

# Soundings



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

**SEPTEMBER 2018**

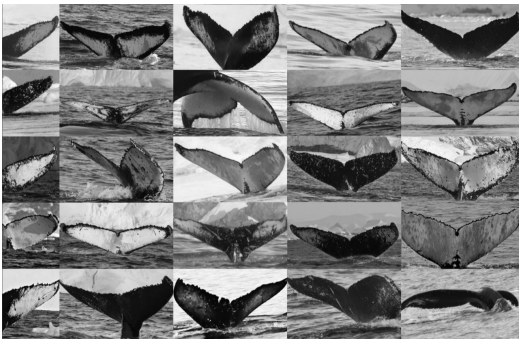
**MONTHLY MEETING AT  
THE CENTER FOR SPIRITUAL AWAKENING  
(522 CENTRAL AVE IN PACIFIC GROVE)  
MEETING IS OPEN TO THE PUBLIC**

**Thursday, September 27, 2018  
Time: 7:30 PM**

PLEASE JOIN US AT 7:00 PM FOR REFRESHMENTS

**Speaker: Ted Cheeseman**

**Title: Sharing the Science: How 2000 Whale Watchers  
Are Doing what Researchers Can't (afford to) Do**



There's something amazing happening across the Pacific Ocean: every single humpback whale swimming in waters accessible by tour vessels may soon be identified as an individual and tracked. A growing team of citizen scientists collaborating with researchers through the web platform Happywhale have now identified over 15,000 individuals from the Antarctic to Alaska. Suddenly, whale science has become personal, and accessible, and hopefully, more

powerful. With this, we are more quickly identifying entangled whales, and learning if individuals who have suffered entanglements survive. Join us to enjoy stories and images from an inspiring movement in citizen science.

Our speaker, Ted Cheeseman, grew up in California, son of a naturalist and zoology professor couple whose shared mission in life was to educate the public about wildlife. Ted began whale watching (and getting seasick) at a very young age and has been leading wildlife and marine mammal focused tourist expeditions for Cheesemans' Ecology Safaris ([www.cheesemans.com](http://www.cheesemans.com)) for more than two decades with a focus on Antarctica and, at warmer latitudes, on responsibly operated in-water whale experiences. Ted is currently a PhD student studying humpback whales, developer of the marine mammal citizen science platform [www.Happywhale.com](http://www.Happywhale.com), and owner of Cheesemans' Ecology Safaris.

Please join us for refreshments before the program begins. More information is available on our website, [www.acsmb.org](http://www.acsmb.org).

**Next month:** Our next meeting will be on Thursday, October 25, and our speaker will be Professor Dan Costa from UCSC. Due to renovations taking place at Hopkins Boatworks Hall, we will be meeting at a TBA location – stay tuned to the ACSMB website for details. Please save the date and join us!

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**ACS Monterey Bay chapter  
needs you!**

**Please consider volunteering to  
serve on the ACS Board of  
Directors. Current openings  
include Membership Chair  
and Publicity Chair.**

**If you enjoy learning about  
whales and sharing your  
passion with others, we'd like  
to speak with you. Please  
contact any board member for  
more information.**

## BOOK RECOMMENDATIONS

The Feather Thief: Beauty, Obsession, and the Natural History Heist Of The Century, by Kirk Johnson. 2018 Viking.

The Tangled Tree: A Radical New History Of Life, by David Quammen. 2018 Simon & Schuster.

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## CALENDAR

**Sep. 15:** California Coastal Cleanup Day. Events are taking place statewide. For a directory of events go to <https://www.coastal.ca.gov/publiced/ccd/ccd.html>.

**Sep. 15:** Farallones Sanctuary and Devils Teeth Whale Watch and Wildlife Expedition. Trip will be led by David McGuire, shark specialist, marine biologist and Director of the non-profit Shark Stewards. Departs from Castagnola's Seafood and Chophouse in San Francisco. 7:30 AM- 4:30 PM. For more information go to [SharkStewards.com](http://SharkStewards.com)

**Sep. 16:** Lecture at the Seymour Marine Discovery Center by Dr. Salvador J. Jorgensen: The Secret Lives of California Great White Sharks. 1:30 - 2:00 PM.

