SPECIES in the SPOTLIGHT

Priority Actions 2021–2025

NOAA FISHERIES

Pacific Leatherback Turtles

(*Dermochelys coriacea*)

Pacific Leatherback Turtle Priority Action Plan Team

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Cover: Leatherback turtle, *Dermochelys coriacea*, Kei Islands. Photo: Jason Isley, Scubazoo.

Leatherback hatchling heading to the surf in Papua New Guinea. Photo: N. Pilcher.

The *Species in the Spotlight* Initiative

In 2015, the National Marine Fisheries Service (NOAA Fisheries) launched the *Species in the Spotlight* initiative to provide immediate, targeted efforts to halt declines and stabilize populations, focus resources within and outside of NOAA on the most at-risk species, guide agency actions where we have discretion to make investments, increase public awareness and support for these species, and expand partnerships. We have renewed the initiative for 2021–2025.

The criteria for *Species in the Spotlight* are that they are endangered, their populations are declining, and they are considered a recovery priority #1C (84 FR 18243, 4/30/2019). A recovery priority #1C species is one whose extinction is almost certain in the immediate future because of rapid population decline or habitat destruction, and because of conflicts with construction, development, or economic activity.

As of January 2021, the following nine species are our *Species in the Spotlight.*

- Atlantic salmon Gulf of Maine distinct population segment (DPS)
- Central California Coast coho salmon evolutionarily significant unit (ESU)
- Cook Inlet beluga whale DPS
- Hawaiian monk seal
- North Atlantic right whale (added in 2019)
- Pacific leatherback sea turtle
- Sacramento River winter-run Chinook salmon ESU
- Southern Resident killer whale DPS
- White abalone

For some of these species, their numbers are so low that they need to be bred in captivity; others are facing human threats that must be addressed to prevent their extinction. In most cases, we understand the limiting factors and threats to these species, and we know that the necessary management actions have a high probability of success. In some cases, we are prioritizing research to better understand the threats so we can fine-tune our actions for the maximum effect. We know we can't do this alone. A major part of the *Species in the Spotlight* initiative is to expand partnerships and motivate individuals to work with us to get these species on the road to recovery.

Priority Action Plans

The 5-year action plan is part of a strategy to marshal resources for species listed under the Endangered Species Act of 1973 (ESA) for which immediate, targeted efforts are vital for stabilizing their populations and preventing their extinction.

In its first 5 years, the *Species in the Spotlight* initiative has been successful at raising awareness, increasing partnerships, and prioritizing funding—providing or leveraging more than $113 million toward projects that will help stabilize these highly at-risk species.

We renewed the *Species in the Spotlight* initiative for 2021–2025, and have updated the priority action plans that outline what we need to do to prevent their extinction.

The 2021-2025 5-year action plans build upon existing action, recovery, or conservation plans and detail the focused efforts needed over the next 5 years to reduce threats and stabilize population declines. We will continue to engage our partners in the public and private sectors in actions they can take to support this important effort. We will report on our progress through the Biennial Recovering Threatened and Endangered Species Report to Congress, and on our *Species in the Spotlight* web pages.

This strategy will continue to guide agency actions where we have the discretion to make critical investments to safeguard these most endangered species. The strategy will not divert resources away from the important and continued efforts to support all ESA-listed species under our authority. Many of our species have long-standing conservation programs supported by multiple partners. We remain committed to those programs.

This action plan builds on the success of the past 5 years and highlights the actions that can be taken by us, other federal and state resource agencies, environmental organizations, Native American tribes, and other partners to work toward turning the trend around for this species from a declining trajectory and toward recovery. We appreciate all of our current partners and collaborators, as the steps we need to take to stabilize these species would not be possible without them.

NOAA Fisheries Contact

If you are interested in working with us, or if you have questions about any of the priority actions contained in this plan, please contact: Ann Marie Lauritsen, Pacific Leatherback Turtle *Species in the Spotlight* Recovery Coordinator, Office of Protected Resources, Silver Spring, Maryland, (301) 427-8477, annmarie.lauritsen@noaa.gov.

