

Situation of World Natural Heritage in Japan

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Abstract

Japan's World Natural Heritage sites currently inscribed in the World Heritage Convention include Shirakami-Sanchi, Yakushima, Shiretoko, and the Ogasawara Islands. In addition, Amami-Okinawa are currently being nominated as a candidate site. Major issues affecting each region are a decrease in tourists, the impact of deer on the local ecosystem (Shirakami-Sanchi and Yakushima), coexistence with wildlife (Shiretoko), measures against invasive species, and plans for airport construction (Ogasawara Islands). The nomination for Amami-Okinawa, submitted in 2017, was temporarily withdrawn and resubmitted in 2019 after incorporating revisions such as integrating nomination areas that had been divided. Future issues include restrictions on the use of heritage sites, the expansion of ecotourism, and the securing of financial resources for management.

Introduction

Those world's cultural heritage sites (cultural assets and ruins) and natural heritage sites (natural areas) that should be passed on to future generations, and were inscribed on the World Heritage List after undergoing certain procedures based on the "Convention Concerning the Protection of the World Cultural and Natural Heritage" (hereinafter "World Heritage Convention"), are thus referred to as World Cultural Heritage and World Natural Heritage sites, respectively.

Of these sites, various regions of the world have been inscribed as World Natural Heritage sites as of today, starting with the inscription of sites including the Galápagos Islands of Ecuador and Yellowstone National Park of the United States in 1978. In Japan, four locations, Shirakami-Sanchi, Yakushima, Shiretoko, and the Ogasawara Islands, have since been inscribed as such, and as of February 2019, "Amami-Oshima Island, Tokunoshima Island, the Northern Part of Okinawa Island, and Iriomote Island" (hereinafter "Amami-Okinawa") have been collectively nominated as a candidate of the

fifth World Natural Heritage site, garnering public attention.

This article will first offer an overview of the World Heritage Convention, and its criteria and procedures for inscription in Chapter I. Chapter II will discuss the current status and issues related to four domestic World Natural Heritage sites and one candidate site. Finally, Chapter III will introduce several issues surrounding Japan's World Natural Heritage sites.

I Overview of World Natural Heritage

1 World Heritage Convention

The World Heritage Convention aims to establish a system of international cooperation and assistance to protect and preserve the cultural and natural heritage, as the world heritage of mankind as a whole, from threats such as damage and destruction. The Convention was adopted by the General Assembly of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1972 and entered into force in 1975. As of January 2020, there were 193 states parties.¹ Japan ratified the Convention in 1992.

Each state party recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage situated on its territory, belongs to that state (Article 4). In addition, such heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to cooperate (Article 6).

2 World Heritage List inscription

(1) Procedures Leading to Inscription

The World Heritage Convention establishes a mechanism for examining cultural or natural heritage properties nominated by states parties and the inscription of those that meet certain criteria on the "World Heritage List" (Article 11). Whether to inscribe a certain site is decided by the World Heritage Committee, an intergovernmental panel, consisting of 21 elected states parties.

The procedures leading to inscription are as follows: (1) nomination by States Parties, (2) evaluation by the Advisory Bodies, and (3) review by the World Heritage Committee (Table 1). In step (2), the International Council on Monuments and Sites (ICOMOS) evaluate cultural heritage sites, and the International Union for Conservation of Nature (IUCN) evaluate natural heritage sites, as Advisory Bodies to the World Heritage Committee. They summarize their results in an evaluation report to the Committee

* The online information cited in this article was last accessed on November 5, 2019.

¹ "[World Heritage Convention](#)," January 8, 2020, Ministry of Foreign Affairs Website.

recommending whether to inscribe the site. This evaluation system was introduced to ensure that the evaluation is conducted professionally and objectively rather than be influenced by political bargaining.²

Table 1 Procedures Leading to World Heritage List Inscription

(1) Nomination by States Parties	States Parties submit nominations of properties to the Secretariat to the World Heritage Committee. The nomination describes the boundaries and overview of the property, the reason why the property is considered to be of Outstanding Universal Value, conservation status and potential threats, protection measures and management plan, monitoring, etc. The Secretariat will confirm that the nomination is complete, register it, and forward it to the Advisory Body.
(2) Evaluation by Advisory Bodies	The Advisory Body investigate the nominated properties and evaluate their Outstanding Universal Value. The Advisory Body for cultural heritage is the International Council on Monuments and Sites (ICOMOS), and the Advisory Body for natural heritage is the International Union for Conservation of Nature (IUCN). Advisory Body compile the results of their evaluation of nominated properties and submit its evaluation report, recommending whether inscription is possible, to the World Heritage Committee.
(3) Review by the World Heritage Committee	The World Heritage Committee reviews nominated properties based on the Advisory Body's evaluation report and decides whether to inscribe them. The decisions are classified into four categories: - Inscription: The Committee decides to inscribe the property on the World Heritage List. - Referral of nomination: The Committee requests additional information from the State Party and a resubmission of the nomination. - Deferral of nomination: The Committee decides to defer a nomination for more in-depth assessment or study, or a substantial revision and resubmission of the nomination by the State Party. - Decision not to inscribe: The Committee decides not to inscribe the property on the World Heritage List.

(Source) Compiled by author based on: UNESCO World Heritage Centre, "[Operational Guidelines for the Implementation of the World Heritage Convention](#)," 12 July 2017, pp.32-42; 吉田正人『世界自然遺産と生物多様性保全』地人書館, 2012, pp.48-53 (YOSHIDA Masahito, *World Natural Heritage and Conservation of Biodiversity*, Chijin Shokan, 2012, pp.48-53).

(2) Criteria for Natural Heritage Property Inscription

According to the World Heritage Convention, natural heritage is natural features, geological/physiographical formations, habitat of threatened animals/plants, or natural sites, with Outstanding Universal Value (OUV) (Table 2).

² 吉田正人『世界自然遺産と生物多様性保全』地人書館, 2012, p.25 (YOSHIDA Masahito, *World Natural Heritage and Conservation of Biodiversity*, Chijin Shokan, 2012, p.25).

Table 2 Definition of Natural Heritage Property

- Natural features consisting of physical and biological formations or groups of such formations, which are of Outstanding Universal Value from the aesthetic or scientific point of view
 - Geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of Outstanding Universal Value from the point of view of science or conservation
 - Natural sites or precisely delineated natural areas of Outstanding Universal Value from the point of view of science, conservation or natural beauty
- (Source) Article 2 of the World Heritage Convention.

In order for the inscription of a natural heritage site nominated by a State Party to be decided, it must meet the following three criteria: (1) satisfy at least one of the four criteria for OUV (Table 3), (2) have integrity, and (3) have an appropriate protection and management system.³

The evaluation of the fulfillment of criterion (2) is compiled from the three viewpoints listed in Table 4. The protection and management system described in criterion (3) will be described later.

Table 3 Criteria for OUV of Natural Heritage

Natural Beauty	Contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance
Geology/Geomorphology	Be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features
Ecosystem	Be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals
Biodiversity	Contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation

(Source) Compiled by the author based on: UNESCO World Heritage Centre, "Operational Guidelines for the Implementation of the World Heritage Convention," 12 July 2017, pp.25-26.

Table 4 Criteria for Assessment of the Integrity of Natural Heritage

- Includes all elements necessary to express its Outstanding Universal Value
- Is of adequate size to ensure the complete representation of the features and processes which convey the site's significance
- Suffers from adverse effects of development and/or neglect

(Source) Compiled by the author based on: UNESCO World Heritage Centre, "Operational Guidelines for the Implementation of the World Heritage Convention," 12 July 2017, pp.27-28.

³ UNESCO World Heritage Center, "Operational Guidelines for the Implementation of the World Heritage Convention," 12 July 2017, pp.25-32.

3 Protection and Restoration of World Natural Heritage Sites

All sites inscribed on the World Heritage List must have adequate and long-term protection and management by legislative, regulatory, institutional and/or traditional measures from their home state party to ensure their safeguarding. This is one of three criteria for inscription as mentioned above. Such policy at the national, regional and/or municipal level is positioned to ensure protection from the negative impact of socio-economic factors.

If the World Natural Heritage site nevertheless deteriorates, the World Heritage Committee can do either of the following: (1) maintain its inscription if it can be restored, provided that the State Party takes the necessary measures to restore the site; (2) inscribe the site on the list of World Heritage Sites in Danger (hereinafter “World Heritage in Danger”)⁴; or (3) delete the site from the List when there is evidence that the site has deteriorated to the point where it has irretrievably lost those characteristics which determined its inscription in the first place. World Heritage in Danger, as mentioned above (2), refers to sites inscribed on the World Heritage List that are endangered due to large-scale development, conflict, natural disasters, etc., are in need of restoration to be preserved, and require international assistance⁵ for such purpose under the World Heritage Convention. The Committee created a specific budget line to ensure that a significant portion of assistance from the World Heritage Fund⁶ is allocated to sites inscribed on the list of World Heritage in Danger.

4 Status of Natural World Heritage Site Inscriptions

As of 2019, 213 World Natural Heritage sites and 39 Mixed Heritage sites, which meet the requirements of both World Natural Heritage and World Cultural Heritage, have been inscribed on the List (Table 5).⁷ Countries with 10 or more inscriptions include China, Australia, the United States, Russia, and Canada.

There are currently 17 sites designated as World Heritage in Danger, 12 of which are located in Africa. In the Democratic Republic of the Congo, all five World Natural Heritage sites have become World Heritage in Danger due to the adverse effects of poaching and

⁴ As an example of World Heritage in Danger, refer to: 長谷川俊介「危機にある世界遺産—ガラパゴス諸島の事例—」『レファレンス』698号, 2009.3, pp.5-28 (HASEGAWA Shunsuke, “World Heritage in Danger: A Case of the Galápagos Islands,” *Reference*, 698, 2009.3, pp.5-28).

⁵ At the request of the States Parties, the World Heritage Committee will consider international assistance to protect the sites inscribed on the World Heritage List or the list of World Heritage in Danger, and decide whether to provide such assistance (Article 13 of the World Heritage Convention).

⁶ A fund to protect the world’s cultural and natural heritage. Contributions by the states parties to the World Heritage Convention will be used as resources (Article 15 of the World Heritage Convention).

⁷ The total number of World Cultural Heritage sites inscribed is 869, as of 2019.

civil war.

The only instance of the removal of a World Natural Heritage site inscription has involved the Arabian Oryx Sanctuary in Oman, located in the Middle East. As a result of the Omani government's decision to reduce the protected area of the sanctuary by 90% for resource development purposes, the World Heritage Committee decided that this constituted significant destruction of the site's OUV and removed its inscription in 2007.⁸

Table 5 Status of World Natural Heritage and Mixed Heritage Site Inscriptions (2019)

		World Natural Heritage Sites	Mixed Heritage Sites *
Number of Inscriptions		213 (including 17 sites in danger)	39 (no sites in danger)
Countries with Highest Numbers of Inscriptions	China	14	4
	Australia	12	4
	USA	12 (including 1 site in danger)	1
	Russia	11	0
	Canada	10	1
Number of Removed Inscriptions		1	0

* The number of mixed heritage sites is counted separately from the number of World Natural Heritage sites.

(Source) Compiled by the author based on: "[World Heritage List Statistics](#)," UNESCO World Heritage Centre Website.

5 Japan's World Natural Heritage Sites

For the first time in 1993, two locations in Japan, Yakushima and Shirakami-Sanchi, were inscribed as World Natural Heritage sites (details are described later). Ten years later in 2003, the Japanese Ministry of the Environment (MOE) and the Forestry Agency (FA) assessed 19 sites in Japan as World Natural Heritage sites and selected three candidates: Shiretoko, the Ogasawara Islands, and Amami-Okinawa.⁹ Subsequently, although the remaining 16 locations were further evaluated, no additional promising areas were found (Table 6).

⁸ "[Oman's Arabian Oryx Sanctuary: First Site ever to be Deleted from UNESCO's World Heritage List](#)," 28 June 2007, UNESCO World Heritage Centre Website.

⁹ 岩槻邦男「[世界自然遺産候補地に関する検討会について](#)」2003.5.26 (IWATSUKI Kunio, "About the Review Meeting on World Natural Heritage Candidate Sites," 2003.5.26).

Table 6 Evaluation Status of World Natural Heritage Candidate Sites in Japan

Candidate Site	Determination *
Shiretoko [Inscribed in 2005] Ogasawara Islands [Inscribed in 2011] Amami-Okinawa [Nominated in 2019]	Judged to be highly likely to meet the criteria for World Natural Heritage inscription
Iide-Asahi mountain range Okutone, Okutadami and Okunikko	Judged to have a low chance of nomination for inscription, as a serial nomination with Shirakami-Sanchi
Rishiri, Rebun and Sarobetsu-Genya Daisetsuzan Mt. Hayachine Northern Alps Mt. Fuji ** Mt. Sobo, Mt. Katamuki, Mt. Okue, Kyushuchuo-Sanchi and surrounding mountains Mt. Aso Mt. Kirishima Izu Islands Sanriku Coast Sanin Coast	Judged as extremely difficult to prove value as a World Natural Heritage site as there are already similar inscribed sites with the Outstanding Universal Value
Akan, Kussharo and Mashu Hidaka Mountains Southern Alps	Judged as not recognizable as World Natural Heritage sites

* In the future, if new knowledge and information are obtained and the possibility of inscription emerges, the candidate sites will be assessed and evaluated again.

** Mt. Fuji was inscribed as a World Cultural Heritage site in 2013.

(Source) Compiled by the author based on: 「2015 年度世界自然遺産候補地詳細調査結果について」環境省ウェブサイト (“FY2015 Detailed Survey Results of World Natural Heritage Candidate Sites,” MOE Website).

As of 2019, four locations in Japan, Shirakami-Sanchi, Yakushima, Shiretoko, and the Ogasawara Islands, were inscribed as World Natural Heritage sites, and Amami-Okinawa has been nominated as a candidate for the World Natural Heritage. These areas are protected by various systems under Japanese national law (Table 7, Figure 1).

