

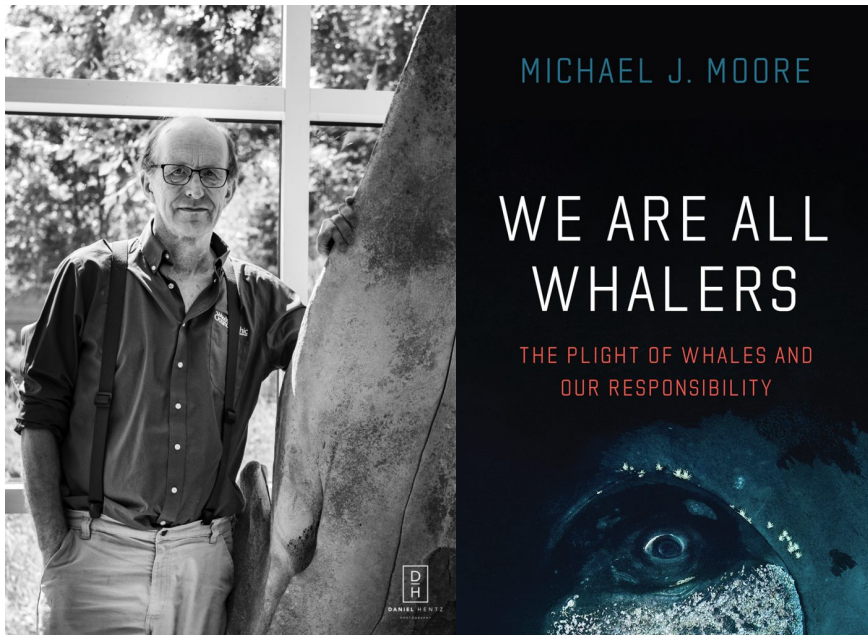
Soundings



American Cetacean Society – Monterey Bay Chapter
P.O. Box HE, Pacific Grove, CA 93950

FEBRUARY 2022

VIRTUAL MONTHLY MEETING
THURSDAY, FEBRUARY 24 AT 7:00 PM
PRESENTER: DR. MICHAEL MOORE
TITLE: WE ARE ALL WHALERS - WHY, WHO AND WHAT TO DO



Michael J Moore, Vet. M.B., Ph.D., has a veterinary degree from the University of Cambridge in the UK, and a PhD from the Woods Hole Oceanographic Institution (WHOI) and Massachusetts Institute of Technology in the USA. He has been based at WHOI in Woods Hole, Massachusetts, since 1986 where he is now a Senior Scientist. He is Director of the WHOI Marine Mammal Center and provides veterinary support to the Marine Mammal Rescue and Research division of the International Fund for Animal Welfare, supporting their work with stranded marine mammals on Cape Cod.

Dr. Moore has studied the effects of trauma from the shipping and fishing industries on North Atlantic right whale (NARW) survival and welfare. He is currently assessing NARW health using aerial photogrammetry, and working with a group of stakeholders to establish On Demand fishing systems as a viable tool to remove line from the water column. He recently published a book titled 'We Are All Whalers' that tells the story of large whale anthropogenic trauma and how we can do better.

Next month: Our next meeting will be on Thursday, March 24 at 7 PM. Please save the date and join us! Note that this month our meeting will be one week earlier than usual. More information is available on our website, www.acsmb.org.

INSIDE THIS ISSUE

CALENDAR	2
BOOK RECOMMENDATIONS....	2
ORCAS FOUND TO KILL BLUE WHALES, THE LARGEST ANIMALS ON EARTH, FOR FIRST TIME	2
WHY WHALES DON'T CHOKE.	3
SEEING 1,000 GLORIOUS FIN WHALES BACK FROM NEAR EXTINCTION IS A RARE GLIMMER OF HOPE.....	4
NORTH ATLANTIC MAKO SHARKS ARE ENDANGERED — NOW WHAT?	5
SIGHTINGS	7
MEMBERSHIP	8

CALENDAR

Feb. 15: COAST: The Art and Science of Blue Seas, Green Seas, Changing Seas. Ray Troll, Chuck Green, and Ken Parker will share their vision for transforming the retired NOAA fisheries laboratory into a Center for Ocean Art, Science, and Technology (COAST). Sponsored by Hopkins Marine Station. Free RSVP. 7-8PM.

