Soundings

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

JANUARY 2018

INSIDE THIS ISSUE

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, January 25, 2018
Time: 7:30 PM

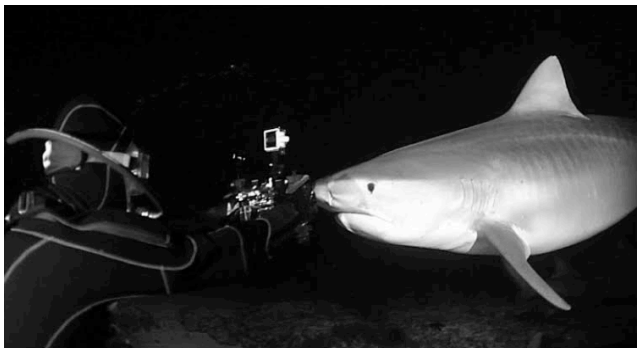
PLEASE JOIN US AT 7:00 FOR REFRESHMENTS

Speakers: Chris and Ame Hartzell

Title: SHARK! An educational and informational presentation

International wildlife photographer and naturalist Chris Hartzell has a particular passion for sharks. From giant Whale Sharks to deadly Great Whites, he has over 35 years studying and photographing one of the planet's top predators. From shark fisherman to shark conservationist, his fascination has led him to spend time with 20 species in seven countries. Join us as he shares his experiences with these incredible creatures and talks about fact vs. fiction.

Chris Hartzell is a Fire Captain, naturalist, and environmental conservationist with over 35 years photographing and his work can be found internationally in calendars, advertisements, magazines, books, and educational exhibits. He and his wife Ame are international wildlife photographers having traveled to more than 25 countries and do field workshops, wildlife tours, educational presentations, photo contest judging, and teach photography classes. You can see more about them and their work at his site, PhotoStrokes.net.



Please join us for refreshments before the program begins. More information is available on our website, www.acsmb.org.

Next month: Our next meeting will be on Thursday, February 22 at Hopkins Marine Station. Please save the date and join us!

ACS Monterey Bay chapter needs you!

Please consider volunteering to serve on the ACS Board of Directors. Current openings include President, 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.

CALENDAR

Jan. 26: Resolving the Food Paradox in the Sea. Lecture by Kelly Benoit-Bird. Kelly examines a wide range of animals including zooplankton, fish, squid, and marine mammals using active acoustics (sonar) to understand the role of spatial heterogeneity (patches) and temporal patterns in pelagic marine ecosystems. Free and open to the public at Hopkins Marine Station, Boat Works Lecture Hall from 12:00pm-1:00pm.

Jan. 26-27: Southern California Marine Mammal Workshop. This two-day workshop will be held at the Marriott Hotel in Newport Beach, CA. Keynote Speakers will include Dr. Sam Ridgway and Dr. Ted Cranford. Annalisa Berta will also be giving a 2-hour lecture on whale evolution, anatomy, and fossils.

Jan. 26: Into Africa: A New Presentation, by Frans Lanting and Chris Eckstrom. Rio Theatre, Santa Cruz, CA, 3:00pm or 7:00pm.

Jan. 27-28: 8th Annual Whalefest Monterey! This two-day symposium will be held at Old Fisherman's Wharf in Monterey and will include: world renowned scientists, marine oriented documentaries, Humboldt squid dissection, whale watching and demonstrations from marine organizations.

Feb. 2: Direct and Indirect Effects in Southern California's Marine Protected Areas: Community Patterns, Invasion Resistance and Resilience to Climate Change. Lecture by Jenn Caselle**.** Free and open to the public at Hopkins Marine Station, Boat Works Lecture Hall from 12:00pm-1:00pm.

BOOK RECOMMENDATIONS

Paleoart: Visions Of The Prehistoric Past, by Zoe Lescaze, with contributions of Walton Ford. 2017 Taschen

From Lucy to Language: Revised, Updated, and Expanded, by Donald Johanson and Blake Edgar, with the photography of David Brill and David L. Brill. 2006 Simon & Schuster

ACSMB
Gray Whale Fundraiser

Join us in one of the best places along the West Coast to observe the southbound migration of the Pacific Gray Whale. Monterey Bay is a migratory corridor for southbound gray whales and our whale watch fleet is only a few miles from a major gray whale migratory highway! In addition to gray whales we will be on the lookout for Killer Whales and numerous species of delphinids that frequent Monterey Bay. Local gray whale experts will be on board to answer any questions.