**Sep. 23-29:** 16<sup>th</sup> Annual Sea Otter Awareness Week. For information on events taking place during the week please go to [seaotterweek.org](http://seaotterweek.org).

**Sep. 27:** Seminar at Moss Landing Marine Labs by Mike Weise, ONR/Navy: The Effect of Sound on Marine Mammals and Federal Funding Strategies. 4 – 5 PM.

**Sep. 28-29:** Monterey Birding Festival, which will include field trips, workshops, and lectures. For more information please go to [www.montereybaybird.org](http://www.montereybaybird.org)

**Oct. 5:** Hopkins Marine Station Friday Lecture by Chris Golden: Linking Global Wildlife Declines and Climate Change to Human Food Insecurity and Malnutrition. 12 – 1 PM.

**Oct. 6:** Hopkins Marine Station Open House. Itinerary will include science lectures from HMS faculty (Barbara Block, Jeremy Goldbogen) and activities will include a squid dissection, touch tanks and a virtual reality

humpback whale. 10 AM – 4 PM. For more information go to [hopkinsmarinestation.stanford.edu/](http://hopkinsmarinestation.stanford.edu/).

**Oct. 17-20:** Society for Vertebrate Paleontology 78<sup>th</sup> Annual Meeting at the Albuquerque Convention Center in Albuquerque, New Mexico.

**Oct. 19:** Hopkins Marine Station Friday Lecture by Lauren Wild: Perspectives of Depredation from Fishermen, Scientists, and Whales. 12 PM – 1 PM.

**Nov. 2-4:** American Cetacean Society 16<sup>th</sup> International Conference at the Hyatt Regency in Newport Beach, CA. Conference Theme: Whales & Us: The Next Generation. Speakers attending include Bernd Wursig, Kate Stafford, John Calambokidis, Denise Herzing, Jeremy Goldbogen, Ari Friedlaender, Joy Reidenberg, Thomas Jefferson, and Ted Cheeseman. Early Bird registration now open at [acsonline.org](http://acsonline.org). Reserve rooms by October 4, at <https://book.passkey.com/go/AMCE18>.

**Nov. 2:** Conference Whale Watch aboard the *Ocean Explorer* with Davey's Locker Whale Watch out of Newport Beach, CA. 8 AM - 4 PM. Check ACS Conference website for more details.

**Nov. 8-11:** Western Society Of Naturalists Annual Meeting in Tacoma, WA.

**Feb. 16 – Mar. 5, 2019:** Antarctic Peninsula Whales and Landscape Expedition, in partnership with ACS. Itinerary, ship details and how to sign up at [cheesemans.com/Ant-Whales-Feb2019](http://cheesemans.com/Ant-Whales-Feb2019).

**Feb. 27 – Mar. 2, 2019:** Pacific Seabird Group 46<sup>th</sup> Annual Meeting in Kauai, Hawaii at the Aqua Kauai Beach Resort. For more information please go to [www.pacificseabirdgroup.org](http://www.pacificseabirdgroup.org)

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## CONCERN OVER ENDANGERED ORCAS BLOWS UP APPROVAL OF TRANS MOUNTAIN PIPELINE IN CANADA

*By Lynda V. Mapes*

Aug. 30, 2018 — Concern for critically endangered southern-resident killer whales has sunk the approval of Canada's controversial Trans Mountain pipeline expansion.

Approval for the expansion was revoked by a federal court in Canada, which ruled Thursday that the effects of the pipeline on orca whales were not addressed and the concerns of First Nations were not

adequately considered. The Federal Court of Appeals is requiring the government to redo its consultation with First Nations and assess the impacts of the project on the whales.

The ruling comes after more than a dozen First Nations, the B.C. cities of Vancouver and Burnaby and several environmental groups petitioned the Court of Appeals after the pipeline's expansion was approved in 2016.

Developer Kinder Morgan issued a statement Thursday stating the company is suspending construction on the project, at least for now.

