

Citizen science water quality monitoring program launched in West Maui

September 15, 2016

Lahaina News

KAHULUI - Maui Nui Marine Resource Council, The Nature Conservancy, West Maui Ridge to Reef Initiative and University of Hawaii have joined forces to launch Hui O Ka Wai Ola, a citizen science coastal water quality monitoring program.

While similar efforts have been implemented around Hawaii, Hui O Ka Wai Ola is the first community-based water quality monitoring program on Maui to measure for nutrients (including nitrogen and phosphorus) in coastal waters.

Nutrients can be indicators of sewage pollution and agricultural, golf course and landscaping runoff. Once in the ocean, these nutrients can lead to algal blooms.



Citizen science volunteers Ty Freiberg and Marie Schroeder collect water quality samples on Maui as part of the island's newly launched Hui O Ka Wai Ola water quality monitoring program.

Algae, particularly invasive species, can quickly out-compete coral reefs for sunlight and overrun large tracts of living reef.

Sediments coming from construction and agricultural lands can also be detrimental.

"We are really excited to get this program off the ground," said Dana Reed, Hui O Ka Wai Ola's volunteer team leader. "This is a critical step towards addressing questions about the severity of brown water events and concerns about how land-based sources of runoff may be impacting Maui's reefs."

From 2012-14, 90 percent of the state Department of Health's (DOH) water quality samples collected on Maui failed to meet state standards for nutrients, bacteria and turbidity (a measure of water clarity).

These results, combined with other data, raise significant concerns about the health of Maui's coral reefs.

Nitrogen and phosphorus runoff from lawns and

agricultural lands can lead to an overgrowth of algae in nearshore waters.

Large rain events also cause sediments to flow off the land and settle onto the reef, where they can be re-suspended for a long time.

Sediments prevent sunlight - an important ingredient for coral growth - from reaching reefs.

"Our goal with Hui O Ka Wai Ola is to supplement DOH water quality monitoring and, in doing so, create a more complete picture of the status of Maui's near shore waters," said Reed. "DOH is understaffed when it comes to water quality."

Hui O Ka Wai Ola collects water quality data at 17 sites along West Maui's coastline, ranging from the Pali to Pohaku Beach Park ("S-Turns") in Kahana.

Volunteers collect water quality samples to test for nutrients, while also measuring turbidity, salinity, dissolved oxygen, pH and temperature onsite.

They also collect samples to assess the total amount of sediment suspended in the water, which is especially helpful during large rain events.

Currently, a single DOH employee is responsible for collecting water quality samples across the entire island of Maui. Hui O Ka Wai Ola's water quality monitoring program aims to supplement DOH sampling efforts and ensure that regular monitoring takes place in priority watersheds.

"Without long-term data sets, it is difficult to evaluate where the major issues are and what the most effective mitigation strategies may be," said Kim Falinski, Hui O Ka Wai Ola's training leader and quality assurance coordinator, and science advisor for The Nature Conservancy.

"Our efforts are meant to first identify which West Maui areas are experiencing prolonged water quality issues, and then use this information to prioritize watershed management efforts."

Community groups spent the past two years developing a Quality Assurance Program Plan (QAPP) for water quality sampling. The QAPP ensures that sampling procedures can both meet DOH standards, and that the data collected can be utilized by Department of Health.

Hui O Ka Wai Ola is extremely grateful to Lahainaluna High School, which generously provides laboratory space, storage for supplies and critical equipment.

"The goal of Hui O Ka Wai Ola is to bring more awareness to local coastal water quality issues and support better-informed decisions and policies regarding water quality," said Reed.

"Ultimately, we want to make a positive difference for Maui's people and reefs."

Coastal Cleanup Removes Tons of Trash

 themolokaidispatch.com/coastal-cleanup-removes-tons-of-trash/

DLNR News Release

Scattered across an expansive coastline of valleys, sea cliffs, boulders, and beaches, is a problem that affects everyone.

“It doesn’t matter the name you give it, marine debris, ocean litter, coastal trash, or where it came from,” said Molokai’s James Espaniola of the Department of Land and Natural Resources (DLNR). “The best thing to do is to get busy and do something about it.”

That is exactly what The Nature Conservancy Molokai (TNC-Molokai), Kalaupapa National Historical Park (KNHP) and the DLNR Division of Forestry and Wildlife’s (DOFAW) Natural Area Reserves System decided to do, removing 16 tons of trash from Molokai’s northern coastline.