Feb. 18: Hopkins Marine Station Friday Seminar Series: Evaluating Upper Ocean Dynamics and Biological Carbon Pump Using Underwater Gliders. Presentation by Dr. Filipa Cavalho (PhD Oceanography, Rutgers University). 9-10 AM.

Feb. 20: Seymour Center Science Sunday: Not Too Hot, Not Too Cold: Maintaining Thermal Balance as a Deep Diving Marine Mammal. Presentation by Arina Favilla, PhD Candidate, Department of Ecology and Environmental Biology, UC Santa Cruz.) 1:30 PM. This event can be viewed in person or virtually. Registration is required.

Feb. 23-25: 49th Annual Meeting of the Pacific Seabird Group. Virtual event - registration is open!

Feb. 24: Seymour Science Center Online Webinar: Small Things Considered: How Phytoplankton Make Life Possible. Speakers: Raphael Kudela, PhD, UC Santa Cruz; Allison Cusick, PhD Candidate, UC San Diego; Steve Mandel, Executive Director, Oceans Micro. 6-7:15 PM.

Mar. 18-20: 12th Annual Whalefest Monterey. More information about speakers and activities will be forthcoming. 9 AM - 5 PM.

Mar. 21-25: V International Symposium on Killer Whales. Tarifa, Strait of Gibraltar, Cadiz, Andalusia, Spain.

May 23-26: 72nd Tuna Conference: "Technological Advances in Large Pelagic Fisheries Science: Applications, Benefits, and Challenges." Meeting location: UCLA's Lake Arrowhead Conference Center.

Aug 1-5: 24th Biennial Conference on the Biology of Marine Mammals in Palm Beach, FL. This conference will be the first fully hybrid, live-virtual conference of the Society of Marine Mammalogy.

Fall 2022 (dates TBA): 10th California Islands Symposium at the Ventura Beach Marriott in Ventura, CA.

BOOK RECOMMENDATIONS

Beloved Beasts: Fighting for Life in an Age of Extinction, by Michelle Nijhuis. 2021 W.W. Norton.

Otherlands: A Journey Through Earth's Extinct World, by Thomas Halliday. 2022 Random House.

Japan: The Natural History of an Asian Archipelago (Wildlife Explorer Guides Book 72), by Mark Brazil. 2022 Princeton University Press.

ORCAS FOUND TO KILL BLUE WHALES, THE LARGEST ANIMALS ON EARTH, FOR FIRST TIME

by Claudia Geib

Jan. 26, 2022 — It begins with a chase: Twelve orcas swimming down their quarry until it grows tired. When their target finally slows, more orcas join in, 20 sets of teeth raking and biting into flesh. A few minutes later, the predators work together to force their prey underwater. It doesn't come back up.

This is no average hunt. The scene, observed off Bremer Bay in southwestern Australia, is the first time humans have documented orcas, also known as killer whales, successfully hunting and eating an endangered blue whale, the largest animal that has ever lived.

In all, scientists describe three blue whale killings, in March and April of 2019 and March of 2021, in a new study published this week in the journal *Marine Mammal Science*.

"This is the biggest predation event on this planet: the biggest apex predator taking down the biggest prey," says study co-author Robert Pitman, a marine ecologist at Oregon State University's Marine Mammal Institute. "We don't have dinosaurs



Rare drone footage of orcas charging a blue whale off Monterey. Credit: National Geographic / gowhales.com.

anymore, so for me as a whale biologist and a zoologist it's an amazing thing."

People have documented killer whales feeding on nearly every other species of large whale worldwide, though most attacks have been on calves. Increasingly, these accounts come from amateur observers with cellphones or drones: In one such drone video, taken in 2017 off Monterey, California, killer whales attacked a blue whale, but did not kill it.

"It was just a matter of time before an observation like this would be made," says David Donnelly, a marine researcher with Australia's Dolphin Research Institute, who runs the citizen-science project Killer Whales Australia.

And the odds were good that it would happen in Bremer Bay, he says, since orcas can be reliably found there year after year.

Bremer Bay's seafloor features a deep canyon that gushes cold, nutrient-rich water to the surface and supports an extraordinarily diverse food chain—from phytoplankton to southern bluefin tuna to salmon all the way up to sperm whales, rare beaked whales, and numerous shark species. (Read about orcas that kill great white sharks.)

