

Soundings



American Cetacean Society – Monterey Bay Chapter
PO Box HE, Pacific Grove, CA 93950

APRIL 2019

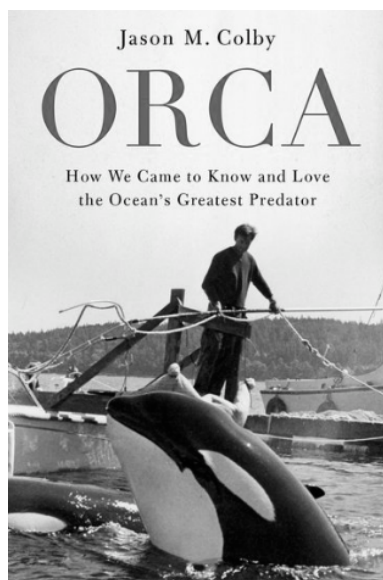
**MONTHLY MEETING AT HOPKINS MARINE STATION,
LECTURE HALL BOAT WORKS BUILDING
(ACROSS FROM THE AMERICAN TIN CANNERY OUTLET STORES)
MEETING IS OPEN TO THE PUBLIC**

Thursday, April 25, 2019

Time: 7:30 PM

Speaker: Jason Colby

Title: How the ‘Killer’ became ‘Orca’



Dr. Jason Colby is professor of environmental and international history at the University of Victoria in British Columbia. His research focuses on the historical interactions between humans and marine mammals on the Pacific Coast. He is the author of *Orca: How We Came to Know and Love the Ocean's Greatest Predator* (Oxford, 2018). His new research examines the near-extinction and extraordinary recovery of the eastern Pacific gray whale.

Jason was born in Victoria, British Columbia, but raised in the Seattle area, where he worked as a commercial fisherman in Alaska and Washington. His book traces the history of human-orca interactions back to the time when they were shot and killed as a “vermin” species, to the 1960s and 70s when orcas were netted in Northwest waters and sent all over the world, until state and federal laws finally shut down the practice. Although these captures were

horrific, Dr. Colby is sympathetic to the captors, who operated in a different historic and moral context, and makes the point that captive whales provided the understanding of the species that led to the ethical imperative to save them.

In *Orca*, Dr. Colby argues that we have a moral obligation to this now critically endangered population that helped transform our views of cetaceans. He writes, “In its preindustrial state, this coast was ideal for specialized predators who fed on fat, abundant chinook salmon... But ... the Salish Sea was becoming an urban, saltwater lake — increasingly loud, empty and polluted.”

Dr. Colby will be selling signed copies of his book following his presentation.

Next month: Our next meeting will be on Thursday, May 30 at Hopkins Marine Station. Our speaker will be naturalist, wildlife photographer, and Monterey native Chase Dekker. Please save the date and join us! More information is available on our website, www.acsmb.org.

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CALENDAR

Now through Apr. 14: Exhibit at the Pacific Grove Museum Of Natural History: Magnificent Migrations: A Journey Through Central California.

Now through Nov. 22: Albatross Exhibit at the Seymour Center at Long Marine Lab: "A Perfect Day for an Albatross." Features Caren Lobel-Fried's book and artwork. The exhibit also features videos, albatross facts and hands-on activities about this remarkable seabird.

Apr. 9: Friends of Hopkins Lecture Series: "Roz Naylor. Oceans and the Future of Food." 7:30 to 8:30 PM at Hopkins Boat Works Lecture Hall.

Apr. 18: Moss Landing Marine Lab Seminar Series: Using Virtual Reality to Share the Ocean. Presented by Erika Woolsey of Stanford and The Hydrous. 4:00 to 5:00 PM in the Moss Landing Marine Labs Seminar Room.

Apr. 18: Hardcore Natural History Series: The State Of the Redwoods – From the Big Sur Coast to Southern Oregon. Presentation by Dr. Emily Burns of the Save the Redwoods League. 6:30 - 8:00 PM at the Pacific Grove Museum of Natural History.

Apr. 25: Moss Landing Marine Lab Seminar Series: Microplastics from Indonesia to San Francisco. Presented by Carolyn Box of the 5 Gyres Institute. 4:00 to 5:00 PM in the Moss Landing Marine Labs Seminar Room.