The pipeline would run for more than 700 miles — alongside a line that has been in service since 1954 — and would move 890,000 barrels a day from Alberta tar-sands deposits to the coast. A second pipeline is planned to be built from the interior of Canada to the coast at Burnaby to carry tar-sands crude for export. The project was considered not only for jobs, but for better oil prices that Canada hopes to garner in overseas markets.

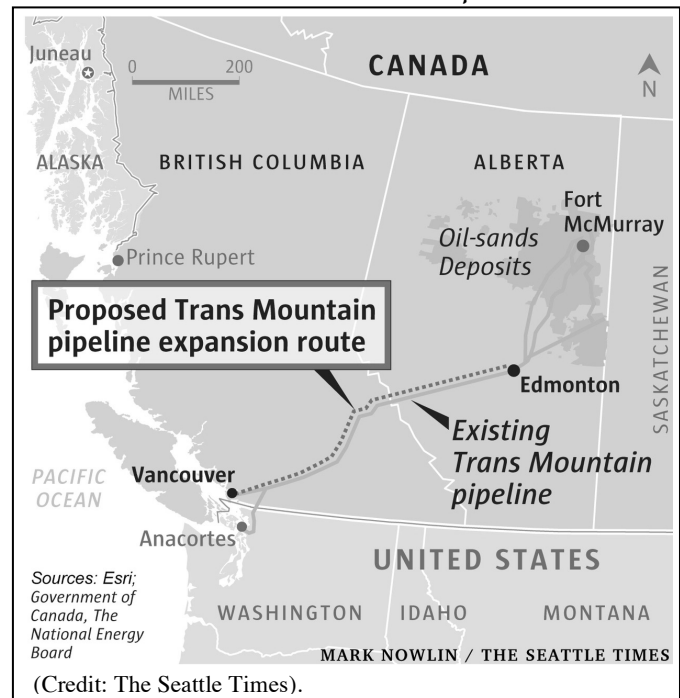
The decision was a major victory for Canadian First Nations, environmental groups and U.S. tribes that opposed the pipeline expansion. Critically endangered southern-resident killer whales face a sevenfold increase in oil-tanker traffic through their critical habitat if the project is built. Many First Nations also have adamantly opposed construction of the project through their territories.

The Trans Mountain expansion is projected to balloon tanker traffic from about 60 to more than 400 vessels annually as the pipeline flow increases from 300,000 to 890,000 barrels per day. The tar-sands oil carried by the tankers would be especially disastrous in the event of a spill in the bays and coves and swift currents in the transboundary waters of the Salish Sea because the oil sinks, and comprises an ever-changing mix of chemicals added to the thick oil to make it flow.

Down to just 75 animals, the whale pods that would share the water with the tankers are sliding toward extinction. The whales are threatened by vessel noise underwater, interfering with their ability to hunt, as well as possible pollution from an oil spill.

Canada's National Energy Board recommended approval of the project, even as it acknowledged it would set back recovery of southern-resident killer whales, a protected species in Canada. The board said the effects of marine traffic were beyond its scope. The court disagreed, sending the project back for reconsideration.

Canadian Prime Minister Justin Trudeau approved the project — then in May nationalized it in an



attempt to ensure the pipeline expansion would be built, despite extensive controversy on both sides of the border. The court decision does not affect Canada's purchase of the project from Kinder Morgan, Anderson said in his statement.

Kinder Morgan shareholders voted overwhelmingly, 99 percent, to approve the \$4.5 billion Canadian (U.S. \$3.4 billion) sale of the pipeline to the government shortly after the court decision was announced.

Canadian Finance Minister Bill Morneau didn't say whether the government would appeal the court decision, but said it will review the decision to ensure the environment is protected and that it meets obligations to consult with indigenous peoples.

Environmental groups and many First Nations hailed the ruling.

"Smothered by choking wildfire smoke this summer, we've experienced a taste of what climate change is bringing. This environmentally destructive project should never have been approved and the Trudeau Government must stop construction immediately," said Grand Chief Stewart Phillip, President of the Union of British Columbia Indian Chiefs (UBCIC).