Table 7 Japan's World Natural Heritage Sites and Candidate Site

Site (Location)	Year of Inscription	Area (ha)	Outstanding Universal Value*	Main Protective Systems Based on Domestic Laws **
Shirakami-Sanchi (Aomori and Akita)	1993	16,971	Ecosystem	• Shirakami-Sanchi Forest Ecosystem Reserve • Tsugaru Quasi-National Park • Shirakami-Sanchi Nature Conservation Area • Shirakami-Sanchi National Wildlife Protection Area • Special Natural Monuments: Japanese serow • Natural monuments: golden eagle, black woodpecker, Japanese dormouse
Yakushima (Kagoshima)	1993	10,747	Natural Beauty Ecosystem	• Yakushima Forest Ecosystem Reserve • Yakushima National Park • Yakushima Wilderness Area • Special natural monument: Yakushima virgin cedar forest • Natural monuments: Ryukyu robin, Japanese wood pigeon, etc.
Shiretoko (Hokkaido)	2005	71,100	Ecosystem Biodiversity	• Shiretoko Forest Ecosystem Reserve • Shiretoko National Park • Mt. Onnebetsu Wilderness Area • Shiretoko National Wildlife Protection Area • Special natural monument: Japanese crane • Natural monuments: white-tailed eagle, Steller's sea eagle, etc.
Ogasawara Islands (Tokyo)	2011	7,939	Ecosystem	• Ogasawara Islands Forest Ecosystem Reserve • Ogasawara National Park • Minamioutou Wilderness Area • Ogasawara Islands National Wildlife Protection Area • Special natural monuments: albatross, Bonin honeyeater • Natural monuments: red-headed wood pigeon, endemic land snails on the Ogasawara Islands, etc.
Candidate site: Amami-Okinawa (Kagoshima and Okinawa)	Not yet inscribed	42,698	Biodiversity	• Amami Islands Forest Ecosystem Reserve, Yambaru Forest Ecosystem Reserve, Iriomote Island Forest Ecosystem Reserve • Amami Islands National Park, Yambaru National Park, Iriomote-Ishigaki National Park • Mt. Yuwan National Wildlife Protection Area, Yambaru (Ada) National Wildlife Protection Area, Yambaru (Aha) National Wildlife Protection Area, Iriomote National Wildlife Protection Area • Special natural monuments: Amami rabbit, etc. • Natural monuments: Okinawa Yambaru rail, etc.

* It is a requirement that one of the categories of natural beauty, geology/geomorphology, ecosystem, or biodiversity be applicable to the site.

** The protection system and its legal basis shown in this table are as follows:

Forest ecosystem reserves: Act Concerning Utilization of National Forest Land (Act No.246 of 1951)

National parks/quasi-national parks: National Park Act (Act No.161 of 1957)

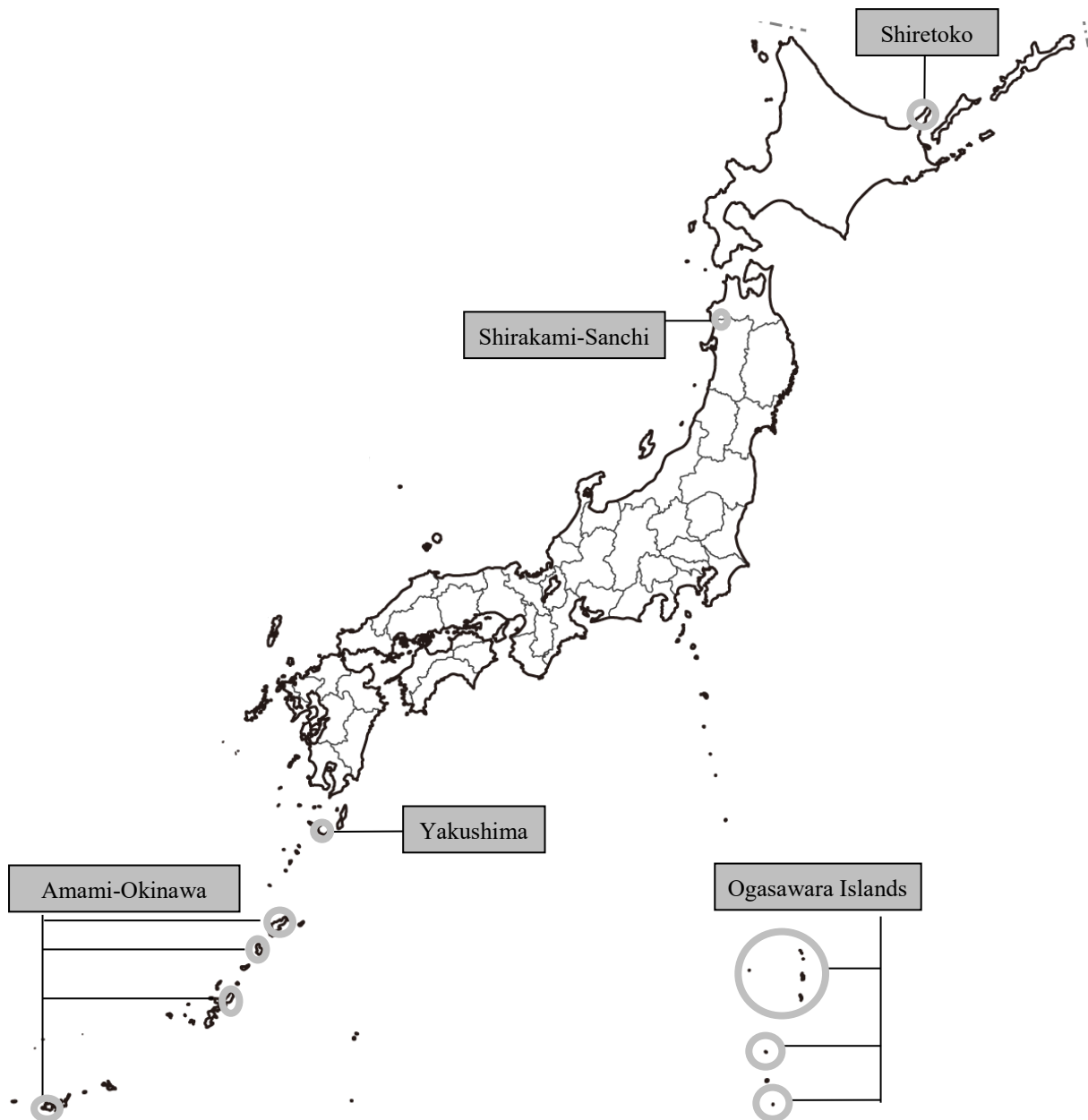
Wilderness areas/nature conservation areas: Nature Conservation Act (Act No.85 of 1972)

National wildlife protection areas: Wildlife Protection, Control, and Hunting Management Act (Act No.88 of 2002)

Special natural monuments/natural monuments: Act on Protection of Cultural Properties (Act No.214 of 1950)

(Source) Compiled by the author based on: "World Heritage List," UNESCO World Heritage Centre Website; Government of Japan, "Nomination of Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island for Inscription on the World Heritage List," January 2019, pp.iii, xxii, MOE Website.

Figure 1 Locations of Japan's World Natural Heritage Sites and Candidate Site



(Source) Created by the author.

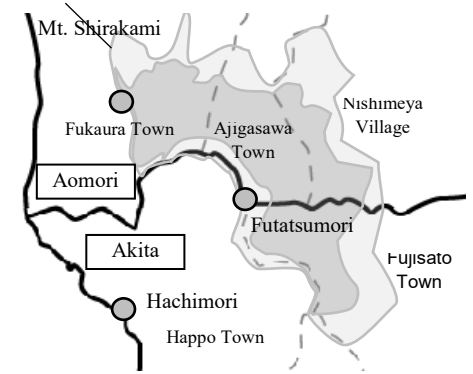
II Status of Japan's World Natural Heritage Sites and Candidate Site

1 Shirakami-Sanchi

(1) Characteristics as a World Natural Heritage Site

Shirakami-Sanchi is a mountainous area that straddles the prefectural border between Aomori and Akita prefectures, and contains the largest virgin beech forest in East Asia (Figure 2). In addition, a rich ecosystem, primarily comprised of beech trees, is maintained with more than 540 species of plants, 35 species of mammals, such as Japanese serow and Japanese black bears, 94 species of birds, and more than 2,200 species of insects. Such areas are said to be rare in the world.¹⁰

Figure 2 Shirakami-Sanchi



(Remarks) Shading indicates heritage area (dark: core area, light: buffer zone).

(Source) Created by the author.

(2) Background to the World Natural Heritage Inscription

Akita and Aomori prefectures planned to build a forest road, the so-called “Seishu Forest Road,” connecting the two prefectures, starting construction in 1982. Nature conservation groups objected as the forest road would divide the virgin beech forest in Shirakami-Sanchi¹¹ though construction proceeded from Hachimori, Happon Town, on the Akita side to the vicinity of Futatsumori on the prefectural border. However, the Aomori side is a national forest designated as a headwater conservation forest, and it was necessary for the Minister of Agriculture, Forestry and Fisheries to cancel the designation in order to proceed with construction.

In 1987, when the Minister decided to cancel the designation, more than 13,000 dissenting opinions were submitted to the Minister. Then governor KITAMURA Masaya of Aomori then took a more cautious stance, saying that this could not be ignored,¹² and the two prefectures had to wait for local consensus.¹³ Later, nature conservation movements gained momentum nationwide, and the FA’s expert review committee indicated the need for forest conservation efforts.¹⁴ In 1990, Shirakami-Sanchi was

¹⁰ MOE et al., “Shirakami-Sanchi World Heritage Area Management Plan,” October 2013, pp.40-44.

¹¹ 「ブナ原生林の分断やめて」『朝日新聞』1982.10.31 (“Stop Dividing the Virgin Beech Forest,” *Asahi Shimbun*, 1982.10.31).

¹² 「87-88 新年へ持ち越す課題 (2) 青秋林道—異議意見書が殺到」『日本経済新聞』(地方経済面東北 B) 1987.12.23 (“87-88 Issues to be Carried over to the New Year (2), Seishu Forest Road: Inundated by Opposition Opinions,” *Nihon Keizai Shimbun*, Tohoku B, 1987.12.23).

¹³ 「青秋林道 予算執行を留保」『読売新聞』1988.4.8 (“Seishu Forest Road Budget Deferred,” *Yomiuri Shimbun*, 1988.4.8).

¹⁴ 林業と自然保護に関する検討委員会「林業と自然保護に関する検討委員会報告」1988.12, pp.16-21 (Forestry and Nature Conservation Review Committee, “Forestry and Nature

designated as a Forest Ecosystem Reserve without being undesignated as a headwater conservation forest,¹⁵ and the forest road plan was cancelled.

In 1990, NUMATA Makoto, then chairman of the Nature Conservation Society of Japan (NACS-J), and a member of the above committee, urged the government to join the World Heritage Convention and named Shirakami-Sanchi as one of the candidate sites.¹⁶ In 1992, Japan ratified the Convention and nominated Shirakami-Sanchi. The site gained World Natural Heritage inscription the following year.

(3) Natural Environment Conservation Policy

The area that has been inscribed as a World Natural Heritage site (hereinafter “heritage area”) of Shirakami-Sanchi is entirely a national forest. Generally, the Shirakami-Sanchi heritage area is supposed to be untouched and left to natural changes, and forestry activities for the purpose of timber production are prohibited. This heritage area is categorized into two types: the core area and the buffer zone that surrounds it. In the core area, access is restricted except for mountain climbing using existing trails. In the buffer zone, it can be a place for the cultural and educational use of forests, forest recreation, and contact with nature, as long as they do not contravene the purpose of the applicable protection systems.¹⁷

(4) Issues and Tasks Facing Shirakami-Sanchi

(i) Pros and Cons of Mountain Entry Restrictions

Restrictions on access to the core area, or mountain entry restrictions, were examined at social gatherings organized in Aomori and Akita prefectures, respectively. As a result, at the Shirakami-Sanchi World Heritage Area Liaison Committee meeting in 1997, which was composed of the MOE, FA, and related local governments, the Aomori side “designated 27 routes and allowed entry to the mountain with permission,” and the Akita side “confirmed no entry to the mountain in principle”.¹⁸ A media report said that underlying the difference in regulations is “...between Aomori, which has used Shirakami-Sanchi constantly, and Akita, which has not”.¹⁹

Conservation Review Committee Report,” 1988.12, pp.16-21).

¹⁵ 「白神山地森林生態系保護地域」林野庁ウェブサイト (“Shirakami-Sanchi Forest Ecosystem Conservation Area,” FA Website).

¹⁶ 沼田眞「世界遺産条約の早期批准に関する意見書」1990.7.12, 日本自然保護協会ウェブサイト (NUMATA Makoto, “Opinion on Early Ratification of the World Heritage Convention,” 1990.7.12, NACS-J Website). Shirakami-Sanchi and the Nansei Islands were presented as candidate sites.

¹⁷ MOE et al., *op.cit.*(10), pp.40, 47, 50.

¹⁸ 「白神山地への入山について」環境省東北地方環境事務所ウェブサイト (“About Entering Shirakami-Sanchi,” MOE Tohoku Regional Environment Office Website). In 2003, Aomori side’s entry restrictions were relaxed from a permit system to a notification system.

¹⁹ 「白神山地（青森・秋田）聖地継承 具体策は手探り」『日本経済新聞』1997.6.19 夕刊 (“Shirakami-Sanchi (Aomori/Akita) Sanctuary Succession: Fumbling for Specific Measures,”

Regarding mountain entry restrictions, even among nature conservationists, there are conflicts between those who insist it is necessary to set certain rules for mountain entry in order to maintain the site in good condition for the future, and those who claim that regulation is unnecessary as this area is hard to entry without demonstrated skill.²⁰ Local residents and hunters, called *Matagi*, who have used Shirakami-Sanchi constantly are aware that it has been protected while being used, and there remains deep-rooted doubt and opposition to mountain entry restrictions.²¹

(ii) Decrease in Visitors

The World Natural Heritage inscription has increased name recognition for the previously unknown Shirakami-Sanchi, and the annual number of visitors entering the buffer zone and the area around the heritage area, where there are no mountain entry restrictions, had increased to about 1.3 million.²² However, in recent years, the annual numbers of both visitors and climbers entering Shirakami-Sanchi have been declining (Figure 3).

Nevertheless, there are still high expectations for the area as tourism resources from the local community, and Aomori and Akita cite regional development and regional revitalization utilizing the World Natural Heritage inscription as issues.²³ Specifically, efforts have begun to consider the needs of visitors,²⁴ such as the development of easily navigable walking paths and the shift from group tourism to small-group experience-based tourism.²⁵ In addition, there are heightened expectations for ecotourism, which deepens

Nihon Keizai Shimbun, 1997.6.19, evening edition).

