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SMITHSONIAN TROPICAL RESEARCH INSTITUTE

See a New Interactive Map of Indigenous Fishing Practices Around the Pacific Rim

Dedicated to “the Ancestors who stewarded the ocean” an interactive story map created by the Pacific Sea Garden Collective reawakens traditional ways of harvesting food from the sea from Panama to Australia to the Pacific Northwest.

Elisabeth King

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For thousands of years indigenous peoples have invented ingenious, often strikingly beautiful ways to harvest marine resources that, in combination with their belief systems, prevented overharvesting. But today, commercial fisheries and skyrocketing human populations are driving the future of resources from the sea toward a dangerous tipping point. Inspired by marine biologist Daniel Pauly, a group of indigenous knowledge holders and community members, scientists and artists led by Anne Salomon, a Simon Fraser University professor, formed the Pacific Sea Garden Collective and created an elegantly simple interactive map to share traditional ways that people interacted with the sea, hoping to inspire a more sustainable future.

Each of the 22 points on the map opens to a story and photos of a place along the Pacific Rim and a specific indigenous innovation. Sometimes techniques passed from generation to generation are still being practiced today. In other cases, as stories are lost when elders die, only archaeological remains hint at past practices.

Report ad

Octopus houses in Canada

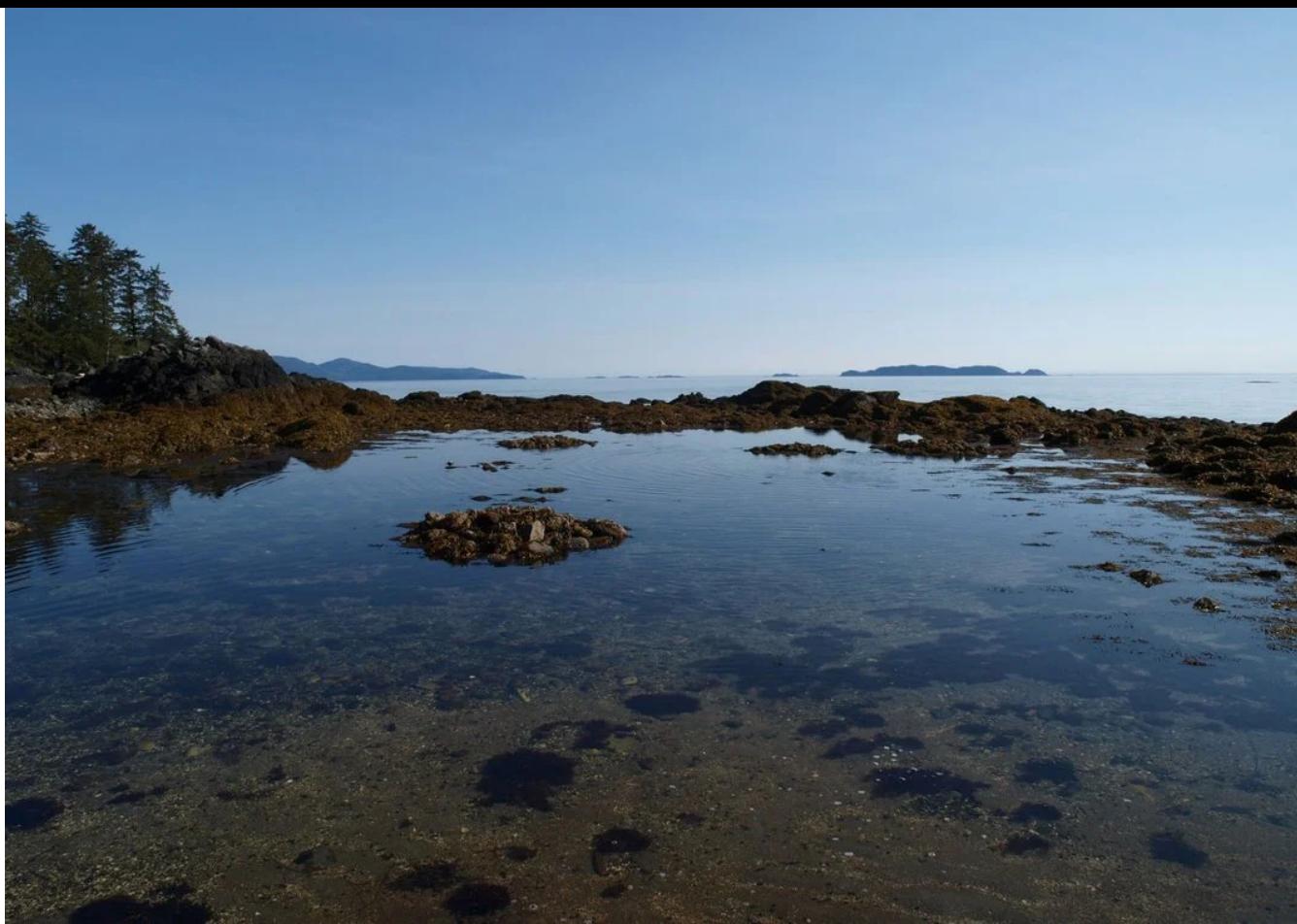
30,000 members of the Haida indigenous group lived in what is now British Columbia, Canada, before the Spanish colonized the Americas. Ravaged by smallpox and other diseases, their numbers fell to ~350 in 1900. Today, they make up less than half of the 4500 people who live on the Haida Gwaii islands.

