

# Marine IBA Inventory

Important Areas for Seabird and  
Marine Conservation in Japan



公益財団法人 日本野鳥の会  
Wild Bird Society of Japan



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*BirdLife International Tokyo & Wild Bird Society of Japan*



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## PREFACE

Marine biodiversity has recently been declining at an unprecedented rate due to the over-exploitation of natural resources, the reclamation of coastal areas, pollutants, coral bleaching and a rise in seawater temperatures etc. The long enjoyed benefits that mankind has derived from natural marine resources are now at stake and the time has come for us to take urgent action to conserve these unique marine environments and their diverse species.

In 2004, BirdLife International and its global Partners initiated a project to designate coastal and marine areas that are important for biodiversity and environmental conservation, as Marine Important Bird and Biodiversity Areas (Marine IBAs), using seabirds as indicators on the state of the marine environment. These marine IBAs provide essential baseline information for marine conservation planning and initiatives aimed at improving the protection and sustainable management of the oceans.

At the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP10) in 2010, the importance of Ecologically and Biologically Significant Areas (EBSAs) was discussed. The Aichi Target 11 was also resolved at the conference, stating that ‘by 2020, 10 per cent of coastal and marine areas should be conserved through the systems of protected areas and other conservation measures’. At subsequent workshops held all over the world, many marine IBAs were designated as candidates for EBSA sites. Marine IBAs are also used as the scientific basis for designating Natura 2000 Special Protection Areas (SPAs) in Europe.

This book provides a national inventory of marine IBAs that have been jointly identified since 2010 by BirdLife International Tokyo and the Wild Bird Society of Japan (WBSJ), compiling knowledge and information about each of these 27 marine IBAs. These selected marine sites have not only been used to depict ‘EBSAs of Japan’ proposed by the Ministry of the Environment in Japan, but could also be used for selecting Marine Protected Areas (MPAs) and selecting candidate sites for constructing offshore wind farms in the future. We sincerely hope that this book will serve the conservation of seabirds and marine ecosystems.

To publish this book, information and photographs were kindly provided by WBSJ and its affiliates, local governments, researchers and numerous others involved in the conservation of seabirds. We thank all of them for their cooperation and extend our sincere gratitude to The Tiffany & Co. Foundation, whose support was made possible through a grant to American Friends of BirdLife International, and the Keidanren Nature Conservation Fund for funding, which made the identification of marine IBAs in Japan and the publication of this book possible.

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# What is a Marine IBA?



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## IBAs (Important Bird and Biodiversity Areas)

### Outline

Since the 1970s, BirdLife International has worked collectively with its Partners throughout the world to identify Important Bird and Biodiversity Areas (IBAs). IBAs are significant habitats for birds and also areas with high biodiversity, selected according to the internationally agreed criteria. For this reason they are often designated national or local reserves or protected areas and have also been used as a shadow list of candidate conservation sites. Birds are so vulnerable to changes in the environment such as human disturbance at breeding sites, pollution and climate change that they can serve as excellent indicators of environmental health. Therefore, the monitoring of IBAs and any subsequent measures arising from monitoring will help local residents to carry out sustainable conservation and management of birds and biodiversity. As IBAs are identified by using an internationally agreed set of criteria, they can be used for global comparison and also as an excellent means to measure the richness of biodiversity.

### IBA Criteria

The categories and criteria used to select IBAs are as follows. In order to be identified as an IBA, a site must meet at least one of them.

- A1:** The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.
- A2:** The site is known or thought to hold a significant component of a group of species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).
- A3:** The site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome.
- A4:** A site may qualify on any one or more of the four criteria listed below:
  - i). Site known or thought to hold, on a regular basis, >1% of a biogeographic population of a congregatory waterbird species.
  - ii). Site known or thought to hold, on a regular basis, >1% of the global population of a congregatory seabird or terrestrial species.
  - iii). Site known or thought to hold, on a regular basis, > 20,000 waterbirds or >10,000 pairs of seabirds of one or more species.

- iv). Site known or thought to exceed thresholds set for migratory species at bottleneck sites.

## IBAs in the World

12,126 sites in a total of 119 countries have so far been identified as IBAs, and 2,381 of them are in Asia. It is not only many IBAs in Europe that have already been designated as national reserves, some of them have also been designated as Special Protected Areas by member states of the European Union. 43% of Asian IBAs have been formally recognized and regulated as protected areas in some way, whereas 14% enjoy partial protection and the rest have no legal protection at all. Urgent action is required to lobby each government to put these IBAs under legal protection.

## IBAs in Japan

The selection of IBAs in Japan has mainly been led by the Wild Bird Society of Japan (WBSJ), and 167 IBAs identified by 2003 were compiled into the 'IBA List of Japan'. Its revised edition, the 'IBA List of Japan 2010', contains the brief description of the present situation of legal designation and monitoring, as well as site information, according to which, 49 IBAs (29%) are not legally designated, and 5 IBAs that are subject to 'environmental modification projects that would or are likely to cause loss of habitat functions' that are under way or being planned. The Awase Tidal Flat, in particular, is one of the world's 422 IBAs, for which BirdLife International is raising a warning as an 'IBA in danger'.

## Marine Important Bird and Biodiversity Areas (Marine IBAs)

### IBAs from the Land to the Ocean

There has been an expansion of the work within the BirdLife Partnership to identify IBAs in the marine environment, in other words Marine Important Bird and Biodiversity Areas (marine IBAs). Seabirds are excellent indicators as to the state of the marine environment and can help to identify key sites for marine biodiversity conservation. Now that the population of seabirds is drastically decreasing due to bycatch (the incidental capture of non-target species by the fishing industry), predation pressure in breeding areas and marine pollution, it is not only breeding areas that urgently need to be identified but also other significant sites for seabirds and the conservation of these unique sites should commence as soon as possible. Marine IBAs should be identified for the conservation of both seabirds and the ocean.

## Marine IBAs in the World

Since 2004, over 3,300 marine IBAs have been identified. BirdLife International Partners held marine IBA workshops in Asia, Indian Partner finished identifying marine IBAs in 2012, and Russian Partner, in 2015.

So far, marine IBAs have not only been used for the conservation of seabirds, but also in the marine conservation policies of many countries and regions. In Spain, for example, where they finished identifying marine IBAs in 2009, 42 sites out of the 43 identified as marine IBAs were certified as Special Protected Areas. In 2010, the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP10) adopted criteria and guidance for identifying Ecologically or Biologically Significant marine Areas, abbreviated as EBSAs, and discussed their importance for marine conservation. Later, at workshops held in various regions around the world to identify EBSA candidate sites, marine IBAs were used as a basis and some were recommended as EBSA candidate sites to the Biodiversity Council.

## Marine IBA Database

All of the marine IBAs in the world and information about each site can be looked up in the following open database: Marine e-atlas (<http://54.247.127.44/marineIBAs/default.html>)

## Marine IBAs in Japan

In Japan, the WBSJ and BirdLife International Tokyo collectively started identifying marine IBAs in 2010. 44 seabird breeding colonies were selected following the IBA criteria, and a total of 27 marine IBAs were identified. This book provides information about these 27 marine IBAs and 44 colony sites, while at the same time presenting the current situation of these marine IBAs and the threats that seabirds are facing.

## References

- BirdLife International (2009) Designing networks of marine protected areas: exploring the linkages between Important Bird Areas and ecologically or biologically significant marine areas. BirdLife International, Cambridge, UK.
- BirdLife International (2010) Marine Important Bird Areas toolkit: standardised techniques for identifying priority sites for the conservation of seabirds at sea. BirdLife International, Cambridge, UK.
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- IBA List of Japan (2010) Bird Conservation Report 27. Wild Bird Society of Japan, Tokyo, (in Japanese).



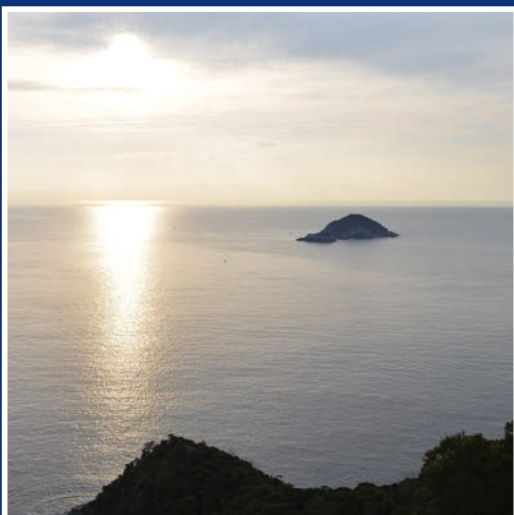
# Identification of Marine IBAs



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## Types of Marine IBAs

There are four types of marine IBAs categorized according to seabirds' at-sea activities.

### 1. Seaward extensions of breeding colonies

Many seabirds colonize in groups for breeding, so the seaward extensions around the breeding sites are extremely important habitats for them during the breeding season. Shearwaters for example, are well-known for an activity called rafting, whereby they gather together on the sea near their colonies after sunset. Consequently, the rafting range is of great significance for these birds in the breeding season.

### 2. Non-breeding (coastal) concentrations

Some species of seabirds live in groups, and the marine areas they use for feeding and resting are also important for them.

### 3. Migratory bottlenecks

Seabirds fly over coastal waters that are determined by topographic features, such as headlands and straits over the course of regular migration.

### 4. Areas for pelagic species

There are marine areas that are very remote from land where pelagic seabirds regularly gather in large numbers. These areas usually coincide with high productivity and can be favoured foraging sites, particularly for pelagic species such as albatrosses and shearwaters.

## How to identify Marine IBAs

### Data Collection and Analysis

To identify marine IBAs, a whole range of data is used, including, for example, the distribution of seabirds on the ocean collected by boat censuses or obtained from the ARGOS system (PTT transmitters), GPS data loggers, geolocators (GLS) and other devices as well as marine environmental data (e.g. bathymetry, sea surface temperature (SST), chlorophyll concentration), colony data (e.g. species, population size, location) and foraging data (e.g. the foraging range of each species). By analyzing these data, marine areas that are frequently used by seabirds or 'hotspots' for seabirds can be identified, mainly following three measures:

#### 1. Identifying important areas using tracking data

e.g. Kernel analysis, First-Passage Time, and State-Space Modelling

#### 2. Identifying important areas based on the seabird distribution predicted by the habitat model

e.g. Maxent, GARP, Generalized Linear Model and Generalized Additive Model

### 3. Identifying the most important areas around breeding colonies using foraging or rafting distances

These marine IBAs are identified by designating seaward extensions around the breeding colony. Many important seabird colonies in need of conservation have already been identified as IBAs on land. The size of the seaward extension depends on factors such as the specific foraging or rafting range and the environment preferences of each species.

BirdLife International inputs the seabird tracking data sent by researchers into a 'Seabird Tracking Database' <http://www/seabirdtracking.org/>

#### Application of IBA Criteria

As with the IBAs designated on land, the IBA criteria and thresholds (see p. 6) are applied to the important marine areas for seabirds or seabird 'hotspots' identified above to validate whether those areas can be considered as candidate marine IBA sites. This has to be done for each species.

#### Delimitation of Final Boundaries of Marine IBAs

Final marine IBA boundaries are delimited by overlapping candidate marine IBA sites for different species located in the same area to merge them into a single marine IBA.

#### Identification of Marine IBAs in Japan

Marine IBAs in Japan are all 'seaward extensions of breeding colonies'. They were identified by selecting seaward extensions of seabirds use for foraging and rafting around breeding colonies that had already been identified as IBAs on land. Identification was carried out using the following procedure:

##### 1. Selecting seabird colonies from terrestrial IBAs triggered by seabirds

Breeding colonies of seabirds (excluding sea ducks and cormorants) were selected from IBAs on land (IBAs in Japan 2010), then adding those that met IBA criteria. When one IBA had more than two colonies, its center on land was considered as the center of the whole marine IBA.

A total of 44 seabird breeding colonies, including the centers of multiple colonies, were identified with 18 trigger species breeding there.

##### 2. Collecting foraging and rafting data of seabirds

Data on the foraging and rafting of seabirds were collected using the non-public BirdLife International Seabird Foraging Range Database. In case no data was found about a particular species to be identified, the foraging distance was estimated by the following:

- refer to the data of a closely related species
- quote the data of the rafting distance of a closely related species from the literature (as in the case of the Streaked Shearwater)
- estimate the foraging distance of each colony from the spatial distribution obtained from the habitat model made from the data of off shore distribution during the breeding season (as in the case of the Japanese Murrelet)
- use the result of the off shore distribution research (as in the case of the Roseate Tern)
- seek experts' opinions (as in the case of the Black-tailed Gull)
- estimate the range that a particular species forages around its breeding colony (as in the case of the Short-tailed Albatross)

Also refer to the appendix table 1 at the back of the book.

##### 3. Identifying the seaward extension used for foraging/rafting around the breeding colony

Using a Geographical Information System (GIS), a buffer polygon of the foraging/rafting distance around the breeding colony of each species was set. The polygon obtained from the longest distance when more than one species were involved, and the whole distance when multiple polygons overlapped, were selected, thus a total of 27 marine IBAs were finally identified.

The newly identified 27 marine IBAs as well as their base areas supporting 44 colonies can be referred to on pages 16-68, and the biological description of the 18 species of seabirds used for identification, on pages 80-89 of this book.

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- BirdLife International (2010) Marine Important Bird Areas toolkit: standardised techniques for identifying priority sites for the conservation of seabirds at sea. Birdlife International, Cambridge, UK.
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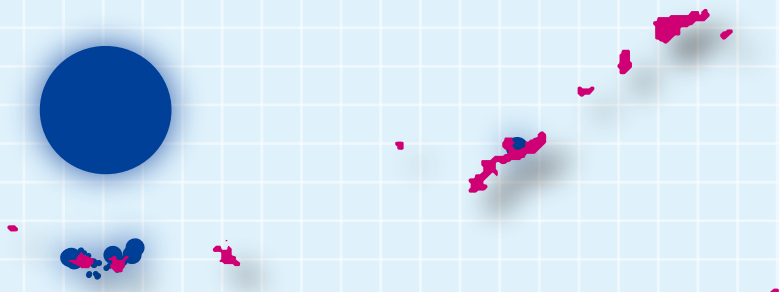
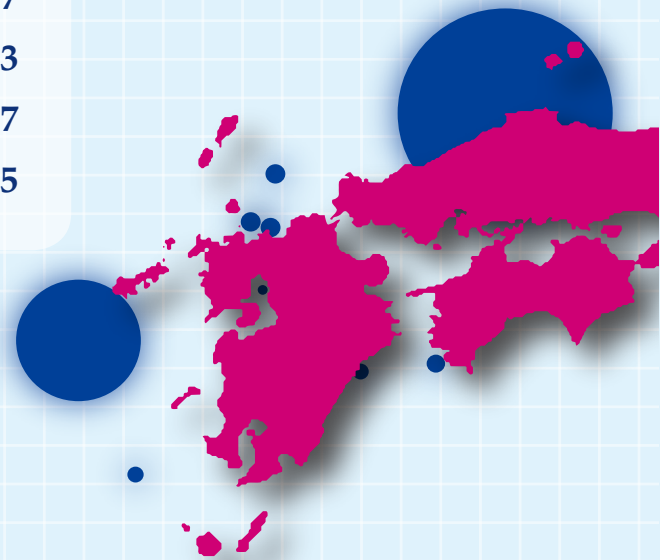


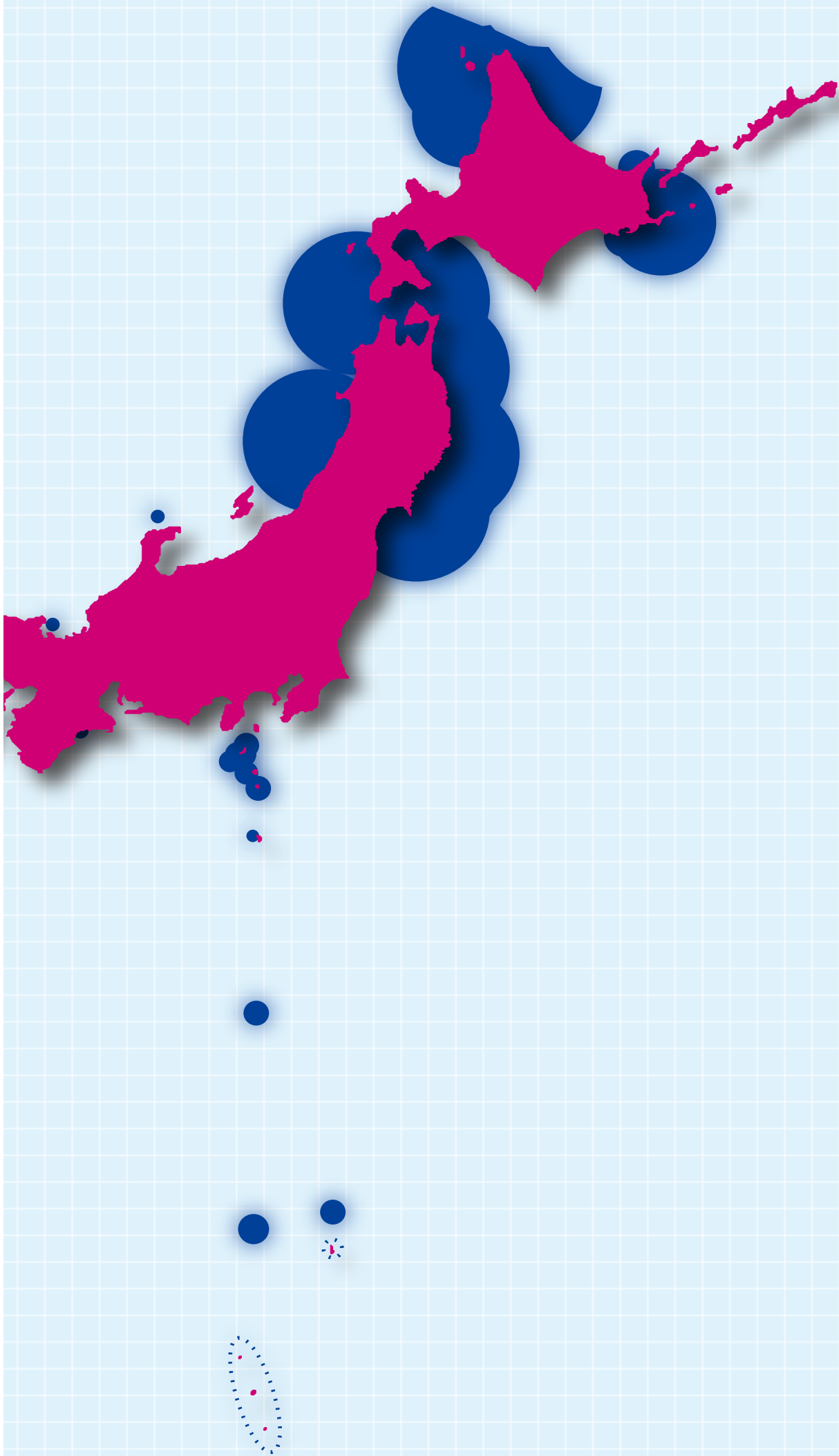
# Marine IBAs in Japan

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# Marine IBAs in Japan

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# How to Read the Marine IBA Information

On pages 15-68 of this book, 27 Marine IBAs are introduced with 44 areas that support breeding colonies of seabirds that were used to identify these Marine IBAs. The information has been compiled in accordance with the regions (Hokkaido, Tohoku, Kanto, Chubu & Kinki, Chugoku & Shikoku, Kyushu, and Ryukyu Islands).

## Cover Page of Each Region

You will find a map and short information of the marine IBAs for each region on the cover page.

### Information about Marine IBAs

#### Code and site name

Each marine IBA is described by a code number and its site name

#### Seabird breeding colonies

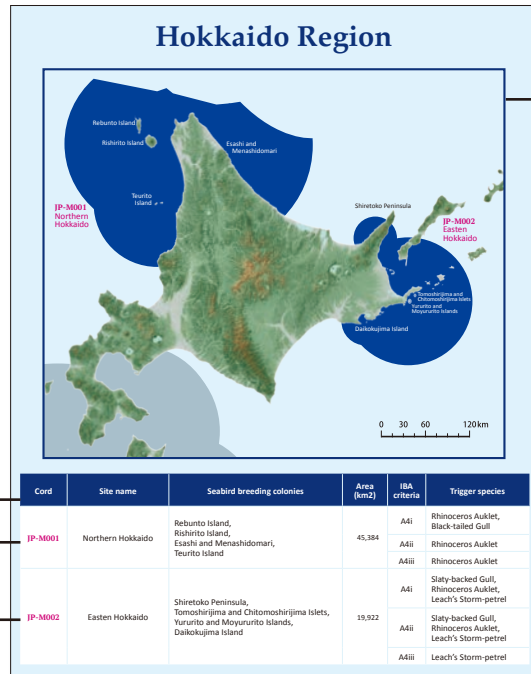
Areas where breeding colonies of seabirds exist

#### Areas

The area of each marine IBA in square kilometers (km<sup>2</sup>)

#### IBA criteria and trigger species

Reason for selection (IBA criteria) and seabird species used for marine IBA identification



### Map of each region

Marine areas in dark blue show marine IBAs with information on the corresponding page, while those in gray show the information on other pages (not on the corresponding page).

The code and the site name of each marine IBA are indicated in red and areas where breeding colonies of seabirds were used for the identification of marine IBAs are shown in black or white. The marine IBA site name only is written when the site name and the area name of the seabird colony are the same.

## Pages on Areas Where Breeding Colonies of Seabirds Exist

After the cover page of each region, areas are described where breeding colonies of seabirds exist that have been used for the identification of marine IBAs in the corresponding region. All of the areas except for the Oki Islands had already been designated as terrestrial IBAs. This book concentrates on compiling information that focuses on seabirds and marine areas.

### Site description

Information about the natural environment of areas where there are breeding colonies of seabirds

### Protection status of seabird breeding site

This section indicates the legal status of protecting lands with seabird breeding colonies (areas designated as IBAs) from the published booklet 'Important Bird Areas of Japan 2010'. The following four factors are covered from the view point of 'legally secured lands for the purpose of nature conservation'.

- Wildlife Reserve and Special Protection Area by the Wildlife Protection Act (laws about the protection of wildlife and proper management of hunting)
- 'Special Protection Area' and 'The first - third kind of Territory' of National Park, Quasi-national Park and Nature Parks by prefectural and city governments designated by the Natural Parks Act.
- Special areas (Wildlife Conservation Areas and Nature Conservation Areas) according to the Nature Conservation Act
- Natural monuments as set by the Cultural Assets Preservation Act

**Rebunto Island**  
礼文島

**Site Description**  
Rebunto Island (81.3km<sup>2</sup>) is located in the Sea of Japan about 59 km west of Wakkanai City in the northern part of Hokkaido. The east side of the island gradually slopes down to the sea from Mount Rebus (490m), whereas cliffs are a prevalent feature of the landscape on the west side. The Ashikajima Islet (0.2km<sup>2</sup>) which is located 1km off Cape Sakaton at the northern tip of Rebunto acted as a summer home to fishing operators until the 1960s, during the harvest season of kelp and sea urchins, but today it is once again an uninhabited islet. Sheer cliffs surround Rebunto Island and seabirds including the Rhinoceros Auklet, the Japanese Cormorant, the Slaty-backed Gull and the Black-tailed Gull are all known to breed there. The sea surrounding the island is rich in fish resources, which attracts the fishing industry.

**Protection Status of Seabird Breeding Site**

- Rishiri - Rebun - Sarobetsu National Park

**Breeding Seabirds**  
Rhinoceros Auklet, Japanese Cormorant, Slaty-backed Gull, Black-tailed Gull

**Threats to the seabirds and the marine environment**

- Impacts from tourists feeding seabirds off the ferry which operates between Rishiri Island, Rebun Island and Wakkanai City

**Conservation Activities**

- Hokkaido Seabirds Conservation Group (seabirds monitoring survey)

### Code of marine IBA site

The code given to a marine IBA site included in the corresponding area

### Map of an area

The area in dark blue shows a marine IBA site; the line in light blue shows the boundary of a marine IBA site selected according to the seabird breeding colonies in the corresponding area

### Conservation activities

Activities that are underway to conserve seabirds or marine areas in the local area

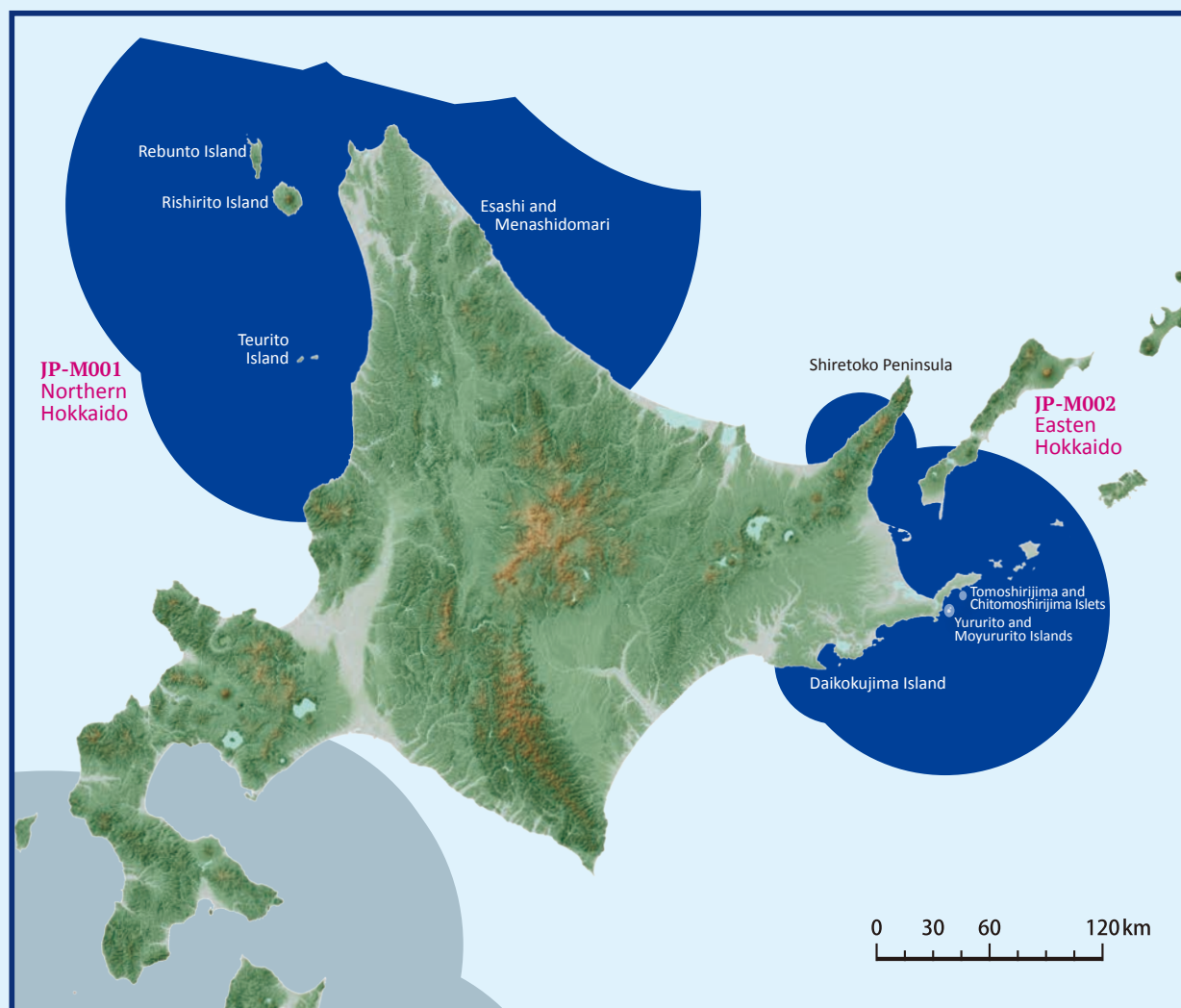
### Threats to the seabirds and the marine environment

Factors threatening the seabirds and the marine environment identified

### Breeding seabirds

Seabird species breeding in each area

# Hokkaido Region



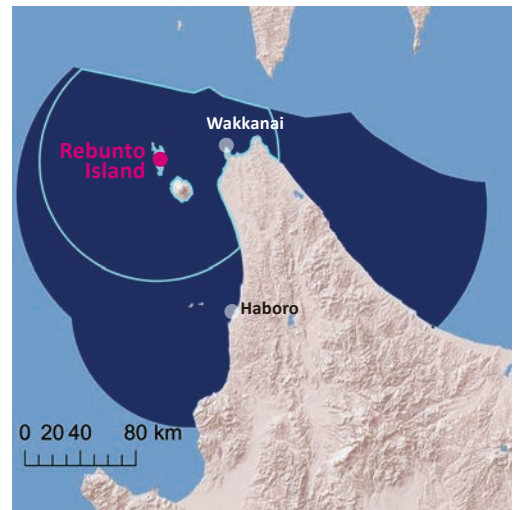
Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M001	Northern Hokkaido	Rebunto Island, Rishirito Island, Esashi and Menashidomari, Teurito Island	45,384	A4i	Rhinoceros Auklet, Black-tailed Gull
				A4ii	Rhinoceros Auklet
				A4iii	Rhinoceros Auklet
JP-M002	Eastern Hokkaido	Shiretoko Peninsula, Tomoshirijima and Chitomoshirijima Islets, Yururito and Moyururito Islands, Daikokujima Island	19,922	A4i	Slaty-backed Gull, Rhinoceros Auklet, Leach's Storm-petrel
				A4ii	Slaty-backed Gull, Rhinoceros Auklet, Leach's Storm-petrel
				A4iii	Leach's Storm-petrel



## Site Description

Rebunto Island (81.3km<sup>2</sup>) is located in the Sea of Japan about 59km west of Wakkanai City in the northern part of Hokkaido. The east side of the island gradually slopes down to the sea from Mount Rebus (490m), whereas cliffs are a prevalent feature of the landscape on the west side. The Ashikajima Islet (0.2km<sup>2</sup>) which is located 1km off Cape Sukoton at the northern tip of Rebunto acted as a summer home to fishing operators until the 1960s, during the harvest season of kelp and sea urchins, but today it is once again an uninhabited islet. Sheer cliffs surround Rebunto Island and seabirds including the Rhinoceros Auklet, the Japanese Cormorant, the Slaty-backed Gull and the Black-tailed Gull are all known to breed there. The sea surrounding the island is rich in fish resources, which attracts the fishing industry.



