local forestry operators conduct forestry operations in compliance with the afore-mentioned regulations. They have also begun to play proactive roles for the conservation of biodiversity in local forests through conducting activities outsourced by relevant government organizations, such as anti-poaching patrols to protect rare species and the monitoring of rare and alien species. They are willing to continue to conduct sustainable forestry operations that takes into consideration the local natural environment.

A report by Mr. Bastian Bertzky, who was invited to the site in 2018, pointed out that forestry operations conducted under the above-mentioned regulations falls under sustainable use (pp.1-17 of Annex 1 to the nomination document).

#### **2.4.3 Approach to logging operations in the buffer zones**

The following initiatives will be taken based on the results of discussions with forestry operators following the receipt of the request, the status of systems concerning logging operations, and expert

advice.

- First, continuous efforts will be made to ensure compliance with the approval standards and the matters requiring consideration explained in 2.4.2, such as the rule on the size of individual harvesting areas under the Natural Parks Act. These are established from the viewpoints of both forestry operations and the inhabitation of rare species, endemic species and so on.
- Next, given that the buffer zones have the function to support the protection of the property, the maximum annual volume of timber harvested in the buffer zones shall be set. Specifically, this should be within the range of annual forest growth while maintaining the standing stock necessary to maintain the forests' function to preserve biodiversity and to produce timber, as calculated for each municipality.
- Furthermore , the newly developed “Forest Management Policy in Consideration of the Natural Environment on Amami-Oshima Island and Tokunoshima Island”, which includes two points mentioned above, and the “Policy for the Promotion of the Yambaru Model Forestry” (pp. 151-163 of Annex 2 to the nomination document) were prepared for each region as voluntary regulations to show the basic direction of forest management that respects forests' dual function of preserving biodiversity and producing timber. Based on these, forest management will be carried out with consideration for the natural environment (see Annex d-2).
- Relevant government organizations will continue monitoring and managing the logging and regeneration of forests through systems such as the prior permission application procedure under the Natural Parks Act and the notification system requiring the submission of reports on logging and the status of post-logging reforestation under the Forest Act.
- Lastly, as an important initiative, a forum will be provided every year for forestry businesses, relevant government organizations, etc. to share information, such as location and area of scheduled logging sites. In this forum, adjustments may be made as needed by, for instance, requesting a forestry operators to change its logging plan from the viewpoint of conserving biodiversity and important habitats of rare species based on the impact to the property. This will make logging operations better aligned with conservation efforts.

Furthermore, in response to the request, a new survey will be conducted in logged areas, scheduled sites of future logging, and their surroundings on Amami-Oshima Island. The survey is designed to comprehend the regeneration process of forests and the relationship between logging operations and the status of wild fauna and flora. It will cover themes such as forest composition, vegetation, soil, and the habitat of wild animals and plants. Using the results of this survey and regular monitoring (to be explained below), the degree of the impact of logging operations in buffer zones on the OUV of the property will be assessed. These results will be shared with forestry operators and relevant government organizations at the afore-mentioned information-sharing forum on Amami-Oshima Island and Tokunoshima Island so that they can be utilized for future initiatives and adjustments. In Northern part

of Okinawa Island, surveys have already been conducted on forest composition, vegetation, soil, status of wild animals and plants, and other matters. The results of these surveys will likewise be shared with forestry operators and relevant government organizations at the information-sharing forum, and will be utilized for future efforts.

In the property, the administrative organs conduct annual monitoring on the status of species representing the conservation status of diverse habitats required to maintain various endemic species and/or threatened species which represent the OUV, and on changes to the total forested area, based on 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 ” (pp. 101-122 of the Supplementary information of November 2019).

In conclusion, logging operations in the property are strictly prohibited, while logging operations in the buffer zones are managed in collaboration between forestry businesses and relevant government organizations through, for instance, information sharing and liaising, while making efforts to ensure strict compliance with various regulations and voluntary regulations. In addition, measures will be implemented where necessary based on surveys and monitoring, as well as seeking expert opinions when needed.

### **3. Other current conservation issues identified by the State Party which may have an impact on the property’s Outstanding Universal Value**

There are no other conservation issues identified by Japan which may impact the OUV of the property.

### **4. In conformity with Paragraph 172 of the Operational Guidelines, describe any potential major restorations, alterations, and/or new construction(s) intended within the property, the buffer zone(s) and/or corridors or other areas, where such developments may affect the Outstanding Universal Value of the property, including authenticity and integrity.**

There are no development projects in and around the property which may affect the OUV of the property.

### **5. Public access to the state of conservation report**

Japan accepts upload of full reports for public access on the World Heritage Centre’s State of Conservation Information System.



## **6. Signature of the Authority**

OKUDA Naohisa  
Director-General  
Nature Conservation Bureau  
Ministry of the Environment  
Government of Japan

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Director-General  
Forestry Agency  
Government of Japan

## Outline of the Draft Iriomote Island Tourism Management Plan

### 1. Background of the Iriomote Island Tourism Management Plan

To realize sustainable tourism on Iriomote Island and to respond to the requests from the World Heritage Committee, which were presented at the time of World Heritage inscription, the Basic Visitor Management Plan for a Sustainable Iriomote Island, which was formulated by the Iriomote Island Subcommittee in January 2020, will be revised, and the Iriomote Island Tourism Management Plan (hereinafter referred to as the “Plan”) will be formulated.

#### Requests

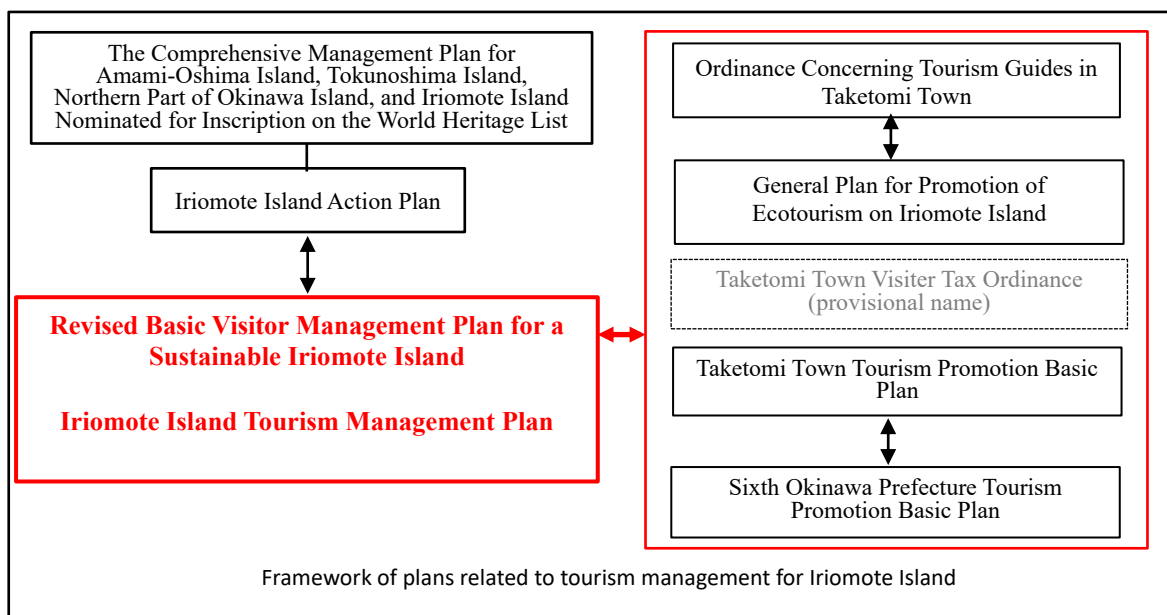
- a) Capping or reducing levels of tourist visitation from current levels, especially on Iriomote Island, until a critical evaluation of tourism carrying capacity and impacts can be conducted and integrated into a revised tourism management plan.

The Iriomote Island Tourism Management Plan is a tourism management plan that covers the entire Iriomote Island, both the heritage area and outside the heritage area, and integrates various visions, plans, and systems related to the tourism of Iriomote Island that have so far been developed individually.

In the Plan, the current status of tourism on Iriomote Island and its impact will be thoroughly evaluated. Also, to realize sustainable tourism on Iriomote Island, the objectives that Iriomote Island tourism should aim at will be set forth, together with the basic policies and criteria for tourism management in and outside the heritage area; concrete measures to implement appropriate management, monitoring methods, and management systems to confirm and evaluate its effectiveness will be presented in the Plan.

The Iriomote Island Subcommittee will ensure consistency between the basic policies and criteria for tourism management of the Plan and the policies and standards of the relevant individual visions, plans, and systems to avoid contradiction. The respective visions, plans, and systems will be revised to be consistent with the Plan, as necessary.

The relationship between superordinate plans and related visions, plans and systems is as follows:



## 2. Current Status of Tourism and Issues

### 2.1 Current status and trends of tourism on Iriomote Island

- The annual number of tourists to Iriomote Island has risen and fallen repeatedly, peaking at 406,000 people in 2007. Since 2015, it has declined gradually, and since 2020, it has fallen by 50% or more of the pre-2019 level due to the impact of movement restrictions in response to the COVID-19 pandemic. Before 2019, the 10-year average number of tourists entering the region was 330,000 (excluding 2011 data, which was affected by the Great East Japan Earthquake).
- In 2019, the annual number of tourists entering the region was 290,313, with 224,493 from Ohara Port in the east and 65,820 from Uehara Port in the west.

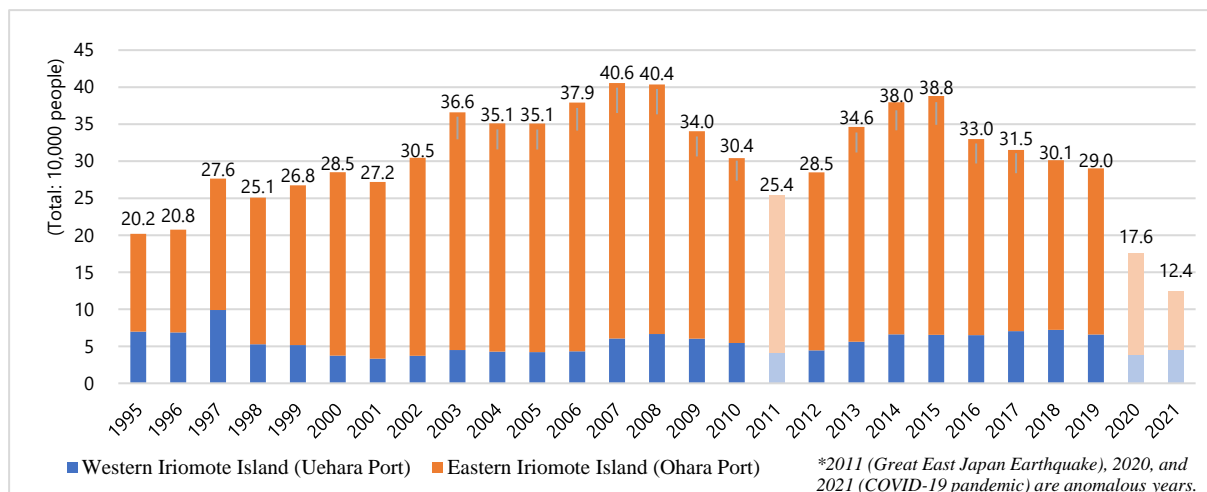


Figure: Annual changes in the number of tourists to Iriomote Island (Source: Taketomi Town website)

- Tourism on Iriomote Island can be generally divided into the following two types: circular tours, using a relatively large field for large buses or motorboats and nature experience-oriented tours (often accompanied by guides and instructors), involving activities such as canoeing and trekking in the sea area. Each type has variable trends in the number of visitors, places of activity, and styles of tourism.
- The number of tourists to Iriomote Island varies greatly seasonally, and the peak periods are different between the eastern and western parts of the island. The number of tourists entering from the eastern part of the island is concentrated in winter, with the peak in March; that from the western part is concentrated in summer, with the peak in August. In addition, tourists in the eastern part tend to take circular tours, while those in the western part tend to take nature experience-oriented tours.
- The annual changes in the number of same-day visitors to Iriomote Island in 2019 show that the number of same-day visitors was 1,543 people per day at the peak day, with its peak rate of 0.49%. In addition, the average is 862 visitors per day, and the standard deviation is 250 visitors per day, which is highly variable. The top 30 days account for 12.2% of the annual number of visitors to the region.
- The number of tourists who visited Iriomote Island in 2019 was 290,000. Of these, a cumulative total of approximately 70,000 people (24%) participated in canoeing, trekking and other eco tours led by tour guides to visit fields within the property. A cumulative total of approximately 150,000 people (52%) participated in sightseeing tours using motor-driven vessels on the Nakama and Urauchi Rivers. In addition, tourists also used facilities and fields in the Surrounding Conservation Area and marine areas.
- The fields used for nature experience-oriented tours and/or ecotourism are widely distributed throughout Iriomote Island, where, as a whole, 27 places on land and the whole sea area are used, of which 20 places are located in the heritage area.
- In recent years, while the number of motorboat users for circular tours has been on a decreasing trend, the number of users for nature experience-oriented tours appears to be on an increasing trend, and there has been an increase in the number of operators providing guidance on nature experiences.