The Haida not only eat the Giant Pacific octopus, *Enteroctopus dofleini*, they also use it as bait as they fish for halibut. To increase the availability of octopi near their settlements, they built stone octopus houses mimicking the animals' own rocky dens in shallow water along the coast.

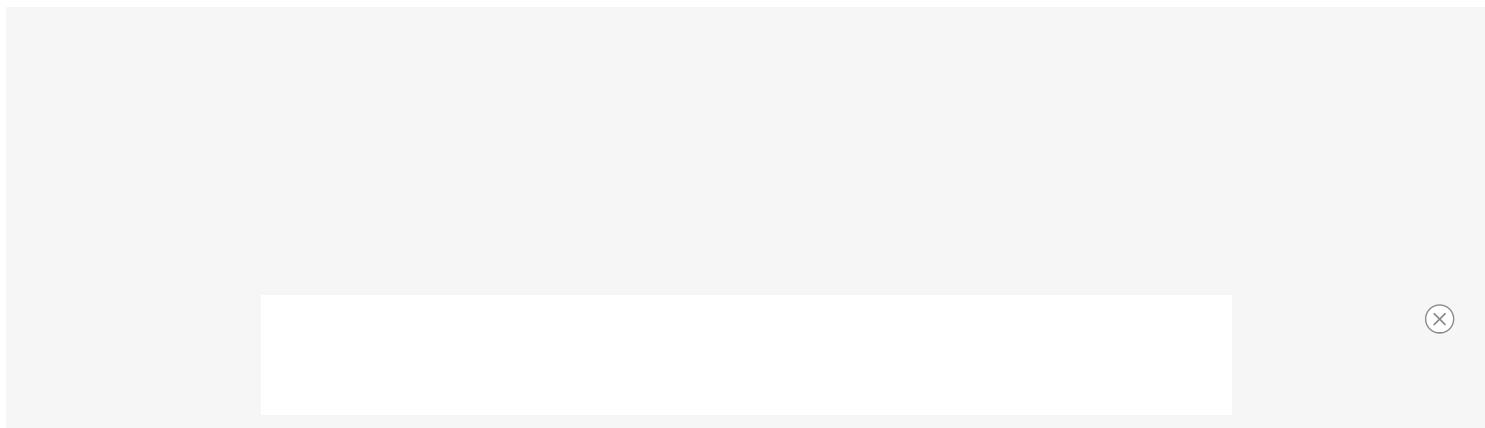
Traditionally, on
contrast, contem

es to breed. In
dens to flush

out the animals is also unsustainable and violates ancient tribal laws. Haida seeking a more sustainable future want to bring back the tradition of building octopus houses.



A dome shaped octopus house, called a Naw náaGalang built by Haida indigenous people to increase the octopus population near the village of T'aanuu Llnagaay, British Columbia, Canada. Photo by R. Commissio. Courtesy of Gwaii Haanas National Park Reserve



Gardens and ponds

By creating new habitat, modifying existing habitat or transplanting species to new areas, indigenous peoples increased the availability of both plants—root crops and algae—and animals.

First Nations along the northwest coast of the Americas created terraced estuarine root gardens where they cultivated plants including springbank clover, Pacific silverweed, Northern riceroot and Nootka lupine and also harvested the ducks and geese that fed on them. They actively tilled the soil and used digging sticks to harvest roots and tubers.



bait later. This practice enhanced the spawning grounds and encouraged fish to return in subsequent years, in contrast to modern fishing practices in which female fish are killed and their egg sacs are removed.

Also in the Pacific Northwest, the practice of building clam gardens goes back thousands of years. People build rock walls at the low tide line or build other rocky structures depending on the shape of the coastline, that increase the amount of sediment on a beach and provide more habitat for clams. In the South Pacific, the Māori also cultivated clams, other shellfish and seaweed both by seeding new areas with clams or pieces of seaweed and by moving rocks around to create better habitat.