## Protection Status of Seabird Breeding Site

- Rishiri - Rebun - Sarobetsu National Park

## Breeding Seabirds

Rhinoceros Auklet, Japanese Cormorant, Slaty-backed Gull, Black-tailed Gull

## Threats to the Seabirds and the Marine Environment

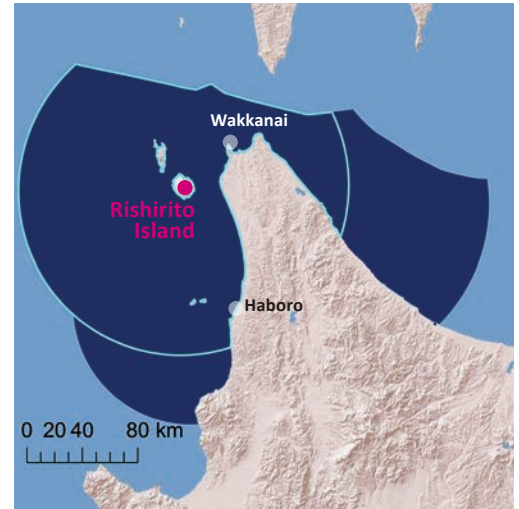
- Impacts from tourists feeding seabirds off the ferry which operates between Rishiri Island, Rebun Island and Wakkanai City

## Conservation Activities

- Hokkaido Seabirds Conservation Group (seabirds monitoring survey)



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## Site Description

Rishirito Island (182.2km<sup>2</sup>) is located in the Sea of Japan about 50km from Wakkanai sea port, at the northwestern tip of Hokkaido. Rebunto Island, the northernmost inhabited island of Japan, is located to the northwest of Rishirito across the Rebus Channel. So far, 280 species of birds have been confirmed on the island – mostly summer visitors and passage migrants. There is a breeding colony of the Black-tailed Gull in the northwest of the island.

Fishing activities are commonplace such as *Netsuki* fishing for sea urchins, kelp, sea cucumbers and abalone, *Isari* fishing (a type of lure fishing) and *Karatsurinawa* fishing for octopus (catching octopus on hooks without bait set on the bottom of the ocean floor) as well as gill-netting for the Okhotsk atka mackerel, the flatfish and the black rockfish, pole-and-line fishing for the Japanese flounder and tuna, and *Ketahiki* fishing (a type of gill-netting) for the sea cucumber. Sustainable fish farming such as the incubation and release of young salmon, the release of young sea urchins and abalone, and the cultivation of Rishiri kelp and scallops are also common.



©Kazuki Kosugi

## Protection Status of Seabird Breeding Site

- Rishiri Wildlife Protection Area (designated by Hokkaido)
- Rishiri - Rebun - Sarobetsu National Park

## Breeding Seabirds

Slaty-backed Gull, Black-tailed Gull

## Threats to the Seabirds and the Marine Environment

- Impacts from tourists feeding seabirds off the ferry which operates between Rishiri Island, Rebun Island and Wakkanai City
- Predation from crows at the breeding site.
- The prolific spread of an introduced seaweed, *Sargassum siliquastrum*, along the coast

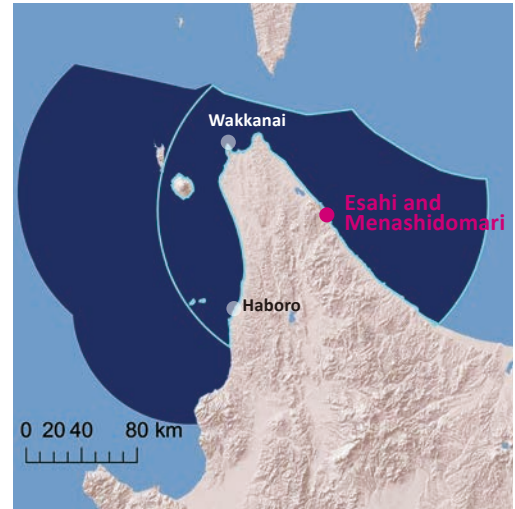
## Conservation Activities

- Rishiri Town Museum (regular birdwatching)
- Wild Bird Society of Japan Dohoku Chapter (surveys on the colony of the Black-tailed Gull)
- Hokkaido University (research on the Black-tailed Gull colony)
- Fishing vessel operators (garbage collection along the beach)
- Rishirifuji Town Office (environmental education for elementary school pupils)

枝幸・目梨泊



©Yoshiko Murayama



## Site Description

Esashi (1,115.7km<sup>2</sup>) is a town located in the southeast of the Soya region facing the Okhotsk Sea. The Black-tailed Gull is most renowned for its breeding colonies on the rock reefs near the sea dike of the Menashidomari District and the Gome Islet off Menashidomari.

Fishing activities are commonplace such as *Hako* fishing (catching octopus in boxes), *Ketahiki* fishing for sea cucumbers (a type of gillnetting), *Sokotateami* fishing for squid (a type of gillnetting), set-net fishing for salmon and gillnetting for the Pacific saury. Tourist boat excursions in the surrounding sea are popular.

## Protection Status of Seabird Breeding Site

- Natural Monument (Onpyo Gome Islet designated by the town)

## Breeding Seabirds

Slaty-backed Gull, Black-tailed Gull, Rhinoceros Auklet, Japanese Cormorant

## Threats to the Seabirds and the Marine Environment

- Harbor protection and maintenance works near the sea dike
- Predation from the red fox
- Disturbance from photographers at the breeding site
- Decline in food resources for seabirds

## Conservation Activities

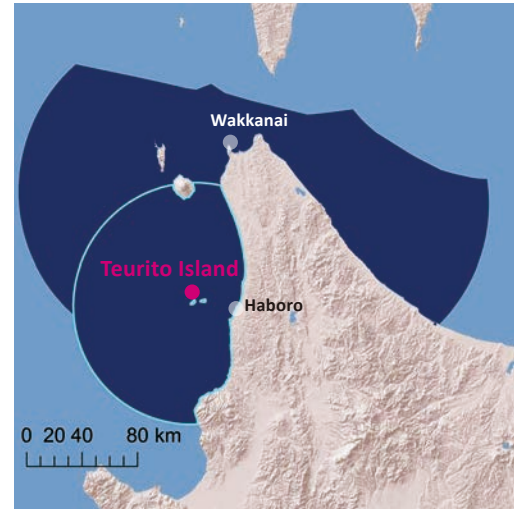
- Cultural Properties Protection Committee of Esashi Town (regular census)
- Wild Bird Society of Japan Dohoku Chapter (surveys on the Black-tailed Gull colony)
- Cleaning up waste washed up along the coast by residents
- Okhotsk Museum of Esashi (surveys on the Black-tailed Gull colony)



©Yoshiko Murayama



©Takuya Ishigouoka



### Site Description

Teurito Island (5.5km<sup>2</sup>) is an island in the Sea of Japan located 28km away from Haboro Town. The climate is relatively warm in Hokkaido as a result of the warm Tsushima current, but the seasonal winter winds are strong. About 240 bird species have been confirmed on the island. The cliffs on the northwest of the island provide a breeding colony site for seabirds. The Common Murre, the Rhinoceros Auklet, the Spectacled Guillemot and the Ancient Murrelet are all known to breed there and the site is renowned as the world's largest breeding site for the Rhinoceros Auklet.

Fishing activities in the surrounding area include deep-sea gillnetting for the Japanese sculpin, the flat fish and the Okhotsk atka mackerel, basket fishing and *Ketaami* fishing (the dragging of a bag-like net over the sea floor using a rope from a boat) for shrimps and set-net fishing for salmon and spear squid. Tourist boat excursions in the surrounding area are also popular.

### Protection Status of Seabird Breeding Site

- Teurito Wildlife Protection Area - Special Protection Area
- Shokanbetsu – Teuri - Yagishiri Quasi-National Park
- Natural Monument (Teurito Island seabirds breeding site)

### Breeding Seabirds

Rhinoceros Auklet, Common Murre, Spectacled Guillemot, Slaty-backed Gull, Black-tailed Gull, Ancient Murrelet, Pelagic Cormorant

### Threats to the Seabirds and the Marine Environment

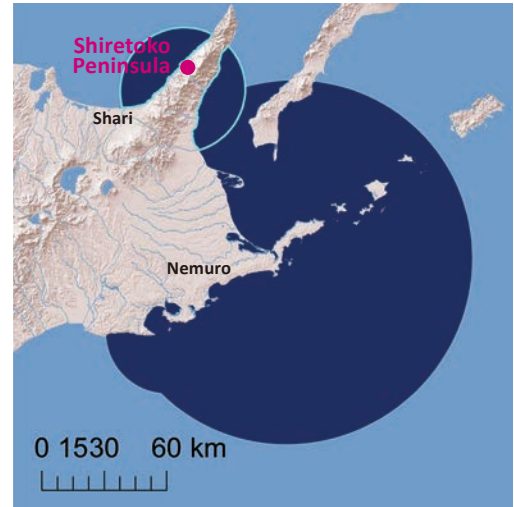
- Bycatch of seabirds in gillnet fisheries
- A decrease in the breeding population of seabirds due to a decline in their food resources
- Predation of seabird eggs and chicks from introduced animal species such as feral cats and brown rats.
- Human impact on breeding seabirds from an increase in the number of tourists
- Disturbance from boats approaching the breeding site
- Increase in the numbers of the Large-billed Crow and the Slaty-backed Gull due to excess garbage from humans and waste from fisheries
- Construction plans of off-shore wind farms

### Conservation Activities

- Hokkaido Seabird Center (e.g. Common Murre recovery plan, surveys on the Spectacled Guillemot, eradication of stray cats)
- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Association of the Hokkaido Seabird Center (educational activities, surveys and education about local wildlife, monitoring of the Ancient Murrelet)
- Conservation Measures Committee of Seabirds of Teurito Island (eradication of stray cats)
- Hokkaido University, Meijo University, Osaka City University (seabird research and monitoring)



©Hajime Nakagawa



### Site Description

The Shiretoko Peninsula is a peninsula about 70km long, protruding into the Okhotsk Sea with a width of about 25km at its base. It straddles the border between Shari Town, Shari District and Rausu Town, Menashi District in eastern Hokkaido. Cliffs and rocky stretches along the coast are breeding sites for seabirds such as the Spectacled Guillemot and gulls. The White-tailed Eagle nests in the forested cliffs and numerous Steller's Sea Eagles spend the winter here.

Fishing activities include set-net fishing for chum salmon and pink salmon, *Hako* fishing (catching octopus by using boxes) for the octopus, basket fishing for the horse-hair crab and *Tsubu* (saltwater snails), sea urchin fishing, *Ketaami* fishing for the Sakhalin surf clam and gillnetting for flatfish and the Okhotsk atka mackerel. In addition, ecotourism in the form of sightseeing boats and sea kayaking is also popular.

### Protection Status of Seabird Breeding Site

- Shiretoko Wildlife Protection Area - Special Protection Area
- Mount Shari Nature Park of Hokkaido
- Shiretoko Forest Ecosystem Protection Area
- Mount Onnebetsu Primitive Natural Environment Protection Area
- Shiretoko World Natural Heritage Site
- Mount Onnebetsu Primary Forest Natural Environment Protection Area
- Shiretoko National Park - Special Protection Area

### Breeding Seabirds

Rhinoceros Auklet, Slaty-backed Gull, Spectacled Guillemot, Black-tailed Gull, Tufted Puffin, Japanese Cormorant, Pelagic Cormorant

### Threats to the Seabirds and the Marine Environment

- Impact from sightseeing boats passing close to seabirds breeding sites such as those of the Spectacled Guillemot and the Japanese Cormorant
- Presence of angler vehicles in the plant protection areas

### Conservation Activities

- Forestry Agency, Ministry of the Environment, the Shiretoko Foundation, private groups (monitoring surveys)
- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- The Shiretoko Foundation, Rausu Town Education Board, Shari and Rausu Senior High Schools (e.g. nature experiences at this world heritage)
- Shiretoko Museum of Shari Town (wildlife excursions and practical seminars for school students, biological surveys, research and wildlife excursions, environmental education, seminars on wildlife conservation)
- Rausu Town Education Board and Tourism Division (nature experiences for schools)
- Wild Bird Society of Japan Okhotsk Chapter (bird watching excursions, surveys on birds contaminated by oil)
- Shiretoko Seabirds Group (surveys on seabirds and public awareness raising)
- Fishermen and local residents (clean-up seashore activities)
- Voluntary association of tourist agents and administrative authorities (conservation of seabird habitats)
- Sightseeing boat operators (route changes to avoid disturbing breeding seabirds, cooperation to acknowledge data collected about seabirds and marine animals)

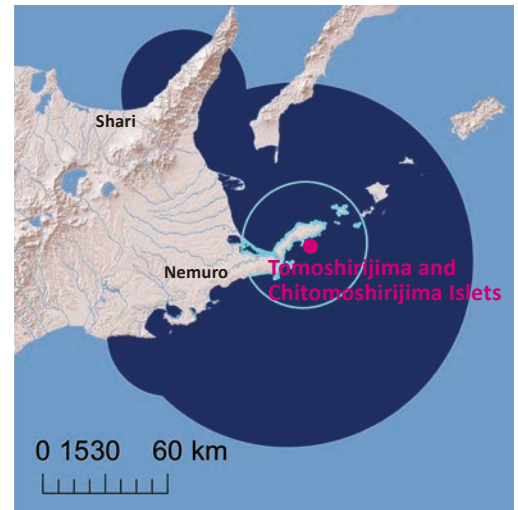
# Tomoshirijima and Chitomoshirijima Islets

JP-M002

トモシリ・チトモシリ島



©Noriyuki Aoki



## Site Description

Tomoshirijima Islet is located 1.2km south of the Tomoshiri Cape on the south coast of the Nemuro Peninsula. Chitomoshirijima Islet is situated between the cape and Tomoshirijima Islet.

Slaty-backed Gulls are known to breed on the islets, although they haven't nested there in recent years. It is suspected that the population is decreasing.

Fishing in the area includes set-net salmon and trout fishing, offshore driftnetting for salmon, trout and Pacific saury, as well as fishing for sea urchins.

## Protection Status of Seabird Breeding Site

None

## Breeding Seabirds

Slaty-backed Gull, Spectacled Guillemot, Rhinoceros Auklet, Tufted Puffin, Leach's Storm-petrel, Black-tailed Gull, Pelagic Cormorant

## Threats to the Seabirds and the Marine Environment

- Predation from introduced brown rats and weasels

## Conservation Activities

- Etopirika Fund (quadrat surveys on the Tufted Puffin)

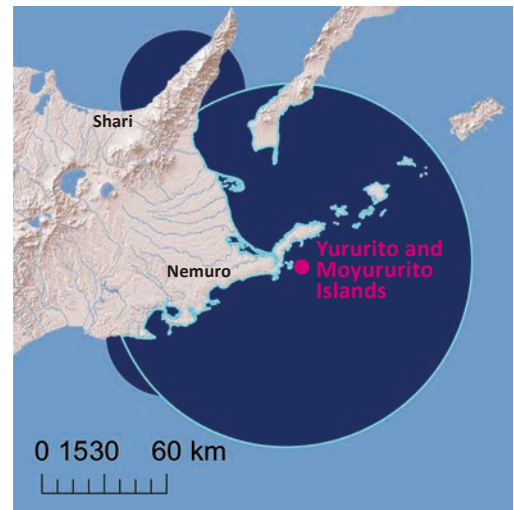


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# Yururito and Moyururito Islands

JP-M002

ユルリ・モユルリ島



## Site Description

Yururito Island (2.0km<sup>2</sup>) is an uninhabited island 7.5km offshore from the Hanasaki Cape of the Nemuro Peninsula. Moyururito Island (0.3km<sup>2</sup>) is situated to the north of Yururito. Seabirds such as the Red-faced Cormorant, the Japanese Cormorant, the Black-tailed Gull, the Slaty-backed Gull, the Spectacled Guillemot, the Rhinoceros Auklet and the Tufted Puffin breed on both islands. These islands are the last remaining breeding sites for the Tufted Puffin in Japan. The islands are off bounds for humans because they have been designated as National Wildlife Reserves by the government and as natural monuments by Hokkaido.

Kelp harvesting and set-net fishing are common in the area as are seabird excursions.

## Protection Status of Seabird Breeding Site

### Notsuke and Odaito Pond

- Yururi/Moyururi Wildlife Reserve - Special Protection Area
- Yururi/Moyururi Natural Monument (seabirds breeding sites designated by Hokkaido)

### Yururito Island

- Far-Eastern Natural Monument of Hokkaido
- Hokkaido Natural Environment Protection Area

### Moyururito Island

- Hokkaido Natural Monument

## Breeding Seabirds

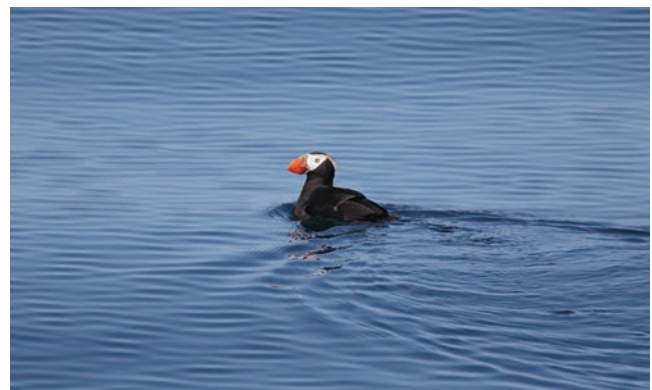
Rhinoceros Auklet, Common Murre, Black-tailed Gull, Slaty-backed Gull, Spectacled Guillemot, Red-faced Cormorant, Tufted Puffin, Japanese Cormorant, Pelagic Cormorant

## Threats to the Seabirds and the Marine Environment

- Seabirds bycatch in gillnet fisheries
- The Slaty-backed Gull is a disturbance to the breeding of other seabirds
- Predation from the White-tailed Sea Eagle and introduced brown rats
- Disturbance to breeding from sightseeing boats passing too close to the seabird breeding sites

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Hokkaido Research Organization, Institute of Environmental Science (monitoring of seabird populations)
- Ministry of the Environment (conservation and breeding project for the Tufted Puffin)
- Kushiro District Bureau of the Ministry of the Environment (eradication of brown rats)

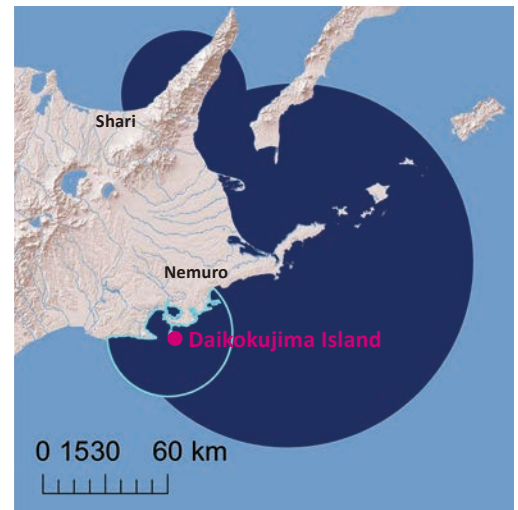


©Koji Ishida

## Site Description

Daikokujima Island (1.1km<sup>2</sup>) is an uninhabited island located in the Pacific Ocean about 3km off Akkeshi Town to the southeast of Kushiro City. A family resides in a fishermen's hut there during the season for kelp harvesting.

About 120,000m<sup>2</sup> (11% of the entire island) of the southwest part of the island was designated as a National Natural Monument in 1951, and as Hokkaido Nature Park in 1965 as a breeding site of seabirds, and the whole island has been designated as a wildlife reserve and a Special Protection Area since 1966. Numerous seabirds breed here such as the Leach's Storm-petrel, the Slaty-backed Gull, the Japanese Cormorant and the Rhinoceros Auklet. In the case of Leach's Storm-petrel it is Japan's largest and only breeding colony. It is also known as a habitat for the harbor seal. Kelp harvesting is common in the area.



## Protection Status of Seabird Breeding Site

- Daikokujima Island Wildlife Protection - Special Protection Area
- Hokkaido Akkeshi Nature Park
- Natural Monumen (Daikokujima Island seabirds breeding site)

## Breeding Seabirds

Slaty-backed Gull, Leach's Storm Petrel, Japanese Cormorant, Rhinoceros Auklet, Spectacled Guillemot

## Threats to the Seabirds and the Marine Environment

- Arrival of predators such as crows and the White-tailed Eagle at the seabird breeding site
- Availability of the Spotlined Sardine – a major food source for the Slaty-backed Gull has dramatically decreased since the mid 1990s.

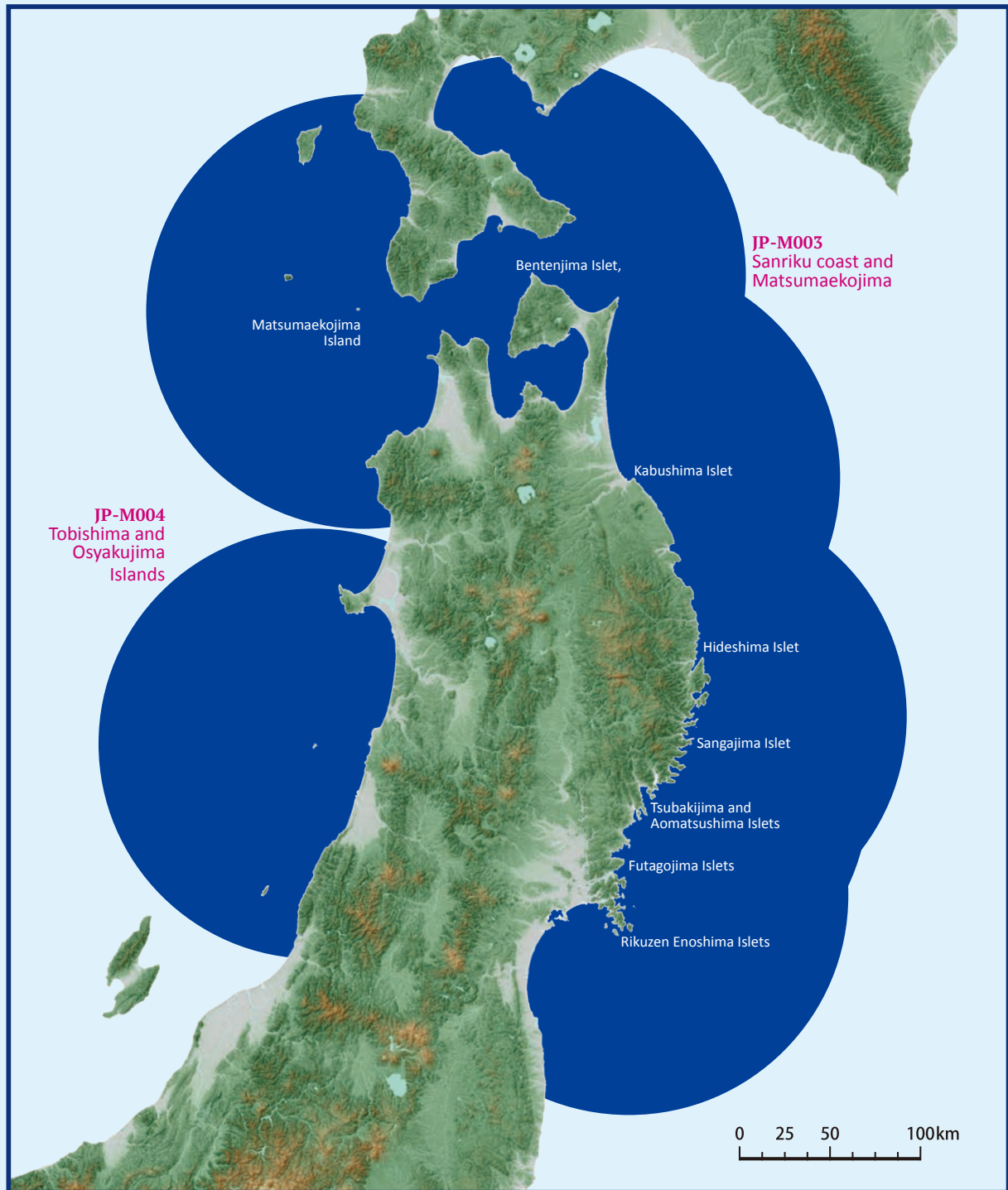
## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)



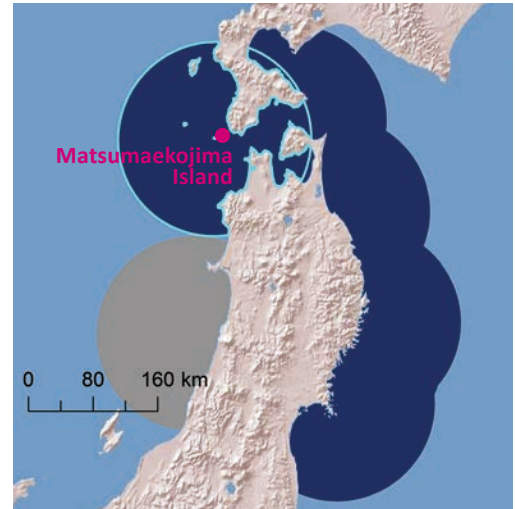


# Tohoku Region



Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M003	Sanriku coast and Matsumaekojima	Matsumaekojima Island, Bentenjima Islet, Kabushima Islet, Hideshima Islet, Sangajima Islet, Tsubakijima and Aomatsushima Islets, Futagojima Islets, Rikuzen Enoshima Islets	103,141	A4i	Black-tailed Gull, Rhinoceros Auklet
				A4ii	Rhinoceros Auklet, Band-rumped Storm-petrel, Streaked Shearwater
				A4iii	Black-tailed Gull, Rhinoceros Auklet, Streaked Shearwater
JP-M004	Tobishima and Osyakujima Islands	Tobishima and Osyakujima Islands	28,078	A4i	Black-tailed Gull
				A4iii	Black-tailed Gull



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## Site Description

Matsumaekojima Island (ca. 4km circumference) is an uninhabited island located about 26km from the town of Matsumae in southern Hokkaido. The perimeter of the island is formed by steep cliffs and islets of varying sizes are scattered across the waters near to the main island. The island is a breeding site for seabirds such as the Rhinoceros Auklet, the Black-tailed Gull and the Spectacled Guillemot.

Gillnetting and pole-and-line fishing for Okhotsk atka mackerel and Pacific codfish are conducted in the surrounding area.