- According to a survey conducted between 2015 and 2016, about 23% of tourists visiting Iriomote Island stayed overnight, but the average number of nights spent on the island was only about 0.36, indicating that many tourists stayed on Ishigaki Island and visited Iriomote Island on a day trip.

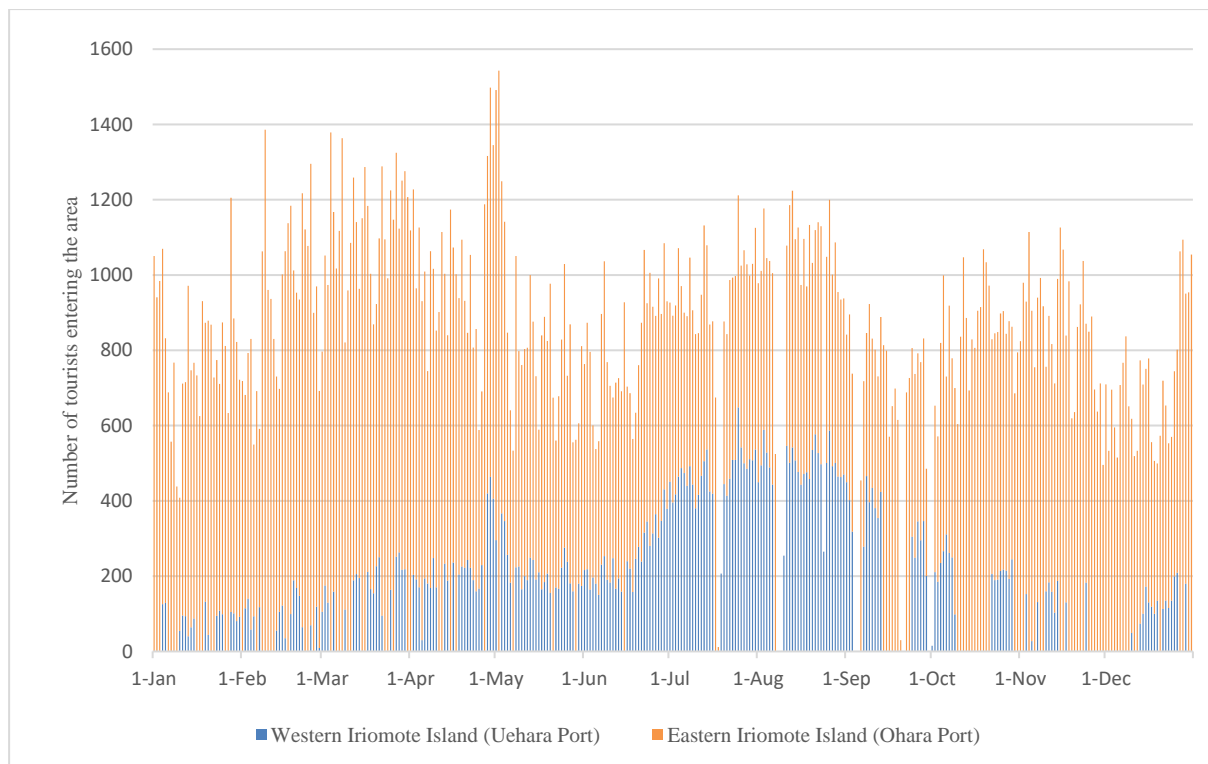


Figure: Daily numbers of tourists entering the Island in 2019  
(Source: Compiled from data provided by shipping companies)



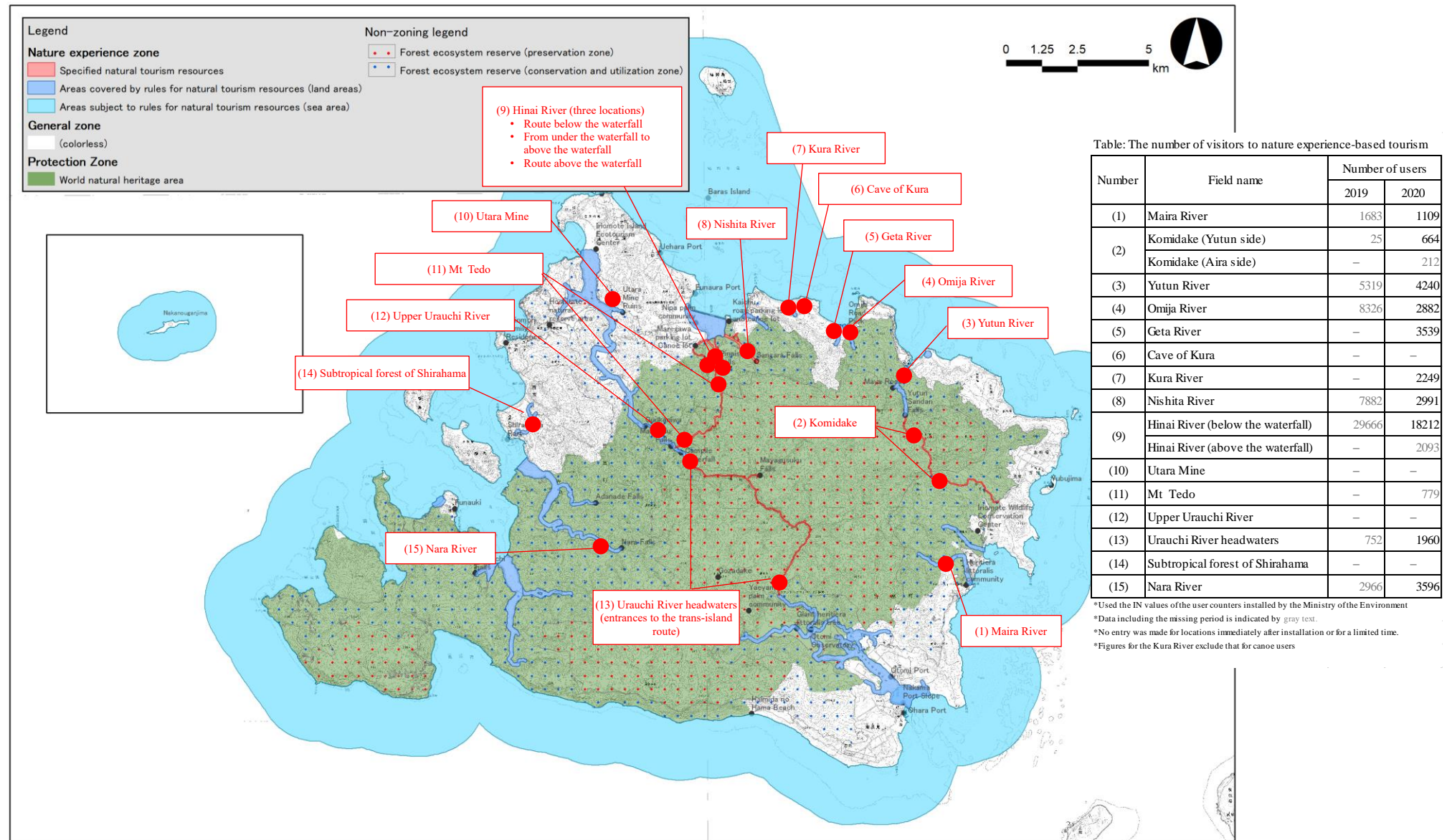


Figure: Distribution of fields for nature experience-oriented tours, locations of user counters, and number of users on Iriomote Island

## 2.2. Impacts of tourism on Iriomote Island and their assessment

The foreseeable impacts (threats) of tourism assumed inside and outside the heritage area on Iriomote Island have been identified as comprehensively as possible, and each impact has been assessed as to the magnitude of current risk and trends of change in consideration of the importance and carrying capacity of the area that may be affected. The assessment results are shown in the table on the next page. It has been decided that it is necessary to establish management criteria and consider measures to strengthen management with regard to the following tourism impacts.

On the other hand, with regard to the tourism outside the heritage area, the diversification of tourists' behaviors and values may bring about positive effects on the environment, society, economy, etc. of Iriomote Island. Therefore, this plan looked into actions that would contribute to the creation of multifaceted values through tourism; their effects need to be verified when the verification of the effectiveness of this plan is conducted.

### (1) Impacts of tourism for which management within the heritage area needs to be strengthened

#### (i) Impact of increasing places that are used as the fields for nature experience

With regard to the impact of an increasing number of places that are used as the fields for nature experience, it is necessary to curb the increase at or below the current level, which is used as the allowable limit, assuming as a precaution that any act could have impact in light of the importance of the heritage area conservation.

#### (ii) Impact of increasing visitors who seek nature experience-oriented tours and concentrated tourism use

With regard to impact of increasing tourists who visit places that are used as the fields for nature experience and concentrated tourism use of these places, it is necessary to determine the allowable limit in consideration of carrying capacity and current conditions and limit the number of visitors below it at places where there is a particular concern about the impact in light of the importance of the heritage area conservation. In other places, it is also necessary to strengthen management by continuously monitoring the number of visitors and the indicators of environmental load associated with use, while suppressing the increase in the number of visitors.

#### (iii) Impact of irresponsible actions of visitors and guide operators and impact due to activity characteristics

To prevent impact of irresponsible actions of visitors and guide operators and impact due to activity characteristics, it is necessary to establish rules for nature experience-oriented use to reduce environmental load and secure the safety of visitors, based on experience, and put in place an institutionalized mechanism to ensure compliance with these rules.

### (2) Impacts of tourism for which management outside the heritage area needs to be strengthened

#### (i) Impact of the total number of visitors to Iriomote Island

With regard to the impact of the total number of visitors to Iriomote Island, in recent years the number of tourists entering the region every year has been rising and falling alternately. Moreover, it is difficult to set the standard figure for the annual number of tourists who can visit the region by evaluating the relation between it and foreseeable impacts from the viewpoint of carrying capacity. Therefore, for the time being, it is necessary to monitor carefully the total number of visitors, so that it will stay within the range of the last 10 years or so.

#### (ii) Impact of concentrated tourism use at specific times

With regard to the impact of concentrated tourism use at specific times, there are concerns that it causes congestion on regular liner ships and that the infrastructure of the island could be affected. It is therefore necessary to set the standard figure in consideration of carrying capacity and control the number of visitors below it to the extent possible.

#### (iii) Impact of increasing individual tourists

An increase in the number of individual tourists cannot necessarily be considered to be a foreseeable impact factor. It would be possible to avoid or reduce the impact that could occur if visitors and guide operators who do not behave properly increase. Therefore, it is necessary to monitor the impact carefully and continuously, while ensuring thorough compliance with traffic rules and strengthening public awareness-raising activities.

#### (iv) Impacts of irresponsible actions of visitors and guide operators and activity characteristics

Same as the description for the impact within the heritage area.

Table: Assumed impacts and assessment for Iriomote Island tourism

Impact category	Impact factors		Foreseeable impacts (threats)	Assessment of impacts	
				Risk assessment	Trend assessment
Impact within the heritage area	Increase in the number of places that are used for tourism within the heritage area		Reduced primeval areas free of human impact Wider, accumulative, and compound human impact Inhibited growth of highly rare species	High	↗
	Increase in the number of visitors entering the heritage area Concentrated tourism use at specific locations and times		Damage to places vulnerable to human activities and environmental degradation Inhibited growth of rare species Decreased visitor safety Decreased quality and satisfaction of visitor experience	High	↗
	Irresponsible conduct of visitors and guide operators	Capture of rare animals and picking of rare plants	Decreased population of rare species that have been captured or picked Increased risk of extinction	High	↗
		Dumping of garbage	Deterioration of water quality and habitat environment		
		Human waste in the field	Deterioration of water quality and habitat environment		
		Invasive alien species and pets	Deteriorated conditions for native species due to competition and predation Spread of infection among wild animals such as wildcats		
		Feeding of wild animals	Behavioral change of wild animals		
		Disorderly abandonment of canoes etc	Impact on mangroves etc and landscape disturbance		
	Load caused by activities	Trekking	Soil hardening, soil denudation, expanded erosion, damaged trees due to trampling and treading by visitors / vegetation change around trails / invasion and spread of alien species / accidents of stray visitors	High	↗
		Canoe, kayak, etc	Trunk and root damage due to intrusion into the mangroves		
		Activities at streams and waterfalls, canyoning	Inhibited inhabitation and reproduction of fish etc due to evasion and water quality deterioration / riverbed disturbance and damage to attached algae due to trampling / disturbance to benthic organisms and detritus		
		Wildlife watching, fishing, collection, etc	Declined population of animals and plants that have been fished, captured, and/or picked Behavioral change of wild animals as they evade or get used to people		
	Motorboat tours		Soil erosion and impact on mangroves due to ship waves of motorboats	Low	↘
Impact outside the heritage area	Development for tourism	Facility construction, landform change, cutting of trees, etc	Habitat loss and habitat environment change Invasion of alien species / landscape disturbance	Low	→
	Total number of visitors to Iriomote Island, concentrated tourism use at specific times, increase in the number of individual tourists	Use of the liner by visitors Occupation of parking lots by tourism operators etc	Congestion on the liner ships and at the ports / decreased comfort and satisfaction of visitors (crowded toilets, bad atmosphere, hurried tour, etc) / disturbance to local residents' life (for example, local people cannot board the liner or park vehicles at the port)	Medium	→
		Load on the island's infrastructure by visitors	Water supply restriction to local people due to shortage of water resource Increased load and cost of sewage and waste treatment	Medium	→
		Increase in accidents caused by visitors	Increased burden on local fire brigades and residents for transport and search activities	High	↗
		Increased traffic and excessive speed on roadways	Traffic accidents and roadkill of wild animals such as wildcats Occurrence of traffic accidents and decreased safety of local residents' life	High	↗
	Irresponsible conduct of visitors and tourism operators	Capture of rare animals and picking of rare plants	Declined population of rare species that have been captured or picked / increased risk of extinction	Medium	↗
		Visitation and use of the local clinic for minor medical treatment	Increased burden on the local clinic		
		Peeping into private houses in the local villages	Violation of local residents' privacy		
		Entry into sacred places such as Utaki and places of festivals	Disturbance to local culture and customs		
		Walking around in swimsuits in the local villages	Deteriorated public morals and increased discomfort to local residents' life		
	Load caused by activities	Trekking and walking	Disturbance to commercial hunting and agricultural activities due to visitors entering hunting grounds and/or farmland / damaged hunting tools and agricultural tools	Medium	↗
		Wildlife watching	Disturbance to turtles' spawning due to lighting on facilities and flashlights in the coastal area		
			Deteriorated habitat environment of fireflies due to disorderly use of flashlights		
		Insect collection and fishing	Declined population of insects and/or fish that have been caught		
		Swimming, diving, snorkeling, and fishing	Disturbance to fisheries due to tourists swimming and/or boats at anchor in the fishing grounds		
			Deteriorated water quality and habitat environment of marine life due to the use of chemical substances such as sunscreen and detergent		
			Coral damage due to anchoring		
			Coral damage due to low-skill swimming		
		Cave exploration and caving	Disturbance to the habitation of bats etc due to tourists entering caves and using flashlights		

### 3. Tourism Management Goals and Policies

#### 3.1 Overall goals of tourism management

In revising the Basic Visitor Management Plan for a Sustainable Iriomote Island, the following goals have been set for Iriomote Island tourism in consideration of consistency with superordinate plans and related plans.

