

A sacred area for native Hawaiians is filling up with trash. Crews are 'fighting the onslaught.'

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Credit: Unsplash/CC0 Public Domain

One month in, the trash plucked from the ocean had piled up—sopping fishing nets covered in plastic that had choked Hawaii's coral reefs. The

cleanup crews knew their task was far from over.

"It's a lot of work, a lot of long days," said Kevin O'Brien, founder of the Papahānaumokuākea Marine Debris Project. "But we do it because we're trying to protect a place we love."

When they finished last week, three shipping containers were heaped with [debris](#) fished from the waters of Papahānaumokuākea Marine National Monument, a hub for biodiversity and home to sacred cultural and historical sites. In total, 97,295 pounds, or about 48.6 tons, of marine debris were removed, about 86,000 of which came from a single reef.

"That's equal to about the weight of a commercial commuter airliner," O'Brien said.

Despite their efforts, O'Brien said, there is a "humongous backlog of accumulated debris from the last 10 to 15 years" as the plastics continue to build. The team plans to set sail again in September with the goal of catching up with the backlog and keeping up with annual accumulation.

Megan Lamson, a program director at the Hawaii Wildlife Fund, called this expedition's haul "a hugely significant" achievement.

But about 115,000 pounds of marine debris accumulate on the reefs of Papahānaumokuākea each year, according to PMDP, so crews are struggling against a pileup that keeps building.

"The debris just keeps accumulating and accumulating," said Mark Hixon, marine biology professor at the University of Hawaii at Manoa and a member of the Papahānaumokuākea reserve advisory council. "It's fighting the onslaught."

Papahānaumokuākea Marine National Monument is a string of remote, uninhabited islands making up the last 1,300 miles of the Hawaiian island chain, O'Brien said. Named a natural and cultural World Heritage Site by the United Nations Educational, Scientific and Cultural Organization, it's the largest contiguous, fully protected [conservation area](#) in the U.S., covering an area larger than all of the country's national parks combined.

Papahānaumokuākea contains 3.5 million acres of coral reef, about 70% of all the coral reef in the U.S., O'Brien said. The reefs are home to a vibrant ecosystem of more than 7,000 [marine species](#), 23 of which are endangered and about a quarter of which are found nowhere else but Hawaii. Hawaii's endangered monk seals, endangered Laysan ducks, threatened [green turtles](#) and thousands more species live there, despite the [plastic](#) that has encroached on their habitat.

"It is remarkably special," Hixon said. "It's a biodiversity treasure trove."

With multiple sacred sites on its islands, Papahānaumokuākea has "extreme cultural and religious importance to the native Hawaiian community," Hixon said.

"Papahānaumokuākea is considered a sacred area, from which Native Hawaiians believe all life springs, and to which spirits return to after death," the monument's website said.

Why debris accumulates

The Great Pacific Garbage Patch, one of at least five patches of trash in the world's oceans, formed as ocean currents swirl in a vortex, pulling microplastics and larger debris together. Lamson said some debris "leaks" from garbage patches into Papahānaumokuākea, where the islands and shallow reefs gather debris like a comb.

"Our islands and reefs act almost like a sieve and capture the debris," Lamson said.

The debris threatens sea life. Creatures may ingest plastics or get caught in or injured by them, Lamson said. Invasive species may hitch a ride on floating trash. The debris may change the chemistry of the ocean, decreasing the amount of oxygen available to sea life. When plastics break down further, microplastics can pose problems, including for humans, she said.

Discarded [fishing nets](#), called ghost nets, can snag on coral and destroy colonies when wind or waves rip them free, Lamson said. Or they can grow algae and smother the coral, leaving it to die underneath. Marine critters can get tangled in the nets.

"They are essentially floating killing machines," Lamson said.

O'Brien, who first visited Papahānaumokuākea in 2007, said he remembers the shock of seeing an idyllic, white sand beach and crystal blue water—all littered with plastic. He's seen dead birds and turtles tangled in debris, chicks dead on the beach with stomachs full of plastics, and dead, white coral smothered in fishing nets.

"Until you see it, you can't really grasp the scale of how bad the problem is," he said. "It was like nothing I've ever seen."

The cleanup effort

After two months of training in breath holding techniques and boat maneuvering, a team of 16 people boarded a 185-foot vessel and set off July 2 for a four- to five-day journey to Papahānaumokuākea.

After they arrived, O'Brien said, the native Hawaiians on their team led

the group through daily, traditional ceremonies that are protocol when entering and leaving the area.

Divers surveyed for discarded nets—trash that catches more trash. Teams of four set off on 19-foot inflatable motor boats, loaded them with debris and ferried it back to the main vessel, where they collected the junk in shipping containers.

Much of the debris was incinerated and converted into energy to power hundreds of Oahu homes, according to the PMDP. Recyclable plastics are given to a student-led ocean plastics recycling project.

Despite the ever-building heaps of trash, O'Brien said he feels confident the goal of keeping up with the annual accumulation is within grasp, but he knows more systemic changes are necessary, including international coordination to reduce plastic use.

"If you walked into your bathroom and your bathtub was on full blast and it was overflowing onto the floor, you wouldn't just go start scooping water out of the bathtub. You would go turn off the tap," he said. "So we need to approach the global [marine debris](#) problem in the same way, to try to turn off the tap."

Lamson said countries need to reduce dependence on fisheries and fish harvested from the type of nets that gather in Papahānaumokuākea. She encourages more research in designing nets that will do less damage, policies that reduce single-use plastics from the top down and support for community efforts such as PMDP.

Most of all, she said, "we must shift all the blame from consumers and begin to pressure manufacturers" and regulators toward sustainability.

"We need to stop this mindless reliance on plastics," she said.

Amid the constant buildup up of debris, Hixon said, "right now, it's sort of a losing battle, but people are doing their very best with the resources they have."

"What really needs to happen is less plastic going into the ocean in the first place," he said. "That's what's going to make the difference, if we become better stewards for our own sake, as well as the sake of all of nature."

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