## Protection Status of Seabird Breeding Site

- Matsumaekojima Wildlife Reserve
- Matsumae, Yagoshi Nature Park of Hokkaido
- Natural Monument (Matsumaekojima Island)

## Breeding Seabirds

Rhinoceros Auklet, Black-tailed Gull, Slaty-bakced Gull, Spectacled Guillemot, Japanese Cormorant

## Threats to the Seabirds and the Marine Environment

- Garbage left by anglers
- Human intrusion on the island without permission
- Falling rock- prevention works near the port

## Conservation Activities

- Guards and monitoring for illegal fishing practices
- Litter picking activities by local citizens



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## Site Description

Bentenjima Islet (0.1km<sup>2</sup>) is an uninhabited islet located 800m north of the Ohma Cape, at the northern tip of Japan's mainland. The centre of the islet is flat with a diameter of approx. 10m and surrounded by cliffs that are 3 ~ 4m high and rocky shore. The Black-tailed Gull and the Slaty-backed Gull breed here. The adjacent seas are abundant fishing grounds where bottom-set gillnetting for flatfish and flounder is also practiced.

## Protection Status of Seabird Breeding Site

- Shimokita Peninsula Quasi-National Park

## Breeding Seabirds

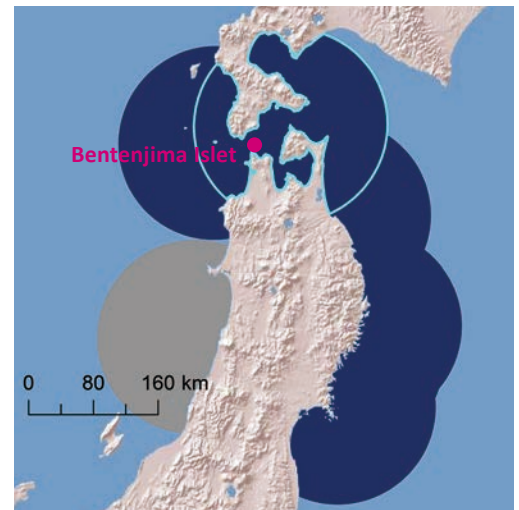
Slaty-backed Gull, Black-tailed Gull, Rhinoceros Auklet, Spectacled Guillemot

## Threats to the Seabirds and the Marine Environment

- Waste left by anglers (including injuries to birds from hooks and lines)
- Predation of eggs and chicks by Black-tailed Gull, Slaty-backed Gull, and introduced brown rats
- Decline of seaweed beds

## Conservation Activities

- Wild Bird Society of Japan Aomori Chapter, the Wild Bird Society of Shimokita (seabirds monitoring survey)
- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- The Society to Protect the Biodiversity of Kitadori (survey on the biodiversity of Bentenjima Islet, promotion of sustainable wildlife management)
- The Fisheries Cooperative Association of Ohma (prohibition of gillnetting for a fixed period for the conservation of fish resources)
- The Fisheries Cooperative Association of Ohma and Okudo (efforts to recover seaweed beds)
- Promotion Group of Shimokita Geopark Scheme, Ohma Seabirds Laboratory (education and public awareness activities on the geology and biodiversity of the islet)



©Takuya Ishigouoka

## 蕪島

### Site Description

Kabushima Islet is located 150m away from Samemachi Town near to Hachinohe City in the Aomori Prefecture and connected with the mainland these days. One side of the islet is a fishing port and the other is a sandy beach with the Kabushima Shrine on top of the islet. The entire islet is a huge breeding site for the Black-tailed Gull.

Seaweed aquaculture sites (brown seaweed) are found in the surrounding sea. Seaweeds that get attached to fishing floats and ropes are food sources for the wintering Brent Goose.

### Protection Status of Seabird Breeding Site

- Sameshima Wildlife Reserve (designated by the prefecture)
- Tanesashi Seashore and Mount Hashikami Prefectural Nature Park
- Natural Monument

### Breeding Seabirds

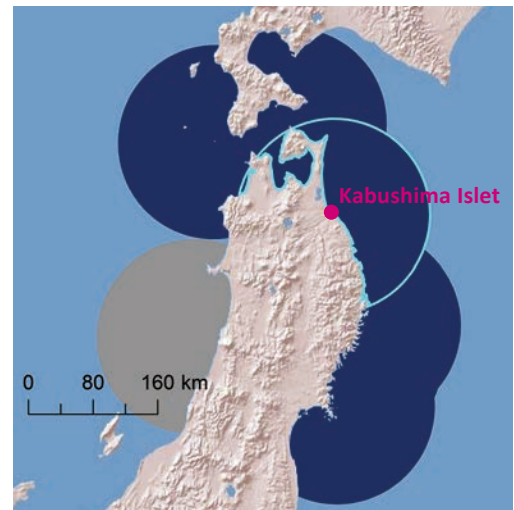
Black-tailed Gull, Slaty-backed Gull

### Threats to the Seabirds and the Marine Environment

- Impacts on chicks from tourists feeding birds during the breeding period
- Growing dependence on Kabushima Islet due to a reduction in suitable breeding sites for the Black-tailed Gull around Kabushima
- Injury to birds entangled in fishing lines
- Declining quality of saltwater in the entire Hachinohe harbour from sea dike construction
- Disturbance to breeding Black-tailed Gull from the prolific growth of grasses on the islet

### Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Hachinohe City (Black-tailed Gull observations, grass cutting activities, extermination of the burr cucumber)
- Same Tourism Association, Hachinohe City (clean-up activities)
- Wild Bird Society of Japan Aomori Chapter (annual birdwatching excursions)
- Kabushima Islet Protection Society (bird banding surveys)
- Meijo University, Osaka University (seabird surveys)



## 日出島

### Site Description

Hideshima Islet (0.1km<sup>2</sup>) is an uninhabited islet about 1km off Sakiyama Beach, near Miyako City. Cliffs line the perimeter of the islet and it is a breeding site for underground nesting seabirds such as the Band-rumped Storm-petrel and the Streaked Shearwater. It is the largest breeding site of the Band-rumped Storm-petrel in Japan, although numbers are decreasing due to habitat degradation from an increase in the Streaked Shearwater breeding there.

Dip net and hook fishing of abalone, sea urchins and tsubu (seawater snails), aquafarming of scallops and sea squirt, set-net fishing for salmon, pacific mackerel and flatfish all take place in the adjacent waters. Pleasure boat trips also frequent these waters.

### Protection Status of Seabird Breeding Site

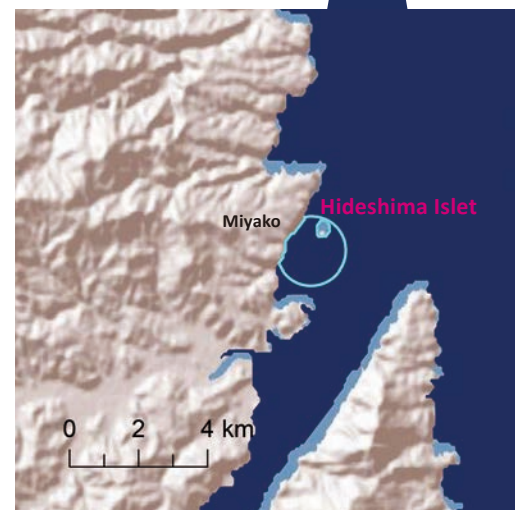
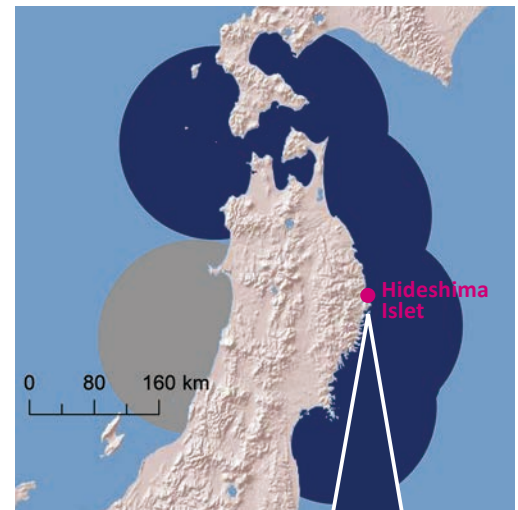
- Sanriku Fukko National Park
- Hideshima Islet Wildlife Reserve - Special Protection Area
- Natural Monument

### Breeding Seabirds

Band-rumped Storm-petrel, Leach's Storm-petrel, Black-tailed Gull, Slaty-backed Gull

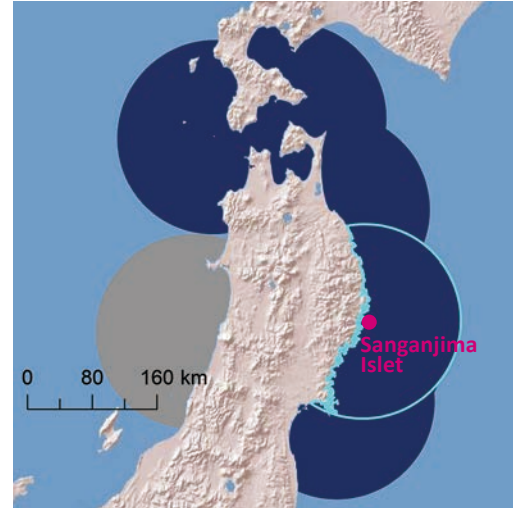
### Threats to the Seabirds and the Marine Environment

- Decline of *Ophiopogon planiscapus* that provides suitable nesting habitat for storm petrels
- Impact on the breeding of storm petrels due to an increase in the Streaked Shearwater
- Predation of seabirds from introduced brown rats
- Bycatch of seabirds in longline and gillnet fishing in the waters surrounding the islet
- Disturbance to the breeding site by anglers on the islet
- Salt damage from the impact of the Great East Japan Earthquake
- Destruction of plants from an increase in the numbers of roosting Great Cormorant



### Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Miyako Nature Guards Office of the Ministry of the Environment (patrols during the breeding period and implementation of conservation measures)
- Yamashina Institute for Ornithology (bird banding surveys, conservation activities for the Band-rumped Storm-petrel)
- Education Board of Miyako City (litter-picking activities, environmental workshops, and birdwatching excursions for high school students)



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## Site Description

Sanganjima Islet (0.39km<sup>2</sup>) is an uninhabited islet about 1.1km northeast of Kamaishi Harbour and about 1.0km southeast of the Hakozaki Peninsula. The islet is lined by towering cliffs and surrounded by islets of various sizes. These islets are breeding sites of the Streaked Shearwater, the Leach's Storm-petrel, the Japanese Cormorant and the Black-tailed Gull.

Set-net fishing for chum salmon, pacific mackerel, flatfish and Japanese flying squid and gillnetting are carried out in the surrounding area.

## Protection Status of Seabird Breeding Site

- Sanriku Fukko National Park
- Sanganjima Islet Wildlife Reserve - Special Protection Area
- Natural Monument

## Breeding Seabirds

Slaty-backed Gull, Streaked Shearwater, Band-rumped Storm-petrel, Spectacled Guillemot, Leach's Storm-petrel, Swinhoe's Storm-petrel, Ancient Murrelet, Black-tailed Gull, Japanese Cormorant, Tristram's Storm-petrel

## Threats to the Seabirds and the Marine Environment

- A decrease in the abundance of black mondo grass, which provides suitable nesting sites for storm petrels
- An increase in the Slaty-backed Gull which is a predator of storm petrels
- Bycatch of seabirds from longline and gillnet fishing
- Disturbance to the seabird breeding site by anglers on land
- Change in the landscape of the sandy beach caused by the Tsunami resulting from the Great East Japan Earthquake

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Oufunato Nature Guards Office of the Ministry of the Environment (survey on seabird breeding sites)
- East Kamaishi Fisheries Cooperative Association (release of young sea urchins and abalone)

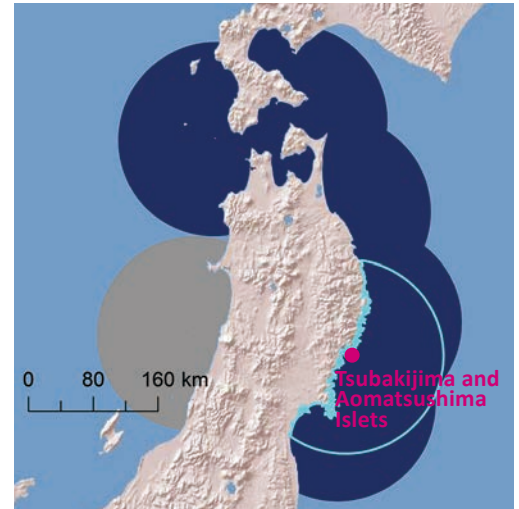


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# Tsubakijima and Aomatsushima Islets

JP-M003

椿島・青松島



©Minoru Sekikawa

## Site Description

Tsubakijima Islet (0.002km<sup>2</sup>) is an uninhabited islet located about 1 km southeast of the Hirota Peninsula. There is a light house on top of the islet and maintenance staff regularly visit it for inspection. Aomatsushima Islet is located between the Hirota Peninsula and Tsubakijima Islet. There are breeding colonies of the Black-tailed Gull on both islets.

Bottom-set gillnetting and set-net fishing for flatfish and salmon are carried out in surrounding areas.



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## Protection Status of Seabird Breeding Site

- Sanriku Fukko National Park
- Rikuzen-takada City Tsubakijima and Aomatsushima Wildlife Reserve - Special Protection Area

## Breeding Seabirds

Black-tailed Gull, Rhinoceros Auklet

## Threats to the Seabirds and the Marine Environment

- Decline in food resources for seabirds
- Disturbance to the breeding site by anglers
- Impacts from the Great East Japan Earthquake

## Conservation Activities

- Education Board of Rikuzen-Takada City (survey on the Black-tailed Gull)



# Futagojima Islets

JP-M003

双子島

## Site Description

The Futagojima Islets are located about 700m away from Kitakami Town, Ishinomaki City of the Sanriku Coast and consist of islets and rock reefs from south to north. The islets are breeding sites of the Black-tailed Gull. Harvesting of brown seaweed, kelp, scallops and sea urchins are carried out in surrounding waters.

## Protection Status of Seabird Breeding Site

- South Sanriku and Mt. Kinkazan Quasi-National Park

## Breeding Seabirds

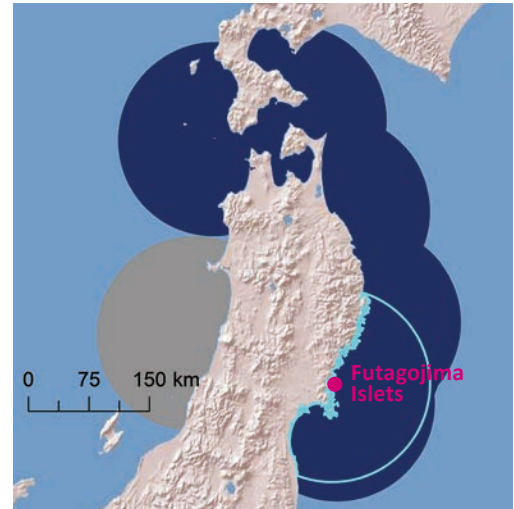
Black-tailed Gull, Spectacled Guillemot

## Threats to the Seabirds and the Marine Environment

- Disturbance to breeding sites from photographers and anglers

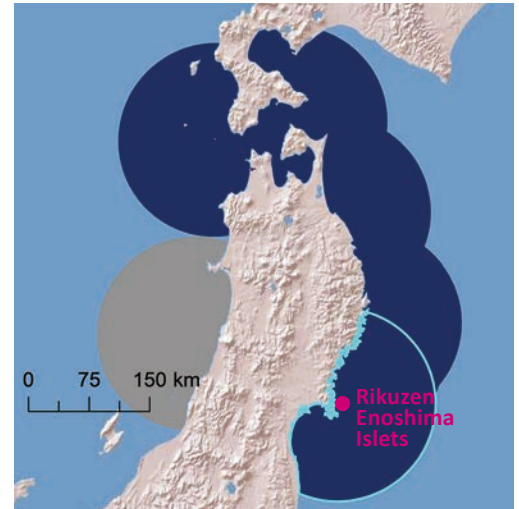
## Conservation Activities

None





©Shin Matsui



## Site Description

The Rikuzen Enoshima Islets are located about 14km away from Onagawa Port at the base of the Oga Peninsula and are referred to as the Enoshima Archipelago, which also includes the inhabited Enoshima Islet and the surrounding uninhabited islets (Futamatashima, Hirashima, Ashijima and Kasakajima). These islets are breeding colonies of the Black-tailed Gull.

Set-net fishing for sardine, pacific mackerel, Japanese flounder, balloon fish and squid as well as bottom-set gillnetting for flatfish are carried out in the surrounding area.

## Protection Status of Seabird Breeding Site

- South Sanriku and Mt. Kinkazan Quasi-National Park
- Enoshima Archipelago Wildlife Reserve - Special Protection Area (designated by the prefecture)
- Natural Monument

## Breeding Seabirds

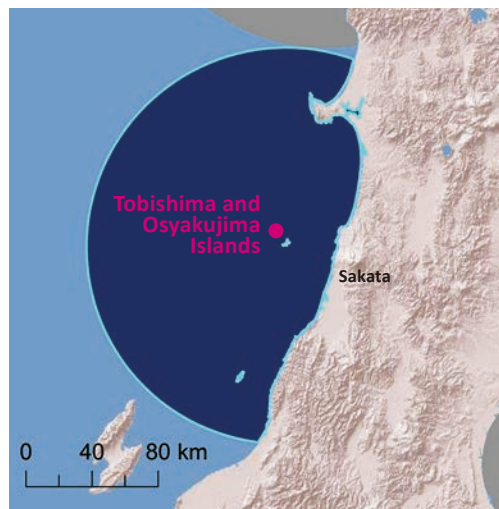
Black-tailed Gull, Rhinoceros Auklet, Streaked Shearwater

## Threats to the Seabirds and the Marine Environment

- Predation of seabirds by introduced brown rats and Large-billed Crows
- Bycatch of seabirds in longline and gillnet fisheries
- Impact on breeding seabirds from a decline in food resources
- Disturbance to the seabird breeding site from anglers

## Conservation Activities

- Members of the Japanese Bird Banding Association and Wild Bird Society of Miyagi Prefecture Chapter (regular bird banding surveys and monitoring)
- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Miyagi Prefecture (survey on introduced rats on the Ashijima Islet)



©Kenji Yanagawa

## Site Description

Tobishima Island (2.7km<sup>2</sup>) is located in the Sea of Japan 39km northwest of Sakata Port. The climate there is mild due to the Tsushima warm current. There are breeding colonies of Black-tailed Gull in Tateiwa on the southeast of the island and on Osyakujima Island to the west of Tobishima, but breeding numbers have been decreasing over recent years. At the bottom of the sea in Tobishima, there is the ‘Tobishima Coral Community’ – a natural monument designated by the prefecture.

Fishing for flying fish, black rockfish, Pacific codfish and crab as well as the harvesting of seaweed and turban shells are carried out in surrounding waters.

## Protection Status of Seabird Breeding Site

- Tobishima Prefecture Wildlife Reserve
- Cho-kai Quasi-National Park
- Natural Monument



©Kenji Yanagawa

## Breeding Seabirds

Black-tailed Gull, Japanese Cormorant, Streaked Shearwater, Spectacled Guillemot

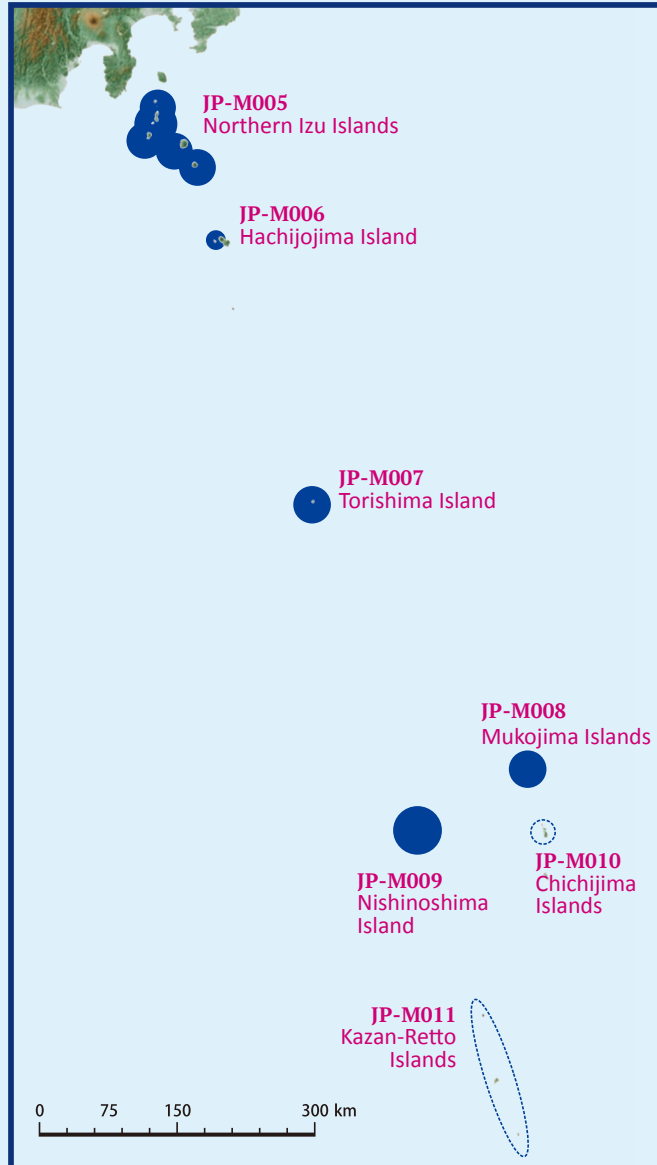
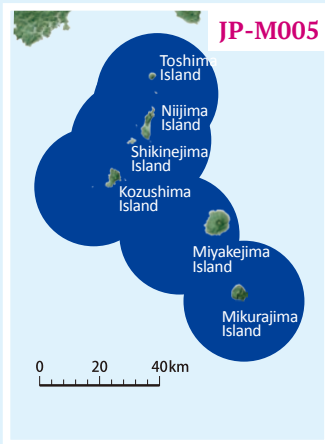
## Threats to the Seabirds and the Marine Environment

- Salt pollution
- Bycatch of seabirds from gillnetting and drift-net fishing
- Predation of seabirds from introduced feral cats on Tateiwa and Yuriijima Islets

## Conservation Activities

- Wild Bird Society of Japan Yamagata Prefecture Chapter (monitoring survey on Osyakujima Island)
- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)

# Kanto Region



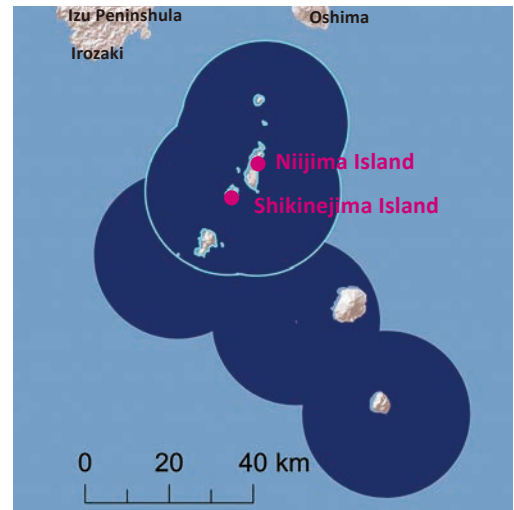
Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M005	Northern Izu Islands	Niijima and Shikinejima Islands, Kozushima Island, Miyakejima Island, Mikurajima Island	4,873	A1	Japanese Murrelet
				A4ii	Japanese Murrelet, Streaked Shearwater, Tristram's Storm-petrel
JP-M006	Hachijojima Island	Hachijojima Island	276	A1	Japanese Murrelet
				A4ii	Japanese Murrelet
JP-M007	Torishima Island	Torishima Island	1,250	A1	Japanese Murrelet, Short-tailed Albatross
				A4i	Short-tailed Albatross
				A4ii	Short-tailed Albatross
JP-M008	Mukojima Islands	Mukojima Islands	1,251	A1	Short-tailed Albatross
JP-M009	Nishinoshima Island	Nishinoshima Island	1,961	A1	Greater Crested Tern
JP-M010	Chichijima Islands	Chichijima Islands	3	A4i	Bryan's Shearwater
JP-M011	Kazan-Retto Islands	Kazan-Retto Islands	36	A1	Matsudaira's Storm-petrel
				A4ii	Matsudaira's Storm-petrel Red-tailed Tropicbird

# Niijima and Shikinejima Islands

JP-M005

新島・式根島



©Wild Bird Society of Japan

## Site Description

Niijima Island (23.2km<sup>2</sup>), which belongs to the Izu Islands Chain, is a narrowly-shaped volcanic island running from north to south and located in the Pacific Ocean about 150km from Tokyo. Shikinejima Island (3.7km<sup>2</sup>) is situated about 3km to the south of Niijima and both islands were formerly connected to each other. In the north of Niijima Island there is a breeding site of the Japanese Murrelet.

A wide range of fishing practices take place in the surrounding waters. These include: gillnetting for yellow-striped butterflyfish, flying fish and spiny lobster; fishing for amberstripe scad, horse mackerel, yellow-striped butterflyfish and white trevally with purse seines, *Tatekiri* fishing (whereby fish communities are driven into nets) for yellow-striped butterflyfish and white travally; set-net fishing for amberstripe scad, yellow-striped butterflyfish, horse mackerel, Japanese amberjack, greater amberjack, yellowtail amberjack, flying squid, white trevally and red seabream; pole-and-line fishing for skipjack tuna, tuna, gnomefish, yellowtail amberjack and greater amberjack; and trawl fishing / harvesting of seaweeds, Horned turban and abalone.

## Protection Status of Seabird Breeding Site

- Niijima Wildlife Reserve - Special Protection Area (designated by Tokyo)
- Izu Island Chain Area of Fuji – Hakone - Izu National Park

## Breeding Seabirds

Japanese Murrelet, Black-tailed Gull, Streaked Shearwater, Japanese Cormorant

## Threats to the Seabirds and the Marine Environment

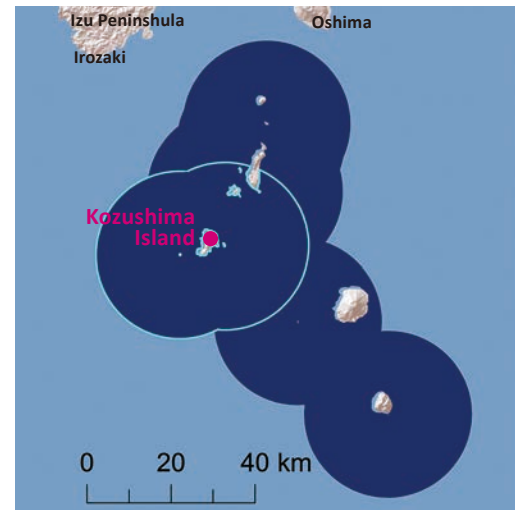
- Collapse of natural vegetation due to feeding damage from introduced deer and rabbits
- Predation of seabirds from the Large-billed Crow

## Conservation Activities

- Niijima Village Museum (awareness raising for conservation and research activities)
- Niijima Nature Club (awareness raising for conservation and research activities)
- Niijima Fisheries Cooperative Association (setting a marine reserve and closed seasons for fishing)



©Yutaka Yamamoto



### Site Description

Kozushima Island (18.5km<sup>2</sup>) is located about 170km south of the metropolis of Tokyo and situated almost at the midpoint of the Izu Islands Chain. The highest point, Mt. Tenjozan, is 572m above sea level in the centre of the island. The Japanese Murrelet breeds on the adjacent Tadanae and Onbase Islets.

A wide range of fishing practices take place in the surrounding seas. These include: gillnetting for yellow-striped butterfish and Pacific saury; drift gillnetting for flying fish; pole-and-line fishing for splendid alfonso-no, Japanese butterfish and gnomefish; *Tatekiriami* fishing for yellow-striped butterfish and chicken grunt; set-net fishing for white trevally, greater amberjack, flying squid and blue mackerel; squid fishing and gillnetting for lobster.

