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toward the survival of the “sea of miracles”

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瀬戸内海・周防灘の生物文化多様性—「奇跡の海」の存続へ向けて—

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瀬戸内海は、東アジアで最大の内海である。非常に豊かな生物多様性と、それに支えられた漁業の栄える、美しい自然がそこにはあった。その生物と伝統文化の豊かさは、戦後の高度経済成長の中で急速に失われた。生物学者の調査によれば、瀬戸内海の中で、奇跡的に多数の生物種が絶滅を免れて生き残っているのが、西の端の周防灘なのである。その周防灘に1982年から建設が計画されている、中国電力の上関原子力発電所計画は、現在までかろうじてのこされてきた生物多様性をおおきく損ねるおそれがある。この論文では、山口県知事による、「生物多様性を有する地域であるから科学的な環境影響調査を」という意見が、どのように作成されたかを明らかにする。さらに、祝島の神舞や、神社用地の原発への売却などの事例を通して、地域の独自の文化の多様性が、原発計画を押し止めるためにどのような役割を果たしてきたかを示して、原発にたよらない地域の未来を展望する。

Key words : Biocultural diversity, Iwaishima Island, Kaminoseki, nuclear power plant, Seto Inland Sea

Introduction

The disaster at the Fukushima Daiichi Nuclear Power Plant (NPP), caused by the Great East Japan Earthquake on March 11, 2011, spread radioactive materials around the world. As of November 1, 2023, more than 26,000 people have been forced to live as evacuees, unable to return to their homes (Fukushima Reconstruction Portal Site).

Thirteen years later, on the afternoon of January 1, 2024, the Noto Peninsula in Ishikawa Prefecture was struck by a powerful earthquake with a magnitude of 7.6 on the Richter scale. As of January 31, 2024, 238 people have been killed in Ishikawa Prefecture. This time, the earthquake and subsequent tsunami hit various parts of Ishikawa, Toyama, and Niigata prefectures (Wikipedia, 2024 Noto Earthquake). In addition, the northwest coast of the Noto Peninsula was uplifted by up to 4 meters along a 90-kilometer stretch (Davis, 2024). NPPs on the Sea of Japan side were declared generally safe (Johnston, 2024). However, coastal uplift was only 7 km away from the Shiga NPP, which had been in commercial operation since 1993 at the foot of the Noto Peninsula. This meant that even though the plant had been shut down since the Fukushima Daiichi disaster, a criticality accident could have occurred in which the spent fuel could not be cooled. In addition, the city of Suzu, where the earthquake was strongest, had once been the site of the planned NPPs. After 28 years of opposition by local residents, construction of the plant was finally abandoned in 2003 (Kitano, 2005). If an NPP had been built in Suzu and was operating at the time of the earthquake, it would have caused an extremely serious nuclear disaster comparable to the Fukushima Daiichi accident.

There are NPP projects in various parts of Japan that have not been built due to opposition from local residents. The oldest of these is the Kaminoseki NPP project of the Chugoku Electric Power Company (CEPCO). It was planned for the western part of the Seto Inland Sea (Fig. 1). There are several reports, mostly written in Japanese, on how

residents have managed to stop this project (Asahi Shimbun’s Yamaguchi Branch, 2001, Ankei, Y., 2003, Miura, 2005, Nasu & Fukushima, 2007, Aftercare Committee for Kaminoseki Resolution of ESJ, 2010). After the Fukushima Daiichi NPP disaster, Kaminoseki has attracted much attention, and many reports have been published not only in Japanese, but also in English and French (Yamaguchi, 2011, Ankei & Ankei, 2011, Ankei, Y., 2012a, Yamaaki, 2012, Dusinberre, 2012a, 2012b, Yamato, 2013, Mashiyama, 2014, Pelletier, 2021). Based on his in-depth microhistory fieldwork, Dusinberre (2012b) used the term DIMBY (definitively in my backyard) as the opposite of NIMBY (not in my backyard) to analyze the social and economic context in which the Kaminoseki majority has actively sought to welcome an NPP.

In addition, in August 2023, the mayor of Kaminoseki announced a proposal, which came as a surprise to most local residents, to locate an ‘interim storage facility’ for spent fuel from the many NPPs operated by Kansai Electric Power Company in Fukui Prefecture, together with spent fuel from CEPCO’s Shimane NPP, at the proposed site of the Kaminoseki NPP on Nagashima Island (Fig. 2). This new plan was announced by CEPCO in response to the mayor’s request for financial support. The plan has generated a great deal of controversy about the long-term dangers of the plant itself, as 59% of the residents of Kaminoseki Town, the majority of whom had been in favor of locating an NPP, are opposed to the new plan, and the leaders of the surrounding municipalities have all expressed their position that they disagree with the mayor of Kaminoseki (Ban, 2024). In such a situation, a very large earthquake was caused by an active fault on the Noto Peninsula, which none of the seismological experts had predicted.

If an NPP is built, there will be economic benefits, but only for the short period the NPP is designed, built and operated, and only people living in the community where it is located will receive most of the money as compensation for accepting the nuisance. In exchange for the money, the residents will be exposed to the following two risks, among others. (1) if the area surrounding the NPP is rich in biodiversity, there is a risk of irreversible and catastrophic impacts on the very ecosystem that supports the livelihood of the local people in the event of normal operation and accidents, if proper EIA is not conducted; (2) the adverse impact is not limited to the ecosystem, but extends to the