**Protect the nature and life of the island that we are proud of  
and pass them on to future generations,  
controlling the impact of tourism on the environment and people's lives  
and promoting responsible tourism that contributes to local society.**

#### 3.2 Stakeholders' roles and action guidelines

To achieve the overall goals of tourism management on Iriomote Island, it is necessary for each stakeholder involved in tourism management on Iriomote Island, i.e., the government, tourism operators, visitors, and islanders, to have accurate understanding of the role it should play and the impact and effect of their actions and then promote the actions for tourism management that are set forth in this plan. The stakeholders' roles and action guidelines are described below. They are presented, will continue to be presented, to the attention not only of stakeholders and visitors both inside and outside the island, but also of the rest of the world, through appropriate measures, by the Taketomi Town Iriomote Island Ecotourism Promotion Council in coordination with the industry, government, academia, and citizens.

##### **Government**

The government bodies concerned with the tourism management on Iriomote Island should always assess and monitor the current status and trends of tourism on Iriomote Island and foreseeable impacts of tourism. They are responsible for taking necessary measures to preserve the value of the World Heritage property and reduce the impact of tourism on the natural environment, culture and life on Iriomote Island.

In addition, the relevant government bodies shall endeavor to share information with each other and shall endeavor to promptly implement necessary measures, fully mobilizing their resources under their jurisdiction in coordination and cooperation with each other.

##### **Tourism operators**

Operators engaged in tourism on Iriomote Island should be fully aware that their business activities may have an impact on the natural environment of Iriomote Island and the culture and life of the local community. They should make efforts to reduce the load that is caused by their activities. They are responsible for promoting tourism business that contributes to local society as well as the preservation of the World Heritage value as well as cultural value of Iriomote Island.

##### **Visitors**

People who visit and stay on Iriomote Island for sightseeing and other purposes should be fully aware that their activities may affect the natural environment of Iriomote Island and the culture and life of the local community. They should make efforts to control their activities in accordance with established rules and requirements. They should understand the value of Iriomote Island's World Heritage as well as local culture, respecting the lives of local residents and act responsibly.

##### **Islanders**

The islanders of Iriomote Island should be fully aware that the island's life and culture are supported by the rich natural environment and should maintain good relations on their own to pass them on to future generations. They are responsible for cooperating with the government bodies' legitimate measures for conservation of the island's nature and culture.

In addition, local residents should make efforts to warmly welcome responsible tourism by operators and visitors that contribute to the local community and make better use of the profit and benefit of tourism.

### 3.3 Basic policies for tourism management

To achieve the aforementioned overall goal of tourism management on Iriomote Island in light of the impacts of tourism and their assessment that were addressed in Chapter 2, Iriomote Island is divided into the areas within the heritage area and outside the heritage area, and basic policies of tourism management are presented for each area.

The basic policies for tourism management on Iriomote Island and management items for each area are shown in the figure below. For each management item, management criteria have been set up; management tools have been selected and management methods have been examined that are necessary to ensure effective management. As a result, it has been decided that tourism management is to be implemented on Iriomote Island in accordance with the framework shown in the table on the next page.

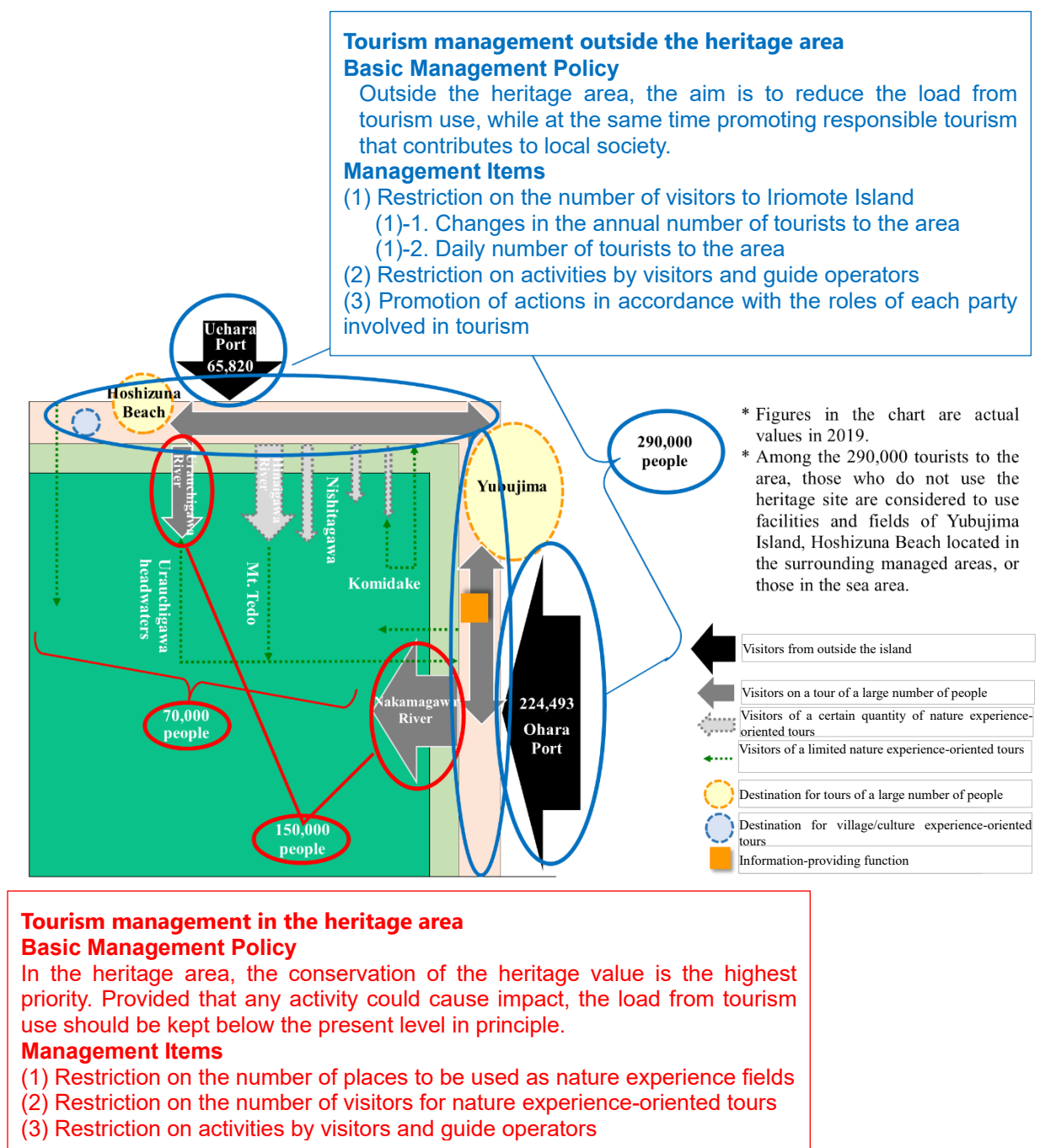


Figure: Framework and basic policies for tourism management on Iriomote Island



Table: Tourism management framework for Iriomote Island

Management area	Management items	Management criteria	Management method
Heritage area	Restricting the number of places that are used as nature experience fields	No increase in the number of places in the heritage area from the number of places that were actually used in 2019 (20 places)	To restrict tourism use based on the rule of the Overall Concept for Promoting Ecotourism (Ecotourism Promotion Act) providing that the protection zone “cannot be used for tourism in principle”.
	Restricting the number of visitors who seek nature experience-oriented tours	i. The number of visitors at places where concentrated tourism use occurs does not exceed: A. Hinai River: 200 people/day; B. Nishita River: 100 people/day.	To designate the relevant areas as specified natural tourism resources under the Overall Concept for Promoting Ecotourism (Ecotourism Promotion Act) and limit the number of people who enter the designated areas by introducing a prior approval procedure for entry to these areas.
		ii. The number of visitors to important habitats for rare plants and/or animals does not exceed: C. Komidake: 30 people/day; D. Urauchi River headwaters: 50 people/day; E. Mt. Tedo: 30 people/day	
		iii. The number of visitors to other fields for nature experience-oriented tours does not exceed: F. One operator per location/activity The maximum number of visitors per guide is to be decided	To require compliance with tourism use rules of the Overall Concept for Promoting Ecotourism (Ecotourism Promotion Act) in the provisions of the Tourist Guide Ordinance, which makes violators subject to administrative penalties, and thereby restrict guide operators’ conduct and obligate guide operators to manage visitors’ conduct.
	Restricting activities by visitors and guide operators	The general rules for guide operators and specific rules for individual areas or activities specify what are banned or restricted.	
Outside the heritage area	Restricting the number of visitors to Iriomote Island	The annual number of tourists to the region does not increase by 10% or more as compared to that of the previous year.	To calculate the allowable limit for the following year based on the annual number of tourists to the region in the previous year, inform tourism stakeholders about the limit, and request necessary measures. When a large increase exceeding the allowable limit is ascertained or is likely to happen, the Iriomote Island Subcommittee examines and re-evaluates the magnitude of foreseen impact. The subcommittee make arrangements and requests for necessary measures to be taken.
		The number of visitors per day to the region does not exceed 1,200 people/day. *The standard figure is to be reviewed in light of the fluctuation in the ratio of overnight visitors.	To create and publish the Ethical Tourism Calendar, which forecasts congestion on Iriomote Island based on the most recent daily number of visitors. To encourage tourists to plan their visits during low seasons by strengthening information transmission. To organize liaison and coordination meetings with tourism-related business operators who transport visitors to Iriomote Island for coordination to stabilize the number of visitors and mitigate congestion.
	Restricting activities by visitors and guide operators	The speed of vehicles that run on the island is limited to 40 km/h or less.	To continue patrols and surveillance by management organizations, NPOs, etc., in addition to patrols and enforcement by the police, and conduct awareness-raising activities for visitors, tourism operators, and islanders.
		The tourism use rules for general visitors specify what are banned or restricted. The general rules for guide operators and specific rules for individual areas or activities specify what are banned or restricted.	To require compliance with tourism use rules of the Overall Concept for Promoting Ecotourism (Ecotourism Promotion Act) in the provisions of the Tourist Guide Ordinance, which makes violators subject to administrative penalties, and thereby restrict guide operators’ conduct and obligate guide operators to manage visitors’ conduct.
	Promoting actions in accordance with the roles of stakeholders involved in tourism	Target actions to be promoted by stakeholders involved in tourism are determined in accordance with their roles. i. Government: Infrastructure development that contributes to reducing tourism impact ii. Tourism operators: Provision of tourism products and services that contribute to reducing burden and enhancing social benefit iii. Visitors: Payment for the social costs associated with tourism activities iv. Islanders: Minimization of environmental load associated with daily life and industry	To introduce and utilize user-pays mechanisms and other programs, such as recognition and support to good practices, and promote the action of the relevant stakeholders through the operation of these mechanisms and programs, to ensure consistency and coherence among the different stakeholders. To make use of tourism to enhance the environmental, social, and economic values of Iriomote Island.

## 4. Major Initiatives to Realize Sustainable Tourism

In accordance with the aforementioned framework of tourism management, specific initiatives and projects to be implemented have been identified: the table below lists them together with information about the implementing entities, outlines of the content, and years for implementation.

