

Japan:

Looking Beyond the Nesting Beach

Japan, the sole breeding area for loggerhead turtles in the North Pacific, was recently ranked as the country most detrimental to sea turtle conservation in James R. Spotila's *Sea Turtles: A Complete Guide to Their Biology, Behavior, and Conservation*. Despite Japan's hawksbill shell (bekko) trade and its far-reaching fishing fleets, it has one of the longest histories of nesting beach conservation and research in the world.

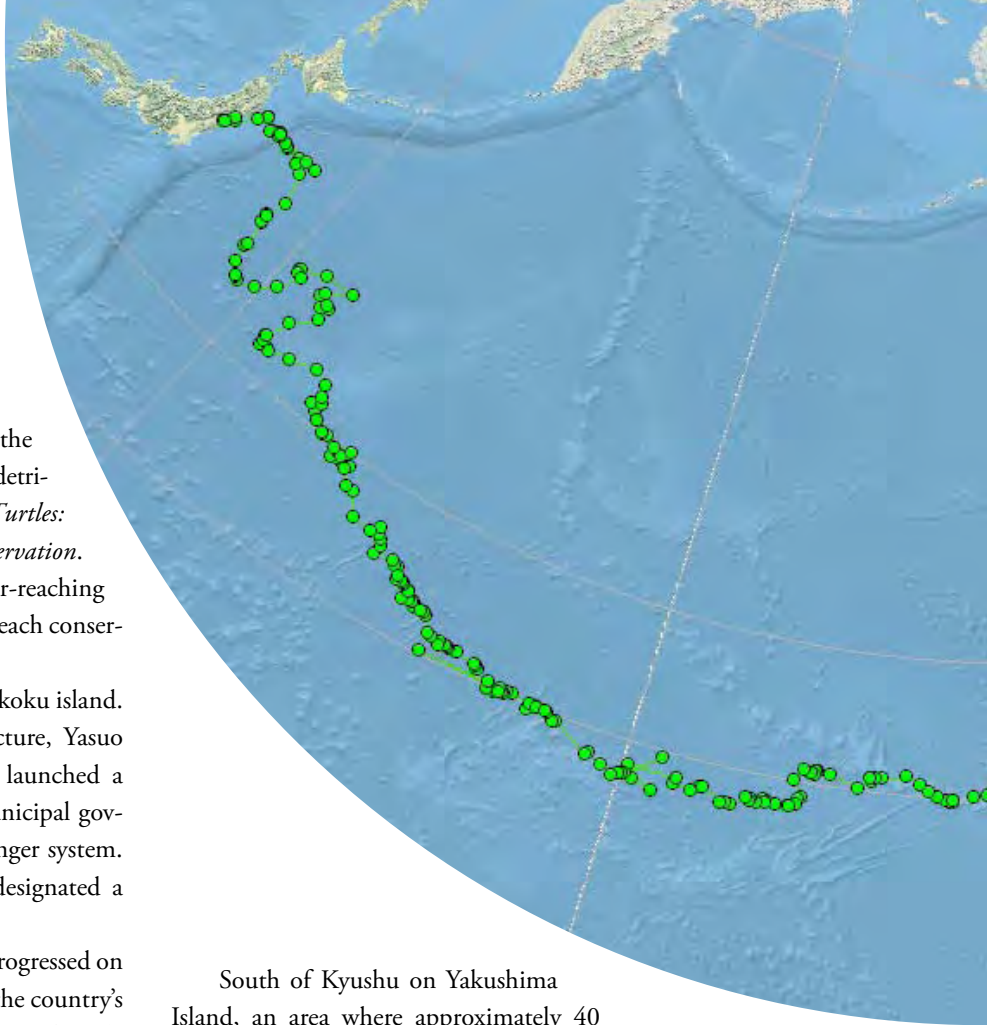
The effort began in 1950 on the southern coast of Shikoku island. There, in the town of Hiwasa in the Tokushima prefecture, Yasuo Kondo, a junior high school teacher, and his students launched a conservation and research project. Ten years later, the municipal government took over the project and established a beach ranger system. The nesting beach and its loggerhead sea turtles were designated a national natural treasure.

In the 1970s, conservation of rookeries dramatically progressed on the southern island of Kyushu, which is home to many of the country's loggerhead nesting beaches. Until that time, consumption of turtle eggs by the local people had been commonplace.

In 1971, Hiroshi Takeshita, founder of Miyazaki Wildlife Research Group, found that 85 percent of all the nests were poached in Miyazaki, a key loggerhead nesting beach on the eastern side of Kyushu. The research group began nightly patrols on the nesting beach, tagging nesters and relocating nests as necessary, and conducted a nutritional analysis of sea turtle eggs. With the results of the nutritional research, Takeshita's group implemented an educational campaign to communicate to the public that sea turtle eggs are no more nutritious than chicken eggs. Within a few years, the egg poaching had ceased. Soon after, the local government designated the loggerhead sea turtle a protected species and began to support the conservation activities.



Sign reads, "17th Japan Sea Turtle Symposium Social Gathering." In Nov. 2006, fishermen, researchers, and resource managers from Mexico, Japan, and the United States gathered to commemorate the 10th anniversary of Adelita's track from Baja California Sur to Japan—the first loggerhead sea turtle to provide physical proof of their trans-Pacific migration via satellite telemetry. The objective of the trip was to share experiences, raise awareness and work toward reducing bycatch of loggerhead sea turtles during a two-week journey throughout the Japan Archipelago. © PROPENINSULA / I. KINAN



South of Kyushu on Yakushima Island, an area where approximately 40 percent of all loggerheads in the North Pacific nest, some local communities had a bidding system for the right to collect eggs. In other communities, children collected and sold eggs to buy school supplies. By the end of the 1970s, a conservation ordinance and beach ranger system implemented by the local government had completely halted egg consumption throughout the area.