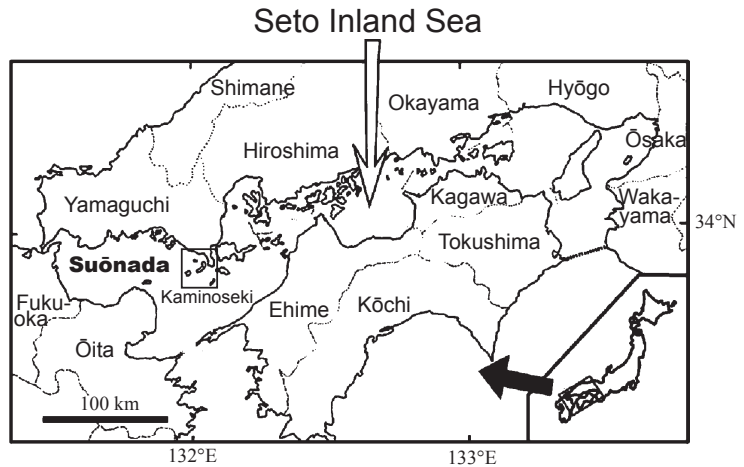


Fig.1 A Map of Seto Inland Sea and Kaminoseki in Suōnada ©Yuji ANKEI

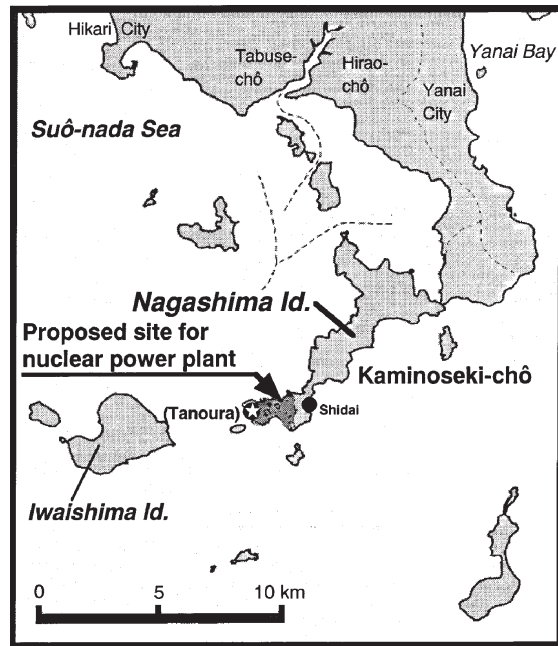


Fig.2 Nagashima and Iwaishima Islands of Kaminoseki Town ©Yuji ANKEI

very cultural diversity of the lifestyles handed down by the local people.

Therefore, this study focuses on the following two aspects. (1) whether the EIA for the Kaminoseki NPP was properly conducted, and (2) how people who believe in natural deities in their traditional Japanese cultural views have dealt with the proposed NPP in front of their community. Synthesizing these two findings, we argue that the study of nature, nature conservation, and belief in natural deities are not separate activities, but have maintained a close relationship with each other.

This study is an attempt to historically depict the biodiversity and cultural diversity of the Seto Inland Sea, the largest inland sea in East Asia. The Seto Inland Sea was originally a place where man and nature coexisted, a fishing industry supported by the area's rich biodiversity, and breathtakingly beautiful scenery that resulted from this coexistence. Since the 1970s, the once rich biodiversity of the Seto Inland Sea has been severely damaged by various adverse conditions such as land reclamation, sea sand collection, factory effluents, and hot water discharge from thermal power plants. Now there are fears of radioactive contamination from the Ikata Nuclear Power Plant in Ehime Prefecture, which began operating in 1985, the Kaminoseki Nuclear Power Plant in Yamaguchi Prefecture, which has been planned since 1982 (Asahi Shimbun's Yamaguchi Branch, 2001), and a so-called 'interim storage facility' for nuclear waste, for which feasibility studies will be allowed

in early 2024 despite its potential damage to human life and the environment (Fujii, 2023, Ban, 2024). Although protected by the Seto Inland Sea Act and the National Park Act, only the Suōnada Sea at the western end of the Seto Inland Sea retains its original ecosystem as a place where endangered species can reproduce (Kato, M., 1999; Ankei, Y., 2012a). Fig. 3 shows the port of Kaminoseki, a beautiful natural landscape with human activity, as seen by Robert Fortune (1863), a plant hunter who visited Japan in 1860, when he sailed through the Seto Inland Sea. Fig. 4 shows that the rare species designated as national monuments in the Seto Inland Sea have been lost. Some rare and endangered species still survive only in the Suōnada. The Suōnada is also the only place in the Seto Inland Sea where finless porpoises are known to continuously breed and raise their young (Kato, 2010).



Fig.3 Seto Inland Sea and its scenery at Kaminoseki in 1860 © Robert FORTUNE (1863)

The catastrophic accident at TEPCO's Fukushima Daiichi NPP halted the Kaminoseki NPP project, whose construction had been blocked by local opposition since 1982. Several years later

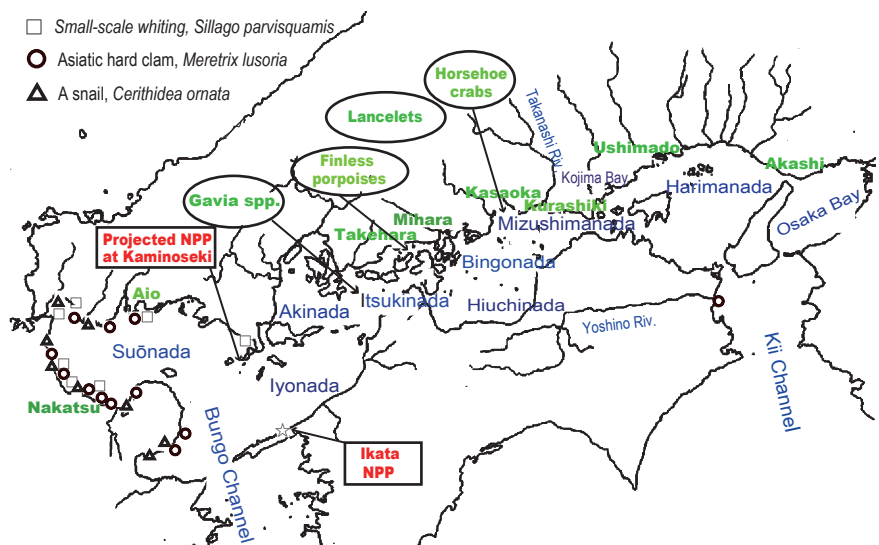


Fig. 4 Biodiversity hotspots in the Seto Inland Sea © Makoto KATO (2010) Species in oval circles have been designated as national monuments, and are now all extinct there, whereas in Suōnada, rare species exceptionally persist.

than the Kaminoseki residents’ opposition movement in Kaminoseki, the citizens’ organization of the anti-nuclear movement in the Yamaguchi Prefecture, ‘No to Nuclear Power! Yamaguchi Network,’ was founded in 1987 and has been conducting widespread anti-nuclear activities in and around Yamaguchi Prefecture. The ‘Nagashima Island Nature Conservation Association’ (now the ‘Kaminoseki Nature Conservation Association’) is an environmental group founded in 1999.