"Anything that passes through that region might end up in a killer whale's mouth," says Donnelly, who was not involved with the new study.

Teamwork is key

In two of the hunts, killer whales targeted young animals, including a calf and what seemed to be a year-old juvenile. During the third, the killer whales took down an apparently healthy adult, between 60 and 70 feet long. The largest killer whales measure only about 30 feet.

Scientists didn't get a chance to sample any of the hunted whales, but based on the time of year, location, and direction the whales were moving, the team surmised they were migrating pygmy blue whales, a smaller subspecies that nonetheless grows to about 79 feet in length.



A pod of orcas attacking a blue whale, one of three attacks in waters off Australia from 2019 to 2021. Credit: NY Times, John Daw/Australian Wildlife Journeys.

So how does a killer whale overcome an animal more than twice its size? It's a family matter: Killer whales live in closely knit pods, led by their grandmothers, mothers, or aunts. The whales learn from each other and cooperate to survive. For instance, up to 50 individuals participated in the chase during these hunts, and multiple smaller groups worked together, often swapping roles, to bite at and eventually drown their prey. (See how orcas work together to whip up a meal.)

"These killer whale groups live for human life spans or longer, and so they hunt together cooperatively for decades and decades," Pitman says, comparing the whales' hunting strategy to that of wolves. "You can learn a lot about how to work together when you practice together as a team."

Good news for both?

To Pitman, these hunts may also signal a positive step for both species' populations. The global population of killer whales, which live in all the world's oceans, is unknown. The International Union for Conservation of Nature (IUCN) lists the blue whale as endangered due to aggressive whaling throughout the 1900s, but their numbers have steadily increased since the 1960s, when the species was globally protected. Worldwide, there may be between 5,000 and 15,000 blue whales alive today, the IUCN estimates.

Pitman says it's possible that killer whales have always dined on blue whales, but when the latter's numbers plummeted during the age of whaling, killer whales had to switch to different prey. (Learn more about the secret culture of orcas.)

So these newly observed hunts, he adds, may be evidence of killer whales returning to an ancient habit as an old food source returns.

Pitman thinks it's unlikely that killer whale attacks will pose an existential threat to blue whales' recovery, though he does expect these incidents will increase as both populations expand their numbers.

He's also intrigued to see how killer whales could shift the dynamics of the marine ecosystem in Western Australia. For instance, some whales, such as humpbacks and bowheads, may plot their entire migration routes to avoid killer whales.

"Nobody that's alive on Earth today has ever seen what the ocean looked like before we started whaling," Pitman says. Australia's killer whales may be offering a glimpse of how the ocean used to be—teeth and all.

<https://www.nationalgeographic.com/animals/article/orcas-can-kill-blue-whales-the-biggest-animal-on-earth>

WHY WHALES DON'T CHOKE

by Sam Jones

Jan. 20, 2022 — To capture prey, humpbacks, minke and other whales use a tactic called lunge feeding. They accelerate — their mouths open to



A humpback whale lunge feeding off Vancouver Island in Canada. Credit: Iain Brownlee/Alamy.

nearly 90 degrees — and engulf a volume of water large enough to fill their entire bodies. “It’s crazy. Imagine putting an entire human inside your mouth,” said Kelsey Gil, a zoologist studying whale physiology at the University of British Columbia.

As water floods into the whale’s mouth, its throat pouch expands, leaving the whale looking like a bloated tadpole. After about a minute, the throat pouch deflates as most of the water leaves the whale’s mouth, released back into the ocean. Small fish and krill are captured in the whale’s baleen — plates of keratin that hang from the top of the whale’s mouth resembling bristles on a toothbrush — and are swallowed into the whale’s stomach.

Scientists didn’t know how these whales avoided choking on prey-filled water and flooding their respiratory tracts during a lunge feeding event. Now Dr. Gil and colleagues have discovered a large, bulbous structure that they’ve termed the “oral plug” — a structure never before described in any other animal — that they think makes lunge feeding possible. Their results were published Thursday in *Current Biology*.