Major Initiatives and Projects Based on the Tourism Management Plan (Heritage Area)

Management area	Management items	Initiatives and project names	Implementing entity	Outline of initiatives and projects	Year		
					- 2021	2022	2023 -
Heritage area	Restricting the number of sites used as a nature experience field	Operation of the Overall Concept for Promoting Ecotourism of Iriomote Island	Taketomi Town Iriomote Island Ecotourism Promotion Council	<p>In order to realize the orderly use of fields for nature experience-oriented tours with little impact on the natural environment, we <b>formulated the Overall Concept for Promoting Ecotourism of Iriomote Island (hereinafter referred to as the "Overall Concept")</b>, which describes the rules and control methods for proper tourism use as follows. <b>Following the approval by the national government in • 2022, we established an enforceable mechanism for proper use based on the Ecotourism Promotion Act.</b> In addition, we will make the rules, etc. known through the website of the Taketomi Town Iriomote Island Ecotourism Promotion Council to operate the Overall Concept properly.</p> <p><b>(i) Limiting the tourism use of sites by zoning</b></p> <p>We divided Iriomote Island into a "nature experience zone," "general zone" and "protection zone," and established usage policies for each zone. As a general rule, the protection zone will not be available for tourism.</p> <p><b>(ii) Restricting the number of sites and visitors under the designation of natural tourism resources and management of activities</b></p> <p>We designated a field for nature experience-oriented tours on Iriomote Island as a "natural tourism resource," and specified restrictions on the available areas, the number of people who can be guided by one operator or one guide, and prohibitions and activity restrictions for the conservation of the natural environment and safety management as a rule for general users and guide operators. In addition, the Ordinance Concerning Tourism Guides in Taketomi Town stipulates the duty to comply with the rules to ensure their effectiveness.</p> <p><b>(iii) Pre-entry application and limit on visitors under the designation of the specified natural tourism resources</b></p> <p>Designated the five fields (Hinaigawa, Nishitagawa, Komidake, Urauchigawa headwaters, and Mt. Tedo), for which it is necessary to take measures for protection owing to particular concerns about the impact of tourism use, as specified natural tourism resources, set the maximum number of visitors per day in accordance with the Ecotourism Promotion Law to ensure compliance with the limitation and the rules.</p> <p><b>(iv) Monitoring and evaluation of utilization impacts</b></p> <p>In order to confirm and improve the effectiveness and validity of the Overall Concept, monitoring will be conducted on the status of tourism use and the natural environment, the quality of tourism use, and relationships with local communities.</p> <p><b>○ Monitoring method:</b> In addition to detailed monitoring that regularly identifies and evaluates scientific and objective impacts, a simplified monitoring about once a year will be conducted in cooperation with guide operators.</p> <p><b>○ Implementation system:</b> Administrative organizations, local related organizations, guide operators, etc. divide their roles to conduct monitoring surveys in cooperation with local researchers and experts.</p> <p><b>○ Evaluation methods and reflection of the results:</b> The Monitoring and Evaluation Committee composed of experts, researchers, administrative organs, etc. are established within the Promotion Council, and the Committee appropriately evaluates the monitoring results and reports the evaluation results to the Promotion Council every year. Based on the evaluation reports from the said Committee, the Promotion Council will examine and coordinate the implementation of concrete conservation measures to conserve natural tourism resources.</p>	Consideration	Overall Concept certification	
	Restricting the number of visitors through nature experience-oriented tours					Implementation	
	Restricting the number of visitors through nature experience-oriented tours					Implementation	
	Restrict activities by visitors and guide operators	Operation of the Ordinance Concerning Tourism Guides in Taketomi Town	Taketomi Town	<p><b>The Ordinance Concerning Tourism Guides in Taketomi Town (and its enforcement regulations) came into effect in April 2020, imposing on guide operators who conduct tourist guide businesses utilizing natural resources in the land area of Iriomote Island (including river and coastal areas) the duty for obtaining a license from the mayor of Taketomi Town.</b> As a result, a system was established to secure and develop high-quality guides rooted in the region.</p> <p><b>Provisions of Ordinance Concerning Tourism Guides in Taketomi Town (Excerpt)</b></p> <ul style="list-style-type: none"> <li>• <b>Requirements for applying for a license:</b> Business performance on Iriomote Island, certification of emergency life-saving training, certification of membership of community centers on Iriomote Island (or prima facie showing of results of regional development, etc.), and training, etc. specified in regulations</li> <li>• <b>Rules and obligations to be observed by tourist guides:</b> Explanation of precautions for use to users, carrying and presenting licenses, reporting on destruction of the natural environment, etc.</li> <li>• <b>Guidance, recommendations, etc.:</b> Guidance, recommendations, orders and public announcement measures for violators</li> <li>• <b>Administrative action:</b> If a tourist guide violates this ordinance or related laws and regulations, it is possible to order the guide to suspend its business for a certain period of time or revoke the license.</li> </ul> <p><b>*As of 2022, coordination with the Public Prosecutor's Office is ongoing toward the revision of the ordinance, including the addition of penal provisions.</b></p>	April 2020 Enforcement of ordinances	Implementation	
Heritage area	Enhance measures to reduce impacts and public awareness activities	Enhance measures to reduce impacts and public awareness activities	Ministry of the Environment Forestry Agency Okinawa Prefecture Taketomi Town Relevant organization	<p>The following projects and initiatives will be implemented to develop fields and raise public awareness necessary to reduce loads on the natural environment caused by tourism in the heritage site.</p> <p><b>(i) Maintenance and improvement of sidewalks, decks, toilets, mooring facilities, parking lots, etc.</b></p> <p><b>(ii) Installation of explanatory plates, signs, gates, etc., indicating area designations, action restrictions, etc.</b></p> <p><b>(iii) Efforts to establish portable toilet booths, maintain them, and promote their use</b></p> <p><b>(iv) Raising awareness of preventing collection of rare species and invasion of alien species</b></p> <p><b>(v) Dissemination and enlightenment of usage rules in ports, base facilities, websites, etc.</b></p>	Consideration	Ordinance revision	
	Enhance measures to reduce impacts and public awareness activities				Consideration	Implementation as needed	

Major Initiatives and Projects Based on Tourism Management Plans (Outside the Heritage Area)

Management area	Management items	Initiatives and project names	Implementing entity	Outline of initiatives and projects	Year		
					- 2021	2022	2023 -
Outside the heritage area	Restricting the number of visitors to Iriomote Island	Building a public-private partnership system based on an agreement	Ministry of the Environment Okinawa Prefecture Taketomi Town Private businesses	<p><b>The Ministry of the Environment Okinawa Amami Nature and Environment Office, Okinawa Prefecture, Taketomi Town, and three shipping companies concluded the Agreement on Sustainable Tourism Management on Iriomote Island in March 2020, and established a system to implement the following measures toward the realization of sustainable tourism management under public-private partnership.</b></p> <ul style="list-style-type: none"> <li>• Efforts to achieve the standard value of visitor capacity on Iriomote Island</li> <li>• Efforts to encourage tourists to come to Iriomote Island in order to disperse and equalize the timing of their visits</li> <li>• Efforts to secure sea routes for life and eliminate congestion on Iriomote Island</li> <li>• Efforts to disseminate and enlighten tourist rules and manners on Iriomote Island</li> <li>• Efforts related to information sharing and monitoring of the number of tourists to Iriomote Island</li> <li>• Other matters consistent with the objectives of the Agreement</li> </ul>			
		Preparation and publication of the Ethical Tourism Calendar	Okinawa Prefecture Taketomi Town Ministry of the Environment Taketomi Town Iriomote Island Ecotourism Promotion Council Private businesses	<p>In order to disperse and equalize the timing of visits by suppressing the number of tourists entering the area during peak hours, <b>we will create and publish the Ethical Tourism Calendar (tentative name) to make visitors aware of the information on the times of congestion and encourage them to take actions of avoiding the concentration of tourism use and of restraining from going voluntarily.</b></p> <p><b>(i) Study on methods for creating and publishing the Ethical Tourism Calendar</b> The Okinawa prefectural government will study ways to create and publish the Ethical Tourism Calendar and coordinate and reach an agreement with relevant parties.</p> <p><b>(ii) Tabulation and reporting of daily traffic data</b> Shipping companies operating regular routes will compile data on the daily number of passengers and report the data to Taketomi Town every month.</p> <p><b>(iii) Tabulation and provision of data on daily number of visitors</b> Taketomi Town will compile daily data on the number of regular route users of the islanders and town office staff, and (i) subtract this from the data to compile the number of daily tourists and provide it monthly to the Taketomi Town Iriomote Island Ecotourism Promotion Council.</p> <p><b>(iv) Tabulation and provision of daily number of visitors by nature experience field</b> The Ministry of the Environment will collect counter data for each field of nature experience, tabulate the daily number of visitors for each field, and provide it to the Taketomi Town Iriomote Island Ecotourism Promotion Council every month.</p> <p><b>(v) Creation and publication of the Ethical Tourism Calendar</b> The Taketomi Town Iriomote Island Ecotourism Promotion Council creates and updates the Ethical Tourism Calendar every month, which predicts the congestion situation of excursion-based tourism and nature experience-oriented tours on Iriomote Island using the most recent data of daily visitors and of daily visitors by field provided by Taketomi Town and the Ministry of the Environment, and publicizes it through the websites of the Council and shipping companies to make it known to tourists.</p>			
		Operator adjustment to disperse and equalize the number of tourists entering the area	Okinawa Prefecture Private businesses	In order to limit the number of tourists to Iriomote Island per day to the standard value, business operators such as shipping companies, travel agents, and airlines that are responsible for transporting tourists to Iriomote Island will cooperate and hold regular meetings to consider and coordinate specific measures for mass tour tourists during the period when a high concentration of tourism use is expected, based on information in the Ethical Tourism Calendar and advance reservation information by each operator.			
	Restrict activities by visitors and guide operators	Operation of the Overall Concept for Promoting Ecotourism of Iriomote Island	Taketomi Town Iriomote Island Ecotourism Promotion Council	(Reshown) The details of the projects and initiatives are as described in the same item in the heritage area.			
		Operation of the Ordinance Concerning Tourism Guides in Taketomi Town	Taketomi Town	(Reshown) The details of the projects and initiatives are as described in the same item in the heritage area.			
		Attention to reduce vehicle speed	Yaeyama Police Station	Under the Road Traffic Law, the police control the speed limit of 40 km/h or less for vehicles on the Island and apply punitive provisions to offenders.			
			Ministry of the Environment Okinawa Prefecture Taketomi Town NPO Private businesses	<p>Management organizations, NPOs and companies will work together to encourage tourists and others to reduce vehicle speeds by continuing to implement the following operations.</p> <p><b>(i) Implementation of patrols and monitoring activities</b></p> <p><b>(ii) Installation of warning signs and posters</b></p> <p><b>(iii) Installation of road markings, speed reduction zones, speed warning devices, etc.</b></p> <p><b>(iv) Raising awareness of rules through handouts, SNS, etc.</b></p> <p><b>(v) Explanation of rules and precautions when renting a car</b></p>			
		Understanding of actual driving conditions of rental cars	Okinawa Prefecture	Transmission devices are installed in vehicles owned by rental car companies on Iriomote Island, and the number of cars running, sections, speeds, etc. of the rental cars are measured by using receivers installed on roads in the island in order to assess the data on sections, time, etc. of excessive speed and reflect it in the methods for effective operations.			