Starting off the summer were short trips by TNC-Molokai, KNHP, Youth Conservation Corps interns, and volunteers covering 11 miles of the coast at Mo’omomi, Kalaupapa, and the remote valleys of Waikolu and Wailau. Sustainable Coastlines Hawaii also had its third annual coastal cleanup along 3.5 miles in Mo’omomi, loading up a 40-foot container. In late July, DLNR staff and the members of the East Molokai Watershed Partnership took on the challenge of covering an expansive area from Halawa to Waikolu, the most remote coastline on the island. Over 10 days they worked along bouldered shores, tangled hala forests, and at times passed along the remains of old Hawaii. With no roads, trails, or harbors, the only signs of civilization are countless tour helicopters and lots of trash. It comes from everywhere.

Complex logistics were needed to mitigate the hazards and avoid dangers involved in working in the tough terrain of surf, sea cliffs, and areas impassable by foot. There were many other obstacles, like an enormous tractor tire that almost maxed out the helicopters’ 1,000-pound carrying capacity. The challenging mission was funded by a State appropriation to DLNR to respond to marine debris. With the help of skilled chopper pilots, boats and donated jet ski support, staff, interns and volunteers cleaned almost every place where trash could accumulate between Kalaupapa and Halawa.

All trash was flown down the coast to Kalaupapa National Historical Park. Staff and volunteers of Sustainable Coastlines Hawaii then sorted what was going to be recycled and what was going to be burned for energy on Oahu. This effort ensured that none of the 30 dump trucks — or 16 tons — full of rubbish will go into landfills. The 22 miles of Molokai’s most remote and untouched coastline, includes two Natural Area Reserves (NARs)— Olokui and Puu Alii.

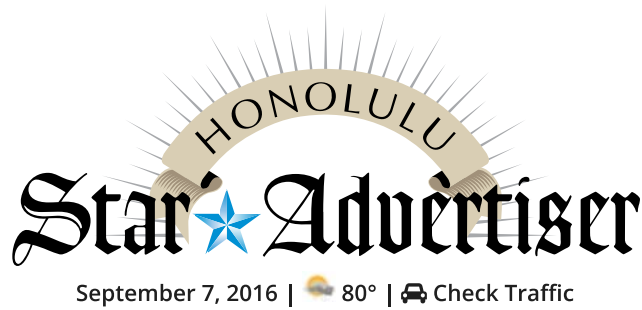


A collective, multi-organization effort to removing marine debris from Molokai’s north shore this summer resulted in removing 16 tons of litter from the island. Volunteers from Department of Land and Natural Resources, The Nature Conservancy, National Park Service and Sustainable Coastlines work to collect rubbish. Photo courtesy of Hawaii DLNR



DLNR’s James Espaniola of Molokai. Photo courtesy of Hawaii DLNR.

The 21 NARs on five islands range from high mountain forests filled with rare birds to coral reefs. DLNR and multiple partners battle a wide range of threats to protect these places, with the main focus as invasive species removal. Native wildlife and plants on the edge of extinction depend on this work to preserve the health of these areas.



Top News

Feds take most humpback whales off endangered species list

Associated Press

Posted September 06, 2016

September 6, 2016

Updated September 6, 2016 3:59pm



ASSOCIATED PRESS

A humpback whale jumps out of the waters off Hawaii.

Federal authorities took most humpback whales off the endangered species list today, saying their numbers have recovered through international efforts to protect the giant

mammals.

Humpback whale numbers have steadily grown since a global ban on commercial whaling started nearly 50 years ago. The whaling moratorium remains in effect, despite the new classification.

The National Marine Fisheries Service said it first had evidence to indicate there were 14 distinct populations of humpback whales around the world. It then said nine of these populations have recovered to the point where they no longer need Endangered Species Act Protections. These include whales that winter in Hawaii, the West Indies and Australia.

Before, the agency classified all humpback whales as one population. They had been listed as endangered since 1970.

"Today's news is a true ecological success story," Eileen Sobeck, assistant administrator for fisheries at the National Oceanic and Atmospheric Administration, said in a statement.

The whales will continue to be protected under other federal laws, including the Marine Mammal Protection Act. Vessels will continue to have to stay a specific distance away from humpback whales in Hawaii and Alaska waters.

A Hawaii fishermen's group that petitioned for delisting three years ago said it was happy with the decision.

"We just saw a lot of whales. So we thought this is a success in ocean management and we wanted to point that out to the world — that things are good with whales in Hawaii," said Phil Fernandez, president of the Hawaii Fishermen's Alliance for Conservation and Tradition.

An estimated 11,000 humpback whales breed in Hawaii waters each winter and migrate to Alaska to feed during the summer, the fisheries service said.

