

Soundings



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

AUGUST 2017

**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**

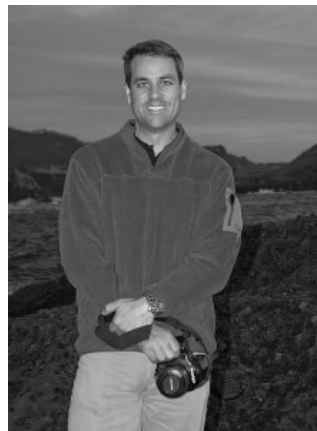
**Thursday, August 31, 2017
Time: 7:30 PM**

PLEASE JOIN US AT 7:00 FOR REFRESHMENTS

Speaker: Kip Evans

Exploring Our Greatest Frontier

Award-winning filmmaker, photographer, and explorer Kip Evans has led or participated in more than sixty expeditions throughout the world, including recent assignments in Spain, Costa Rica, Chile, and the Galapagos Islands. As a photographer, he has worked on dozens of National Geographic Society projects since 1998, including the five-year Sustainable Seas project to explore and document the U.S. National Marine Sanctuaries. Kip's images have been featured in books, exhibits, calendars, advertisements, and magazines worldwide, including *National Geographic* magazine, Patagonia, and Outside. In 2014, Kip lived underwater for 17 days in the Aquarius underwater laboratory as an aquanaut with Mission 31. Since 2008, Kip has been the director of expeditions and photography for Mission Blue. Kip was recently honored as the 2017 *Ocean Champion* by the San Francisco Ocean Film Festival.



From the seamounts of the high seas to the shallow sunlit reefs, Kip will share some of his favorite moments during 25 years of undersea exploration.

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 at Hopkins Marine Station at 7:30 PM on Thursday, September 28, 2017. Please save the date and join us!

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*Your local ACS chapter
needs you!*

*Consider serving on the
Board of Directors as
Membership Chair or
Publicity Chair.*

*Please talk to any board
member for more
information.*

CALENDAR

Aug. 20: Science Sunday at the Seymour Science Center in Santa Cruz. Presentation by Hayley Neutzel, Ph.D Student in Ocean Sciences at UC Santa Cruz: "The Bait and Switch: A Discussion of Seafood Fraud in Los Angeles and Santa Cruz." 1:30-2:30 PM.

Aug. 26: ACSMB Summer Whale Watching Fundraiser with Discovery Whale Watch. This annual fundraiser will explore the marine mammal rich waters of Monterey Bay in search of Blue and Humpback Whales. 9 am – 2 pm. \$45. For reservations contact Katlyn Taylor at katlyn.taylor.oc@gmail.com or mail check to ACSMB, P.O. Box H.E., Pacific Grove, CA 93950.

Aug. 26: ACS San Francisco Annual Farallon Islands Whale Watching Trip! For reservations and information go to acs.sfbay@gmail.com.

Sep. 9: Channel Islands Adventure: Santa Rosa Island day trip, hosted by the Cabrillo Marine Aquarium. 7:30 AM – 6:00 PM. For more information go to: <https://tinyurl.com/y9vmk4x9>.

Sep. 23: Monterey Birding Festival. Festival will include field trips, workshops, and lectures. For registration and more information go to montereybaybirding.org.

Oct. 23-27: 22nd Biennial Marine Mammal Conference in Halifax, Nova Scotia, Canada. Conference theme: "A Marine Mammal Odyssey: Marine Mammals and the People Who Study Them." For more information please go to www.marinemammalscience.org.

BOOK RECOMMENDATIONS

The Ends of the World: Volcanic Apocalypses, Lethal Oceans, and Our Quest to Understand Earth's Past Mass Extinctions, by Peter Brannen. 2017 Ecco.

Big Pacific: Passionate, Voracious, Mysterious, Violent, by Rebecca Tansley. 2017 Princeton University Press.

RisingTideFallingStar, by Philip Hoare (Author of *The Whale* and *The Sea Inside*). 2017 Fourth Estate.

THE RHYTHMS THAT MAKE ELEPHANT SEALS RUN OR FIGHT

Jul. 21, 2017 — If you're a beta Northern elephant seal and you hear a sound like the one in this short video, you might run.