### Protection Status of Seabird Breeding Site

- Tadanae Wildlife Reserve - Special Protection Area
- Izu Island Chain Area of Fuji – Hakone - Izu National Park



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### Breeding Seabirds

Streaked Shearwater, Black-tailed Gull, Japanese Murrelet, Swinhoe's Storm-petrel, Tristram's Storm-petrel, Japanese Cormorant

### Threats to the Seabirds and the Marine Environment

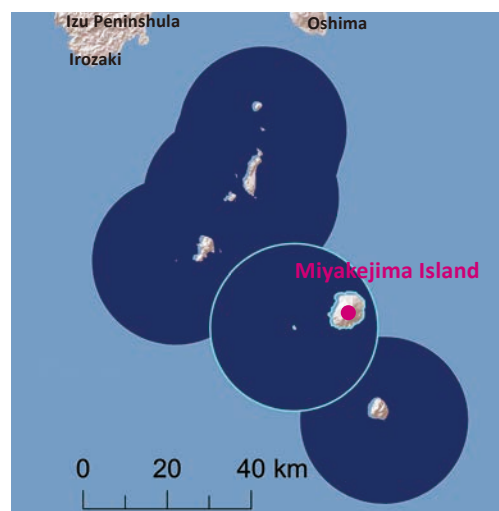
- Predation of seabirds from the Large-billed Crow

### Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Wild Bird Society of Japan (research and awareness raising activities on the Japanese Murrelet)
- Kozushima Island Tourism Association (awareness-raising activities on the Japanese Murrelet)



©Yutaka Yamamoto



### Site Description

Miyakejima Island (55.5km<sup>2</sup>) is a volcanic island located about 180km south of Tokyo. It has erupted numerous times throughout history, and it has landscapes that are characteristic of previous volcanic activity such as Tairoike Pond and the remains of Shinmyuike Pond. About 250 species of birds have been confirmed including the Izu Thrush, the Ijima's Leaf Warbler and the Japanese Wood Pigeon. The Japanese Murrelet breeds on Ohnoharajima Island (an uninhabited islet about 10km west of Miyakejima) and there are also breeding records of Bulwer's Petrel.

In the surrounding seas, pole-and-line fishing for splendid alfonsino, trawl fishing for the skipjack tuna, longline fishing for yellowfin, bluefin and big-eye tuna, set-net fishing and gillnetting are all carried out. Furthermore, ecotourism such as diving and birdwatching for the Japanese Murrelet as well as dolphin watching around Mikurajima Island are popular.

### Protection Status of Seabird Breeding Site

- Miyakejima Island - Mt. Togayama Wildlife Reserve - Special Protection Area (designated by Tokyo)
- Tsubota and Tairoike Pond Wildlife Reserve (designated by Tokyo)
- Mt. Oyama Wildlife Reserve (designated by Tokyo)
- Izu Island Chain Area of Fuji – Hakone - Izu National Park
- Ohnohara Island Wildlife Reserve

### Breeding Seabirds

Japanese Murrelet

### Threats to the Seabirds and the Marine Environment

- Increase of predators such as the Large-billed Crow attracted by garbage left by anglers

### Conservation Activities

- The Wild Bird Society of Japan (research and awareness-raising activities)
- Miyake Nature Center Akakokko Station (nature excursions, eco-tourism conducted by guides from the nature group 'Kyururu')
- Tomonokai, a nature society in Miyakejima (nature excursions, surveys on the Japanese Murrelet and biological research)

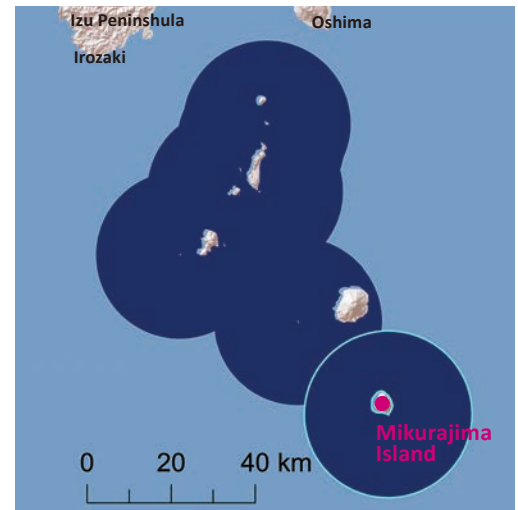


©Kanae Ohkubo

御蔵島



©Yutaka Yamamoto



## Site Description

Mikurajima Island (20.6km<sup>2</sup>) is a volcanic island located about 200 km south of Tokyo and about 20km south of Miyakejima Island. Mt. Miyama (851m a.s.l.) is situated in the centre of the island. It is surrounded by steep cliffs and covered with dense forest. It is the largest breeding site of the Streaked Shearwater in Japan with a population estimated at 1.75 – 3.5 million individuals by a survey conducted in 1978. However, the population has been decreasing by approx. 20,000 birds per year since then and the total population had decreased to 770,000 birds in 2012.

Pole-and-line fishing for skipjack tuna, white trevally and greater amberjack as well as other fishing practices for flying fish, yellowtail amberjack, greater amberjack and amberstriped scad are carried out in surrounding waters. Dolphin watching excursions are also popular.

## Protection Status of Seabird Breeding Site

- Mikurajima Island Wildlife Reserve - Special Protection Area (designated by Tokyo)
- Natural Environment Conservation Promoting Area (designated by Tokyo)
- Nature Protection Ordinance (Mikurajima Village)
- Izu Island Chain Area of Fuji – Hakone - Izu National Park

## Breeding Seabirds

Streaked Shearwater, Japanese Murrelet



©Yutaka Yamamoto

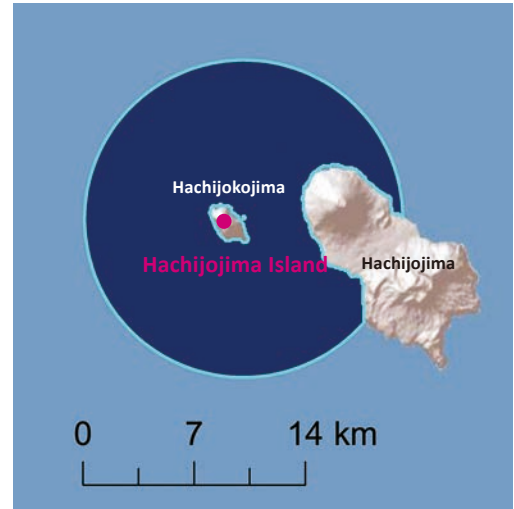
## Threats to the Seabirds and the Marine Environment

- Predation of Streaked Shearwater by introduced feral cats
- Accidental death of Streaked Shearwaters in metal mesh fences to prevent debris from falling onto the prefectural road
- Eradication of pests targeting the Streaked Shearwater

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Mikurajima Village (eco-tourism, limitation of tourists to reduce the impact on resources)
- Society of Huge Trees (restoration of vegetation)
- Mikurajima Island Tourism Association (lectures about the biology of the Indian Ocean Bottlenose Dolphin for tourists)
- Mikurajima Fisheries Cooperative Association (setting closed seasons for protecting fish resources)





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## Site Description

Hachijojima Island (69.5km<sup>2</sup>) is the southernmost of the Izu Seven Islands group of the seven northern islands of the Izu archipelago about 290km south of Tokyo. There are two volcanoes: Mt. Hachijofuji (854m a.s.l.) in the northwest and Mt. Hachijo-Miharayama (701m a.s.l.) in the southeast of the island. Due to the effect of the Kuroshio Current – a north-flowing ocean current on the west side of the North Pacific Ocean, the island has a humid subtropical maritime climate with very warm summers and mild winters.

On Hachijokojima, an uninhabited islet about 7.5km northwest of Hachijojima, the Izu thrush, Iijima's Leaf Warbler and the Japanese Wood Pigeon are also found, as they are on Hachijojima Island. The Kojine Islet, east of Hachijokojima, is a breeding site of the Japanese Murrelet and the Swinhoe's Storm-petrel.

Fishing for flying fish, trawling for skipjack tuna and demersal trawling as well as the harvesting of shell fish such as the small abalone and the spiny lobster are carried out in the surrounding waters.

## Protection Status of Seabird Breeding Site

- The Izu Island Chain Area of Fuji – Hakone - Izu National Park
- Hachijofuji Wildlife Reserve (designated by Tokyo)
- Hachijo-Miharayama Wildlife Reserve (designated by Tokyo)
- Koiwa - Togasaki Wildlife Reserve (designated by Tokyo)

## Breeding Seabirds

Streaked Shearwater, Swinhoe's Storm-petrel, Tristram's Storm-petrel, Black-tailed Gull, Japanese Murrelet, Bulwer's Petrel

## Threats to the Seabirds and the Marine Environment

- Predation of seabirds by Large-billed Crows attracted by the garbage left by anglers

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Hachijo Visitor's Centre (birdwatching excursions, introductory classes and lectures on birdwatching)
- The Natural History Society of the Izu Islands (monitoring and survey on the Black-footed Albatross)



©Ken Kikuchi

# Torishima Island

JP-M007

鳥島

## Site Description

Torishima Island (0.048km<sup>2</sup>) is a volcanic island about 600km south of Tokyo. The Short-tailed Albatross used to breed there in great numbers (virtually covering the entire island), but numbers fell dramatically as they were hunted for their feathers after the Meiji Reform (1868). Overhunting continued until 1933 when a ban of hunting the Short-tailed Albatross was declared to save the species. Until then, an estimated 200,000 birds a year and 5 million birds in total were killed. The species was assumed to be extinct, but in 1951 a small number of individuals were discovered on Torishima Island. Since then, conservation activities have continued over 60 years and until now numbers have recovered to about 4,500 individuals. The Black-footed Albatross and the Japanese Murrelet also breed on the island.



## Protection Status of Seabird Breeding Site

- Torishima Island Wildlife Reserve
- Natural Monument (Torishima Island)

## Breeding Seabirds

Short-tailed Albatross, Black-footed Albatross, Japanese Murrelet, Tristram's Storm-petrel, Wedge-tailed Shearwater

## Threats to the Seabirds and the Marine Environment

- Volcanic activity, inflow and deposition of earth and sand at the seabird breeding site
- Predation of seabirds by introduced species (black rats)

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Ministry of the Environment (preservation and monitoring, rodenticide poisoning at the breeding site of Tristram's Storm-petrel)
- Tokyo local metropolitan government (anti-erosion works to prevent the outflow of earth and sand at the breeding site, planting of *Miscanthus condensatus*)
- Ministry of the Environment, Toho University, Yamashina Institute for Ornithology (conservation measures to increase the numbers of Short-tailed Albatross, monitoring of populations, relocation of Short-tailed Albatross colony to Mukojima Island of the Bonin Islands)



©Hiroshi Hasegawa

## Site Description

Mukojima Islands are the northern-most islands of the Bonin (Ogasawara) Islands and are located in the Pacific Ocean about 50 km north of Chichijima Island, comprising of Mukojima (2.6km<sup>2</sup>: literally the Bridegroom Island), Nakodojima (1.4km<sup>2</sup>: literally the Matchmaker Island) and Yomejima (0.8km<sup>2</sup>: literally Bride Island). They used to be inhabited islands, but became uninhabited after World War II. The Black-footed Albatross and the Laysan Albatross breed on Mukojima Island. The entire Mukojima Islands have been designated by the government as Special Protection Area and Bonin (Ogasawara) Islands Wildlife Reserve. Artificial breeding of the Short-tailed Albatross through conservation measures to increase its numbers has been taking place since 2008 and a new colony has been created as a result.

Longline fishing is carried out in adjacent waters and three islands (Mukojima, Nakodojima and Yomejima) are fertile fishing grounds for demersal fish and prawns. In addition, the Ogasawara Cooperative Association has established a closed season for fishing on a rotating schedule for these three islands for the first time in Japan.

## Protection Status of Seabird Breeding Site

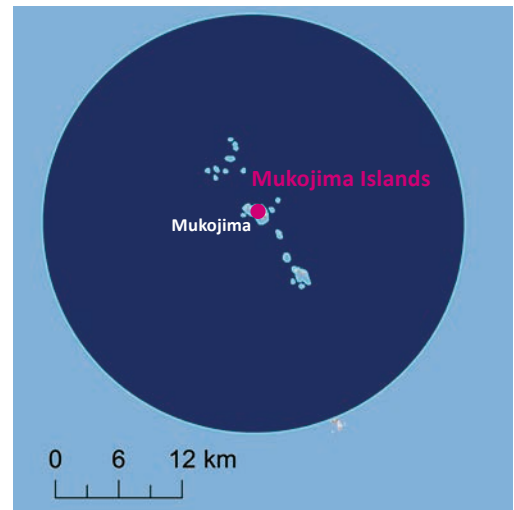
- Bonin Islands Wildlife Reserve - Special Protection Area
- Ogasawara National Park - Special Protection Area

## Breeding Seabirds

Short-tailed Albatross, Black-footed Albatross, Laysan Albatross, Wedge-tailed Shearwater, Bonin Petrel, Brown Booby, Bulwer's Petrel, Brown Noddy, Tristram's Storm-petrel

## Threats to the Seabirds and the Marine Environment

- Predation from introduced rats
- Disturbance and erosion of the breeding site from humans landing on the island
- Waste being dumped into the sea



## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Ministry of the Environment, Yamashina Institute for Ornithology, Tokyo's local metropolitan government (bird banding surveys, breeding situation surveys, conservation and breeding project)
- NPO Institute of Boninology (banding surveys of the Black-footed Albatross and the Laysan Albatross on the Bonin Islands; surveys on the inhabiting status of seabirds and research on introduced species, biological research on *Columba janthina nitens* (a sub-species of the Japanese Wood Pigeon))
- Ministry of the Environment, Tokyo's local metropolitan government, Japan's Wildlife Research Center (eradication of rats and feral goats)
- NPO Ogasawara Wildlife Institute, Ogasawara Albatross Association (preservation activities such as the restoration of vegetation, education and awareness raising activities through informative leaflets)
- Tokyo's local metropolitan government Ogasawara Island Branch Office (preventing the outflow of earth and sand on Nakodojima Island, eradication of introduced plants on Mukojima and Nakodojima Islands)
- NPO Ogasawara Wildlife Research Society (planting native plants on Yomejima Island)

## 西之島

### Site Description

Nishinoshima Island is an uninhabited island created by the eruption of a submarine volcano. It is located about 130km northwest of Chichijima Island. Following an eruption in 1973, a new island was created that was connected to the existing main island. Most of the island is made up of lava (except for a part of it with gravel) and used to be the breeding site for many seabirds such as the Greater Crested Tern, the Brown Noddy and the Brown Booby. A large-scale eruption that began in November 2013 further enlarged the island. The island is currently off-limits.

### Protection Status of Seabird Breeding Site

- Ogasawara National Park - Special Protection Area
- Nishinoshima Island Wildlife Reserve - Special Protection Area

### Breeding Seabirds

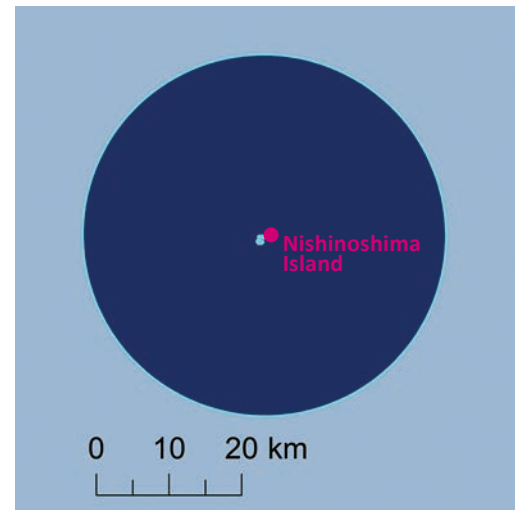
Greater Crested Tern, Brown Noddy, Sooty Tern, Brown Booby, Masked Booby, Wedge-tailed Shearwater, Red-tailed Tropicbird, Bulwer's Petrel, Tristram's Storm-petrel

### Threats to the Seabirds and the Marine Environment

- Loss of existing seabird colony due to continued large-scale volcanic activity
- Collection of seabird eggs

### Conservation Activities

- Forestry & Forest Products Research Institute, Forestry Agent, Ogasawara Village (surveys on the current state of seabirds and vegetation)
- NPO Ogasawara Wildlife Institute (surveys on habitat suitability for seabirds)



## Site Description

The Chichijima Islands are located in the Pacific Ocean about 1,000km southeast of Tokyo and in the middle of the Bonin (Ogasawara) Islands. The islands consist of Chichijima (literally Father), Ototojima (literally Younger Brother), Anijima (literally Older Brother), Minamijima (literally Southern) and Higashijima (literally Eastern). All of them are uninhabited islands except for Chichijima. The Bonin Islands have been designated as a world natural heritage site and numerous endemic species can be found there including endangered species. Many endemic terrestrial shellfish species can be found on Anijima Island. Hence, a valuable ecosystem has been preserved. Minamijima has been designated as a natural monument of Tokyo and landing on the island is restricted.

Most islands and rock reefs are breeding sites for seabirds, and Higashijima in particular was confirmed as a breeding site for Bryan's Shearwater for the first time in 2015.

In addition to fishing, there is also eco-tourism such as dolphin and whale-watching excursions.

## Protection Status of Seabird Breeding Site

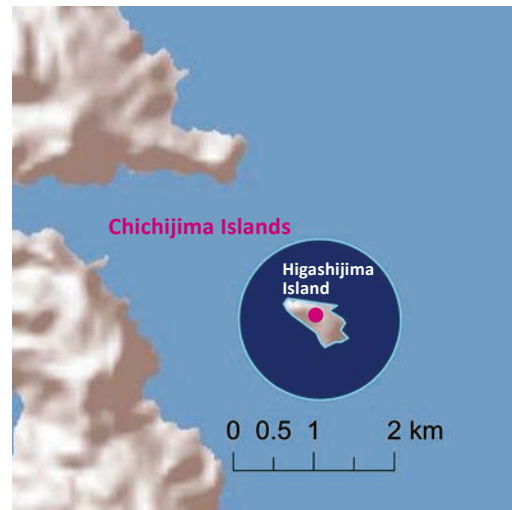
- Bonin Islands Wildlife Reserve - Special Protection Area
- Ogasawara National Park - Special Protection Area
- Bonin Islands Forest Eco-system Preservation Area (Preserved Area, Preservation and Utilization Area)
- Higashidaira, Chichijima Island (sanctuary for *Columba janthina nitens*, a sub-species of the Japanese Wood Pigeon)

## Breeding Seabirds

Brown Booby, Bryan's Shearwater, Wedge-tailed Shearwater, Bonin Petrel, Tristram's Storm-petrel, Bulwer's Petrel

## Threats to the Seabirds and the Marine Environment

- Increase in the number of tourists after being registered as a world natural heritage site
- Wildlife habitats and areas of human activity are getting closer due to development
- Bird collisions are increasing due to artificial edifices and lights and car accidents
- Waste dumped at sea
- Human disturbance to breeding sites



- Construction plans for an airport on Chichijima Island
- Impacts of introduced species (feral goats: Chichijima, rats: Anijima, Nishijima, Minamijima, feral cats: Chichijima, Ototojima) on terrestrial shellfish, seabirds and vegetation

## Conservation Activities

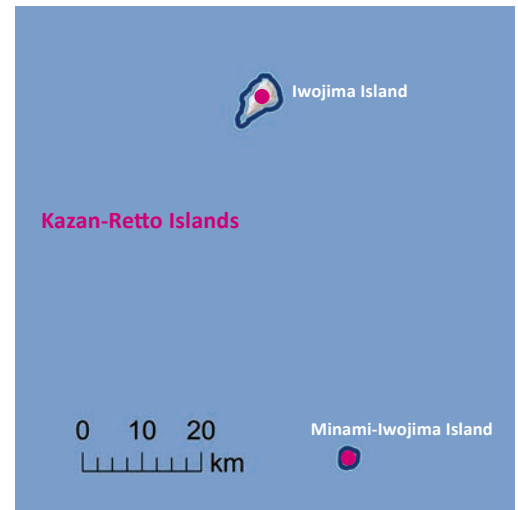
- Ministry of the Environment, Forestry Agent (reviews on the national wildlife reserve, nature conservation mitigation and action plan, measures against introduced species)
- NPO Ogasawara Wildlife Institute (surveys on habitat use of seabirds and introduced species, rescue of injured birds and animals in the consignment by Tokyo or in cooperation with the wildlife safe guards of Tokyo's local metropolitan government)
- Forestry & Forest Products Research Institute, NPO Ogasawara Wildlife Institute (survey on Bryan's Shearwater)
- Association for the Nature of Ogasawara (banding survey of the Brown Booby on Minamishima Island)
- Ogasawara Village Tourism Association (planning and promotion of voluntary rules for sightseeing)
- Tokyo's local metropolitan government, Ogasawara Village (promotion of eco-tourism by Tokyo, preservation and growing of rare plants, monitoring the natural environment on Minamishima Is. and the Ishimon (literally Stone Gate) area)
- Liaison Committee about Cats in Ogasawara, Tokyo Veterinary Medical Association (eradication of feral cats in mountain areas and promotion of captured cats for adoption)

## 火山列島

### Site Description

The Kazan-Retto Islands are located about 1,200km south of Tokyo and are made up of Kita-Iwojima Island (5.57km<sup>2</sup>), Iwojima Island (23.16km<sup>2</sup>) and Minami-Iwojima Island (3.5km<sup>2</sup>). Kita-Iwojima Island and Iwojima Island used to suffer from a great deal of human disturbance to the environment, but the former became uninhabited after World War II and only the Japanese Self Defense Forces are based permanently on Iwojima Island today. There is no history of humans inhabiting Minami-Iwojima Island, hence the valuable nature still to be found there. On Minami Iwojima, a steep mountain (918m a.s.l.) rises from the shore. Its vegetation makes a transition from tropical to sub-tropical zones and both southern and northern plants are seen including a lot of indigenous species. Tree ferns grow in the forest of *Bryophyta* near the top of the mountain.

On the Kazan-Retto Islands, seabirds found breeding are the Red-tailed Tropicbird, the Brown Noddy, the Black Noddy and the Bonin Petrel. Most notably, Minami-Iwojima is the only breeding site in the world for Matsudaira's Storm Petrel.



### Protection Status of Seabird Breeding Site

- Kita-Iwojima Island Wildlife Reserve - Special Protection Area
- Ogasawara National Park - Special Protection Area
- Minami-Iwojima Island Primeval Natural Environment Protection Area
- Natural Monument (Minami-Iwojima Island)

### Breeding Seabirds

Red-tailed Tropicbird, Wedge-tailed Shearwater, Audubon's Shearwater, Bonin Petrel, Brown Booby, Brown Noddy, Black Noddy, Matsudaira's Storm-petrel, Bulwer's Petrel, Black-footed Albatross, Tristram's Storm-petrel

### Threats to the Seabirds and the Marine Environment

- Predation of seabirds from introduced rats

### Conservation Activities

- Tokyo's local metropolitan government and NPO Ogasawara Wildlife Institute (surveys on habitat suitability for seabirds on the Bonin Islands)



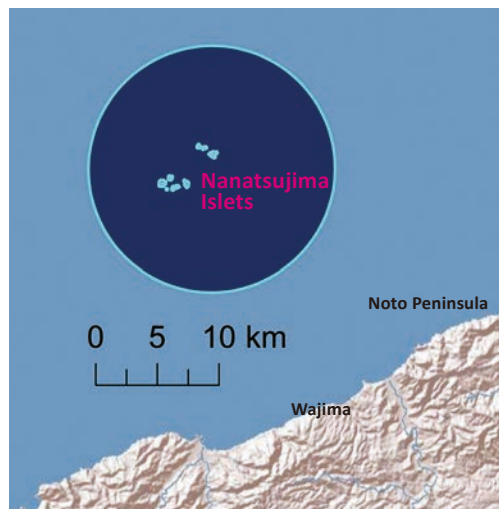
# Chubu & Kinki Region



Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M012	Nanatsujima Islets	Nanatsujima Islets	314	A1	Japanese Murrelet
JP-M013	Enshunada	Enshunada	14	A4i	Little Tern
JP-M014	Kii Nagashima Islets	Kii Nagashima Islets	187	A1	Japanese Murrelet
JP-M015	Kanmurijima and Kutsujima Islands	Kanmurijima and Kutsujima Islands	313	A1	Japanese Murrelet
				A4ii	Streaked Shearwater, Swinhoe's Storm-petrel
				A4iii	Streaked Shearwater





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## Site Description

The Nanatsujima Islets are located about 20km away from Wajima City in the Ishikawa Prefecture and consist of seven islets: Oshima, Aramikojima, Mikuriyajima, Tatsujima, Karimatajima, Akajima and Eboshijima. In the center of the largest islet Oshima (0.03km<sup>2</sup>, 62m a.s.l.) is the uninhabited Nanatsujima light house. The other six islets are surrounded by steep cliffs that tower 40m high, making it difficult for humans to land on the islets. The Japanese Murrelet, the Streaked Shearwater and the Black-tailed Gull all breed on the islets.

Until the 1970s, fishermen used to live on the islets during the fishing season, but today they remain uninhabited. Surrounding seas are good fishing grounds for horse mackerel and red seabream, and skin diving fishing by female divers is also popular in addition to gillnetting for black rockfish, horsehead tilefish, red seabream and longline fishing.

## Protection Status of Seabird Breeding Site

- The Noto Peninsula Quasi - National Park
- Nanatsujima Islets Wildlife Reserve - Special Protection Area

## Breeding Seabirds

Japanese Murrelet, Streaked Shearwater, Black-tailed Gull, Japanese Cormorant, Swinhoe's Storm-petrel

## Threats to the Seabirds and the Marine Environment

- Impacts on vegetation from the introduced rabbits and soil outflow
- Predation of seabirds by introduced brown rats
- Decline of seaweed beds

## Conservation Activities

- Ministry of the Environment (surveys on the Japanese Murrelet, eradication of rabbits from Oshima Islet, preservation and surveys of vegetation)
- Fisheries Cooperative Association of the Wajima Branch of the Ishikawa Prefecture (setting the fishing season for female spearfishing and gillnetting, eradication of competitive alien species to recover seaweed beds)

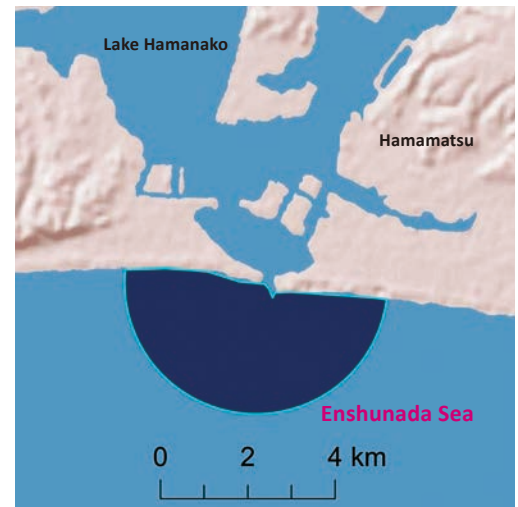


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### Site Description

Enshunada is an area of sea stretching from the Omaezaki Cape in the Shizuoka Prefecture to the Iragomisaki Cape in the Aichi Prefecture for approx. 110km. The Tenryugawa River and the Oigawa River both flow into the Enshunada. Sand dunes run along the coastline, providing egg-laying sites for the loggerhead turtle and breeding sites for the Little Tern. In accordance with the development of the Lake Hamanako area for tourism, visitor numbers have increased for recreational activities such as fishing, marine sports and collecting shells, and their disturbance to the breeding site of the Little Tern has become a threat.

There is an excessive amount of plankton in the Enshunada because of the high volume of fresh water inflow from Lake Hamanako. This attracts fish in large numbers that come to feed on the plankton, which in turn attracts the fishing industry. Boat seine fishing for whitebait, bottom trawling and longline fishing for balloon fish, pole-and-line fishing for skipjack tuna and gillnetting for Japanese blue crab, flounder and flatfish are carried out. The whitebait catch here is the largest in Japan.



### Protection Status of Seabird Breeding Site

- Prefectural Wildlife Reserve of the Sea of Enshunada to the west of the Tenryugawa River

### Breeding Seabirds

Little Tern

### Threats to the Seabirds and the Marine Environment

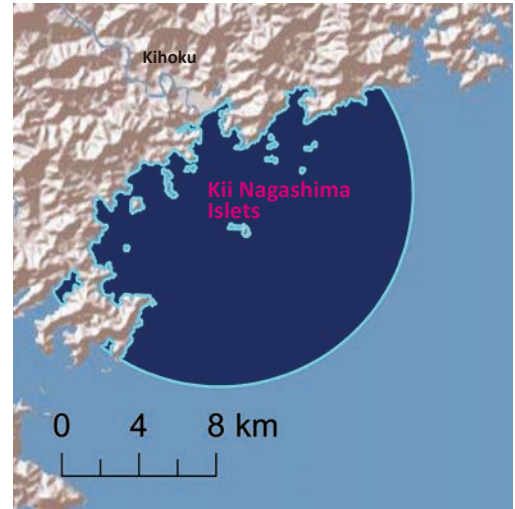
- Disturbance to the breeding site of the Little Tern from cars entering the sandy beach
- Impacts to breeding Little Terns from coastal levee works and the intrusion of cats and dogs

### Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Wild Bird Society of Japan Toutoumi Chapter (monitoring survey, requesting to local authorities to regulate cars driving onto beaches)
- Sanctuary Japan (conservation activities for loggerhead turtles and Little Terns)
- Civil Society (litter picking along the beach)
- Environment Department of Josai City (environmental workshops for children)



©Masashi Hirai



## Site Description

There are numerous uninhabited islets scattered off Kii Nagashima. Mimianajima Islet, in particular, is known as a breeding site for the Japanese Murrelet and the Streaked Shearwater. The Japanese Wood Pigeon and Styan's Grasshopper Warbler are also known to breed there.

