

# Hawai'i Marine Mammal Consortium Field Report

MARINE MAMMAL RESEARCH, EDUCATION AND CONSERVATION



## SHORE-BASED RESEARCH

Lots of whales or just a few? That was our question when we started the 2018 shore station field season the first week of February. Short answer: not a lot of whales. The numbers were not as low as 2016, but they were very low.

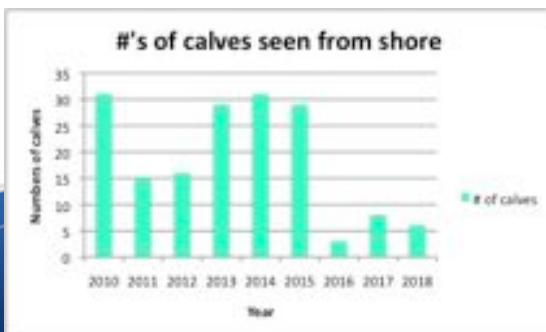
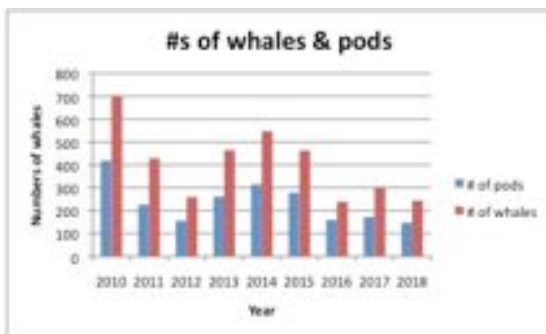
To summarize, from “Old Ruins”, north of Kawaihae, we conduct four ‘scans’ during each of five weeks, during one of four time blocks. We record positions of whales using a theodolite, an instrument that measures angles (see image to right). From shore in 2018, we saw 147 pods with 244 whales with 6 calves. For comparison, in 2010 (one of our biggest years), we saw 419 pods with 700 whales and 31 calves.

Why the low numbers? We believe a variety of factors are responsible. One idea is perhaps whales aren't getting enough food during the feeding season, so they don't come to Hawai'i.

As always, a simple question can have a very complicated answer. In a scientific manuscript in the works, we are examining several oceanographic variables to see if they are part of the answer. Stay tuned!



Above top: Kate Stafford at shore station (with a theodolite) Above lower: A 'sailing' mom seen from shore station. Humpback whales don't often keep their flukes in the air for long periods of times, but this mom did. Photo was taken through the theodolite on February 23. On Feb 27, she was seen on Maui! Photos by Suzanne Yin and Chris Gabriele.



HMMC Scan Sample Whale Counts 2010-2017. Data represent the mean of ~20 independent shore-based counts, by a single trained observer, in peak whale season each February and March. A pod is a group of one or more whales.

## ON THE WATER

The HMMC team photographically identified fewer whales than usual in 2018. In total, we approached over 48 whales in 32 different groups that included 4 calves. There were two main reasons for the low numbers. First, we spent only 9 days on the water in 2018. We got started a bit late, as we did not launch our boat until after we returned from Maui for Whale Tales (see Page 5). Secondly, there appeared to be fewer whales. When we started on February 21, there appeared to be a 'typical' number of pods. But by early March and until March 22, our final day on the water, whales were scarce. It seemed an abrupt and early end to the season. Given that 'skinny' whales have become more common in the past few years (see 2016 and 2017 newsletters), this further suggests that they are not getting enough to eat in their feeding areas. We suspect that whales in poor body condition cannot stay as long in the Hawai'i wintering area because they have less stored energy in the form of blubber.

The data collection portion of our study of trace element and organic pollutant levels in tissue samples from whales with "bumpy" and "non-bumpy" skin has been completed (see 2014-2017 newsletters). We await laboratory results from collaborator Dr. Colleen Bryan at the Hollings Laboratory, National Institute of Standards and Technology (NIST). She will be assessing the samples for levels of trace elements and organic pollutants and we will be working together in 2018 to write up our findings for publication.