Pacific Leatherback Turtle Status

Leatherback turtles are highly migratory and are found across the globe in temperate and tropical latitudes. Leatherback turtles in the Pacific Ocean (Pacific leatherbacks) are split into western and eastern Pacific populations based on their distribution and biological and genetic characteristics. Eastern Pacific leatherbacks nest along the Pacific coast of the Americas, primarily in Mexico and Costa Rica, and forage throughout coastal and pelagic habitats of the southeastern Pacific. Western Pacific leatherbacks demonstrate a bimodal pattern of seasonal nesting during the winter and summer months in the west Pacific, primarily in Indonesia, Papua New Guinea, and the Solomon Islands. A portion of this population migrates north through the waters of Indonesia, Malaysia, Philippines, and Japan, and across the North Pacific past Hawaii to feeding areas off the Pacific coast of North America. Another segment of the western subpopulation migrates into the southern hemisphere through the Coral Sea, into waters of the western South Pacific Ocean (2, 3, 18, 20, and 22)*.

On June 2, 1970, the leatherback turtle (*Dermochelys coriacea*) was listed as endangered under the Endangered Species Conservation Act of 1969 (35 FR 8491), the precursor to the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 et seq). When the ESA was enacted in 1973, the species was listed as endangered, wherever found (see Endangered and Threatened Wildlife; 50 CFR 17.11). The NOAA Fisheries and the U.S. Fish and Wildlife Service (USFWS), together the Services, jointly administer the ESA and share jurisdiction of sea turtles. Pacific leatherbacks are considered one of the most at-risk species because of the drastic decreasing population trend since the 1980s. Western Pacific leatherbacks have declined more than 80 percent and Eastern Pacific leatherbacks by more than 97 percent. They face significant threats from bycatch in fisheries (entanglement and/or hooking), direct harvest of both eggs and turtles, coastal development, and the effects of climate change (habitat loss due to sea level rise, alteration of hatchling sex ratios, and decreased nest success). Additional threats include vessel strikes, ingestion of plastics, and entanglement in marine debris, including lost or discarded fishing gear (17, 18, 27, 29, and 30).

*Note: Numbers appearing in parentheses refer to the numbered references at the end of the action plan.

Leatherback turtle, *Dermochelys coriacea,* Kei Islands. Photo: Jason Isley, Scubazoo.

Pacific Leatherback Key Conservation Efforts/Challenges

More recent trend analyses, on the primary nesting beaches in both the East and West Pacific, continue to show declines. In the East Pacific, on the primary nesting beach complex in Costa Rica, the trend in the number of nesting females at Las Baulas declined by 15.5 percent annually from 1988/1989 through 2015/2016. In the West Pacific, there was a 5.7 percent annual decline at Jamursba Medi, Indonesia, from 2001 to 2017 and a 2.3 percent annual decline at Wermon, Indonesia, from 2006 to 2017. This population decline is also evident in a key foraging habitat in the United States. A 28-year aerial survey and in-water study indicates a 5.6 percent annual decline in the number of leatherback turtles foraging off central California, with an 80 percent total decline between 1990 and 2017 (1 and 17).

The most significant threat to Pacific leatherbacks is bycatch in their foraging areas, in migratory corridors, and off their nesting beaches.

NOAA Fisheries has implemented measures to address threats and study the population in U.S. waters. In 2001, the Pacific Leatherback Conservation Area off central California and Oregon was established, which prohibits large-mesh drift gillnet fishing during mid-August through mid-November to protect foraging leatherbacks. Since 2004, the Hawaii shallow-set pelagic longline fishery includes 100 percent fishery observer[1] coverage and limits the amount of leatherback turtle interactions. Additionally, the shallow-set longline fishery targeting swordfish is required to use 18/0 circle hooks and finfish bait, which has been shown to reduce leatherback bycatch rates by 84 percent. All Pacific U.S.-managed commercial fishing vessels are required to have specific equipment on board to help safely release bycaught sea turtles, and vessel owners and operators are trained on safe handling and release procedures.