Management area	Management items	Initiatives and project names	Implementing entity	Outline of initiatives and projects	Year		
					- 2021	2022	2023 -
Outside the heritage area	Promote actions in accordance with the responsibilities of each party involved in tourism	Enhance measures to reduce impacts	Ministry of the Environment Forestry Agency Okinawa Prefecture Taketomi Town Private businesses Relevant organization	The following operations and efforts are implemented to reduce loads on the natural environment caused by tourists' stay and activities and the lives and industries of residents, and to improve facilities, expand functions, and strengthen maintenance and management necessary to mitigate the impact on residents' lives. <b>(i) Maintenance and enhancement of toilet facilities and purification functions at ports and sites</b> <b>(ii) Developing and encouraging utilization of tourist reception facilities in the surrounding management areas</b> <b>(iii) Securing a means of transportation within the island with less environmental load and roadkill</b> <b>(iv) Efforts to reduce congestion in liner ships and harbor parking lots</b> <b>(v) Strengthening the functions of waste, sludge, and sewage treatment facilities</b> <b>(vi) Reduction of waste such as PET bottles</b> <b>(vii) Promotion of cleanups and beautification of coastal debris</b> <b>(viii) Disaster and accident prevention measures (installation of warning signs, establishment of rescue and communication systems, etc.)</b>	Consideration	Implementation as needed	
		Establishment and operation of the <b>Taketomi Town Visitor Tax Ordinance</b> (tentative name) on taxes to be borne by users	Taketomi Town Ministry of the Environment Okinawa Prefecture	The Taketomi Town Visitor Tax (tentative name) shall be established and properly operated as a system to collect revenue for the costs necessary for the development of infrastructure and environmental conservation projects that contribute to the reduction of loads and impacts from tourism on the natural environment as the responsibility and burden of tourists.	Consideration	Implementation	
		Use of Good Practice ( <b>Eco-Certification</b> ) System (tentative name)	Relevant organization	We will promote activities that contribute to the promotion of responsible tourism and to the region by providing incentives to tourism operators and islanders by utilizing a system that evaluates the state of efforts to reduce loads on the natural environment and contribute to the local community for guide operators, tourism operators such as lodging businesses, restaurants, and transportation businesses, and islanders, and certifies, awards, and publicizes qualified business operators who meet certain standards and those who implement excellent activities.	Consideration	Implementation	
		Establishment and operation of the <b>Iriomote Foundation</b> , a regional management organization responsible for tourism management	Relevant organization	In order to preserve the natural environment of Iriomote Island and protect the island's culture and operations, the Iriomote Foundation was established as a dedicated organization for local residents to take the lead in solving Iriomote Island's problems. • Implementation of projects, such as operation of the license system for guides based on the Tourist Guide Ordinance and human resource development • Implementation of management projects to enforce entry regulations and rules based on the Overall Concept for Promoting Ecotourism • Constant management of the secretariat of the Promotion Council based on the Overall Concept for Promoting Ecotourism • Implementation of conservation projects through the use of funds under the user contribution system • Implementation of monitoring of utilization impacts and results of conservation projects	November 2021 Iriomote Foundation established Consideration	Implementation as needed	
		Development of facilities for dissemination and enlightenment	Wildlife Conservation Center	The Ministry of the Environment will renew the content of the exhibition through a major renovation of the Iriomote Wildlife Conservation Center, while Okinawa prefectural government will strengthen its human resources to provide guidance for and explain the exhibition, thereby enhancing public awareness on the protection of wild animals, such as a Iriomote wildcat, and proper tourism.	Consideration	Implementation	
			Heritage Center	The World Heritage Center, which will function to provide exhibitions and explanations, education and learning, information dissemination, and conservation management related to Iriomote Island's World Natural Heritage, will be established in the eastern area, which is the gateway to Iriomote Island.	Consideration	Implementation	
			Field Center	Establish a field center in the western area of Iriomote Island with functions such as informing users of rules, bases for field management activities, and disseminating and raising awareness of heritage values.	Consideration	Implementation	
		Dissemination of rules and manners	Ministry of the Environment Forestry Agency Okinawa Prefecture Taketomi Town Private businesses	In order to reduce loads on the natural environment and give appropriate consideration to local communities and residents, the following measures will be implemented on an ongoing basis to disseminate the rules and manners to be observed by tourists and to promote responsible behavior. <b>(i) Distribution of pamphlets, etc. at ports, base facilities, accommodation facilities, restaurants, etc.</b> <b>(ii) Screening of educational videos on airplanes and liner ships, etc.</b> <b>(iii) Posting rules and manners on websites, SNSs, etc.</b>	Consideration	Implementation	
		Centralization of collection and dissemination of various information related to tourism	Ministry of the Environment Forestry Agency Okinawa Prefecture Taketomi Town Relevant organization Private businesses	In order to collect various kinds of information on Iriomote Island tourism (tourism management conditions, current status of tourism resources, actual conditions and trends of utilization, etc.) from various directions, and to organize and integrate them into a form that is easy to use, and to disseminate it to a wide range of targets, strengthen cooperation among the parties, and build a platform for centralized management and the dissemination of information.	Consideration	Implementation	

The tables below are checklists, which have been used to ensure that tourism management measures to be implemented based on this plan appropriate management tools address the foreseeable tourism impacts.

Table: Tourism impacts on Iriomote Island and the checklist of management tools (within the heritage area)

Management area	Impact factors	Foreseeable impacts (threats)	Impact assessment		Management tools										
			Risk assessment	Trend assessment	Natural Parks Law	Protected forest system	Ecotourism Promotion Act	Takekomi Town Tourist Guide Ordinance	Road Traffic Act	Maintenance measures and infrastructure development	User fees (Visiting Tax Ordinance)	Good practices (eco-certification system)	Public-private sector agreement and coordination meetings Management organization	Promotion and enlightenment (including establishment of bases)	Information dissemination (including tourism calendars)
Impact within the heritage area	Increase in the number of places that are used for tourism within the heritage area	Reduced primeval areas free of human impact / Wider, accumulative, and compound human impact / Inhibited growth of highly rare species	High	↗		✓	✓	✓					✓	✓	✓
	Increase in the number of visitors entering the heritage area Concentrated tourism use at specific locations and times	Damage to places vulnerable to human activities and environmental degradation / Inhibited growth of rare species / Decreased visitor safety / Decreased quality and satisfaction of visitor experience	High	↗			✓	✓					✓	✓	✓
	Irresponsible conduct of visitors and guide operators	Capture of rare animals and picking of rare plants	High	↗											
		Dumping of garbage													
		Human waste in the field													
		Invasive alien species and pets													
		Spread of infection among wild animals such as wildcats													
		Feeding of wild animals													
		Disorderly abandonment of canoes etc													
	Load caused by activities	Trekking	High	↗											
		Canoe, kayak, etc													
		Activities at streams and waterfalls, canyoning													
		Wildlife watching, fishing, collection, etc													
	Motorboat tours	Soil erosion and impact on mangroves due to ship waves of motorboats	Low	↘	✓								✓		

Table: Tourism impacts on Iriomote Island and the corresponding checklist of management tools (outside the heritage area)

Management area	Impact factors		Assumed impacts (threats)	Assessment of the impacts		Administrative tools																						
				Risk assessment	Trend assessment	Natural Parks Law	Protected forest system	Ecotourism Promotion Act	Taketomi Town Tourist Guide Ordinance	Road Traffic Act	Maintenance measures and infrastructure development	User fees (Visiting Tax Ordinance)	Good practices (eco-certification system)	Public-private sector agreement and coordination meetings Management organization	Promotion and enlightenment (including establishment of bases)	Information dissemination (including tourism calendars)												
Impact outside the heritage area	Development for tourism	Facility construction, landform change, cutting of trees, etc	Habitat loss and habitat environment change Invasion of alien species / landscape disturbance	Low	➡	✓																						
	Total number of visitors to Iriomote Island, concentrated tourism use at specific times, increase in the number of individual tourists	Use of the liner by visitors Occupation of parking lots by tourism operators etc	Congestion on the liner ships and at the ports / decreased comfort and satisfaction of visitors (crowded toilets, bad atmosphere, hurried tour, etc ) / disturbance to local residents' life (for example, local people cannot board the liner or park vehicles at the port)	Medium	➡									✓	✓	✓												
		Load on the island's infrastructure by visitors	Water supply restriction to local people due to shortage of water resource Increased load and cost of sewage and waste treatment	Medium	➡						✓	✓																
		Increase in accidents caused by visitors	Increased burden on local fire brigades and residents for transport and search activities	High	↗										✓	✓												
		Increased traffic and excessive speed on roadways	Traffic accidents and roadkill of wild animals such as wildcats Occurrence of traffic accidents and decreased safety of local residents' life	High	↗					✓	✓			✓	✓	✓												
		Irresponsible conduct of visitors and tourism operators	Capture of rare animals and picking of rare plants	Declined population of rare species that have been captured or picked / increased risk of extinction																								
	Visitation and use of the local clinic for minor medical treatment		Increased burden on the local clinic																									
	Peeping into private houses in the local villages		Violation of local residents' privacy																									
	Entry into sacred places such as Utaki and places of festivals		Disturbance to local culture and customs																									
	Walking around in swimsuits in the local villages		Deteriorated public morals and increased discomfort to local residents' life																									
	Load caused by activities	Trekking and walking	Disturbance to commercial hunting and agricultural activities due to visitors entering hunting grounds and/or farmland / damaged hunting tools and agricultural tools	Medium	↗																							
		Wildlife watching	Disturbance to turtles' spawning due to lighting on facilities and flashlights in the coastal area														✓	✓	✓	✓								
			Deteriorated habitat environment of fireflies due to disorderly use of flashlights																									
		Insect collection and fishing	Declined population of insects and/or fish that have been caught																									
		Swimming, diving, snorkeling, and fishing	Disturbance to fisheries due to tourists swimming and/or boats at anchor in the fishing grounds																									
			Deteriorated water quality and habitat environment of marine life due to the use of chemical substances such as sunscreen and detergent																									
			Coral damage due to anchoring																									
			Coral damage due to low-skill swimming																									
Cave exploration and caving	Disturbance to the habitation of bats etc due to tourists entering caves and using flashlights																											

## 5. Implementation of Monitoring and Progress Management of the Plan

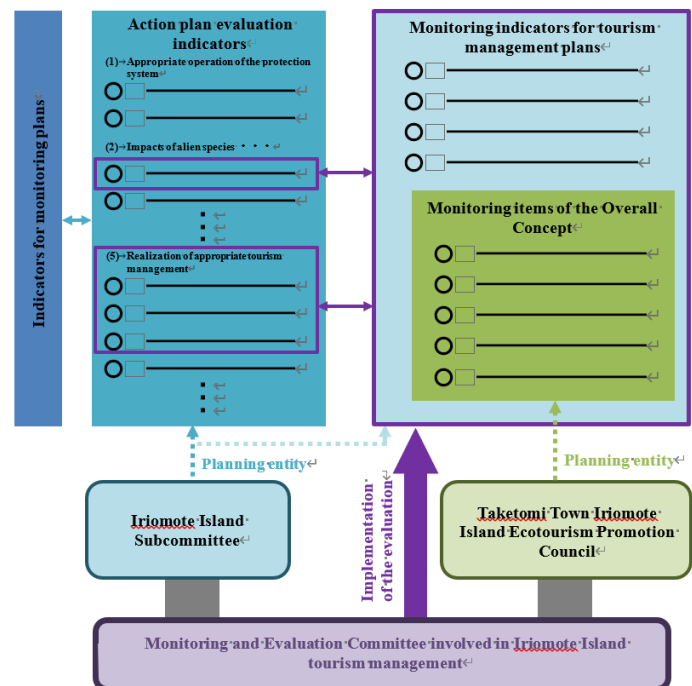
### 5.1 Monitoring and evaluation system

To achieve the overall goals of tourism management of this plan, the status of achievement of management criteria will be periodically monitored and evaluated together with the magnitude of tourism impact on the natural environment and local communities and the status of implementation of the related actions and projects. Based on the results, adaptive responses will be made, for example revising management criteria and strengthening measures to address issues.

Indicators for monitoring and evaluation have been set out in the monitoring plans related to the World Natural Heritage Amami-Oshima Island, Tokunoshima Island, the northern part of Okinawa Island, and the Iriomote Island, and the Iriomote Island Action Plan, which is superordinate to this plan, also has indicators to evaluate the effectiveness of management. In addition, the Overall Concept for Promoting Ecotourism of Iriomote Island, which is a related plan of this plan, has its monitoring items. Many of them overlap with the monitoring indicators to be set forth in this plan. Therefore, this plan aims to achieve efficient monitoring and evaluation in consistency with these indicators.

In consideration of the relationship between this plan and other plans, monitoring indicators have been set up for this plan to cover the monitoring items of the Overall Concept for Promoting Ecotourism of Iriomote Island. In addition, for consistency, some of the monitoring indicators of this plan have been chosen, so that the evaluation indicators of the monitoring plan for the entire heritage area and the Iriomote Island Action Plan can be used.

To monitor and evaluate this plan, the Committee for Monitoring and Evaluation of Tourism on Iriomote Island (hereinafter referred to as “Monitoring and Evaluation Committee”) has been jointly established under the Iriomote Island Subcommittee, which is responsible for formulating and managing this plan and the Iriomote Island Action Plan, and the Taketomi Town Iriomote Island Ecotourism Promotion Council, which is responsible for formulating and managing the Overall Concept for Promoting Ecotourism of Iriomote Island as a Whole. The Monitoring and Evaluation Committee will periodically check and evaluate the monitoring indicators for both plans and report and provide advice to the Iriomote Island Subcommittee.



### 5.2 Management of the progress of plan

After the completion of this plan, the Monitoring and Evaluation Committee will be organized periodically to check and evaluate monitoring indicators, and report and provide advice to the Iriomote Island Subcommittee on the evaluation results. Based on the report and advice of the Monitoring and Evaluation Committee, the Iriomote Island Subcommittee will revise and update, as necessary, the content of major actions that are contained in this plan.

This plan will be reviewed five years after the completion of this plan. The Monitoring and Evaluation Committee will review the content of the plan in general and make recommendations and requests of revisions to management methods, management criteria, etc. as necessary. The Iriomote Island Subcommittee will review and revise this plan, as necessary based on the recommendations and requests from the Monitoring and Evaluation Committee.

After that, this plan will be continuously checked and reviewed every five years. In the meantime, the Iriomote Island Subcommittee will periodically check data on monitoring indicators, and if there is any matter of concern, it will seek opinions and advice from the Monitoring and Evaluation Committee.

### 5.3 Monitoring indicators

The monitoring indicators in the Plan are classified into “management indicators” for achieving management criteria, “impact indicators” for evaluating the magnitude of tourism impact on the natural environment and local communities, and “related indicators” for monitoring the progress of related actions and projects, as follows:

■ Management indicators

- In accordance with the management criteria of the Plan itself, the implementation status and the degree of achievement of the Tourism Management Plan will be verified quantitatively by means of specified measurement methods.
- The Iriomote Island Subcommittee will consider measures to be taken in the event that the management criteria set in this plan are exceeded.

■ Impact indicators

- To ascertain the extent to which major negative impacts that are assumed to have resulted from tourism have occurred.
- If the Monitoring and Evaluation Committee has determined that a serious impact has occurred, the Iriomote Island Subcommittee will consider measures to be taken.