But an environmentalist group said the protections should stay in place.

"These whales face several significant and growing threats, including entanglement in fishing gear, so ending protections now is a step in the wrong direction," Kristen Monsell, an attorney with the Center for Biological Diversity, said in a statement.

Humpbacks that breed in Central America in the winter and feed off California and the Pacific Northwest in the summer are among those that will remain on the endangered list.

Marta Nammack, the fisheries service's Endangered Species Act listing coordinator, said that's because the population is estimated at only about 400 whales. These whales also face threats from vessel collisions and getting entangled in fishing gear, she said.

Whales that breed off Mexico and feed off California, the Pacific Northwest and Alaska will be listed as threatened. There are about 3,200 of the whales in this group, which is only about half of what scientists previously thought, Nammack said. The whales also face fishing gear entanglement threats.

COMMUNITY VOICE

Fishing Righteously In Kona For Generations To Come

The establishment of a 10-year rest period for fishing will allow species to repopulate in a key area off the Hawaii Island coast.

JUNE 8, 2016 • By Ted Kawahinehelelani Blake 

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Lawaia pono — a call to fish righteously — is supported and promoted by 32 Native Hawaiian organizations from across the state. Lawaia pono translates to “good management of our ocean and shoreline resources.” It encourages thoughtful, good neighborly practices to ensure that there will be fish for those who come after us.

Hui Makaainana o Makana and Haena, Kauai, was the first ahupuaa, in modern times, to re-establish traditional cultural practices to restore the health and abundance of their “icebox” and bring back the fish that once were plentiful. They are doing this by reinstating time-honored and tested techniques and methods used by our kupuna.

These methods had allowed Hawaiians centuries ago to catch thrice the amount of fish annually that scientists consider sustainable today. And we know that they maintained and drew on that kind of abundance for more than 400 years. Hui Makaainana o Makana’s Community Based Subsistence Fishing Area (CBSFA) rules for the Haena fishery were adopted and signed by Gov. David Ige, on Aug. 4, 2015, bringing with it the promise of replenishment of coastal waters that have fed families for generations.

Via Wikimedia Commons



Banning fishing in a 3.6-mile area off the Kailua-Kona coast is a significant example of taking responsible steps now for future benefit.

On May 28, the Kaupulehu Marine Life Advisory Council in north Kona became the second to attain a lawaia pono designation, this one for a 3.6-mile stretch from Kalaemano to Kikaua Point, extending out from the shoreline to a depth of 120 feet (20 fathoms). The Board of Land and Natural Resources affirmed the community's call for a 10-year rest period to give fish the opportunity to repopulate the reef, getting it back to levels of abundance that many members of families who have lived in the Kaupulehu area for generations remember.

Researchers tell us today what people born and raised in the area, like Aunty Lei (also known as Leinaala Lightner), know from family lore: that "[Native Hawaiians caught about 50 percent more fish](#) than modern fleets catch today in both Hawaii and the Florida Keys, the two largest reef ecosystems in the United States."

Education, Rules, Enforcement Critical To Sustainable Fisheries

There are some roadblocks on the path to lawaia pono in our islands. There is little public understanding or education on how to sustain our reefs. Rules exist, but they are poorly adhered to and given scant attention.

Enforcement is stretched thin on each island. If a [Division of Conservation and Resources Enforcement](#) agent is not seen on the beach, fishing regulations matter very little.

“Lawaia pono” reflects the community’s mindfulness and sense of responsibility to future generations.

This is a far cry from the way it used to be.

We know that Hawaiians used many techniques, such as placing a kapu on fishing in certain areas and restricting the kind of gear used or species that could be

caught. People knew the consequences of violating the kapu or exceeding catch limits. Violations brought swift corporal punishment or even death.

Not so today. One researcher, John Kittinger of the Center for Ocean Solutions in Monterey, Calif., pointed out in a 2012 blog post in the *New York Times* that “you get penalized much more harshly if you shoplift sunglasses from a store than if you take a bunch of fish that are the wrong size or kind.”

I recently learned to identify the different sex of the uhu (*Scarus perspicillatus*, the parrot fish). I learned if the male uhu (blue one) is removed from the school of red uhu (females), the uhu will not reproduce for a few years until one of the red uhu biologically changes its sex to a male. I now tell divers I know to avoid spearing a male uhu.

We all have a responsibility to educate ourselves about our kuleana to make lawaia pono a lived reality.

Rest Reef Now, Avoid Disaster Later

Where and who do we turn to if we have another shipping strike that cripples the entire state for months? How will we feed our families?

