

Tides of time

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Remote and little visited, the Ogasawara Islands of Japan boast spectacular scenery — and more important, ecosystems that allow us to better understand ongoing evolutionary processes

Chichi Jima, one of the main island groups in the Ogasawara Archipelago. In the foreground, an inland beach visited by green sea turtles.

TAKAHIRO OKANO / MINISTRY OF THE ENVIRONMENT, JAPAN

OGASAWARA ISLANDS | Adaptation and development of species

A tiny jewel of great scientific value for the study of oceanic island ecosystems

Sparingly populated and extremely remote, inhabited by flora and fauna found nowhere else on the planet, the Ogasawara Islands are one of the ecological gems of the Pacific Basin. They are also among the most fragile, an archipelago that was pushed to the edge of environmental catastrophe and is now slowly making its way back thanks to its Unesco World Heritage listing in 2011 and other conservation efforts.

The volcanic Ogasawara Islands — also known as the Bonin Islands — are located about 1,000 kilometers, or 600 miles, south of the main Japanese archipelago. The serial World Heritage property comprises the three island groups of Ogasawara plus three other individual islands, for a total of more than 30 islands. The scenery is spectacular: a mosaic of turquoise bays, towering sea cliffs, coral reefs, white-sand strands, subtropical forest and shrublands. But there isn't much of it: Unesco puts the land area of the World Heritage property at 63.58 square kilometers

and the marine area at 15.81 square kilometers, or about 25 square miles of land and 6 square miles of sea. (For comparison, Manhattan's land area is about 23 square miles.)

Nearby Iwo Jima is renowned for its World War II battle, but Ogasawara is virtually unknown, even to the vast majority of Japanese — except perhaps the most ardent science-fiction fans, because the islands do feature in the Godzilla film series and several other sci-fi tales, the writers no doubt inspired by the enduring mystery and utter isolation of this far-flung corner of Japan.

While the landscapes may be quintessential tropical Pacific, the flora and fauna definitely are not. Ogasawara's uniqueness — the reason it deserves protection and World Heritage designation — is manifest the moment one begins to examine the plants and animals, both on land and below the sea.

According to the evaluation report by the International Union for Conservation of Nature, official

advisor to the World Heritage Committee for natural heritage, the islands serve as "an outstanding example of the ongoing evolutionary processes in oceanic island ecosystems, as evidenced by the high levels of endemism; speciation through adaptive radiation; evolution of marine species into terrestrial species; and for their importance for the scientific study of such processes."

Flora and fauna

Ogasawara supports 440 species of native vascular plants, 195 endangered bird species, more than 100 native land snail species and distinctive mammals like the critically endangered Bonin fruit bat. Endemism is extremely high. For instance, 90 percent of the land snails and 70 percent of the woody plants are found nowhere else on earth.

The archipelago's flora represents a convergence of Southeast Asian and Northeast Asian plants, as well as a South Pacific species, *Metrosideros boninensis*,

that has researchers wondering how it spread so far north without any apparent human or natural links between the two areas. Categorized as a subtropical, moist, broadleaf-forest eco-region, the islands boast a variety of woodland, from dry upland forest and scrub forest clinging to sea cliffs to endangered lowland mesic (that is, with a moderate supply of moisture) forest with trees that grow to nearly 50 feet.

The 2,500 residents are confined to the two main islands: Chichi Jima (Father Island) and Haha Jima (Mother Island). There is no airport, which means the only way to reach the archipelago is a 25-hour ferry ride from Tokyo. As a result, tourism is almost nonexistent. Visitors who should happen to reach the site in their own vessel would likely have the islands all to themselves.

But that doesn't mean that humans haven't had an impact on Ogasawara. By a quirk of history, Americans were the first to inhabit the islands when a handful established a small colony in 1830. It endured

until World War II, after which the archipelago was administered by the U.S. military until 1968.

Settlement introduced several factors that would eventually threaten the local flora and fauna: alien species, agricultural activities and widespread logging of the native forests. "Many endemic species, especially orchids and one woody plant... are threatened with extinction due to human disturbance, goat grazing and the introduction of alien plant species," writes Dr. Sandra Zicus in her World Wildlife Fund report on Ogasawara.

Recognizing the threat, the Japanese government designated most of the archipelago as a national park in the 1990s. Multi-agency management and action plans were authored in 2010, and the World Heritage listing followed the next year. Although the details vary from island to island, the combined conservation strategy calls for eliminating alien invasive species, limiting access (and tourism) to the islands and control over the shipping channels that pass in and around the islands. J.R.Y.

Technical innovation and iconic style

The game of polo has become an iconic symbol of elegance in sports (and fashion). It has also given birth to a timepiece that itself has become an icon. The Reverso, conceived by Jaeger-LeCoultre in 1931, encompasses not only elegance and fashion but also sportsmanlike precision and accuracy.

