

**STATEMENT OF JIM KURTH, DEPUTY DIRECTOR
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BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, SUBCOMMITTEE
ON FISHERIES, WATER, AND WILDLIFE ON MARINE DEBRIS AND WILDLIFE: IMPACTS,
SOURCES, AND SOLUTIONS**

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Good morning Chairman Sullivan, Ranking Member Whitehouse, and Members of the Subcommittee. Thank you for the opportunity to provide the Department of the Interior's views on marine debris and its impact on wildlife. My testimony will focus on the U.S. Fish and Wildlife Service's (Service) role in addressing the threat of marine debris to our ocean and coastal areas.

Marine Debris Overview

Marine debris is one of the most pervasive and pernicious global threats to the health of the world's coastal areas, oceans, and waterways. It is an issue of growing local, regional, national, and international concern. Marine debris can injure or kill marine and coastal wildlife; damage and degrade habitats; interfere with navigational safety; cause economic loss to fishing and maritime industries, degrade the quality of life in coastal communities; and threaten human health and safety. The Service works collaboratively with federal and nonfederal partners to address this growing problem and its impacts on wildlife.

Marine debris is defined as "any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes" (33 U.S.C. 1951 et seq., as amended by Title VI of Public Law 112-213). Anything man-made – such as fishing gear, plastic bags, beverage bottles, balloons, food wrappers, and even vessels – can become marine debris through dumping, improper waste management, litter that is blown or washed out to sea through storm drains, and extreme natural events which can transport both small and large items into the ocean. Major marine debris events caused by natural disasters, such as the 2011 earthquake and tsunami in Japan, and Hurricane Sandy which hit the East Coast of the United States in 2012, have brought national and international attention to the marine debris issue. While these singular events have focused the public's attention, there has also been an increasing recognition that marine debris is a persistent, everyday problem.

There are three main types of marine debris that impact wildlife: plastics, derelict fishing gear, and abandoned and derelict vessels. Each is discussed briefly below.

Plastics

Plastics are one of the most extensive types of marine debris. They are commonly used in many items, and as society has developed new uses for them the variety and quantity of plastic items found in the marine environment has increased dramatically. Plastics are a very visible part of the marine debris problem but many of the impacts of plastic on the marine environment are only

now starting to be understood. Research has revealed that most commonly used plastics do not completely degrade into organic and inorganic molecules, but instead break into smaller and smaller pieces called microplastics. These microplastics and their associated toxic chemical components contribute to human and wildlife health risks as the toxic microplastics are ingested and move through the marine food web. Plastics and other debris such as bottle caps, balloons, and lighters are also ingested directly by wildlife, such as sea turtles, seabirds, and marine mammals. Debris may be mistaken for food and ingested, an animal's natural food (e.g. fish eggs) may be attached to the debris, or the debris item may have been ingested accidentally with other food. Debris ingestion has led to loss of nutrition, internal injury, intestinal blockage, starvation, and even death in wildlife. The Northwest Atlantic Loggerhead Recovery Plan lists marine debris ingestion as one of the highest priority threats facing endangered loggerhead sea turtles. In addition to ingestion, plastic and other debris such as packing bands, balloon strings, rubber bands, six-pack rings, and mesh bags can lead to entanglement.

Derelict Fishing Gear

A second highly visible and impactful form of marine debris is derelict fishing gear (DFG). DFG has numerous impacts on the environment, including: damaging marine habitats, entangling marine species including seabirds and marine mammals, creating hazards to navigation, and ghost fishing of commercially important species resulting in lost catch opportunities and economic losses for fishermen. One of the most notable types of impacts from this type of marine debris is wildlife entanglement. Derelict nets, ropes, line, or other fishing gear can wrap around marine life. Entanglement has led to injury, illness, suffocation, starvation, and even death.

Sea turtles are at great risk for entanglement in marine debris which has caused injuries and in many cases death for a variety of sea turtle species, including loggerhead, leatherback, green, Kemp's ridley, hawksbill and other sea turtles. One study found that between 1997–2009, over 1,000 sea turtles were found stranded in Florida due to entanglement in fishing gear¹. Some of these entanglements resulted from netting and monofilament line that accumulated on both artificial and natural reefs. These areas are often heavily fished, resulting in snagging of hooks and discarding of lines. Turtles foraging and/or resting in these areas can become entangled and drown.