Lunge-feeding whales are also called rorqual whales and include two of the largest animals on Earth — the blue and fin whales. Through lunge feeding, rorqual whales ingest thousands of pounds of food every day, a feeding strategy that allows them to maintain their hulking physiques, which can weigh more than 300,000 pounds in the case of blue whales.

To determine how these whales are safely chowing down — and not choking — on their food, Dr. Gil and colleagues analyzed deceased fin whales. When opening up the mouth of the first whale, they were confused by what they saw.

“If you look in the mirror at the back of your throat, it’s just a big empty space,” Dr. Gil said. “But when we were looking in the back of this whale’s mouth, there was this space that was just plugged with tissue, and we thought, ‘That doesn’t make sense.

That’s where food has to travel through — why is it being blocked off like that?’”

By physically manipulating and dissecting the mass of muscle and tissue — the oral plug — the researchers determined that when the animal is at rest, the plug blocks off the whale’s pharynx, a tube-shaped structure that leads to both the respiratory and digestive tracts, just like in other mammals including humans. When a whale lunges, the oral plug protects both tracts from being flooded by the water and the critters that the animal has taken in.

For the whale to ingest food, that oral plug needs to move. Again through manipulation and dissection, the researchers figured out that when the animal was ready to swallow its latest meal, the oral plug shifted upward to protect the upper respiratory tract, including the nasal cavities and blowhole. At the same time, the larynx — the structure in the pharynx that guards the entrance to the lungs — closes up and shifts downward, sealing off the lower respiratory tract. In other words, during swallowing, the pharynx only leads to the digestive tract and the upper and lower airways are protected.

“This fills in a blank that we didn’t even know really existed,” said Dr. Gil of the team’s findings.

Ari Friedlaender, who studies whale feeding behaviors at the University of California, Santa Cruz but was not involved in this research, sees immense value in filling in these anatomical blanks about whales.

“The more we can understand how they developed these means for being able to eat so much, and to be so efficient as foragers, the more we understand about what their capacities are, and how they function as part of marine ecosystems,” Dr. Friedlaender said. “It’s sort of the ultimate evolution of anatomy to be able to do these things that no other animals can do.”

<https://www.nytimes.com/2022/01/20/science/whales-swallow-choke.html>

SEEING 1,000 GLORIOUS FIN WHALES BACK FROM NEAR EXTINCTION IS A RARE GLIMMER OF HOPE

by Philip Hoare

Jan. 17, 2022 — Good news doesn’t get any more in-your-face than this. One thousand fin whales, one of the world’s biggest animals, were seen last week swimming in the same seas in which they were driven to near-extinction last century due to whaling. It’s like humans never happened.

This vast assembly was spread over a five-mile-wide area between the South Orkney islands and the Antarctic Peninsula. A single whale is stupendous; imagine 1,000 of them, their misty forest of spouts, as tall as pine trees, the plosive sound of their blows, their hot breath condensing in the icy air. Their sharp dorsal fins and steel-grey bodies slide through the



Spouts from fin whales near the South Orkney Islands in the Southern Ocean. Credit: Conor Ryan.

waves like a whale ballet, choreographed at the extreme south of our planet.

The sight has left whale scientists slack-jawed and frankly green-eyed in envy of Conor Ryan, who observed it from the polar cruiser, National Geographic Endurance. Messaging from the ship on a tricky connection, Ryan, an experienced zoologist and photographer, says this may be “one of the largest aggregations of fin whales ever documented”. His estimate of 1,000 animals is a conservative one, he says.

“We were about 15 miles north of Coronation Island,” Ryan reports, with “four large krill fishing vessels working the same area”. The vessels’ presence makes clear the reason for this party. The whales were feeding on a grand scale, sucking up tonnes of tiny shrimps.

Fin whales are surprisingly slender, serpentine creatures when you see them underwater, and so long that they seem to take for ever to swim past. Like blue, humpback and minke whales, they’re baleen whales, distinguished by food-filtering keratinous plates in lieu of teeth. Unlike toothed whales, such as sperm whales and killer whales, they are not usually seen as social animals. In *Moby-Dick* Herman Melville classifies the fin whale as “not gregarious ... very shy; always going solitary ... the banished and unconquerable Cain of his race”.

Factor in their tremendous size – at up to 27m long, only just short of the blue whale’s 33m – and you come close to appreciating the astonishing intensity of this eruption of marine life.