But when you hear sounds like this one, you might scratch your head and wait to see what happens.

And here's why: In the rhythm and pitch of the first call, you recognize one voice as a familiar, more dominant male that you've fought with before. But you can't discern the other, modified call, according to a study published Thursday in *Current Biology*. This suggests that elephant seals are the only known mammals other than humans that can use rhythm to recognize and respond to other members of their species in the wild.

During breeding season, between December and March, elephant seals take a break from their lives at sea and congregate on the West Coast from San Francisco to Mexico. The males, called bulls, arrive first and fight to establish dominance. Winning males become alphas with a whole harem of females with which they can breed. Losers become betas, connecting with females only opportunistically, when the alphas aren't around and dominating other males that are even lower in the hierarchy.

What researchers already knew is that as they battle, the male elephant seals call out in rhythmic clicks or grunts that announce their identities. A few clicks may say: "I am Antonio, the Elephant Seal King," "I am Paul, Prince of the Elephant Seals," or "Hi, I'm Joe — just an average citizen seal here to learn."

These voices are always the same, remaining



Male Northern elephant seals fighting on the beach at Año Nuevo State Park in California. The photos and recordings in this article were made by researchers under permit number NMFS 19108. (Credit: Nicolas Mathevon).

stable year to year. Even young males not yet ready to breed arrive at the colony to start learning its social network. Knowing the ranks of your male colony mates is important for survival, because bulls are big and powerful: They stretch up to 16 feet long, can weigh more than two tons and possess toothy mouths with four sharp canines. An easily avoided fight can mean life or death for the seal.

And knowing the ranks comes down to identifying, learning and remembering particular characteristics of individual calls, the French-American team of researchers found in its latest study.

“At the very beginning of our elephant seal studies, we thought that males maybe sent information about their physical ability to fight,” said Nicolas Mathevon, a biologist at the University of Lyon/Saint-Etienne in France, who helped lead the study. But “the main call is like a fingerprint” that reveals a seal’s individual identity, not its strength.

At Año Nuevo State Park in Pescadero, Calif., the researchers recorded calls from elephant seals up and down the hierarchy. Later, they returned to the beach with calls they had altered in the lab. They set up speakers a foot tall a few yards from the seals and played back the original and modified calls of alpha seals to beta seals.

The team found that the subordinate seals recognized the rhythm and pitch of the original dominant individual’s call and fled. But when the researchers manipulated the original call, sliding the pitch higher or lower or the rhythm faster or slower — by just a little so it still resembled a seal — the subordinate seals reacted to the modified calls just as they would the calls of strangers: They waited to see what type of interaction would follow.

Some animals have been trained to detect rhythms, palm cockatoos can bang out beats with sticks and bottlenose dolphins and humpback whales can learn the signature whistles and songs of others. But this is the first study to experimentally demonstrate that a nonhuman mammal can use the rhythm of another’s voice to make decisions that affect survival.

In further studies, the researchers want to explore whether bulls can recognize even more complex changes in other male voices. They also want to know if females can recognize and use the male calls, and if they have their own calls to communicate with pups.

To hear the calls yourself, you can head out to Año Nuevo State Park on your own or on a guided walk during breeding season (and you can see them year-round with a permit). Remember to stay at least 25 feet away from the powerful animals. You won’t

American Cetacean Society
Monterey Bay Chapter

Annual Summer Whale Watching Fundraiser

Saturday, August 26, 2017

9:00 am – 2:00 pm

This annual fundraiser will explore the marine mammal rich waters of Monterey Bay in search of Blue and Humpback Whales.

Humpback Whales have been seen daily for weeks and Blue Whales have already been observed on several occasions in both March and April of this young feeding season.

We will also be on the lookout for Fin Whales, Killer Whales, and various species of dolphin.

Cost: \$45

Hosted by Discovery Whale Watch

Reserve online at www.discoverywhalewatch.com, call 831-372-7064, or mail check to ACSMB, P.O. Box H.E., Pacific Grove, CA 94950.

Questions: Contact Katlyn Taylor at katlyn.taylor.oc@gmail.com

be able to mimic their voices, and don’t try. Harassing or disturbing the seals is against the law. But you’ll bring along a new appreciation of their cognitive abilities: “You have the impression that they’re just waiting for whatever happens, but they’re always active, monitoring the colony,” Dr. Mathevon said.