In 2006, four U.S. Marine National Monuments were created within the Pacific Islands region, and they provide lasting protection of leatherback marine habitat. In 2012, leatherback critical habitat was designated in two areas off the U.S. West Coast determined to be key foraging areas.[2] A 28-year long-term monitoring and research program off the Central California coast has provided important information on population trends, demographics, and marine habitat use in a key U.S. foraging area.

Despite long-term conservation efforts in the United States, both East and West Pacific populations are predicted to further decline without intensive international conservation efforts to address their threats. The highly migratory nature of Pacific leatherbacks necessitates regular cooperation with international partners to monitor the populations and address their main threats. Both the USFWS, through the Marine Turtle Conservation Fund, and NOAA Fisheries have worked to support conservation projects that protect and conserve Pacific leatherbacks to ensure the long-term survival of this imperiled species. We work to maintain consistent nesting surveys on primary beaches, and to reduce the harvest of nesting females and nests on these beaches. Between 2000 and 2020, NOAA Fisheries and USFWS worked with a range of internationally based non-governmental organizations, government agencies, and universities supporting projects to protect Pacific leatherbacks in the Philippines, Indonesia, Papua New Guinea, Solomon Islands, Vanuatu, Perú, Mexico, and Costa Rica.

The most significant threat to Pacific leatherbacks is bycatch in their foraging areas, in migratory corridors, and off their nesting beaches. Fishing fleets from multiple nations and the dispersed nature

[1] See http://www.st.nmfs.noaa.gov/observer-home/ for more information on the National Observer Program for fisheries.

[2] 77 FR 4169: Endangered and Threatened Species: Final Rule To Revise the Critical Habitat Designation for the Endangered Leatherback Sea Turtle. https://www.fisheries.noaa.gov/action/critical-habitat-designation-leatherback-sea-turtles-along-us-west-coast

of artisanal fisheries make reducing this threat challenging. NOAA Fisheries supported fisheries bycatch mitigation projects in Mexico, Chile, Perú, Philippines, and Indonesia. Likewise, the USFWS supports Pacific leatherback projects in Chile, Costa Rica, Mexico, Nicaragua, Indonesia, Papua New Guinea, and Solomon Islands. Through these programs and the associated scientific and technical assistance, the Services are closely coordinating and collaborating with international partners, and seeking new partners to promote the recovery of Pacific leatherbacks and reverse the current decline.

NOAA Fisheries and USFWS have identified the following top five recovery actions to support over the next 5 years:

- Reduce fisheries bycatch and in-water harvest.
- Improve protection on nesting beaches.
- Support in-water research and monitoring to inform conservation actions.
- Foster cooperation with international partners.
- Encourage public engagement.

In this action plan, we identify the critical steps to achieve these actions. During the 5-year timeframe, we will endeavor to develop and track specific ways to measure and report changes in key conservation metrics.

NOAA Fisheries offices (NMFS Office of Protected Resources, NMFS Pacific Islands Fisheries Science Center, NMFS Pacific Islands Regional Office, NMFS Southwest Fisheries Science Center, and the NMFS West Coast Regional Office), USFWS, and numerous partners are currently working collaboratively to recover leatherbacks and we hope to engage new partners in this renewed effort.

Key Actions Needed 2021–2025

The key actions that follow represent actions that the Services and partners can take in the next 5 years to promote recovery of the species.