What happens if a hurricane should pass directly over Oahu and wreak havoc in our two deep water harbors, incapacitating inter-island barge companies?

Thinking then, “I wish we had given more thought to sustaining ourselves,” will not put food on the table during these natural and human-made emergencies. We must insure against these possibilities now.

Lawaia pono reflects the community’s mindfulness and sense of responsibility to future generations. It is a call for a change in attitude and practices so that we can keep feeding our families through all our tomorrows.

In adopting the community’s call for a 10-year rest for the reef, the Board of Land and Natural Resources affirmed the soundness of the solution to a problem that has reached critical proportions. All that remains now is for Gov. Ige to lend his signature to the plan of action. Doing so will go a long way toward ensuring that there will be food in our icebox for generations to come.

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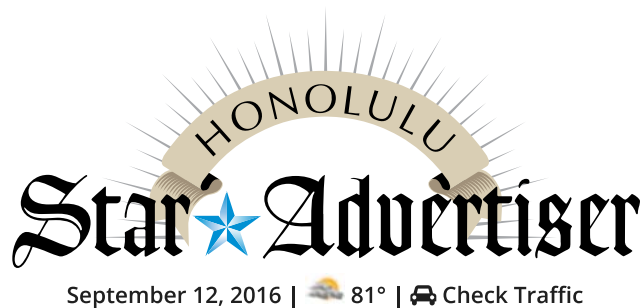
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Top News

Hawaii prepares plan to help coral recover from bleaching

Associated Press

Posted September 08, 2016

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ASSOCIATED PRESS / OCT. 2015

Fish swim over a patch of bleached coral in Kaneohe Bay on Oct. 26. Officials today unveiled an action plan to cope with coral bleaching threatening island reefs.

Officials today proposed a series of steps to fight coral bleaching that's threatening the state's reefs, including new marine protected areas, limits on fishing and controlling polluted runoff from land.

Hawaii's ocean temperatures have been rising as greenhouse gases in the atmosphere have increased, forcing corals to expel algae they rely on for food. Vast stretches of reef have turned white over the past two summers, increasing the risk that the coral will get sick and die. Some already have died.

It's a serious concern for the health of the ocean because coral reefs provide habitat for fish and other marine life, scientists say. Severe or concurrent years of bleaching can kill coral reefs, as has been documented over the past two years in oceans around the world. Scientists expect a third year of bleaching to last through the end of 2016.

Bruce Anderson, the state Division of Aquatic Resources administrator, said addressing polluted runoff is difficult, noting it would cost millions of dollars to create artificial wetlands that would help control runoff. Fishermen in the past have also resisted moves to limit their catch.

But Anderson said the coral bleaching crisis presents an opportunity.

"We are going to have future bleaching events, and the water is going to get warmer. And it's going to happen again and again," he said. "So our challenge is to prevent the impacts of bleaching as much as we can and also to help the reefs recover."

Another idea is to ban lay gill nets that fishermen leave in the water. Anderson said these types of nets are harmful because they kill all the fish caught in them, not just the species targeted by the fisherman. The nets work because the mesh is large enough for a fish's head to go through but too small for its body to escape.

The state will hold public meetings on its proposals before any are adopted.

Anderson said the state came up with the proposals after surveying over 80 scientists around the world about what steps are most effective at helping coral reefs.

Warmer ocean temperatures bleached coral in Kaneohe Bay off Oahu in 2014. Last year, they bleached corals off the west coast of the Big Island and off Maui.

Hawaii Fishermen's Alliance for Conservation and Tradition President Phil Fernandez said he looks forward to working with Anderson and the state on the proposals.

The no-take zones may be problematic, depending on where they would be, he said, but his group is open to discussing them.

As for potential catch limits on parrotfish, a popular reef fish, he said the species needs to be managed but the question is to what degree and how. Parrotfish help coral by eating algae and preventing it from smothering the reef.

"We want the reef to come back. We fish, and the health of fish is completely dependent on habitat. When the habitat is decimated, the fish goes away," he said.

The Nature Conservancy of Hawaii's marine science director said he's excited and encouraged the state is taking on the issue and that it recognizes it needs to think strategically about coral bleaching.

Eric Conklin called the proposals ambitious and noted the state will need to get feedback and input from the community. He said the proposals face a long road to approval through a public process.

"It's really easy to say 'the science tells us these are the best things to do.' It's really tricky to figure out the best way to be guided by that science but develop up a plan that still meets the needs of the people who rely on the resource," Conklin said. "That's the real challenge in front of us."