²⁰ 安達一成「病む世界遺産 白神山地 保護は地元のリードで 入山規制で割れる民間」『毎日新聞』1996.4.4 (ADACHI Kazunari, “Endangered World Heritage Shirakami-Sanchi: Locally Led Conservation, Private Sectors are Broken over Entry Restrictions,” *Mainichi Shimbun*, 1996.4.4).

²¹ 青森県環境生活部自然保護課「世界自然遺産白神山地の概要と青森県側の取組」(第2回新たな世界自然遺産候補地の考え方に係る懇談会 資料2) 2012.9.20, p.11, 環境省ウェブサイト (Aomori Prefecture, “Overview of the Shirakami-Sanchi, a World Natural Heritage Site, and Efforts by Aomori Side,” 2nd Meeting on the Concept of a New World Natural Heritage Candidate Site, Material 2, 2012.9.20, p.11, MOE Website).

²² In 1993, when it was registered as a World Natural Heritage Site, the number of tourists visiting Shirakami-Sanchi (Aomori) was about 200,000. 同上, p.23 (*ibid.*, p.23).

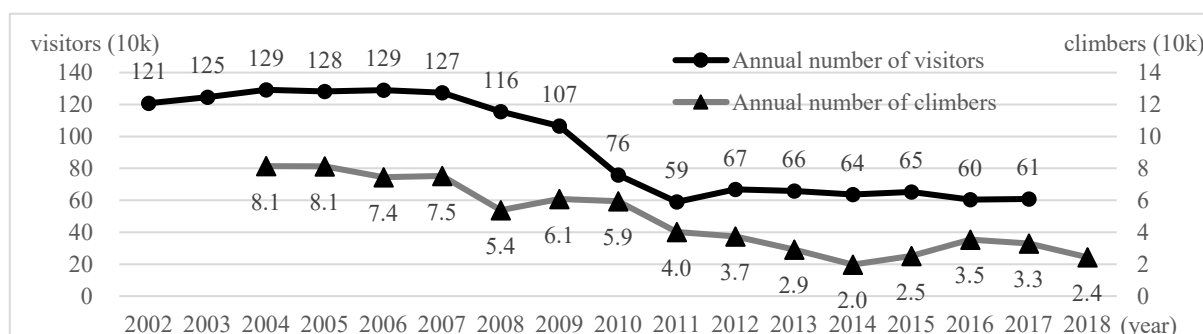
²³ 「新たな世界自然遺産候補地の考え方に係る懇談会 第2回概要」2012.9.20, 環境省ウェブサイト (“Overview of the 2nd Roundtable on the Concept of a New World Natural Heritage Candidate Site,” 2012.9.20, MOE Website).

²⁴ 「白神体感自然歩道オープン!!」2015.7.25, 西目屋村ウェブサイト (“Shirakami Experience Nature Trail is Open!!” 2015.7.25, Nishimeya Village Website); 「白神山地：世界自然遺産 県、新ルート整備へ」『毎日新聞』(青森版) 2014.3.31 (“Shirakami-Sanchi: World Natural Heritage, Prefecture to Develop a New Route,” *Mainichi Shimbun*, Aomori edition, 2014.3.31).

²⁵ 「「保護」「活用」模索続く」『東奥日報』2019.2.15 (“‘Protection’ and ‘Utilization’ Continue to be Sought,” *To-o Nippo*, 2019.2.15).

the understanding of the natural environment of Shirakami-Sanchi.²⁶ However, addressing a shortage of people to serve as guides due to the aging population, the training of guides has also become an issue. Akita introduced the “Akita-Shirakami Guide Certification System” in 2018 to train about 20 “Governor-Certified Guides” annually.²⁷

Figure 3 Trends in the Annual Numbers of Visitors to Shirakami-Sanchi Adjacent Areas (Left Axis) and Shirakami-Sanchi Climbers (Right Axis)



(Note) The annual number of visitors to sightsee in Aomori (Shirakami No Mori Yuzan Road, Jyuniko Park, Beech Forest Walking Path, Anmon Falls, Mt. Shirakami, Awone Shirakami Jyuniko, Forest Product Center “Kyororo”, Jyuniko Visitor Center, Jyuniko Ecomuseum Center, Shirakami-Sanchi Visitor Center, Beech Village Shirakamikan, Aqua Green Village ANMON) and Akita (Shirakami-Sanchi World Heritage Center Fujisatokan). The calculation method for the annual number of visitors to Aomori has changed in 2010. The annual number of climbers depends on the automatic counting equipment installed at 13 points in total in the buffer zone or surrounding areas where there are no entry restrictions. However, there are missing values due to a malfunction of the equipment, and the value is lower than the actual value.

(Source) Compiled by author based on: Annual data from 青森県観光国際戦略局「青森県観光入込客統計」(Aomori Prefecture, “Aomori Prefecture Annual Visitor Statistics,”); Annual data from 秋田県観光文化スポーツ部観光戦略課「秋田県観光統計」(Akita Prefecture, “Akita Prefecture Tourism Statistics,”); 環境省東北地方環境事務所「白神山地世界遺産地域及び周辺地域入山者数集計表 (2004 年度～2018 年度)」2019.2.19 (MOE Tohoku Regional Environment Office, “Table of Number of Visitors and Climbers to Shirakami-Sanchi World Heritage Area and Surrounding Areas (2004-2018),” 2019.2.19).

(iii) Invasion by Japanese *Sika* Deer

There is concern in Shirakami-Sanchi that invasion of Japanese *sika* deer will adversely affect the ecosystem due to damage caused by feeding.²⁸ *Sika* deer were said to have gone extinct in Aomori and Akita from the late 19th to the early 20th century. But in recent years, their habitat in Aomori and Akita has expanded with an increase in neighboring prefectures like Iwate.²⁹ In Shirakami-Sanchi and the surrounding areas, *sika* deer have been seen since around 2010, and the number of sightings has increased rapidly

²⁶ MOE et al., *op.cit.*(10), p.51.

²⁷ 秋田県生活環境部「2019 年度 生活環境部の重点事業の概要について」 pp.25-26 (Akita Prefecture, “Overview of Life and Environment Department Priorities for FY2019,” pp.25-26).

²⁸ MOE et al., *op.cit.*(10), p.50.

²⁹ 環境省東北地方環境事務所「増えるニホンジカ 迫り来る脅威！」2015.1 (MOE Tohoku Regional Environment Office, “Increasing Threats from *Sika* Deer!” 2015.1).

(Table 8). In 2017, *sika* deer were confirmed in the core area for the first time.³⁰

MOE and FA have cooperatively gained an understanding of the habitat status and carried out vegetation monitoring, construction of capture systems, etc. in and around the heritage area, stating that if the habitat of *sika* deer expands in the heritage area, the ecosystem recognized as having OUV may be damaged. FA is conducting a trial capture project using corral traps around the heritage area but has yet to see a result.³¹

It has been noted that the challenges for full-scale capture include the dwindling and aging of hunters, the rugged terrain of the heritage areas, and the possibility of catching wild animals in need of protection such as Japanese serow. In addition, there are some who question the effectiveness of traps due to the low population density. MOE and FA intend to continue to assess the habitat's status.³²

Table 8 Changes in the Number of *Sika* Deer Sightings in Shirakami-Sanchi and Surrounding Areas

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of Sightings	2	0	1	5	11	32	50	79	43

(Note) The target areas are in Aomori (Ajigasawa Town, Nishimeya Village, Fukaura Town) and Akita (Noshiro City, Happo Town, Fujisato Town).

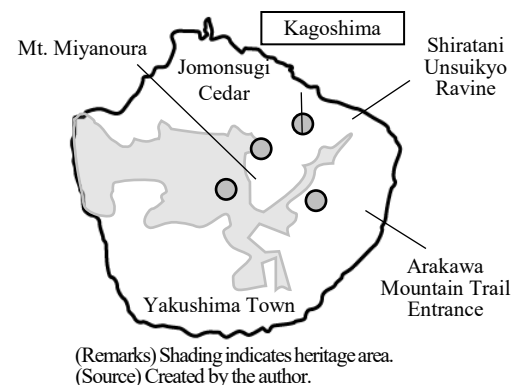
(Source) 「2018年度調査結果」2019.5.10, 環境省東北地方環境事務所ウェブサイト (“FY2018 Survey Results,” 2019.5.10, MOE Tohoku Regional Environment Office Website).

2 Yakushima

(1) Characteristics as a World Natural Heritage Site

Yakushima in Kagoshima prefecture is an almost circular island located about 60km from the southern tip of Kyushu (Figure 4) and has a wet and humid climate. The native *sugi* trees (Japanese cedars), called Yakusugi, which are over 1,000 years old, exist in a unique forest landscape unlike any other in the world. In the forest, “Jomonsugi Cedar,” which is the

Figure 4 Yakushima



³⁰ 白神山地世界遺産地域連絡会議ニホンジカ対策事務局・環境省東北地方環境事務所「白神山地世界遺産地域及びその周辺におけるニホンジカの確認について（青森県鰺ヶ沢町、深浦町及び西目屋村）」2017.9.13 (Shirakami-Sanchi World Heritage Area Liaison Committee Secretariat for *Sika* Deer Countermeasures and MOE Tohoku Regional Environment Office, “Confirmation of *Sika* deer in and around the Shirakami-Sanchi World Heritage Area (Ajigasawa Town, Fukaura Town and Nishimeya Village in Aomori Prefecture),” 2017.9.13).

³¹ 「第18回白神山地世界遺産地域科学委員会 資料」2019.2.5, pp.40-72, 林野庁東北森林管理局「白神 NetWalker」ウェブサイト (“18th Meeting of Shirakami-Sanchi World Heritage Regional Science Committee, Material,” 2019.2.5, pp.40-72, FA Tohoku Forest Management Bureau “Shirakami Net Walker” Website).

³² *ibid.*, pp.58-67; 「白神山地：世界遺産、シカから守る」『毎日新聞』（青森版）2018.1.12 (“Shirakami-Sanchi: Protecting the World Heritage Site from Deer,” *Mainichi Shimbun*, Aomori Edition, 2018.1.12).

largest Yakusugi cedar currently confirmed and said to be over 2,000 years old, is famous.

There is a belt of mountains spanning the central part of the island with an altitude of nearly 2,000m. Subtropical plants can be found on the coast, while cold temperate plants and high moors can be seen in the mountainous areas above 1,000m. Such vertical distribution of vegetation is characteristic of Yakushima, which is said to be a valuable ecosystem rarely found anywhere else in the temperate regions of the Northern Hemisphere.³³

(2) Background to the World Natural Heritage Inscription

On Yakushima, Yakusugi were already being felled before the mid-19th century, and a forest track for transporting timber was established in the early 20th century. Logging activities increased in scale after the chainsaw was introduced in the 1950s. But, after the 1960s, the demand for nature conservation increased, including the active Yakusugi conservation movement. Yakushima was designated as Kirishima-Yaku National Park in 1964 and as a Wilderness Area in 1975.

Afterwards, in Yakushima, the industry replacing forestry was not well developed, and depopulation and aging progressed. In 1990, Kagoshima incorporated the “Yakushima Environmental and Cultural Village Concept” into one of the strategic projects set forth in the prefectural comprehensive basic plan. The concept promotes community development from a new, long-term perspective based on the coexistence of nature and people, while conserving and utilizing Yakushima’s natural environment.³⁴

The prefecture has set up the “Yakushima Environmental and Cultural Council” consisting of experts to examine the basic principles of the concept. At its first meeting in April 1991, then president of the National Parks Association of Japan, OI Michio, proposed that “Yakushima be a World Heritage site.” Afterwards, “Inscription of Yakushima” became the consensus among members of the Council.³⁵ In response, the prefecture, towns,³⁶ and the Council influenced the government. As a result, Yakushima became a candidate site for World Natural Heritage being nominated in 1992, and was inscribed in

³³ 環境省ほか「屋久島世界遺産地域管理計画」2012.10, p.1 (MOE et al., “Yakushima World Heritage Area Management Plan,” 2012.10, p.1); 「屋久島：顕著な普遍的価値」環境省ウェブサイト (“Yakushima: Outstanding Universal Value,” MOE Website).

³⁴ 鹿児島県『鹿児島県総合基本計画』1990, p.48 (Kagoshima Prefecture, “Kagoshima Prefectural Comprehensive Basic Plan,” 1990, p.48); 柳川民夫「「屋久島環境文化村」について」『国立公園』513号, 1993.5, pp.8-9 (YANAGAWA Tamio, “About the Yakushima Environmental and Cultural Village,” *National Parks*, 513, 1993.5, pp.8-9).

³⁵ 大澤雅彦ほか編『世界遺産屋久島—亜熱帯の自然と生態系—』朝倉書店, 2006, p.223 (OSAWA Masahiko et al., eds., *Yakushima World Heritage Site: Subtropical Nature and Ecosystems*, Asakura Shoten, 2006, p.223).

³⁶ At the time, Kamiyaku Town and Yakushima Town in Kagoshima. Currently they have been merged into Yakushima Town.

1993.³⁷

(3) Natural Environment Conservation Policy

In heritage areas located in the center of the island, the conservation policy leaves the area to its natural course, in principle. However, activities such as mountain climbing and sightseeing are possible to the extent that they do not interfere with the ecosystem and natural landscape, and the minimum necessary facilities will be developed for that purpose. In addition, it is expected to promote deeper understanding of the protection of heritage areas through knowledge and experience of Yakushima, while trying to disperse and limit its use by mountaineers and general visitors.³⁸

(4) Issues and Tasks Facing Yakushima

(i) Issues Surrounding Overuse

In 1992, before its World Natural Heritage inscription, the Yakushima Environmental and Cultural Council suggested the “Environmental Ticket System” that place advance procedures and financial burden on prospective climbers and limit the number of climbers, in order to balance environmental conservation and tourism.³⁹ It was expected that the number of climbers would be reduced and level off, and awareness of environmental conservation would be raised. However, taking into account an opposing view that adverse effect of the increase in climbers could be controlled by improving the facilities, this system was not realized.⁴⁰

After the World Natural Heritage inscription, the annual number of climbers increased, and it was expected that overuse would damage the Jomonsugi Cedar and the area along the mountain trail. Therefore, a Jomonsugi Cedar observation deck and facilities such as toilets at the climbing entrance were installed. Therefore, the number of annual visitors to Yakushima doubled from about 200,000 in 1993 to about 400,000 in 2007, and the number of climbers to Jomonsugi Cedar increased from about 10,000 to over 90,000 (Figure 5). Prior to its inscription, the annual number of climbers was not expected to increase to this extent.⁴¹ In 2011, Yakushima Town submitted a draft ordinance to the town council to set an upper limit on access to the Jomonsugi Cedar site.⁴² However, due to concerns about

³⁷ After being inscribed as a World Natural Heritage site, the population of Yakushima has stopped declining and has remained at around 13,000 - 14,000 people.