These are but a few of the examples of nesting beach protection in Japan. Over the past 25 years, conservation initiatives have continued to increase protection of nesting females, their eggs, and hatchlings on the beaches throughout the country.

Despite these long-standing efforts, Japan's loggerhead nesting population has not recovered. Initial short-term increases in the population during the first years of conservation led to a longer-term decline. While nesting has been increasing since 1998, the population is nowhere near restored. For example, in Kamoda on Shikoku Island, nesting turtles came ashore almost 800 times in 1959, while fewer than 50 have emerged each year over the past decade. Also, at least 300 loggerheads are found stranded on Japanese beaches each year, emphasizing what we already know. These facts emphasize that no matter how well we protect the nesting habitat, conservation on the beach is not enough.

Conservation of such global animals must be addressed on a global basis. In Japan, we must work with other conservationists to mitigate the hazards that our nesting loggerhead population confronts in the open ocean and along their foraging grounds in the eastern Pacific, where they feed. By cooperation and collaboration, we will one day succeed in protecting the loggerheads throughout their migratory paths, and we will welcome hundreds of nesting loggerheads to our shores once again.

Yoshimasa Matsuzawa is a researcher at the Sea Turtle Association of Japan in Osaka and a member of the IUCN Marine Turtle Specialist Group.



This map shows satellite telemetry data from a loggerhead known as Adelita, the first sea turtle ever tracked on a trans-Pacific journey. Adelita was released in Santa Rosalita, Baja, Mexico, and tracked to the Japanese coast before her satellite transmitter stopped sending signals. She most likely became caught in fishing gear and drowned. Adelita's journey was recorded in 1996 by researchers Wallace J. Nichols, Jeffrey Seminoff, and Antonio and Beatris Resendiz.

Baja Fishers Work to Conserve Loggerhead Foraging Grounds

The small Mexican fishing community of Puerto Lopez Mateos has a big influence on loggerhead sea turtle conservation. Facing a massive bycatch problem in their halibut and shark fisheries, fishermen are partnering with researchers to better understand sea turtles and to avoid turtle bycatch.

Adult loggerheads in the North Pacific nest exclusively on Japanese beaches, but their juvenile migrations can span the entire Pacific Basin. Some travel more than 10,000 kilometers (6,213 miles) to the west coast of North America. On reaching maturity, they return to Japanese coasts to reproduce.

The legendarily rich waters of Baja California Sur attract thousands of juvenile loggerheads to feed and mature. However, these waters are also a place of intense fishing, where catastrophically high bycatch occurs. This bycatch is one of the greatest known threats to the critically endangered North Pacific loggerhead population—one of the 10 most threatened sea turtle populations in the world, as identified by the IUCN Marine Turtle Specialist Group.

Demographic models suggest that bycatch in this hotspot may preclude the North Pacific loggerhead population's recovery. Local fishermen accidentally kill as many as 30 loggerheads per day, per boat. In 2005 alone, conservationists estimate that more than 900 loggerheads died in fishing nets in just two of the region's fleets. The fishermen reported, however, that they catch loggerheads only in certain areas.

In 2003, the Grupo Tortuguero formed a task force of local fishers, community members, and managers to study turtle habitat use and to design and conduct experiments to reduce turtle bycatch. Ultimately, they developed a research program to engage local fishers in understanding, assessing, and reducing their bycatch.

The task force deployed more than 40 satellite transmitters and tracked turtles to better understand if loggerheads congregate in specific areas. The research revealed that although they range widely throughout their lifetimes, juvenile loggerheads off the Baja California Peninsula spend most of their time in a narrow feeding hotspot that overlaps with massive swarms of their primary prey, the pelagic red crab.

Testing of various types, sizes, arrangements, and locations of gillnets demonstrated that loggerheads are caught almost exclusively within the hotspot. The tests ascertained that the only reliable method of preventing turtle bycatch is to avoid fishing with bottom-set gillnets and longlines in the hotspot.

In March 2006, the community task force combined local ecological knowledge with these new data to declare the loggerhead hotspot a "fisher's turtle reserve," where turtle ecotourism can thrive and where locals work to eliminate loggerhead bycatch by changing their fishing techniques.

Since then, the Grupo Tortuguero has worked with state and federal authorities to formally establish the turtle reserve as a federally protected refuge zone that will give local fishermen the authority to defend turtles in the area from destructive local and outside fishing practices. During summer 2006, several fishing crews left nets and hooks ashore to take ecotourists to sea to witness the natural beauty of loggerheads in their waters.

Long-term solutions to mitigate bycatch must be based on good science, policy, and enforcement, but ultimately success derives from fishers' direct interest and participation. The capacity to conduct and apply research and to enforce legislation for bycatch reduction in Baja California Sur is limited—as it is in many coastal fisheries around the world. The Grupo Tortuguero demonstrates the power of a small cadre of committed local citizens to effect change when they steward the resources on which their livelihoods depend.

Hoyt Peckham is a marine conservation scientist at ProPeninsula and a doctoral candidate at the University of California at Santa Cruz. *Jobath Laudino Santillán* is a coordinator of environmental education for the Grupo Tortuguero. *Wallace J. Nichols* (www.wallacejnichols.org) works with a number of organizations to further marine conservation efforts and has studied Pacific sea turtles for 15 years.



Fishermen from Puerto López Mateos, Baja California Sur, satellite track a loggerhead on her trans-Pacific journey. © GRUPO TORTUGUERO