Chief Bob Chamberlin, vice president of the UBCIC, called the ruling "a major win with impacts that will be felt across the country."

"Our wild salmon and the orcas that they support are critically under threat. The increased tanker traffic that the ... project proposes is entirely unacceptable," he said.

Washington Gov. Jay Inslee has often repeated his opposition to the project, and did so again Thursday.

“I have made my opposition to this plan clear,” Inslee said in a prepared statement. “This proposed project runs counter to everything our state is doing to fight climate change, protect our endangered southern-resident killer whales and protect communities from the risks associated with increased fossil-fuel transportation ... I hope this decision helps to bring this potentially devastating project proposal to a close.”

Washington tribes also celebrated the decision Thursday.

“The proposed pipeline would put more oil on the Salish Sea thereby increasing the threat of damage to our fragile and sacred ecosystem, not only for oil spills but also interference with our fisherman working to maintain our ancient way of life,” said Leonard Forsman, chairman of the Suquamish Indian Tribe, which along with the Lummi, Tulalip and Swinomish tribes fought the pipeline proposal before the National Energy Board. “Now is the time to invest in the health of our marine waters, as we try to save the orca and the salmon, rather than trying to expand investment in the fossil-fuel industry.”

The ruling handed down Thursday was sweeping and far-reaching. The judge found that the recommendation for approval of the expansion by the National Energy Board was so deficient it could not be relied on.

Missing was any consideration of the effects of marine-shipping traffic from the project, including on threatened orca whales, an exclusion the court found was impermissible: “The Board unjustifiably defined the scope of the Project under review not to include Project-related tanker traffic,” the ruling stated. “The unjustified exclusion of marine shipping from the scope of the Project led to successive, unacceptable deficiencies in the Board’s report and recommendations. As a result, the Governor in Council could not rely on the Board’s report and recommendations when assessing the Project’s environmental effects and the overall public interest,” the ruling stated.

Further, while testimony was taken recording specific concerns of First Nations with the project and its effects on their lands, waters and ways of life, no response was made to address them. That makes the consultation to date inadequate, the judge found. “Canada failed ... to engage, dialogue meaningfully and grapple with the real concerns of the Indigenous applicants so as to explore possible accommodation of

those concerns,” the ruling stated. “The duty to consult was not adequately discharged.”

Such a strong decision is a major stumbling block for the project, said Jan Hasselman, of Earthjustice in Seattle, who represented Washington tribes in their opposition to the pipeline expansion before the National Energy Board.

“This is a watershed moment for a troubled and controversial project,” Hasselman said. “You have to make a choice. Is it going to be orcas, or is it going to be tar sands?”

<https://www.seattletimes.com/seattle-news/environment/concern-over-endangered-orcas-blows-up-approval-for-trans-mountain-pipeline-in-canada/>

## **IN WIN FOR MARINE LIFE, CALIFORNIA TO END DRIFT GILLNET FISHING**

*By Paul Shively*

Aug. 30, 2018 — Sea turtles, dolphins, whales, and other marine wildlife in California waters will get a reprieve from an indiscriminate fishing gear—drift gillnets—thanks to state lawmakers’ passage of a bill to phase out the destructive equipment, which is used to target swordfish off the West Coast.

The California Legislature passed Senate Bill 1017 with bipartisan support today. The legislation gives the swordfish fleet—now fewer than 20 active boats—a transition period to stop using drift gillnets. It also provides compensation for fishermen who agree to permanently retire their nets and related permits. The money for the buyout will come from a combination of private and public funds. Fishermen will still have other options for catching swordfish, including deep-set buoy gear, which has proven highly effective and far less threatening to non-target sea life after more than seven years of on-the-water testing.

The measure, which now moves to Governor Jerry Brown’s desk for approval, follows decades of effort by a range of stakeholders to end the use of nets that kill more dolphins and porpoises than all other West Coast fisheries combined.