³⁸ 環境省ほか 前掲注(33), pp.13, 17 (MOE et al., *op.cit.*(33), pp.13, 17).

³⁹ 鹿児島県「環境文化村マスタープラン」1992.11, p.194 (Kagoshima Prefecture, “The Yakushima Environmental and Cultural Village Master Plan,” 1992.11, p.194).

⁴⁰ 則久雅司「世界自然遺産・屋久島の20年」2012.10.23, p.27, 林野庁ウェブサイト (NORIHISA Masashi, “20 Years of World Natural Heritage Site Yakushima,” 2012.10.23, p.27, FA Website).

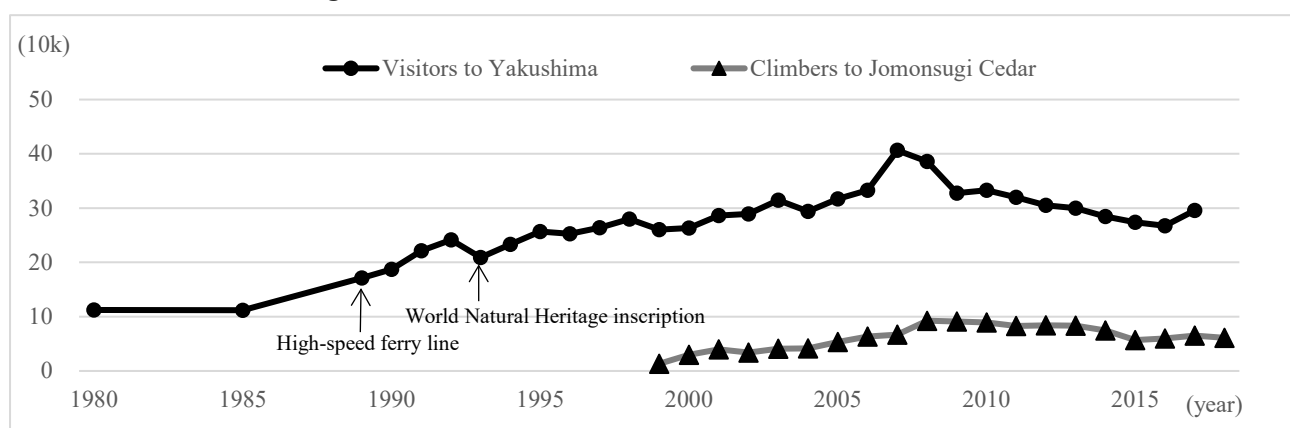
⁴¹ *ibid.*

⁴² 「屋久島町自然観光資源の利用及び保全に関する条例」林野庁ウェブサイト

the impact on tourism, the draft ordinance was unanimously rejected, and access restrictions were not implemented.⁴³

Since 2010, the annual number of visitors to Yakushima and the Jomonsugi Cedar have peaked, tending to decrease slightly. The town has set a goal to increase the number of visitors to 350,000 again.⁴⁴ Under such circumstances, measures to avoid overuse have also been proposed. They are, for example, a system such as making reservations for mountaineering buses and mountain lodges to ease the concentration of climbers to Jomonsugi Cedar,⁴⁵ and exploring new demands such as walking in places other than Jomonsugi Cedar, and sightseeing via the rivers and sea.⁴⁶

Figure 5 Trends in the Estimated Annual Numbers of Visitors to Yakushima and Climbers to Jomonsugi Cedar



(Remarks) The number of climbers to Jomonsugi Cedar is a measurement value of the Okabu trail, the route from the Arakawa mountain trail entrance or Shiratani Unsuikyo Ravine to the Jomonsugi Cedar.

(Source) Created by the author based on: 「屋久島への入込者数等の推移」 (2017年度第3回屋久島山岳利用のあり方検討会 資料2) 2017.11.4, p.1, 環境省ウェブサイト (“Trends in the Annual Number of Visitors to Yakushima,” FY2017 3rd Meeting of Yakushima Mountain Area Utilization Study Group, Material 2, 2017.11.4, p.1, MOE Website); 環境省九州地方環境事務所「主要山岳部における登山者数」 (平成30年度第2回屋久島世界遺産地域科学委員会 資料3-1⑤) 2019.2.27, p.3 (MOE Kyushu Regional Environment Office, “Number of Climbers in Major Mountainous Areas,” FY2018 2nd Meeting of Yakushima World Heritage Regional Science Committee, Material 3-1-5, 2019.2.27, p.3).

(“Yakushima Town Ordinance on the Use and Conservation of Natural Tourism Resources,” FA Website); 「同施行規則」同 (“Enforcement Rules of the Ordinance,” FA Website). The draft rule says entry to the footpaths leading to Jomonsugi Cedar is limited up to 420 people a day, and a fee of 400 yen per person is collected for use.

⁴³ 「屋久島観光制限 全会一致で否決」『日本経済新聞』(沖縄版)2011.6.23 夕刊 (“Yakushima Tourism Restriction Unanimously Rejected,” *Nihon Keizai Shimbun*, Okinawa edition, 2011.6.23, evening edition).

⁴⁴ 屋久島町「屋久島町観光基本計画」2016.3, p.50 (Yakushima Town, “Yakushima Town Tourism Basic Plan,” 2016.3, p.50).

⁴⁵ 「太古の森 守り残すには」『朝日新聞』(鹿児島全県版)2016.9.24 (“How to Protect Ancient Forests,” *Asahi Shimbun*, Kagoshima edition, 2016.9.24).

⁴⁶ 「屋久島町 縄文杉だけじゃない 新たな魅力アピール」『観光経済新聞』2016.3.19 (“Yakushima Town: Offering New Attractions, not just Jomonsugi Cedar,” *Kanko Keizai Shimbun*, 2016.3.19).

(ii) Assurance of Site Maintenance and Management

On Yakushima, since human waste from the toilets of mountain lodges was buried underground, there were growing concerns about pollution of water source due to the increasing number of people entering the mountain. Therefore, it was decided that, from 2008, guides and others manually carry out human waste. Covering their labor costs, Yakushima Town called on the mountain climbers to donate 500 yen per person.⁴⁷ Though, the percentage of those who responded to the donation request was only about 40%, and the income and expenditure balance has been negative.⁴⁸

Starting from March 2017, the town introduced a system requesting each person entering the mountain to pay a cooperation fee of 1,000 yen for day trip and 2,000 yen for overnight stay in the mountain.⁴⁹ The cooperation fee is optional, but the approach of paying it when purchasing a ticket for a mountaineering bus was adopted. Those who paid it have the privilege of receiving a discount when purchasing souvenirs at cooperating stores in the town. This new system was so effective that about 80% of the mountain climbers paid the cooperation money, generating income of about 65 million yen in FY2017. This can afford the required costs.⁵⁰

Meanwhile, as the number of foreign climbers increases, there are cases where the cooperation fee is not paid due to unfamiliarity with the system. Dissemination of the system in foreign languages has become a new challenge.⁵¹

(iii) Damage Caused by the Yakushika

Yakushika, a subspecies of *sika* deer, is endemic to Yakushima. Yakushima has long been said to have “20,000 people, 20,000 monkeys, and 20,000 deer.” When the number

⁴⁷ 屋久島町山岳部保全基金条例（平成 20 年屋久島町条例第 28 号。平成 29 年廃止）（“Yakushima Town Mountains Conservation Fund Ordinance,” 2008 Yakushima Town Ordinance No.28, Abolished in 2017).

⁴⁸ 「屋久島山岳部保全募金とし尿搬出の経緯」（2016 年度第 2 回屋久島山岳部利用のあり方検討会 資料 2-1）2017.2.4, pp.1-4, 環境省ウェブサイト（“History of Yakushima Mountain Area Conservation Fundraising and Sewage Transport,” FY2016 2nd Meeting of Yakushima Mountain Area Utilization Study Group, Material 2-1, 2017.2.4, pp.1-4, MOE Website).

⁴⁹ 世界自然遺産屋久島山岳部環境保全協力金条例（2015 年屋久島町条例第 31 号）（“World Natural Heritage Yakushima Mountainous Area Environmental Conservation Cooperation Fee Ordinance,” 2015 Yakushima Town Ordinance No.31).

⁵⁰ 「山岳部環境保全協力金の収受状況 期間：2017 年 4 月～2018 年 3 月」屋久島山岳部保全利用協議会ウェブサイト（“Status of Mountainous Area Environmental Conservation Cooperation Fee from April 2017 to March 2018,” Yakushima Mountainous Area Conservation and Utilization Council Website). Necessary expenses were 59.7 million yen, including operating expenses such as personnel were 30.3 million yen, expenses related to mountain amenities such as septic management were 25.9 million yen, and other expenses were 3.5 million yen. The balance after deducting expenses from income was reserved.

⁵¹ 「屋久島入山協力金 好ペース 制度の周知 さらに徹底へ」『朝日新聞』（鹿児島全県版）2018.1.18（“Yakushima Cooperation Fee for Entering the Mountain: Good Pace, but System to Be More Disseminated,” *Asahi Shimbun*, Kagoshima Edition, 2018.1.18).

of Yakushika decreased to 2,300– 3,000 around 1980, the capture of the Yakushika was restricted. Since then, the population of this species has increased more than ten-fold, threatening Yakushima’s ecosystem as they devour agricultural products and precious plants.⁵²

In 2012, Kagoshima formulated a Yakushika management plan over a period of 5 years in order to maintain a balance between the Yakushika habitat and the ecosystem conservation.⁵³ Currently, planned capture is proceeding throughout the island according to the plan revised in 2017.⁵⁴ The number of Yakushika was estimated to be 28,392-44,624 in 2014, but has been declining since, and the number in 2017 was estimated to be 11,300-15,930.⁵⁵

Meanwhile, the damage caused by the Yakushika was confirmed to have already spread to the entire heritage area. Future tasks include not only catching the Yakushika, but also vegetation restoration.⁵⁶

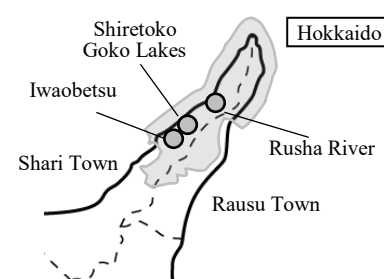
3 Shiretoko

(1) Characteristics as a World Natural Heritage Site

Shiretoko is a peninsula at the northeastern tip of Hokkaido (Figure 6). Drift ice in the Sea of Okhotsk accumulates along the western coast providing nutrients. Proliferated phytoplankton supports a rich land-sea ecosystem, including fish, birds, and mammals.

A total of 872 species of land plants, of which 233 are alpine plants, 140 species of seaweed, 36 species of land mammals, 22

Figure 6 Shiretoko



(Remarks) Shading indicates heritage area.
(Source) Created by the author.

⁵² MOE, “World Natural Heritage in Japan,” 2013.3, p.19; 加藤倫之「屋久島世界自然遺産—登録の効果と課題—」2014.10.25, 環境省ウェブサイト (KATO Tomoyuki, “Yakushima World Natural Heritage Site: Effects and Challenges of Inscription,” 2014.10.25, MOE Website).

⁵³ 鹿児島県環境林務部自然保護課「特定鳥獣（ヤクシカ）保護管理計画」2012.3, 林野庁ウェブサイト (Kagoshima Prefecture, “Designated Species (Yakushika) Conservation and Management Plan,” 2012.3, FA Website).

⁵⁴ 「第二種特定鳥獣（ヤクシカ）管理計画」2017.3, p.4, 鹿児島県ウェブサイト (“Type 2 Designated Species (Yakushika) Management Plan,” 2017.3, p.4, Kagoshima Prefecture Website).

⁵⁵ 鹿児島県自然保護課「2017年度ヤクシカの生息状況について」(2018年度第1回屋久島世界遺産地域科学委員会ヤクシカワーキンググループ及び特定鳥獣保護管理検討委員会合同会議 資料 2-③) 2018.7.29, p.7, 林野庁ウェブサイト (Kagoshima Prefecture, “FY2017 Yakushika Habitat,” FY2018 1st Meeting of Yakushima World Heritage Area Science Committee Yakushika Working Group and Designated Species Conservation and Management Committee Joint Meeting, Material 2-3, 2018.7.29, p.7, FA Website).

⁵⁶ 林野庁九州森林管理局・日本森林技術協会「森林生態系の管理目標の設定について」(同上 資料 4-①) 2018.7.29 (FA Kyushu Forest Management Bureau and Japan Forest Technology Association, “Setting Goals for Management of Forest Ecosystems,” FY2018 1st Meeting of Yakushima World Heritage Area Science Committee Yakushika Working Group and Designated Species Conservation and Management Committee Joint Meeting, Material 4-1, 2018.7.29).

species of marine mammals, 275 species of birds, 42 species of freshwater fish, and 261 species of saltwater fish have been confirmed. It is also an important area in terms of biodiversity, acting as a wintering ground for rare species such as Blakiston's fish-owl and Steller's sea eagle.⁵⁷

(2) Background to the World Natural Heritage Inscription

In Shiretoko, attempts were made for agricultural reclamation in the Iwaobetsu district in Shari Town in early 20th century, prior to the World War II (WWII), and after WWII. But they did not take root due to harshness of nature and changes in the social environment, and the last farming settlers left in 1966. Meanwhile, in 1961, the then Natural Parks Council of the Ministry of Health and Welfare issued a report designating the Shiretoko Peninsula as a candidate site for a national park, and the nature of Shiretoko began to be evaluated,⁵⁸ leading to the birth of the Shiretoko National Park in 1964.

Thereafter, there were concerns about overdevelopment of the reclaimed land due to an increase in tourism following the popular song “Shiretoko Ryojo” (1971) and the land boom due to the plan for remodeling the Japanese archipelago (1972).⁵⁹ In 1977, Shari Town launched its “Shiretoko 100 Square Meters Movement” to collect donations from all over the country, purchase the settlement site, and restore it to the forest. In 1986, FA's deforestation plan of Shiretoko National Forest led to opposition movement, raising public opinion about nature conservation.⁶⁰

GORAI Sakae, who was involved in the movement, became the mayor of Shari in 1987 and started working on the World Natural Heritage inscription in 1994 with neighboring Rausu Town.⁶¹ In 2003, it was selected as a candidate site by the Japanese government's “Review Meeting on World Natural Heritage,”⁶² and the government submitted its nomination in 2004. The following year, the inscription of Shiretoko as a World Natural Heritage site was decided.