*(Story continues on the next page)*



*A calf resting its rostrum on the back of its mother. We were encouraged to find several mothers and calves during our boat-based research activities. Photo by Suzanne Yin.*



*A typical fluke-up dive is shown above. Below: Everybody loves a breach! Photos by Adam Frankel.*



*Our long time volunteer Kim New (this was her 15th year) and acoustician extraordinaire Dr. Kate Stafford (her 3rd year) applied their talents and hard work to great effect. Photos by Chris Gabriele and Suzanne Yin.*

## ON THE WATER, continued



In 2018, we conducted two offshore surveys for odontocetes (toothed whales) to complement the research of Dr. Robin Baird of the Cascadia Research Collective. We found a group of about 20 bottlenose dolphins (*Tursiops truncatus*) on February 21 near Kawaihae, and a large group of spotted dolphins (*Stenella attenuata*, our best estimate was 270 animals) offshore in about 450 m of water on March 14. On our final offshore survey on March 22nd, we managed to find two large



toothed whales (possibly *Feresa attenuata*) which came toward the research vessel and promptly disappeared. We had been hoping to see melon-headed whales (*Peponocephala electra*), but have not been able to find them in the past few years. However, a local fisherman told us that he has seen a large group of them recently. It takes fairly calm seas for us to be able to sight small cetaceans since we don't have a lot of height above sea level in trusty *Malolo*. We

photographed spinner dolphins (*S. longirostris*) in groups ranging from about 40 to 150 individuals during four encounters near shore in Kawaihae Bay. These spinner dolphins get visited almost daily by the local tour vessels, some of whom put swimmers in the water with the dolphins.

Above top: A 'frozen C' or 'frozen arch' is a characteristic high leaping behavior of spotted dolphin. Above center: a spotted dolphin surfaces, showing off its spots. Above lower: a spinner dolphin shows off its long rostrum and 3-tone color pattern. Photos by Suzanne Yin.



On February 21<sup>st</sup>, we found two brilliant blue shrimp in a patch of marine debris. After a few photos, we released them unharmed. We contacted several local experts who were unable to identify them and then reached Dr. Tin-Yam Chan from the National Taiwan Ocean University. He identified them as "juvenile shrimp of Penaeidae, likely Penaeus s.l. or Metapenaeus. Juveniles of these two genera often with bodies quite blue especially in some species of Penaeus s.l." What a cool blue color! Photo by Suzanne Yin.



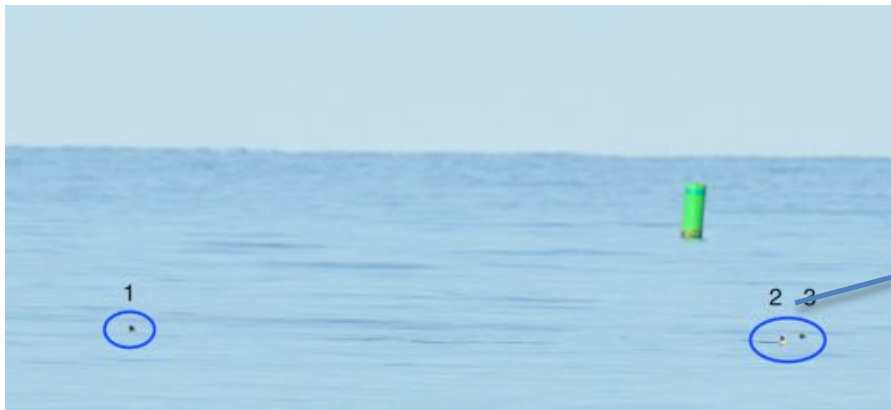
Much like in 2017, we didn't see a lot of seabirds during our 2018 field season. We saw one Black-Footed Albatross, several Wedge-Tailed Shearwaters (above, left two images), one immature Brown Booby and one Sooty Shearwater (above, right two images). We submit our opportunistic seabird observations to Peter Pyle of the Institute for Bird Populations. HMMC bird data have been included in the monograph site for the B.P. Bishop Museum (<http://hbs.bishopmuseum.org/birds/rlp-monograph/>). Photos by Chris Gabriele.

# BLACK-TIPPED REEF SHARKS

The HMMC 2017-2018 shark field observations didn't find a lot of sharks in Pelekane Bay. In 14 surveys, we saw 30 sharks, with most observed in March and no sharks seen in our first 6 surveys. We take photographs of the sharks' dorsal fins, which have different coloration markings. Their markings are as individual as a fingerprint and so far we have individually identified over 30 different sharks! Sometimes the sharks are quite far away from our location on the shore, thus we use cameras with very long lenses. As you can see, even with this equipment, the sharks can still be quite distant!



Above: Chris Gabriele with Ben Saldua, Chief of Interpretation, and Leeane Baskin, Hawai'i Pacific Parks Association sales / intern associate at Pu'ukoholā Heiau National Historic Site. Below left and right, black-tipped reef sharks in Pelekane Bay. Photos by Suzanne Yin.



# HELP FROM OUR FRIENDS – MAHALO NUI LOA



Suzanne Yin answered questions and sold HMMC merchandise at a vendor table at Whale Tales. For more details, see "Whale Tales next page". Photo by Marilyn Wright.