In recent years, tens of thousands of Californians have written letters and testified at public hearings in an effort to persuade the Pacific Fishery Management Council and California lawmakers to improve this fishery. Further, a 2016 poll commissioned by The Pew Charitable Trusts found that 86 percent of California voters supported phasing out drift gillnets.

Because California fishermen are required to have both state and federal drift gillnet permits, Congress should move quickly to pass similar legislation. California Senator Dianne Feinstein (D) is leading the

effort with a bill she introduced in the U.S. Senate in April. It is cosponsored by Senators Kamala Harris (D-CA) and Shelley Moore Capito (R-WV). Representatives Ted Lieu (D-CA) and Brian Fitzpatrick (R-PA) are backing companion legislation in the U.S. House.

These reforms are long overdue. More than half of the marine life caught by drift gillnets is discarded—usually dead or dying. That's one of many reasons every other state and many nations have prohibited the use of this equipment. By phasing out large-mesh drift gillnets in favor of less destructive gear, California is protecting the rich and iconic marine wildlife that are key to its coastal communities' livelihoods while ensuring sustainable fisheries for generations to come.

<https://www.pewtrusts.org/en/research-and-analysis/articles/2018/08/30/in-win-for-marine-life-california-to-end-drift-gillnet-fishing>

## TRACKING MARINE MIGRATIONS ACROSS GEOPOLITICAL BOUNDARIES AIDS CONSERVATION

Sep. 3, 2018 — The leatherback sea turtle is the largest living turtle and a critically endangered species. Saving leatherback turtles from extinction in the Pacific Ocean will require a lot of international cooperation, however, because the massive turtles may visit more than 30 different countries during their migrations.

A new study uses tracking data for 14 species of migratory marine predators, from leatherback turtles to blue whales and white sharks, to show how their movements relate to the geopolitical boundaries of the Pacific Ocean. The results provide critical information

for designing international cooperative agreements needed to manage these species.

"If a species spends most of its time in the jurisdiction of one or two countries, conservation and management is a much easier issue than it is for species that migrate through many different countries," said Daniel Costa, professor of ecology and evolutionary biology at UC Santa Cruz and a coauthor of the study, published September 3 in *Nature Ecology & Evolution*.

"For these highly migratory species, we wanted to know how many jurisdictional regions they go through and how much time they spend in the open ocean beyond the jurisdiction of any one country," Costa said.

Under international law, every coastal nation can establish an exclusive economic zone (EEZ) extending up to 200 nautical miles from shore, giving it exclusive rights to exploit resources and regulate fisheries within that zone. The high seas beyond the EEZs are a global commons and are among the least protected areas on Earth. Discussions have been under way at the United Nations since 2016 to negotiate a global treaty for conservation and management of the high seas.

First author Autumn-Lynn Harrison, now at the Smithsonian Conservation Biology Institute in Washington, D.C., began the study as a graduate student in Costa's lab at UC Santa Cruz. Costa is a cofounder, with coauthor Barbara Block of Stanford University, of the Tagging of Pacific Predators (TOPP) program, which began tracking the movements of top ocean predators throughout the Pacific Ocean in 2000. Harrison wanted to use the TOPP data to address conservation issues, and as she looked at the data she began wondering how many countries the animals migrate through.

"I wanted to see if we could predict when during the year a species would be in the waters of a particular country," Harrison said. "Some of these animals are mostly hidden beneath the sea, so being able to show with tracking data which countries they are in can help us understand who should be cooperating to manage these species."

Harrison also began attending meetings on issues related to the high seas, which focused her attention on the time migratory species spend in these relatively unregulated waters. "Figuring out how much time these animals spend in the high seas was directly motivated by questions I was being asked by policy makers who are interested in high seas conservation," she said.



Leatherback sea turtles, a critically endangered species, may visit over 30 countries during their migrations. (Credit: Alex Eilers).

The TOPP data set, part of the global Census of Marine Life, is one of the most extensive data sets available on the movements of large marine animals. Many of the top predators in the oceans are declining or threatened, partly because their mobility exposes them to a wide array of threats in different parts of the ocean.