Date: Sunday, January 28, 2018

Time: 8am-10am

Cost: $25

All proceeds benefit research, conservation and education programs funded by ACS.

For more information:
Contact Katlyn Taylor at
(971) 322-8425 or katlyn.taylor.oc@gmail.com

VIDEO TAGS REVEAL SURPRISING DETAILS OF BLUE WHALE FEEDING BEHAVIOR

By Tim Stephens

Nov. 20, 2017 — The lunge feeding of blue whales is an extraordinary biomechanical event in which the largest animal on Earth accelerates and opens its mouth under water, expanding its enormous throat pouch to engulf a huge volume of water, then

filtering out its prey (small crustaceans called krill) by forcing the water through sieve-like baleen plates.

"It's very costly energetically, but it's also very efficient because they get a lot of prey at once," said Ari Friedlaender, a researcher at the UC Santa Cruz Institute of Marine Sciences. Blue whales are "the ultimate example of efficient feeding," he said. Although energetic costs increase with body size, so does the efficiency because a larger mouth can process more water.

Friedlaender is lead author of a new study of blue whale feeding strategies that reveals surprising preferences in the massive whales with respect to how much and which direction they roll during lunge feeding. These preferences show how the need to maximize efficiency shapes the whales' feeding behavior.

The study, published November 20 in *Current Biology*, used data from sophisticated tags attached to the animals' backs that recorded video along with depth and movements in all directions. The tagging, which was done for a previous study of how blue whales respond to disturbances in the environment, yielded a rich set of data for a wide range of blue whale behaviors, Friedlaender said.

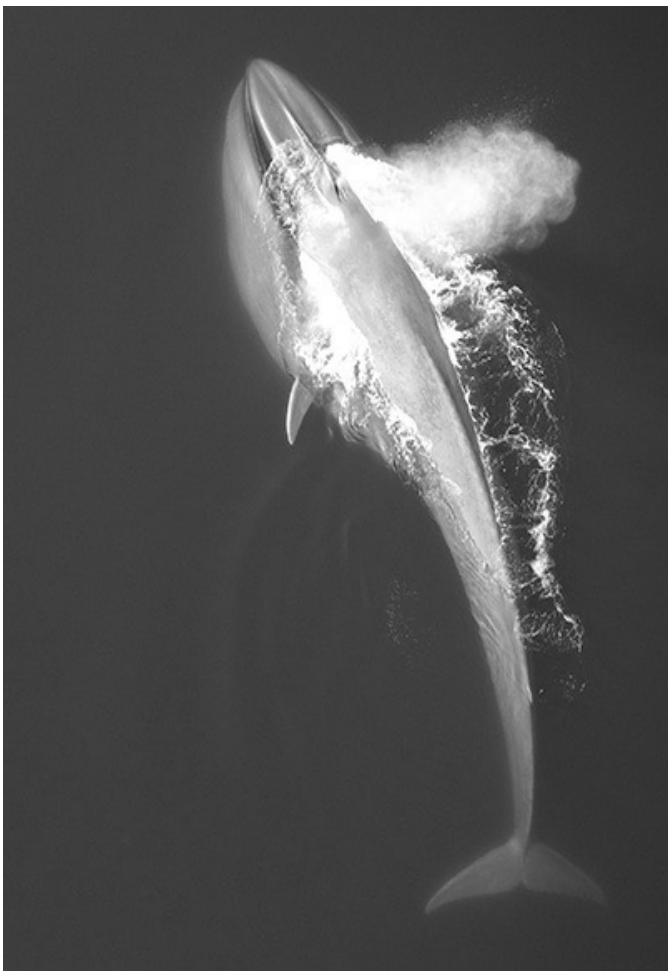
"We tagged 63 whales over six years, so we had a huge data set, and that allowed us to do this quantitative assessment of feeding behaviors," he said.

The researchers were particularly interested in "lateralized behaviors," seen in humans as a bias toward right-handedness and more generally in all vertebrates as a bias to the right side. Blue whales, they found, show a right-side bias in their most common feeding behavior, rolling about 90 degrees to the right side during most feeding lunges. But the researchers discovered one glaring exception.

"There's one particular situation where they do full 360-degree rolls, almost exclusively to the left side," Friedlaender said. "When we looked at their orientation during this maneuver, we found they tended to be approaching the surface from below at a steep angle and likely targeting small patches of prey."