Apr. 27-28: Moss Landing Marine Lab Open House. Events include seminars by MLML researchers, tours of wetlands, birds and aquaculture facility, and fun activities for kids. 9:00 AM - 5:00 PM both days.

May 3: Annual Meeting of the Southern California Academy Of Sciences at Cal State University Northridge.

May 3: Hopkins Marine Station Friday Seminar: Turning up the Heat on Ocean Outbreaks from Seagrasses to Seastars, presentation by Drew Harrell of Cornell University. 12:00 - 1:00 PM at the Boat Works Lecture Hall.

May 23: Hardcore Natural History Series: Why Animals Eat Plastic and the Curious Case Of the Cuvier's Beaked

Whale. Presentation by Dr. Andrew Savoca. 6:30 – 8:30 PM at the Pacific Grove Museum of Natural History.

May 24: Hopkins Marine Station Friday Seminar: Global Penguin Conservation, presentation by Pablo Borboroglu of the Global Penguin Society in Argentina. 12:00 - 1:00 PM at the Boat Works Lecture Hall.

May 28: ACSSF Monthly Lecture: "Examining Southern Hemisphere Humpback Whale Migratory Routes from Foraging to Breeding Grounds." Presentation by Michelle Modest. 7:00 – 9:00 PM at The Bay Model Visitor Center in Sausalito.

BOOK RECOMMENDATIONS

Endangered Orcas: The Story Of the Southern Residents, by Monika Wieland Shields. 2019 Orca Watcher.

Beyond Words: What Elephants and Whales Think and Feel: A Young Readers Edition, by Carl Safina. 2019 Roaring Book Press.

Europe's Sea Mammals, including the Azores, Madeira, the Canary Islands and Cape Verde: A field guide to the whales, dolphins, porpoises and seals, by Robert Still, Hugh Harrop, Tim Stenton, and Luis Dias. 2019 Princeton University Press.

PUGET SOUND'S SOUTHERN RESIDENT ORCAS WOW MONTEREY BAY, CALIFORNIA, IN RARE SIGHTING

by *Lynda V. Mapes*

Apr. 1, 2019 — Southern resident killer whales wowed California on Sunday, with more than 30 members of L pod seen in Monterey Bay, including the oldest member of all the southern residents and the newest baby.

Nancy Black, a marine biologist and owner of Monterey Bay Whale Watch, said she was home when she first heard of the sighting from her staff out on the boat, and was doubtful. Transient, or Bigg's, killer whales that prey on gray whale calves are the orcas usually seen in the California waters this time of year. The grays are lumbering north from the calving lagoons in Mexico to their summer feeding grounds in the Bering, Beaufort and Chuckchi seas.

But after Black saw a few photos emailed from her crew out on the whale-watch boat, she headed out on the water.

There they were: probably all of L pod, Black said. “And the little calf was there, swimming toward the back of the group. We were all so glad to see that little calf — it would have been so sad to see the mother without it.”

The southern residents are endangered. There are only 75 left — including the baby.

The gender of the new calf, born an estimated 3 months ago, is not yet known.

The oldest southern resident whale, L25 was also present. She is believed to be in her 90s.

The southern residents, particularly K and L pods, travel the outer coast as far as Southern California in winter, pursuing salmon. It could be the whales were targeting spring chinook heading to the Feather River hatchery, said Steve Lindley, director of the fisheries ecology division of the Southwest Fisheries Science Center of the National Oceanic and Atmospheric Administration in Santa Cruz.

Or the whales could be targeting fall chinook headed to the Sacramento River, which also travel off the coast this time of year, Lindley said. Or the whales could just be working off memory of fish that used to be there.

“It is an interesting question what is there, and what they might be looking for, which might not be the same thing, depending on what they remember,” Lindley said of the whales. Winter run chinook are coming back now to the Sacramento — but today they are an exceedingly rare, endangered species.

But fall run chinook are enjoying a slight rebound with an estimated ocean population of about 390,000 this year, compared with 230,000 last year, said Harry Morse, spokesman for the California Department of Fish and Wildlife.

“They will go where the fish are,” said Ken Balcomb, founding director for the Center for Whale Research, who said it takes the whales about a week to reach California waters. It was Black who first recorded the southern residents in California, in 2000. “That was the first we knew they had gone to California,” he said.