In 2017, long-time HMMC associate, Kim New, arranged a donation from Thrivent Financial to HMMC via their "Seed Money" action campaign. Their \$250 donation went toward purchasing new binoculars for shore-based whale counts and a digital audio recorder to record whale and dolphin sounds  
Photos by Suzanne Yin.



Check out our Amazon Wish List at [HMMC wish list](#)



To help support HMMC's ongoing research, go to: [Onepercentfortheplanet.org](http://Onepercentfortheplanet.org)

AmazonSmile shoppers have generated over \$500 for the HMMC! PLEASE KEEP SHOPPING!

Shop at AmazonSmile and Amazon will make a donation to:

Hawaii Marine Mammal Consortium

# EDUCATION

## WHALE TALES

In February, Chris Gabriele was again invited to give a talk at Whale Tales, an annual research and education extravaganza (and fund raiser) on Maui, coordinated by Whale Trust (<http://www.whaletrust.org>). Chris' talk to fellow researchers and the public was entitled, "Humpback Whales Navigate the Changing North Pacific" and addressed the North Pacific humpback whale population status. HMMC also hosted a booth at this venue facilitating our education and outreach efforts. Many thanks to Meagan Jones, Jim Darling and Flip Nicklin for hosting such an extraordinary event!



*In February 2018, Chris was an invited speaker at Whale Tales. Photo by Marilyn Wright.*

## "CORALS" FIELD PROGRAM

In late February, Adam Frankel taught a group of students from the Cornell Ocean Research Apprenticeship for Lynch Scholars (CORALS) program. They were on Hawai'i Island studying corals, water quality and whales before heading north to further their studies in Puget Sound. While on island, HMMC members lectured and led outings focused on humpback whale biology, sound production, sound recording, and analysis techniques. Additionally, Chris gave a lecture on the status of humpback populations here and in Alaska.

Because CORALS emphasizes fieldwork, the students joined HMMC at the shore station and learned how to operate a theodolite to track whales and how to collect those data. With help from Blue Wilderness divers, we deployed three SoundTrap acoustic recorders for five days near previous recording sites. During the deployment and recovery cruises, the students got good views of humpback whales as well as a nearby pod of spinner dolphins. We were attempting to create a three-element autonomous hydrophone array. Unfortunately, one of the recorders failed, so we only had two recordings. This is part of the reality of field work and we took it as an opportunity to have students discuss what we COULD do with the data that we actually collected. The students went on to compare different acoustic location methods as well as explore the data collected by the SoundTrap recorders.



*SoundTrap recorder.*

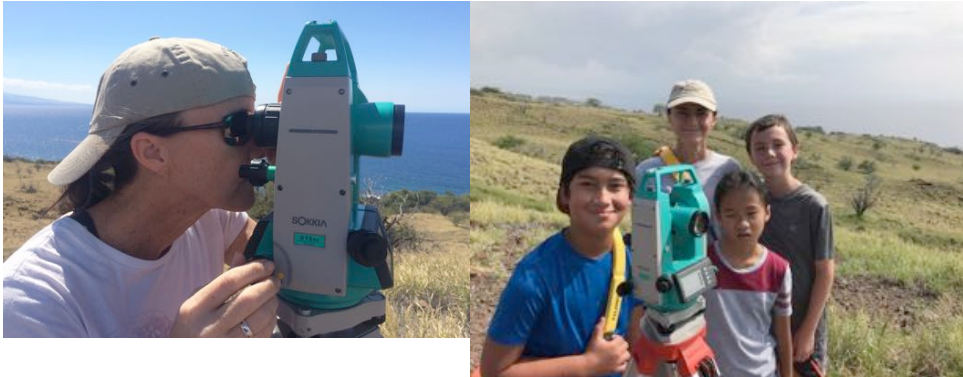


*Emily Chei tries her hand looking for a whale with the theodolite (above, left). Adam Frankel, Chris Gabriele and Kim New teach the CORALS class about shore station data collection. Photos by Suzanne Yin.*



## EDUCATION (continued from previous page)

On March 5, we hosted some local middle school students from Parker School at our shore station. These students had the opportunity to observe our scan sampling procedure and assist with marine mammal observations. They proved to be excellent humpback whale spotters!



Susan Rickards gets a position of a whale, also known as a 'fix' with the theodolite. Susan with Parker School students (clockwise) Noa Rickards (5<sup>th</sup> grade), Emily Atkins and Arthur Taylor (6<sup>th</sup> grade). Photos by Suzanne Yin and Chris Gabriele.