COMMUNITY VOICE

Here's How To Do Sound Marine Management

The Kauai community of Haena provides a case study of how community practices can inform coastal stewardship.

AUGUST 12, 2016 · By Mehana Blaich Vaughan  Adam Ayers 

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In late May, the Board of Land and Natural Resources accepted the “Try Wait” regulations proposed by the Kaupulehu community to rest a section of the reef and allow severely depleted fish populations to recover. Less than a year earlier, Gov. David Ige signed into law community-driven fisheries management rules proposed by Haena, a rural community within the moku (district) of Halelea on the island of Kauai’s North Shore.

As the World Conservation Congress approaches (scheduled for September on Oahu), both initiatives send a strong message of optimism about local level care taking and the way customary practices can be integrated into community and state collaborations to care for natural resources.

Our research team began a study of the Haena process in 2008, recently published in an international scientific journal. Our findings may help all concerned better understand the sometimes rocky road to collaboration in caring for natural resources, and reduce barriers to management based on customary practices.



Kauai's rural community of Haena, pictured here, offer an example of how customary practices can be successfully integrated into care taking for natural resources.

Hawaii enacted legislation in 1994 allowing the Department of Land and Natural Resources to designate community-based subsistence fishery areas (CBSFA) for “reaffirming and protecting fishing practices customarily and traditionally exercised for purposes of Native Hawaiian subsistence, culture and religion.” Nineteen Hawaii communities have taken steps towards becoming CBSFA, with eight — including three entire islands — submitting bills for legislative designation.

Haena is the first permanently designated CBSFA in Hawaii and the first community to develop state law based on customary coastal management.

Haena fishermen and community members formed a committee to develop rule proposals with facilitation from a nongovernmental organization founded to support Hawaii's local malama aina efforts, [Kuaaina Ulu Auamo](#).

Meetings with area Hawaiian fishing families, Haena coastal users, such as surfers and commercial kayak operators, and neighborhood associations yielded valuable input. Personnel from the state Department of Aquatic Resources and other DLNR divisions reviewed rule drafts and ultimately translated rules into legal language. The process, from legislation, to planning, to passing rules into law took nine years, over 60 meetings, 15 rule drafts, an attorney general review and three public hearings in which 99percent of testimony from across the state of Hawaii supported rules passage.

A vital component of this process was the identification of key values underlying customary management for the Haena area. Our team analyzed primary documents spanning 1840-2010, including 14 oral histories of area elders on coastal use between 1920 and 1970. We identified seven customary values (five of which we touch on here) and validated them through a focus group of knowledgeable Haena community members.

We looked for contemporary expressions of these values by observing 40 rulemaking meetings and analyzing minutes. We interviewed 20 knowledgeable fishermen and Haena community members, asking, “What traditional rules and lessons should be followed when fishing?” Then we traced the values emerging from archival documents and current day community understanding through the many rules drafts, to see how they were reflected in the rules and final state law.

Changes In Resource Management Agencies

In Haena, the customary value of ahupuaa recognizes the interconnectedness of resources from mountain to sea. Haena community members’ goals for rules included addressing declining fresh water quality and quantity, land-based pollution and sedimentation from coastal development.

However, DLNR regulates forests, coastal lands, freshwater resources and boating separately from fisheries through five distinct divisions. Haena’s rules fall under the jurisdiction of the Division of Aquatic Resources, dealing solely with fisheries and fishing. Therefore the new rules govern only a narrow band of shoreline, from the high water mark to the fringing reef and regulate only fishing, though many other factors affect coastal health.

Haena is the first Hawaii community to develop state

Another barrier was DAR’s preference for scientific studies over customary

law based on customary coastal management.

protection, emphasizes minimizing disturbance to coastal areas where fish were known to feed and seek shelter.

community knowledge. This slowed decision making and the incorporation of values, such as hoomalu. Hoomalu, or

Community consensus based on multiple elders' knowledge held that the area was an important nursery lagoon, with one 80-year-old recalling her father instructing her not to walk along the shoreline, lest shadows or footsteps scare away the baby fish. Today, this same lagoon is the center of recreational activity for the 900,000 visitors who visit Haena each year. Up to 300 people at a time snorkel, scuba-dive, and swim, and an average of 20 at a time walk the shoreline on a typical summer day.

Studies by University of Hawaii marine biology professor Alan Friedlander and his students corroborated the area's importance as a nursery, convincing DAR to accept rules limiting recreational use there.