<https://mobile.nytimes.com/2017/07/21/science/elephant-seal-calls.html>

WHY DON’T WHALES GET OUT OF THE WAY?

By Amorina Kingdon

Jul. 27, 2017 — When eight endangered North Atlantic right whales turned up dead in the ocean off Nova Scotia this past June, scientists scrambled to find out why. Early data shows several of the whales had blunt force trauma consistent with a ship strike, with data still pending on others.

Ship strikes are a major cause of injury or death for whales. But why do they happen at all? The ocean is vast, and huge ships don’t exactly travel at freeway

speeds—there should be enough noise, movement, and warning for a whale to get out of the way, right? Why whales may remain in dangerous proximity to ships is tough to study, but over the years, some clues have begun to emerge.

One reason is that whales may not know ships are dangerous. After all, as the biggest animals in the ocean, whales may not understand that there are things in the ocean larger and more powerful than they are.

“It’s not something they’ve evolved to deal with,” says John Calambokidis, a research biologist at Cascadia Research Collective in Washington State. “It’s also something there’s very little opportunity to learn from. It’s not like you can get struck two or three times and then you know you should avoid them.”

Calambokidis is trying to better understand why whales get hit through his ongoing acoustic-tagging study of blue whales off the coast of California, where whales coexist with the busy shipping lanes that feed the huge ports of Los Angeles and Long Beach.

In his study, Calambokidis found that when a ship approaches, the blue whales most often slowly sink, rather than dive or swim evasively. One of the tagged whales had 14 recorded near misses in just a few weeks. Calambokidis also found that the blue whales are more vulnerable to strikes at night, when they spend about 70 to 80 percent of their time resting near the surface. The risk also rises when shipping lanes cross whale feeding areas.

Another reason for ship strikes is that in busy shipping lanes, whales get used to the traffic, and may ignore an approaching ship until it’s too late. And there’s some evidence that the bows of large ships may mask the sound from the engine, making it difficult to hear them approaching (a phenomenon called the bow null effect). Calambokidis suspects that

whether or not a whale is struck depends on how (and if) it detects a ship, coupled with how it reacts (or not).

Whales that rely on acoustics to feed and hunt have an added challenge in avoiding ships. Killer whales, for example, vocalize extensively when feeding, socializing, and navigating. Ships add both noise and danger to the underwater soundscape.

Lynne Barre, the recovery coordinator for southern resident killer whales with the US National Oceanic and Atmospheric Administration (NOAA), says whales may be confused by ship sounds. “They might be distracted by feeding, or other whales, but we don’t know.”

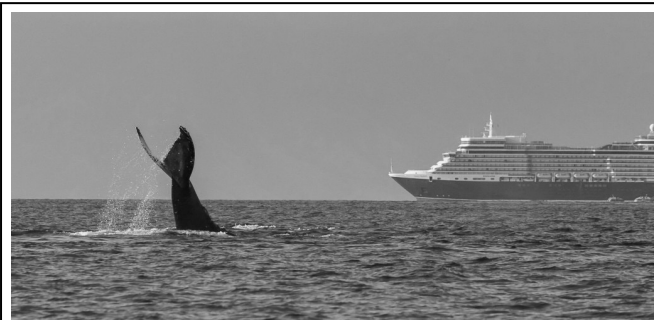
Barre says when it comes to killer whales, their relatively small size allows them greater maneuverability than their larger baleen relatives. She says large ships may be more predictable and easy to detect, while recreational boaters with smaller vessels may move more erratically, try to get close to the whales, or be unaware that they’re in killer whale habitat. Some of the worst strikes or wounds are from small recreational vessels.

Collecting data has been problematic, Barre says. A large ship’s crew may have no idea they’ve struck a whale, or they may not want to report it. So deceased whales that wash up, sad as they are, add critical information to our small but growing knowledge on what happens during a collision. Studying the location and severity of wounds also gives clues about the encounter as well as data on safe ship speeds through whale stomping grounds. Based on the accumulating data, NOAA has implemented regulations in Puget Sound prohibiting all vessels, from huge cargo ships to kayaks, from coming within 200 meters of whales. (On the Canadian side, Fisheries and Oceans Canada stipulates that vessels cannot come within 100 meters.)