Stone tidal fish traps point toward the sea on the islands of Yap in the Federated States of Micronesia. These structures lie underwater at high tide and catch fish as tides drop. They have been used for more than 1,000 years ago. Photo by Bill Hatcher



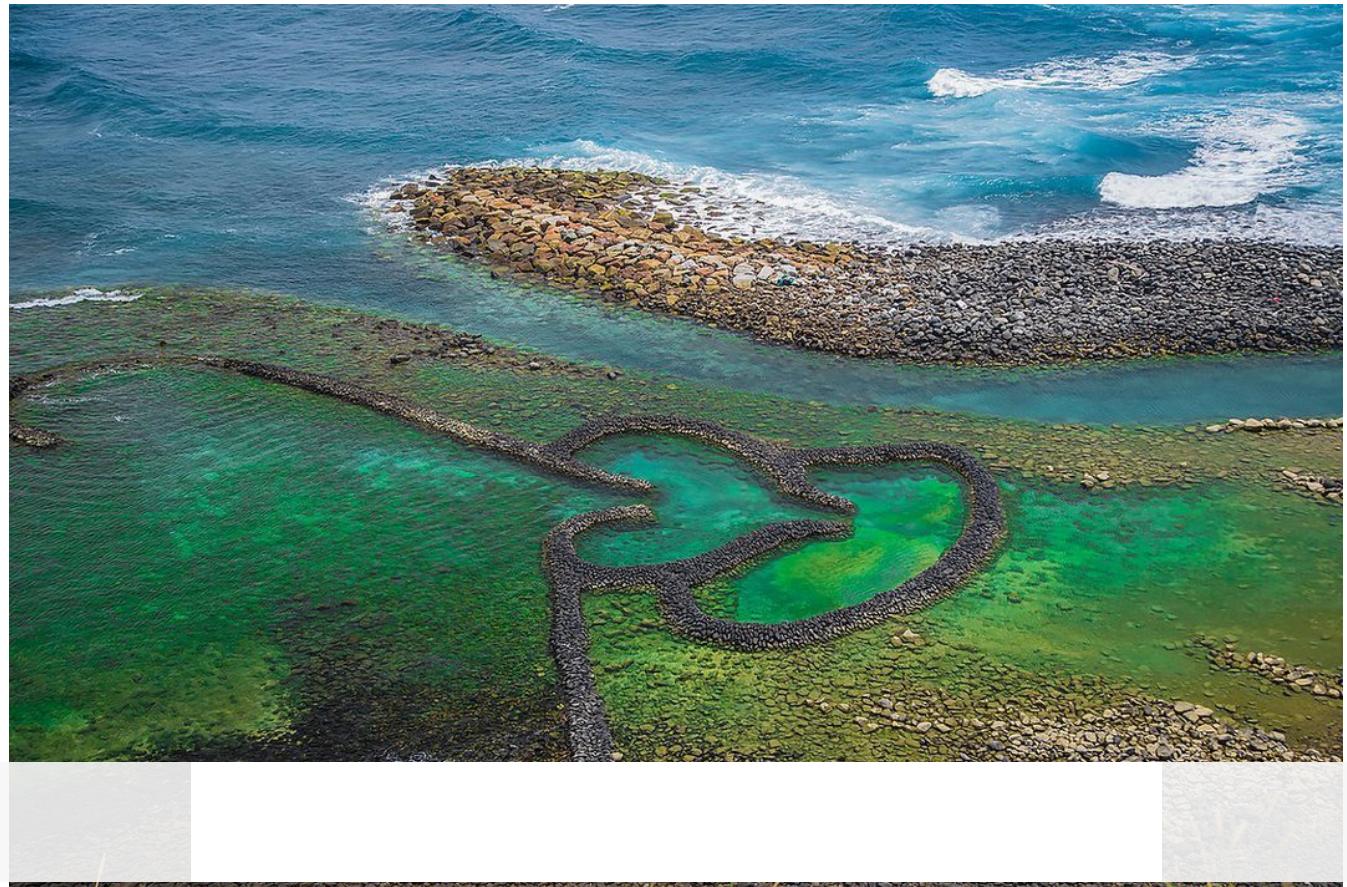


pasture in the past, but is now being restored.