■ Related indicators

- To monitor not tourist management itself, but changes in tourism that occur as a result of tourism management measures, such as the ripple effects of tourism on local economy and the quality of tourism.
- To keep data on the latest situation up to date continuously based on monitoring indicators and share the results with relevant organizations through the Iriomote Island Subcommittee.

Table: Tourism management plan monitoring items

Management category	Type	Monitoring indicators	Implementing entity	Frequency	Monitoring method	Monitoring plan*	Action plan indicator*	Overall Concept*
Heritage area	Management indicators	The number of sites in the heritage area	Iriomote Island Ecotourism Promotion Council	Every year	The Iriomote Island Ecotourism Promotion Council ascertains the exact number of fields within the heritage area with the natural tourism resources listed in the Overall Concept and that have at least the same level of tourism use.	-	-	-
	Management indicators	Number of visitors entering areas of specified natural tourism resources	Iriomote Island Ecotourism Promotion Council	Every year	The Iriomote Island Ecotourism Promotion Council ascertains the exact number of visitors through a pre-entry approval system managed by the council. Until the system is introduced, the Council ascertains the exact number of visitors in the same manner as other natural tourism resources.	4-(1)-17(vi)	-	○
	Management indicators	Number of visitors entering other natural tourism resources	Ministry of the Environment Taketomi Town	Every year	The entities ascertain the exact number of visitors using user counters installed by the Ministry of the Environment or receiving reports from guides based on the Ordinance Concerning Tourism Guides in Taketomi Town.	4-(1)-17(vi)	-	○
	Management indicators	Compliance with rules by guide operators and users	Iriomote Island Ecotourism Promotion Council	Every year	The Iriomote Island Ecotourism Promotion Council ascertains the exact number of penalties to guide operators and users based on the Ordinance Concerning Tourism Guides in Taketomi Town or the Ecotourism Promotion Act.	-	Short-term (ix)	○
	Impact indicators	Status of alien species invasion	Ministry of the Environment	Every year	The Ministry of the Environment collects information obtained through surveys conducted by government agencies and research institutions and information confirmed by guides at sites to ascertain the status of alien species invasion, etc.	3-(1)-16 (i)	Short-term (ii)	○
	Impact indicators	Vegetation conditions along routes	Ministry of the Environment	Every year	The Ministry of the Environment takes fixed-point photographs and measures sidewalk widths along major routes to monitor changes in the natural environment around the routes.	4-(2)-18 (ii)	Short-term (xi)	○
	Impact indicators	Vegetation conditions along routes (details)	Ministry of the Environment / University of the Ryukyus Iriomote Station	Once every five years	The Ministry of the Environment and the Iriomote Station of University of the Ryukyus jointly conduct plant surveys in fixed-point study areas along major routes of tourism use to understand the conditions of treading on vegetation, the extent of roads, and changes in vegetation around the sites.	4-(2)-18 (ii)	Short-term (xi)	○
	Impact indicators	Water quality in major waterfall basins	Ministry of the Environment	Every year	The Ministry of the Environment conducts water quality surveys (numbers of BOD, SS, and fecal coliforms) at major waterfall basins and other sites in use.	-	-	○
	Impact indicators	Habitat of fish in major waterfall basins	Ministry of the Environment	Once every 1-3 years	The Ministry of the Environment conducts a visual survey of fish species and populations in major waterfall basins by skin diving.	-	-	○
	Impact indicators	Habitat of fish in major rivers	Ministry of the Environment / University of the Ryukyus Iriomote Station	Once every five years	The Ministry of the Environment and the Iriomote Station of the University of the Ryukyus work together to sample water from major rivers in use and analyze the environmental DNA contained in these samples to identify living species and taxa.	-	-	○
Outside the heritage area	Management indicators	Annual number of tourists to Iriomote Island	Taketomi Town	Every year	The Taketomi Town compiles and ascertains the number of tourists who entered Iriomote Island throughout the year based on the daily number of passengers, etc. reported by shipping companies and data on the daily number of regular route users of islanders and town office staff.	4-(1)-17(ii)	Short-term (viii)	○
	Management indicators	Daily number of tourists to Iriomote Island	Taketomi Town	Every year	The Taketomi Town compiles and ascertains the number of tourists who entered Iriomote Island throughout the year based on the daily number of passengers, etc. reported by shipping companies and data on the daily number of regular route users of islanders and town office staff.	-	Short-term (viii)	○
	Management indicators	Vehicle speed on the island	Okinawa Prefecture	Every year	The prefectural government collects data from Bluetooth sensors installed along prefectural roads on Iriomote Island to monitor the traffic volume and vehicle speed of all vehicles and rental cars.	-	-	-
	Management indicators	(Reshown) Compliance with rules by guide operators and users	Iriomote Island Ecotourism Promotion Council	Every year	(Reshown) The Iriomote Island Ecotourism Promotion Council ascertains the number of penalties to guide operators and users based on the Taketomi Town Tourist Guide Ordinance or the Ecotourism Promotion Act.	-	Short-term (ix)	○
	Impact indicators	Traffic accidents involving Iriomote wildcats	Ministry of the Environment	Every year	The Ministry of the Environment conducts autopsies on dead or injured animals found through patrols and reports from municipalities and local residents to monitor trends in traffic accident damage.	2-(1)-11	Short term (iv)	-
	Impact indicators	(Reshown) Status of alien species invasion	Ministry of the Environment	Every year	(Reshown) Regarding the status of alien species invasion, the Ministry of the Environment will collect and assess information obtained through surveys by government agencies and research institutions and information confirmed by guides at sites.	3-(1)-16 (ii)	Short term (iii)	○
	Impact indicators	The number and rate of visits to medical institutions by tourists	Okinawa Prefecture	Every year	The Okinawa prefectural government compiles data on medical examinees at clinics on Iriomote Island to ascertain the number and percentage of people who live outside the island.	-	-	-
	Impact indicators	The number of distress calls and accidents on the island and of personnel who responded	Taketomi Town	Every year	Taketomi Town ascertains the exact number of rescue operations and the number of rescuers involved in mountain rescues in the town (i.e., rescue of disaster victims in mountains or rivers on Iriomote Island).	-	-	-
	Impact indicators	Congestion of liner ships	(TBD)	Every year	(To be announced) ○○○ compiles and assesses data on congestion rates based on the data on the daily number of passengers and capacities of operated ships collected from shipping companies.	-	-	-
	Impact indicators	Amount of waste discharged	Taketomi Town	Every year	(To be announced) Taketomi Town assesses data on the amount of waste by item generated on Iriomote Island.	-	-	-
	Impact indicators	Water quality in major ports	Okinawa Prefecture	Every year	(To be announced) The Okinawa prefectural government monitors the results of a water quality surveys of public waters conducted at major ports on Iriomote Island.	-	-	-
	Related indicators	User awareness (satisfaction, understanding of heritage value, etc.)	Okinawa Prefecture	Once every 3-5 years	The prefectural government monitors user satisfaction, thoughts of revisiting, and understanding of heritage value through questionnaire surveys, etc.	-	Mid-term D	○
	Related indicators	Occurrence of accidents during nature experience-oriented tours	Taketomi Town	Every year	(To be announced) Taketomi Town ascertains the number of accidents in nature experience-oriented tours in accordance with the details of reports from guide operators.	-	Short-term (x)	-
	Related indicators	Population and occupancy rate of Iriomote Island's tourism industry workers (accommodation, transportation, food and beverage, goods sales, guides) living on the island	Taketomi Town	Once every five years	The Taketomi Town ascertains the number of people working in the tourism industry on Iriomote Island based on census data. In addition, the Town ascertains the number of people living on the island and the rate of residence of the islands guides based on the license information in the Tourist Guide Ordinance.	-	Mid-term C	-
	Related indicators	Average number of guests	Taketomi Town	Once every five years	Taketomi Town ascertains the rate of tourists staying on Iriomote Island based on data from statistical surveys of tourist arrivals.	-	Mid-term E	-

\* The Monitoring Plan column indicates the index number of the monitoring index that is similar in content to the monitoring index of Amami-Oshima Island, Tokunoshima Island, Northern Okinawa Island, and Iriomote Island World Natural Heritage Site Monitoring Program

\* Action plan indicator column shows the item numbers of the management evaluation indicators whose content is similar to that of the Iriomote Island Action Plan.

\* A circle (○) in the Overall Concept column indicates an item set as a monitoring item in the Overall Concept for Promoting Ecotourism of Iriomote Island



## Overview of Tourism Management on Amami-Oshima Island, Tokunoshima Island, and the Northern Part of Okinawa Island

### 1. Northern Part of Okinawa Island

#### (1) Current state and issues of tourism

With regard to the state of tourism use of the northern part of Okinawa Island, the annual numbers of visitors to major tourist facilities and popular spots are individually counted at each facility etc., but no statistical figures are available to show the change in number of visitors to the entire region. It is necessary to discuss how to obtain data in the future that can be used as indicators to monitor tourism trends in the northern part of Okinawa Island accurately.

The table below shows the major points of tourism use, both within and outside the World Heritage property area (hereinafter referred to as “heritage area”) in the northern part of Okinawa Island, for which the status of tourism use has been obtained; the status of tourism use in 2019, before the impact of the spread of COVID-19, is shown. Since 2020, the number of visitors has declined significantly due to COVID-19, but it is necessary to continue the current work and keep track of the trends, since the number of visitors may increase after COVID-19.

In the northern part of Okinawa Island, the number of users is considered to be at a low level, because there are not many points of tourism use within the heritage area at present. However, there are not enough data on the actual status of tourism use when it comes to the extensive heritage area covering three villages in the northern part of Okinawa Island; it is necessary to establish a system that can accurately ascertain the number of visitors, mainly at the existing points of tourism use. Particular attention should be paid to the relative ease of access to forest roads and the possibility of vehicles use off public roads.

Table: Status of tourism use in the northern part of Okinawa Island in 2019

Entire region	Inside the heritage area	Outside the heritage area
*How to monitor the tourism use trends of the entire region is an issue.	[1] Mt. Yonaha (about 2,500 people) [2] Mt. Ibu (about 500 people) [3] Mt. Tamatsuji (* not counted; installation of counters under preparation)	[1] Cape Hedomisaki (380,424 people) [2] Kunigami-son Shinrin-koen Park (14,032 people) [3] Hiji Otaki Waterfall (31,047 people) [4] Yambaruikuina Ecology Exhibition and Learning Facility (19,801 people) [5] Okuyambaru no Sato (4,226 people) [6] Yambaru Manabi no Mori (Forest of Learning in Yambaru) (18,894 people) [7] Yambaru Wildlife Conservation Center (11,702 people) [8] Yambaru Forest Visitor Center (*counted from FY2020, as tourism use started in February 2020) [9] Ta Falls (33,989 people) [10] Museum of Mountain and Water Life (12,401 people) [11] Villagers' Forest Azalea Eco Park (51,024 people) [12] Fukujigawa Seaside Park (15,934 people) [13] Fureai Hirugi Park (88,009 people)

(2) Basic policy on tourism management

In the northern part of Okinawa Island, the Master Plan of the Northern Part of Okinawa Island Sustainable Tourism was formulated in February 2020 by the Northern Part of Okinawa Island Sub-local Meeting, based on the basic policy of “formulating a tourism management plan that takes into account the actual situation of tourism in each region”, which was set forth in the comprehensive management plan.

In the northern part of Okinawa Island, multi-faceted efforts are currently being made in accordance with the basic policy of the plan as described below. In particular, visitor management based on zoning of the heritage area, buffer zone, and surrounding management area is being implemented in accordance with the policies described in [3] and [4].

○ Basic policy on tourism management in the Master Plan for Sustainable Tourism in the Northern Part of Okinawa Island

- [1] Fostering local residents’ understanding of sustainable tourism
- [2] Creating a system in which World Heritage inscription contributes to sustainable development of the local economy and resolution of local community issues
- [3] **Realizing appropriate visitor management in heritage areas and buffer zones centering on Yambaru Forest Tourism**
- [4] Providing **planned guidance for sightseeing and three village excursions focusing on the surrounding management area**
- [5] Developing human resources to promote sustainable tourism and strengthen the general management and tourism management capacities of organizations (tourism associations etc.)

So far, visitor management in the heritage area and buffer zone has been conducted based on the Yambaru Forest Tourism Promotion Plan as a Whole formulated by the Yambaru Three Village World Natural Heritage Promotion Council in March 2019. However, it is now necessary to revise its content partly in light of the policy change regarding the guide system and the inscription as a World Natural Heritage property.

With regard to the guide system, work to revise it is already underway in consideration of operation under the specific circumstances of the individual villages under the common rules that apply to the three villages. In Kunigami Village, the Ordinance for Promotion of Use of Official Guide of Kunigami Village was enacted in FY2020, and it has been enforced since FY2021. Ogimi Village and Higashi Village are also examining their own institutionalization.

After the World Natural Heritage inscription, the name of the body that formulated this plan was changed to the Yambaru Three Village World Natural Heritage Council in May 2022; at the same time, the Forest Tourism Subcommittee, which implements this plan, also changed its structure, so that the Yambaru Three Village Tourism Council works as the secretariat.

In light of the aforementioned situation, the Forest Tourism Subcommittee began in June 2022 to review and reorganize the fields of use, based on the data from survey on the actual status of tourism use, and re-examine an effective visitor management system according to the zoning of the heritage area, buffer zone, and surrounding management area, with a view to reflecting the current status of the guide system in the plan and taking into consideration the possible increase in the number of visitors and changes in the style of use that are anticipated to occur once COVID-19 has settled down.