⁵⁷ MOE et al., “Management Plan for the Shiretoko World Natural Heritage Site,” December 2009, pp.2-5.

⁵⁸ 「国立公園体系の整備答申さる」『国立公園』146/147 号, 1962.1, p.54 (“Report on the Maintenance of the National Park System,” *National Parks*, 146/147, 1962.1, p.54).

⁵⁹ Concept policy of then Prime Minister TANAKA Kakuei. The pillars are industrial dispersion from urban to rural areas, construction of new local cities, and development of high-speed transportation networks.

⁶⁰ At the same time, the aforementioned Seishu Forest Road problem in Shirakami-Sanchi also occurred. These problems are said to have made the forestry administration focus on nature conservation. 中川元「知床半島の開発と自然保護」『農業と経済』71 巻 6 号, 2005.6, p.36 (NAKAGAWA Hajime, “Development and Nature Conservation of Shiretoko Peninsula,” *Agriculture and Economy*. 71-6, 2005.6, p.36).

⁶¹ 午来昌「世界遺産と私 第 1 回 知床」『ユネスコ』1128 号, 2010.7, p.3 (GORAI Sakae, “World Heritage and Me: Part 1: Shiretoko,” *UNESCO*, 1128, 2010.7, p.3).

⁶² 岩槻 前掲注(9) (IWATSUKI, *op.cit.*(9)).

(3) Natural Environment Conservation Policy

The Shiretoko heritage area consists of a part of the Shiretoko Peninsula and the sea area, up to 3km offshore. It is one of the few areas in Japan where untouched pristine nature remains, and the goal is to pass it on to future generations. The terrestrial area is basically left to nature, and effective measures are taken when specific species or human activity has a significant adverse effect on the ecosystem. In the sea area, management will be conducted so that conservation of the marine ecosystem and the use for fisheries and marine recreation are compatible. Regarding tourism, nature exploration, mountain climbing, fishing, etc., it was indicated that suitable usage rules for the wilderness will be created, and proper use will be promoted through public awareness activities and certain restrictions as necessary.⁶³

(4) Issues and Tasks Facing Shiretoko

(i) Coexistence with Wildlife

Measures to ensure coexistence with wildlife are being implemented at Shiretoko, such as (1) safety measures for brown bears, (2) improvement of erosion-control dams, (3) protection of Steller sea lions, and (4) measures against Yezo *sika* deer. A typical example of (1) is usage restrictions at the Shiretoko Goko Lakes. In order to deal with the dangers of brown bear encounters and damage to native flora due to the increase in tourists, a “regulated utilization system” was introduced at Shiretoko Goko Lakes in 2011 to limit the number of ground-level footpath users, requiring them to attend pre-training sessions and be accompanied by a guide. Meanwhile, as a footpath with no use restrictions, an elevated boardwalk was constructed, avoiding the danger of encountering brown bears and causing damage to plant life. This has been seen as a successful example of ensuring the safety and satisfaction of visitors and protecting the ecosystem, and it is hoped that the system will be deployed in another location in Shiretoko in the future.⁶⁴

Measure (2) is an effort to improve erosion-control dams on the Rusha River so as not to hinder the run-up and spawning of salmonids, with the intention of protecting Shiretoko’s “rich land-sea ecosystem.” Hokkaido, which manages the dams, has made the run-up possible by cutting a part of the dam, which has successfully increased spawning in the upstream area,⁶⁵ but further improvement is required.⁶⁶ Measure (3) is the protection

⁶³ MOE et al., *op.cit.*(57), pp.8-15.

⁶⁴ For example, 馬場隆「わがまちの自然公園 斜里町」『国立公園』772号, 2019.4, p.28 (BABA Takashi, “The Local Shari Town Natural Park,” *National Parks*, 772, 2019.4, p.28).

⁶⁵ 「知床：世界遺産10年 海・山・人は今(4) IUCN、繰り返し勧告」『毎日新聞』(北海道版) 2015.7.6 (“Shiretoko: 10 Years of World Heritage: Sea, Mountains, and People: (4) IUCN, Successive Recommendations,” *Mainichi Shimbun*, Hokkaido edition, 2015.7.6).

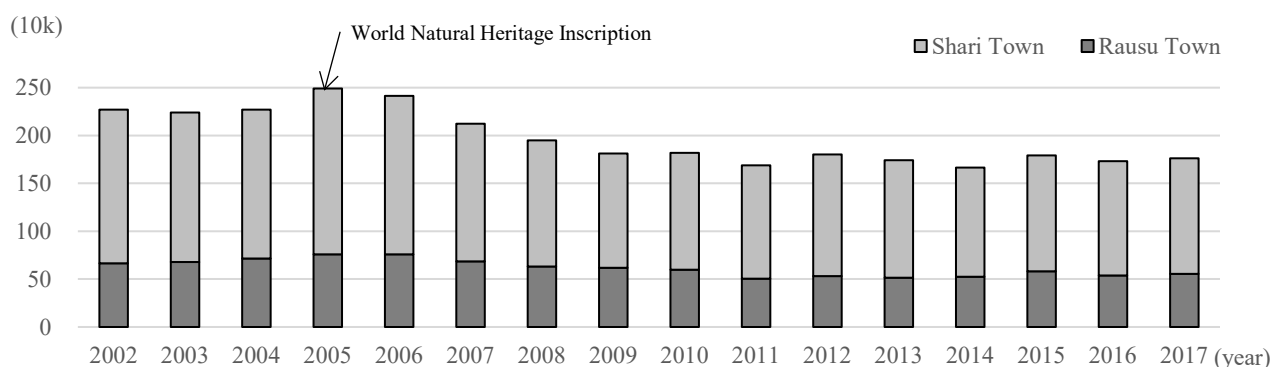
⁶⁶ For example, “41st World Heritage Committee Resolution 30. Shiretoko (Japan),” WHC/17/41.COM/7B.30, 2017.5.19, MOE “Shiretoko Data Center” Website.

of Steller sea lions whose population had decreased. By reducing extermination efforts aimed at preventing fishery damage, the number of Steller sea lions has surged. However, the amount of damage to the fishery is increasing, and appropriate population management is being sought.⁶⁷ Measure (4) is an effort to capture Yezo *sika* deer whose number is rapidly increasing, and reportedly the results, such as vegetation recovery, are gradually beginning to appear.⁶⁸

(ii) Development of Ecotourism

The number of visitors to Shiretoko has declined after peaking at about 2.5 million in 2005 when it was inscribed as a heritage site (Figure 7). Shiretoko tourism is mainly transit-type group tourism, but there has been an increasing trend in recent years for individual and small-group-based experience tourism and foreign visitors. In response, Shiretoko launched its “Shiretoko Ecotourism Strategy” in 2013. The area has been working on the development and adoption of “ecotourism” to promote guided enjoyment of the natural environment, while giving consideration to the conservation of the heritage area.⁶⁹

Figure 7 Trend in the Annual Number of Visitors to Shari Town and Rausu Town



(Source) 環境省北海道地方環境事務所釧路自然環境事務所・環境コンサルタント株式会社「2017年度知床国立公園適正利用等検討業務報告書」2018.3, pp.7-10, 環境省「知床データセンター」ウェブサイト (MOE Hokkaido Regional Environment Office Kushiro Nature Conservation Office and Kankyo Consultants Corporation, “FY2017 Shiretoko National Park Appropriate Use Study Report,” 2018.3, pp.7-10, MOE “Shiretoko Data Center” Website).

⁶⁷ 日本政府「第41回世界遺産委員会決議 41COM7B.30に係る知床の保全状況報告（仮訳）」2018.11, pp.2-6, 同上 (Government of Japan, “Report on Shiretoko Conservation Status regarding 41st World Heritage Committee Resolution 41COM7B.30 (Tentative Translation),” 2018.11, pp.2-6, MOE “Shiretoko Data Center” Website).

⁶⁸ 「これまでの植生モニタリング調査結果」(知床世界自然遺産地域科学委員会エゾシカ・陸上生態系ワーキンググループ 2016年度第3回会議 参考資料 3) 2017.1.12, 同上 (“Results of Vegetation Monitoring Surveys so far,” FY2016 3rd Meeting of Shiretoko World Natural Heritage Area Science Committee Yezo *Sika* and Terrestrial Ecosystem Working Group, Reference Material 3, 2017.1.12, MOE “Shiretoko Data Center” Website).

⁶⁹ Shiretoko Natural World Heritage Site Joint Committee on Appropriate Use and Ecotourism, “Shiretoko Ecotourism Strategy (Provisional Translation),” March 2013, pp.1-3, MOE “Shiretoko Data Center” Website.

As a representative example of ecotourism, the “Shiretoko Goko Lakes ecological tour of midwinter” has been offered in the area since 2014. Although it is not possible to enter the Shiretoko Goko Lakes during the winter due to traffic restrictions, guide vehicles are allowed to pass through for tours as an exemption, and guides escort visitors on walks around the lake area.⁷⁰ From January to March of 2018, 399 tours were held over 40 days, with 2,320 participants, including 1,483 foreigners.⁷¹ While it is expected to attract customers in the winter, when there are few tourists, and improve understanding of nature conservation, there is concern that if the number of visitors significantly increases, it will adversely affect the natural environment. Thus, balancing nature conservation and tourism has become an issue.⁷²

(iii) Appropriate Use and Human Resource Development

Problems with Shiretoko visitor etiquette have often been cited. In particular, dangerous acts such as feeding brown bears and taking pictures by some visitors were confirmed. It is said that an accident could happen at any moment. There are also concerns about the impact on tourism in the event of an accident.⁷³

The above-mentioned “Shiretoko Ecotourism Strategy” specifies the “establishment and instruction of rules to be followed” as a concrete measure against such problems. This means the establishment of “Shiretoko Rules” that tourists, tour planners, guides, etc.

⁷⁰ 「厳冬期の知床五湖エコツアー事業の 2017 年度以降の継続について」(2016 年度第 2 回知床世界自然遺産地域適正利用・エコツーリズム検討会議 資料 1-1-1) 2017.3.9, p.1. 同上 (“Continuing the Shiretoko Goko Lakes Ecological Tour of Midwinter after FY2017,” FY2016 2nd Meeting of Shiretoko Natural World Heritage Site Joint Committee on Appropriate Use and Ecotourism, Material 1-1-1, 2017.3.9, p.1, MOE “Shiretoko Data Center” Website).

⁷¹ 「2018 年度 厳冬期の知床五湖エコツアー事業の実施状況」(2018 年度第 2 回知床世界自然遺産地域適正利用・エコツーリズム検討会議 資料 3-1) 2019.2.28. 同上 (“FY2018 Implementation Status of the Shiretoko Goko Lakes Ecological Tour of Midwinter,” FY2018 2nd Meeting of Shiretoko Natural World Heritage Site Joint Committee on Appropriate Use and Ecotourism, Material 3-1, 2019.2.28, MOE “Shiretoko Data Center” Website).

⁷² 「厳冬期の知床五湖エコツアー事業の 2017 年度以降の継続について」前掲注(70), p.3 (“Continuing the Shiretoko Goko Lakes Ecological Tour of Midwinter after FY2017,” *op.cit.*(70), p.3); 「知床を活かす 世界遺産 10 年 (1) 「守る」「呼ぶ」両立探る」『朝日新聞』(北海道版) 2015.6.9 (“Utilizing Shiretoko, 10 Years of Shiretoko World Heritage Site (1), Search for Reconciliation between “Protecting” and “Attracting” on the Area,” *Asahi Shimbun*, Hokkaido edition, 2015.6.9); 「知床：世界遺産 10 年 海・山・人は今 (5) 保全と利用の間で 観光の方向性探る」『毎日新聞』(北海道版) 2015.7.7 (“Shiretoko, 10 Years of World Heritage, Sea, Mountains, and People (5), Exploring the Path of Tourism between Conservation and Use,” *Mainichi Shimbun*, Hokkaido edition, 2015.7.7).

⁷³ 竹原真理「レンジャー便り 知床—野生動物の宝庫で—」『国立公園』772 号, 2019.4, p.29 (TAKEHARA Mari, “Ranger News Shiretoko: A Treasury of Wild Animals,” *National Parks*, 772, 2019.4, p.29); 「ヒグマによる人身事故の早急な回避を実現していくための会議 (概要版)」2018.10.24, 環境省「知床データセンター」ウェブサイト (“Meeting Concerning Urgent Measures to Promote the Avoidance of Personal Injury Caused by Brown Bears (Summary Version),” 2018.10.24, MOE “Shiretoko Data Center” Website).

should follow. The strategy says that related administrative agencies cooperate to disseminate and enlighten the Rules widely and give guidance.⁷⁴ As one measure, it is suggested to apply the obligation to attend training prior to entry, under the “regulated utilization system” described in (i), to visitors in locations other than the Shiretoko Goko Lakes.⁷⁵

In 2016, Hokkaido enacted the “Hokkaido Government Ordinance on the Shiretoko World Natural Heritage Site” (Hokkaido Ordinance No.10 of 2016). The ordinance states that related administrative agencies, residents, businesses, etc. will work together to preserve and properly use the heritage (Article 3, item (i)). To support this, the ordinance also provide improvement of local understanding by information provision, promotion of ecotourism and formulation of matters to be observed, as well as securement and development of the bearers of heritage conservation and proper use (Articles 15-16). Specifically, regarding the bearers, a shortage of guides has been highlighted as an urgent issue, and developing guides that meet the diversifying needs, such as those of foreign tourists, is critical.⁷⁶

In addition, there is a concept for the establishment of a graduate university – the “Shiretoko Institute of Wildlife Management” – which is responsible for human resource development. In 1986, when public awareness of nature conservation increased, local volunteers in Shari Town proposed a training institution for specialists and researchers who would contribute to coexistence with wildlife through on-site education. Subsequent discussions led to the establishment of the Public Interest Incorporated Foundation for Shiretoko Institute of Wildlife Management in 2013 to request support and publicize the establishment of the university.⁷⁷

⁷⁴ Shiretoko Natural World Heritage Site Joint Committee on Appropriate Use and Ecotourism, *op.cit.*(69), pp.9-10.

⁷⁵ 「知床：世界遺産 10 年 海・山・人は今 (5) 保全と利用の間で 観光の方向性探る」 前掲注(72) (Shiretoko, 10 Years of World Heritage, Sea, Mountains, and People (5), Exploring the Path of Tourism between Conservation and Use,” *op.cit.*(72)).