Surrounding seas with the warm Kuroshio Current of the Pacific Ocean are rich in a diversity of fish species and renowned as good fishing grounds. Set-net fishing for Japanese amberjack and lobster fishing are carried out. Ferries operate to take anglers to fishing grounds and nearby islets.

## Protection Status of Seabird Breeding Site

- Kii Nagashima Wildlife Reserve - Special Protection Area

## Breeding Seabirds

Japanese Murrelet, Streaked Shearwater

## Threats to the Seabirds and the Marine Environment

- Seabirds dragged into the sea by leisure boats
- Human disturbance to seabird breeding sites such as anglers and recreational marine activities

## Conservation Activities

None

## Site Description

Kanmurijima (0.22km<sup>2</sup>) is an uninhabited islet located in Wakasa Bay about 10km away from Maiduru City in the Kyoto Prefecture with a width of 413m from east to west, and a length of 1316m from north to south, and an altitude of 169m above sea level. The entire islet has been designated as a natural monument because of the colony of Streaked Shearwater found there.

On the Kutsujima Island, which is located 2.2km to the northeast of the Kanmurijima Island, breeding of the Streaked Shearwater, the Japanese Murrelet and Swinhoe's Storm-petrel has been confirmed in addition to thousands of breeding Black-tailed Gulls. Banding and satellite-tracking surveys have revealed that the seabirds that breed on these islets do not only forage in the surrounding areas but also over a wide range across the Sea of Japan.

In the seas surrounding the islets, various fishing practices are carried out such as gillnetting for turban shells, pole-and-line fishing for Japanese amberjack, fishing with skimmer nets for filefish, set-net fishing and box fishing for turban shells and abalone. In addition, there are numerous small recreational activities in the area such as fishing off leisure boats, surf fishing and diving

## Protection Status of Seabird Breeding Site

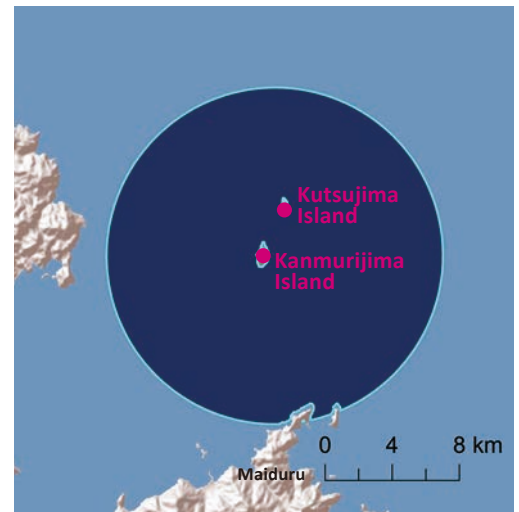
- Kanmurijima and Kutsujima Islands Wildlife Reserve - Special Protection Area
- Wakasa Bay Quasi-National Park

## Breeding Seabirds

Streaked Shearwater, Japanese Murrelet, Swinhoe's Storm-petrel, Black-tailed Gull

## Threats to the Seabirds and the Marine Environment

- Heavy oil spills such as the one by Nakhodka in 1997
- Predation from introduced brown rats



## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Kanmurijima Islet Research Association, the Education Board of Maiduru City, Ministry of the Environment, Yamashina Ornithological Institute (Biological surveys on seabirds including the Streaked Shearwater)
- Maiduru City (Environmental education workshops for schools)
- Fisheries Cooperative Association of the Kyoto Prefecture (setting the harvesting season for brown seaweed)



# Chugoku & Shikoku Region



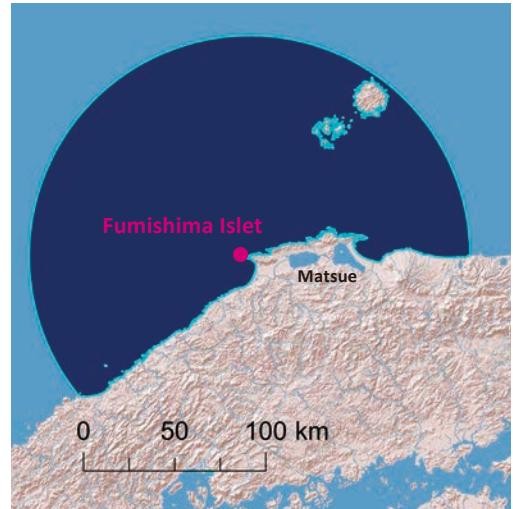
Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M016	Fumishima Islet and Oki Islands	Fumishima Islet, Oki Islands	27,613	A1	Japanese Murrelet
				A4i	Streaked Shearwater, Black-tailed Gull
				A4ii	Streaked Shearwater
				A4iii	Streaked Shearwater
JP-M017	Seinan Islands	Seinan Islands	296	A1	Japanese Murrelet
				A4ii	Japanese Murrelet

経島



©Hitoshi Sato



## Site Description

Fumishima Islet (about 3.0km<sup>2</sup>) is an uninhabited islet in the Sea of Japan about 100m west of the Hinomisaki Shrine. It has been designated as a natural monument as a breeding site of the Black-tailed Gull and it is prohibited for people to land on the islet. Pole-and-line fishing for the Japanese amberjack and the harvesting of abalone and turban shells are carried out in the surrounding sea.

## Protection Status of Seabird Breeding Site

- Daisen-Oki National Park
- Natural Monument (Fumishima Islet Black-tailed Gull's breeding site)

## Breeding Seabirds

Black-tailed Gull

## Threats to the Seabirds and the Marine Environment

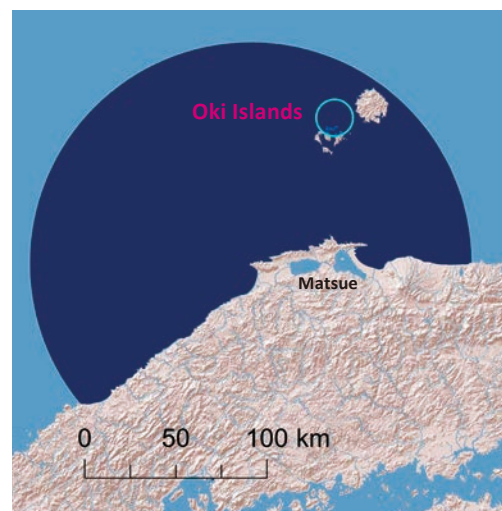
- Predation from crows, introduced feral cats and badgers

## Conservation Activities

- Izumo City (biological surveys on the Black-tailed Gull)
- Members of the Fisheries Cooperative Association JF Shimane Oyashiro Branch (seashore clean-up activities)
- The Fisheries Cooperative Association JF Shimane Oyashiro Branch (setting a closed season for pole-and-line fishing, setting a partially closed season for collecting shellfish)
- The Fisheries Cooperative Association (litter picking)



©Hitoshi Sato



©Hironobu Taziri

## Site Description

The Oki Islands are located about 40km ~ 80km north of the Shimane Peninsula, consisting of four inhabited islands: Togo, Chiburi, Nishinoshima and Nakanoshima as well as numerous uninhabited islands. Hoshigami Island (Nishinoshima Town) and Okinoshima Island (Okinoshima Town) are national monuments designated by the state, and Oohakashima Island (Chibu Village) is a national monument designated by the prefecture as breeding colonies for the Streaked Shearwater. In addition, shearwaters breed on Shiarshima Island, Matsushima Island, Futamata Island and Oomori Island. On the steep shores of Hoshigami Island, breeding of the Japanese Murrelet and the Swinhoe's Storm-petrel has also been confirmed.

The surrounding marine areas are known to be abundant fishing grounds with the Tsushima Current and the Limann Current running through them. Purse-seine fishing that targets migratory fish such as sardines, horse mackerel and pacific mackerel is common along with crab and squid fishing. Many anglers go there for surf fishing and boat fishing. The area is also known for aqua-farming of noble scallops and rock oysters.

The islands have gone through many eras – the era when they were part of the continent, the era when they were seabed or lakes, the era of volcanic activity and the era when they were connected with Honshu, but today the islands remain isolated from Honshu (Shimane Peninsula). The islands were registered as 'the Oki World Geopark' in 2012 based on their characteristic natural landscape and geological formation.

## Protection Status of Seabird Breeding Site

- Daisen-Oki National Park - Special Protection Area
- Natural Monument (Hoshikamishima and Okinoshima Islands Streaked Shearwater breeding site)
- Natural Monument (Oohakashima Island Streaked Shearwater breeding site designated by Prefecture)
- Hakashima, Mt. Takuhi, Oomori, and Daimanji Wildlife Reserves - Special Protection Areas (designated by Prefecture)
- Ama, OkiKokubunji, Shirashima and Kamenohara Pond Wildlife Reserves

## Breeding Seabirds

Japanese Murrelet, Swinhoe's Storm-petrel, Streaked Shearwater

## Threats to the Seabirds and the Marine Environment

- Predation from introduced rats (Oomorijima, Futamatajima, Futamata-kojima, Okinoshima, and Oohakashima)
- Predation of chicks and eggs from the Large-billed Crow
- Disturbance to breeding site and garbage left behind by anglers

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Wild Bird Society of Japan Shimane Prefecture Chapter (seabird surveys)

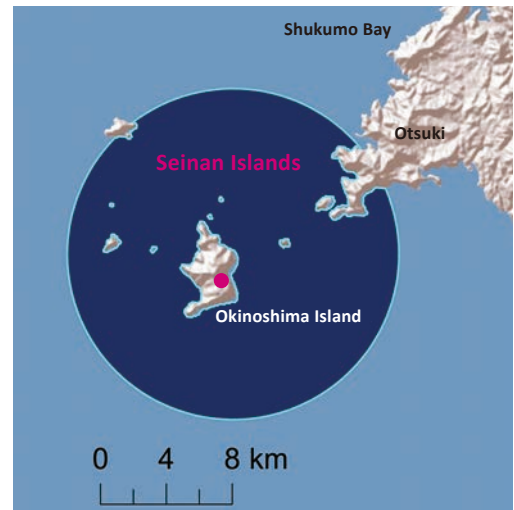


## 西南諸島

### Site Description

Okinoshima Island is located in the Pacific Ocean about 24km southwest of Sukumo City and the entire island is covered by granite. Biroujima Island is an uninhabited island located between the tip of the Otsuki Peninsula and Okinoshima Island. *Carex oahuensis* and *Miscathus condensatus* are found here and the Streaked Shearwater breeds here. The Japanese Murrelet also breeds on some uninhabited islands of Sukumo Bay. Due to the effects of the Black Stream, this site has a mild climate with high temperatures and heavy rain, allowing a large amount of sub-tropical plants to inhabit.

In the surrounding seas, pole-and-line fishing is carried out and marine recreation activities such as surf fishing and diving are popular.



### Protection Status of Seabird Breeding Site

- Ashizuri - Uwakai National Park - Special Protection Area
- Himejima Island Wildlife Reserve - Special Protection Area (designated by the Prefecture)
- Biroujima Island Wildlife Reserve (designated by the Prefecture)

### Breeding Seabirds

Streaked Shearwater, Japanese Murrelet

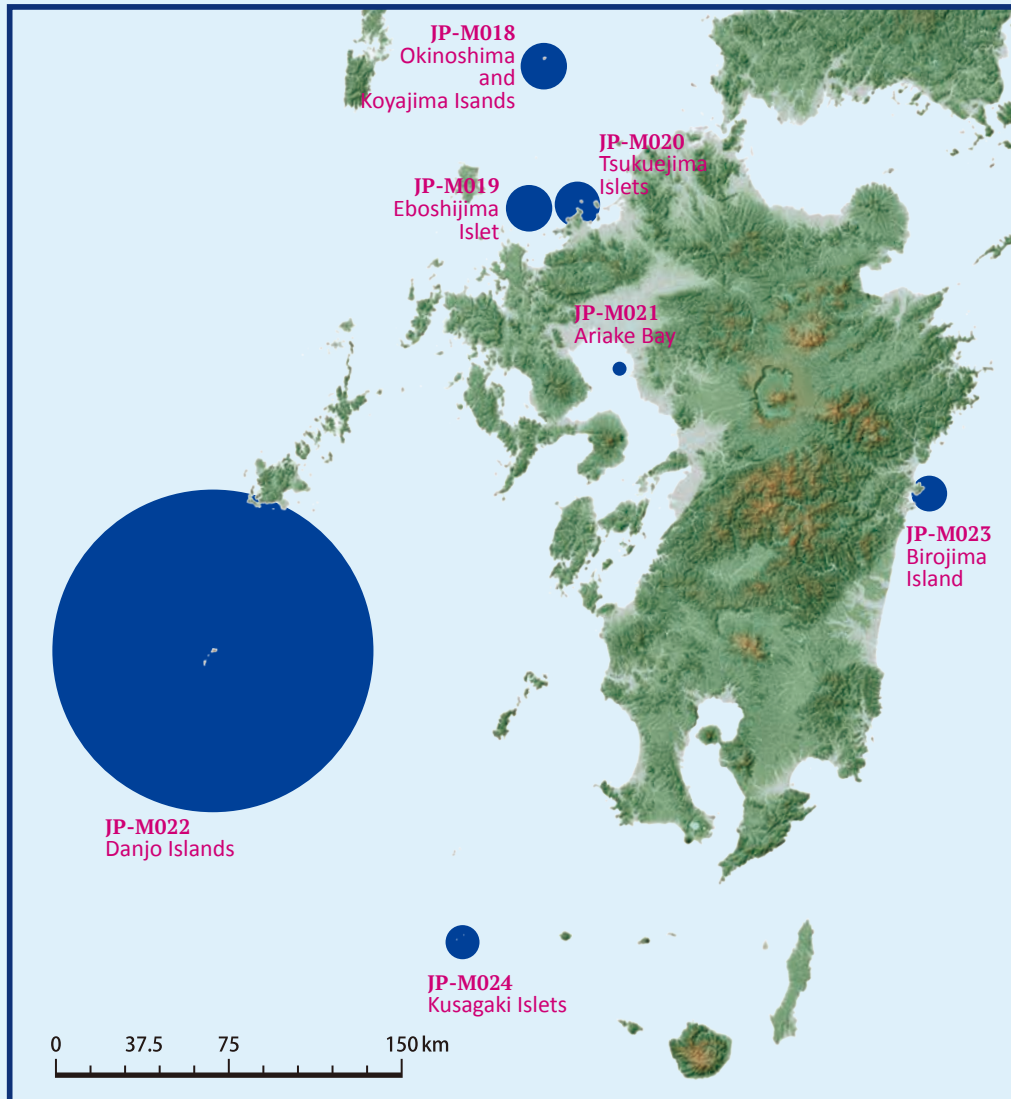
### Threats to the Seabirds and the Marine Environment

- Destruction of Streaked Shearwater nesting holes by wild boar
- Disturbance from the intrusion of anglers

### Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Kochi Prefecture (habitat surveys on birds and animals)

# Kyushu Region



Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M018	Okinoshima and Koyajima Islands	Okinoshima and Koyajima Islands	313	A1	Japanese Murrelet
				A4ii	Japanese Murrelet, Streaked Shearwater
JP-M019	Eboshijima Islet	Eboshijima Islet	314	A1	Japanese Murrelet
				A4ii	Japanese Murrelet
JP-M020	Tsukuejima Islets	Tsukuejima Islets	265	A1	Japanese Murrelet
JP-M021	Ariake Bay	Ariake Bay	28	A4i	Roseate Tern
JP-M022	Danjo Islands	Danjo Islands	15,353	A1	Japanese Murrelet
				A4ii	Brown Booby, Streaked Shearwater
				A4iii	Streaked Shearwater
JP-M023	Birojima Island	Birojima Island	170	A1	Japanese Murrelet
				A4i	Japanese Murrelet
				A4ii	Japanese Murrelet
JP-M024	Kusagaki Islets	Kusagaki Islets	176	A4ii	Streaked Shearwater
				A4iii	Streaked Shearwater

# Okinoshima and Koyajima Islands

JP-M018

沖ノ島・小屋島

## Site Description

Okinoshima Island (0.85km<sup>2</sup>) is located in the Sea of Genkai, 78km north-northwest of Fukuoka City. The entire island is designated as the holy area of the Munakata Shrine and it is strictly prohibited to remove any wild plants or even a stone from the island. It is a pristine habitat that has been designated as a natural monument as the 'Primeval Forest of Okinoshima Island'. Koyajima is a rocky reef located about 1.0 km south-southeast of Okinoshima at an altitude of 29m above sea level.

The Streaked Shearwater breeds on Okinoshima Island, whereas the Japanese Murrelet and Swinhoe's Storm-petrel breed on the Koyajima Islet. The areas of Okinoshima Island, the Koyajima Islet, the Mikadobashira Reef and the Tenguiwa Reef have been designated as Japanese wildlife reserves as important colonies for seabirds.

In the surrounding seas, gillnetting for coarse fish and longline fishing are carried out.

## Protection Status of Seabird Breeding Site

- Okinoshima Island Wildlife Reserve - Special Protection Area
- Natural Monument Okinoashima Primeval Forest

## Breeding Seabirds

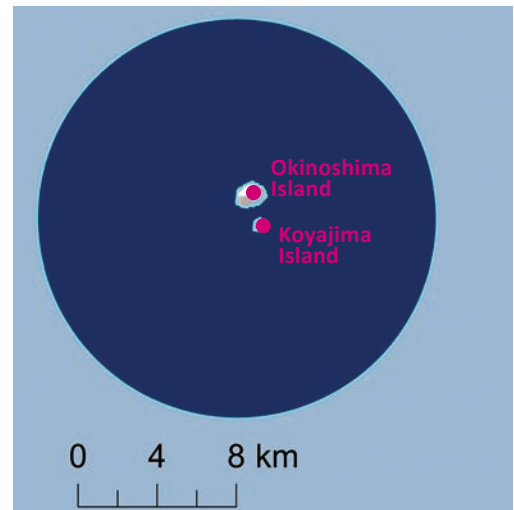
Japanese Murrelet, Swinhoe's Storm-petrel, Streaked Shearwater

## Threats to the Seabirds and the Marine Environment

- Predation of the Japanese Murrelet and Swinhoe's Storm-petrel from introduced brown rats and their impact on breeding birds (Koyajima Islet)
- Predation from introduced feral cats on Okinoshima Island
- Seabirds crash into the buoys set for longline fishing

## Conservation Activities

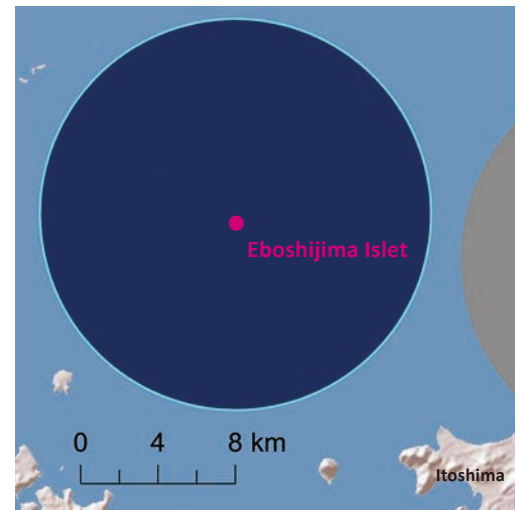
- Wild Bird Society of Japan Kitakyushu Chapter (surveys and monitoring on seabirds)
- Kitakyushu Museum of Natural History & Human History (surveys and conservation activities on seabirds)
- The Munakata Fisheries Association (beach clean-up)



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©Kousaku Tamura



## Site Description

Eboshijima Islet (0.01km<sup>2</sup>) is an uninhabited rocky islet in the Sea of Genkai in between the Itoshima Peninsula and Iki Island. Vegetation is sparse and only *Carex oahuensis* and *Fimbristylis ferruginea* var. *sieboldii* grow at the top of the islet. The Japanese Murrelet breeds in the crevices of stone walls and/or small gaps among *Carex oahuensis*. The islet was designated by the prefecture as a wildlife reserve.

Gillnetting (bottom-set) for flounder and flatfish and longline fishing for Red Seabream and Japanese Amberjack are carried out in surrounding seas.

## Protection Status of Seabird Breeding Site

- Eboshijima Islet Wildlife Reserve -Special Protection Area (designated by the Prefecture)

## Breeding Seabirds

Japanese Murrelet



©Kousaku Tamura

## Threats to the Seabirds and the Marine Environment

- Invasion of introduced rats following anglers landing on the islet by boat and their predation of seabirds

## Conservation Activities

- Wild Bird Society of Japan Fukuoka Chapter (bird surveys)
- The Itoshima Fisheries Cooperative Association (periodic gillnetting following the regulations of the Fukuoka Prefecture fisheries control)



©Kousaku Tamura



## Site Description

The Tsukuejima Islets consist of two islets (O-Tsukueshima and Ko-Tsukueshima), located to the southwest of Genkaijima Island which faces the Sea of Genkai at the exit of Fukuoka Bay. The north side of the O-Tsukuejima Islet are used by the Japanese Cormorant and the Pelagic Cormorant as a stop-off site.

Harvesting of abalone and turban shells as well as fishing for red seabream, horse mackerel, squid and red seabream are common in the surrounding seas.



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## Protection Status of Seabird Breeding Site

- Genkai Wildlife Reserve (designated by the Prefecture)

## Breeding Seabirds

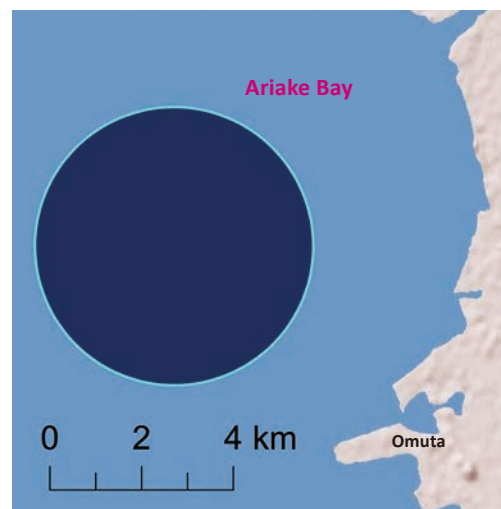
Japanese Murrelet

## Threats to the Seabirds and the Marine Environment

- Predation of seabirds from the introduced rats resulting from anglers on land
- Impacts from the development of seabed resources in Hakata Bay

## Conservation Activities

- Wild Bird Society of Japan Fukuoka Chapter (surveys on seabirds in sea areas including Genakai Island, O-Tsukuejima and the Ko-Tsukuejima islets)



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### Site Description

In the Inner Ariake Bay, there is a huge area of mud flats, which accounts for 40% of the total mud flat areas in Japan. The tidal range here of about 6m is the largest in Japan. From the current running into the Inner Ariake Bay, nutrient inputs through discharge from rivers into the bay reach significant levels. As a result, plankton and benthic species such as ragworms are prolific and various distinguished fish species such as the Bluespotted mud hopper, mudskippers and *Odontamblyopus lacepedii* are present. 'Daijugarami', 'Shoudai reclaimed land', 'Arao reclaimed land' and 'Shingomori' are important stop-over sites for waders such as the Bar-tailed Godwit and the Mongolian Plover as well as wintering sites of the Black-faced Spoonbill, Saunders's Gull and the Common Shelduck. In addition, the bay is Japan's largest breeding site for the threatened species, the Roseate Tern, on the artificial island: Miikejima Island.

In the Inner Ariake Bay, seaweed cultivation and clam harvesting are actively carried out, and traditional fishing for the bluespotted mud hopper and the mud-skipper, such as using a four-armed scoop net are still practiced today.

For the purpose of preserving this area and using it sensibly and sustainably, the 'Higashi-yoka mud flat', the 'Hizen-kashima mud flat' and the 'Arao mud flat' were designated as wetlands under the Ramsar Convention and as wildlife reserves (Special Protection Areas).

### Protection Status of Seabird Breeding Site

None

### Breeding Seabirds

Roseate Tern, Little Tern

### Threats to the Seabirds and the Marine Environment

- Ageing artificial island of Miikejima, a breeding site of the Roseate Tern
- Predation of chicks and eggs by the Large-billed Crow
- Death of chicks caused by *Tetramorium tsushimae*
- Disturbance to breeding and garbage left behind by anglers on land

### Conservation Activities

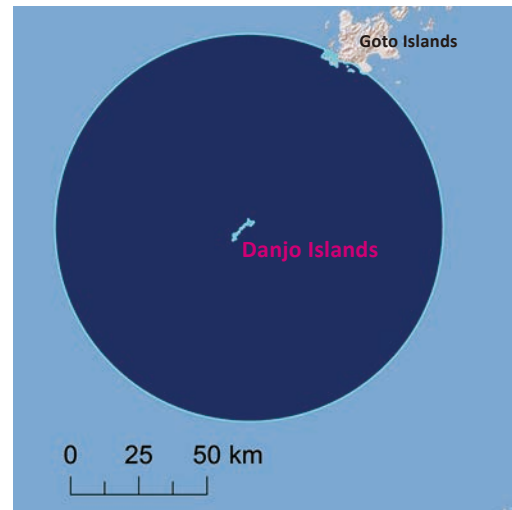
- Wild Bird Society of Japan Chikugo and Kumamoto Chapters (surveys and awareness-raising activities)



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## Site Description

The Danjo Islands are uninhabited islands located about 70km southwest of the Goto Islands. They consist of five major islands: Otokojima (2.7km<sup>2</sup>), Kurokijima (0.1km<sup>2</sup>), Nakanoshima (0.3km<sup>2</sup>), Hanagurishima (0.2km<sup>2</sup>) and Onnajima (1.3km<sup>2</sup>) from North to South, and a number of small rock reefs. The entire island group is designated as a natural monument.

The Tsushima Current, one of Japan's warm currents, runs around the islands, making the area abundant in fish and therefore attracting seabirds. The islands have colonies of the Streaked Shearwater and the Brown Booby and are stopover sites for migrant species.

Due to the effect of the warm current, the seawater temperature does not really drop. Therefore, the surrounding seas are rich with large-sized fish of various species. Commercial fishing for largescale blackfish and barred knifejaw and diving are commonplace.

## Protection Status of Seabird Breeding Site

- The Danjo Islands Wildlife Reserve - Special Protection area
- Natural monument (Danjo Islands)

## Breeding Seabirds

Streaked Shearwater, Japanese Murrelet, Black-tailed Gull, Brown Booby

## Threats to the Seabirds and the Marine Environment

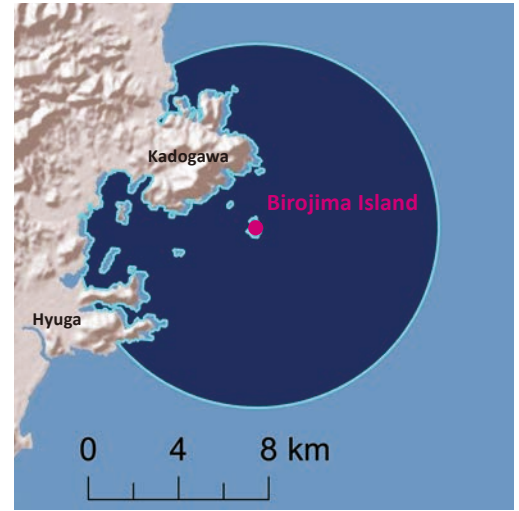
- Garbage and hooks from anglers and divers

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Danjo Islands Friendship Boats and Ships Association (clean-up operations of the surrounding seas)



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©Ikuo Kamimura

## Site Description

Birojima Island (perimeter ca. 1.5km) is an uninhabited island about 3km off Kadogawa Town in the Miyazaki Prefecture. Columnar joints are prominent on the island, which is surrounded by steep cliffs. The Japanese Murrelet and the Streaked Shearwater breed on the island, which, most notably, is the world's largest breeding site for the Japanese Murrelet.

