From Sea Scrap to Sculpture

Artists transform marine debris into art, educating national park visitors in the process.

In 2023, a 14-foot shark turned up on the beach of Cape Cod National Seashore. The tip of her snout was an old Nike sneaker, her teeth were the pointy plastic bottoms of beach umbrellas, her eyes were swim goggles, and her sleek body was broken into colorful panels of lighters, markers, straws, golf balls and plastic utensils. She'd been named Sugar, but locals called her Mama Shug. A nearby sign clarified her pedigree: "100% unnatural materials."

"Art can tell a story differently than graphs and statistics," said sculptor Cindy Pease Roe, who created Mama Shug from debris collected by volunteers along the park's 40 miles of shoreline. "You look at a sculpture, and once you're up close, you see what it's made of," she said. "You see the beach chairs and lighters and plastic bottles that were on the beach and then washed up on someone else's beach."

Roe came to love the ocean — and its wildlife — as a child summering on the Cape and as a young adult living on a sailboat. But she didn't start making art from trash until 15 years ago, after she came across an expanse of debris near the surf, completely intermingled with pebbles. She brought the jumble to her studio, fashioned a wreath out of what she'd collected and hung it on her door. "Then I started asking questions," Roe said. "Where does this come from? What can we do?"

Mama Shug is just one of the eye-catching, albeit trashy, art installations that have popped up at 11 coastal national park sites thanks to a five-year partnership between the National Park Service and the National Oceanic and Atmospheric Administration. The project, which launched in 2020 with funding from NOAA, aims to raise awareness about the prevalence of trash in oceans and the Great Lakes. Already, tens of thousands of visitors have interacted with these displays, and many more will see the exhibits in 2025, when four more installations will be unveiled at National Park of American Samoa, Sleeping Bear Dunes National Lakeshore, Lewis and Clark National Historical Park, and Virgin Islands National Park.

"There are a lot of visitors coming into these natural environments, and with them, they usually bring trash," said Emma Tonge, communications specialist for the NOAA Marine Debris Program. But visitors aren't all to blame. The rubbish that ends up in parks also comes from faraway lands, carried by ocean currents — sometimes for hundreds of miles. Globally, cigarette butts, plastic bottles and caps, food wrappers, and plastic bags are the main culprits, Tonge said. Because debris can sink to the seafloor, float beneath the surface or break into microscopic pieces, cleanup is a challenge. The ultimate solution is prevention, she said, and the NOAA-Park Service partnership is an "amazing opportunity to share that message with visitors."

Mama Shug's eclectic makeup reminds viewers of the scope of junk that washes up where it doesn't belong. The whimsical sculpture is accompanied by interpretive panels that explain how marine debris affects everything from zooplankton to sharks. One sign suggests visitors make a pledge to bring reusable bags to pick up trash along the beach or use bubbles — not balloons — for celebrations.

ARTIST Cindy Pease Roe stands beside her marine debris creation, Mama Shug, at Cape Cod National Seashore.

Roe's involvement with the project didn't end with Mama Shug's installation in Provincetown. She created a smaller version of her finned masterpiece, known as Baby Shug, which found a home at the park's visitor center in Eastham last year. And a third Roe sculpture is on display at Fire Island National Seashore in New York: an osprey and nest constructed with branches and human-made items she found in a storm-toppled nest in 2016. Roe's nonprofit, UpSculpt, has also been hosting workshops at Fire Island, complete with locally sourced flotsam, so visitors can take a stab at making their own sea creatures.

"People tend to think about plastics affecting ocean creatures like whales, fish and turtles," Roe said, "and less often about how other animals like birds interact with plastics by fishing in the ocean and gathering nesting materials." Both adults and chicks, she said, risk entanglement when their homes are made from plastic bags, balloons and ribbons, all of which Roe discovered in the fallen nest.

And then there are the microplastics — too small for use in Roe's work but a big problem for the marine ecosystem. Coral, small crustaceans known as copepods and other animals consume microplastics, resulting in these particles — and their contaminants — moving up the food chain as predators feed on prey. Unfortunately, the bothersome bits, some of which are small enough to be inhaled by humans, are everywhere. A project funded by NOAA and led by the Park Service and Clemson University collected and analyzed sand from 37 park beaches in 2015 and 2016 and found microplastics and microfibers (such as those from fleece clothing) in every sample, including in remote areas of Alaska. To better demonstrate the ubiquity of these minute shards, Fire Island staff set up microscopes to supplement their osprey exhibit. Now school groups and other visitors can sift through beach sand for a close-up look at the teeny plastics.

"When visitors think about going to national parks, they think about pristine beaches or even coral reefs," said Eva DiDonato, the ocean and coastal resources program lead in the Park Service's Water Resources Division. "They aren't going to national parks to sit on the beach among debris." DiDonato, who has worked closely with NOAA and the participating parks, said each site faces different issues, from industrial rubbish washing up on the isolated shorelines of Kenai Fjords National Park in Alaska to trash-strewn Lake Erie beaches at Perry's Victory and International Peace Memorial in Ohio.

It's these problems that served as inspiration for the new exhibits. At Kaloko-Honokōhau National Historical Park in Hawaii, for instance, fishing line entangles sea turtles and other wildlife. So the park installed collection bins for the snarls of used filament and asked artist Jim Swaim to construct a giant sea turtle that could be filled with other debris.

Swaim, co-founder of Environmental Sculptures, spent decades building sets and props for theme parks, theaters and TV studios before he began creating sculptures to inspire action against pollution. He shifted his focus after discovering a disturbing amount of trash along the Intracoastal Waterway, near his home in Myrtle Beach, South Carolina. "Sometimes the current will pile huge quantities in certain areas," the avid camper and canoer said. "I missed it before. Now all I see are cigarette butts." In the last decade, Swaim has worked with his business partner Paul Quirk to design and build more than 85 steel animal sculptures for parks, municipalities and visitor centers across the country. The turtle was their first sculpture for a national park site.

COURTESY OF BRI SANDER, UPSCULPT

AN UPCYCLED SCULPTURE by Roe of an osprey atop a nest at Fire Island National Seashore.

Several other litter-besieged parks also went the sculpture route, including the Outer Banks' Cape Lookout National Seashore, which opted for a fillable metal dolphin, and Massachusetts' New Bedford Whaling National Historical Park, which unveiled a life-size whale tail made from discarded fishing rope. Some parks took a different approach. There's a 6-foot-tall trash-themed Plinko board at Padre Island National Seashore in Texas and an Instagram-ready bench encircled by a junk-studded acrylic ring at Biscayne National Park in Florida. And at Isle Royale National Park, an archipelago in Lake Superior with 337 miles of shoreline, a salvaged wood and fiberglass rowboat has taken center stage in the park's Rock Harbor Auditorium.

Mariah Reading, the visionary behind Isle Royale's latest attraction, was working as a seasonal ranger at the park and moonlighting as an artist

when a supervisor told her about the art-in-parks opportunity. After brainstorming what the exhibit should entail, she solicited help in amassing lake litter from a local conservation nonprofit, as well as park volunteers and law enforcement personnel.

"They gave me a huge pile of debris," Reading said. She was immediately intrigued by a weathered rowboat, found partially submerged in a remote cove. Reading painted a canvas showing underwater rocks and reefs and a distant island, which she later displayed in the floor of the vessel.

The artists and park staff know these exhibits won't turn the tides on marine debris on their own. But big changes start with small steps. And Reading is hopeful the project offers visitors "a boost of inspiration to leave their community better than they found it."

—MELANIE D.G. KAPLAN

PARTICIPANTS craft sea creatures out of sea trash at a Fire Island workshop.

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