So, is it really good news? In this same ocean, at least two million whales were slaughtered in the past century. Given that we now know fin whales can live for up to 140 years, the effects of that cull are still being felt in their culture. It may be that our assumption that fin whales aren’t “social” animals actually stems from the fact that they amended their behaviour to evade the whalers, as sperm whales did in the 19th century. Scientists suspect that baleen whales also learned not to gather in large groups to

stay one step ahead of the hunters. Only now, perhaps, are they returning to old foraging grounds.

Ryan delights in calling himself a “whale nerd”; he and his best friend, Peter Wilson, were just 14 years old when they published their first peer-reviewed scientific paper on killer whales in 2001. When he gets home from this trip, he’ll be writing another paper. Despite his 20 years’ experience at sea, Ryan has never seen anything like this. “Words fail me,” he says. “I have seen maybe 100 fins here before in previous years. Thousands of chinstrap penguins, petrels, and albatrosses, too ... It was unusually calm weather,” he adds, “and unusually good visibility.”

If Ryan considers himself blessed, then so should we. Whales still face many threats, mostly from us. And we would do well to remember that the protests that saved the whales in the 1970s and 80s will be outlawed if the new police and crime bill passes into law. In a world constrained by woe and threats to democracy (it’s a good job whales don’t have to apply for the right to assemble), 1,000 fin whales can’t help but lift our hearts. They might even convince us that, as another species of (supposedly) sentient mammal, we still stand a chance of getting through “all of this”. So long as we stick together and send up a few protest spouts of our own.

<https://www.theguardian.com/commentisfree/2022/jan/17/glorious-fin-whales-extinction-hope-antarctic-peninsular>

NORTH ATLANTIC MAKO SHARKS ARE ENDANGERED — NOW WHAT?

by Sydney Randall and Carl Safina

Jan. 31, 2022 — With their pointed snouts, slender gill slits, cobalt-blue skin, flashing metallic sides and white bellies, North Atlantic shortfin mako sharks are a stunning sight. They’re deadly fast, too, reaching speeds up to 45 miles per hour — the fastest sharks in the ocean. As apex predators, they evolved in a niche that helped maintain ecological balance by controlling prey populations. Through a diet of big, meaty fish like tuna and swordfish, makos can grow to 13 feet in length and live up to 30 years.

Assuming they can survive that long.

A lack of fishing regulations means that as many as 1 million shortfin mako sharks are caught and killed every year.

Some species could survive that pressure. Not makos. Their late breeding — females don’t reach sexual maturity until age 19 — and the fact that their prey are also heavily overfished leaves them especially vulnerable.

In fact most makos are caught unintentionally by fishing boats seeking other species — a well-documented, avoidable, unmitigated disaster and one of the clearest, most catastrophic shark conservation crises in the world.

This disaster truly surfaced in 2017, when an assessment by the International Commission for Conservation of Atlantic Tunas — the management body responsible for the well-being of large migratory fish species in the Atlantic Ocean — found the population overfished. Another 2017 report found that even if we stopped all catch of makos today, it would still take the deeply depleted population more than five decades to fully recover. These reports landed North Atlantic makos on the IUCN Red List as endangered in 2018.

Still, the commission failed to take serious action until late 2021, when it finally passed some protections for North Atlantic mako sharks.

Those protections come with a ticking clock.

Delayed Action

Last November delegates to the ICCAT convened in Madrid, Spain. Far removed from the high-running groundswell and moodiness of the North Atlantic Ocean, committee members met to decide their role in determining the fate of the rapidly declining North Atlantic mako shark. As usual they tossed around jargon like “landing rates” and “retention bans.” Notes were taken, coffee was sipped, points were argued, and disagreements were vigorous.

But this time, progress was made.

Up for debate was the implementation of an “international retention ban” on North Atlantic mako sharks. That’s jargon again, but such a ban would mean no mako sharks could be brought to land. Any mako shark caught while fishing for, say, tuna or swordfish would have to be released — or, if dead upon arrival, discarded. Canada had already implemented its own national retention ban and first proposed the international version in October 2020, backed by ample scientific evidence of rapid decline and the support of the commission’s scientists.