⁷⁶ 「人材育成 未来につなぐ」『読売新聞』（北海道版）2015.7.15 (“Human Resource Development Connected to the Future,” *Yomiuri Shimbun*, Hokkaido edition, 2015.7.15).

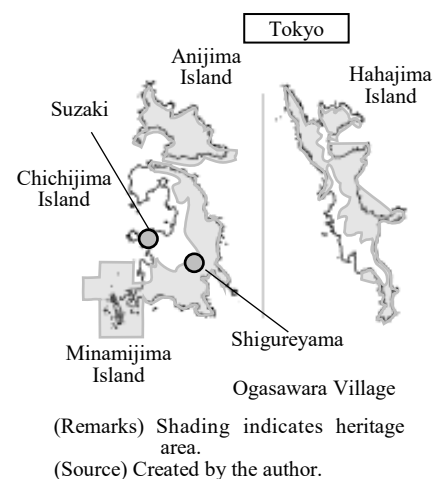
⁷⁷ 中川元「知床自然大学院大学設立の試み」（第 5 回人口縮小社会における野生動物管理のあり方の検討に関する委員会 資料 3 その 1）2018.12.13, 日本学術会議ウェブサイト (NAKAGAWA Hajime, “Attempt to Establish the Shiretoko Institute of Wildlife Management,” 5th Committee on Examination of Wildlife Management in a Declining Population Society, Material 3, Part 1, 2018.12.13, Science Council of Japan Website); 「ニュースプラス：野生動物と共存へ人材育成」『毎日新聞』（北海道版）2016.5.12 (“News Plus: Human Resource Development for Coexistence with Wild Animals,” *Mainichi Shimbun*, Hokkaido edition, 2016.5.12).

4 Ogasawara Islands

(1) Characteristics as a World Natural Heritage Site

The Ogasawara Islands are located about 1,000 km south of Tokyo and consist of about 30 large and small islands, including Chichijima, Hahajima, and Anijima. These islands have never been connected to the continent, and the indigenous flora and fauna have evolved independently over eons in this isolated environment. Thus, they are also called the “Galápagos of the Orient.” There are many endemic animal and plant species in the Ogasawara Islands. The endemic species rate is 36.5% of all vascular plants, 27.5% of all insects, and as high as 90% or more of land snails. Biological evolution is still ongoing, and valuable ecosystems, including examples showing the evolution of organisms that have landed from the sea, remain.⁷⁸

Figure 8 Chichijima Island, Hahajima Island, Anijima Island, Minamijima Island



(2) Background to the World Natural Heritage Inscription

The Ogasawara Islands were recognized internationally as Japanese territory in 1876. Afterwards, along with the progress of settlement, sugarcane and raw sugar production and fisheries developed. However, in 1944 during WWII, the islanders were forcibly evacuated to the mainland. After the end of the war, the Islands were placed under the rule of the United States. They were returned to Japan in 1968, and the return of the former islanders began. The following year, the “Act on Special Measures for the Ogasawara Islands Reconstruction” (Act No.79 of 1969)⁷⁹ was enacted, and the Ogasawara Islands Reconstruction Plan based on this law stipulated the boundaries of village areas, agricultural areas, nature conservation areas, etc. In 1972, the Islands were designated in the aggregate as a national park.

Some wished to nominate the Ogasawara Islands as a World Natural Heritage site until around 1998.⁸⁰ In 2003, the Ogasawara Islands were selected as a candidate site for World Natural Heritage by the government’s “Review Meeting on World Natural Heritage”.⁸¹ Since Shiretoko was included among the heritage sites in 2005, the government began preparing for nomination in 2007 and submitted a nomination to the

⁷⁸ MOE et al., “World Natural Heritage Ogasawara Islands Management Plan (Summarized Version),” March 2018, pp.5-9, Ogasawara Islands Nature Information Center Website.

⁷⁹ The title was revised later. The current title is “Act on Special Measures for the Ogasawara Islands Promotion and Development.”

⁸⁰ 「「屋久島や白神山地に続け」12月の世界遺産委控え 候補“選定”名乗り続々 小笠原、富士山など」『東京新聞』1998.4.6 夕刊 (“Continuing from Yakushima and Shirakami-Sanchi: Candidates Coming Forward One after Another to be ‘Selected’ for December World Heritage Committee: Ogasawara, Mt. Fuji, etc.,” *Tokyo Shimbun*, 1998.4.6, evening edition).

⁸¹ 岩槻 前掲注(9) (IWATSUKI, *op.cit.*(9)).

World Heritage Committee in 2010. The following year, the Ogasawara Islands were inscribed as a World Natural Heritage site.

(3) Natural Environment Conservation Policy

In order to preserve sources of heritage value such as unique ecosystems and geology, it is essential to minimize the effects of non-native species that have invaded due to human settlement. In addition, to avoid the extinction of rare indigenous species, at the center of its natural heritage value, conservation management measures affecting individuals, groups, and the island biomes must be implemented.⁸²

The elimination of invasive species will be implemented with consideration of the impact on other non-native species and native ecosystems, as well as the impact of animal and plant species that move between islands due to wind or ocean currents. In addition, as prevention of the invasion of new alien species, and their spread to untouched areas, are also important issues, efforts will be made to raise awareness to prevent the invasion or spread of non-native species as a result of industry or daily living on the Islands. In particular, on the manned islands of Chichijima and Hahajima, implementation measures will proceed while gaining support from residents about the harmony between life and nature and the significance and necessity of the measures.⁸³

(4) Issues and Tasks Facing the Ogasawara Islands

(i) Measures to address invasive species: feral goats, feral cats, and *Bischofia javanica* Blume

A number of non-native species have invaded the Ogasawara Islands as people settled. For example, goats and cats brought in as livestock or pets in the 19th Century have gone feral and have adversely affected the ecosystem.

Feral goats excessively consume vegetation and expose the soil. Due to the severe destruction of the natural environment, including the outflow of soil to the sea, the hunting of feral goats has been promoted, and the species has largely been eradicated from the Islands with the exception of Chichijima. Native plant growth is recovering, while the population of non-native plants is expanding. Therefore, additional measures are needed.⁸⁴

Feral cats prey on rare wild birds such as the red-headed wood pigeon, which is endemic to the area. Since 2005, efforts to domesticate the captured feral cats have begun

⁸² MOE et al., *op.cit.*(78), p.17.

⁸³ *ibid.*, pp.17-18.

⁸⁴ 小笠原諸島世界自然遺産地域連絡会議事務局「小笠原諸島世界自然遺産に関する基礎資料集 2018 年度版」p.24, 小笠原自然情報センターウェブサイト (Ogasawara Islands World Natural Heritage Area Liaison Council Secretariat, “Ogasawara Islands World Natural Heritage Basic Data Collection FY2018 Edition,” p.24, Ogasawara Islands Nature Information Center Website).

at a breeding facility on the mainland to re-home them as pets. The number of red-headed wood pigeons had decreased to about 40, but has now recovered to several hundred. However, due to problems such as the limited space to accommodate feral cats in mainland breeding facilities, the complete elimination of feral cats has not been achieved.⁸⁵

In addition, the range of exotic trees such as *Bischofia javanica* Blume, *Casuarina stricta* Aiton, and *Leucaena leucocephala* has expanded, causing additional problems including the occupation of the forest of *Morus boninensis*, which is endemic to the Ogasawara Islands. For example, *Bischofia javanica* Blume, brought from Okinawa during the Meiji Era, spread explosively on Hahajima Island and other areas after the 1970s. Although logging to get rid of them began in 2002, the extermination measure has now been switched to injecting herbicide via holes in the trunk after finding cutting was not sufficient to kill the trees, and results are becoming apparent.⁸⁶

(ii) New measures against invasive species: *Rattus rattus*, *Platydemus manokwari*, *Anolis carolinensis*

In recent years, the effects of new, invasive species have become apparent, and countermeasures are being taken. For example, the endangered *Mandarina*, a species of snail endemic to the Ogasawara Islands, is preyed upon by the invasive species *Rattus rattus* (black rat) and *Platydemus manokwari* (a type of planarian). Its population is declining sharply.

The black rat is believed to have invaded during the movement of people in the 1960s under American rule, causing great damage to *Mandarina* on Anijima Island. It has been eradicated in the area since 2010 through the use of rodenticides, but sightings have since been confirmed. *Platydemus manokwari* is a leech-like creature several centimeters in length. It is not clear how this species invaded the Ogasawara Islands, but after being sighted in the northern part of Chichijima Island in the 1990s, its range has since expanded to almost the entirety of the Island. In order to avoid the extinction of *Mandarina*, efforts are currently being made to strengthen the extermination of the black rat, prevent the spread of *Platydemus manokwari*, and artificially breed and transplant *Mandarina*.⁸⁷

⁸⁵ *ibid.*, p.41; 「自然を守る取り組み：ノネコの捕獲」同上 (“Efforts to Protect Nature: Capturing Feral Cats,” Ogasawara Islands Nature Information Center Website). By February 2019, 770 feral cats had been relocated to the mainland.

⁸⁶ 葉山佳代「小笠原諸島—侵略的外来植物のアカギに立ち向かう—」『グリーン・パワー』454号, 2016.10, pp.6-7 (HAYAMA Kayo, “Ogasawara Islands: Confronting *Bischofia javanica* Blume, an Invasive Non-Native Plant Species,” *Green Power*, 454, 2016.10, pp.6-7); 「世界遺産管理に係る主な取組状況」(2019 年度第 1 回小笠原諸島世界自然遺産地域連絡会議 資料 1) 2019.7.1, pp.8-9, 同上 (“Main Efforts Related to World Heritage Management,” FY2019 1st Meeting of the Ogasawara Islands World Natural Heritage Area Liaison Council, Material 1, 2019.7.1, pp.8-9, Ogasawara Islands Nature Information Center Website).

⁸⁷ 小笠原諸島世界自然遺産地域連絡会議事務局 前掲注(84), pp.25-29 (Ogasawara Islands World Natural Heritage Area Liaison Council Secretariat, *op.cit.*(84), pp.25-29); 大林隆司「ニ

The *Anolis carolinensis* (green anole) is a bright green-colored lizard measuring about 20cm in length that preys on insects endemic to the Ogasawara Islands, such as *Celastrina ogasawaraensis* (a genus of butterfly), drastically reducing them. It was brought to Chichijima Island in the 1960s under American occupation, spread to Hahajima, and was discovered on Anijima in 2013. Currently, traps are used for capture, and protective fences are used to prevent its spread.⁸⁸

(iii) Airport planning

There is only one ferry route from the mainland to Chichijima Island every 6 days, with each trip requiring 24 hours.⁸⁹ This presents a significant burden to the islanders, who must leave to the mainland for reasons such as medical treatment and childbirth. The islanders have requested the opening of an air route. However, the construction of this proposed airport has not yet been realized.⁹⁰ The World Heritage Committee requires a strict environmental impact assessment and thorough environmental consideration before constructing an airport.⁹¹ The background to the construction plans to date is summarized in Table 9.

In 1989, the Tokyo Metropolitan Government (TMG) decided to build an airport on Anijima Island, but biologists opposed it because of concerns about the impact on snails that live only on Anijima Island. The TMG investigated the effects on animals and plants and decided to move ahead with construction on Anijima Island in 1995. But, then Environmental Agency strongly opposed the initiative, and TMG later abandoned the plan.

In 1998, the TMG decided to build an airport around Shigureyama in the southern part of Chichijima Island. However, it became evident that the only wild strain of *Rhododendron boninense* in the world is located at the planned site and it is difficult to transplant. In addition, the steep terrain requires blasting away a large portion of mountain, including the enormous construction costs. These problems led the TMG to scrap the plan

ユーギニアヤリガタリクウズムシについて—小笠原の固有陸産貝類への脅威—『小笠原研究年報』29号, 2006, p.26 (OBAYASHI Takashi, “*Platydemus manokwari*: A Threat to Ogasawara’s Endemic Terrestrial Shellfish,” *Annual Research Review of Ogasawara*, 29, 2006, p.26).

⁸⁸ 小笠原諸島世界自然遺産地域連絡会議事務局 前掲注(84), pp.32-39 (Ogasawara Islands World Natural Heritage Area Liaison Council Secretariat, *op.cit.*(84), pp.32-39); 「外来トカゲグリーンアノール撃退作戦」『東京新聞』2018.5.9 (“Invasive Green Anole Repellent Strategy,” *Tokyo Shimbun*, 2018.5.9).

⁸⁹ The cheapest fare is about 35,000 yen for a round trip, which is a discount fare for island residents. Due to the small number of services, it may be necessary to pay for lodging on the mainland. Use of Japan Self-Defense Forces’ flying boat for transport to the mainland is permitted only in life-threatening emergencies, such as for seriously injured patients.

⁹⁰ In a survey of residents conducted from 2007 to 2008, 70.7% answered that they needed an air route. 「小笠原村民アンケートの結果」(第3回小笠原航空路協議会 参考資料1) 2009.3.26, p.A-1, 東京都総務局ウェブサイト (“Results of Ogasawara Villagers Questionnaire,” 3rd Meeting of Ogasawara Air Route Council, Reference Material 1, 2009.3.26, p.A-1, TMG Bureau of General Affairs Website).

⁹¹ MOE et al., *op.cit.*(78), p.10.

in 2001. Thereafter, the “Techno Super Liner (TSL)” super high-speed ferry was expected to enter service, but this plan was also ultimately scuttled because the fuel cost burden was so great that the venture was expected to be unprofitable.

