



Veteran monk seal researcher John Henderson on Tern Island.

How long have you been working with monk seals and what drew you to working with them?

I've been with NOAA for 43 years, and working with seals for the last 38 years, since 1981. I was working in La Jolla, CA and what drew me to work with them was both circumstantial and a choice. At the time, there was a cutback where I was working (in the tuna-porpoise program) and an opportunity arose in the monk seal program out in Hawaii. NOAA's studies on Pacific pinnipeds, like monk seals, were being conducted out of Seattle, but the monk seal program was moving to Hawai'i. NOAA leadership had made a decision to center research about particular marine mammals closer to where they are located.

I talked to my boss at the time, [Bill Perrin\(link is external\)](#), who was a world-renowned cetacean biologist that actually has a species of whale named after him, and I said I was thinking about joining the monk seal program. He thought about it and said that it might be my best chance ever to help save a species, and that really hit home. I had been to grad school in Hawai'i and knew what I was getting into, so I took it.

What are some of the most interesting things about monk seals and their behaviors?

Well, they are the only seal in existence that has evolved to live in the tropics. Sure, you have sea lions on the equator in Ecuador, but that is similar to a California climate with the cold water currents; there are the Mediterranean monk seals, but that is also pretty temperate, and you really don't have any other tropical seal. That's the most interesting thing to me, how they have evolved to accommodate a hot climate and how they stay cool. Staying cool can often be as much of a challenge as staying warm.

There also aren't other seals that are born jet black. Pups retain their lanugo, or the neonatal fur, similar to the soft hair humans are born with. Monk seals' lanugo is black, which may serve the purpose of heat absorption.

Another thing that is interesting is their underwater vocalizations, they make a blooping sound underwater that is unique.

Tells us a few of your favorite stories working and living with monk seals in the Northwestern Hawaiian Islands.

Particularly in the early days, like on Lisianski—and to an extent, they do this today—you can be on a place long enough and marking the animals, that after a time, you almost feel like you know all the animals individually.

After you have been there a few months, while walking around, you can come to expect where certain individuals will be at certain times. You can say, "well, that's seal 683 and she usually hauls up either here or over there."

To get to that degree of familiarity is pretty unique, and it doesn't happen at all our locations, but at the smaller islands like Lisianski and Kure it does, and that is one of my favorite aspects of the field camps.



John Henderson ashore Nihoa Island.

Your self-appointed title is the “corporate memory” of the monk seal program. Can you extract some choice moments from your vault of experiences, and perhaps some of the more interesting requests colleagues have made of your knowledge?

Sure, I had one request fairly recently. Our veterinarian, Michelle Barbieri, recently asked me about a seal living at Sea Life Park, named E'kolu, that recently died. This had been a seal that was brought into captivity early on in the program. When they were doing the necropsy, some

interesting things turned up, so Michelle asked me about the reasons why that animal was brought into captivity in the first place. So I had to go back through my records and look it up.

Back in the day, we were doing something similar to what we are doing now—taking seals in for a winter of rehabilitation, then returning them to the wild the following year. It was being done at Sea Life Park. Early on, E'kolu was deemed not fit for release since she was not thriving, and this is how she came to live at the Park.

I had another interesting request that didn't have to do with me wearing a hat as a monk seal biologist, but had to do with my earlier work with cetaceans. Someone sent me a picture of a critter that looked like the back of a surfacing cetacean, with the saddle markings similar to a killer whale, but without a dorsal fin, and they asked me what it was. I asked where it was taken, and they were cryptic about it, so I sent it to some folks that study killer whales and asked if they had ever seen a killer whale without a dorsal fin, and does this picture look like a killer whale?

They said, "yes, it looks like a killer whale," but that they had never seen one without a dorsal fin. So I started getting suspicious and took it to my photo person and asked if the picture had been edited, and she immediately said yes, that waves in the background repeat in the image, etc.

I told the folks that sent me the image that it was fake and then they told me it was supposed to be an image of Ogopogo, a cryptic animal purportedly living in Lake Okanogan in British Columbia, and this guy claimed to have pictures of this creature. They were trying to verify it... and I said, "nope, not this time," and had some fun debunking a myth. It has nothing to do with seals, but it's a fun memory.

I hear you are retiring soon and sifting through a lifetime of materials in your office, any choice memories that you uncovered?

I'm coming back to some old tuna/porpoise work I did years ago. I've been looking back on the early days of permitting and how that culture has changed over time.

Describe what it was like in the early days of the field camps? Back in the day you even had airdrops of food and supplies from US Coast Guard overflights, is that right?

Often it wasn't dropping food, we had lots of food, but the Coast Guard liked to do the drops because it was training for them, learning how to drop things on target. So they would incorporate training if they could and we would have them drop mail.

Back then, we had no contact with family and loved ones. We had radio contact with Honolulu maybe three times per week, and we could pass messages back and forth but there was no e-mail, no satellite phone, no Internet, so the day we all got letters, it was a big deal. It was kind of

refreshing, but on the other hand it was hard.

After being out there for a while, doing well and being self-sufficient, and you have your own little world and suddenly the outside world comes in and pokes you. It's not like we got a "Dear John" letter, but things happen in real life, and people were really down and depressed for a day or two. They started missing their families and it hit home how remote we were. Back in the day, we really compartmentalized things. To this extent, it is much different now, and I have never worked out there when we had regular communication.

But the airdrops back in the day were a lot of fun, and at the end of the season, the Coast Guard would want their gear back, and we'd give them the drums and other equipment and would pay them back with a few glass fishing balls—the ultimate currency of the Northwestern Hawaiian Islands.



