

**CASE STUDY:****OCEAN OPTIMISTS: WORKING TOGETHER FOR A CLEANER,  
HEALTHIER OCEAN**

Heather Koldewey describes herself as an “Ocean Optimist” because she believes in the power of individuals, the strength of collaboration and community, and because the ocean should be clean and thriving. Koldewey believes we should all be ocean optimists and suggests three steps everyone can take:

1. Replace single-use plastic bottles with a reusable bottle.
2. Next time you’re near water, take a few minutes to clean it up; leave it a cleaner and better place.
3. Strive to be an ocean optimist by making a difference with others.

Koldewey has been studying and protecting the ocean her entire career. She is internationally known as a leading expert on seahorses, she coordinates a marine science program for large marine protected areas, and serves as a Senior Technical Advisor for the Zoological Society of London.



Heather Koldewey in the Philippines.

*Hannah Reyes Morales / National Geographic*

In 2018, Koldewey became one of the scientific co-leads of the National Geographic Society’s Sea to Source expedition, which is investigating the sources and impact of plastic pollution in the Ganges River in India and Bangladesh from the river’s source in the Himalayas to where it reaches the sea in the Bay of Bengal.

Koldewey’s previous work with Net-Works project in the Philippines illustrates both her collaborative approach to conservation and how social science data is essential for developing successful community-based solutions.



## NET-WORKS IN FILIPINO FISHING COMMUNITIES

At the turn of the 21st century, when Filipino fishing communities were struggling to catch enough fish in increasingly polluted waters, Koldewey and her team saw an opportunity to address both problems at once.

Part of the problem was that the marine habitat was collapsing. Long-term observation in the Philippines shows that overfishing and damaging fishing practices has seriously impacted the ocean ecosystem. Koldewey described what she saw as “devastated coral reefs with blasted craters giving evidence of recent dynamite fishing, few tiny schooling fish, and if you’re lucky, the flick of a tail as a small grouper scoots into a rocky crevice.” A recent study confirmed that fish have been declining in the Philippines since 1960<sup>1</sup>.

Pollution was also taking a toll. Beaches held heaps of abandoned nets and plastic waste tangled in the roots of mangrove forests. On these small islands, there is no waste management: no trash collection and no recycling system. Yet more and more plastic is accumulating on these islands; because it lasts for hundreds of years, plastic is becoming an increasingly pressing problem.

The poor fishing conditions meant that communities were struggling financially. Net-Works was established in the Philippines in 2012 to design a unique solution that would support both the depleted ocean ecosystem and communities who were struggling to live without a healthy ocean.

## THE SERIOUS IMPACT OF GHOST NETS

In addition to the lack of waste management on the island communities, pollution from the fishing industry also contributed to the crisis. Lost and abandoned fishing nets, or ghost nets, cause serious harm in the ocean ecosystem and are a significant component of plastic pollution in the ocean. An estimated 800,000 tons of ghost gear enters the oceans every year; and are estimated to kill millions of marine mammals, including large whales, sea lions, and seals, every year, in addition to an incalculable number of seabirds, sea turtles, and fish<sup>2</sup>.

A 2018 study found that nearly half of the floating trash found in the Great Pacific Garbage Patch consists of nets and lost fishing gear<sup>3</sup>. Ghost nets have no owners; they persist in the sea as a global problem. When washing up on Filipino islands, however, these nets also presented an opportunity.

<sup>1</sup> University of British Columbia. “Coral reefs suffering in Philippines despite outlawing damaging fishing practices: New research finds dynamite, poison still common fishing methods.” ScienceDaily, March 16, 2018. [www.sciencedaily.com/releases/2018/03/180316100307.htm](http://www.sciencedaily.com/releases/2018/03/180316100307.htm)

<sup>2</sup> World Animal Protection, Ghosts Beneath the Waves: Executive Summary, London, 2019, [https://d31j74p4lpxrfp.cloudfront.net/sites/default/files/int\\_files/ghost\\_beneath\\_the\\_waves\\_-\\_2nd\\_edition\\_exec\\_summary.pdf](https://d31j74p4lpxrfp.cloudfront.net/sites/default/files/int_files/ghost_beneath_the_waves_-_2nd_edition_exec_summary.pdf)

<sup>3</sup> Laura Parker, “The Great Pacific Garbage Patch Isn’t What You Think it Is,” National Geographic, March 22, 2018. <https://www.nationalgeographic.com/news/2018/03/great-pacific-garbage-patch-plastics-environment/>





In fishing communities, plastic fishing nets can become a major source of plastic water pollution.

*Hannah Reyes Morales/National Geographic*

## COMMUNITY COLLABORATION

To address these issues, Koldewey and her team began by meeting with village leaders, community members, and local government officials. These discussions helped build partnerships and identify the following issues:

- Marine protection areas (MPAs) are known to be an effective tool to help recover fish populations and associated habitats, but they can be hard for poor communities to fund and sustain over time.
- Fish are declining but it is difficult to change from fishing to another livelihood because communities lack access to savings and insurance.
- In the absence of a social security system, MPAs are often referred to as “banks” or “security” for their future.
- Plastic waste accumulating on islands is causing concerns for people’s health.