(3) Major actions

- [1] Control and optimization of tourism use in the heritage area and buffer zone (by the three villages in coordination)
- Study on the proper use of night roads  
Verify the effectiveness of nighttime road closures on forest roads conducted in the previous years and study the methods and operation of nighttime road closures to implement more effective anti-poaching and roadkill measures etc.
  - Review of the Yambaru Forest Tourism Promotion Plan as a Whole  
The Forest Tourism Subcommittee will review the Yambaru Forest Tourism Promotion Plan as a Whole with a view to reconstructing the guide system and effective visitor management system in line with the zoning and actual status of tourism use after World Heritage inscription.
  - Implementation of surveys to ascertain the actual status of tourism use  
The Yambaru Three Village World Natural Heritage Council will conduct surveys to ascertain the actual status of tourism use, mainly in the heritage area and buffer zone, taking into consideration the possible increase in the number of visitors and changes in the style of tourism use that might occur once COVID-19 has settled down.
  - Model project to enhance sustainable tourism content  
With the aim of deterring and preventing poaching and illegal excavation, forest road patrols and biological surveys have been continuously carried out by local volunteers of the three villages in the northern part of Okinawa Island and the Kunigami Village Forest Association in coordination and cooperation with the Ministry of the Environment. These activities will be provided to visitors as new tourism content, thereby linking tourism to forest conservation activities.
- [2] Guide system and guide training (by the individual villages)
- Kunigami Village: Enforcement of the Ordinance for Promotion of Use of Official Guide of Kunigami Village.  
Continual implementation of registration, accreditation and training of guides under the 2021 ordinance.
  - Ogimi Village: Consideration of preparation and certification of the Ogimi Village Ecotourism Promotion Plan as a Whole.  
Establishment of rules for use, including restrictions on the number of people entering Ta Falls, where users are concentrated, and establishment of a system to ensure compliance with the rules.  
Promotion of the Ogimi Village Kuganinchu Project  
Creation of a human resource development system for guides who interpret the value of natural and cultural resources that exist in Ogimi Village
  - Higashi Village: Consideration of the enactment of the Higashi Village Guide Ordinance (provisional name)  
Examination of a registration and certification system for guides in Higashi Village, aiming to pass the ordinance by the end of FY2022.
- [3] Encouraging the tourism use of the surrounding management areas (by the three villages in coordination + by the individual villages)
- World Natural Heritage Branding Project
    - Kunigami Village: Development of SDGs-compatible experience as tourist products targeting vacation rental users and their expansion to Ogimi Village and Higashi Village; outreach to schools outside the prefecture for school trips.
    - Ogimi Village: Development of guidance methods that make use of tourism resources

that exist in the Yambaru area, learning from good examples of more experienced places, and tools to guide visitors to the surrounding areas.

- Higashi Village: Development of digital brochures to encourage visitors to move around the three villages

## 2. Amami-Oshima Island and Tokunoshima Island

### (1) Current state and issues of tourism

The table below shows the major points of tourism use, both within and outside the heritage area on Amami-Oshima Island and Tokunoshima Island, for which the status of tourism use has been obtained; the status of tourism use in 2019, before the impact of the spread of COVID-19, is shown. Although the number of visitors to the whole region increased from 2015 to 2019, efforts are being made to reduce the load of tourism use on the natural environment and to disperse tourism use in accordance with the Master Plan of the Amami Island Group Sustainable Tourism (Page 204 of the nomination dossier, Annex 5-40).

Since 2020, the number of visitors has decreased significantly due to COVID-19, but we will continue the current work and monitor the trends, since the number of visitors might increase after COVID-19.

Table: Status of tourism use on Amami-Oshima Island in 2019

Entire region	Inside the heritage area	Outside the heritage area
The number of visitors increased approximately 1.3 times between 2015 and 2019. (Approximately 423,000 to 530,000)  *314,000 visitors in 2020	[1] Yuwandake (*Less than 3,000 *Total of the Yamato Village side and Uken Village side. Data partially missing.) [2] Kinsakubaru (1,185 vehicles *April to December) [3] Setouchi Chuo Line (* not counted; installation of counters under preparation.)	[1] Cape Ayamaru (89,309 people) [2] Amami Park (129,000 people) [3] Amami Nature Observation Forest (19,041 people) [4] Ohama Seaside Park (62,333 people *2019 figures) [5] Amami Wildlife Conservation Center (10,484 people) [6] Amami Forestpolis (14,711 people) [7] Kuroshio Forest Mangrove Park (91,931 people)

Table: Status of tourism use on Tokunoshima Island in 2019

Entire region	Inside the heritage area	Outside the heritage area
The number of visitors increased 1.1 times between 2015 and 2019 (from approximately 130,000 to approximately 144,000).  *The number of visitors in 2020 was approximately 81,000.	[1] The Yamakubiri Line of the forest road (143 vehicles *May 2019 to March 2020. Night only.) [2] Mt. Inokawa [3] Mt. Amagi (visitors of [2] and [3] are not counted yet. *Counter installed in December 2020.)	Amami rabbit observation hut (209 people)

## (2) Basic policy on tourism management

For Amami-Oshima Island and Tokunoshima Island, the national government, Kagoshima Prefecture, municipalities, private organizations, etc. are working in coordination to implement measures for sustainable tourism, such as the enforcement of tourism use rules and improvement of facilities, based on the Master Plan of the Amami Island Group Sustainable Tourism developed by Kagoshima Prefecture in March 2016.

The master plan aims at “systematically guiding utilization according to the characteristics of each sightseeing spot”, “spreading the effect of World Heritage inscription to the Amami Island Group”, and “realizing high-quality tourism and improving visitor satisfaction”. The master plan was conceived to create a planned flow of tourists by properly directing them to tourist spots according to the carrying capacities and the state of the natural environment to avoid the negative impacts of the expected increase in the number of tourists.

Currently, based on the master plan, work is underway to develop and enforce the tourism use rules for areas that are important for the protection of Amami-Oshima Island and Tokunoshima Island, as is explained later. In addition, outside the heritage area, various efforts are being made to ensure proper use and decentralization of tourism use, such as the installation and utilization of facilities that can be used by a large number of people and long trails. Along with these efforts, the monitoring of the status of tourism use has been done and will be continued in the future. Based on the results, further necessary measures will be considered.

## (3) Major actions

### [1] Control and optimization of tourism use in the heritage area and buffer zone

In areas that are important for protection of Amami-Oshima Island and Tokunoshima Island, tourism use rules have been developed and provisionally enforced to reduce the load of tourism use by a large number of people on the natural environment and to provide high-quality nature experiences. The tourism use rules have been discussed and decided by the meetings of the relevant local government organizations, private organizations, etc. (Amami-Oshima Island: Kinsakubaru (formulated by the Amami-Oshima Utilization Optimization Liaison Conference; enforcement since February 2019), areas around the Santaro Line (formulated by the Liaison Conference for the Optimization of Night-time Use around the Amami-Oshima Santaro Line; enforcement since October 2020), Mt. Yuwandake (enforcement scheduled to start within FY2022); Tokunoshima Island: the Yamakubiri Line of the forest road (formulated by the Tokunoshima Utilization Optimization Liaison Conference; enforcement since July 2019), the Mt. Hage forest road and the Sankyo forest road (agreement signed by the Forestry Agency, Amagi Town, and the Tokunoshima Eco-Tour Guide Liaison Council; enforcement since April 2019.)) The tourism use rules include, depending on the specific local conditions, the requirement that tourists should be accompanied by certified eco-tour guides and the restriction of the number of vehicles that can be used in the same time period. Even after their enforcement started, they have been discussed periodically at the utilization optimization liaison conference etc., to revise and strengthen the content of the tourism use rules in light of the status of tourism use. The status of tourism use is monitored, based on the counting devices, on-site investigation, etc.

To raise the public awareness of the tourism use rules, awareness-raising activities for the tourism use rules are conducted, providing information on websites and distributing flyers etc., with the cooperation of tourism associations, travel agencies, and rental car companies.

Moreover, recently on Tokunoshima Island, to reduce the environmental load, such as roadkill, walk events are organized aiming at changing the style of night tours from vehicle rides to walking.

### [2] Training of guides

For Amami-Oshima Island and Tokunoshima Island, the General Concept for Promotion of Ecotourism on the Amami Islands was adopted based on the Ecotourism Promotion Act in 2017; the operation of the Amami Islands ecotourism guide certification system started in the same year. The Amami Islands Ecotourism Promotion Council, consisting of the national government, Kagoshima Prefecture, and local municipalities, certifies eco-tour guides who have deep knowledge and philosophy about the nature and culture of the Amami Islands, provide safe and high-quality experiences to visitors, and are responsible for environmental conservation in the region. Since April 2020, to improve the skills, the certified eco-tour guides have been required to take a renewal training course in the third year after certification and meet certain requirements to get their certification renewed. They not only guide tourists but also work in coordination with related organizations to enforce the tourism use rules and raise public awareness for environmental conservation. Ninety-one guides on Amami-Oshima Island and 19 guides on Tokunoshima Island have been certified as of April 2022.

In addition, in accordance with the Amami Islands Local Licensed Guide Interpreters Training Program based on the amended Licensed Guide Interpreters Act, training has been provided since 2015 to Amami Islands local licensed guide interpreters, who will receive tourists from other countries. As of April 2022, 114 licensed guide interpreters have been registered (English 87, Chinese 27).

[3] Encouraging the tourism use of the surrounding management areas

To reduce the load of tourism use on the natural environment and disperse the use, measures are taken to install tourist centers.

Specifically, outside the heritage area, “World Heritage Centers” have been set up as the central facilities for awareness raising of tourist users, tourism management, and environmental conservation (Amami-Oshima Island: open since July 2022; Tokunoshima Island: under construction since FY2023 to open in FY2024 or later), and the Amami Nature Observation Forest has been renewed as a place where people can enjoy nature experiences casually (open since October 2022).

In addition, long-distance nature trails named the World Natural Heritage Amami Trail have been set up on inhabited islands of the Amami islands, such as Amami-Oshima Island and Tokunoshima Island (the entire section opened in January 2021). On Amami-Oshima Island and Tokunoshima Island, the trails basically run outside the heritage area. The trails have been routed in such manner that visitors can experience the unique nature of the Amami Islands and the culture of the harmonious relationship between people and nature. They are used for sightseeing and also local walking events in different places.

## **River Restoration Strategy of Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island (Draft)**

### **1. Background to Strategy Formulation**

#### **(1) Significance of rivers on the property and background to the installation of river structures**

The property contains the most important and significant remaining natural habitats for the in-situ conservation of the unique and rich biodiversity of the central and southern parts of the Ryukyu Chain (Central and Southern Ryukyus) and is of high value for the protection of numerous endemic species and globally threatened species. The species representing the Outstanding Universal Value (OUV) of the property, such as the Amami rabbit, Okinawa rail, and Iriomote cat, mainly inhabit forests. A characteristic of the property is the subtropical marine climate greatly influenced by the warm Kuroshio Current and monsoons. It is an area of abundant water with an annual rainfall of over 2,000 mm, resulting in the formation of small and large river systems within the subtropical rainforest of the property. These river systems provide water and feeding grounds for the species representing the OUV, as well as stable habitats for inland water fish and rheophytes.

In the four regions that comprise the property, the habitats of the threatened and endemic species representing the OUV are close to areas where local people live and industrial activities take place. Over many generations, the regions' natural environment has been used sustainably based on traditional lifestyles and beliefs so as to support people's livelihoods. Water resources in particular are essential to the livelihoods of the local people. The topography in the four regions are steep, with rivers running a short distance. Because of this, rainwater flows out to the ocean in a relatively short time. In addition, due to the topography with few flat areas, settlements and agricultural lands are concentrated in the flat areas alongside rivers or near the river mouths. As a result, it creates conditions unique to the regions: a relatively high incidence of water shortages and the frequent occurrence of floods in the flat areas. It is therefore very important for people living in the regions to use the limited water resources effectively and to protect their livelihoods from floods and other events that have caused deaths and injuries in the past.

Furthermore, geologically the regions are mainly composed of old sedimentary rocks such as sandstones, shales, and clay-slates from between the Paleozoic and the Mesozoic eras. Many sections are fractured by faults and the surfaces are weathered and vulnerable. In addition, the regions are often struck by typhoons, causing landslides and mudslides in the mountainous areas and floods in downstream river basins. With future climate change, such phenomena could escalate in scale. For these reasons, river structures, including multipurpose dams for water use and control, intake weirs, check dams, and *sabo* check dams have been built since long ago in order to secure water resources for the livelihoods of the local people and to protect themselves and their properties from disasters. The river structures have been regarded as essential.

There has not been clear evidence-based finding on the impact of river structures on wild plants and animals in the property and buffer zones. Because relevant studies have been so few, their impact is currently unknown. In response to the request of the World Heritage Committee (Decision 44 COM 8B.5), a study on river restoration has been initiated in order to maintain and enhance the value of the property. To begin with, the study will be carried out to determine the impact of the river structures on the property and to verify causal relationships.