Table 9 Background of Airport Plans in Ogasawara Islands

Proposal	Overview	Background
Anijima Island Plan (1989)	Construction of an airport on Anijima Island with a runway length of 1,800m where medium-sized jets can arrive and depart	• In 1989, the TMG decided to build an airport with a runway length of 1,800m on Anijima Island. • Biologists and environmental groups opposed this as it threatens precious animals and plants. • In 1995, the TMG decided to build on Anijima Island again based on the results of the survey on the effects on animals and plants and the reexamination of construction costs. The Environmental Agency strongly opposed. • In 1997, the TMG abandoned the Anijima Island plan.
Chichijima Island-Shigureyama Area Plan (1998)	Construction of an airport in the Shigureyama area of Chichijima Island with a runway length of 1,500m where small jets can arrive and depart	• In 1998, based on the recommendations of the TMG’s “Ogasawara Airport Construction Expert Committee,” the TMG decided on an airport construction site with a runway length of 1,500m around Shigureyama on Chichijima Island. • In 2001, a survey of the TMG confirmed a large number of rare species including the endangered <i>Rhododendron boninense</i> in the planned site. The TMG’s “Ogasawara Natural Environment Conservation Measures Review Committee” expressed opposition. • In the same year, the TMG withdrew the Chichijima Island-Shigureyama area plan.
Super High-Speed Ferry Plan (2001)	Putting the super high-speed ferry “Techno Super Liner (TSL)” into service, reducing travel time to about 17 hours	• In 2001, the national government considered a TSL route between Tokyo and Ogasawara. • In 2003, Ogasawara Kaiun Company made a lease contract with the state-affiliated company that owns TSL. • Crude oil prices later soared. In 2005, Ogasawara Kaiun announced that it would cancel the contract, saying that it would generate a deficit of about 2 billion yen annually. In the same year, the national government and the TMG abandoned the TSL service.
Chichijima Island-Suzaki Area Plan (2006)	Construction of an airport in the Suzaki area of Chichijima Island with a runway length of 1,200m where small propeller planes can arrive and depart	• In 2006, the TMG budgeted for research expenses for airport construction in the Suzaki area of Chichijima Island. • In 2008, the TMG and Ogasawara Village started studying multiple plans, including the Suzaki area plan. • In 2015, some parliamentary members of the Liberal Democratic Party established the “Ogasawara Support Group” and petitioned PM Shinzo Abe to open an air route promptly. • In 2017, the TMG presented an airport construction plan with a runway length of 1,200m to the Suzaki area. • In 2018, the TMG considered a plan to reduce the runway length to 1,000m or shorter.

(Source) Created by the author based on: 「小笠原飛行場案に島民複雑」『朝日新聞』2018.7.4 (“Ogasawara Airport Plan: Island Residents with Mixed Feelings,” *Asahi Shimbun*, 2018.7.4); 「小笠原に空港」再浮上『読売新聞』2016.11.28, 夕刊 (“‘Airport in Ogasawara’ Resurfaced,” *Yomiuri Shimbun*, 2016.11.28, evening edition).

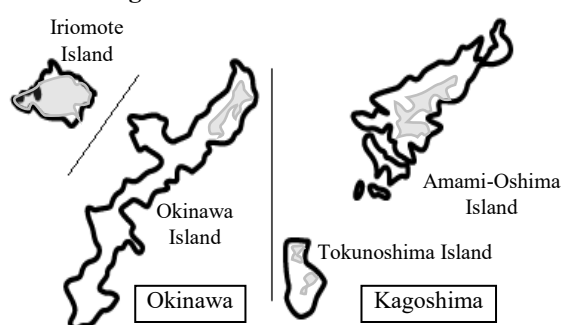
Since 2006, the TMG has been considering the construction of an airport centered on the Suzaki area, former Japanese military airfield site, in the western part of Chichijima Island. It is outside the heritage area, but the strip of land to be used is short. For that reason, it is necessary to supplement through land reclamation, etc. for the runway to be constructed, as well as cut off adjacent humps to create flight paths for takeoffs and landings. It was concerned for potential adverse effects on the environment, due to the risk of invasion by non-native species as a consequence of construction and bringing in equipment. The TMG is considering reducing the impact by shortening the runway.⁹²

5 Amami-Okinawa

(1) Characteristics as a World Natural Heritage Candidate

The Nansei Islands are scattered between the southern tip of Kyushu and Taiwan, and are composed of Northern Ryukyu including Yakushima Island, Tanegashima Island, Middle Ryukyu including Amami Islands, Okinawa Island, and Southern Ryukyu including Iriomote Island. The islands of Middle and Southern Ryukyu were originally part of the continent, but over a long period they separated from the continent and became islands,⁹³ forming a unique biota through various evolutionary processes. These islands are distinguished by their outstanding biodiversity among the archipelago. The nomination sites consist of Amami-Oshima Island, Tokunoshima Island and the Northern Part of Okinawa Island as part of Middle Ryukyu, and Iriomote Island as part of Southern Ryukyu. There are many internationally endangered and endemic species, and it is believed to be the area most representative of Middle and Southern Ryukyu in terms of biodiversity conservation.⁹⁴

Figure 9 Amami-Okinawa



(Remarks) Shading indicates nominated area.

(Source) Created by the author.

(2) Background to World Natural Heritage Nomination

(i) Development of a Protection System

The Ryukyu Kingdom was established on Okinawa Island in 1429, thereafter, its rule

⁹² 「「小笠原に空港」再浮上」『読売新聞』2016.11.28 夕刊 (“‘Airport in Ogasawara’ Resurfaced,” *Yomiuri Shimbun*, 2016.11.28, evening edition); 荒木涼子「自然との共存考えたい」『毎日新聞』2018.8.9 (ARAKI Ryoko, “I Want to Think about Coexistence with Nature,” *Mainichi Shimbun*, 2018.8.9).

⁹³ Also called a “continental island.” Meanwhile, an island like those of the Ogasawara Islands, which has never been connected to the continent, is called an “oceanic island.”

⁹⁴ Government of Japan, “Nomination of Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island, and Iriomote Island for inscription on the World Heritage List,” January 2019, p.134, MOE Kyushu Regional Environment Office Website.

was expanded to Amami-Oshima Island, Tokunoshima Island, Iriomote Island, etc. In the 1600s, the islands came under the control of the Satsuma Domain of Japan, and after the beginning of the Meiji Period in 1868, Amami-Oshima Island and Tokunoshima Island became part of Kagoshima, while Okinawa Island and Iriomote Island became part of Okinawa. After years of rule by the United States following the WWII, Amami-Oshima Island and Tokunoshima Island were returned to Japan in 1953. In 1972, Okinawa was also returned to Japan, but much of the land was still provided to the U.S. military, while some parts were returned.

The Nansei Islands, including Amami-Okinawa, have been attracting attention from early on. Then Chairman NUMATA of NACS-J listed the Nansei Islands, along with Shirakami-Sanchi, as the first Japanese candidate site for World Natural Heritage.⁹⁵ In 2003, the government's "Review Meeting on World Natural Heritage Candidate Sites" selected Amami-Okinawa as a candidate site, along with Shiretoko and the Ogasawara Islands,⁹⁶ but submission of its nomination to the World Heritage Committee took considerable time. At that time, with the exception of Iriomote Island, the protection system based on Japanese law, such as national parks and forest ecosystem reserves had not yet been established, therefore, importantly the site did not meet inscription standards.⁹⁷

Later, Amami-Oshima Island and Tokunoshima Island were designated as a forest ecosystem reserve in 2013 and a national park in 2017, due to the acquisition of privately owned forests by the national and prefectural governments. The Northern Part of Okinawa Island, or Yambaru area, was also designated as a national park in 2016. In 2017, the government finally submitted a nomination for Amami-Okinawa.

(ii) Recommendation of Deferral of Nomination

However, in 2018, IUCN, an advisory body to the World Heritage Committee, evaluated the nomination and recommended deferring the nomination of Amami-Okinawa.⁹⁸ The recommendation suggested the nomination was (1) inappropriate, because

⁹⁵ 沼田 前掲注(16) (NUMATA, *op.cit.*(16)).

⁹⁶ 岩槻 前掲注(9) (IWATSUKI, *op.cit.*(9)).

⁹⁷ 吉田正人『世界遺産を問い直す』山と溪谷社, 2018, pp.137-138 (YOSHIDA Masahito, *Reexamining World Heritage*, Yama-kei Publishers, 2018, pp.137-138). This had been already recognized as an issue in 2003. 「琉球諸島、世界遺産への課題 環境省大臣官房審議官・小野寺浩氏」『読売新聞』(鹿児島版) 2003.6.21 ("Ryukyu Islands, Issues for World Heritage Inscription, ONODERA Hiroshi, MOE Deputy Minister's Secretariat," *Yomiuri Shimbun*, Kagoshima edition, 2003.6.21).

⁹⁸ 環境省「「奄美大島、徳之島、沖縄島北部及び西表島」に関する IUCN 評価結果及び勧告の概要について」(2018 年度第 1 回奄美大島、徳之島、沖縄島北部及び西表島世界自然遺産候補地科学委員会 資料 1-1) 2018.9.12, 環境省九州地方環境事務所ウェブサイト (MOE, "Outline of IUCN Evaluation Results and Recommendations regarding 'Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island and Iriomote Island'," FY2018 1st Meeting of the Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island and Iriomote Island World Natural Heritage Candidate Site Science Committee,

the nomination site was divided into smaller areas, (2) needed strengthening of measures against invasive species, (3) required management measures related to tourism, and (4) required comprehensive monitoring of endangered species, etc.⁹⁹ Of these, (1) points out the range of nominated sites, which appears to be the main reason for the deferral.¹⁰⁰

The government argued that Amami-Okinawa has OUV (see Table 3) corresponding to the two items of “ecosystem” and “biodiversity.” Meanwhile, the recommendation suggested that the nomination sites were divided into small areas (four areas smaller than 10ha, 11 areas smaller than 100ha) and did not meet the requirements for “ecosystem” from the viewpoint of the “integrity” criterion, but rather “biodiversity,” pointing out that the requirements may be met if the range of nominated sites was revised.¹⁰¹ “Integrity” is an evaluation standard applied in the evaluation of World Natural Heritage sites and must be of an appropriate extent to fully express the characteristics of importance of the nominated site (see Table 4).

(iii) Revision and Resubmission of Nomination

MOE judged that inscription would be extremely difficult without amending the original nomination, even if it was examined by the World Heritage Committee. Thus, it decided to withdraw the nomination, amend it, and reapply.¹⁰²

The content of the revised nomination specified the site’s OUV as related to “biodiversity” only, connected each separate area as much as possible, and included a part of the U.S. Military’s Northern Training Area on Okinawa Island which was returned in 2016 (hereinafter “returned U.S. Military training grounds”) (Table 10). As a result, the nominated sites, which had been divided into 24 locations, were consolidated into five.

In February 2019, the government resubmitted the revised nomination. It is expected that the IUCN will re-evaluate, and the World Heritage Committee to be held in 2020 will decide whether or not to include the inscription.

Material 1-1, 2018.9.12, MOE Kyushu Regional Environment Office Website).

⁹⁹ 「IUCN からの勧告等への対応方針について」(2018 年度第 2 回奄美大島、徳之島、沖縄島北部及び西表島世界自然遺産候補地科学委員会 参考 1-1) 2018.12.10, pp.1-6, 同上 (“Policy for Addressing IUCN Recommendations,” FY2018 2nd Meeting of the Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island and Iriomote Island World Natural Heritage Candidate Site Science Committee, Reference Material 1-1, 2018.12.10, pp.1-6, MOE Kyushu Regional Environment Office Website).

¹⁰⁰ MOE recognizes that (1) is the primary reason for the deferral of nomination. MOE, *op.cit.*(98), p.1.

¹⁰¹ 「IUCN からの勧告等への対応方針について」前掲注(99) (“Policy for Addressing IUCN Recommendations,” *op.cit.*(99)).

¹⁰² 環境省「奄美大島、徳之島、沖縄島北部及び西表島の世界遺産一覧表への記載推薦に関する今後の方針について」2018.6.1 (MOE, “Subsequent Policy regarding Nomination of Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island and Iriomote Island for Inscription on the World Heritage List,” 2018.6.1).

Table 10 Main Indications and Treatment for the Range of Nomination Sites

Main Indication	Main Treatment
• For the OUV category of “ecosystem”, there are serious concerns about ecological sustainability and they do not meet the integrity requirements. • For the OUV category of “biodiversity,” it may meet the requirements if the integrity is modified. • As the nominated sites include many locations with a small area, it is necessary to revise the range from the viewpoint of integrity. • Although returned U.S. Military training grounds are in an important position from the viewpoint of biodiversity, they were not included among the nominated sites.	• Revised nomination adopted the OUV category of “biodiversity,” not “ecosystem.” • As much as possible, areas sandwiched between dispersed nomination areas were incorporated into nomination areas, and small areas that were difficult to incorporate were excluded from them. • Returned U.S. Military training grounds were incorporated into Yambaru National Park, and most were newly integrated into nomination sites.

(Source) Created by the author based on: 環境省「「奄美大島、徳之島、沖縄島北部及び西表島」に関する IUCN 評価結果及び勧告の概要について」(2018 年度第 1 回奄美大島、徳之島、沖縄島北部及び西表島世界自然遺産候補地科学委員会 資料 1-1) 2018.9.12, pp.1-2, 環境省九州地方環境事務所ウェブサイト (MOE, “Outline of IUCN Evaluation Results and Recommendations regarding ‘Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island and Iriomote Island’,” FY2018 1st Meeting of Amami-Oshima Island, Tokunoshima Island, Northern Okinawa Island and Iriomote Island World Natural Heritage Candidate Site Science Committee, Material 1-1, 2018.9.12, pp.1-2, MOE Kyushu Regional Environment Office Website); 「IUCN 評価書における勧告への対応について」(2018 年度第 2 回奄美大島、徳之島、沖縄島北部及び西表島世界自然遺産候補地科学委員会 資料 1-2) 2018.12.10. 同 (“Responding to Recommendations in the IUCN Evaluation Report,” FY2018 2nd Meeting of Amami-Oshima Island, Tokunoshima Island, Northern Part of Okinawa Island and Iriomote Island World Natural Heritage Candidate Site Science Committee, Material 1-2, 2018.12.10, MOE Kyushu Regional Environment Office Website).