## COLLECTING SOCIO-ECONOMIC DATA: INTERVIEWS AND INFORMAL CONVERSATIONS

After determining larger issues and assets, it was important to talk with community members to ensure the team knew what communities experienced and what they needed. This was done through a mix of informal and structured discussions. Focus group discussions were one method, where groups of similar people, such as fishers, women or youth, gathered together to share their views about their situation and also ideas for change. Socio-economic surveys at the household or individual level also provide insights into how people live, their jobs, how they spend their money, and their concerns and aspirations.

When Koldewey and her Filipino Net-Works team met with fishers, they asked questions about how frequently nylon nets were used, for what purposes, and how their fishing gear was managed. In broader community groups, questions focused on how discarded nets were viewed by community



members, what alternative uses were known for them, and the types of marine conservation activities already underway or under consideration.

In addition to asking about key sources of income and general community well-being, the Net-Works team also inquired about historic and current practices of plastic use and waste management. When analyzing responses, they looked for generational and socio-economic differences to better understand how to tailor potential solutions to people of different ages and perspectives.

## MOVING FORWARD TOGETHER: COLLABORATIVE SOLUTIONS

If plastic pollution goes unchecked, it has been estimated that there will be one ton of plastic for every three tons of fish in the ocean by 2025. By 2050, plastic in the ocean could outweigh fish<sup>4</sup>. This means that solutions to plastic pollution in the ocean need to reduce plastic while also increasing fish populations.

The net recovery program began to help clear polluting plastic from the beaches and the ocean by creating a supply chain and market for old nets, providing supplemental income for communities. Today, nets are retrieved by members of the community, compressed into bales, and sent to a net recycling company based in Slovenia that turns the nets into nylon yarn that is then sent to the United States to become carpet.

“We connect marine conservation with the business model that brings marginalized communities in the developing world into a mainstream global supply chain,” Koldewey says.

The Net-Works program has been so successful that it has expanded to other sites within the Philippines, to Cameroon, in Africa, and most recently to Indonesia.

Statistics provided by Net-Works suggest the approach is working:

- **224** metric tons of fishing nets collected
- **2,200** families now have access to finance through community banks established by the project
- **64,000** people enjoy a healthier environment through cleaner beaches and bigger and better MPAs

Amado Blanco, the Net-Works project manager, has seen beliefs and behavior change since 2012: “The work is part of a bigger strategy to change people’s perspective on plastics. You don’t have to throw plastics away because you can derive economic benefit from it. People are no longer burning their



Hannah Reyes Morales / National Geographic

<sup>4</sup> Jenna R. Jambeck et al., “Plastic Waste Inputs From Land Into the Ocean,” *Science* Vol. 347, Issue 6223 (February 13, 2015): 768-771; McKinsey & Company and Ocean Conservancy, “Stemming the Tide: Land-based Strategies for a Plastic-Free Ocean,” September, 2015.



nets. They are no longer throwing nets on the shore or into the ground. They are keeping them in sacks and selling them.”

For community-based solutions, Net-Works provides a roadmap for how to foster change within a community by collecting and sharing data.

## **BRINGING CHANGE TO ALL COMMUNITIES**

Koldewey’s work in the Philippines may seem far away from your community. But there’s work to be done everywhere. One of Koldewey’s current projects through a Zoological Society of London partnership with four other organizations is the OneLessBottle initiative, which aims to move the city of London from a disposable to a refill society. Londoners use one billion single-use plastic bottles per year and these last over 500 years if they enter the ocean. By remembering to bring refillable water bottles, installing water fountains, and building a network of businesses and organizations across London who do not use or sell water in plastic bottles, this project is starting to make a real difference.

If you will be collecting socio-economic data to inform local solutions, Koldewey offers the following advice:

- Make sure you ask for prior and informed consent. This means people know what you are studying, why you are doing it, how you’ll store data, and how they’ll be identified in any reports or publications.
- Communicate your values and vision to communities and partners. Early communications often influence the community’s perspective of what you are trying to achieve, and can make or break your research project.
- Take time to listen! It’s tempting to talk about issues of concern; be sure to hear and understand what people are saying.
- Be inclusive. It’s easy to get information from people who are confident and keen to share their views, but their views aren’t necessarily reflective of a whole community. Seek out people within communities whose voices are rarely heard.

How can you and your community be ocean optimists and help address the plastic pollution problem?



## ADDITIONAL RESOURCES

**Net-Works:** <http://net-works.com/>

Explore the Net-Works program to understand more about their approach and expanding projects.

**Project Seahorse:** <http://www.projectseahorse.org/>

Learn about one of Heather Koldewey's initiatives. Project Seahorse is a marine conservation group dedicated to securing a world where marine ecosystems are healthy and well-managed.

**Heather Koldewey's talk at TEDx:** <http://tedxtruro.com/talks/2016/optimistic-oceans-heather-koldewey-tedxtruro/>

Learn why Heather Koldewey became an ocean optimist and how you can harness the power of optimism in the fight to save our oceans.

**These Communities Turn Discarded Fishing Nets Into Carpets:** <https://www.nationalgeographic.com/news/2018/06/heather-koldewey-explorer-nets-plastic-philippines-ocean-culture/>

This National Geographic magazine article highlights Heather Koldewey and the Net-Works project as part of the Planet or Plastic? initiative.