Black said it appeared the whales were actively foraging Sunday, but she did not actually see a whale get a fish. She said she hoped a whale circling at the surface and a slick on the water might have been a kill.

“Everyone really wants them to get a fish,” she said.



L pod visited Monterey Bay, California, on March 31, wowing whale watchers. (Credit: Daniel Bianchetta / Monterey Bay Whale Watch).

The southern residents are at risk of extinction and lack of adequate food is one of the largest threats to their survival, in addition to pollution and disturbance from boats.

The whale-watching community in Monterey was crackling with the news of the southern residents, Black said, because it is rare to see them so far south. Black said she had only seen the southern residents about five times since her discovery in 2000.

A highlight of the day was a visit to her boat by one of the whales, seemingly to take a close look at a child aboard. “It came right over, it was so intentional, and just spy-hopped right in front of her, like she wanted to check her out,” Black said.

The southern residents behave very differently from the transients, she said. “The transients are quiet and stealthy but the southern residents are so active at the surface, so bubbly,” she said. “All the spy-hopping, you only see that with them.”

No one had seen the southern residents again as of Monday afternoon, though lots of whale-watch boats were out looking.

<https://www.seattletimes.com/seattle-news/environment/puget-sounds-southern-resident-orcas-wow-california-in-rare-sighting/>

SCIENTISTS FIND MYSTERY KILLER WHALES OFF CAPE HORN, CHILE

Mar. 7, 2019 — In January 2019, an international team of scientists working off the tip of southern Chile got their first live look at what might be a new species of killer whale. Called Type D, the whales were previously known only from a beach stranding more than 60 years ago, fishermen's stories, and tourist photographs.

Genetic samples the team collected will help determine whether this animal, with its distinctly

different color pattern and body shape, is indeed new to science.

"We are very excited about the genetic analyses to come. Type D killer whales could be the largest undescribed animal left on the planet and a clear indication of how little we know about life in our oceans," said Bob Pitman, a researcher from NOAA Fisheries' Southwest Fisheries Science Center in La Jolla, California.

The team's encounter with the distinctive whales came after they spent more than a week at anchor, waiting out the perpetual storms of Cape Horn off southern Chile. It was here that the scientists collected three biopsy samples -- tiny bits of skin harmlessly taken from the whales with a crossbow dart -- from a group of Type D killer whales.

Into the Laboratory

Unraveling the secrets of these unique killer whales has now moved from the blustery Southern Ocean to the laboratory, where NOAA scientists will analyze DNA from the skin samples. "These samples hold the key to determining whether this form of killer whale represents a distinct species," said Pitman.

The first record of the unusual killer whales came in 1955, when 17 animals stranded on the coast of Paraparaumu, New Zealand. Compared to other killer whales, they had more rounded heads, a narrower and more pointed dorsal fin, and a tiny white eyepatch; no whales like this had ever been described, before.

Initially, scientists speculated that the unique look might have been a genetic aberration only seen in those stranded whales. Then, in 2005, a French scientist showed Pitman photographs of odd-looking killer whales that had taken fish from commercial fishing lines near Crozet Island in the southern Indian Ocean. They had the same tiny eye patches and bulbous heads.

The location, a quarter of the way around the world from New Zealand, suggested that relatives of the stranded whales might in fact be widespread.

Burgeoning tourism in Antarctica has since produced wildlife photographs in unprecedented quality and quantity. To monitor the distribution, movements, and abundance of killer whales in Antarctic waters, Pitman and colleagues, including members of the International Association of Antarctica Tour Operators, began to collect killer whale images from the Southern Ocean.

New Sightings Emerge

Among the tens of thousands of images compiled were six additional sightings of the unique whales. In 2010, Pitman and colleagues published a paper in the scientific journal *Polar Biology* describing the Type D

killer whales. They included photos from each encounter and a map of the sighting locations.

The sightings indicated a distribution around the entire continent of Antarctica, but within subantarctic waters. Because Type D killer whales seemed to avoid the coldest waters, the authors suggested "subantarctic killer whale" as a common name. It was also evident from the few sighting records that this animal lived in offshore waters, in some of the most inhospitable latitudes on the planet: the Roaring 40s and the Furious 50s, known for their strong winds. No wonder it was almost unknown to science.