By rolling to the left, the whale orients its right eye toward the surface and toward the prey it is trying to target. But what makes the right eye better than the left eye for targeting prey? That has to do with the wiring of the vertebrate nervous system and the specialization of the brain's left and right hemispheres.

The optic nerves that carry visual input from the eyes to the brain run contra-laterally, so the right eye connects to the left side of the brain and the left eye to the right side. The performance of routine actions is controlled predominantly by the left side of the brain, so the right eye provides more direct input to the control center than the left eye. According to Friedlaender, that seems to make enough of a difference that rolling to the left enables more efficient feeding than rolling to the right.



Aerial photo showing a blue whale lunge feeding near the surface with fully expanded throat pleats. Most blue whales show a right-side preference for rolling behavior during feeding, but they roll to the left side for more acrobatic feeding behaviors targeting smaller prey patches from below. The specialization of lateralized feeding strategies may enhance foraging efficiency in environments with heterogeneous prey distributions. (Credit: John Durban (NOAA) and Michael Moore (WHOI); Chilean research permit MERI-488-FEB-2015).

"The movements involved in targeting prey have to be coordinated, and when you think about how big a blue whale is, these are massive movements that take a long time to execute," Friedlaender said. "These are not squirrels racing around, they're the biggest animals on the planet."

The smaller rolls to the right when feeding at depth probably relate to the biomechanics of opening the mouth rather than visual targeting of prey, he said.

A blue whale dives into the water off the California coast. (Credit: Craig Hayslip, Oregon State University Marine Mammal Institute).

The predominance of rolls to the right at depth, like the preference for the right eye in targeting prey at the surface, probably reflects the left-brain control of routine actions. Such lateralized behaviors are found throughout the animal kingdom, but scientists still do not fully understand the reasons for them.

"Not only is this the first report of handedness in blue whales, showing a preference for the right side as most mammals do, but we show that their side preference can change based on what the whales are doing," Friedlaender said.

Friedlaender's coauthors include James Herbert-Read at Stockholm University; Elliott Hazen at NOAA Fisheries in Monterey; Jeremy Goldbogen and David Cade at Hopkins Marine Station in Pacific Grove; John Calambokidis at Cascadia Research Collective in Olympia, Washington; Brandon Southall of Southall Environmental Associates; and Alison Stimpert at Moss Landing Marine Laboratory. Hazen and Southall are also affiliated with UC Santa Cruz. This research was funded by the Office of Naval Research.

https://news.ucsc.edu/2017/11/blue-whales.html

Ancient Dolphin Species *Urkudelphis Chawpipacha* Discovered in Ecuador

Dec. 22, 2017 — A new dolphin species likely from the Oligocene was discovered and described in Ecuador, according to a study published December 20, 2017 in the open-access journal *PLOS ONE* by Yoshihiro Tanaka from the Osaka Museum of Natural History, Japan, and colleagues.

Many marine fossils described in previous research have been from long-recognized temperate regions such as South Carolina, off the coast of Oregon, Hokkaido and New Zealand. Few equatorial and polar fossils are currently known.

While in the tropical region of Santa Elena Province, Ecuador, the authors of this study found a small dolphin skull, which they identified as representing a new species, *Urkudelphis chawpipacha*, based on facial features. The dolphin skull had a bone crest front and center on its face, above the eye sockets. This species stands apart from other Oligocene dolphins with its shorter and wider frontal bones located near the top of the head and the parallel-sided posterior part of its jaw. The authors also conducted a phylogenetic analysis which revealed that the new species may be the ancestor of the nearly-extinct Platanistoidea, or river dolphin, and may have lived during the Oligocene era.

The fossil is one of the few fossil dolphins from the equator, and is a reminder that Oligocene cetaceans may have ranged widely in tropical waters.

https://www.sciencedaily.com/releases/2017/12/171222090340.htm

Recovery of West Coast Marine Mammals Boosts Consumption of Chinook Salmon

Nov. 20, 2017 — Recovering populations of killer whales, sea lions and harbor seals on the West Coast have dramatically increased their consumption of chinook salmon in the last 40 years, which may now exceed the combined harvest by commercial and recreational fisheries, a new study finds.

While the recovery of marine mammals represents a conservation success, it creates complex tradeoffs for managers also charged with protecting the salmon they prey on, the study concludes. The U.S. Marine Mammal Protection Act of 1972 protects all marine mammals, including whales and pinnipeds (seals and sea lions) within the waters of the United States and the Endangered Species Act protects nine West Coast populations of chinook salmon.