After more than four years of commission scientists warning us about the vulnerability of mako sharks, the committee finally listened. Thanks largely to the leadership of Canada, the United Kingdom, Senegal and Gabon, the committee agreed on a two-year full international retention ban of all mako sharks, the first step in a long-term, international rebuilding plan for this population.

As Sonja Fordham, president of Shark Advocates International, said after the November committee meeting, “With all the existing commitments and warnings about the dire status of makos, this win should not have been this hard.”

The move was a success — undeniable progress — but not nearly enough.

What Next?

Although this two-year international retention ban does show progress, the question remains, what happens after it expires?

Even with the ban, mako sharks are still coveted, not only for their meat and fins, but as a prize catch for sport fishermen. And their widespread range

means that both individual and commercial catches boost local economies. So it’s no surprise that the countries with the highest global mako catch rates — the United States and members of the European Union (Spain, Portugal and Morocco) — were the groups that consistently opposed the proposed ban on keeping makos. They cited the usual short term “economic reasons” that in the long-term drive people broke, until now.

During the November meeting, the European Union, which has long been the biggest offender of North Atlantic shortfin mako catch — it took 74% of the total mako catch last year — held firm on a complicated cocktail of conditions, potentially setting itself up to exploit some loopholes after the short respite. In the words of Ali Hood, director of conservation for the Shark Trust, “At long last, we have the basis for a game-changing rebuilding plan, but it won’t be successful if we take our eyes off the EU and their egregious intent to resume fishing a decade before rebuilding is predicted to begin.” We can’t afford to slide backward just as progress starts.

Retention bans, when done right, can work. Through a recent study, the commission found that makos caught and then released have a 77% chance of surviving, proving that this ruling, plus other mitigation strategies, could be a straightforward way to help this population and immediately stop mortality.

But it can’t work with loopholes, and it can’t work in two years. The U.S. National Marine Fisheries Service needs to enforce regulations specifying that this retention ban is not just for open ocean (pelagic) fisheries but for all boats in all water. If done swiftly, that could fill some regulatory cracks before anyone can slip through.

Experts agree that two years is not nearly enough for this population to fully recover. As of now, the current ruling states that after 2023 shortfin mako sharks will once again be up for grabs. Boats in the North Atlantic will be able to land mako sharks if the



Mako shark. Credit: NOAA

total bycatch from the previous year is under 250 metric tons. For context, according to ICCAT scientists, the EU alone landed 1,261 metric tons in 2020, so while this quota is a definite improvement, it still creates some upsetting possibilities. By allowing any landings you open the door to a whole array of possible half-truths and lies, fudging bycatch numbers, claiming the mako was dead on arrival — anything to justify landing these sharks.

To avoid this, member countries need to align their conservation goals to be a unified front against powerful parties like the EU — insisting on a full international retention ban and nothing less.

Conservationists, divers, scientists, aquarists and elected representatives who have been steady advocates for these sharks cannot let up now. These people, dubbed the “voice of the makos” by Hood, have been crucial to the victory and should continue to fight.

Finally, those on the water — fishermen, who witness the athleticism of makos firsthand through a whipping metallic blue tail or a splash of white belly in the waves — need to do their part, too. Historically, sport and recreational fishermen have resented and resisted any bans on landing makos. Catching them is a thrill and a challenge — the focus of intense “mako tournaments,” where fishermen compete to catch the heaviest shark for a cash prize. For many of these fishermen, the mako victory out of ICCAT was bad news for their sport and a personal disappointment for those who never crossed a mako off their fishing bucket list.

But abiding by, and actively supporting, these regulations will go a long way — not just for making sure these sharks are around for future anglers to enjoy, but also for helping to maintain a healthy ocean ecosystem that can provide joy and sustenance for years to come. By encouraging fellow anglers to support the retention ban, recreational fishermen have a chance to be the strongest “voice of the makos.”

The makos caught a temporary break this time. All of us, together, need to make sure it lasts.