The stories continued: Chilean fishermen complained of killer whales stripping valuable toothfish off their lines, 60 to 80 miles south of Cape Horn, where the continental shelf drops off into the abyss. Based on photographs by fisheries observers, most of the fish-stealing killer whales were "regular" killer whales, but, among the images, there were also some groups of Type D whales.

The fishermen reported that the types did not mix and that the Type Ds stayed further from the boats when regular killer whales were around.

The Stories Become Real

This year, the stories and photographs finally became real. With support from an anonymous donor through Cookson Adventures, and in collaboration with Centro de Conservación Cetácea, Chile, Pitman assembled an expedition of international whale experts: Bob Pitman and Lisa Ballance from the United States, John Totterdell and Rebecca Wellard from Australia, Jared Towers from Canada, and Mariano Sironi from Argentina. In January, they set sail from Ushuaia, Argentina, on the 22-meter research vessel *Australis*, to search for the elusive Type D killer whale.

At first, luck did not seem to favor the *Australis* team -- at one point they sat at anchor for eight anxious days, pummeled by 40 to 60 knot winds at Cape Horn. Then, during a brief lull in the weather, *Australis* pounded its way back offshore when the team's fortune changed.

They finally found the animals that Pitman had sought for 14 years.

The *Australis* spent three hours among a group of about 30 whales, which approached the vessel many times. When killer whale vocalization expert Rebecca Wellard towed a hydrophone behind the boat to record Type D calls, whales immediately came over to inspect it. From wide-angle cameras mounted on her hydrophone, she obtained revealing underwater images as the curious whales showed details of their unique color patterning and body shape.

The Type D killer whale images brought back by team *Australis* serve as a reminder of how little we know about life in our oceans. In the next few months, the DNA samples should finally reveal just how different the Type D is from other killer whales.

<https://www.sciencedaily.com/releases/2019/03/190307131509.htm>

WORLD'S FASTEST SHARK NOW FACING EXTINCTION, CONSERVATION EXPERTS WARN

by Josh Gabbatiss

Mar. 22, 2019 — The world's fastest shark is hurtling towards extinction following years of hunting for its prized meat and fins.

Experts have announced that shortfin makos, along with dozens more species of sharks and rays, are now officially at high risk of being wiped out for good.

Overfishing of these charismatic species, which take a long time to reproduce, by both commercial and recreational anglers has led to many global populations collapsing.

The shortfin mako, which can swim at speeds exceeding 40mph, is not currently subject to any international fishing restrictions despite populations falling by up to 60 per cent in some regions.

Its dramatic decline, along with that of its cousin the longfin mako, was reflected in the International Union for the Conservation of Nature's latest assessment of shark species' status.

Both species were downgraded from "vulnerable" to "endangered" – the same category as other famously threatened species like blue whales and Asian elephants.

"Our results are alarming and yet not surprising, as

we find the sharks that are especially slow-growing, sought-after and unprotected from overfishing tend to be the most threatened," said Professor Nicholas Dulvy, co-chair of the IUCN's Shark Specialist Group.

Earlier this year, a study found a shortfin mako fin for sale alongside other threatened species in an Asian food retailer in the UK.

Conservation groups say there is still hope for the mako and other persecuted sharks if governments implement strict caps on fishing limits.

The success of such measures was reflected in the updated "red list" assessment for sharks and rays in Australia, which was heralded as a world leader in conservation of these animals.

More than half of the species found in Australian waters were deemed to be in no danger, with just a handful of deep-water species still thought to be at risk.

This is thought to be a direct result of authorities there implementing strict fishing quotas.

"The new information paints a stark warning – we find ourselves on the precipice of losing these unique species forever," said Lee Crockett, director of the Shark Conservation Fund (SCF).

"The good news is that, with strategic support from SCF, we have the chance to win real protection this year with the right action by governments and fishery management bodies."

A record number of sharks and rays will be proposed for listing at the next meeting of the Convention of International Trade in Endangered Species of Wild Fauna and Flora in May.

At the same time, the EU is facing increasing pressure to announce catch quotas for mako sharks in its waters.