Changes in state rule-making are needed to allow flexibility in adapting rules to local resource conditions. That would allow a quicker response to current day realities such as coral reef bleaching and annual variations in when certain fish spawn, using ancestral tools such as Hoomaha (rests) or rotating kapu, opening and closing areas or species as they reproduce and replenish, rather than imposing fixed long term closures.

Customary values taught people how to interact with natural resources and each other. Lawa pono, "take only what you need," was the most frequently mentioned value guiding harvest in interviews with both elders and younger generations of Haena fishermen and women. Customary management was predicated upon continually building shared understandings of a community. Values emphasize maintaining respectful relationships with all elements of the natural world, considered not just animate beings, but family. Customary values requiring sharing of mahele (portions of the catch), also promote balanced relationships and responsibility.

As we prepare to welcome the many indigenous conservation practitioners and advocates to the World Conservation Congress in Hawaii next month, it is clear that government agencies alone cannot meet the challenges facing our earth today.

We believe that sharing community-based resource-management practices that have sustained people for generations, along with customary values from around the globe can lead to better policies. We hope this sharing will also encourage more government – community collaborative management partnerships, not just here in Hawaii, but in other parts of the world.

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COMMENTS (7)

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Ocean Activities discussed at July 19 meeting

Lanai visitors may be able to enjoy more ocean-related activities and even have a chance to explore beneath the sea in a three-person submarine, Pulama Lanai Senior Vice President Lynn McCrory told residents gathered at the July 19 meeting. But, before she expanded on what was on the planning boards, she gave residents a recap of what has occurred in the past few years.

In November 2013, Pulama met with the Manele Harbor Advisory Committee and subsequently, Hawaii State Board of the Department of Land and Natural Resources (DLNR), for approval to lease submerged land areas at Manele Small Boat Harbor that included the floating dock, from the State. It was approved. Next, Pulama went to the State Legislature for the passage of a Resolution confirming it; the Governor signed in May 2014.

Although Pulama has been working with DLNR Division of Boating and Ocean Recreation (DOBOR), to finalize the lease agreement, the State did not have a property manager to do the work in the Division. Last month, that position was filled and the DLNR's board issued a Revocable Permit to allow Pulama to go forward with activities from the floating dock. This permit is intended to cover the period of time for the appraisal of the submerged land and final lease document that is now in process.

Presently, Pulama has now put out a Request for Proposals (RFP), for three vendors who can manage various ocean activities for guests, day visitors, and island residents who may want to participate in an ocean activity. Key points of the RFP include 10 consecutive years of ocean activities operation in the State of Hawaii; a proven safety record; strong customer service rating; and an established high quality record as an ocean activities operator.

The RFP's requirements are stringent; the operator must abide by all applicable DLNR, DOBOR, and Coast Guard regulations in addition to having the necessary licenses and insurances required. The requirements are too numerous to name in detail, but cultural training is on the list.

Pulama will provide the vessels used for various activities. It will also provide a large specialized vessel to use to launch some of the activities away from the floating dock. In addition, it will provide a hospitality center, a first aid facility, and storage and maintenance facilities.

A Small Boat Harbor Director will be hired by Pulama to oversee the vendor operating the activities from the floating dock. He or she will also be responsible for closing the dock if ocean conditions warrant no activity.

Some of the activities being considered are: stand-up paddle boards, 6-person outrigger canoe paddling, and outrigger canoe sailing. Snorkeling, scuba diving, sunset cruises, whale watching, and fishing are also on the list.

However, the most exciting thing on the proposed list of things to do is exploring Lanai's surrounding ocean in a three-person submarine! The submarine is approximately 21 feet long and is being built by Deep Flight, in San Francisco. When it is completed, it will undergo sea trials and be ocean-tested by the Coast Guard before coming to Lanai, where it will go through more trials before it can be put into service. A surface "chase boat" will monitor the submarine whenever it is in use. The submarine will be the only one of its kind operating in Hawaiian waters.

There are numerous factors to consider before the ocean activities can be put into service. Permits for moorings at two locations are currently underway. No commercial activity will take place inside the Manele Marine Reserve or at Hulopoe Beach.

Stay tuned for more details in the months to come. As always, Lynn McCrory's monthly meetings are excellent opportunities for residents to hear what's happening on Lanai. The meetings are informal and after the agenda items are covered, residents at the meetings may ask questions. If she doesn't have the answers at the meeting, she'll get them for you! To receive a notice about future meetings, email Barbi Shinno: bshinno@pulamalanai.com.