Abandoned and derelict vessels

Abandoned and derelict vessels (ADV) are a third highly visible type of marine debris with thousands littering our nation's coastal waters. ADVs threaten oceans, coasts, and waterways by obstructing navigational channels, causing harm to the environment, and diminishing commercial and recreational activities. ADVs may pose an immediate or future threat to wildlife and wildlife habitat from the release of hazardous substances to surrounding areas. The Service recently removed nearly one million pounds of shipwrecks to protect some of the most pristine coral reefs in the world at the Palmyra Atoll and Kingman Reef National Wildlife Refuges. The

¹ Adimey, N.A, C.A. Hudak, J.R. Powell, K. Bassos-Hull, A.Foley, N.A. Farmer, L. White, and K. Minch. Fishery gear interactions from stranded bottlenose dolphins, Florida manatees and sea turtles in Florida, U.S.A. Marine Pollution Bulletin 81: 103-115.

iron from the shipwrecks on these remote atolls was fueling the growth of invasive organisms – corallimorph at Palmyra Refuge and a filamentous algae at Kingman Refuge – that smothered a large amount of once-healthy, diverse coral. Now that the shipwrecks are gone, the otherwise healthy reefs will have the opportunity to recover from this damage.

Despite the scope of the problem, marine debris is preventable through increased public awareness, changing individuals' behaviors, and improvements to waste infrastructure. We also recognize that marine debris can be addressed by ensuring a comprehensive approach that is local in scale and global in scope, directed primarily at source prevention and education. The Interagency Marine Debris Coordinating Committee (IMDCC) is a multi-agency group tasked with ensuring this comprehensive approach is implemented. The IMDCC was established by Congress under the Marine Plastic Pollution Research and Control Act of 1987 and was re-established under the Marine Debris Act (33 U.S.C. 1956). The IMDCC is made up of a variety of federal agencies with a diversity of expertise including the Service, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency, the Department of Defense, the Army Corps of Engineers, the U.S. Navy, the Department of Homeland Security, the U.S. Coast Guard, the National Park Service, the Bureau of Safety and Environmental Enforcement; the Department of State, the Marine Mammal Commission, and the Department of Justice.

Examples Across the National Wildlife Refuge System

The National Wildlife Refuge System (Refuge System), managed by the Service, is the world's premier network of public lands devoted solely to the conservation of wildlife and habitat. There are over 500 million acres of land and water in the Refuge System, which preserves a diverse array of land, wetland, and ocean ecosystems. The Refuge System includes 180 refuges that protect ocean, coastal or Great Lakes habitats. Spanning from above the Arctic Circle to south of the Equator, the Refuge System protects an incredible diversity of marine and coastal ecosystems including salt marshes, rocky shorelines, tide pools, sandy beaches, kelp forests, mangroves, seagrass meadows, barrier islands, estuaries, lagoons, tidal creeks, tropical coral atolls, as well as open ocean. Marine debris is an issue that impacts coastal and island refuges across the country.

Each September, dozens of coastal refuges and refuge Friends Groups organize their local communities to participate in the International Coastal Cleanup. Refuge staff use these cleanup events as opportunities to not only clean up debris but also provide an educational opportunity for the public to learn about the threats that marine debris pose to wildlife. Individual refuges across the country deal with the issue of marine debris in a variety of ways, and some examples include:

Midway Atoll National Wildlife Refuge

Midway Atoll National Wildlife Refuge is located on the far northern end of the Hawaiian archipelago 1,300 miles northwest of Honolulu, within the Papahānaumokuākea Marine National Monument. It is one of the oldest atoll formations in the world, providing nesting habitat for millions of seabirds and is a touchstone for one of the most significant naval battles in our human history. Nearly three million birds nest here, including endangered Laysan ducks, the world's

largest albatross colony, and 19 other seabird species. The oldest known wild bird continues to nest at Midway, a Laysan albatross named Wisdom that is at least 65 years old and currently raising another chick. Hawaiian monk seals, green sea turtles and spinner dolphins frequent Midway's crystal blue lagoon encircled by coral.