Reduce Fisheries Bycatch and in-Water Harvest

Description and Background: Bycatch in coastal and pelagic international fisheries—including illegal, unreported, and unregulated (IUU) fishing—remains one of the most significant threats to Pacific leatherbacks throughout their migratory range and foraging habitats. Reducing bycatch is part of a broader strategy incorporating bycatch reduction/mitigation methodologies in coastal gillnet and pelagic longline fisheries. Currently we are working with several countries to assess fisheries impacts and reduce Pacific leatherback bycatch in coastal waters, particularly near nesting beaches. As we continue our efforts to reduce bycatch in U.S. waters and in eastern and western Pacific leatherback high-use marine areas, we will collaborate with other countries, non-governmental organizations, and Regional Fisheries Management Organizations. Additionally, we will focus efforts on reducing the direct harvest of immature and adult western Pacific leatherback sea turtles in their coastal foraging habitats (8, 9, 10, 12, 13, 14, 16, 21, 23, 26, 31, and 33). Over the next 5 years, we plan to expand our efforts in several complementary ways:

- Work collaboratively with Regional Fisheries Management Organizations. We will continue our efforts within the Western and Central Pacific Fisheries Commission (WCPFC) and the Inter-American Tropical Tuna Commission to enact resolutions that protect leatherback turtles from fishery-related threats. This work includes resolutions to mitigate impacts on sea turtles in the Eastern Tropical Pacific and expand mitigation measures to all shallow-set longline fisheries in the WCPFC Area (Conservation and Management Measure 2018-04). We will explore opportunities to better understand the effectiveness of bycatch reduction measure (including observer programs).
- Expand assessments and monitoring of fisheries bycatch in the Philippines, Indonesia, and Mexico.

- Develop, test, and begin the process of implementing bycatch reduction technologies, including solar-powered net illumination.
- Improve and evaluate sea turtle safe handling and release measures (e.g., the development of sliding line cutters).
- Continue monitoring efforts in the waters of the Kei Islands, Maluku Province, Indonesia, to reduce the directed harvest of immature and adult leatherbacks. There have been periodic monitoring efforts estimating the number of individuals killed annually over the past three decades. In 2017, an increase in leatherback hunting was recorded (103 individuals killed) with a notable decrease to seven in 2019, emphasizing the need to focus on this significant threat to the population.

Expected Benefits to the Species: Reducing and eliminating the main threat and impediment to Pacific leatherback recovery will have the most immediate and substantial impact on the conservation and recovery of this population.

Source: Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). USFWS and NMFS 1998 (19).

Priority 1 Recovery Actions:

2.1 Protect and manage leatherback populations in the marine habitat.

2.1.4 Monitor and reduce incidental mortality in commercial and recreational fisheries.

Location: U.S. and International Pacific Waters

Partners:

- Academia: Arizona State University, State University of Papua-Indonesia, and University of Bogor-Indonesia.
- Multilateral Sea Turtle Agreements: Inter-American Convention for the Protection and Conservation of Sea Turtles and Indian Ocean Southeast Asian Marine Turtle MOU.
- Governments: Indonesia, Philippines, Malaysia, Papua New Guinea, Solomon Islands, México, and Perú.

The highly migratory nature of Pacific leatherbacks necessitates regular cooperation with international partners to monitor the populations and address their main threats.

- Non-Governmental Organizations: Ecolibrium, Inc., National Fish and Wildlife Foundation, Grupo Tortuguero de las Californias, Kutzari Asociación para el Estudio y Conservación de las Tortugas Marinas, Large Marine Vertebrates Research Institute, Marine Research Foundation, Pacífico Laud, ProDelphinus, Marine Research Foundation, Red Laúd del Océano Pacífico Oriental, The Ocean Foundation, World Wildlife Fund, and Upwell.
- Regional Fishery Management Organizations/ Council: Inter-American Tropical Tuna Commission, Western and Central Pacific Fisheries Commission, and Western Pacific Regional Fishery Management Council.

Current Status: Ongoing

Resources: This priority recovery action requires a significant commitment of funds to provide support to implement these critical needs. Funding of $250,000 to $350,000 annually above base funds is needed.

Adult leatherback sea turtle. Photo: Scott Benson, SWFSC.