<https://therevelator.org/north-atlantic-mako-sharks>

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)
1/31 10 am	11 2 10	Gray Whales Humpback Whales Risso's Dolphins
1/30 10 am	26 55	Gray Whales Risso's Dolphins
1/29 10 am	26 20	Gray Whales Risso's Dolphins (nursery pod)

1/28 2:30 pm	11 2	Gray Whales Killer Whales (incl. CA171B “Fatfin”)
1/28 10 am	15	Gray Whales (migrating)
1/27 10 am	17 9 500 500	Gray Whales Humpback Whales Pacific White-sided Dolphins Northern Right Whale Dolphins
1/26 10 am	25 1	Gray Whales Humpback Whale
1/25 10 am	21 100 200	Gray Whales Pacific White-sided Dolphins Risso's Dolphins (incl. Casper)
1/24 10 am	21 17 4000 25 2000	Gray Whales Humpback Whales Pacific White-sided Dolphins Risso's Dolphins Northern Right Whale Dolphins
1/23 10 am	8 6 1500 1000	Gray Whales Humpback Whales Pacific White-sided Dolphins Northern Right Whale Dolphins
1/22 10 am	29 1 300	Gray Whales Bottlenose Dolphin Risso's Dolphins
1/21 10 am	16	Gray Whales
1/19 10 am	19 1 25	Gray Whales Humpback Whale Risso's Dolphins
1/18 10 am	16 1	Gray Whales Short-tailed Albatross
1/17 10 am	33 200	Gray Whales Risso's Dolphins (incl. Casper)
1/16 10 am	32 40	Gray Whales (mom/calf pair) Risso's Dolphins
1/15 2:30 pm	7 65	Gray Whales Risso's Dolphins
1/15 10 am	19	Gray Whales
1/14 10 am	10 20	Gray Whales Risso's Dolphins (nursery pod)
1/13 10 am	11 2 2	Gray Whales Humpback Whales Black-footed Albatross
1/12 10 am	57	Gray Whales
1/10 10 am	20 9 50	Gray Whales Killer Whales (Orcas) Risso's Dolphins
1/9 10 am	27	Gray Whales
1/8 2:30 pm	12 15	Gray Whales Risso's Dolphins
1/7 10 am	15 60	Gray Whales Risso's Dolphins (breaching)

**Membership Application - American Cetacean Society,
Monterey Bay Chapter**

Join or renew online at acsonline.org
Or mail membership form to ACS Monterey Bay,
P.O. Box HE, Pacific Grove, CA 93950



Membership Type: New ____ Renewal ____ Gift ____

Name _____

Address _____

City, State, Zip _____

Phone _____ Email _____

Membership Level _____

Membership Levels and Annual Dues

Lifetime \$1000	Patron \$500	Contributing \$250
Supporting \$85	International \$55	Family \$55
Individual \$45	Student \$35	Teacher \$35
Senior (62 plus) \$35		

Check _____ Mastercard _____ Visa _____ Expiration _____

Card Number _____ Security Code _____

DONATE

The American Cetacean Society is the world's oldest whale conservation organization, established in 1966. Dedicated to research, conservation and education about whales, dolphins and porpoises and their environment, the American Cetacean Society is volunteer-run and consists of 8 chapters within the national organization. As a 501 (c)(3) non-profit organization, donations are welcome and necessary to continue our work. To donate to the Monterey Bay Chapter of ACS, please visit www.acsmb.org or mail payment to ACS MB, PO Box HE, Pacific Grove, CA 93950. For more information about the American Cetacean Society, please visit www.acsonline.org Thank you!

**Monterey Bay Chapter
Officers & Chairs, 2022**

Brian Phan, *President*
 Katlyn Taylor, *Immediate Past President*
 OPEN, *Vice President*
 Katy Castagna, *Treasurer*
 Jennifer Thamer, *Secretary*
 Sally Eastham, *Membership*
 Tony Lorenz, *Programs*
 Terry Feinberg, *Publicity*
 Emilie Fiala, *Education & Events*
 Humphrey Williams, *Research Grants*
 Debbie Ternullo, *At-Large*
 Diane Glim, *ACS National Secretary*
 Tony Lorenz, Oren Frey, *Editors*

Email: tonylorenz831@gmail.com
soundingsnewsletter@gmail.com

**MONTEREY COUNTY
HOTLINES
for Marine Mammals**

**Strandings / Entanglements /
Distress**
24-hour toll-free
877-767-9425

Harassment
NOAA Enforcement, Monterey
831-853-1964



Risso's Dolphins on
January 4, 2022. Credit:
Daniel Bianchetta /
MBWW.