Leatherback turtle populations in the Pacific could face a 96 percent decline by 2040, according to the IUCN Red List of Threatened Species, and leatherbacks are a priority species for the National Oceanic and Atmospheric Administration (NOAA). Laysan and black-footed albatrosses, both listed as near threatened on the IUCN Red List, spend most of their time on the high seas, where they are vulnerable to being inadvertently caught on long lines during commercial fishing operations.

White sharks are protected in U.S. and Mexican waters, but the TOPP data show that they spend about 60 percent of their time in the high seas. Pacific bluefin tuna, leatherback turtles, Laysan albatross, and sooty shearwaters all travel across the Pacific Ocean during their migrations.

"Bluefin tuna breed in the western North Pacific, then cross the Pacific Ocean to feed in the California Current off the United States and Mexico," Costa said. "Sooty shearwaters not only cross the open ocean, they use the entire Pacific Ocean from north to south and go through the jurisdictions of more than 30 different countries."

International cooperation has led to agreements for managing some of these migratory species, in some cases through regional fisheries management organizations. The Inter-American Tropical Tuna Commission (IATTC), for example, oversees conservation and management of tunas and other marine resources in the eastern Pacific Ocean.

The first session of a U.N. Intergovernmental Conference to negotiate an international agreement on the conservation of marine biological diversity beyond areas of national jurisdiction will be held in September. Harrison said she has already been asked to provide preprints and figures from the paper for this session.

"These migratory species are a shared heritage, and this paper shows their international travels better than ever before," Harrison said. "The first step to protect them is knowing where they are over their annual cycle and promoting international agreements to manage the threats they may face across several countries."

<https://www.eurekalert.org/multimedia/pub/179477.php>

## **OSU RESEARCHERS HOPE TO RAISE BLUE WHALE CARCASS FROM YAQUINA BAY FOR EDUCATIONAL DISPLAY**

Feb. 1, 2018 — For the past two-plus years, the carcass of a 78-foot blue whale that washed ashore near Gold Beach, Oregon, in November 2015 has been submerged in Yaquina Bay allowing nature to run its course by having scavengers clean the bones.

The cleansing process is nearly complete, according to researchers with the Marine Mammal Institute at Oregon State University, who hope to bring the skeleton to the surface and treat it with chemicals to get oil out of the bones. Eventually, they hope to display it for the public as an educational exhibit at the new Marine Studies Building that OSU will open in late 2019 on the Hatfield Marine Science Center campus in Newport.

There's just one problem: Even with volunteer labor, the project will cost \$125,000 that the institute does not have.

"It's critical to get the oil out of the bones to help preserve the skeleton and keep it from becoming rancid," said Bruce Mate, an OSU whale expert and director of the institute. "The chemicals needed are both carcinogenic and flammable, so they have to be handled carefully. They are expensive and need special recycling procedures."

Mate has some expertise in the process. He oversaw the graduate student preservation project of a 30-foot minke whale some 40 years ago that is hanging outside of the Guin Library at OSU's Hatfield Marine Science Center in Newport. "It's holding up very well," he noted.

The blue whale project is much bigger. For starters, blue whales are the largest animals to have ever lived on Earth. A team of nearly 30 volunteers, including OSU undergraduate and graduate students, spent 10 days removing the flesh from the blue whale in 2015 – taking off about 58 tons in the process.

The bones that remain are immense – a small school bus would fit inside the whale's mouth.

"We had sections of the vertebrae that two people together could not lift, so we had to use a small front-end loader," Mate said. "To properly treat the bones, we'll have to fill large livestock troughs with the chemicals and do it more or less one bone or section at a time."

In addition to the chemicals, the researchers will need a secure place indoors to work and assemble the project. Mate said about 10 percent of the oil in a whale is in the bones.

“In the olden days, whalers just extracted oil from the whale’s blubber – an exterior blanket of fat that also insulates whales from losing body heat,” he said. “As whales became scarcer, some whalers also rendered oil from the bones. Just setting the bones out in a dry yard to get the oil out does not work. The remaining oil in the bones needs to be extracted or they will leak over time and have a foul odor.”