Gillnetting, set-net fishing, trawling and longline fishing are all commonplace in the surrounding seas and spiny lobster, flounder, thread-sail filefish, daggertooth pike conger, spotted sardine, tuna and skipjack tuna are frequently unloaded from fishing vessels at the port.

## Protection Status of Seabird Breeding Site

- Birojima Island Wildlife Reserve
- Nippo Seacoast Quasi-National Park
- Special Natural Monument
- Biroujima Island Sub-tropical Plants Community

## Breeding Seabirds

Japanese Murrelet, Streaked Shearwater

## Threats to the Seabirds and the Marine Environment

- Deterioration of nesting habitats resulting from environmental change
- Bycatch of seabirds and marine turtles from trawling, gillnetting and longline fishing

## Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Birojima Island Research Society, Wild Bird Society of Japan Miyazaki Prefecture Chapter (banding survey of the Japanese Murrelet)
- Kadogawa Senior High School (recovery of fishing lines, hooks, and garbage)
- Kadogawa Town Office (at-sea bird watching excursions for the Japanese Murrelet hosted by the town office)
- Kadogawa Town Education Board (environmental education about the wildlife of Kadokawa Town and the Japanese Murrelet)
- The Kadogawa Fisheries Association and Iorigawa Fisheries Association (setting of a closed period for reef gillnetting to preserve fish resources)
- The Kadogawa Fisheries Association (assistance in surveying and observation of the Japanese Murrelet, bird watching tours for the Japanese Murrelet, awareness-raising activity for anglers)



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# Kusagaki Islets

JP-M024

草垣群島

## Site Description

The Kusagaki Islets are located in the East China Sea about 90km southwest of Makurazaki City in the Kagoshima Prefecture. They are uninhabited islets consisting of 17 islets in addition to the major Kaminishima Islet, the Nakanoshima Islet and the Shimonoshima Islet. In particular, Kaminoshima (the largest islet) has breeding colonies of the Streaked Shearwater and the Brown Booby and has been designated by the government as a wildlife reserve. Furthermore, the islets are important stopover sites for migrating birds and so far about 150 species have been confirmed.

The Kuroshio Current runs offshore and the islets are known as good fishing sites for the largescale blackfish and the white trevally as well as for rocky shore fish such as the barred knifejaw and the rock-cod.

## Protection Status of Seabird Breeding Site

- Kusagaki Islets Wildlife Reserve - Special Protection Area

## Breeding Seabirds

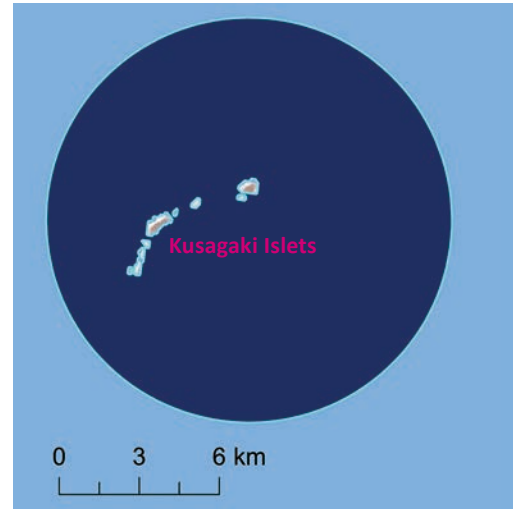
Streaked Shearwater, Brown Booby

## Threats to the Seabirds and the Marine Environment

- Rock collecting around colonies of the Streaked Shearwater and the Brown Booby
- Disturbance from anglers intruding at breeding sites
- Predation of seabirds from introduced black rats

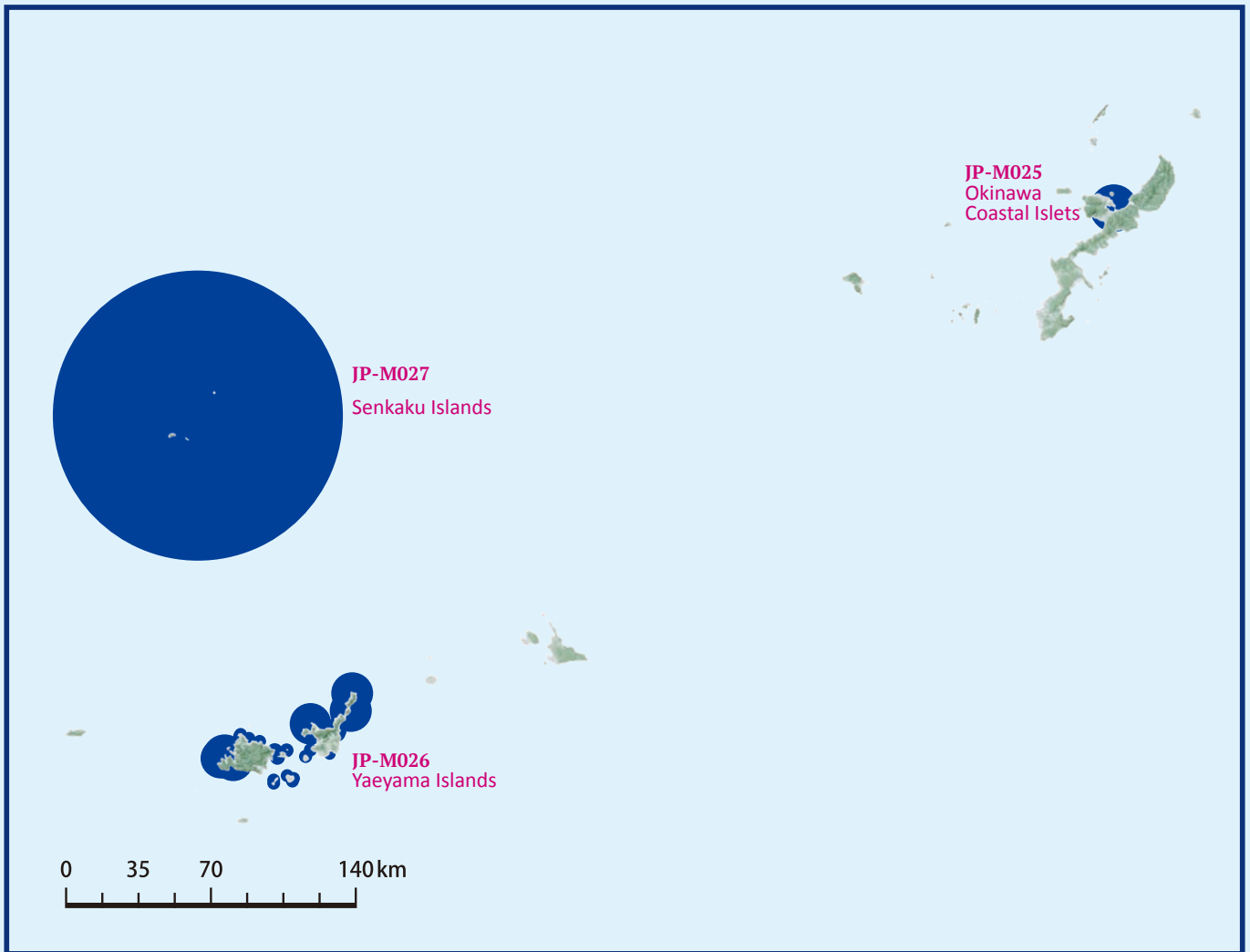
## Conservation Activities

- Ministry of the Environment and the Kagoshima Prefecture (surveys on the special wildlife reserve)



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# Ryukyu Islands

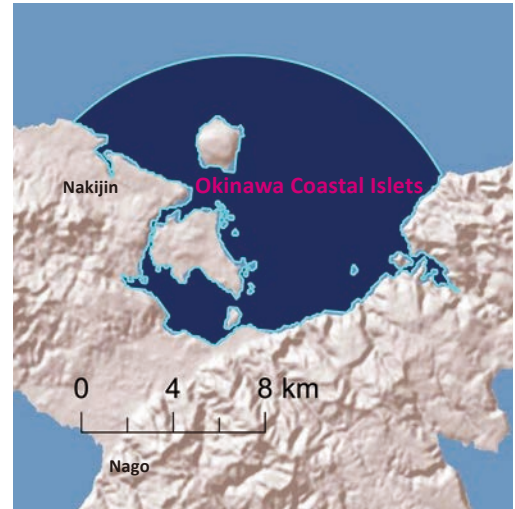


Source of background map: Ground Interface <http://www.gridscapes.net/#AllRiversAllLakesTopography>

Cord	Site name	Seabird breeding colonies	Area (km <sup>2</sup> )	IBA criteria	Trigger species
JP-M025	Okinawa Coastal Islets	Okinawa Coastal Islets	118	A4i	Roseate Tern, Black-naped Tern
JP-M026	Yaeyama Islands	Yaeyama Islands	1,261	A4i	Roseate Tern, Black-naped Tern
JP-M027	Senkaku Islands	Senkaku Islands	15,372	A1	Short-tailed Albatross
				A4i	Greater Crested Tern
				A4ii	Brown Booby



©Masakuni Yamashiro



## Site Description

This site consists of islets and rock reefs of all sizes around the main island of Okinawa. The Black-naped Tern, the Roseate Tern and the Bridled Tern all breed here, although the exact breeding sites greatly vary from year to year. The Roseate Tern tends to form big colonies which can regularly be seen on Keisejima, Henzajima, Hamahigajima, Yagajishima, Minnashima, Katsuren and Bisezaki Islets.

In the seas around the Akamaru Cape, the cultivation of seaweed such as *Namacystus decipiens* is carried out along with sea urchin harvesting and gillnetting for white-spotted parrotfish, balloon fish and red seabream. Diving to harvest sea urchins, spiny lobster and octopus is also carried out on the Keisejima Islet.

## Protection Status of Seabird Breeding Site

- Yagachi Wildlife Reserve - Special Protection Area
- Okinawa Kaigan Quasi-National Park - Special Protection Area

## Breeding Seabirds

Roseate Tern, Black-naped Tern, Bridled Tern, Sooty Tern, Little Tern

## Threats to the Seabirds and the Marine Environment

- Disturbance to breeding sites from the presence of anglers on islets and reefs
- Waste left by anglers
- Increase in predators such as the Large-billed Crow

## Conservation Activities

### Akamaru Cape

- The Nakijin Fisheries Association (setting closed seasons for sea urchin fishing, extermination of the invasive crown-of-thorns starfish, clean-up seashore activities)

### Tounja

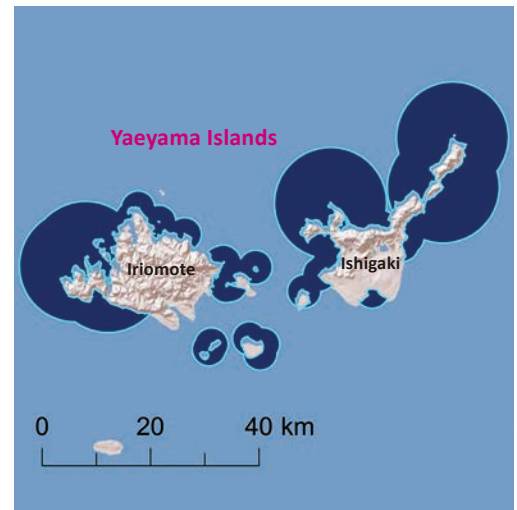
- Private company (conservation of terns)

### Keisejima Islet

- The Nago Fisheries Association (measures to ban the harvesting of sea urchins)



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### Site Description

The Yaeyama Islands are the southwestern-most islands of Japan located about 400km from the main island of Okinawa. The islands consist of inhabited islands such as Ishigakijima, Iriomotejima, Kuroshima, Taketomijima, Kohamajima, Aragusukujima, Hatomajima, Haterumajima and Yonagunijima in addition to about 20 uninhabited islands.

Considerable numbers of Roseate Terns and Black-naped Terns breed on Ishigakijima Island and Iriomotejima Island. In the adjacent seas, barrier reef type coral reefs which connect Ishigakijima and the islands of Taketomi Town are well developed, providing various habitats to coastal organisms. The areas are rich fishing grounds. Rocky beaches, inner bays and sandy beaches are interspersed in the northern and western parts of Iriomotejima Island and the northwestern part of Ishigakijima Island, bringing diversity to coastal areas.

Several islets are scattered southwest of Iriomotejima, including Nakanokamishima, Nakanosone, and Taiwan-sone, which are excellent fishing grounds for the pole-and-line fishing of snappers. In particular, Yonagunijima Island that is located in the headwater of the Kuroshio Current provides some excellent fishing grounds for migrant fish such as the skipjack tuna and marlins. The area is farmed for sugarcane, pineapples and herbs and. Set-net fishing practices are also carried out in surrounding seas.

### Protection Status of Seabird Breeding Site

- Iriomote Wildlife Reserve - Special Protection Area
- Yonaguni Wildlife Reserve
- Nagura-Anparu Wildlife Reserve - Special Protection Area
- Nakanokamishima Wildlife Reserve - Special Protection Area

- Iriomote National Park - Special Area
- National Monument (Nakanokamishima Islet)
- Registered wetland under the Ramsar Convention (Nagura-Anparu)

### Breeding Seabirds

Red-footed Booby, Brown Booby, Brown Noddy, Bridled Tern, Sooty Tern, Black-naped Tern, Greater Crested Tern, Roseate Tern, Little Tern, Streaked Shearwater, Bulwer's Petrel

### Threats to the Seabirds and the Marine Environment

- Impacts to breeding sites from outdoor activities such as sea-kayaking
- Disturbance to breeding sites from approaching humans

### Conservation Activities

- Ministry of the Environment (Monitoring and Survey Project of 1,000 sites: Seabirds)
- Wild Bird Society of Japan Iriomote Chapter (monitoring survey on terns)
- Okinawa Area Research Institute of Tokai University (research and studies on seabirds)
- Conservation Society of Sea Turtles in Iriomote (conservation and research on sea turtles)
- Ministry of the Environment (Monitoring Center of International Coral Reef Research)
- Ishigaki City Education Board (co-hosting of environmental education for primary and junior high school students with NPOs)
- The Yaeyama Fisheries Association (setting of a closed season during the egg-laying period of the Pacific yellowtail emperor)

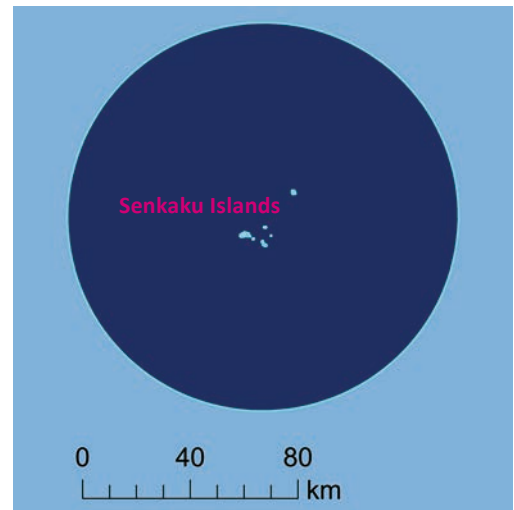
## 尖閣諸島

### Site Description

The Senkaku Islands consist of Uotsurijima, Kitakojima, Minamikojima, Kubashima, Taishojima, Okino-kita-iwa Rock, Okino-minami-iwa Rock and Tobise Reef, located in the southwest of the East China Sea (to the north of the Yaeyama Islands).

A lot of terns and boobies breed on Minamikojima and Kitakojima in particular. The islands are also the breeding site of the Short-tailed Albatross next to Torishima Island of the Izu Islands Chain. It is said that the Japanese immigrated to the islands and overharvested the birds in the past for their feathers. Currently, landing on the islands is very restricted and so accurate population estimates on the numbers of Short-tailed Albatross and Black-footed Albatross there do not exist.

In addition to seabirds, various species of flora and fauna can be found on the islands, including endemic species and adjacent sea areas are good fishing grounds.



### Protection Status of Seabird Breeding Site

None

### Breeding Seabirds

Black-footed Albatross, Short-tailed Albatross, Brown Booby, Masked Booby, Sooty Tern, Bridled Tern, Brown Noddy, Greater Crested Tern, Streaked Shearwater

### Threats to the Seabirds and the Marine Environment

- Loss of vegetation and outflow of surface soil resulting from introduced feral goats feeding on vegetation
- Insufficient research on the Short-tailed Albatross due to restricted landing on the island

### Conservation Activities

None

# Candidate Sites of Marine IBAs

## Identification of Marine IBAs in the Future

There are four types of marine IBAs that correspond to seabirds' at-sea activities (see page 8). All of the marine IBAs that have so far been identified correspond to the 'seaward extensions of breeding colonies'. In order to use marine IBAs for wider conservation of the marine ecosystem such as to designate EBSAs and/or MPAs in the future, it is necessary to identify marine IBAs in terms of the types of 'non-breeding (coastal) concentrations' and 'areas for pelagic species'.

### Non-breeding (coastal) Concentrations

Some seabirds flock in coastal areas outside of the breeding period. Surrounding seas become important foraging and/or resting areas for these seabirds. For example, the Saunders's Gull mainly winters in Japan in the Kyushu region but the number has been rapidly decreasing due to the degradation of habitats from the reclamation of tidal flats. Some tidal flats and the coast of the Ariake Sea have already been designated as IBAs using the IBA criteria A1 and A4. In the future, we will proceed to identify more coastal marine IBAs that are important for non-breeding seabirds.

### Areas for Pelagic Species

A hotspot where seabirds gather in pelagic water can be considered as an area rich in food resources with high productivity. This kind of area is usually dynamic and susceptible to seasonal and annual changes of the marine environment over time. However, for conservation and management purposes, it is necessary to select stable marine areas, which entails selecting those areas that seabirds regularly use at various life history stages over multiple years.

So far, candidate sites of pelagic marine IBAs have been selected by using tracking data (Fig. 1). Additional data of seabird distributions over a number of years should also help us to identify those areas used most regularly and finalize their designation as formal marine IBAs.

Over recent years, the progress of scientific technologies such as the downsizing of wearable data loggers has been remarkable, enabling an accumulation of information about the distribution of seabirds in pelagic waters. Designating marine IBAs in pelagic areas would require a close collaboration with scientists in the future.

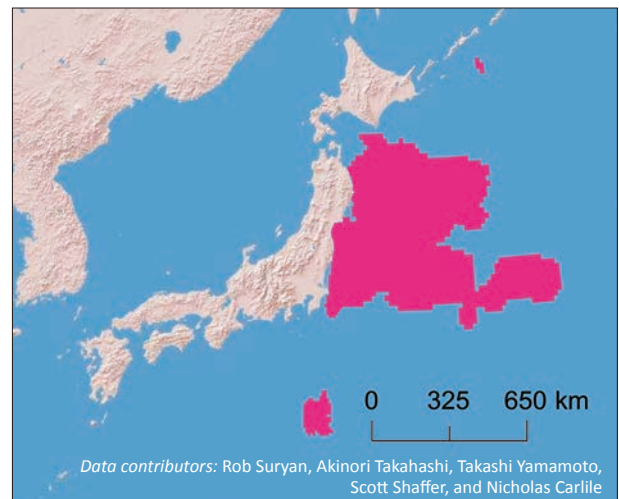


Fig. 1 Candidate marine IBAs identified by using tracking data



©Koji Ishida

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- Lascelles, B.G., Taylor, P.R., Miller, M.G.R., Dias, M.P., Opper, S., Torres, L., Hedd, A., Le Corre, M., Phillips, R.A., Shaffer, S.A., Weimerskirch, H. & Small, C. (2016) Applying global criteria to tracking data to define important areas for marine conservation. *Diversity and Distribution* 22: 1-10.
- Thaxter, C.B., B. Lascelles, K. Sugar, A.S.C., P. Cook, S. Roos, M. Bolton, R.H.W. Langston & N. H. K. Burton (2012) Seabird foraging ranges as a preliminary tool for identifying candidate Marine Protected Areas. *Biological Conservation* 156: 53-61.



# Current State of Marine IBAs

A questionnaire survey was carried out in 2014 to assess the current state of marine IBAs including the threats to seabirds and the current conservation activities that are being conducted for the protection of seabirds and their habitats.

Institutions in those areas with seabird colonies that had been selected according to IBA criteria\*, WBSJ chapters and local governments were surveyed and 33 of them responded. The data collected from those answers are summarized in the following sections: 'Threats to Seabirds', 'Main Industries', 'Fishing Practices' and 'Conservation Efforts'

\* The areas with seabird colonies are the 44 areas described on pg. 16 - 68 of this book.



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A mouse feeds on a seabird chick on the Gough Island in the South Atlantic



# Current State of Marine IBAs

## Threats to Seabirds

Invasive ‘introduced predators’ are the greatest threats to seabirds in marine IBAs in Japan according to 22 responders (22 areas) out of 33 (66.6%). This result is in line with the global trend, as reported by Croxell *et al* (2012) that ‘introduced predators’ are the biggest threats to coastal seabirds. This was followed by ‘bycatch’ (13 areas, 39.4%), then disturbance caused by ‘tourism/leisure’ activities (9, 27.3%), disturbance caused by ‘recreational fishing’ (8, 21.1%) and finally ‘habitat destruction’ (7, 21.1%). Some responders also reported the influences of ‘oil spill’, ‘marine litter’, ‘native problematic species’ and a ‘decline in food resources’ (Fig. 1). Introduced predators include rodents (brown and black rats) and feral cats. Furthermore, an increasing number of crows scavenging through garbage left by fishermen are also becoming an apparent threat. Additional threats caused by tourism and leisure are disturbance by sightseeing and pleasure boats coming too close to the colonies, intrusive photographers and artificial feeding.



©Youhei Hagiwara

## Main Industries

‘Fisheries’ are the main industry conducted in marine IBAs in Japan, with 30 areas affected, according to 90.9% of respondents. ‘Tourism/leisure’ (12, 36.4%) is the second most influential industry in marine IBAs and ‘recreational fishing’ and ‘eco tourism’ were mentioned in third place, by the same number of respondents (9, 27.3%) (Fig. 3).

## Fishing Practices

‘Gillnet’ fishing is the most widely-used fishing practice, conducted in 21 areas (63.6%). This type of fishing includes bottom gillnetting (used in 4 areas) and drift gillnetting (1). The other common fishing practices that follow are ‘set-net’ fishing (14, 42.4%), ‘pole-and-line’

fishing (8, 24.2%) and ‘longline’ fishing (6, 18.2%). Other fishing methods that are difficult to categorize are lumped into ‘others’ (fig. 3). While ‘bycatch’ is the second greatest threat to seabirds after predators, the scale of the impact is not made sufficiently clear. Effective mitigation measures have still not been developed against bycatch in gillnet fisheries. Further research and data collection should follow in the near future.

## Conservation Efforts

‘Research and monitoring’ is mostly conducted in 26 areas, according to 78.8% of those who responded to the survey. ‘Environmental education’ is carried out in 11 areas (33.3%), ‘anti-predator measures’ in 6 areas (18.2%), and ‘eco tourism’ in 2 areas (6%) (Fig. 4). ‘Research and monitoring’ is conducted ‘annually’, mostly in 21 areas (52.5%), ‘every 2 to 5 years’ in 15 areas (37.5%) and ‘at other rates’ in 4 areas (10.0%).

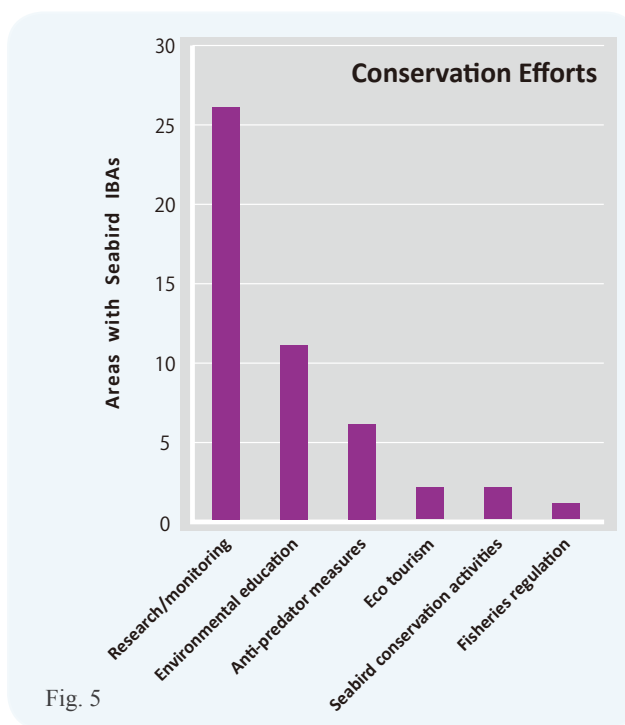
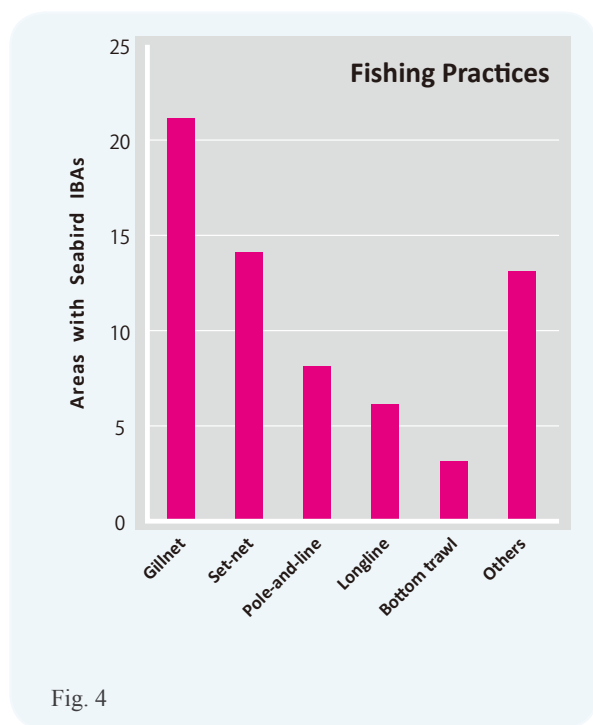
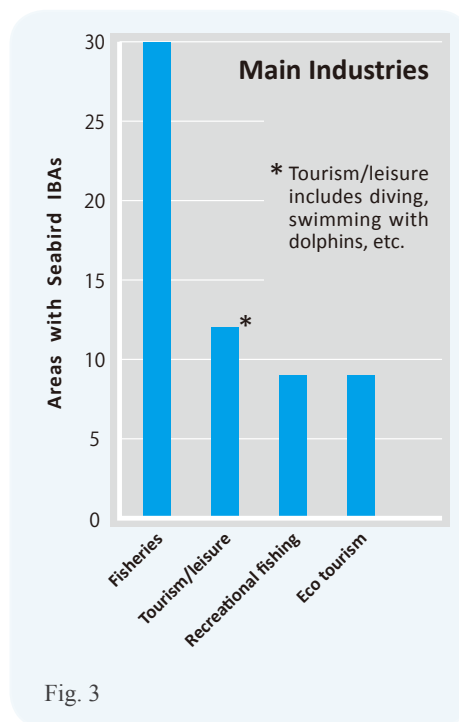
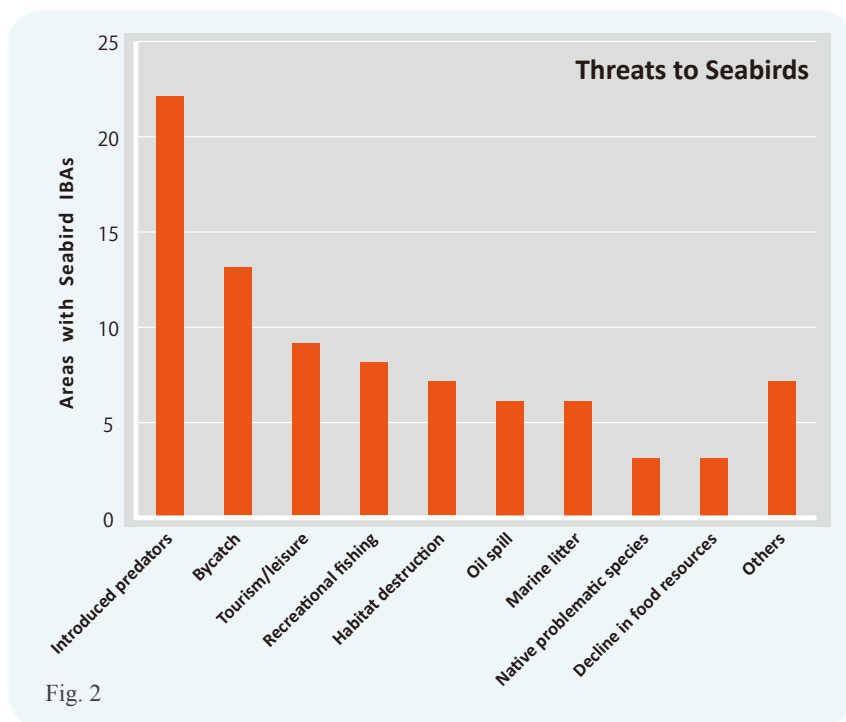
21 sites out of 30 that were surveyed as part of the ‘Monitoring and Survey Project of 1,000: Seabirds’ conducted by the Ministry of the Environment, are identified as marine IBAs. Habitat use of these sites by seabirds is monitored every 2 to 5 years.