It will ultimately be up to humans, not whales, to prevent strikes. “There haven’t been giant objects steaming through the ocean at 20 to 30 knots until very recent times,” says Calambokidis.

We brought ships into the whales’ world, now we need to learn how to be good neighbors.

<https://www.hakaimagazine.com/article-short/why-dont-whales-get-out-way>



It’s not always clear why whales don’t—or can’t—avoid large ships, but studies and necropsies are helping scientists better understand why ship strikes happen and how they can be avoided. (Credit: National Geographic Creative/Alamy Stock Photo).

PLASTIC GARBAGE PATCH BIGGER THAN MEXICO FOUND IN PACIFIC

By Shaena Montanari

Jul. 25, 2017 — Water, water, everywhere—and most of it is filled with plastic.

A new discovery of a massive amount of plastic floating in the South Pacific is yet another piece of bad news in the fight against ocean plastic pollution. This patch was recently discovered by Captain Charles Moore, founder of the Algalita Research Foundation, a non-profit group dedicated to solving the issue of marine plastic pollution.

Moore, who was the first one to discover the famed North Pacific garbage patch in 1997, estimates this zone of plastic pollution could be upwards of a million square miles in size.

The team is currently processing the data and weighing the plastic so they can get a handle on exactly how much garbage they've discovered in this area off the coast of Chile and Peru.

The term "patch" referring to the plastic pollution in oceanic gyres can be misleading. The pieces of plastic are not necessarily floating bottles, bags, and buoys, but teeny-tiny pieces of plastic resembling confetti, making them almost impossible to clean up.

These microplastic particles may not be visible floating on the surface, but in this case, they were detected after collecting water samples on Moore's recent six-month expedition to the remote area that had only been explored for plastic once before.

On the first transect of the South Pacific gyre in 2011, Marcus Eriksen, marine plastic expert and research director at the 5 Gyres Institute, did not spot much plastic. In only six years, according to the new data collected by Moore, things have changed drastically.

Henderson Island, located in this South Pacific region, was recently crowned the most plastic-polluted island on Earth, as researchers discovered it is covered in roughly 38 million pieces of trash.

The problem of plastic pollution is becoming ubiquitous in the oceans, with 90 percent of sea birds consuming it and over eight million tons of new plastic trash finding its way into the oceans every year.

<http://news.nationalgeographic.com/2017/07/ocean-plastic-patch-south-pacific-spd/>

GRUESOME CASES OF GREAT WHITE SHARKS HAVING THEIR LIVERS RIPPED OUT AND EATEN BY ORCAS ARE ON THE RISE BECAUSE OF CONSERVATION PROGRAMMES, EXPERT CLAIMS

By Shivali Best

Jul. 25, 2017 — Since May, several great white shark corpses have washed ashore with their livers

and hearts missing in South Africa, in a bizarre set of killings.

Orcas are believed to be responsible for the slayings, living up to their name as 'killer whales.'

While several theories for why the killings have occurred have been suggested, one expert now claims the murders appear to be on the rise because conservation programmes have led to rising populations.

This has increased numbers of both of the creatures, changed their range and allowing them to cross paths more often.

In May alone, at least three liver-less white shark carcasses washed up near the popular tourist town of Gansbaai, South Africa.

All three sharks had consistent bite wounds and were found to be missing their livers, suggesting that orcas were responsible for the attacks.

Experts suggest that local killer whales have developed an appetite for squalene - an organic chemical compound found in abundance in shark liver oil.

The shark's fatty liver can weigh more than 60 kilograms (130lbs) and its rich organic chemicals make it a perfect food source for killer whales.

Speaking to Gizmodo, George Burgess, Director of the International Shark Attack File at the Florida Museum of Natural History, said: 'Those that say sharks are apex predators, that's not the case.'

'As hard as it is to say it, the killer whales are a step above.'

While the attacks in South Africa appear to have occurred out of the blue, experts claim that they have been happening for years.

Professor Rus Hoelzel, a biosciences expert at Durham University told Gizmodo: 'Killer whales can eat pretty much anything - they're very good predators.'