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[Ocean Power Technologies Deploys Commercial PowerBuoy with Energy Storage](#)

Ocean Power Technologies Deploys Commercial PowerBuoy with Energy Storage

09/01/2016 | Sonal Patel

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Ocean Power Technologies (OPT) deployed its first commercial PB3 PowerBuoy—a wave energy conversion system that incorporates energy storage—off the coast of New Jersey this July.

The Pennington, N.J.-based firm has been working to advance its PowerBuoy technology since the firm was founded in 1994. Development of the wave energy conversion technology for naval and civilian applications was catalyzed by small-business innovative research (SBIR) funding awards from the U.S. Navy. By 1997, following trials of a handful of PowerBuoy designs in the Navy's wave tank facility and in the Atlantic Ocean, OPT demonstrated that the buoy could operate for more than 11 months at sea and endure harsh ocean conditions. Beginning in 2001, the company began developing more wave power systems at the Marine Corps base in Oahu, Hawaii. In 2005, it installed its first 40-kW buoy 1 mile off the coast of Oahu. That unit connected to the grid for the first time in 2010, following 4,400 hours of operation.

Deployment of the PB3 PowerBuoy (Figure 3) marks a major milestone for the company. The PB3 incorporates "multiple enhancements" over early prototypes, including a redesigned power take-off, a battery pack, a higher voltage power management and distribution system, and a new auto-ballasting system, which the company says allows for faster and less costly deployment.



([http://cdn.powermag.com/wp-](http://cdn.powermag.com/wp-content/uploads/2016/09/pwr_090116_gm_fig3.jpg)

[content/uploads/2016/09/pwr_090116_gm_fig3.jpg](http://cdn.powermag.com/wp-content/uploads/2016/09/pwr_090116_gm_fig3.jpg))

3. Finding its sea legs. Ocean Power Technology (OPT) in July deployed its first commercially designed PB3 PowerBuoy about 4 miles off the coast of New Jersey. Another PB3 array is slated to be deployed off Kozy Island in Japan following a planned stage gate review. *Courtesy: OPT*

Designed to be moored at a single point, the PB3 PowerBuoy produces 300 W of continuous power (depending on ocean conditions) and 7.2 kW at peak (1 hour per day). As it floats over ocean depths of between 20 meters (m) and 1,000 m (Figure 4), it constantly recharges itself by harvesting energy from waves and then converting that wave energy to power through a direct-drive generator. That power then charges an energy storage system, which delivers power to meet application and end-user needs. Its modular battery has a capacity of 44 kWh and is scalable to 150 kWh.



([http://cdn.powermag.com/wp-](http://cdn.powermag.com/wp-content/uploads/2016/09/pwr_090116_gm_fig4.jpg)

[content/uploads/2016/09/pwr_090116_gm_fig4.jpg](#))

4. Buoyant. About 3.4 meters (m) of the 12.8-m-long PB3 PowerBuoy sits above the waterline. Conversion of wave energy is carried out through a direct-drive generator that continuously charges an onboard battery pack. *Courtesy: OPT*

The PB3 technology was demonstrated for a Navy project to provide power to coastal security networks and “survived rigorous sea trials, including operation off the New Jersey coast through Hurricane Irene in 2011,” the company said.

The news follows OPT’s six-month lease agreement with Japanese firm Mitsui Engineering and Shipbuilding this June, a deal valued at \$975,000 for PB3 PowerBuoys that are planned to be deployed off Kozy Island in Japan following a planned stage gate review. OPT will also provide engineering support, deployment planning and logistics, and ocean performance data collection and analysis. Mitsui and OPT are also reportedly collaborating to develop and test an advanced control algorithm to assess increased ocean wave energy capture and electric power generation for potential customers in Japan and other Asian nations.

Meanwhile, OPT said in a June 2016 statement that it will target a variety of markets over the next five years. Within the next two years, the PB3 PowerBuoy could snag a sizable share of the oceanographic and meteorological data market, it projected, but it will also seek customers in the oil and gas, defense and security, offshore wind, and communications sectors.

Over the next five years, the company also plans to substantially boost the technology’s maturation and commercialization. A second-generation PB3 model in the works could include a new, modular high-efficiency energy storage system. A future third-generation model would feature a more advanced and lighter hull design for improved power generation, the company said. That would be followed by the PB15-Gen1, which OPT envisions could generate more than 15 kW peak payload power. By 2020, it wants to commercialize the PBX model, which would use advanced hydro-dynamics, energy storage, and controls.