Improve Protection on Nesting Beaches

Description and Background: Nesting beach monitoring includes surveys of nesting activity, protection of nesting females and their nests, and protection of the nesting beach. Long-term monitoring of index nesting beaches is critical for gathering reproductive information and for determining population status and trends needed for recovery planning, status/5-year reviews, and Section 7 consultations. For example, long-term nesting data from Indonesia were essential to the ESA Status Review and Section 7 consultations for U.S. Pacific fisheries completed during the 2016-2020 *Species in the Spotlight* period. Direct harvest of nesting turtles and their eggs is a primary threat to Pacific leatherback populations. Nest protection efforts allow for successful hatching by minimizing the threat through a science-based management approach. Protection efforts include strategies to prevent egg depredation by feral pigs or dogs, and additional measures to reduce threats that lower hatching success (e.g., in-situ nest shading to lower sand temperatures, relocation of nests laid in erosion-prone areas to stable sections of beach). Culturally focused, community-based education and alternative livelihood programs help sustain recovery and conservation efforts (4, 5, 11, 15, 16, 24, 25, 28, 29, and 31).

Nest protection efforts allow for successful hatching by minimizing the threat through a science-based management approach.

In addition, coastal development and village sprawl impact nesting beaches through the placement of structures adjacent to the nesting beach and increased human presence. Structures can create barriers to nesting, accelerate beach loss, and disrupt coastal processes. Artificial lighting visible from the nesting beach disrupts nesting and disorients hatchlings. Increased human activities on the beach may interfere with the nesting process if efforts to prevent disturbance are not in place (18).

Over the next 5 years, we will focus on:

- Supporting our international partners to maintain and expand their nesting beach monitoring programs at both index nesting beaches and secondary nesting beaches in the western Pacific Ocean (Indonesia and the Solomon Islands) and eastern Pacific Ocean (Mexico and Costa Rica). We will work to expand nesting beach monitoring and protection activities to currently unmonitored areas (e.g., Papua New Guinea).
- Working with international government agencies and partners to identify the most effective strategies (best management practices) to protect nests and nesting beaches. This includes reducing/eliminating direct harvest of nesting females and taking of eggs for consumption as well as identifying effective strategies to protect nests from predation due to feral pigs and dogs.
- Fostering community involvement through culturally focused, community-based education and outreach, with a focus on alternative livelihood programs in Indonesia. Using science-

Leatherback turtle hatchling heading to the surf. Photo: Shutterstock.

based management approaches is key for developing effective nest protection programs, enhancing hatchling production, and ensuring broad community support for leatherback conservation.

Expected Benefits to the Species: Protecting turtles, nests, and nesting habitat is necessary to ensure recruitment into the population, which is critical for the long-term survival of Pacific leatherbacks.

Source: Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). USFWS and NMFS 1998.

Priority 1 Recovery Actions:

1.1 Protect and manage turtles on nesting beaches.

1.2 Protect and manage nesting habitat.

Location: Nesting Beaches in the Eastern and Western Pacific

Partners:

- Academia: State University of Papua's Abun Leatherback Project.
- Multilateral Sea Turtle Agreements: Inter-American Convention for the Protection and Conservation of Sea Turtles, Indian Ocean Southeast Asian Marine Turtle MOU, and South Pacific Regional Environment Programme.

A village in Wau-Weyaf West Papua, Indonesia, after attending a leatherback turtle outreach program. Photo: Kartika Zohar.

- Governments: Indonesia, Philippines, Malaysia, Papua New Guinea, Solomon Islands, México, and Costa Rica.
- Non-Governmental Organizations: Blue Abadi Fund, Conservation International, Fauna & Flora International, Kutzari Asociación para el Estudio y Conservación de las Tortugas Marinas, Marine Research Foundation, National Fish and Wildlife Foundation, Red Laúd del Océano Pacífico Oriental, Solomon Islands Community Conservation Partnership, Tetepare Descendants, The Ocean Foundation, The Nature Conservancy, Walton Family Foundation, Wildlife Conservation Society, World Wildlife Fund, and Yayasan Kehati
- Regional Fishery Management Organization/Council: Western Pacific Regional Fishery Management Council, Western and Central Pacific Fisheries Commission.