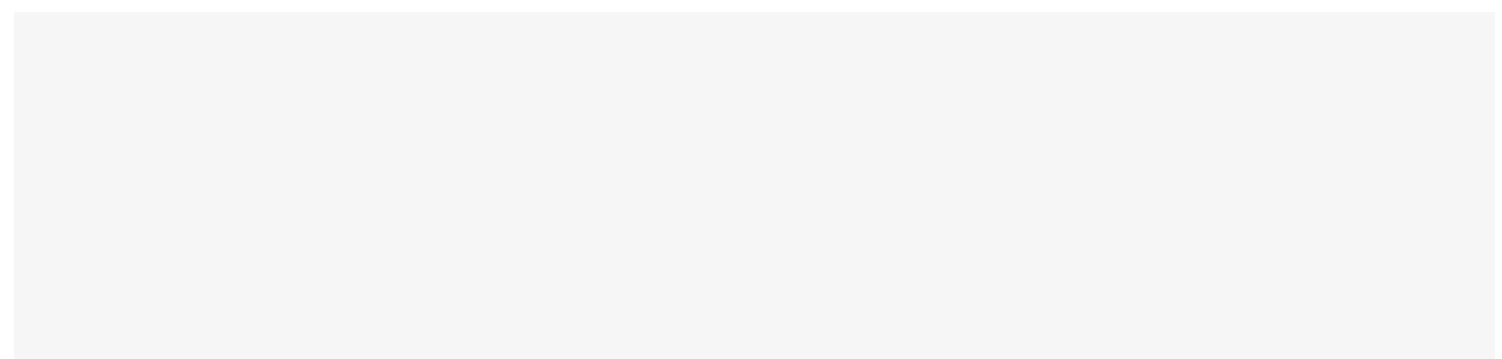
In Korea, for hundreds of years, women divers called Haenyeo have collectively administrated village sea-beds for optimal resource use. The divers hold their breath and hand-harvest individual animals according to a previously agreed upon schedule and rules.

Fish traps and weirs

Fifteen of the points on the map detail different kinds of traps and weirs. It is worth taking a look at the seagardens.net website just to see the photographs of these structures. From Yap in Micronesia to Shi Hu in Taiwan to Hawaii, the Philippines, Chile, Panama, Costa Rica and the Pacific Northwest, fish traps and weirs made of stone and/or wood are amazing land art, each adapted to the site where it is built and the type of fish or other prey (dolphins, turtles) people aimed to catch.



Twin Heart Weir, Shi Hu, in the Penghu Archipelago, Taiwan. Photo by Zeze0729 CC By-SA 3.0 via Wikimedia





Pacific beaches tend to be long and very gently sloping. So it's possible to build stone walls, wooden corrals, or stone walls topped by wooden corrals to trap fish as the tide goes out. In Panama, where abandoned stone corrals are common along the Pacific coast, but much of the indigenous knowledge about marine resources has been lost, archaeologist Richard Cooke from the Smithsonian Tropical Research Institute teamed up with Francisco Herrera, of the *Centro de Estudios y Acción Social Panameño*, and independent geologist Stewart Redwood to put Panama's stone corrals on the map. They combined analysis of fish remains at archaeological sites (showing that 70 percent of the fish that people were eating at some inland sites were from the ocean), with stories collected from coastal residents who remembered when corrals were still being used to catch fish, with a detailed study of the catch in a contemporary trap to understand how corrals might have been used in the past. In Chile, where commercial fishing has decimated fish stocks, coastal residents use corrals built in the past as places to cultivate algae or to seed with shellfish.

Rivers and streams also funnel fish into traps and weirs. Stone traps and stone foundations supporting wooden fences were used for controlled harvest of Pacific salmon and herring. Traditional regulations guaranteed that harvests were sustainable by leaving traps open for certain periods to maintain healthy fish populations.



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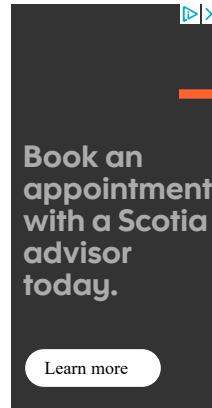
El Coral beach fish trap, Saboga Island, Panama Stewart Redwood



As the story about octopus houses concludes: "We are on the cusp of a historic change," and what better time to look to the past for inspiration? In a press release about the map from Simon Fraser University, Kii'iljuus Barbara Wilson, a Haida Matriarch and scholar concluded: "In this time of climate change, it's really important to acknowledge Indigenous mariculture as conservation and recognize First Nations governance over our land and resources. We managed to live in this world for thousands of years without the massive ecological destruction that is happening now. It's very much about not taking more than you need."

**Elisabeth King**[READ MORE](#)

As Communications Manager at the Smithsonian Tropical Research Institute (STRI) in Panama, Elisabeth King bridges the gap between research scientists and diverse audiences. She writes about science, creates exhibitions and video scripts in English and Spanish, making STRI research available to all audiences from school kids to ambassadors.

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