John Henderson plays a game of "over the line" with USCG staff at Kure Atoll in 1988.

You were involved in the first studies to evaluate the safety of tagging weaned pups. Now, nearly all seals get tags. Tell us about the development of that program.

In the late 1970s and early 80s, the conventional wisdom on monk seals was that they don't like to be disturbed, they don't do well around humans—they didn't do well at Kure Atoll where there was a Coast Guard base, they didn't do well at Midway because of the military presence, they weren't in the main Hawaiian Islands, they didn't do well at French Frigate Shoals between the Navy, Coast Guard, and Fish and Wildlife—so it was thought they just don't do well around people. So there was a lot of concern about any kind of disturbance to the seals, even if it could be to their benefit.

I was telling my colleague just today about a couple back in 1978 that would go onto Laysan Island on contract to the Marine Mammal Commission in the early days of figuring out what was going on, and they had a nursing pup that was trapped somewhere, in trouble. They chose not to intervene because of concerns that it would affect the mother-pup bond. That choice ended up resulting in the pup's death.

“No disturbance” was the mantra, so there was a lot of concern about tagging weaned pups and questions over whether it was okay to even handle them. And then there were concerns about whether the tags would be shark attractors. The tags at Kure to this day are grey since they were determined to be the most unobtrusive. Then, we tested at Lisianski with dark green tags so they would not be confused with Kure.

For our study, we tagged weaned pups, and tagged only half of the cohort but handled them all, and then followed their survival and found no difference. This told us it was okay to handle and tag them. We could also tell no difference between the colors of the tags and whether or not they got eaten. The approach basically followed caution first, and one of the old assumptions about handling went out the window. Then the Coast Guard left French Frigate Shoals and the population did great, and we felt we were again right about being disturbed.

But now we have seals showing up in the main Hawaiian Islands, something we never thought would happen, and they are doing great. However, the seals in the Northwestern Hawaiian Islands appear more skittish, and the ones in the main populated islands are less-so. As with most animals, there is a spectrum of behaviors and some animals are more used to living around humans than others.

I hear you were on the first NOAA voyage to monitor monk seals in the Northwestern Hawaiian Islands, and on this ship we have the newest scientists to staff the field camps. What words of wisdom can you share with them?

I would say to be open to new ideas, as we were talking about earlier with seals being disturbed by humans, and let the data tell you the accurate information, but be aware that new data may come in that makes the old stuff obsolete. Think outside the box and be open and communicative with colleagues and outside expertise.

Now, we have seals with eels getting stuck in their noses, something we had not observed before, and you need to be open to the possibilities of what may be out there. And with the increased communication, it is easier to consult on new observations.

One of the projects that you worked on was entanglement of seals in marine debris and trying to evaluate this impact starting in the 1980s. What have you learned and what are your current thoughts on this expanding threat?

I have a bunch of data and a paper in the works to see if we can say anything about trends in entanglement and whether or not oceanic factors are contributing to accumulation of debris that are, in turn, driving entanglement rates. Whether there is any kind of cycle going on with seal population, or the subtropical front that moves down with the Pacific Decadal Oscillation (PDO), and whether that is driving things.

We know that the PDO can change currents that bring debris to the islands, and bring more debris, but we don't know whether that will increase entanglement. We don't know if the tons of debris that we have been pulling is having an effect on entanglement rates. We know the debris entanglement is a source of mortality, and it is important to address anything that affects survival of the species. We just don't know the extent, and is likely the tip of the iceberg.

We definitely know that the younger seals are more susceptible to entanglement since they are curious and learning how to forage for food so explore everything, including nets that could entangle them. Weaned pups are overrepresented in the numbers of seals that get entangled compared to juveniles or sub adults.

How will climate change impact monk seals?

I think we will know in a few years. There is an island that disappeared at French Frigate Shoals quite a few years ago that was a pupping island—Whale Skate Island—and the seals shifted over to East and Tern Islands. And now East Island is mostly gone from Hurricane Walaka in 2018, and Tern Island was damaged.

The loss of pupping habitat will show us how adaptable the seals are to pup somewhere else, and how adaptable they are to hauling out in other places. Perhaps the increase in main Hawaiian Islands seals is being driven by loss of habitat in the Northwestern Hawaiian Islands. I don't think there is enough loss in the Northwesterns yet to account for the seals finding their way back to the main islands. I think we will know the answer to this question in the coming years as we see many of these islands shrink and even disappear.



John Henderson reads at a makeshift desk at French Frigate Shoals in 1984. Photo: NOAA Fisheries.

With monk seals re-establishing themselves in the main Hawaiian Islands, and doing well, we are seeing occasional conflicts with people. What are some of your thoughts on how people can learn to live with seals?

It's not unique to monk seals, it's a story that is being played out in many places. With the Marine Mammal Protection Act, the Endangered Species Act, we see more and more recovery of species. In La Jolla, CA seals re-took a popular swimming area called the Children's Pool, and grey seals are re-populating Cape Cod and interacting with fishermen and swimmers.

We are going to have to learn to live with these critters; some people will have to learn to live with mountain lions being in their backyard, or bobcats or coyotes killing their pet cat. The advice is not to be selfish, to be willing to make sacrifices. I think Hawai'i is doing a good job of adjusting to monk seals on our beaches, although there are still some hurdles—we are getting there.

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Last updated by Pacific Islands Fisheries Science Center on June 07, 2019

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