<https://www.independent.co.uk/environment/nature/shark-extinction-shortfin-mako-endangered-rays-iucn-a8834896.html>

DEEP TIME TRACKING DEVICES: FOSSIL BARNACLES REVEAL PREHISTORIC WHALE MIGRATIONS

Mar. 25, 2019 — Many whales take long journeys each year, spending summers feeding in cold waters and moving to warm tropical waters to breed. One theory suggests that these long-distance migrations originated around 5 million years ago, when ocean productivity became increasingly patchy. But patterns of ancient whale migrations have, until recently, been shrouded in mystery. Scientists from the Smithsonian Tropical Research Institute (STRI) and the University



Shortfin mako sharks are prized for their meat and fins. (Credit: Getty/iStock).



Fossil whale barnacles from the Pleistocene were retrieved from the Burica Peninsula of Panama for analyses. (Credit: Larrv Tavlör).

of California, Berkeley approached this question with an ingenious technique: barnacles.

"Instead of looking for clues to migration patterns from the whale's bones, we used hitch-hiking whale barnacles instead," said Larry Taylor, STRI visiting scientist and doctoral student at UC Berkeley who led the study.

Barnacles are crustaceans (crabs, lobsters, shrimp) that live stuck in one place in a hard shell. Most glue themselves to rocks, but whale barnacles attach to a whale's skin by sucking the skin in.

"Whale barnacles are usually species specific -- one species of barnacle on one type of whale," said Aaron O'Dea, staff scientist at STRI and co-author of the study. "This gives the barnacle several advantages -- a safe surface to live on, a free ride to some of the richest waters in the world and a chance to meet up with others when the whales get together to mate."

As whale barnacles grow, their shells record the conditions by taking up oxygen isotopes from the water. By carefully reading the unique isotope signatures left in the shells, the barnacles can reveal the water bodies the barnacle passed through, helping reconstruct the whale's movements over time.

The study, published in *Proceedings of the National Academy of Sciences* looked at a number of fossil and modern whale barnacles from the Pacific coast of Panama and California.

"The signals we found in the fossil barnacles showed us quite clearly that ancient humpback and grey whales were undertaking journeys very similar to those that these whales make today," Taylor said. "It seems like the summer-breeding and winter-feeding migrations have been an integral part of the way of

life of these whales for hundreds of thousands of years."

"We want to push the technique further back in time and across different whale populations," said Seth Finnegan, co-author from UC Berkeley. "Hunting for fossil whale barnacles is easier than whales, and they provide a wealth of information waiting to be uncovered."

<https://www.sciencedaily.com/releases/2019/03/190325163019.htm>

KILLER WHALES ARE INSUFFERABLE GOSSIPS

by Amorina Kingdon

Mar. 25, 2019 —Scientists have begun to decipher the meaning of whales' underwater vocalizations, and it turns out they're obsessed with food, sex, and gossip. They are, apparently, just like us.

Researchers at the University of the North Pacific in Victoria, British Columbia, have used artificial intelligence (AI) to analyze the high-pitched vocalizations of an active, thriving pod of transient killer whales. Scientists now have a BabelFish for whales, allowing them to understand entire conversations. It's a big step in understanding the cetaceans' social lives.

Rosa Polinsky, a marine biologist, has observed and recorded one family of transient killer whales for about 15 years off the west coast of Vancouver Island, British Columbia. The family consists of a matriarch, nicknamed Susan, her adult son Frankie, daughters Stella and Betty, and Stella's two sons, Elmer and Spot. Over the years, Polinsky has matched a few vocalizations with certain behaviors, but knew she was missing a huge chunk of information.

The big break came when Polinsky discovered a new tool: an open-source AI framework, developed to detect Twitter bots during the 2016 US election by analyzing speech and language patterns. Polinsky fed recorded whale vocalization data into the AI and translated years of recordings. The software mapped the frequency and order of sounds and calculated which sounds likely referred to objects, actions, or to individual whales. The scientist had no idea what to expect. But the first recording she listened to sounded eerily familiar.