Island residents continue to improve habitat for wildlife on the atoll, but can do nothing about problems hundreds of miles away. Albatross scour thousands of ocean miles in search of food for their chicks. Along with fish, they scoop up plastic from the "Great Pacific Garbage Patch," an enormous area where high concentrations of litter – the majority of which is microplastics – accumulates. The "Great Pacific Garbage Patch" is not visible from an airplane or space, you can even sail on a boat through it without seeing it, as a result its size has defied estimation but may be larger than the state of Texas and possibly twice as large as the continental U.S. The stomachs of nearly all dead albatross chicks contain plastic (e.g. cigarette lighters, parts of toys and fishing gear) all fed to them by their parents. It is estimated that albatross carry over 5 tons of plastic to Midway each year to feed their chicks. Another 5-10 tons of marine debris washes up on Midway beaches each year. The Service partners with NOAA and the USCG to remove much of the marine debris on Midway and in the Northwestern Hawaiian Islands, including large discarded fishing nets which damage coral reefs and can entrap and drown seals, turtles, dolphins, and other marine life.

Alaska Maritime National Wildlife Refuge

Alaska Maritime National Wildlife Refuge (Alaska Maritime Refuge) was established to conserve marine mammals, seabirds and other migratory birds, and the marine resources upon which they rely. The Refuge's 3.4 million acres include the spectacular volcanic islands of the Aleutian chain, the seabird cliffs of the remote Pribilof Islands, and ice-bound lands washed by the Chukchi Sea, providing essential habitat for some 40 million seabirds, representing more than 30 species.

Pribilof Islanders work with fishermen to remove nets and other debris from fur seal rookeries, as part of a program that grew out of a refuge stewardship camp for kids. The Service provides marine debris education on the Pribilof Islands and at other refuge communities throughout the Alaska Maritime Refuge. The Service has supported or permitted marine debris cleanup efforts in the Aleutians, along the Alaska Peninsula, and in the Gulf of Alaska. Stopping debris at the source is vital to addressing the overall issue. While clean-ups are successful, they are a short-term fix and "cleaned" areas will often be littered again following the next high tide. The Service's emphasis in Alaska has mostly been on education as we are unable to patrol and clean up the thousands of miles of refuge beaches on a regular basis.

Caribbean Islands National Wildlife Refuge Complex

The Caribbean Islands National Wildlife Refuge Complex consists of nine refuges: five in Puerto Rico; three in the U.S. Virgin Islands; and the island of Navassa and its surrounding waters to the west of Haiti. These refuges support a variety of resources important to the region, including sea turtles, migratory seabirds and shorebirds, as well as resident birds. These species, in particular

threatened and endangered sea turtles and migratory seabirds, depend on the marine resources located in the surrounding waters as well as nesting habitat on beaches and off-shore cays.

Throughout the Caribbean, threats to wildlife include habitat loss, degradation and alteration, and increasing levels of pollution, among others. Marine debris poses a threat to species that nest on sandy shorelines such as plovers and other shore birds as well as to seabirds when nesting on offshore cays and feeding in offshore waters. Marine debris is also a threat to sea turtles hatchlings when emerging from the nest and entering the surrounding waters.

At the Culebra National Wildlife Refuge in Puerto Rico, population surveys have identified at least fourteen species of seabirds nesting in the Culebra archipelago including the Audubon's shearwater, masked booby, brown booby, white-tailed tropicbird, red-billed tropicbird, laughing gull, royal tern, sandwich terns, roseate tern (federally-listed species), bridle tern, sooty tern, and brown noddy. The Refuge staff works with agencies, schools and other volunteers every year to remove pounds of marine debris before seabird and sea turtle nesting seasons in order to increase reproductive success and reduce the chance of mortality to these populations.

Conclusion

The scope of marine debris and its impacts on wildlife is serious. The effects of marine debris can be observed at most of the Service's coastal and island refuges across the country. In response, the Service is working with federal and nonfederal partners to better understand the causes and effects of marine debris, identify strategies to address this issue, and educate the public on ways they can be a part of the solution.

Thank you for your interest in addressing the impacts of marine debris on wildlife, and for the opportunity to testify. I look forward to working with the committee on ways to further address this pressing issue.