Hats and binoculars are essential field gear. HMMC hats are for sale on our online store. Photo by Suzanne Yin.

HMMC expands its online store with shirts and hats! Quantities limited! Order now!

## LONG TIME NO SEE



On March 15, 2011, we photographed a humpback whale that Chris Gabriele knows from Alaska, whale 875 (above, top). We saw 875 again this year on February 23, just a few miles from where we saw him in 2011 (above, lower). This whale is regularly seen each summer in Glacier Bay and Icy Strait. First seen in Alaska in 1985 by researcher Jan Straley, 875 was first seen in Hawai'i in 1990, where Chris was one of the researchers who recorded his song (875 is a male, known after DNA tests on skin collected after he breached). Researcher Scott Baker saw 875 with fresh propeller scars in 1987, those are the white parallel scars just under the dorsal fin. Given his 33-year sighting history, perhaps we will see 875 again soon, hopefully in less than 7 years!



Check out the HMMC online store for long sleeved 'performance' tshirts in royal blue and silvery blue (cost \$35.00, above left, bottom 2 shirts and top right). Short sleeve cotton shirts (above, right) are available for \$20. Performance shirt sizes are limited and run large. HMMC hats are \$25.00 each and come in tan or dark blue.

Also available on line, HMMC's humpback flukes note cards and posters.

**ORDER ONLINE TODAY! All proceeds go to support the HMMC!**

<http://www.hmmc.org/Store/StorePage.html>

# CONSERVATION

## Marine debris – There’s an App For That!

For many years, we’ve been picking up marine debris, but this year we’re logging our trash with the Marine Debris Tracker app, and we hope you’ll join Team HMMC. Whenever you pick up trash on the beach, in the ocean or on land, you can log it and help raise awareness of this important issue.

Here’s How: Download the free app for both Android and iOS devices and use the team login and password when you pick up trash. Join our team by emailing us to get the HMMC login and password (email [info@hmmc.org](mailto:info@hmmc.org)). The app will log the trash we collect and we can compete for bragging rights against other groups. The app is simple to use and has multiple lists of trash so it’s easy to log what you’ve picked up. Team HMMC is using the NOAA marine debris items list. We probably won’t catch the top team which has picked up almost 300,000 items of trash, but you can see your activity online (see image below after we picked up a straw and logged it) (<http://www.marinedebris.engr.uga.edu>). Remember, it doesn’t have to be marine debris but any litter that might head into the ocean. A study published in the journal Nature in March said the Pacific Garbage Patch is now double the size of Texas. We ALL have a part in helping to keep our PLANET clean. So far we’ve picked up 121 straws! Go Team HMMC!



Above: Various items of marine debris collected by HMMC in one day. Photo by Kate Stafford.

Below: Rosalind Rolland pulls marine debris from the water. Photo by Suzanne Yin.



### Recent Debris Activity

With Marine Debris Tracker, it just takes a few seconds to easily report where you find marine debris or litter anywhere in the world... and then prevent it from impacting our oceans.

HMMCDebris in Waimea, HI found 1 items of 1 types at 1 locations @ 8:23pm on 03/21



Mahalo!!! We couldn’t do it without you!



## Our Partners

HMMC is grateful to our many funders and supporters, as well as loyal field volunteers and associates who make the fieldwork fun and productive! A Whale Trust Maui grant supports our shore-based scans and retrospective data analysis. Erin Oleson (NOAA Pacific Islands Fisheries Science Center) and Robin Baird (Cascadia Research Collective) allowed us to work under their research permits. Gabriela Serra-Valente and Annette Henry (NOAA Southwest Fisheries Science Center) loaned us biopsy equipment that made sampling possible. Colleen Bryan’s (NIST) ongoing collaboration and financial help supports humpback whale health studies. Thrivent Financial provided funds for much needed equipment. Debbie Steele and Scott Baker’s laboratory support and spirit of discovery is so welcomed. Thanks to Mike Force for bird species ID. Chuck Greene, Joleah Lamb and Drew Harvell of Cornell University plus Blue Wilderness divers—Thanks! Joe Mobley (University of Hawai’i), Honda Motor Corporation of America and Kona Coast Marine: You help keep us on the water. Special thanks to Marilyn Wright, Annette Henry, Mike Morton, Kim New and Marjorie Erway for donations that help make our field season possible. The National Park Service supports our shark observations. The Puako General Store sells our fundraiser whale note cards and posters — much appreciated. Cetacean photos were taken under the authority of scientific research permits issued by the National Marine Fisheries Service.