The Reverso was the solution to a problem faced by British army officers in India who played polo in their spare time. They sought a wristwatch whose glass face would not be damaged during play. Jaeger-LeCoultre developed a timepiece with a face that could be flipped over to protect the dial.

The cleverness and apparent simplicity of the solution — patents were filed in March 1931 — belied the technical challenges involved. A refined dial with an ornamental band slid around to reveal a protective metal backing. In November of that year, the company began marketing the

Reverso, and the watch achieved immediate — and enduring — success.

Women as well as men enthusiastically embraced the watch, realizing that the metal backs of these timepieces could be personalized with inscriptions, monograms, gemstones, enamel and other materials in the Art Deco style prevailing at the time. Among early customers were Amelia Earhart and the prince of Denmark.

Over the years, the Reverso has housed over 50 different mechanical calibers. Since 1991, these have included the tourbillon, the minute repeater, the retrograde chronograph and the perpetual calendar. In 1994, Jaeger-LeCoultre introduced a Reverso with two different dials, back and front. Each of these mechanisms has been specially designed to fit the watch's reversible case and is entirely made in their manufacture in Switzerland by Jaeger-LeCoultre. C.F.

WORLD HERITAGE CONVENTION | 40th anniversary

Celebrating accomplishment and looking forward to work ahead

A 40th-year anniversary celebration is taking place this week, with implications as global as the guest list. Between Nov. 6 and 8, almost 600 attendees from 190 countries gather to celebrate the 40th anniversary of the World Heritage Convention in Kyoto, Japan. This event gives the organization — and others who care about the future of the planet — the opportunity to focus on the significance of World Heritage today. It is hard to imagine that 40 years ago no tours or travel books mentioned Unesco World Heritage in connection with any destination. Today countries vie for the honor of having a World Heritage site, and many trips and excursions are designed specifically around the cultural and natural sites. Since the inscription of the Great Barrier Reef on the World Heritage List in 1981, these also include marine places.

The anniversary is an occasion not only to look back but also to look forward. Already in July 2012, the World Heritage Committee prepared a concrete vision for the future of the World Heritage Convention. "The World Heritage Convention represents a true model of international cooperation," affirms Gina Doubleday, a spokesperson

for the World Heritage Centre in Paris. The Convention has a global reach of 190 signatories, and the 1,000th site will likely be inscribed on the World Heritage List within the next few years.

Fanny Douvère, coordinator of the World Heritage Marine Program at Unesco in Paris, describes the 40th anniversary celebrations as "a time of reflection on what has been accomplished as well as a new focus on the future and the challenges ahead." Reflection includes a stronger emphasis on conservation of existing sites. The future focus encompasses the use of more scientific approaches to support countries in identifying new sites and more innovative uses of the by-now-consolidated World Heritage brand.

One innovation being considered is the identification of sites beyond the jurisdiction of individual countries. At present, potential sites are nominated by individual countries in areas over which they have jurisdiction. Marine features of a site, however, often do not fall within administrative boundaries, and many marine sites are more than 200 miles from a shoreline and thus outside national waters. Yet they could very well meet one or more of the criteria for listing, by

representing: superlative natural phenomena or areas of exceptional natural beauty; major stages of earth's history, including the record of life; significant ongoing ecological and biological processes in the evolution and development of coastal and marine ecosystems; natural habitats that are important and significant for in-situ conservation of biological diversity.

"We are in the process of raising additional funds to assist the World Heritage Committee in understanding the potential for marine World Heritage in the high seas," says Douvère. "Scientists and experts are already at work exploring exceptional features in these deep and far-offshore places. Meanwhile, we are very grateful to Jaeger-LeCoultre for their continuing support and for their sponsorship of some exciting new activities we will be announcing early in 2013."

"Tides of Time" is a partnership among Jaeger-LeCoultre, the International Herald Tribune and Unesco's World Heritage Centre.

Since 2009, with Jaeger-LeCoultre's support, the marine area covered by the World Heritage Convention has doubled in size, and today covers about a quarter, by size, of all the 6,000 protected marine areas on the planet.

Kyoto is an appropriate setting for the World Heritage meeting, since it is one of Japan's 16 World Heritage sites, two of which are marine sites: the Shiretoko Peninsula and the Ogasawara Islands.

Japan has been an uncommonly active state party member since signing the Convention in 1992. It is serving its third term as a member of the World Heritage Committee, and it hosted the World Heritage Committee in Kyoto in 1998. Doubleday emphasizes that an "exceptionally notable contribution of the state party of Japan to the conservation of the World Heritage properties is the long-standing Japan Funds-in-Trust for the Preservation of the World Cultural Heritage, which started in 1989 — even before the ratification of the World Heritage Convention." C.F.

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