We would like to describe the lesser-known activities of scientists interested in the unique biodiversity of the site. We, the authors of this study, have been engaged in research on the biodiversity of the proposed Kaminoseki Nuclear Power Plant site since before the formation of the Association for Nature Conservation of Nagashima Island, and have been responsible for providing information and disseminating research results to a number of academic societies, mainly the Ecological Society of Japan, and to researchers specializing in various species to conduct research on the biodiversity of the site.

The Ecological Society of Japan (ESJ) and its subordinate organizations have submitted a total of eight statements or resolutions (one of which was submitted jointly with the Conservation Committee of the Ornithological Society of Japan and the Conservation Committee of the Japanese Association of Benthology) to the Chugoku Electric Power Company (CEPCO) and national and local governments. We have been responsible for writing and editing the revisions for all eight resolutions and statements on Kaminoseki NPP by ESJ.

An overview of these activities has already been reported in English by Ankei Yuji (2012a; 2012b). In the following, we will first focus on the current status of the environmental impact study for the Kaminoseki NPP construction project. Second, in considering the mechanisms by which the people of Kaminoseki and the Suōnada region have maintained biodiversity in their daily activities and economy, we would like to examine traditional religious beliefs as a cultural aspect. Based on these results, we will discuss what possibilities, other than nuclear power plants, there are for preserving the biological and cultural diversity of the inland sea in the future.

1. Environmental Impact Assessment of the Kaminoseki Nuclear Power Plant Project

From 1996 to 2006, Ankei Takako, one of the authors of this study, served as a member of the Yamaguchi Prefectural Environmental Impact Assessment Technical Review Board as an expert in botany and ecology. The environmental impact assessment (EIA) of CEPCO’s Kaminoseki Nuclear Power Plant was the first instance in which an environmental impact assessment of a nuclear power plant was reviewed by the review board of the prefecture where the plant was to be located, rather than by the national government. However, the EIA for the Kaminoseki NPP was fundamentally flawed in that it lacked a ‘scoping document,’ the centerpiece of the new law. Through our active participation in the review process, we learned about the unparalleled biodiversity of the Suōnada Sea in the Seto Inland Sea, where Nagashima Island, the proposed site of the nuclear power plant, is located. This biodiversity also made us aware of the wonderful human/nature relationship among the local people who have used the nearby waters in a sustainable way.

We stayed in Paris for a year and a half, from 1986 to 1988, with our then 4-year-old son, to study the human/nature relationship and to deepen our regional study in the Democratic Republic of the Congo and Mali, which began in 1978. Our stay in France began immediately after the Chernobyl nuclear accident in April 1986. While people in France were very concerned about the nuclear accident, the official statement from the French government was that the effects of the accident were negligible. Through this experience, we learned how important it is for citizens to get information on their own, rather than relying on government announcements.

Ankei Yuji had taught cultural anthropology as a liberal arts course at Yamaguchi University since 1982. However, when we returned to Japan in October 1988, we were disappointed to find that most of our university

colleagues and other intellectuals in Yamaguchi Prefecture were unaware of the effects of nuclear power and radioactive materials in the environment, and were indifferent to the Kaminoseki NPP project being planned in Yamaguchi Prefecture.

As we gradually gathered information about nuclear power in Japan, the citizens' movement in Yamaguchi Prefecture, a group called 'No to Nuclear Power! Yamaguchi Network' was organized and became active in Yamaguchi Prefecture. In 1995, Ankei Yuji transferred from Yamaguchi National University to the much smaller Yamaguchi Prefectural University. Our goal at that time was not to live in a big city where we would have to use electricity from nuclear power plants, but to live in the countryside and be as self-sufficient in food as possible, pursuing a 'half farmer, half teacher' lifestyle. In addition to our studies and training at the university, we set our sights on the kind of community-based, sustainable lifestyle we had learned about in Africa.

In the summer of 1995, we learned that the "Sacred Run '95," an anti-nuclear and peace initiative spearheaded by a Native American movement leader Dennis Banks, would run a relay from Horonobe, Hokkaido, where nuclear waste storage was planned, to Hiroshima and Nagasaki, passing batons between runners. We ran together from Kaminoseki to Tokuyama with university and high school students. We used a banner from Iwaishima Island as a baton. "We Absolutely Oppose Kaminoseki Nuclear Power Plant" was written on the banner.

However, such an anti-nuclear movement was not covered at all by the mass media. This was because the nuclear industry, which later came to be known as the 'nuclear mafia,' controlled the Japanese mass media with its enormous capital power and political influence. We realized that even if we promoted a minority movement against nuclear power, we would be limited in our ability to make our activities known to the public. This was at a time when the Internet was not yet widespread in Japan, and of course social networking services and cell phones did not yet exist.

In January 1999, CEPCO submitted the EIA documents for the Kaminoseki nuclear power plant to Yamaguchi Prefecture. From that point on, we decided to withdraw from the citizens' campaign against the Kaminoseki nuclear power plant. This was especially important because Takako was supposed to conduct an academic review from a neutral standpoint. The Yamaguchi Prefectural Technical Review Board for Environmental Impact Assessment submitted its report to the governor on November 16, 1999, after the governor of Yamaguchi Prefecture had consulted the board on June 17, 1999, immediately after the EIA Law was enacted, and after seven meetings (an unusually large number of meetings) in a short period of time. The Board's report was submitted to the Ministry of International Trade and Industry (MITI, now the Ministry of Economy, Trade and Industry, METI) as the 'Opinion of the Governor of Yamaguchi Prefecture' without any changes.

The following is an excerpt from the Official Letter of Opinion of the Governor of Yamaguchi Prefecture entitled '*On the Environmental Impact Assessment of the Kaminoseki Nuclear Power Plant (Units 1 and 2)*' to MITI, dated November 25, 1999.

General remarks: The area has a rich natural environment with biodiversity, as important flora and fauna have been confirmed in part of the proposed Kaminoseki NPP site and the surrounding area, where various types of commercial fishing are conducted (Fig. 5).