Current Status: Ongoing

Resources: This priority recovery action requires a significant commitment of funds to provide support to implement these critical needs. USFWS has contributed funding to implement this priority recovery action through the MTCF and these funds are critical. Funding through NOAA Fisheries of approximately $500,000 annually above base funds is needed to fully implement.

Support In-water Research and Monitoring to Inform Conservation Efforts

Description and Background: Long-term in-water studies including telemetry, tagging, and tissue sampling for stable isotope and genetic analysis are vital to understanding the distribution, abundance, natal origins, and threats in the marine environment. Leatherbacks are highly migratory, including periodic migrations between foraging grounds and nesting beaches. These migrations result in leatherbacks moving through a variety of political jurisdictions (and the high seas) where regulations may vary or may be non-existent. Information on migration, foraging areas, and threats is an essential component to inform development of conservation measures.

Long-term in-water studies including telemetry, tagging, and tissue sampling for stable isotope and genetic analysis are vital to understanding the distribution, abundance, natal origins, and threats in the marine environment.

We will continue to engage with partners to support telemetry studies, aerial and in-water surveys, and population assessments in marine habitats to understand habitat use and threats. We plan to continue building on partnerships aimed at monitoring, assessing, and reducing direct harvest of leatherback turtles in foraging habitats, while also advancing genetic sample collection and analysis of samples from Indonesia, Philippines, Papua New Guinea, and Solomon islands to understand connectivity of foraging turtles and the threats to the population.

We will continue to encourage expanded fishery-independent telemetry studies in order to determine overlap between fisheries and leatherback habitats. The results will be applied to Ecosystem-Based Fishery Management research to improve fishery management measures. Defining seasonal foraging and migratory areas within the South China, Sulu, Celebes, Molucca, Halmahera, Philippine, and Banda seas as well as off the U.S. West Coast will help guide conservation (e.g., real time data used by the State of California to inform the opening and closing of the Dungeness crab fishery season).

Over the next 5 years, we will:

- Continue aerial and in-water studies off the U.S. West Coast to monitor leatherback abundance and trends to inform conservation measures.
- Build on partnerships to advance in-water research in Southeast Asia to understand foraging and migratory habitats.
- Develop modified satellite tag attachment methodology for leatherbacks to expand opportunities for studying movement, habitat use, and post-interaction mortality.

Leatherback turtle carrying a suction cup mounted time-depth recorder off the central coast of California. Photo: Demian Bailey, NOAA-NMFS permit #1596.

- Expand ecosystem-based fisheries management to understand environmental drivers that can be used to predict hot spots in order to help minimize bycatch.

Expected Benefits to the Species: Increased understanding of movements, connectivity, and marine habitat use is vital to informing and prioritizing efforts to conserve and recover Pacific leatherbacks.

Source: Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). USFWS and NMFS 1998.

Priority 1 Recovery Actions:

2.1 Protect and manage leatherback populations in the marine habitat.

2.1.1 Eliminate directed take of turtles.

2.1.2 Determine distribution, abundance, and status in the marine environment.

Location: U.S. and International Pacific Waters

Partners:

- Academia: State University of Papua's Abun Leatherback Project.
- Governments: Indonesia, Papua New Guinea, México, Costa Rica, and Perú.
- Non-Governmental Organizations: Kutzari Asociación para el Estudio y Conservación de las Tortugas Marinas, Pacifico Laud, The Leatherback Trust, ProDelphinus, Marine Research Foundation, World Wildlife Fund, and Upwell.

Current Status: Ongoing

Resources: Annual funding above base funds of approximately $300,000 to $350,000 would significantly improve our ability to make progress on this priority recovery action.