Environmental education is only conducted in 30% of the responder areas, because most marine IBAs are uninhabited islands where it is difficult for local governments to carry out such activities to make it publicly known that those islands are important habitats for seabirds. Consequently, the general awareness about seabirds is low. We hope that such activities will be carried out to make the importance of seabird conservation and the marine environment widely understood, and to make more people familiar with the sea through actual experiences.



©Wild Bird Society of Japan

## Current State of Marine IBAs



As a result of the survey, it has become clear that:

- invasive introduced predators such as rodents and feral cats have turned into great threats because they eat the birds' chicks and eggs;
- the main industry in most areas with marine IBAs is fisheries, thus it is imperative to collect information on and take measures to prevent bycatch;
- many seabird colonies are remote and uninhabited and unlikely to be a familiar issue, therefore educational activities are needed to make the importance of such colonies known to the general public.

### References

Croxall, J.P., Butchart, S.H.M., Lascelles, B., Stattersfield, A.J., Sullivan, B., Symes, A. & Taylor, P. (2012) Seabird conservation status, threats and priority actions: a global assessment. *Bird Conservation International* 22: 1–34.



# Areas Promoting Seabird Conservation

## Introduction of Model Cases

In some areas, the conservation of seabirds has been powerfully promoted through various activities such as countermeasures against alien invasive species, an improvement of the breeding environment, environmental education (stressing the importance of seabird conservation and development of human resources), and ecotourism. This chapter presents four sites facing marine IBAs (or a marine IBA candidate), namely Haboro Town (JP-M001), Hamanaka Town (marine IBA candidate), Miyake Village (JP-M005) and Kadogawa Town (JP-M023), as case studies where conservation and/or the management of seabirds are conducted by local coastal communities.



©Hokkaido Seabird Center



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©Kadogawa Town



©Miyake Nature Center Akakokko Station

# Areas Promoting Seabird Conservation

<p>Case Study 1</p> <p><b>Haboro Town</b></p> <p>in Tokomaegun, Hokkaido</p>	<p><b>IBA status</b></p> <p>Identified (Northern Hokkaido, JP_M001)</p>
	<p><b>Government and/or organizations promoting the conservation of seabirds</b></p> <p>Hokkaido Seabird Center (Ministry of the Environment, Haboro Town)            ‘Teurito Island for the Cohabitation of Humans, Seabirds and Cats’ Council            Association for the Hokkaido Seabird Center            Haboro Conference for the Collective Creation of Nature Space</p>
	<p><b>Reference URLs</b></p> <p>Hokkaido Seabird Center: <a href="http://www.seabird-center.jp/">http://www.seabird-center.jp/</a>            Cat issues on Teurito Island: <a href="http://teuri-neko.net/news/news-1005/">http://teuri-neko.net/news/news-1005/</a></p>

## Outline of Haboro Town

Haboro Town, with a population of approximately 7,400, is located on the Sea of Japan to the northern Hokkaido side, boasting the nation’s highest catches of pink shrimps, scallops and octopus. 28km off the west coast is Teurito Island – a breeding site for 8 species of seabirds including the largest breeding colony of Rhinoceros Auklets in the world and the last remaining colony of Common Murres in Japan, and 4km east of Teurito is Yagishirito Island that is renowned for its pristine habitats and wildlife.

## Conservation Activities for the Common Murres on Teurito Island

The Common Murre is the symbol of Teurito Island. It used to also breed on Matsumaekojima, Yururi and Moyururi Islands, but now Teurito Island is the only breeding site that this bird still uses. While in the 1960s an estimated 8,000 individuals were recorded as breeding on the island, there are only 30 individuals at present. It is assumed that this is mainly due to a change in the marine environment and to bycatch in salmon drift-net fisheries. However, an increase in predators such as the Slaty-backed Gull and the Large-billed Crow has become another major threat. The Common Murre is categorized as Critically Endangered IA (CR) on the Red List of the Ministry of the Environment and designated as a ‘national rare species’.

The Hokkaido Seabird Center, operated jointly by the Ministry of the Environment and the Haboro Town, is the base for seabird conservation in Hokkaido including research and public awareness. Currently, in an attempt to increase the number of the Common Murre, they are trying out various measures such as installing decoys alongside a speaker system playing murre calls and driving off predators.



©Hokkaido Seabird Center

At the breeding site, as many as 50 decoys have been installed at the entrance to prevent predators from invading the colony. In 2012 a CCD camera was set up, making it possible to observe the birds incubating their eggs and to closely watch the chicks growing.

Furthermore, the success rate of breeding has increased since 2011 by using air guns to frighten away Slaty-backed Gulls that flock to the colony. While the number of fledglings was zero in 2006, it was 9 in 2013 and 11 in 2014, and is thus constantly increasing. The population is expected to grow by reducing predation pressure on the eggs and chicks.

## Countermeasures against Stray Cats on Teurito Island

Around 200~300 stray cats live on Teurito Island, and they have been observed to prey on seabirds. Haboro Town enacted an ordinance requiring cat owners to register their cats with the town and microchip them. If pet cats are let outdoors, they must be neutered to ensure that numbers are kept low and thus reduce the threat to seabirds. The local governments of Haboro Town and Hokkaido Prefecture, the Ministry of the Environment, the Hokkaido Veterinary Medical Association and animal welfare organizations all have worked together to take the stray cats off the island for spaying, neutering and finding new homes for them.

## Participation of the Residents

The activities mentioned are also supported by the ‘Association for the Hokkaido Seabird Center’ and the ‘Haboro Conference for the Collective Creation of Nature Space’, both of which rely on the participation of local residents.

The people interviewed in the survey in Haboro Town in January, 2015 were:

Yasuo TAKENAKA; Ministry of the Environment/Hokkaido Seabird Center  
 Makoto HASEBE; Ministry of the Environment/Hokkaido Seabird Center  
 Takuya ISHIGOOKA; Haboro Town Office/Hokkaido Seabird Center  
 Takashi HAMANO; Haboro Conference for the Collective Creation of Nature Space

# Areas Promoting Seabird Conservation

Case Study 2 <b>Hamanaka Town</b> in Akkeshigun, Hokkaido	<b>IBA status</b>
	Not identified
	<b>Government and/or organizations promoting the conservation of seabirds</b>
	Hamanaka Town Education Board Hamanaka Fisheries Association Etopirika Fund
<b>Reference URLs</b>	
Hamanaka Town: <a href="http://www.townhamanaka.jp/">http://www.townhamanaka.jp/</a> Etopirika Fund: <a href="http://www.geocities.jp/etopirika_fund/">http://www.geocities.jp/etopirika_fund/</a>	

## Outline of Hamanaka Town

Hamanaka, located in the east of Hokkaido, is a town with a population of about 6,000, facing the Pacific Ocean. The Kiritappu Wetland that extends along the shoreline is home to numerous rare species of flora and fauna and is enlisted as a registered wetland under the Ramsar Convention. As the warm Kuroshio Current and the cold Oyashio Current converge in the surrounding waters, fish resources, such as saury, flounder, octopus and crabs, are abundant in the town.

## The Critically Endangered Tufted Puffin

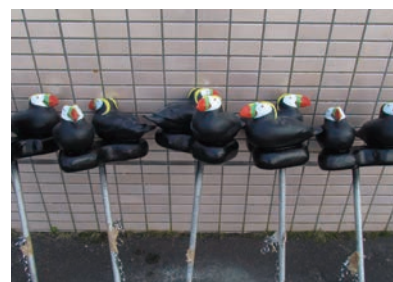
The Tufted Puffin is known to breed only in Hokkaido in Japan. The number of individuals drastically fell during the 1970s, and in 2001, it was designated as a 'national rare species' by the Ministry of the Environment with a protection and recovery plan for the species. However, in 2013, only 6 pairs were found to breed on the Yururito and Moyururito Islands and its extinction within the country is a serious concern. It is estimated that a considerable number of Tufted Puffins fell victim to bycatch in bottom gillnet and salmon drift-net fisheries, both of which used to be frequently conducted along the coast. The Tufted Puffin used to breed in Hamanaka but breeding has not been confirmed since 2009.

## Conservation Activities for the Tufted Puffin – the Town's Symbol

Hamanaka Town designated the Tufted Puffin (locally called Etopirika) as its symbol in 1978 and the local NPO Etopirika Fund and the Hamanaka Fisheries Association have been working on its conservation and research in collaboration with the Ministry of the Environment and the local government of Hokkaido.

As measures to bring the Tufted Puffin back to the

town, each year the town sets up two types of decoys made by the NPO, for the land and the sea, on the bird's previous habitat and on the surrounding



©Etopirika Fund

waters. The decoys at sea, in particular, must be some of the most unique that the world has ever seen, and have even received quite a lot of attention from overseas. Indeed, the number of breeding Spectacled Guillemots increased after the decoys were installed.

Under an agreement with the Ministry of the Environment, the Fisheries Association bans gillnetting for flounders and patrols the surrounding seas during the seabird breeding season. In 2006, the town registered the ocean area as a 'marine area seeking protection' where no gillnetting should be allowed, stressing the importance of the conservation of the Tufted Puffin.



©Etopirika Fund

Local elementary school pupils paint decoys, exhibit research results on panels and learn about the seabird's protection in the field. It is expected that more young people will recognize the value of their natural environment and become interested in the protection of the Tufted Puffin through such education in later years.

Although no best practice measures to mitigate seabird bycatch in gillnets fisheries have been developed, the Ministry of the Environment and the Fisheries Association have made attempts to alert seabirds to the presence of gillnets such as by attaching CDs to the nets and painting the nets.

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The people interviewed during the survey in Hamanaka Town in March, 2014 were:

Koji ONO; Ministry of the Environment Kushiro Nature Conservation Office  
Takehiko HAKOISHI; Hamanaka Town Education Board  
Yoshinori NAKAYAMA; Hamanaka Fisheries Association  
Shotaro WATABE; Hamanaka Fisheries Association  
Yoshihiro KATAOKSA; Etopirika Fund

# Areas Promoting Seabird Conservation

<p>Case Study 3</p> <p><b>Miyake Village</b></p> <p>in</p> <p>Miyakejima Island, Tokyo</p>	<p><b>IBA status</b></p>
	<p>Identified (Northern Izu Islands, JP_M005)</p>
	<p><b>Government and/or organizations promoting the conservation of seabirds</b></p>
	<p>Miyake Village Miyake Nature Center Akakokko Station Miyake Nature Center Association 'Cullulu' and 'Mahana' (Nature guides' associations)</p>
<p><b>Reference URLs</b></p>	
<p>Miyake Village: <a href="http://www.miyakemura.com/">http://www.miyakemura.com/</a> Miyake Nature Center Akakokko Station: <a href="http://www.wbsj.org/sanctuary/miyake/">http://www.wbsj.org/sanctuary/miyake/</a></p>	

## Outline of Miyakejima Island

Miyakejima Island is a volcanic island in the Pacific Ocean about 180km south-southwest of Tokyo. Due to multiple volcanic eruptions, it has numerous unique geographical formations and 250 or more species of birds have been found to be present there, including subspecies that are endemic to the island such as Owston's Tit and the Japanese White-eye. Rare species of evergreen broad-leaved trees are present on the island, and it is also popular as a good diving spot thanks to the abundance of sea fish brought by the Kuroshio Current that flows around it.

## Promotion of Nature Tourism and Nature Guides

The off-limits ban following the large-scale eruption in 2000 was lifted and the island's nature is gradually starting to recover. Miyake Nature Center



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Akakokko Station (hereinafter referred to as 'Akakokko Station') and the Miyakejima Tourism Association are promoting extensive tourism that not only focuses on wild birds, but also on more general nature packages including the volcano and marine wildlife.

In 2005 residents began to return to the island after its complete evacuation, and since then Akakokko Station has played a central role in training nature guides. The trainees became leading members in setting up the two groups, 'Cullulu' and 'Mahana'. 'Cullulu' organizes study sessions and works together with Akakokko Station to conduct workshops, research and school events. 'Mahana'

provides paid guides to accommodate the needs of visitors, to show them birds, the volcano and marine wildlife.

## Model Eco-tours Focusing on the Japanese Murrelet

Onoharajima Island, located 9km south west of Miyakejima Island, is an important breeding site for the threatened Japanese Murrelet. Since 2006, the Mi-



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yakejima islanders have attempted to provide model eco-tours to show the Japanese Murrelet to as many people as possible while conserving its birds. To reduce the stress on birds, they have proposed a set of rules such as keeping 100m or more away from the birds' breeding site and never leaving behind any garbage that might attract the birds' predators. One tour takes about 2~3 hours and it is prohibited to take photos with the flash on.

With the cooperation of the Miyake Nature Center Association, Akakokko Station carries out counts of the Japanese Murrelet on the sea around Mt. Sanbonmatsudake to monitor populations of the bird. Akakokko Station, with the support from a local junior high school, also invites students to join the at-sea observation of the bird.



©Miyake Nature Center Akakokko Station

The people interviewed during the survey on Miyakejima Island in December, 2014 were:

- Ryo MIYASHITA; Miyake Village Office
- Seiji ASANUMA; Miyake Village Office
- Hiroo KITAGAWA; Fish master (captain of 'Hokuyomaru')
- Hiroyuki NODA; Mahana (Nature guides' associations)
- Yasuto ISOYA; Miyakejima Island Tourist Agency
- Akinori NAITO; Miyake Nature Center Akakokko Station /Wild Bird Society of Japan
- Kanae OKUBO; Miyake Nature Center Akakokko Station /Wild Bird Society of Japan

# Areas Promoting Seabird Conservation

<p>Case Study 4</p> <p><b>Kadogawa Town</b></p> <p>in</p> <p>Higashiusukigun, Miyazaki</p>	<p><b>IBA status</b></p> <p>Identified (Birojima Island, JP_M023)</p>
	<p><b>Government and/or organizations promoting the conservation of seabirds</b></p> <p>Kadogawa Town Education Board Kadogawa Fisheries Association</p>
	<p><b>Reference URLs</b></p> <p>Kadogawa Town: <a href="http://www.town.kadogawa.lg.jp/">http://www.town.kadogawa.lg.jp/</a></p>

## Outline of Kadogawa Town

Kadogawa Town that is bordered by the cities of Nobeoka and Hyuga in the Miyazaki Prefecture, is a port town with a population of about 18,500, facing the Pacific Ocean. As the Kuroshio Current flows into the Hyuganada Sea, the area has always thrived on the fishing industry and the processing of fish products since ancient times, with the fishing of sardines, tuna, bonito, and conger pike, for example. The mild climate also makes it possible to cultivate various vegetables. Sweet tomatoes and Japanese yams, in particular, are well-known local products. Birojima Island, 3km east of the town, is an uninhabited island surrounded by columnar joints where rare wild birds such as the Japanese Murrelet, Styan's Grasshopper Warbler and the Japanese Wood Pigeon breed.

## Conservation Activities in Kadogawa Town

The Japanese Murrelet is an endangered seabird in the auk family that breeds only on remote islets and rock reefs in the coastal waters of Japan and in the south of Korea. About 1,000 individuals also breed on the Izu Islands, but Birojima Island is the largest breeding site in the world, with as many as 3,000 individuals gathering during the breeding season from March through May.

Kadogawa Town designated the Japanese Murrelet as its symbol in 2005 and has worked on its protection together with residents. The town is enthusiastically dedicated to education and public awareness activities for the residents by offering bird-watching tours from the sea during the birds' breeding months, March and April, by inviting professionals to hold lectures and by teaching about the Japanese Murrelet in schools as part of the hometown studies.

A lot of tourists visit Birojima Island for fishing by ferry and they tend to leave garbage, which attracts Large-

billed Crows that are predators of the Japanese Murrelet. Crows have often been observed preying on parent birds and eggs. The town is aiming to get people's attention to protect the Japanese Murrelet through their actions by putting up sign boards and handing out leaflets.

'Kadoppy' and 'Gawappy', the mascot characters of Kadogawa Town, were created to portray the Japanese Murrelet and play an important role in reviving the town.



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One of their future tasks is to strictly prohibit any visitors from leaving the slightest bit of waste. Another task will be for the government to establish an official system for monitoring and surveying the birds at their breeding site, which is currently only done by researchers.

## Fishermen's Activities

The fishermen of Kadogawa Town are working towards the protection of the Japanese Murrelet. Kadogawa Fisheries Association not only submits an annual shipboard visual record of the birds to the prefectural government, but also cooperates in scientific research undertaken by researchers. At 'Umisuzume' (meaning Murrelet in Japanese), the association's marine product shop and restaurant, they display photos of the Japanese Murrelet as part of their public awareness activity. They also support events held by the town, such as the observation of seabirds and cruises for elementary school pupils, and the 'take garbage home' campaign.



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The people interviewed during the survey in Kadogawa-cho in March, 2014 were:

Osamu YASUDA; Mayor of Kadogawa Town  
Reiko KUBOTA; Kadogawa Town Office  
Takaaki MATSUO; Kadogawa Town Office  
Masamitsu YASUDA; Kadogawa Town Office  
Ikuo UEMURA; Kadogawa Town Office  
Tomoaki KURODA; Kadogawa Fisheries Association  
Yutaka NAKAMURA; Researcher of the Japanese Murrelet



# Seabirds of Japan

Seabirds are well adapted to the marine environment as they spend the most of their lives out at sea. From the 9,700 bird species found in the world, 364 of these species are seabirds, of which 108 species can be found in Japan (excluding sea-ducks). They vary in size and appearance, ranging from well-known birds such as penguins, albatrosses and gulls to less familiar ones such as storm petrels and auks. They are well adapted to life at sea with characteristics such as webbed feet and

## Red-tailed Tropicbird

*Phaethon rubricauda*



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Order : **Pelecaniformes**

Family : **Phaethontidae**

Total length : **96cm**

Population size : **32,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **EN**

Relevant pages : **p. 43, 45**

Both its body and wings are white, the eyeline and the shafts of its primaries are black. The male and female are the same color. A red bill and long red tail-feathers are distinctive. Juveniles lack the red tail-feather shaft and have a black bill. Distribution is mainly in the tropical ~ sub-tropical zones of the Indian Ocean and the Pacific Ocean. The species is known to breed on the Kazan-retto Islands and on South Torishima Island and sometimes on the Bonin Islands (Ogasawara Islands) and Yaeyama Islands.

It forms a colony on an island in high seas and lays one egg directly in the crevices between rocks or on the ground under shrubs. Fledging follows a 42 ~ 46 day incubation period and a 70 ~ 90 day brooding period. The breeding period differs according to the area with nesting records for both summer and winter, which is also the case in Japan. South Iwo Island, a major breeding site, is protected as a nature conservation area for its pristine forest, but as nests are made by the sea, they are sometimes heavily hit by tidal waves. The species primarily feeds on flying fish and neon flying squid.

### References

BirdLife International (2016) Species factsheet: *Phaethon rubricauda* (online).

<http://www.birdlife.org>, accessed Mar. 1, 2016.

Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).

Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).

their ability to excrete excesses of salt when consuming seawater. Other characteristics that are distinctive to seabirds include: longer life-spans, a low number of eggs laid and breeding in colonies when compared to the Passerines for example. Many of them occupy top levels in the ecosystem and some of them migrate great distances and are distributed across the world's oceans. Furthermore they can be regarded as bioindicators for the state of the marine environment.

## Short-tailed Albatross

*Phoebastria albatrus*



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Order : **Procellariiformes**

Family : **Diomedidae**

Total length : **91.5cm**

Population size : **4,500**

IUCN Red List Category : **VU**

Japanese Red List Category : **VU**

Relevant pages : **p. 41, 42, 68**

The body is white all over with a yellowish head at the back and a pink-coloured bill. The juvenile's entire body is a blackish brown except for its legs and bill. Main breeding sites are Torishima Island and the Senkaku Islands. It migrates to the Aleutian Islands, the Gulf of Alaska and the West Coast of the USA outside of the breeding period. This species was common in the western part of the North Pacific Ocean and once thought to be extinct due to overhunting for its feathers and the destruction of its nesting sites.

This monogamous species starts to reproduce from about seven years old. It lays a single egg every year from October to November. The incubation period lasts for about 65 days with chicks relying on their parents for food for about four months after they hatched. It is a pelagic bird, frequenting the open Pacific Ocean except during the breeding period.

The main breeding site, Torishima Island, is a volcanic island with major threats such as the destruction of the colony from eruptions or the inflow of soil. Under these circumstances, a project was set up to transfer individuals from the existing breeding site to Hatsunozaki – a more suitable site for breeding, using decoys. In 2014, 22 years after the project was initiated, 98 chicks were confirmed at Hatsunozaki. In 2008, a 5-year species transfer project of a colony to Mukojima Island of the Bonin Islands (Ogasawara Islands) was initiated, and 69 chicks were hand-reared and fledged so far. In 2016, a pair consisting of an individual that fledged on Mukojima Island and a wild bird succeeded in breeding and the first chick was born on the island.

### References

- BirdLife International (2016) Species factsheet: *Phoebastria albatrus* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Hasegawa, H. (2015) On the Island of the Okinotayuu (Short-tailed Albatross): Diary about Survey of the Short-tailed Albatross on an Uninhabited Island. Kaiseisha, Tokyo (in Japanese).
- Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).
- Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).
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- Yamashina Institute for Ornithology (2016) Breeding Success of Hand-reared Individuals on the Mukojima Island by Creation of a New Breeding Site for the Short-tailed Albatross (online; in Japanese) <http://www.yamashina.or.jp/hp/yomimono/albatross/03decoi.html>, accessed Mar. 1, 2016.

## Streaked Shearwater

*Calonectris leucomelas*



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Order : **Procellariiformes**

Family : **Procellariidae**

Total length : **48cm**

Population size : **3 million**

IUCN Red List Category : **NT**

Japanese Red List Category : **Not listed**

Relevant pages : **p. 29, 30, 33, 34, 36, 37, 39, 40, 48, 50, 51, 55, 56, 58, 62-64, 67, 68**

The upperparts of this bird are a blackish brown, whereas the underparts are white. It breeds on islands around Japan, Korea and China. Mikurajima Island provides important breeding habitat for some 2 million Streaked Shearwaters in spite of its small island size (ca. 16km<sup>2</sup>), making it one of the largest breeding sites in the world.

This species is a monogamous species and lays a single egg from the end of June to July. The incubation period is about 45 ~ 58 days and they fledge the nest about 82 days after hatching. After the breeding period, this species migrates to the northern sea area of Papua New Guinea, the Arafura Sea and the South China Sea. Major threats to breeding sites are predation by feral cats, weasels, brown rats and the destruction by humans. Feral cats, in particular, are considered to be the cause of decline in breeding population on Mikurajima Island. It used to breed on Miyakejima Island, but due to introduced weasels, it no longer breeds there.

### References

- BirdLife International (2016) Species factsheet: *Calonectris leucomelas* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Oka, N. (2004). The distribution of streaked shearwater colonies, with special attention to population size, area of sea where located and surface water temperature. *Journal of the Yamashina Institute for Ornithology* 35: 164-188 (in Japanese).
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- Yamamoto, T., Takahashi, A., Katsumata, N., Sato, K. & Trathan, P., N. (2010) At-sea distribution and behavior of streaked shearwaters (*Calonectris leucomelas*) during the non-breeding period. *Auk* 127: 871-881.

## Bryan's Shearwater

*Puffinus bryani*



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Order : **Procellariiformes**

Family : **Procellariidae**

Total length : **27 ~ 30cm**

Population size : **unclear**

IUCN Red List Category : **CR**

Japanese Red List Category : **CR**

Relevant pages : **p. 44**

This species was discovered in the Midway Atoll in 1963 and identified as a new species. Six similar individuals were collected on the Bonin Islands (Ogasawara Islands) over 20 years after the first finding and were confirmed to be the same species (Bryan's Shearwater) as the one discovered in the Midway Atoll by using DNA analysis in 2012. On the global scale this species is rare and there is a possibility of extinction.

In 2015, nesting was confirmed on Higashijima Island which is a part of the Bonin Islands (Ogasawara Islands). However many facts remain unknown such as its ecology and distribution. On Higashijima Island, it nests and broods in burrows or crevices among colonies of *Miscanthus boninensis*.

Threats to the breeding site are predominantly from a change in the vegetation as a result of thriving introduced plant species, *Leucaena leucocephala*, and predation from introduced black rats.

### References

- BirdLife International (2016) Species factsheet: *Puffinus bryani* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Forestry and Forest Products Research Institute (2015) Bryan's Shearwater – Discovery of a Mysterious Seabird and its Future (online). <https://www.ffpri.affrc.go.jp/special/02-puffinus/index.html>, accessed Mar. 1, 2016
- Kawakami, K., Eda, M., Horikoshi, K., Suzuki, H., Chiba, H. & Hiraoka, T. (2012). Bryan's shearwaters have survived on the Bonin Islands, Northwestern Pacific. *The Condor* 114: 507-512.
- Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).

## Band-rumped Storm-petrel

*Hydrobates castro*



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Order : **Procellariiformes**  
 Family : **Hydrobatidae**  
 Total length : **19cm**  
 Population size : **150,000**  
 IUCN Red List Category : **LC**  
 Japanese Red List Category : **CR**  
 Relevant pages : **p. 29, 30**

The entire body is a blackish brown, whereas its rump, upper tail-coverts and sides are white. This is a small pelagic seabird with a range in warm areas of the Pacific and Atlantic Ocean. Breeding sites in Japan are limited to Hideshima Islet and Sanganjima Islet along the sea shore of the Iwate Prefecture.

It returns to the breeding site in May and lays a single egg in rock crevices or a nest-hole created by digging in June. The male and the female bird take it in turns to incubate the egg which hatches in July with the chick fledging around October.

The population has been decreasing due to predation from rats as well as competition with the Streaked Shearwater for the same nesting site. In the middle of the 1960s there were some 25,000 pairs breeding on the Hideshima Islet, which dramatically decreased to 800 pairs in 1994. The number of nests confirmed in 1994 was 2,206 compared to only 63 in 2010.

### References

- BirdLife International (2016) Species factsheet: *Hydrobates castro* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).
- Sato, F. (2014) Conservation of the band-rumped storm petrel. *Yamashina Institute for Ornithology NEWS* 255 (in Japanese).

## Swinhoe's Storm-petrel

*Hydrobates monorhis*



©Kazuhisa Oue

Order : **Procellariiformes**  
 Family : **Hydrobatidae**  
 Total length : **19cm**  
 Population size : **260,000**  
 IUCN Red List Category : **NT**  
 Japanese Red List Category : **VU**  
 Relevant pages : **p. 51**

The entire body is a dusky blackish brown. This species only breeds on off-shore islands of Japan, Russia, Korea and China, and inhabits the Indian Ocean and the Red Sea during the non-breeding season. The biggest breeding site in Japan is Kutsujima Islands. Furthermore, it also breeds on some islands in the Iwate Prefecture, the Fukuoka Prefecture and the Izu Island chain. The estimated population of breeding pairs in Japan is less than 5,000.

In the breeding period, adult birds come to the islands at night to take turns in incubation and feed the chick(s) and leave the islands before dawn.

Predation by rats is a serious cause of population decline. On Koyajima Islands in Kyushu, this species and the Japanese Murrelet suffer devastating damage from brown rats.

### References

- BirdLife International (2016) Species factsheet: *Hydrobates monorhis* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).
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# Seabirds of Japan

## Leach's Storm-petrel

*Hydrobates leucorhous*



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Order : **Procellariiformes**

Family : **Hydrobatidae**

Total length : **20.5cm**

Population size : **6,700,000 ~ 8,300,000**

IUCN Red List Category : **VU**

Japanese Red List Category : **Not listed**

Relevant pages : **p. 21, 23**

The body is a blackish brown, whereas the upper tail-coverts and sides of the under tail-coverts are white. Faint brown bands appear on the upper wings. This species breeds on islands in the arctic and sub-arctic zones in the North Pacific Ocean and the North Atlantic Ocean, and ranges over sea areas from the arctic zone to the tropical zone in the wintering period. Breeding sites in Japan include Dai-kokujima Island and the Habomaimoshiri Islet in Hokkaido.