In addition, since the area involves reclamation of the marine area to which the *Law on Special Measures for the Environment of the Seto Inland Sea* applies, the basic policy of the Law should be taken into consideration and sufficient measures should be taken to preserve the marine environment.

It also stated the following. These included biological surveys for peregrine falcons, finless porpoises, and rare shellfish; supplementary surveys in areas where biological surveys were not conducted, mainly on land parcels;

scientific forecasts and evaluations; environmental protection measures; and follow-up surveys to compensate for uncertainties in forecasts.

In fact, the species that CEPCO failed to mention in its EIA documents of the Kaminoseki NPP were: Japanese murrelets (*Synthliboramphus wumizusume*, a nationally designated natural monument and an MoE listed endangered species) peregrine falcons (*Falco peregrinus japonensis*, an MoE listed vulnerable species), finless porpoises (*Neophocaena phocaenoides*, an IUCN endangered species), and other rare species as lancelets (*Branchiostoma japonicum*), cornirostrid snails (*Tomura* sp.), and brachiopods (*Discinisca sparselineata*).

In addition to these species, the following rare bird species have recently been discovered to live and/or breed in the proposed area: Japanese wood pigeon (*Columba janthina janthina*, a nationally designated natural monument); common murrelet (*Synthliboramphus antiquus*, MoE listed critically endangered species); and streaked shearwater (*Calonectris leucomelas*, Yamaguchi Prefecture listed near threatened species). The breeding of streaked shearwater populations in the inland sea was the first recorded (cited from Ankei, Y., 2012b). Fig. 6 shows a golden orchid, a MoE listed vulnerable species, as an example of rare plants growing in the *satoyama* forest of the projected site for Kaminoseki NPP. Figs. 7–15 demonstrates some of those rare and endangered animal species found around the forest and marine *satoumi* environment of the projected site, but unrecorded in CEPCO’s initial EIA document.

These species should have been included in the assessment documents at the ‘scoping document’ stage of the Law of EIA, which was revised in 1999. In light of such critical opinions from the Governor of Yamaguchi Prefecture, MITI announced on March 3, 2000, that CEPCO would conduct an ‘additional survey’ and prepare an ‘interim report’



Fig.5 A View on the Tanoura Bay, Nagashima Island where Kaminoseki NPP is projected with Iwaishima Island on the right ©Takako ANKEI



Fig. 6 The golden orchid, *Cephalanthera falcata* (Thunb.) Blume ©Takako ANKEI

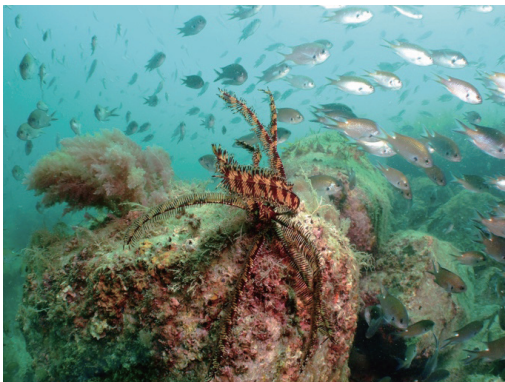


Fig.7 The ‘Sea of Miracles’ at Tanoura Bay ©Shogo ARAI



Fig.8 Japanese murrelets, *Synthliboramphus wumizusume* ©Toshihiko TOMARI

incorporating the results of this survey, claiming that the ‘preparation document’ was inadequate. On the other hand, CEPCO announced that it would voluntarily investigate without waiting for the recommendation of MITI, following the opinion of the Governor of Yamaguchi Prefecture to MITI on November 25, 1999. On January 20, 2000, CEPCO announced that it would conduct an additional investigation on 8 of the 13 points concerning plants and animals raised in the opinion of the Governor of Yamaguchi Prefecture.



Fig.9 Peregrine falcon, *Falco peregrinus japonensis*
©zukan.com



Fig. 10 Japanese wood pigeon, *Columba janthina janthina* ©zukan.com



Fig. 11 Streaked shearwater, *Calonectris leucomelas*
© Kaminoseki Nature Conservation Association



Fig.13 Lancelets, *Branchiostoma japonicum*
© ffish.asia



Fig.12 Finless porpoise, *Neophocaena phocaenoides*
© Yamaguchi Travel Guide website



Fig. 14 Cornirostrid snail, *Tomura* sp.
©Hiroshi FUKUDA



Fig. 15 Brachiopod, *Discinisca sparselineata*
©Hiroshi FUKUDA

CEPCO submitted the results of the additional investigation from January 2000 to summer 2000 to MITI on October 18, 2000 as '*Interim Environmental Impact Assessment Report for Kaminoseki NPP (Units 1 and 2)*'. In June 2001, CEPCO submitted the '*Environmental Impact Assessment of Kaminoseki NPP (Units 1 and 2)*' to METI, which had changed its name from MITI.

The Ecological Society of Japan submitted 'Letters of Request' to CEPCO and related agencies twice, once in March 2000, when CEPCO started the additional survey, and once in March 2001, after the interim report of the additional survey was issued. The reason these 'Letters of Request' were submitted is that the interim report stated that "no impact is expected" on any of the items, regardless of the results of the additional investigation. In March 2009, the General Assembly of ESJ passed a third resolution calling for '*Suspension of the Construction of the Kaminoseki NPP.*' ESJ established an 'Aftercare Committee' as a subcommittee of the 'Special Committee for Nature Conservation' to fulfill its social responsibility regarding the request. The 'Kaminoseki Request Aftercare Committee' was established in March 2000, with Ankei Yuji as chairman with Ankei Takako and many specialists as members. Researchers in specialized fields participated in the independent survey conducted by the ESJ as members of the 'Aftercare Committee.' The Chugoku-Shikoku Branch of the ESJ supported the activities as a local branch and submitted a written statement in response to the movement, which was not timed to coincide with the annual meeting of ESJ. The Japanese Association of Benthology also submitted a 'Request Letter' in December 2000. The letters from the societies described individual cases from their respective professional perspectives, but they all agreed that the "scientific understanding and conservation of the environment" called for in the Yamaguchi Prefectural Governor's Opinion had not been realized.