The study was published today in the journal *Scientific Reports*. The findings resulted from a collaboration of federal, state and tribal scientists in the Pacific Northwest, including Oregon State University and NOAA Fisheries. The research was designed in part to understand the pressures on chinook salmon consumed by southern resident killer whales, which in contrast to other killer whale populations are endangered and show few signs of recovery.

Southern residents spend much of the year in the inland waters of Washington and consume about the

same volume of salmon today as they did 40 years ago, the study found. The study suggests that, at least in recent years, competition with other marine mammals may be more of a problem for southern residents than competition with human fisheries.

"We have been successful at restoring and improving the population status of protected marine mammals," said Brandon Chasco, a doctoral candidate at Oregon State University and lead author of the study. "But now we have the potential for protected seals and sea lions to be competing with protected killer whales, and all of which consume protected chinook salmon."

The study used models to estimate marine mammal consumption of chinook salmon based on several assumptions about their diet and the size and weight of salmon. The researchers estimate that from 1975 to 2015, the yearly biomass of chinook salmon consumed by pinnipeds (sea lions and harbor seals) and killer whales increased from 6,100 to 15,200 metric tons, and from five to 31.5 million individual salmon.

Over the same time span, they found that annual fisheries harvest decreased from 16,400 to 9,600 metric tons, and from 3.6 million to 2.1 million individuals.

Overall, several growing populations of resident killer whales in Canada and southeast Alaska are estimated to consume the largest biomass of chinook salmon, but harbor seals consume the largest number of individuals, including juvenile chinook salmon, according to the study.

Salmon are anadromous: They migrate from home streams to the ocean as juveniles, and return a few years later as adults to spawn. Many of the salmon from the West Coast migrate as far as Alaska, and are subject to predation during both their northward and southward migrations, making southern stocks of chinook salmon susceptible to a larger gauntlet of predators.

Salmon recovery programs underway up and down the West Coast have boosted numbers of wild salmon, the research found. However, increased predation by recovering marine mammals may be offsetting reductions in recreational and commercial harvests, and "masking the success of coast-wide recovery efforts," the scientists wrote.

Isaac Kaplan, a research fishery biologist at NOAA Fisheries' Northwest Fisheries Science Center and a coauthor on the study, said the researchers quantified only one of many challenges to chinook salmon recovery.

While the recovery of marine mammals represents a conservation success, it creates complex tradeoffs for managers also charged with protecting the salmon they prey on. (Credit: Lori Pagel / Fotolia).

The better we understand the different obstacles to salmon recovery, the better we can account for them as we plan and carry out recovery programs," Kaplan said. "Recovery efforts must account for all of these challenges, and we're providing more details about one important part of that picture."

The Columbia River has previously been identified as an area with high marine mammal consumption of salmon, specifically by seals and sea lions in the estuary. The researchers found that in 2015 in the Columbia River, harbor seals on the river consumed 14 metric tons of chinook salmon, compared to 219 and 227 metric tons consumed by California and Steller sea lions, respectively.

Considering the consumption of just adult chinook salmon in 2015, the researchers estimated that harbor seals consumed 1,000 adult chinook salmon, while California sea lions consumed 46,000, and Steller sea lions consumed 47,000.

Chinook Salmon (Credit: Photograph by Peter Hemming).

"Consumption in the ocean is also a significant source of mortality, but has been largely unmeasured until now," said Chasco, a National Marine Fisheries Service-Sea Grant Population Dynamics Fellow in the Department of Fisheries and Wildlife in OSU's College of Agricultural Sciences. "Now managers have more information to work with in balancing these difficult tradeoffs."