Foster Cooperation with International Partners

Description and Background: Because Pacific leatherbacks originate from and migrate outside of U.S. territorial waters during much of their life cycle, effective recovery and conservation efforts must engage international partners to address the various threats facing leatherbacks on land and sea. Several multilateral instruments provide opportunities for working collaboratively to conserve and recover the species. These include the Agreement on the Conservation of Nature and Natural Resources, the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, the Inter-American Convention for the Protection and Conservation of Sea Turtles, the Indian Ocean Southeast Asian Marine Turtle Memorandum of Understanding, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Secretariat of the Pacific Regional Environment Programme. We encourage continued involvement and compliance, increased membership among international partners, and communication of agreements at the community level to ensure the protection and recovery of this highly migratory and globally distributed species.

Over the next 5 years, we will:

- Engage on leatherback bycatch mitigation through bilateral and multilateral cooperation agreements. We will continue our international cooperation efforts particularly with Coral Triangle Countries (e.g., Indonesia, Philippines, and Malaysia), Chile, Perú, Ecuador, and Mexico.
- Complete the Memorandum of Understanding on Cooperation to Conserve and Protect Pacific Leatherback Sea Turtles drafted by the United States and Indonesian governments to promote cooperation and share best practices in conservation, support programs to protect nesting beaches, increase reproductive output, and reduce harvest of leatherback turtles.
- Continue participation in the Eastern Pacific Leatherback Task Force of the Inter-American Convention for the Protection and Conservation of Sea Turtles to implement strategic actions of the Resolution.
- Continue collaboration between the Inter-American Convention for the Protection and Conservation of Sea Turtles and Inter-American Tropical Tuna Commission (MOU established) to foster greater collaboration to reduce leatherback bycatch.

- Continue participation in the Indian Ocean Southeast Asian Marine Turtle Memorandum of Understanding and look for opportunities to advance leatherback conservation.

Expected Benefits to the Species: Because Pacific leatherbacks inhabit areas outside of U.S. territorial waters during a large portion of their life cycle, effective international coordination and cooperation is vital to their recovery and conservation.

Source: Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). USFWS and NMFS 1998.

Priority 1 Recovery Actions:

4.1 Support existing international agreements and conventions to ensure that turtles in all life-stages are protected in foreign waters.

4.2 Encourage ratification of CITES for all non-member Pacific countries, compliance with CITES requirements, and removal of sea turtle trade reservations held by member nations.

4.3 Develop new international agreements to ensure that turtles in all life-stages are protected in foreign waters.

Location: International Pacific Waters and Nesting Beaches

Partners:

- Multilateral Sea Turtle Agreements: Agreement on the Conservation of Nature and Natural Resources, Convention on International Trade in Endangered Species of Wild Fauna and Flora Parties, Inter-American Convention for the Protection and Conservation of Sea Turtles, Indian Ocean Southeast Asian Marine Turtle MOU, Inter-American Tropical Tuna Convention, and South Pacific Regional Environment Programme Parties.
- Non-Governmental Organization: National Fish and Wildlife Foundation.
- Regional Fishery Management Organization: Western and Central Pacific Fisheries Commission.

Current Status: Ongoing

Resources: Most of the resources needed to implement this priority recovery activity are included in base salaries of NOAA Fisheries staff. Additional funding could help support our participation in bilateral and multilateral meetings to advance recovery activities.

A nesting leatherback sea turtle. Photo: Shutterstock.

Encourage Public Engagement

Description and Background: Recovering eastern and western Pacific leatherbacks will require significant efforts across a wide range of stakeholders, including the public. While the U.S. public might not be able to contribute to improving nesting beach protection or develop ways to reduce bycatch, they can help through their purchasing decisions and participation in conservation projects.

Increasing the public's awareness and capacity to choose seafood caught in ways that do not harm or kill sea turtles is an important effort to support leatherback conservation. Consumers can use available online resources to find out where their seafood is from and buy from fisheries that include bycatch reduction measures.