The environmental impact report submitted by CEPCO in June 2001 was immediately approved by the METI. However, the content of the report completely ignored the requests of these companies and, as a result, was not in line with the Governor's opinion.

This attempt to create an alternative EIA by the private sector had an impact on the citizens' movement for nature conservation, and in 1999 the 'Nagashima Island Nature Conservation Association,' now known as the 'Kaminoseki Nature Conservation Association,' was formed in close cooperation with researchers who are members of ESJ, the Japanese Ornithological Society, the Japanese Association of Benthology, and others (Ankei, 2003; Ankei & Fukuda, 2003). The group has worked with Japanese researchers, and later with overseas researchers, to disseminate information about the natural values of the proposed Kaminoseki NPP site.

The research of the ESJ's Aftercare Committee, which began in April 2000, has gradually attracted researchers from a variety of fields. They have been amazed by the unexpectedly high biodiversity of the site. A group of researchers belonging to this committee published two collections of papers for ESJ members, in 2001 and 2006. The members were able to convince each other that the Tanoura Sea is a rare hotspot that preserves the original landscape and biodiversity of the Seto Inland Sea. Ten years after the start of the research, the three societies jointly held the 'Kaminoseki Forum' at the Hiroshima Peace Memorial Park. We began to share the results of our research with the general public. Similar forums were also held in Tokyo and Nagoya. It became increasingly clear that researchers and citizens alike must work together to conserve the site's biodiversity.

In October 2010, in conjunction with the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity in Nagoya (COP10), Japan, we set out to communicate to the world the natural values of Kaminoseki based on the results of our research over the 10 years since 2000. We decided to compile the results of research on Kaminoseki's biodiversity conducted by researchers to date and publish them in a single volume (Aftercare Committee for Kaminoseki Resolution of ESJ, 2010). The title of the book, published by the Kaminoseki Request Aftercare Committee of ESJ, was '*The Sea of Miracles: Biodiversity of Kaminoseki in the*

Seto Inland Sea. Since then, it has become widely known that this area has miraculously preserved the original biodiversity of the Seto Inland Sea and is a hotspot for biodiversity conservation, where endangered species and new species can be found.

In the book, Ankei Takako (2010) wrote a chapter that critically introduced the process of EIA for the Kaminoseki NPP. Ankei Yuji (2010) pointed out the importance of the biodiversity of the Seto Inland Sea as a whole, the subsistence activities it supports, and its cultural aspects such as traditional beliefs and divine festivals.

Biodiversity and the cultural diversity of the local people who have coexisted with it are closely related. In recognition of this fact, the term ‘biocultural diversity’ has been coined. Although this term has become quite popular (e.g. as reviewed by Hanspach, et al., 2020), in most cases it is only used as an abbreviation for ‘biological and cultural diversity.’ Ankei Yuji (2002: 14) proposed the term ‘biocultural diversity’ as “a set of plants and animals whose diversity has been maintained by local, indigenous cultural values and behaviors, which in turn have depended on their local biodiversity.” In this study, the term is used in this sense.

2. The Sacred Natural Sites and its Biocultural Diversity

Recently, the role that areas of land or water that have special spiritual significance to peoples and communities have played in the conservation of biodiversity has gained global attention. The International Union for Conservation of Nature (IUCN) has produced a book of 27 examples of so-called ‘sacred natural sites’ from around the world to draw attention to their importance (Verchuuren et al., 2010). Many such sacred natural sites are found in East Asia (e.g., Lee, 2020). In Japan, *Chinju no mori* (Shrine Grove), which has been carefully protected as a sanctuary of faith from north to south of the archipelago, is known to have played an extremely important role in the conservation of biodiversity and cultural diversity (Rots, 2013).

Yanagi (2012) defines *satoumi* as “a human-influenced coastal sea with high productivity and high biodiversity.” This is a new application of the well-known concept of *satoyama* on land to the sea, but it is a time-tested concept in Japan (Berque & Matsuda, 2013). The Seto Inland Sea has been intimately connected to human life since ancient times and has long maintained its role as a *satoumi*, and there is archaeological evidence that as early as the Jōmon period, the bounty of the sea was not only being exploited through the harvesting of coastal seafood, but the sea routes were also being used for long-distance trade. The Seto Inland Sea has long provided the coastal people with the bounty of the sea for maritime traffic and transportation, as well as marine products, salt, and recreational activities such as bathing and gathering by the sea. The Seto Inland Sea is a coastal sea area with high biological productivity and biodiversity due to the addition of human labor. In Suōnada, which will be discussed next, the Seto Inland Sea as *satoumi*, which was destroyed by high economic growth, remains in a healthy state.

The evergreen broadleaf forest surrounding the former rice fields of Tanoura, the site of the proposed Kaminoseki Nuclear Power Plant, was originally used as a *satoyama*, a place where humans coexisted with diverse natural environments. The shrine grounds, which cover an area of 10 hectares, are both a well-preserved *satoyama* and a shrine grove.

Residents on the Iwaishima Island have always been the most active opponent of the Kaminoseki NPP project. Looking at the proposed site of Tanoura from at only 3.8 km from the houses of Iwaishima, one notices that this is the area where the sun rises. It is the most universal and basic religious act for Japanese people to join hands and offer prayers of thanksgiving to the rising sun. The fact that an NPP is being built where they worship daily means that the people of Iwaishima will worship the NPP, not the sun. Artist Matsuda Shōhei (1913-2004), who painted pictures of Suōnada all his life, said, “The sunrise from Iwaishima Island is *so beautiful that I want to worship it*” (Kunihiro, 2015, Vol1: 95). And for fishermen, it is a rich fishing ground, a place to catch the traditional one-line fishing bait, and

an ocean that should not be polluted (Yamato, 2013).

Thus, the diverse creatures living in the 'miracle sea,' which includes spiritual values, are creatures and the sea shaped by a web of diverse relationships, including 2000 years of human activity.