https://www.sciencedaily.com/releases/2017/11/171120085419.htm

FOSSIL HUNTERS FIND BONES OF HUMAN-SIZED PENGUIN ON NEW ZEALAND BEACH

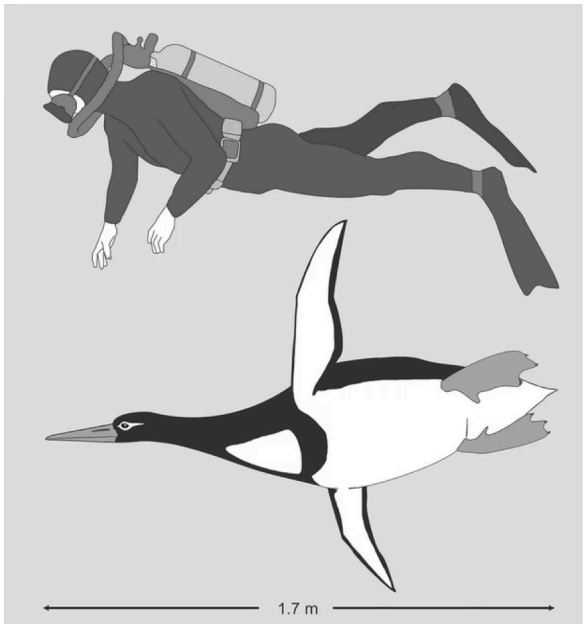
By Ian Sample

Dec. 12, 2017 — The remnants of an ancient penguin that stood as tall as a human have been found encased in rock on a beach in New Zealand.

Fossil hunters chanced upon the prehistoric bones in sedimentary rock that formed 55m to 60m years ago on what is now Hampden beach in Otago in the country's South Island.

Measurements of the partial skeleton show that the flightless bird weighed about 100kg and had a body length of 1.77 metres (5ft 10in), equal to the average height of an American man. Emperor penguins, the tallest penguin species alive today, reach only 1.2 metres when fully grown.

Penguins evolved from flying birds tens of millions of years ago, but lost the ability to get airborne and became accomplished swimmers instead. Once grounded, some penguin species became much larger, growing from about 80cm tall to twice the size.



This illustration shows the sizes of an ancient giant penguin *Kumimanu biceae* and a human being. (Credit: Gerald Mayr/AP).

The pieces of the latest skeleton, including wing, spine, breast and leg bones, were first discovered more than a decade ago, but the rock holding the fossilised bones was so hard that it has taken until now for researchers to prepare and study the remains.

The partly prepared skeleton of the Paleocene giant penguin *Kumimanu biceae*. The rectangles emphasise the humerus and a bone from the shoulder girdle (coracoid), which are shown separated from the original bone cluster. Photograph: Gerald Mayr/Senckenberg Research Institute

Rather than the usual black-and-white colouring, the ancient penguin was probably brownish and had a longer beak than its modern-day cousins. "It would most likely have been slimmer too and not so cute looking," said Gerald Mayr at the Senckenberg Research Institute and Natural History Museum in Frankfurt. "It's one of the tallest penguins that has ever been found."

Researchers named the new species *Kumimanu biceae*, after the Maori words "kumi", meaning a large mythological monster, and "manu" for bird. The second part of the name honours Beatrice Tennyson, known as "Bice", the mother of Alan Tennyson, a senior researcher on the team.

The fossilised remains of giant penguins have been found from 20m to 50m years ago, but older examples are extremely rare. The latest specimen, reported in Nature Communications, suggests that some penguins became giants soon after penguins first evolved and switched from flight to diving. At the time the newly discovered species was alive it would have shared the warm subtropical environment with other sea birds, turtles and sharks.

Giant penguins went extinct about 20m years ago, when marine mammals arrived in the form of toothed whales, seals and other creatures. What spelled the end is unclear, but the big birds may have struggled to compete with marine mammals for food, or may have become the meal of choice for the new predators.

Another species of giant penguin, discovered in Antarctica in 2014, may have been even taller than *Kumimanu biceae*. Bones from the 37m-year-old "colossus penguin", or *Palaeeudyptes klekowskii*, suggest the animal stretched two metres from beak to foot and weighed 115kg.

https://www.theguardian.com/science/2017/dec/12/fossil-hunters-find-man-sized-penguin-on-new-zealand-beach