A blue whale washing ashore in Oregon is very rare, Mate said. In fact, until the 2015 event, there hadn’t been a documented case of a blue whale beached in Oregon since Lewis and Clark made their very first historic journey to the coast, where they saw Native Americans salvaging edible parts from a blue whale.

“The emotional impact of seeing such a large whale alive is profound – and I’ve seen dead ones all around the world,” he said. “Many of the people around me while we worked on this dead whale occasionally broke down in tears. It was a life-changing moment for some of them. At more than 100 tons, some blue whales are the equivalent of 1,300 people in biomass.”

Mate hopes to capture some of that impact with a display of the articulated skeleton, where it can be seen by the public. Divers have been checking on the bones, which are submerged in huge bags and tied to railroad wheels in Yaquina Bay. Most of the bones are ready for treatment, though the skull still has quite a bit of flesh to remove.

“We just need the funding,” Mate said. “The job is a big one and will require specialized equipment along with the chemicals. Unfortunately, state and federal agencies are not set up to fund this kind of work, but the educational value for the project would be immense. We know we can find volunteers for the labor effort and we’re hoping to secure some private support to get us launched.”

<https://today.oregonstate.edu/news/osu-researchers-hope-raise-blue-whale-carcass-yaquina-bay-educational-display>

## 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)
8/31 9 am	35	Humpback Whales (breaching and lunging)
	500	Common Dolphins
	1	Mola Mola (ocean sunfish)
8/30 9 am	10	Humpback Whales (breaching)
	5	Blue Whales

	5	Harbor Porpoise
8/29 8 am	40	Humpback Whales
8 hour All Day	5	Killer Whales
	3	Blue Whales
	2,000	Long-beaked Common Dolphins
	160	Risso’s Dolphins
	4	Black-footed Albatross
8/28 8 am	42	Humpback Whales (lunge-feeding)
	1,000	Common Dolphins (nursery pod)
	10	Harbor Porpoise
	2	Mola Mola (ocean sunfish)
8/27 8 am	40	Humpback Whales (breaching, side-lunging, pec slapping, tail slapping)
8 hour All Day	15	Risso’s Dolphins
	20	Dall’s Porpoise
8/26 9 am	16	Humpback Whales (tail throwing, breaching)
	150	Long-beaked Common Dolphins
	65	Risso’s Dolphins
	12	Dall’s Porpoise
	3	Black-footed Albatross
8/25 9 am	15	Humpback Whales (breaching)
	2	Blue Whales
	50	Risso’s Dolphins
8/24 9 am	12	Humpback Whales
	50	Risso’s Dolphins
	5	Pacific White-sided Dolphins
	50	Common Dolphins
	10	Harbor Porpoise
8/23 8 am	36	Humpback Whales
	26	Risso’s Dolphins
	70	Harbor Porpoise
	4	Mola Mola (ocean sunfish)
8/22 8 am	16	Humpback Whales (lunge-feeding)
	7	Bottlenose Dolphins
	10	Dall’s Porpoise
	5	Harbor Porpoise
8/21 8 am	17	Humpback Whales (breaching, tail throwing)
	1	Fin Whale
	10	Risso’s Dolphins (nursery pod, tail slaps)
8/20 8 am	67	Humpback Whales
8 hour All Day	2	Fin Whales
	600	Risso’s Dolphins
	6	Dall’s Porpoise
	5	Harbor Porpoise
8/19 7:30 am	45	Humpback Whales (feeding with 2,500 sea lions)
12 hour All Day	2	Blue Whales
	6	Fin Whales
	1	Minke Whale
8/18 9 am	16	Humpback Whales (breaching)
	2	Baird’s Beaked Whales
	3	Blue Whales
	1	Fin Whale
	50	Pacific White-sided Dolphins
	20	Harbor Porpoise
	1	Mola Mola (ocean sunfish)

American Cetacean Society  
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**American Cetacean Society Membership Application Chapter#24**

Membership/Subscription Type: New \_\_\_\_ Gift \_\_\_\_ Renewal \_\_\_\_

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**Membership Levels and Annual Dues**

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