Whenever we visit Tanoura, we enjoy listening to the voices of various creatures. Ankei Yuji (2001: 63) writes of his first visit to the site of the proposed Kaminoseki nuclear power plant:

When I first came to Tanoura Bay on Nagashima Island and stood on its rocky shore, I was amazed at the abundance and large size of shells, barnacles, and wharf roaches that were attached to the reef. As I was about to leave the rocky shore for the beach, I was struck by a strange sensation as if some beings were staring at me all at once. I turned around and saw the eyes of many creatures as if they were staring at me. While working with biologists and nature-loving citizens to record the creatures of Tanoura, I suddenly had an idea to try a sip of tidal water and tasted it. The taste was indescribable, with a mild sweetness and umami. I was struck by the fact that the water tasted so wonderful, probably as a result of the healthy lives of so many creatures. Since that day, when I felt and experienced firsthand how wonderful the nature of Nagashima Island is, I have had a strong desire to share this wonderfulness with as many people as possible.

When I visited Iwaishima Island, I saw women and children sitting on the dock washing sea urchins in baskets by dipping them in the sea. They used chopsticks to pick up the dark parts of the urchins' intestines and threw them into the sea, leaving the edible ovaries (Fig. 16). To my surprise, however, several large mullet, some as large as two feet, swarmed in front of the basket to feed. A woman patted the back of one of the mullets that did not run away, as if she were feeding her carp in the pond. The harbor, which is supposed to be the dirtiest place in the sea because of the many fishing boats, was washed with clear tidal water that you could see all the way to the bottom.

When I saw this scene, I immediately remembered a story I had heard in Kusugawa village on Yakushima Island, south of Kyushu. In the old days, fresh water flowed through the canal, and the islanders valued the water so much that even at the end of the canal, near the sea, the water was clean enough to wash fish and cut sashimi. As the water supply became more widespread and life more comfortable, people's appreciation of water and their worship of the water deity diminished, and the canal became dirtier and dirtier.

As the habit of appreciating the most mundane and immediate things, such as water, air, sun, and so on, diminishes, the environment becomes polluted accordingly. Originally, the Japanese believed that all living things were inhabited by deities, and that human beings were just another member of this universe of plants, trees, insects, and fish. This philosophy has sometimes been dismissed as animism, and sometimes put in a new Western leather bag as 'deep ecology'. We believe that Tanoura and the islands of Kaminoseki will become one of the places that people around the world will treasure as a sacred space where one can feel and practice the worldview of pantheism, where deities dwell in everything, including mountains, rivers, plants, and trees.

Ms. Midori Miura is a friend of ours who values such traditional world views. She and her husband founded the 'No to Nuclear Power! Yamaguchi Network.' We once asked her to share her experience in a university class. She explained what



Fig.16 Cleaning sea urchins in the harbor of Iwaishima Island ©Yuji ANKEI

made her an anti-nuclear activist (Miura, 2005).

My husband was exposed to the atomic bomb in Hiroshima when he was a boy. He later worked as a high school teacher there, but in the 1980s we moved to Kano, a mountainous area in Yamaguchi Prefecture, where I had to take care of my relative. There, we tried our hand at growing strictly organic rice without using any chemicals. After harvesting the rice, we would see a lot of Chinese milkweed blooming there in the spring. When I lay down among the flowers and looked at the sky, I saw the universe as it is. “There is the universe, there is the earth, and here I am.” I felt satisfied and thought, “This is enough. I don’t need anything else.” When I went to the fields, I could harvest vegetables, and in the rice fields I could harvest rice. We lived in peace and were very happy. I also grew tea. I harvested a little bit, processed it by hand, and we had enough tea for a whole year.

Then the Chernobyl disaster happened. It was April 26, 1986. I did not pay much attention at that time. It was more than 8,000 kilometers away from where I lived, and I went on with my life as before. About a year later, however, I was informed that radioactive materials from Chernobyl had also fallen in Japan, and that they had adhered to tea leaves and other things. This was after we had already drunk all the tea I had made.

At that time, I became very angry. I realized that I could not keep my happiness of having ‘a small rice field as my universe.’ It was not enough just to take care of the small field at my feet. It was only after the Chernobyl disaster that I realized what nuclear power plants really were. Even though they were 8,000 kilometers away, they were ‘next door,’ and I lived in the ‘local area’ affected by Chernobyl.

At that time, there was already a nuclear power plant project in Yamaguchi Prefecture, in a place called Kaminoseki Town and Nagashima Island in the Seto Inland Sea. It was a big problem to have something like that built so close to us. I felt strongly that we had to do something about it. After discussing it with my husband, we decided that it was important to do something to prevent a nuclear power plant from being built under our feet, and we both started working on it. However, we couldn’t do anything on our own, so we called on my husband’s friends, friends who had done various things together, and other acquaintances to come together and form the ‘No to Nuclear Power! Yamaguchi Network.’ The name of the group was also decided by suggestions from all of us. It was all new to us, and we didn’t know what to do, but we did a lot of things. Our approach was to try everything by fumbling around. As we held seminars and learned about nuclear power, we came to know many important things that we did not know, and things that were hidden from the general public and known only to those who were involved in the actual operations.

Mr. Ujimoto Chōichi of Iwaishima Island was raising pigs when we interviewed him in 2011 (Ankei & Ankei, 2016). During his interview, he mentioned that the traditional festival called Kanmai, which used to be held once every four years, had been halted twice because residents were divided between those for and against the nuclear power plant, and that now that the festival had been revived, the future of Iwaishima was in sight. Dusingberre (2012a) also describes the sociological background for the revival of this festival. Mr. Ujimoto told us:

A recent Nikkei newspaper article reported that a Kaminoseki fisherman over 50 years old, when asked by a reporter why he wanted to accept the Kaminoseki nuclear power plant, said, “I want to live like ordinary people.” But the people of Iwaishima are beginning to realize that their lives, which are supported by nature, are in fact more than those of ordinary people. With billions of yen that we don’t earn, what on earth are we going to do?

There is a divine festival called ‘Kanmai’ or Divine Dance (Fig. 17). It has been performed on this island for more than 1,000 years. It is now performed every four years and costs about 10 million yen. The money is saved

and put aside every year. Even those who have left the island return here to participate in the festival. If they do not return, people might think that they have fallen so far behind that they cannot return to the island for the important divine festival. Because of the Kanmai celebration, the people of this island naturally have a humble but firm sense of life, not in the sense of 'good for now' or 'good for me only,' but in the sense of being able to return to the island every four years, safe and sound.