It is a monogamous species that breeds from May to October. It excavates its own burrow 20 – 60cm deep on high ground or slopes and lays an egg in it. The parents take it in turn to incubate the egg for 37 ~ 49 days with the chick fledging 56 ~ 68 days after hatching. It feeds on krill, Gammaridea, small fish and young squids which it catches on the wing by dipping, skimming or snatching from the surface.

To avoid predation from the Slaty-backed Gull and the Large-billed Crow, it returns to the breeding site at night.

### References

BirdLife International (2016) Species factsheet: *Hydrobates leucorhous* (online). <http://www.birdlife.org>, accessed 2016-3-1.

Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).

## Tristram's Storm-petrel

*Hydrobates tristrami*



©Koji Ishida

Order : **Procellariiformes**

Family : **Hydrobatidae**

Total length : **24.5cm**

Population size : **20,000**

IUCN Red List Category : **NT**

Japanese Red List Category : **NT**

Relevant pages : **p. 37, 40-45**

The entire body is a blackish brown. The upper part is slightly ashy and the rump is light bister. There are pale bands of bister on the upper wings. This species only breeds in the Izu Island chain and the Bonin Islands (Ogasawara Islands) in Japan and the North-west Hawaiian Islands.

It nests by excavating its own burrow or making use of rock crevices. It lays a single egg from the end of December to February with the chick fledging by June.

The predation by introduced species is a serious threat. Torishima Island used to be a significant breeding site until its colony was wiped out by black rats and cats in 1960s. Similarly, the colony was decimated by rats on the Midway Islands. On Torishima Island, breeding was confirmed in 2004 for the first time in 40 years, but the colony has still not recovered.

### References

BirdLife International (2016) Species factsheet: *Hydrobates tristrami* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.

Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).

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Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).

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## Matsudaira's Storm-petrel

*Hydrobates Matsudairae*



©Koji Ishida

Order : **Procellariiformes**

Family : **Hydrobatidae**

Total length : **24.5cm**

Population size : **At least 20,000**

IUCN Red List Category : **VU**

Japanese Red List Category : **NT**

Relevant pages : **p. 45**

The entire body is a blackish brown. The shaft of its primaries is white. This species ranges from the Philippine Sea to areas close to the equator, the Indian Sea and the east coast of Africa. In Japan it is a winter visitor to the sea around the Bonin Islands. South Iwojima Island is the only breeding site in the world.

Two breeding sites were known (North Iwojima Island and South Iwojima Island), but the breeding population on the former disappeared due to the invasion of black rats. On South Iwojima Island, it digs a burrow in the ground of forested area and breeds in a colony.

It uses its bill to catch crustaceans, small fish and squids close to the surface of the sea. Because the breeding site is extremely limited, the threat to the population from the incidence of contractible diseases is of great concern.

### References

BirdLife International (2016) Species factsheet: *Hydrobates matsudairae* (online).

<http://www.birdlife.org>, accessed Mar. 1, 2016.

Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).

Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).

## Brown Booby

*Sula leucogaster*



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Order : **Pelecaniformes**

Family : **Sulidae**

Total length : **70cm**

Population size : **200,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **Not listed**

Relevant pages : **p. 62, 64, 67, 68**

The body is a blackish brown, whereas the abdomen and part of the underside of the wings are white. The colour of the exposed area of skin around the eyes is blue in the males and pale yellow in the females. This species has a wide range across tropical and sub-tropical oceans of the Indian Sea, the Pacific Ocean, the Atlantic Ocean and the Caribbean Sea. In Japan, it breeds on the Izu Island chain, Bonin Islands (Ogasawara Islands), Nansei Islands, Yaeyama Islands, Senkaku Islands, Tokara Islands, Iwo Islands and Kusagaki Islets.

It nests as a colony on the cliffs and coastal ledges of islands and makes a nest out of dried grasses and branches. It normally lays two eggs but usually only one chick survives to fledge the nest.

The predation of eggs and chicks by rats and disturbance from anglers at the breeding site are major threats. In recent years, a breeding colony on Hahajima Island of the Bonin Islands was nearly wiped out as a result of predation from feral cats.

### References

BirdLife International (2016) Species factsheet: *Sula leucogaster* (online).

<http://www.birdlife.org>, accessed Mar. 1, 2016.

Horikoshi, K., Suzuki, H., Sasaki, T. & Chiba, H. (2009) Impacts on Seabirds by introduced mammals. *Global Environment* 14:103-105 (in Japanese).

Institute of Boninology (2016) Seabirds and Measures for Introduced Species (online)

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Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).

# Seabirds of Japan

## Black-tailed Gull

*Larus crassirostris*



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Order : **Charadriiformes**

Family : **Laridae**

Total length : **45cm**

Population size : **1,100,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **Not listed**

Relevant pages : **p. 16-22, 26-34**

This species has a white head, chest and abdomen; grey back and upper wings with a black band on its tail. The bill and legs are yellow and it has a black and red pattern on the tip of the bill. This species has a wide range across the Okhotsk Sea, the Sea of Japan, the northern Yellow Sea and along the Pacific coast of the Japanese archipelago. It nests on islands along the coast of Hokkaido, Honshu and Kyushu in Japan from April to August and lays 1 ~ 4 eggs. The incubation period is about 25 days with chicks fledging about 45 days after hatching.

It feeds on small fish and squids from the sea and sometimes scavenges in numbers in areas where fish have been dumped from fishing boats. It can also be seen opportunistically scavenging at fisheries and meat processing factories, private households and rice paddies. Threats are presented by the predation of eggs from the Large-billed Crow and brown rats at the breeding site.

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- BirdLife International (2016) Species factsheet: *Larus crassirostris* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).
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## Slaty-backed Gull

*Larus schistisagus*



©Koji Ishida

Order : **Charadriiformes**

Family : **Laridae**

Total length : **61.5cm**

Population size : **25,000 ~ 1,000,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **Not listed**

Relevant pages : **p. 16-23, 26-28, 30**

White head, chest and abdomen; dark grey back and upper wings with pink legs. It has a yellow bill with a red spot on the tip of the lower bill. This species ranges across the Sea of Japan, the Okhotsk Sea and the Asian side of the Bering Sea and breeds in Hokkaido and Northern Honshu in Japan.

This species makes its nest on rocks and grassy fields of coastal areas and islands with dried grass from April to August.

This gull lays 2 ~ 3 eggs and has an incubation period of about 25 days. Chicks fledge the nest about 40 days after hatching and are still fed by their parents for a short time after fledging. It mainly feeds on small fish like sardines. It is an omnivore and an opportunist that scavenges on waste fish and leftover meals at fishing ports.

It sometimes attacks the chicks of other seabirds. Hence, when one of its breeding sites overlaps with that of rare seabird species, it often becomes a target of eradication.

### References

- BirdLife International (2016) Species factsheet: *Larus schistisagus* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Olsen, K., M. & Larsson, H. (2004) Gulls of Europe, Asia and North America. Christopher Helm Publishers Ltd, New Jersey.
- Tomita, N. (2016) Knowing seabirds today – monitoring site 1000 by Ministry of the Environment – decline of populations of the slaty-backed gull in east Hokkaido. *Yamashina Institute for Ornithology NEWS* 264 (in Japanese).

## Greater Crested Tern

*Thalasseus bergii*



©Koji Ishida

Order : **Charadriiformes**

Family : **Laridae**

Total length : **45cm**

Population size : **150,000 ~ 1,100,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **VU**

Relevant pages : **p. 68**

Upper wings and tail are grey, whereas underparts are white. The top to the back of the head is black with a shaggy crest. The bill is yellow and the legs are black. It has a wide range across the Indian Ocean and the western Atlantic Ocean. This species is a summer visitor to Japan to the Bonin Islands (Ogasawara Islands) and Ryukyu Islands. Breeding on the Bonin Islands and the North Islets of the Senkaku Islands has been confirmed.

On Nishinoshima Island, it breeds on sand and gravel beaches created by volcanic activity and on grassland. It usually lays an egg in May, which then hatches in June. The birds start to leave the breeding site from the beginning of August. Its feeding habit is carnivorous, mainly feeding on fish, squid and crustaceans.

Environmental change from volcanic activity and the impact on breeding from typhoon-related tidal waves threaten this species.

### References

- BirdLife International (2016) Species factsheet: *Thalasseus bergii* (online). <http://www.birdlife.org>, accessed Mar. 1, 2016.
- Ministry of the Environment Japan (2014). Red Data Book 2014 - Threatened Wildlife of Japan, Vol. 2: Aves. Gyosei Corporation, Tokyo (in Japanese).
- Takano, S. (2015) A Field Guide to the Birds of Japan. Wild Bird Society of Japan, Tokyo (in Japanese).

## Little Tern

*Sternula albifrons*



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Order : **Charadriiformes**

Family : **Laridae**

Total length : **25cm**

Population size : **190,000 ~ 410,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **VU**

Relevant pages : **p. 49, 61**

The upper part of its body and wings are grey and the underside is white. One of four sub-species, *Sternula albifrons sinensis*, comes to Japan as a summer visitor.

It nests on the bare ground of reclaimed land in bays and on the sand gravel in river beds as a colony. Such habitats are not only becoming rare but also rapidly changing, which is why the Little Tern often changes its breeding site. For this reason, it is difficult to get an accurate picture of its current state, although the domestic population in Japan is estimated at 5,000 to 10,000 pairs.

The breeding period is from May to August. It makes a shallow nest by excavating the sandy gravel where it lays one to three eggs.

Open environments without grasses which the Little Tern prefers are rarely maintained over a longer period of time because these often change to grasslands and/or can be easily developed as residential land. Human disturbances from recreational activities also threaten this species. The Ministry of the Environment drew up a guideline for conserving and monitoring this species in 2014.

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# Seabirds of Japan

## Roseate Tern

*Sterna dougallii*



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Order : **Charadriiformes**

Family : **Laridae**

Total length : **35cm**

Population size : **70,000 ~ 82,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **VU**

Relevant pages : **p. 61, 66-67**

This bird has a white body, black head grey back and a deeply forked tail. This species ranges across the tropical and sub-tropical areas of the western Pacific, the Atlantic Ocean and the Indian Ocean. It comes to the Amami Islands, Okinawa Coastal Islets, Miyako Island and the Yaeyama Islands in Japan in the summer for breeding. Miikejima Island, Fukuoka Prefecture, is the largest breeding site in Japan.

It lays one to two eggs with incubation period from 22 to 26 days, with chicks fledging the nest after 23 to 30 days. It mainly feeds on small fish grouping at the surface of the sea and squid.

This bird will abandon its nest or move to another site with the other birds in the colony, if humans disturb its breeding site. In Okinawa, in particular, disturbance to breeding sites from marine leisure activities such as fishing and kayaking is also a threat.

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## Black-naped Tern

*Sterna sumatrana*



©Kouichi Mine

Order : **Charadriiformes**

Family : **Laridae**

Total length : **31cm**

Population size : **Unclear**

IUCN Red List Category : **LC**

Japanese Red List Category : **VU**

Relevant pages : **p. 66, 67**

This tern is entirely white but its back and upper wings are a bluish-gray. It has a long, forked tail and black legs. The back of its head is black like a brow-band. This species has a wide range across coastal areas of the western Pacific and Asian seas of the tropical zone. It visits the Amami islands, Okinawa, Miyako Island and the Yaeyama islands in Japan in the summer and breeds on an islet or a rocky reef in a protected bay, forming a colony.

Egg-laying starts from the middle of June with one or two, and in rare cases three eggs being laid. The incubation period is 21 to 27 days with chicks leaving the nest after an average 3.8 days and fledging when they are 26.1 days old on average. This species feeds on the flathead silverside and banded blue-sparganx as well as the flying fish and halfbeak. Predation from crows and disturbances to the breeding site from marine leisure activities such as fishing, kayaking and camping on the beach are considered as threats.

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## Japanese Murrelet

*Synthliboramphus wumizusume*



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Order : **Charadriiforms**

Family : **Alcidae**

Total length : **24cm**

Population size : **under 10,000**

IUCN Red List Category : **VU**

Japanese Red List Category : **VU**

Relevant pages : **p. 36-41, 48, 50, 51, 55, 56, 58-60, 62, 63**

The front of its cheeks and crest are black, whereas the back of its head and abdomen are white, the back is grey and the bill a bluish-gray. This species ranges across Japanese coastal waters, the south of Korea and the northwestern part of the Sea of Japan. It will only breed on remote islets and rocky reefs in Japanese coastal waters and in the south of Korea. Major breeding sites are found on the Birojima islets in the Miyazaki Prefecture, followed by the Izu Island chain.

The breeding period is from February to May. It lays one to two eggs in rock crevices or at the base of sedges on remote islets. Parents take it in turns to incubate the eggs for about 30 days. Chicks are encouraged to the sea after hatching for feeding by calls from their parents. Foraging is mainly carried out in rip currents by dipping its head in the water and feeding on small fish, crustaceans and shell fish.

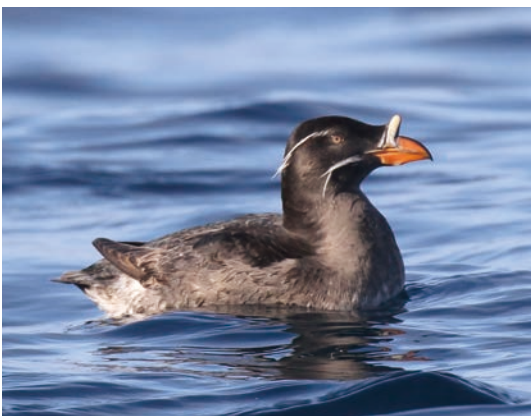
Threats to this species include predation from the presence of crows and rats at the breeding site as well as bycatch from fishing nets.

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## Rhinoceros Auklet

*Cerorhinca monocerata*



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Order : **Charadriiforms**

Family : **Alcidae**

Total length : **37.5cm**

Population size : **1,300,000**

IUCN Red List Category : **LC**

Japanese Red List Category : **not listed**

Relevant pages : **p. 16, 18-23, 26, 27, 30, 31, 33, 34**

Summer plumage displays white ornamental feathers on the back of its eyes and bill and a protrusion at the base of the bill. This species ranges from the subarctic to the temperate zone in the North Pacific Ocean. Teurito Island in Japan is the world's largest breeding site for this species with 300,000 breeding pairs. The Rhinoceros Auklet on Teurito moves north to the Okhotsk Sea out of the breeding period and then returns south to the Sea of Japan.

In the middle of March it returns to the breeding site and excavates a nest-hole in grassland on high ground or slopes. It lays an egg in the middle of April. It mainly forages for Japanese anchovy as well as the Okhotsk atka mackerel and the Pacific sand lance in the sea around the breeding site. Chicks fledge around July.

Predation from crows and feral cats at the breeding site as well as bycatch and the decline of food sources are thought to be having an impact on the population.

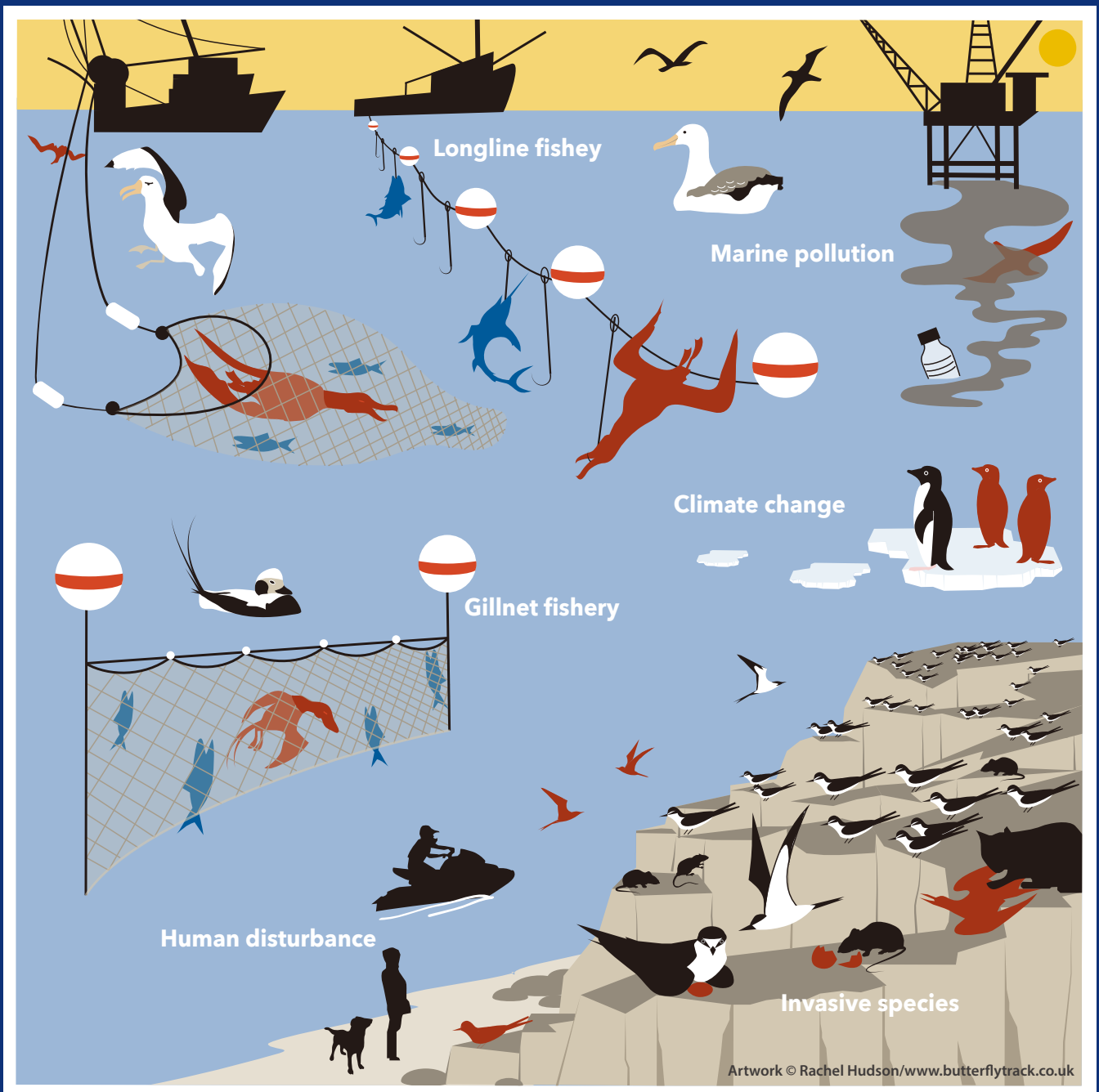
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# Threats to Seabirds

Seabirds are declining faster than any other group of birds, particularly caused by a range of anthropogenic threats. One of the most imminent is bycatch – the incidental catch of seabirds in fisheries. Marine pollution is another factor to exacerbate the threats to seabirds as it has recently got worse without any effective measures being implemented to combat chemicals and plastic debris.

As long-living seabirds lay only one or two eggs every few years, only a small decline in the population could have dramatic, long-lasting consequences and ultimately even wipe out entire species. The sea has no borders, therefore seabird conservation needs to be promoted globally.



## Bycatch from Fisheries

### Longline Fishery

Every year longline fishing fleets kill an estimated 160,000 - 320,000 seabirds as bycatch, including up to 100,000 albatrosses. During longline fishing operations, seabirds, particularly albatrosses and petrels, are attracted to the bait, become hooked, dragged into the water and drowned. Over recent years, a variety of bycatch mitigation measures have been developed in an attempt to prevent bycatch. Among them, tori lines (also called streamer lines or bird scaring lines) which were developed by a Japanese fisherman are the most commonly prescribed seabird bycatch mitigation measures for longline fisheries. Setting fishing equipment at night (night-setting) and adding weights to branchlines to deliver hooks to target fishing depths before seabirds catch the baited hooks (line weighting) are also regarded as simple and effective mitigation measures to reduce the deaths of seabirds killed in longline fisheries.

### Gillnet Fishery

Gillnetting is a fishing method targeting various fish, including flat fish, cods, sardines and salmon, to entangle them in the nets. The nets are fixed with anchors and suspended vertically, making the 'curtains of death' set in the water. Nets without anchors, called 'drift nets', are also used in some cases particularly on the high seas. While very limited information on seabird mortality in gillnets is available, according to the recently published global review of seabird gillnet bycatch, at least 400,000 birds may be being killed every year. Unlike longline fisheries, there are no best practice measures to mitigate seabird bycatch in gillnets, requiring urgent research to develop technical modifications to gillnets that are both effective in reducing bycatch and maintaining fishermen's catches.

## Marine Pollution

### Plastic Debris

The spread of plastic debris in the sea has increased at an unprecedented rate since the 1950s and is now considered to be the biggest factor contributing to marine pollution. In 1962, plastic was found in the gizzards of Leach's Storm Petrels in Canada, and later in the '80s seabirds foraging in plastic were reported every year.

Albatrosses mainly forage squid drifting under the sea surface and fish eggs attached to seaweeds. Consequently, seabirds sometimes gulp down waste floating

on the water's surface. Even when parent birds mistakenly feed their young with such waste, chicks become malnourished, and some may not even grow sufficiently. The coast of the Midway Atoll, Hawaii, is the breeding site of the Laysan Albatross, and toothbrushes, hair brushes, lighters and PET bottle caps have all been found compactly squeezed in their gullets.

As plastic debris has a high affinity to oil, it continues to drift over the sea for a long time with absorbed chemicals such as PCB (polychlorinated biphenyl). Marine plastic debris is increasing year after year and has become a major threat not only to seabirds but also to most marine wildlife. While it might seem like obvious ethical behavior not to dump waste into the sea, the governments and industries of every nation need to take profound action and introduce the necessary policies to ensure that this action is adhered to by citizens and industry as soon as possible.

### Toxic Chemicals

Toxic heavy and precious metals including mercury and cadmium have been found in accumulated and concentrated levels in shearwaters and other fish-eating seabirds. A small amount of chemicals is ingested through fish and other food sources, and accumulates in target organs such as the liver, the kidney, the stomach and the feathers. It is prognosticated that the more that waste increases, the greater the threat of chemicals to seabirds will become. In order to protect seabirds from being exposed to toxic chemicals, it is imperative to take preventive actions by reducing the amount of waste dumped into the sea.

### Oil Spills

Seabirds are vulnerable to oil contamination and can therefore be used as an indicator of the impact of oil spills to the ecosystem. When oil is released into the ocean from tanker spills and other accidents, it has dramatic impacts on seabirds, impairing the bird's water-repellent and heat-retention functions, causing ulcers to the skin. Oil that enters the body also damages the digestion and the immune system. When oil sticks to an egg, the chick can choke and sometimes becomes unable to hatch, causing low birth rates and premature death rates. Once oil has been spilt, it takes a long time for the situation to recover.

### Human Disturbance

Breeding seabirds are sensitive to human disturbance.

# Threats to Seabirds

Various human activities near colonies such as jet-skiing, diving, leisure-boat trips and canoeing, and fishing can all cause disturbance to breeding birds. As the result of such human disturbances, eggs may fall from the nest or nests may be trodden down and ultimately abandoned. Even today, seabirds' eggs are still traded mostly through illegal hunting, and seabird meat is eaten, causing a serious problem to some of the endangered species. The garbage left behind at breeding sites often attracts predators such as crows and gulls.

## Invasive Species

Most seabirds breed on relatively remote islands, and when rats and cats do manage to invade an island however, those invasive species can have tremendous impacts on the seabirds breeding there.

In some colonies, rats and feral cats have been known to eat eggs and chicks with catastrophic consequences. Feral goats are known to overgraze the vegetation of nesting sites, damaging the surface soil of the vegetation where seabirds prefer to nest.

Usually the eradication of invasive species costs too much money and labor to be carried out on uninhabited islands. The solution is therefore to prevent invasive species from entering such unique sites in the first place.

## Climate Change

Climate change has had profound impacts on human lives as well as on ecosystems. Arguably, the most serious climate change event is global warming. It is estimated that the global temperature will have risen by almost 5 degrees by the end of this century if rates remain unchanged, which is liable to influence the structure of the earth. Melting of ice caps at the North and South Poles, glacier and alpine ice fields and permafrost will not only lead to a rise in sea level temperatures, but also block the intersection of seawater, causing changes to ocean flows and resulting in an acidification of seawater. Consequently, there will be a quantitative change in algae production (including phytoplankton), resulting in a significant change to the entire ecological pyramid – firstly affecting fish through krill and other food sources, and finally having an impact on marine mammals and seabirds at the top of the food pyramid.

Seabirds rely on limited types of food sources, the number and distribution of which will alter greatly as a result of global warming. When seabirds are not able to adapt to such changes, they cannot survive. The influ-

ence on many seabirds of a change in the number and distribution of their food sources is already apparent. In the South Pole, a decrease in krill abundance caused by an increase in the sea surface temperature has led to a population decline of the Emperor Penguin by 50%. Furthermore, the Southern Fulmar gives up breeding when the temperature is too high – to name but a few examples.

Climate change caused by global warming has now become a problem too serious for the world to ignore. To stop the trend, it is down to each and every one of us to reflect on our lifestyle choices.

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## ◆ Appendix: Foraging Distance to Select Marine IBAs

All of the Marine IBAs that were introduced in this book were selected according to the marine areas used by seabirds for foraging and rafting around their breeding colonies (see Page 9).

We collected distance data on the foraging and rafting of seabirds during the breeding season from the ‘BirdLife International Seabird Foraging Range Database (BISFRD)’ (<http://www.seabirdtracking.org/>), and other literature as well as taking into account the opinions of experts. We used the data from related species when data was insufficient for a particular species. However, in the case of Bryan’s Shearwater whose biology is not well known and the Red-tailed Tropicbird as well as storm petrels that are thought to use vast marine areas for foraging, it was difficult to select appropriate foraging ranges and rafting distances. We therefore used one

kilometer from breeding sites as a provisional value.

As for other species not mentioned above, we created a habitat model of the Japanese Murrelet from the at-sea distribution data during the breeding season and estimated foraging distance from the spatial distribution around the breeding colony. We also used the results of distribution surveys of the Roseate Tern in the Sea of Ariake in addition to values in the database. The Short-tailed Albatross is known to fly long distances for foraging and thus we estimated the foraging distance around its breeding colony (Torishima Island) during the breeding season (late brooding period) using tracking data from the ‘BISFRD’.

We have compiled the foraging and rafting distances of all seabird species used for selecting the Marine IBAs in Table 1.

**Table 1. Foraging and rafting distances of all seabird species used for selecting the Marine IBAs**

Common names	Scientific names	Radii (km)	Source
Red-tailed Tropicbird	<i>Phaethon rubricauda</i>	1	BISFRD (BirdLife International Seabird Foraging Range Database)
Short-tailed Albatross	<i>Phoebastria albatrus</i>	20	Tracking data (R. Suryan)
Streaked Shearwater	<i>Calonectris leucomelas</i>	7.5	Surrogate rafting radii of Cory's Shearwater (SEO/BirdLife 2009)
Bryan's Shearwater	<i>Puffinus bryani</i>	1	Provisional choice
Band-rumped Storm-petrel	<i>Hydrobates castro</i>	1	Provisional choice
Swinhoe's Storm-petrel	<i>Hydrobates monorhis</i>	1	Provisional choice
Leach's Storm-petrel	<i>Hydrobates leucorhous</i>	1	Provisional choice
Tristram's Storm-petrel	<i>Hydrobates tristrami</i>	1	Provisional choice
Matsudaira's Storm-petrel	<i>Hydrobates matsudairae</i>	1	Provisional choice
Brown Booby	<i>Sula leucogaster</i>	70	BISFRD
Black-tailed Gull	<i>Larus crassirostris</i>	120	Ken Yoda pers. comm. 2012
Slaty-backed Gull	<i>Larus schistisagus</i>	30	BISFRD surrogate Lesser Black-backed Gull
Greater Crested Tern	<i>Thalasseus bergii</i>	25	BISFRD
Little Tern	<i>Sternula albifrons</i>	3	BISFRD
Roseate Tern	<i>Sterna dougallii</i>	3, 10	BISFRD
Black-naped Tern	<i>Sterna sumatrana</i>	3	BISFRD
Japanese Murrelet	<i>Synthliboramphus wumizusume</i>	10, 20	At-sea survey and habitat model
Rhinoceros Auklet	<i>Cerorhinca monocerata</i>	87	Kato, Watanuki and Naito (2003)

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