'Working in a group certainly helps.'

The reason for the recent bout of attacks in South Africa could be down to rising conservation efforts for both great white sharks and orcas.

Mr Burgess said: 'We do know that there has been a rise in white shark populations in certain areas of the world, such as on both coasts of the United States thanks to proper fishery management and endangered species status given to the white shark's primary food items.'

'It may be that there are some modifications in their ranges.'

'The animals may also be coming together more often, perhaps as a result of local environmental conditions.'



In May alone, at least three liver-less white shark carcasses washed up near the popular tourist town of Gansbaai, South Africa. Experts suggest that local killer whales have developed an appetite for squalene - an organic chemical compound found in abundance in shark liver oil. (Credit: Marine Dynamics / www.SharkWatchSA.com)).

Mr Burgess also suggests that the great white sharks may be approaching the orcas with the intention to attack them, rather than the other way round.

Great white sharks usually win their encounters with other animals.

But unknown to them, orcas are big and strong enough to take them out with one headbutt.

Mr Burgess added: 'It comes down to whether the killer whales are going after the shark at their vulnerable spot to disable them and eat an important part of them, or if they're there to essentially play with something that they've defeated, a la the cat.'

<http://www.dailymail.co.uk/sciencetech/article-4727902/Expert-claims-orcas-eaten-great-white-sharks.html>

ORCA SURVIVAL DEPENDS ON PROTECTING CHINOOK SALMON

By David Suzuki

Jul. 6, 2017 — Two of British Columbia's most iconic species, chinook salmon and southern resident killer whales, are in trouble. The whale depends on the salmon for survival. Is it time to manage chinook fisheries with killer whales in mind?

In marine ecosystems, cause and effect is a challenge. It's almost impossible to claim with certainty that depletion of one species is caused by abundance or lack of another. The general rule is that big things eat smaller things, so any given species will eat dozens of others, even their smaller kin. The southern resident killer whales, also known as orcas, are an exception. Despite their immense intelligence, or perhaps because of it, their diet consists almost

entirely of chinook salmon, with only traces of other salmon, and virtually no other fish species.

Every killer whale population has its own unique culture, which includes language, social behaviours and dietary preferences. A large male weighs nearly as much as two Ford 150 pickup trucks. Sustaining this mass of warm-blooded flesh in a cold ocean requires using echolocation to find and capture fish in blackness. Understanding the patterns of their chinook prey is a highly specialized activity passed on through generations of learned behaviour.

After each capture, an orca normally shares the fish with the pod. That's remarkable considering the whale could practically swallow the prey whole. If the 78 southern resident killer whales are to survive, this cultural feeding ritual needs to occur about 1,400 times a day. That's become difficult, as chinook salmon populations that migrate through waters where the southern resident killer whale feed are severely depleted, and the fish are smaller on average than they once were.

Fisheries and Oceans Canada's assessments show most chinook populations in southern B.C. are well below historical levels and continue to decline. In November 2018, the Committee on the Status of Endangered Wildlife in Canada will determine the status of several populations, and will likely declare many endangered.

Fishing is not the only threat chinook face, but it has a major impact. Fishing tends to target salmon as they return to spawn — after they've survived, against all odds, through 99 per cent of their expected lives. Those that spawn hold the genetic blueprint to help their offspring withstand current environmental conditions. With far fewer chinook making it to spawning grounds, each survivor is a critical contributor to the next generation. Estimates show commercial and sport fisheries in British Columbia took more than half a million chinook in 2016. For some chinook populations, people harvest well over half the returning fish.

Noise from shipping also hinders the whales' ability to communicate with each other, find prey and avoid danger — by up to 97 per cent in the noisiest areas. Commercial shipping has increased dramatically in recent years. One large ship transits the Salish Sea, on average, every hour of every day of every year.

Federal whale biologists have identified a priority recovery strategy: refuges where orcas can feed without competition from fisheries and that are quiet enough that echolocation is not masked and social behaviours aren't disrupted. These areas are currently

being identified and could be established within killer whale critical habitat areas. Many other issues, including pollution, must also be addressed.