"Basically, Stella and Betty were having a good old gossip about Frankie being a huge mama's boy," Polinsky says. "It was the equivalent of 'When is he going to move out and learn to fish for himself?' But one of our hydrophones also picked up Betty gossiping with Frankie about how Stella thinks she's so great ever since she had the two calves. Plus, we

picked up a conversation between Susan and Stella, where they agree that Betty constantly complains about how big her tail is but still always has that 15th or 16th salmon when she's out hunting at the shoal."

Last year, Frankie apparently threw the pod into chaos when he swam around with a new female for a few weeks. According to the translations, Stella, Susan, and Betty often commented that the new female was just with Frankie because of the pod's rich fishing grounds.

University of Australia biologist Ed Stresslin began using the same AI technology to translate humpback whale songs in the South Pacific and applauds Polinsky's parallel efforts. Of his own work, he says the humpbacks may sound majestic, but their songs, like those of the killer whales, are less grand than they sound.

"They're essentially saying, 'I'm so great. Look at all the females I've mated with. I've got such a big tail. Your blowhole is tiny,'" Stresslin says. Humpbacks copy each others' songs but alter them slightly, and Stresslin says after seeing the translations, he believes this behavior is akin to a rap battle. "One of them will sing, 'I mated with 10 females,'" he says. "Then another one will sonorously moan, 'I have mated with 20 females, including your mother.' It's basically a diss track."

Stresslin once recorded a humpback singing something as profound as humans might imagine. "It was sort of like, 'Ocean is deep and boundless, it has endured before we came and will endure after we die,'" Stresslin says. "But another whale sang back, 'Go back down to the twilight zone and choke on a squid, loser.'"

Stresslin worries that translating whale songs may interfere with conservation efforts because the whales will appear less regal to humans, and more like reality-TV stars—more Kardashian than Kennedy. On the other hand, he wonders if that might make them more relatable. Only time will tell.

Back in the drama-rich waters off Vancouver Island, Polinsky eagerly awaits a major life event: Betty is pregnant and has told Stella she's not sure who the father is. Polinsky can't wait to see how this impacts the family. "There will definitely be a lot of clicking and chirping over that."

From Hakai Magazine: Writing about the world's oceans is serious business, so every April Fool's Day we give ourselves permission to have a bit of fun. Check the article date!

<https://www.hakaimagazine.com/article-short/killer-whales-are-insufferable-gossips/>

SIGHTINGS

Sightings are compiled by Monterey Bay Whale Watch. For complete listing and updates see <http://www.montereybaywhalewatch.com/slstcurr.htm>

Date	#	Type of Animal(s)
3/31 9 am	2 35	Humpback Whale Southern Resident Killer Whales (L Pod)
3/30 9 am	16 500 100 5	Humpback Whales (lunging) Pacific White-sided Dolphins Risso's Dolphins Harbor Porpoise
3/29 9 am	3 5 400 1	Gray Whales Humpback Whales Northern Right-whale Dolphins Black-footed Albatross
3/28 11 am	30 1,000 100 2	Humpback Whale Pacific White-sided Dolphins (bow riding, head slapping, porpoising) Risso's Dolphins Black-footed Albatross Common Murre
3/27 9 am	6 50	Gray Whales Risso's Dolphins
3/26 11 am	6 10 2	Gray Whales Killer Whales Black-footed Albatross
3/25 8 am 6 hour trip	6 1 3	Gray Whales Humpback Whale Harbor Porpoise Black-footed Albatross
3/24 9 am	3 5	Gray Whales Humpback Whales (breaching, tail lobes) Black-footed Albatross
3/23 8 am All Day	7 10 300 5 5	Gray Whales Humpback Whales (lunge-feeding, breaching, tail slapping) Pacific White-sided Dolphins Northern Right-whale Dolphins Black-footed Albatross
3/22 9 am	5 6 350 1 1	Gray Whales (migrating north) Humpback Whales (lunge-feeding) Pacific White-sided Dolphins Black-footed Albatross Pink-footed Shearwater
3/21 1 pm	11 150	Gray Whales Risso's Dolphins Black-footed Albatross Laysan Albatross
3/20 11 am	4 22 100 5 10	Gray Whales* Humpback Whales* (breaching, lunge-feeding) Pacific White-sided Dolphins* Northern Right-whale Dolphins Black-footed Albatross *were interacting together, including rolling around, playing, and snout riding

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