So I think the real crisis for the island was when the conflict over the Kaminoseki nuclear power plant came to the island and we were forced to cancel the Kanmai Festival twice. When it was finally resumed, I think the possibility of the island surviving was once again seen.

We sent out boats called 'Kai-denma' from the island to welcome the divine Kagura dancers from the Imi Betsugūsha Shrine in Ōita Prefecture. When I was on the island, there were four boats, but now there are barely two. We don't have enough rowers because of the aging of the islanders, so we get help from people off the island to row the boats.

The number of people who want to live on the island is gradually increasing because they are fascinated by the island lifestyle. It is good to have people from different backgrounds. By the way, have you seen the nine-meter-high stone wall of the terraced rice fields (Fig. 18) that Manji Taira's grandfather opened by hand over a period of 30 years? It was also shown in the movie '*Houri no Shima*' (Island of Iwaishima) by Aya Hanabusa. The stones were manually assembled on the spot from the hills, and when you look at the way they were assembled, I think it shows the flexibility of the mind itself. This is a bit of a leap, but I feel that there is a similarity between the flexibility of the people who assembled the stones and the community structure of Iwaishima Island, as seen in the Kanmai Festival. For the festival, everyone has a role to play. In other words, we use all the different stones (human resources) to form a team.

On the second morning of our stay on the island, we spent the morning with young people who had moved to the island. Together we planted seedlings of windbreak trees near Mr. Ujimoto's grazing pigs, in the fields of the representative of the island's Shintō Dance Association. The plan is to block the strong winds from the sea and grow beans, one of the five grains to be offered to the deity of the field at next year's Kanmai. Thus, life on Iwaishima Island has been organized according to the seasons, and the people associated with the island have made arrangements that culminate in a festival every four years, and in this way they have lived off the bounty of the land and sea for more than a thousand years.



Fig. 17 Kanmai Devine Dance in Iwaishima Island
© Yamaguchi Travel Guide website



Fig. 18 Nine-meter high stone walls in the paddy field of Iwaishima Island © Hideto KUNIHURO

The priest Haruhiko Hayashi, who continued to oppose the sale of the shrine's land on Nagashima Island for the proposed site of the Kaminoseki nuclear power plant, and who was dismissed against his will by means of a forged letter of resignation, I quote the last part of his explanation of why he, as a religious person, was opposed to nuclear power from the text he wrote before his unexpected death (Hayashi, 2002). We believe that here, too, we find a living manifestation of bioregionalism in the form of a religious decree (Fig. 19).



Fig.19 Shrine grove at Kamai Hachimangū on Nagashima Island ©Takako ANKEI

The Kaminoseki NPP, said to be the last nuclear power plant project in Japan, is about to be built on Nagashima Island in the Seto Inland Sea, in the Shidai district of Kaminoseki Town. Twenty years after the plans were announced, even immediate relatives are at odds over the pros and cons of the plant. What was once a peaceful and tranquil village has become an unprecedented situation. In a village of only 100 households, three lawsuits are pending between residents.

Even in Kaminoseki, where an estimated 45 billion yen has been spent on this small town, many residents worry daily about the terrible effects of radiation exposure. Once an accident occurs, it will be a matter of life and death not only for Yamaguchi Prefecture, but also for people living in the vast Seto Inland Sea region, which stretches across Honshu, Shikoku and Kyushu. The Tōkaimura and Chernobyl disasters must never be repeated. Of course, who can compensate in any way for the suffering of those exposed to radiation in the Tōkaimura criticality accident? What will happen to the lives of those who died and those who were injured, and what will become of their suffering? They will never regain their health. Irreplaceable lives have been damaged.

If the land for the Shidai Hachimangū Shrine is sold, they will immediately reach the stage of starting construction. Therefore, the land of the shrine cannot be sold for the site of a nuclear power plant. In a situation where the natural environment has been severely damaged and even the survival of the human race is at stake, the shrine community also has an urgent responsibility to protect its sacred forests and shrine lands and to protect local residents from pollution (Collection of Rules and Regulations of the Agency of Shintō).

NPPs are the worst form of pollution. It is only logical that shrine land cannot be sold to the worst polluters. It is clear from the disasters at Tōkaimura and Chernobyl that selling shrine land is inhumane and an outrage that could deprive people of their basic right to life. As the chief priest in charge of Shidai Hachimangū Shrine, whose duty it is to pray for the harmony and perpetuation of the village, I am deeply concerned about the situation.

Who owns the shrine grove and its land? According to the modern legal system, the Shrine Grove and its land belong to a religious organization, but from a moral point of view, they belong to the village community, and their ownership is very similar to that of village common lands and public lands.

Although we do not have time to describe the history of the Hachimangū Shrine, which retains elements of the life and ancient culture of Jōmon and Yayoi, the shrine land at the center of the nuclear power plant site was originally secured as the basic property for the continuation of the shrine through the hardships of the ancestors of the Shidai community. This is probably the reason why the site was nicknamed Hachiman Yama (Hill) by the local people. In the first place, shrine lands with such historical origins cannot be sold by people living in the present for short-sighted economic gain. The perpetuation of Hachimangū Shrine also means the perpetuation of the village.

Shrines essentially belong to the people who live there. Therefore, the ideal way to maintain a shrine forest or shrine land is to have it maintained by the people who live there, just like village common land or public land. This was the case in the past. The decline in the vitality of farming and fishing villages has led to the devastation of the human spirit, and the devastation is staggering. The word 'common area for members,' which means common land used to support people's livelihoods, was a common sight throughout the country until the beginning of the period of high economic growth, but due to the rapid changes in lifestyles, the word itself has fallen into disuse. In the past, people used to share forests and fields and collect firewood, make charcoal, and collect grass. Nowadays, when the land is no longer used, the fishing grounds are the most appropriate place for the word 'common areas for members'. The area of the bay below the shrine site of Hachimangū Shrine is a treasure trove of marine life, where rare shellfish of international rarity have been discovered, including those studied by the Ecological Society of Japan. It is not the case that fish and shellfish live everywhere in the sea. Fish and shellfish, like humans, do not live in places where the conditions for their survival are not met. Since ancient times, it has been customary to leave shrine sites in their natural state. As a result, the forests of shrine lands also serve as fish-breeding forests and have provided excellent fishing grounds. It is immeasurable how many people's lives have been nourished by these forests. It is truly a blessing of nature.