Leatherbacks can become entangled in marine debris such as derelict fishing gear or plastic debris, which can interfere with their ability to swim, submerge, feed, avoid predators, and/or surface to breathe and result in injury or death. Leatherbacks can also ingest debris such as plastic bags, plastic sheets, balloons, latex products, and other refuse, which they mistake for jellyfish prey. Young sea turtles tend to seek shelter under floating objects to avoid predation and adults may congregate where marine debris often occurs. The public can help reduce the amount of debris in the marine environment by purchasing biodegradable products, disposing of trash properly, and participating in beach and marine cleanup events. Members of the public can help protect and recover Pacific leatherbacks by reporting sightings, as well as stranded, entangled, or injured animals (7 and 8).

Become a responsible seafood consumer by asking where and how your seafood was caught. Choose seafood caught in ways that do not harm or kill turtles.

Leatherback turtle, *Dermochelys coriacea,* Kei Islands. Photo: Jason Isley, Scubazoo.

We will focus public engagement efforts around the following themes:

- Making responsible seafood choices: We will continue to encourage consumers to buy seafood from responsibly managed fisheries that minimize bycatch of sea turtles. Consumers can use resources such as Fishwatch.gov, Seafoodwatch.org, or the free Seafood Watch App.
- Reducing marine debris: We will support programs that encourage consumers to reduce, reuse, and responsibly dispose of plastics. We will also participate in coastal cleanup efforts of marine debris to reduce the amount of harmful trash that enters the marine environment and harms Pacific leatherbacks and the ecosystems on which they depend.
- Reporting sea turtle sightings and strandings: We will continue to encourage the public to report in-water sightings of Pacific leatherbacks in U.S. waters to NOAA Fisheries and to report stranded, entangled, or injured sea turtles by contacting their local stranding response group. NOAA Fisheries Sea Turtle Stranding and Salvage Network web page: https://www.fisheries.noaa.gov/national/marine-life-distress/sea-turtle-stranding-and-salvage-network. NOAA's Marine Wildlife Hotline: 1-888-256-9840; and along the U.S. West Coast, Sea Turtle Stranding Hotline at 1-858-546-7162 or 1-562-506-4315.

We will use different outreach forums to engage the public, including training workshops (Skipper workshops that include safe handling procedures and data collection), events (California Leatherback Day in partnership with Monterey Bay National Marine Sanctuary), and social media (Sea Turtle Week with stories that highlight Pacific leatherbacks).

Expected Benefits to the Species: Consumers who buy seafood caught in ways less likely to adversely affect leatherback turtles will contribute to the species recovery. Consumers who engage in marine debris reduction/elimination will reduce the likelihood of leatherback injury and mortality and will contribute to the species recovery.

Source: Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). USFWS and NMFS 1998.

Priority 1 Recovery Actions:

2.1.1.1 Reduce directed take of turtles through public education and information.

2.1.3 Reduce the effects of entanglement and ingestion of marine debris.

2.1.7 Develop stranding network.

Location: U.S. and International Pacific Waters and Nesting Beaches

Partners:

- Government: State of California.
- Multilateral Sea Turtle Agreements: Inter-American Convention for the Protection and Conservation of Sea Turtles, Indian Ocean Southeast Asian Marine Turtle MOU, and South Pacific Regional Environment Programme.
- Non-Governmental Organizations: Upwell and World Wildlife Fund.
- Regional Fishery Management Organization/Council: Western Pacific Regional Fishery Management Council and Western and Central Pacific Fisheries Commission.
- Marine Sanctuaries: Gulf of Farallones National Marine Sanctuary and Monterey Bay National Marine Sanctuary.
- NOAA's Marine Debris Program.

Current Status: Ongoing

Resources: Most of the resources needed to implement this priority recovery activity are included in base salaries of NOAA Fisheries staff. Funding of $25,000 annually would help expand implementation of this priority recovery activity.

Hatchling leatherback sea turtle. Photo: Shutterstock.

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Back cover: Leatherback turtle hatchling in West Papua, Indonesia crawling to the ocean. Photo: Scott Benson, SWFSC.

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