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)
12/31 1:30 pm	9	Gray Whales
12/31 11:30 am	15	Gray Whales
12/30 1:30 pm	1	Gray Whales
12/30 11:30 am	1 11	Humpback Whale Gray Whales
12/29 1:30 pm	2 1 3	Humpback Whales Gray Whale Pacific White-sided Dolphins
12/29 11:30 am	3 4	Humpback Whales Gray Whales
12/28 1:30 pm	5	Humpback Whales
12/28 11:30 am	2	Humpback Whales
12/27 1:30 pm	1 1	Humpback Whale Gray Whale
12/27 11:30 am	2 1	Humpback Whales Gray Whale
12/26 1:30 pm	1 1	Humpback Whale Gray Whale
12/26 11:30 am	1	Humpback Whale
12/24 1:30 pm	3 1	Humpback Whales Gray Whale
12/24 11:30 am	5 15	Killer Whales Dall's Porpoise
12/23 1:30 pm	6	Humpback Whales
12/23 11:30 am	2 300	Humpback Whales Pacific White-sided Dolphins
12/22 1:30 pm	11 1 110	Humpback Whales Gray Whale Pacific White-sided Dolphins
12/22 11:30 am	5 2 3 1	Humpback Whales Gray Whales Risso's Dolphins Black-footed Albatross
12/21 1:30 pm	3 1	Humpback Whales Gray Whale
12/21 11:30 am	5 2	Humpback Whales Risso's Dolphins
12/19 1:30 pm	5 3	Humpback Whales Gray Whales
12/19 11:30 am	4 5	Humpback Whales Killer Whales
12/18 1:30 pm	7 1	Humpback Whales Gray Whale
12/18 11:30 am	7	Humpback Whales
12/17 1:30 pm	3 2 20	Humpback Whales Gray Whales Risso's Dolphins
12/17 11:30 am	5 1 60	Humpback Whales Gray Whales Risso's Dolphins
12/15 9 am	14 5 3 18 1	Humpback Whales Gray Whales Pacific White-sided Dolphins Risso's Dolphins Black-footed Albatross
12/14 2 pm	8 50	Humpback Whales Risso's Dolphins
12/14 9 am	17 50 2 1	Humpback Whales Risso's Dolphins Black-footed Albatross Laysan Albatross
12/13 9 am	12 8 3	Humpback Whales Pacific White-sided Dolphins Black-footed Albatross
12/12 9 am	9 2 15	Humpback Whales Blue Whales Risso's Dolphins
12/11 9 am	16 8	Humpback Whales Risso's Dolphins
12/10 2 pm	9 25 15	Humpback Whales Risso's Dolphins Mola Mola (Ocean Sunfish)
12/10 11:30 am	7 1 30 300	Humpback Whales Killer Whale (Lonesome George) Pacific White-sided Dolphins Risso's Dolphins
12/9 2 pm	5 1 1 2	Humpback Whales Killer Whale (Lonesome George) Blue Whale Black-footed Albatross
12/9 11:30 am	5 1 1 2	Humpback Whales Killer Whale (Lonesome George) Blue Whale Black-footed Albatross
12/8 9 am	6 1 10 11 1	Humpback Whales Killer Whale (Lonesome George) Pacific White-sided Dolphins Risso's Dolphins Black-footed Albatross
12/7 9 am	10 5 1 35	Humpback Whales Blue Whales Killer Whale Pacific White-sided Dolphins
12/6 9 am	7 3 2 1	Humpback Whales Blue Whales Gray Whales Black-footed Albatross
12/5 9 am	18 2 3	Humpback Whales Blue Whales Pacific White-sided Dolphins
12/4 9 am	24 3 3 2	Humpback Whales Blue Whales Mola Mola (Ocean Sunfish) Black-footed Albatross

American Cetacean Society
Monterey Bay Chapter
P.O. Box H E
Pacific Grove, CA 93950

RETURN SERVICE REQUESTED

Nonprofit
Organization
U.S. Postage
PAID
Monterey, CA
Permit No. 338

MONTEREY COUNTY HOTLINES for Marine Mammals

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

Harassment
NOAA Enforcement, Monterey
831-853-1964

American Cetacean Society Membership Application Chapter#24

Membership/Subscription Type: New ___ Gift ___ Renewal ___

Name _____

Address_____Email_____

City, State, Zip_____

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		

Subscription only * $15/11 issues (*not entitled to membership benefits)

Check___ Mastercard___ Visa___ Expiration date_____

Signature_____

Make checks payable to: ACS/Monterey Bay Chapter
Return to: Membership Secretary, ACS Monterey Bay Chapter
P.O. Box H E Pacific Grove, CA 93950

Monterey Bay Chapter
Officers & Chairs, 2018

OPEN, *President*
Katlyn Taylor, *Vice President and Events*
Katy Castagna, *Treasurer*
Sally Eastham, *Membership*
Jennifer Thamer, *Secretary*
Tony Lorenz, *Programs*
Emilie Fiala, *Education*
Art Haseltine, *Grants*
David Zaches, Debbie Ternullo, *Members at Large*
Diane Glim, *ACS National Secretary*
Randy Puckett, Jerry Loomis, *Emeriti*

Evelyn Starr, *Webmaster*
Tony Lorenz, Oren Frey, *Editors*
Email: tonylorenz@bigbluebay.com
soundingsnewsletter@gmail.com