(3) Issues and Tasks Facing Amami-Okinawa

(i) Protection of Amami Rabbits

Thirty mongooses were brought to Amami-Oshima Island in 1979, as a measure to exterminate the highly poisonous habu snake, a species of pit viper. However, this measure did not have the anticipated outcome. On the contrary, the mongooses preyed on endemic species such as Amami rabbits, which became a problem. The then Environment Agency initiated a mongoose extermination project in 2000 and, as a result, the number of mongoose, which had increased to almost 10,000 by around 2000, was decreased to approximately 10 or fewer by 2018.¹⁰³

As a result of these efforts, the Amami rabbit population has been rising in recent years. However, ironically, the damage to agriculture caused by the Amami rabbits is also increasing, and new challenges have emerged: protection of endemic species and ensuring

¹⁰³ 早瀬穂奈実「奄美大島マングース一掃目前」『国立公園』775 号, 2019.7, pp.8-10 (HAYASE Honami, “Amami-Oshima Mongoose: Rapid Eradication,” *National Parks*, 775, 2019.7, pp.8-10); 環境省「2018 年度奄美大島におけるマングース防除事業の実施結果及び 2019 年度計画について (お知らせ)」2019.9.26, p.1, 環境省九州地方環境事務所ウェブサイト (MOE, “FY2018 Amami-Oshima Mongoose Control Project Implementation Results and FY2019 Plan (Notification),” 2019.9.26, p.1, MOE Kyushu Regional Environment Office Website). Predation of Amami rabbits by feral cats and damage caused by traffic accidents are also problems, and countermeasures are being implemented.

their coexistence with the agriculture.¹⁰⁴

(ii) Illegal Poaching and Trading of Rare Species

Illegal poaching and trading of rare endemic species has also become a problem.¹⁰⁵ As background, there are enthusiasts and collectors who raise/grow them themselves as pets. The national government, local governments, and related organizations are working together to raise awareness, monitor for preventing illegal poaching and collection, but this practice has proved difficult to eradicate. A 2018 survey by a private organization also confirmed the trade of amphibians and reptiles, including 37 species in total, endemic to the Nansei Islands at pet exhibitions, pop-up sales, and by online sellers.¹⁰⁶

To prevent illegal collection and trade of rare species on Okinawa, MOE has collaborated with NTT DoCoMo, since May 2019, to implement an experimental program to determine whether animals and plants are rare species, utilizing AI-equipped image analysis technology. This technology is expected to be used for baggage inspections at airports and reception at post offices.¹⁰⁷

(iii) Soil Contamination at the Returned U.S. Military Training Grounds

Regarding the returned U.S. Military training grounds, that are mostly Japanese government-owned land,¹⁰⁸ Japan's Ministry of Defense conducted a soil contamination survey and implemented waste treatments in accordance with applicable laws and regulations. They confirmed that there was no soil contamination or water pollution at the sites, and jurisdiction over the sites was subsequently transferred to FA.¹⁰⁹ However, it was later reported that waste such as drums, which appeared to belong to the U.S. Military, were found at one return site, and the presence of harmful substances such as

¹⁰⁴ 「タンカン食害 保護で頭数増 アマミノクロウサギ」『日本農業新聞』2019.3.15 (“Amami Rabbit Population Increases due to Protective Measures, Tankan Citrus Feeding,” *Nihon Nogyo Shimbum*, 2019.3.15).

¹⁰⁵ The poaching and trade of rare species is regulated by the “Act on Conservation of Endangered Species of Wild Fauna and Flora (Act No.75 of 1992).”

¹⁰⁶ Government of Japan, *op.cit.*(94), pp.185-186; 「南西諸島の希少種 迫る「違法取引」の手」『東京新聞』2019.7.29 (“Illegal Poaching Affecting Rare Species in the Nansei Islands,” *Tokyo Shimbum*, 2019.7.29).

¹⁰⁷ 環境省・NTT ドコモ「環境省とドコモ、沖縄県の空港や郵便局における画像認識 AI を活用した希少野生動植物の密猟・密輸対策の実証実験を開始」2019.5.21, NTT ドコモウェブサイト (MOE and NTT DoCoMo, “MOE and DoCoMo Initiate Experimental Demonstration of Anti-Poaching and Anti-Smuggling Measures Using Image Recognition AI at Airports and Post Offices in Okinawa to Protect Rare Wild Animal and Plant Species,” 2019.5.21, NTT DoCoMo Website).

¹⁰⁸ 「北部訓練場（国頭村）」内閣府「跡地利用の推進」ウェブサイト (“Northern Training Grounds (Kunigami Village),” Cabinet Office “Promotion of Site Use” Website); 「北部訓練場（東村）」同 (“Northern Training Grounds (Higashi Village),” *idem*).

¹⁰⁹ Government of Japan, *op.cit.*(94), p.117.

polychlorinated biphenyls (PCBs) were confirmed in the surrounding soil. MOE stated that the Ministry of Defense will take appropriate measures in case new waste is discovered, but some concerns remain about the impact on the heritage inscription.¹¹⁰

III Issues Surrounding Japan's World Natural Heritage Sites

1 Restrictions on Use

While there are claims that use restrictions are necessary to protect heritage areas, there are also strong claims against such restrictions from the perspective of their impact on the history and culture of the area and on tourism. In Shirakami-Sanchi, where use restrictions have been introduced, there are opinions that oppose restrictions on mountain entry based on local residents' history and culture having used Shirakami-Sanchi constantly.¹¹¹ By contrast, in Yakushima which has not introduced any use restrictions, damage to Jomonsugi Cedar due to the rapid increase in the number of people entering the mountain after inscription, and pollution of water source due to increased waste from humans became a problem, but a draft ordinance to restrict access to Jomonsugi Cedar were still rejected unanimously based on concerns over their impact on tourism.¹¹²

At Shiretoko Goko Lakes in Shiretoko, the number of ground-level footpath users, which is highly necessary for nature conservation and safety, is restricted, and users are required to attend pre-entry training and be accompanied by a guide. Meanwhile, by developing an elevated boardwalk with no restrictions on use, the area management has achieved both safety assurance and improved visitor satisfaction, as well as nature conservation.¹¹³ This case is noteworthy as a solution to the conflict over usage restrictions.

Minamijima Island in the Ogasawara Islands completely prohibits entry to the island during a 3-month period each year since 2003. Entry to the area during other periods must be made while accompanied by a guide, limited to a specific use area, and for no more than 2 hours. Visitors are also limited up to 100 per day.¹¹⁴ In other heritage areas, restrictions

¹¹⁰ 「「奇跡の森」に米軍廃棄物 沖縄「自然遺産」再挑戦に不安」『毎日新聞』2019.10.6 (“U.S. Military Waste in ‘Miracle Forest’: Concern over Renomination of Okinawa for World Natural Heritage,” *Mainichi Shimbun*, 2019.10.6); 「やんばるの森に米軍の影 問題抱えたままの登録「禁じ手」」『東京新聞』2019.9.30 (“Inscription despite the Shadow of the U.S. Military in the Yambaru Forest,” *Tokyo Shimbun*, 2019.9.30).

¹¹¹ Refer to Chapter II, Section 1, “(4) (i) Pros and cons of mountain entry restrictions.”

¹¹² Refer to Chapter II, Section 2, “(4) (i) Issues surrounding overuse.”

¹¹³ Refer to Chapter II, Section 3, “(4) (i) Coexistence with wildlife.”

¹¹⁴ 東京都知事・小笠原村長「適正な利用のルール等に関する協定書(2002年9月30日)」(第71回小笠原諸島振興開発審議会 資料4) 2003.2.4, 国土交通省ウェブサイト (Governor of Tokyo and Mayor of Ogasawara Village, “Agreement on Proper Use Rules, September 30, 2002,” 71st Meeting of Ogasawara Islands Promotion and Development Council, Material 4, 2003.2.4, Ministry of Land, Infrastructure, Transport and Tourism Website).

may be required if nature conservation concerns arise.

2 Response to Changes in Tourism Needs

In each heritage area, there is an urgent need to respond to changes in tourism demands, such as the shift from large-group tourism to small-group, experience-based tourism and the increase in foreign tourists.¹¹⁵ One pathway is the expansion of ecotourism. Since ecotourism is premised on avoiding the destruction of nature and ensuring tourist safety, it will be important to introduce usage rules such as those at Shiretoko Goko Lakes. The training of guides is also important. In Shirakami-Sanchi and Shiretoko, determining how to address the shortage of guides is an urgent issue.

It was pointed out that if a goal of the heritage area management is to promote the local region, it is important to cherish the resources of the area, maintain its attractiveness as a tourist destination, and cooperate with its primary industry.¹¹⁶ Ecotourism has the characteristic of thoroughly enjoying the nature of the region. Creating highly satisfying tours will lead to an increase in repeaters and is expected to contribute to the development of the local economy and guides.

On the other hand, dealing with the increase in foreign tourists is also an issue.¹¹⁷ The participation rate of foreigners is high at Shiretoko's "Shiretoko Goko Lakes ecological tour of midwinter",¹¹⁸ and it will be necessary to develop tours in heritage areas that are attractive to foreigners like this Shiretoko's tour, where enhancing adherence to utilization rules and training guides for foreigners is also an issue.

3 Funding of Conservation and Maintenance

When considering tourism promotion in heritage areas, it is necessary to take measures against the environmental impact caused by the increase in visitors and to improve walking paths to ensure their safety, but the burden will be significant for the local government.¹¹⁹ In many cases, the issue is how to secure such management resources. In

¹¹⁵ Regarding the effect of tourism on World Heritage sites, refer to: 長谷川俊介「世界遺産の普及啓発と教育」『レファレンス』712号, 2010.5, pp.5-24 (HASEGAWA Shunsuke, "Information Sharing and Education regarding World Heritage Sites," *Reference*, 712, 2010.5, pp.5-24).

¹¹⁶ 小野寺浩「奄美から考える—奄美と屋久島、東京— (第14回)」『国立公園』773号, 2019.5, p.22 (ONODERA Hiroshi, "From the Perspective of Amami: Amami and Yakushima, Tokyo, Part 14," *National Parks*, 773, 2019.5, p.22). Regarding the relationship between World Heritage sites and local residents, refer to: 長谷川俊介「世界遺産と地域住民」『レファレンス』705号, 2019.10, pp.9-31 (HASEGAWA Shunsuke, "World Heritage Sites and Local Residents," *Reference*, 705, 2019.10, pp.9-31).

¹¹⁷ MOE is working to attract foreign tourists to national parks. See "[Project to Fully Enjoy National Parks](#)," MOE Website.

¹¹⁸ Refer to Chapter II, Section 3, "(4) (ii) Development of ecotourism."

¹¹⁹ 小野寺浩「自然保護と地方創生の両立のために—世界遺産屋久島の試み—」『地域構想』

2017, Yakushima introduced a system that requires a voluntary cooperation fee of 1,000-2,000 yen for climbers and has succeeded in covering environmental conservation costs.¹²⁰ Even in Shirakami-Sanchi, Nishimeya Village in Aomori has been collecting voluntary cooperation funds of around 300 yen since 2002 to cover part of the cost for the maintenance of walkways.¹²¹

In 2014, the Act on Promotion of Conservation of Natural Environment and Sustainable Use in Local Nature Asset Areas (Act No.85 of 2014) was enacted, which stipulates a framework for conservation at the expense of users to conserve the natural environment of the region and promote sustainable use. Based on this law, prefectures and municipalities can set up local nature asset areas in consultation with related organizations in the region, collect entrance fees from users, and use them for expenses such as maintenance. Since 2019, Taketomi Island in Okinawa has begun collecting entrance fee, 300 yen as a voluntary cooperation fee, under the Act.¹²²

Given these circumstances, it is said that many local governments have deferred the introduction of entrance fees because the number of tourists will decrease,¹²³ and it will be difficult to establish a collection system. Professor KURIYAMA Koichi of Kyoto University expressed the view that the entrance fee will be understood if the expenditure is specified as such the beneficiaries are limited to users. In addition, he pointed out the need to (1) assess its effect via pre-questionnaires etc., and (2) ensure reliability and transparency regarding the handling of entrance fees.¹²⁴

1 号, 2019, p.47, 大正大学地域構想研究所ウェブサイト (ONODERA Hiroshi, “Towards a Balance between Nature Conservation and Regional Revitalization: A Test of the Yakushima World Heritage Site,” *Chiiki Koso*, 1, 2019, p.47, Taisho University Regional Research Institute Website).

¹²⁰ Refer to Chapter II, Section 2, “(4) (ii) Assurance of site maintenance and management.”

¹²¹ 「入域料、導入広がる 世界遺産や景勝地の環境保全」『日本経済新聞』2014.8.4 (“Widespread Introduction of Admission Fees for Environmental Conservation of World Heritage Sites and Scenic Spots,” *Nihon Keizai Shimbun*, 2014.8.4). In some cases, such as Gifu’s “Norikura Environmental Conservation Tax,” tax revenues from earmarked taxes stipulated by local ordinances are used to finance environmental conservation measures rather than voluntary cooperative funds.

¹²² 沖縄県竹富町「竹富島地域自然資産地域計画」2019.8, pp.26-28 (Taketomi Town, “Taketomi Island Local Nature Asset Area Plan,” 2019.8, pp.26-28).

¹²³ 「入山料 定着へ道半ば 専門家「適切な徴収法を」」『日本経済新聞』2019.8.10 夕刊 (“Toward the Widespread Adoption of an Entrance Fee: Expert’s ‘Suitable Collection Method’,” *Nihon Keizai Shimbun*, 2019.8.10, evening edition).

¹²⁴ 栗山浩一「国立公園の利用者負担と入山料・入域料の役割」『国立公園』772号, 2019.4, p.9 (KURIYAMA Koichi, “Burden of Users on National Parks and the Role of Climbing/Entrance Fees,” *National Parks*, 772, 2019.4, p.9).

Conclusion

What candidates for Japan's World Natural Heritage Sites are to follow Amami-Okinawa? As the number of inscriptions increases, the hurdles are rising. This is because it is becoming difficult to select candidate sites with OUV. Moreover, from 2020, annual number of nominations will be limited to one per country as a total of natural and cultural heritage.¹²⁵ At present, no promising areas as potential World Natural Heritage sites have been confirmed in Japan,¹²⁶ and there is an argument that five World Natural Heritage sites in Japan, including Amami-Okinawa, have been identified as sufficient as land sites.¹²⁷

In the future, rather than the inscription of a new World Natural Heritage Site, emphasis should be placed on improving sustainability measures in Japan, including steadily promoting nature conservation in each region that has already been inscribed, and coexistence with tourism and regional development.

ENDO Masahiro, *Situation of World Natural Heritage in Japan* (Research Materials), 2021e-2, Tokyo: Research and Legislative Reference Bureau, National Diet Library, 2021.

ISBN:978-4-87582-880-8

¹²⁵ 文化庁記念物課世界文化遺産室「世界遺産一覧表への審査件数の制限について（2016年11月）」（文化審議会 第3回世界文化遺産・無形文化遺産部会 第3回世界文化遺産特別委員会 合同会議 参考2）2016.12.22 (Agency for Cultural Affairs, “Limitations on the Number of Nominations for World Heritage List, November 2016,” Council for Cultural Affairs, 3rd Meeting of the Subcommittee on World Cultural Heritage/Intangible Cultural Heritage, 3rd Meeting of World Cultural Heritage Special Committee Joint Meeting, Reference Material 2, 2016.12.22).

¹²⁶ Refer to Chapter I, Section 5.

¹²⁷ 吉田 前掲注(97), p.190 (YOSHIDA, *op.cit.*(97), p.190).