Rebuilding chinook populations is critical to rebuilding whale populations, yet there are no recovery plans to increase chinook populations to upper benchmarks, as required by Canada's Wild Salmon Policy. More than 300,000 recreational fishing licences are issued annually in B.C., which creates a formidable competitor to killer whales. Like whales, humans have also learned over generations about the behaviour of their prey.

The federal government is undertaking a scientific review to prioritize killer whale recovery actions. Part of this process involves public consultation. Anyone concerned about orcas should contribute.

Understanding the importance of chinook to killer whales makes it difficult to justify catching them without considering the whales' needs. The complexity of marine ecosystems makes it easy for individuals to point fingers to the myriad other threats such as climate change and habitat destruction. But we must recognize that, collectively, our habits have become destructive to the environment and other species.

The fate of two of British Columbia's most iconic animals and the ecosystems and economies that depend on them rests in our hands.

<https://m.piquenewsmagazine.com/whistler/orca-survival-depends-on-protecting-chinook-salmonby-david-suzuki/Content?oid=3794790>

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)
7/31 9 am	26	Humpback Whales
	10	Pacific White-sided Dolphins
	35	Risso's Dolphins
	5	Harbor Porpoise
	1	Mola Mola (Ocean Sunfish)
7/30 1 pm	3	Black-footed Albatross
	14	Humpback Whales
	7	Risso's Dolphins
7/29 8 am All Day	5	Harbor Porpoise
	1	Mola Mola (Ocean Sunfish)
	400	Black-footed Albatross
	10	Black-footed Albatross
7/28 8 am	10	Humpback Whales
	50	Risso's Dolphins
	25	Dall's Porpoise

	1	Black-footed Albatross
7/27 8 am All Day	64	Humpback Whales (breaching)
	5	Risso's Dolphins
	10	Harbor Porpoise
	8	Dall's Porpoise
7/26 8 am	57	Humpback Whales
	20	Pacific White-sided Dolphins
	145	Risso's Dolphins
	16	Dall's Porpoise
	1	Mola Mola (Ocean Sunfish)
7/25 10 am	25	Humpback Whales
	3	Blue Whales
	500	Pacific White-sided Dolphins
	8	Risso's Dolphins
	50	Northern Right Whale Dolphins
	10	Dall's Porpoise
	1	Mola Mola (Ocean Sunfish)
	1	Black-footed Albatross
7/24 9 am	23	Humpback Whales
	20	Risso's Dolphins
7/23 8 am	14	Humpback Whales
	1	Black-footed Albatross
	1	Tufted Puffin
7/22 9 am	10	Humpback Whales
	2	Blue Whales
	60	Pacific White-sided Dolphins
	40	Risso's Dolphins
	4	Harbor Porpoise
	1	Northern Fur Seal
	1	Black-footed Albatross
7/21 8 am	8	Humpback Whales
	15	Risso's Dolphins
	2	Mola Mola (Ocean Sunfish)
7/20 9 am	14	Humpback Whales
	3	Harbor Porpoise
7/19 9 am	25	Humpback Whales
	12	Pacific White-sided Dolphins
	80	Risso's Dolphins
	1	Mola Mola (Ocean Sunfish)
	1	Black-footed Albatross
	1	Black-footed Albatross
7/18 9 am	24	Humpback Whales
		(breaching & pec slaps)
	2	Risso's Dolphins
	1	Harbor Porpoise
7/17 9 am	1	Mola Mola (Ocean Sunfish)
	39	Humpback Whales
	4	Mola Mola (Ocean Sunfish)
7/16 8 am All Day	42	Humpback Whales
		(breaching & lunge feeding)
	100	Risso's Dolphins
	2	Harbor Porpoise
7/15 8 am All Day	7	Great White Sharks
	13	Humpback Whales
	18	Risso's Dolphins
7/14 8 am	3	Great White Sharks
	12	Humpback Whales
	1	Minke Whale
	12	Risso's Dolphins
7/13 9 am	2	Black-footed Albatross
	13	Humpback Whales
	4	Dall's Porpoise

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Monterey Bay Chapter
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Membership Levels and Annual Dues

Lifetime \$1000	Patron \$500	Contributing \$250
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Individual \$45	Student \$35	Teacher \$35
Senior (62 plus) \$35		

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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
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