—Sonali Patel, associate editor

PRINT MODE : ON





National Oceanic and Atmospheric
Administration
U.S. Department of Commerce

Successful conservation efforts pay off for humpback whales

Division into distinct populations paves the way for tailored conservation efforts

Fisheries | whales

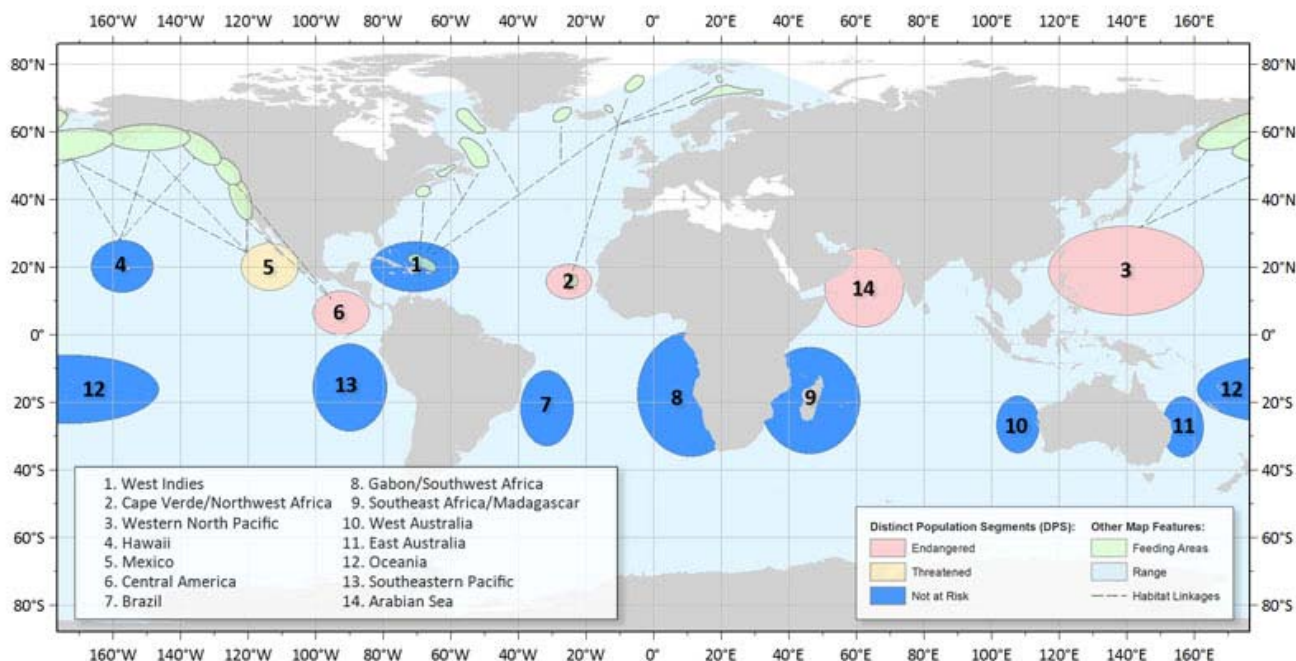
September 6, 2016 — Endangered humpback whales in nine of 14 newly identified distinct population segments have recovered enough that they don't warrant listing under the Endangered Species Act, NOAA Fisheries said today. International conservation efforts to protect and conserve whales over the past 40 years proved successful for most populations. Four of the distinct population segments are still protected as endangered, and one is now listed as threatened.



Commercial whaling severely reduced humpback whale numbers from historical levels, and the United States listed all humpback whales as endangered in 1970. NOAA Fisheries worked nationally and internationally to identify and apply protections for humpback whales. The International Whaling Commission's whaling moratorium, imposed in 1982, played a major role in the comeback of humpback whales, and remains in effect.

"Today's news is a true ecological success story," said Eileen Sobeck, assistant NOAA administrator for fisheries.

"Whales, including the humpback, serve an important role in our marine environment. Separately managing humpback whale populations that are largely independent of each other allows us to tailor conservation approaches for each population."



2016 Humpback distinct population segments (NOAA)

Two of the four populations that remain endangered are found in U.S. waters at certain times of the year. The Central America population feeds off the West Coast, while the Western North Pacific population does so in the Bering Sea and Aleutian Islands. The Mexico population – listed as threatened – also feeds off the West Coast of the United States and Alaska.

Two separate, complementary regulations filed today maintain protections for whales in waters off Hawaii and Alaska by specifying distance limits for approaching vessels. All humpback whales remain protected in U.S. waters and on the high seas under the Marine Mammal Protection Act, regardless of their ESA status.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Join us on [Facebook](#), [Twitter](#), [Instagram](#) and our other [social media channels](#).

Note to reporters: B-roll available at <https://vimeo.com/111689294>.