## **(2) Basic concept of river management in Japan**

As an effort to conserve and restore riverine environments in Japan, the River Act was revised in 1997. The revised River Act added the improvement and conservation of riverine environments as its objective, together with water control and use which were already stipulated. In addition, the Government of Japan established a Basic Policy on Nature-Oriented River Management in 2006 to conserve and create diverse river landscapes, habitats, and breeding environments for wild plants and animals. Furthermore, the Basic Environment Plan approved by the cabinet in 2018 for the conservation of environment prescribes the promotion of green infrastructure projects designed to create sustainable and attractive national lands and local communities by utilizing the diverse functions of the natural environment (e.g., providing habitats, forming healthy landscapes, controlling temperature rises, preventing and mitigating disasters) in terms of both tangible and intangible aspects, such as the improvement of social overhead capital and land use. The plan also includes the promotion of ecosystem-based disaster risk reduction (Eco-DRR) by identifying the function of the ecosystem which reduces disaster risks and by proactively conserving and restoring the ecosystem.

In keeping with these concepts, Okinawa Prefecture stated its intent to promote the adoption of environmentally-friendly construction methods in the Biodiversity Strategy of Okinawa (2013), announcing that the prefecture would manage its rivers based on the Nature-Oriented River Management concept that advocates river improvements with consideration to biodiversity and the conservation, restoration and creation of diverse river environments as well as habitats and breeding environments for wild plants and animals. For instance, a riverine environment restoration project was implemented on the Oku River in the northern part of Okinawa Island from 2008 to 2018, improving drop structures and restoring riffles and pools by re-establishing the former river channel. This led to the recovery of diverse river flows and habitats, resulting in the sightings of migratory fish such as *Mugil* and *Kuhlia* swimming upstream from the ocean.

Furthermore, the Biodiversity Strategy and Action Plan of Kagoshima Prefecture (2014) positions the promotion of public works with consideration to biodiversity as one of the items of its action plan, requiring that Nature-Oriented River Management be the basis of river improvements and advocating for the establishment of fishways and other measures as well as conservation of diverse waterfront environments, such as riffles and pools which are valuable habitats for fish. Moreover, the Amami

Island Group Promotion and Development Plan (2019) lists the implementation of nature restoration-type public works to conserve and restore habitats for animals and plants, such as Ryukyu ayu-fish, as an effort to conserve the value of the world natural heritage.

### **(3) Establishment of a taskforce for scientific review on river restoration strategy**

At the extended 44th session of the World Heritage Committee held in July 2021, decisions were made to inscribe the property on the World Heritage List and to make four requests to Japan. One of the requests was to develop “a comprehensive river restoration strategy in order to transition wherever possible from hard, engineered infrastructure to employ nature-based techniques and rehabilitation approaches such as replenishment, vegetation, and the formation of different habitat types.” In response to this request, the Government of Japan established a taskforce comprising six experts in river engineering, disaster prevention engineering, and biology, as well as relevant administrative organs, discussed the request from scientific perspectives, and formulated the river restoration strategy.

## **2. Aim of the strategy**

This strategy sets out an approach to river restoration for the entire four regions to understand the impact of river structures on the OUV and to consider the actions to be taken for the existing river structures that impact the OUV.

## **3. Goal**

The strategy aims to achieve the following two goals.

- Conduct an assessment to evaluate the impact of river structures on the OUV.
- Take actions wherever possible to mitigate the impact on the OUV identified in the above assessment while ensuring the livelihoods of local people (lives and properties), monitor and assess the impacts of these actions, and achieve river restoration.

## **4. Basic approach to river restoration**

River restoration in this strategy means to restore the natural flows of rivers, including their continuity and disruptions, to improve the diverse habitats of the endemic and threatened species which constitute the OUV in rivers and rely on the natural freshwater process and habitats. Currently, there is a lack of detailed scientific knowledge about the impact of river structures on the OUV and specific causal relationships. As the first step, it is necessary to review literature, monitor the impact of river structures on diadromous fish, rheophytes, amphibians, and so on, and conduct analyses and examinations.

After identifying the specific causal relationships of the impact of river structures, improvement measures will be examined to mitigate such impact, while bearing in mind a transition from hard, engineered infrastructure to employ nature-based techniques and restoration approaches. In considering improvement measures, the local peoples' livelihoods (lives and properties) must be



preserved, taking into account the functions the structures play in, for instance, preventing forest deterioration and other disasters. In addition, sufficient consideration must be given to factors such as the stress that might be placed on the current ecosystem from new disruptions caused by the implementation of improvement measures and the impact of incidental actions (e.g., construction of temporary roads, felling of trees, and invasion of alien species). Furthermore, collaboration with the local people, their consensus, and transparency of the process must be ensured.

In recognition that river restoration based on this strategy will be a long-term endeavor, river restoration must take place adaptably while keeping up to date with progress in nature-based river restoration techniques, and carefully considering changes to conditions affecting rivers such as the escalation of disasters due to climate change and population changes in the affected river basins.

## **5. River restoration process**

River restoration will be implemented in the following four phases: impact comprehension phase, restoration policy examination phase, countermeasure implementation phase, and effectiveness examination and monitoring phase.

### **5.1 Impact comprehension phase**

#### **5.1.1 Scope of impact assessment**

An impact assessment will be conducted for the list of existing river structures standing against the flow of major rivers in the property and its buffer zones (see attachment) provided to IUCN by the Government of Japan as supplementary information in November 2019.

#### **5.1.2 Selection of target species subject to the impact assessment in each river in which the assessed river structures exist**

The species to be assessed will be selected from the species representing the OUV (taxonomic groups) in each river in which the assessed river structures exist. These species will be mainly diadromous fish, rheophytes, and amphibians. When selecting the species to be assessed, the reason for their selection must be clearly stated.

#### **5.1.3 Impact comprehension study**

After clarifying the impact the assessed river structures have had on the assessed species using existing research papers, interviews with experts, and other means, monitoring will be conducted to evaluate their impact where information is lacking and necessary information will be collected to determine their impact. In evaluating the impact, attention must be paid to understanding which stages of the life history of the species being assessed are affected.

#### **5.1.4 Compiling the results of the impact assessment**

The information collected will be sorted based on advice from experts and so on, and the results of the

impact assessment of the river structures on the target species will be compiled.

### **5.2 Restoration policy examination phase**

Based on the results of the impact assessment, the specific causal relationships of the impact of the river structures on the OUV will be analyzed and examined, and improvement measures for the river structures will be discussed to remove the factors causing the impact. A study and evaluation of potential risks due to adopting the improvement measures, such as the risks to disaster prevention, will also be conducted and restoration policy will be discussed based on the results of such study and evaluation. In the long term, restoration policy will be reviewed flexibly as changes in the conditions affecting rivers are comprehended. Restoration policy must be examined based on “4. Basic approach to river restoration” mentioned above.

### **5.3 Countermeasure implementation phase**

Countermeasures will be implemented based on the restoration policy discussed. In implementing countermeasures, sufficient attention must be paid to preventing negative impacts on the heritage value, such as the invasion of alien species.

### **5.4 Effectiveness examination and monitoring phase**

After implementing countermeasures, their effectiveness will be monitored and examined. If no improvement is seen, further countermeasures will be implemented, and their effectiveness will be monitored and examined as needed based on the PDCA cycle.

## **6. Evaluation of river restoration strategy**

The strategy will be subject to a review approximately five years after its formulation based on the progress and results of the impact comprehension study.

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世界自然遺産地域科学委員会(20221005)

資料 1－2－添付資料c-1-別表【英】

No.	Region	Property/buffer zone	River	River structure that disrupts the flow	Management body	Year of the completion
1	Amami-Oshima Island	Property and buffer zone	Okawa River	Intake weir	Amami City	1983
2	Amami-Oshima Island	Buffer zone	Naon River	Intake weir	Kyushu Electric Power Co., Inc	1956
3	Amami-Oshima Island	Buffer zone	Naon River	Intake weir	Naon Irrigation Association	Before the Meiji period (1868-1912)
4	Amami-Oshima Island	Property	Sumiyo River	Intake weir	Kyushu Electric Power Co., Inc	1959
5	Amami-Oshima Island	Buffer zone	Yakugachi River	Ground sill	Kagoshima Prefecture	Unknown
6	Amami-Oshima Island	Buffer zone	Asato River and its tributary	Sabo check dam	Kagoshima Prefecture	1961 1966
7	Amami-Oshima Island	Buffer zone	Shirinashi River	Sabo check dam	Kagoshima Prefecture	1983
8	Amami-Oshima Island	Buffer zone	Sutarumata River	Sabo check dam	Kagoshima Prefecture	1997
9	Amami-Oshima Island	Buffer zone	Kamiya River	Sabo check dam	Kagoshima Prefecture	2012
10	Amami-Oshima Island	Buffer zone	Uekawa River	Sabo check dam	Kagoshima Prefecture	1999
11	Amami-Oshima Island	Property	Honda River	Sabo check dam	Kagoshima Prefecture	2011
12	Amami-Oshima Island	Buffer zone	Yanma River	Sabo check dam	Kagoshima Prefecture	1990
13	Amami-Oshima Island	Buffer zone	Agina River	Sabo check dam	Kagoshima Prefecture	1993
14	Amami-Oshima Island	Property	Ishira River	Sabo check dam	Kagoshima Prefecture	1993
15	Amami-Oshima Island	Property	Ishira River	Sabo check dam	Kagoshima Prefecture	1985
16	Amami-Oshima Island	Property	Yakugachi River	Sabo check dam	Kagoshima Prefecture	1999
17	Amami-Oshima Island	Property	Yakugachi River	Ground sill	Setouchi Town	Unknown
18	Amami-Oshima Island	Property	Kawauchi River *1	Sabo check dam	Kagoshima Prefecture	1962 1963
19	Amami-Oshima Island	Buffer zone	Kogachi River	Ground sill	Kagoshima Prefecture	Unknown
20	Amami-Oshima Island	Property	Kawauchi River *2	Ground sill	Uken Village	1995
21	Amami-Oshima Island	Property	Kawauchi River *2	Ground sill	Uken Village	Unknown

\*1: The Kawauchi River in Amami City.

\*2: The Kawauchi River in Uken Village.

No.	Region	Property/buffer zone	River	River structure that disrupts the flow	Management body	Year of the completion
1	Tokunoshima Island	Buffer zone	Akirigami River	Check dam	Forestry Agency	1991
2	Tokunoshima Island	Property	Akirigami River	Check dam	Forestry Agency	1983
3	Tokunoshima Island	Property	Akirigami River	Check dam	Forestry Agency	1973
4	Tokunoshima Island	Property	Akirigami River	Check dam	Forestry Agency	1987
5	Tokunoshima Island	Property	Kametoku River	Check dam	Forestry Agency	2003
6	Tokunoshima Island	Property	Kametoku River	Check dam	Forestry Agency	1990
7	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	1988
8	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	1990
9	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	1995
10	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	1997
11	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	2009
12	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	1992
13	Tokunoshima Island	Property	Akirigami River tributary	Check dam	Forestry Agency	2006
14	Tokunoshima Island	Buffer zone	Akirigami River	Water utilization dam	Amagi Town	1968
15	Tokunoshima Island	Buffer zone	Soya River and Tari River	Sabo check dam	Kagoshima Prefecture	1982

No.*1	Region	Property /buffer zone	River	River structure that disrupts the flow	Management body	Year of the completion
1	Northern part of Okinawa Island	Buffer zone	Oku River	Sabo check dam	Okinawa Prefecture	1983
2	Northern part of Okinawa Island	Buffer zone	Yona River	Sabo check dam	Okinawa Prefecture	1983
3	Northern part of Okinawa Island	Buffer zone	Okuma River	Sabo check dam	Okinawa Prefecture	1982
4	Northern part of Okinawa Island	Buffer zone	Hiji River	Sabo check dam	Okinawa Prefecture	1985
5	Northern part of Okinawa Island	Buffer zone	Benoki River	Intake weir	Kunigami Village*2	Unknown
6	Northern part of Okinawa Island	Buffer zone	Benoki River	Water utilization dam	Okinawa General Bureau, Cabinet Office	1988
7	Northern part of Okinawa Island	Buffer zone	Fungawa River	Water utilization dam	Okinawa General Bureau, Cabinet Office	1983
8	Northern part of Okinawa Island	Buffer zone	Aha River	Water utilization dam	Okinawa General Bureau, Cabinet	1983

Revised from supplementary information submitted in November 2019.

\*1: The check dam at Takazato River tributary (No. 6), listed in the supplementary information in November 2019, was removed from the list and map as it was found to be outside the property and buffer zone. The numbers after that have been moved up.

\*2: Corrected from "Okinawa Prefecture" to "Kunigami Village".

No.	Region	Property/buffer zone	River	River structure that disrupts the flow	Management body	Year of the completion
1	Iriomote Island	Property	Nakama River tributary	Check dam	Forestry Agency	1994
2	Iriomote Island	Property	Nakama River tributary	Check dam	Forestry Agency	1996
3	Iriomote Island	Property	Nakama River tributary	Check dam	Forestry Agency	2009
4	Iriomote Island	Property	Nakama River tributary	Intake weir	Taketomi Town	1975
5	Iriomote Island	Property	Aira River	Intake weir	Taketomi Town	1977
6	Iriomote Island	Property	Male River	Intake weir	Taketomi Town	1978
7	Iriomote Island	Property	Fukai River	Intake weir	Taketomi Town	1981



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