The forests and oceans that support the livelihoods of the people of these regions are of infinite value that cannot be measured by the modern economic system. There is no guarantee that the current financial system will continue indefinitely. The time of collapse of a system that places the supremacy of money, which functions only in the system of creditworthiness, may come sooner than expected. What will happen to people's lives then?

We will never forget the heartbreaking words of Ms. Toshiko Hazama (vice-president of the Anti-Nuclear Landowners' Association), who died at the age of 78 in opposition to nuclear power: "I lost my husband in the war and suffered hardship, but I was able to live through the difficult postwar years because of the fields and the sea." If we lose the forests and oceans that provide us with food for life, we will never be able to revive the richness of nature. If a nuclear power plant is built, the village community of Shidai, which has existed since the Jōmon period, will probably disappear from the earth.

As mentioned above, the nature of a Shintō forest or the land of a shrine is similar to that of the common land of a village or the public land. Originally, shrines belonged to the people who lived there. It was the simple reverence for nature and the deities in the hearts of the people that led to the preservation of these forests and shrine lands to the present day. However, if such reverence becomes rare, it will be extremely difficult to maintain them. Under the current legal system, the priesthood must bear most of the administrative responsibility for maintaining shrine grounds, but protecting shrine grounds from nuclear power plants means protecting the safety of local residents.

Who in the world is responsible for the life-and-death problems that plunge many people living in the Seto Inland Sea region into the agony of death and misery? If this were not a crime, there would be no crime in the world.

As the head priest, I have only one mission: to protect the safety of local residents, I will continue to make every effort to preserve the shrine grounds of Hachiman Shrine, which is the foundation of the community.

The shrine grounds and forests should be passed on to children and grandchildren. Shrines, which are often considered less religious (than churches or temples), cannot be anything other than a religious category. If religious ideas have meaning in the modern ideological context, their value lies in the fact that they transcend the secular thinking of commercial supremacy.

It is not only a fundamental form of Shintō thought, but also a simple concept of people who have lived

in the Asian world. Buddhism also strictly forbids the killing of animals. The same is true of Shintō shrines. Nothing is more important than the preciousness of life and the abundance of nature. In view of their fundamental principles, forests and shrine grounds do not exist only for the benefit of those living today, but are handed down by our distant ancestors and should be passed on to our children in the future.

In May 2003, Ankei Yuji and other ESJ members visited the Jinja Honchō (The Association of Shinto Shrines) with a resolution from the Chugoku-Shikoku branch of the ESJ. The purpose of the visit was to ask for disapproval of the sale of the shrine land, which Hayashi Haruhiko, the head priest of the shrine, had opposed. At that time, Ankei Yuji asked a young official in the office of Jinja Honchō, who seemed to have no interest in conservation, if he had ever heard of Mr. Minakata Kumagusu. Although he did not know of this great naturalist and folklorist, Minakata, while studying slime molds in the Kumano forests of Wakayama Prefecture, realized the need to preserve the forests in which they lived. He then developed a direct action against the national policy to organize and consolidate many small shrines at the beginning of the 20th century (the end of the Meiji era) and was arrested (Kato, S. 1999). In this way, we have tried to build a bridge between ecological conservation and shrine management, while educating the public about the deep relationship between nature conservation and the protection of traditional religious institutions.

3. Prospects: Sustainable Utilization of the Bounty of East Asia's Largest Inland Sea

As explained above in the **Introduction**, in August 2023, the Mayor of Kaminoseki Town announced his acceptance of a survey by KEPCO and CEPCO to invite an 'interim storage facility' for spent nuclear fuel from nuclear power plants in order to overcome the dwindling support of CEPCO and the Japanese government amidst the lack of prospects for the construction of the Kaminoseki NPP. They announced their acceptance of the new project. In fact, this was something that had been prepared since 2019, four years ago, including a visit to a similar facility in Tōkaimura, without announcing it to the residents of the town. The plan is to accept it solely for the purpose of rebuilding Kaminoseki Town's finances, without any mention of building cooperation with Japan's energy policy, as has been the case in the past (Ogawa 2023). Although it is called an 'interim storage facility,' it is very likely to become a final nuclear waste disposal site (Fujii, 2023, Ban, 2024); in Japan, where major earthquakes could occur anywhere at any time, there can be no final disposal site for nuclear waste. In addition, none of the local government leaders near Kaminoseki expressed support for the project.

Neither organisms nor radioactive materials can be stopped by man-made boundaries such as prefectural or national borders. The decisions made by the people of Kaminoseki have a strong possibility of contaminating not only Yamaguchi Prefecture, but also the entire Seto Inland Sea, including the miraculous Suōnada Sea, a world treasure, and the larger natural bioregion of the Pacific Ocean.

We believe that we must create a new human history based on bioregionalism, which transcends human-made regions and nations and is different from the conventional way of life, leading to the revival of biological and cultural diversity in each bioregion (Ankei, Y., 2012a).

For the Seto Inland Sea to be revived, it will take more than just appreciation of the landscape and culture. For the Seto Inland Sea to be a healthy ecosystem, we desperately need a place that well preserves the biodiversity and genetic diversity it had before it was destroyed on a large scale. Suōnada is an important place that should be one of the genetic seeds for such a revival of the Seto Inland Sea. Furthermore, the process of restoration and revival of the relationship between humans and nature can itself be a major highlight for ecotourism and should be within reach of World Heritage registration (Ankei, Y., 2001: 63).

Abbreviations

CEPCO: Chugoku Electric Power Company

EIA: environmental impact assessment

ESJ: the Ecological Society of Japan

KEPCO: Kansai Electric Power Company

METI: the Ministry of Economy, Trade and Industry (reorganized from MITI in 2001)

MITI: the Ministry of International Trade and Industry

MoE: the Ministry of Environment

NPP: Nuclear Power Plant

TEPCO: Tokyo Electric Power Company

Conflict of interests

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Authorship

Ankei Takako wrote the section on Environmental Impact Assessment, Ankei Yuji wrote the rest of the text, and both worked together on the overall editing.

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