

Soundings



American Cetacean Society- Monterey Bay Chapter

SEPTEMBER 2012

PO Box H E, Pacific Grove, CA 93950

AMERICAN CETACEAN SOCIETY- MONTEREY BAY CHAPTER

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

Date: Thursday, September 27, 2012 Time: 7:30 PM.

PLEASE JOIN US AT 7:00 FOR REFRESHMENTS

**Speaker: Mark DiOrio and Mara Kerr,
Film Makers and Conservationists**

Subject: *In the Wake of Giants*, a screening and discussion

INSIDE THIS ISSUE	
CALENDAR.....	2
CALIFORNIA LAWMAKERS DESIGNATE LEATHERBACK SEA TURTLE AS NEW STATE SYMBOL	2
THE FIN WHALE, UNDER MORE THREAT THAN THOUGHT	3
HUMPBACK WHALES STAYING IN ANTARCTIC BAYS LATER INTO AUTUMN	5
EASING THE COLLATERAL DAMAGE FISHERIES INFLICT ON SEABIRDS.....	6
SIGHTINGS.....	7
MEMBERSHIP.....	8

This is the second occasion that Monterey has been the host to the Blue Ocean Film Festival. While not an official sponsor of BLUE, ACS MB appreciates this International Film Festival that showcases marine related issues. Our Chapter looks forward to making its own effort to support the spirit of BLUE 2012.

This year our speakers are the husband and wife team of Mark DiOrio and Mara Kerr, the founders of AKUA Films. AKUA Films is a non-profit organization that specializes in marine conservation documentaries.

In the Wake of Giants was produced by Mark and Mara. The film is about the large whale disentanglement efforts being conducted primarily within the Hawaiian Island Humpback Whale National Marine Sanctuary. The film highlights the perils humpback whales face due to marine debris on their migration from Alaska to Maui and back. It also looks at those individuals who risk their lives to disentangle these large marine mammals.

All proceeds from the film have been donated to the Hawaiian Island Humpback Whale National Marine Sanctuary. Donations have allowed the large whale disentanglement team to purchase additional safety equipment, cutting tools and even a new inflatable chase craft.

Please join us to help celebrate the spirit of Blue 2012 and to meet two local film makers who are making a difference in the world of marine conservation.

See you there,
Bob Mannix, Chair, ACS MB Programs Committee

CALENDAR

Sept 24--30: 2012 Blue Ocean Film Festival & Conservation Summit in Monterey, CA. Blue brings together some of the finest scientist and filmmakers from around the world for 6 days in Monterey to try and find solutions to our oceans most urgent problems

Oct 4: Ken Norris Memorial Lecture at Long Marine Lab. Lecture 7pm. Book Signing 8pm. Discovering the Heart of America: An Experiment in Marine Biology-Terrie Williams-UCSC Professor of Ecology and Marine Biology

Oct. 13: Wildlife Conservation Expo, 10am-6pm, Mission Bay Conference Center, San Francisco. www.wildnet.org/events

Oct 23-26: 8th California Islands Symposium Ventura, CA. For more info go to cisymposium@gmail.com

Nov. 8-11: Western Society of Naturalists Annual Meeting in Monterey, CA. Meeting will be held at the Embassy Suites Hotel in Seaside, CA

Nov. 9th-11: 13th International Conference Of The American Cetacean Society. Whales and Humans: A Conflicted Relationship. San Diego, CA Hyatt Regency, Mission Bay. Register now at Acsonline.org

Moss Landing Marine Science Series

Wednesdays; 4:00-5:00pm OLLI@CSUMB

Oct. 17: Hawaiian Monk Seals

Tenaya Norris, Vertebrate Ecology

Oct. 24; Tackling Ocean Pollution

Nicole Bobco, Biological Oceanography

Nov. 7; California Leatherbacks

Deasy Lontoh, Vertebrate Ecology

MEDIA RECOMMENDATIONS

Darwin's Ghosts: The Secret History of Evolution

Written by Rebecca Scott

On a Farther Shore: The Life and Legacy of Rachel

Carson. Written by William Souder

Dinosaur Art: THE WORLD'S GREATEST

PALEOART. Written by Steve White

The Land Grabbers; The New Fight Over Who Owns

The Earth. Written by Fred Pearce

CALIFORNIA LAWMAKERS DESIGNATE LEATHERBACK SEA TURTLE AS NEW STATE SYMBOL

Legislation Awaits Governor Jerry Brown's Signature

August 13th, Sacramento, CA.- Today California Senators voted unanimously to designate the endangered Pacific leatherback sea turtle as the official marine reptile of California and send the enabling legislation, AB 1776 by Assembly-member Fong (D - Cupertino), to Governor Jerry Brown for his signature. The governor has 12 days to sign the bill into law.

The legislation will declare October 15 every year as Leatherback Conservation Day in California, urge conservation of this ancient marine species and encourage schools to teach about the native sea turtle. The bill is intended to recognize the importance of California state waters to the survival and recovery of the Pacific leatherback. Naming this species as the state marine reptile will add it to other state icons including the California gray whale, golden trout, poppy, and the redwood. More than 20 leatherback sightings have been reported along the California coast this year.

"Designating the Pacific leatherback sea turtle as our state marine reptile is part of a coordinated worldwide conservation effort to save a species whose population has declined more than 95 percent," said Assembly-member Fong, who authored the bill. "Naming the leatherback sea turtle as our official state marine reptile will demonstrate California's commitment to protecting leatherback sea tur-



Photo copyright Doug Perrine/SeaPics.com

tles, our ocean's ecosystem, and recognize the education and awareness this official designation bestows for this revered creature whose migratory pattern includes California's coast."

Governor Brown has historically taken actions to protect the state's ocean resources. Last year the governor signed legislation to ban the sale, trade, and purchase of shark fins, also authored by Assembly-member Fong. In his previous term as governor, Brown signed into law the California Coastal Commission and Coastal Conservancy Acts, and successfully fought federal efforts to expand offshore oil drilling in Southern California.

"By signing the leatherback bill, Governor Jerry Brown will build on his own ocean legacy and enhance California's commitment to sea turtles, marine life and our oceans," said Teri Shore, Program Director at SeaTurtles.org (Turtle Island Restoration Network), the primary bill sponsor, based in West Marin, California.

The Pacific leatherback swims 6,000 miles across the ocean to feed on jellyfish along the California coast. More than 16,000 square miles of California's coastal waters were designated as critical habitat for the leatherbacks earlier this year.

As sponsors and supporters of the bill, SeaTurtles.org and Oceana generated statewide support for AB 1776 from thousands of California residents and more than 30 conservation entities.

"The Senators' swift bi-partisan support for this legislation shows the timeliness and importance of recognizing this ocean ambassador species," said Geoff Shester, Oceana California Program Director. "With Governor Brown's signature, California will continue to lead the way in our nation for healthy oceans."

THE FIN WHALE, UNDER MORE THREAT IN THE MEDITERRANEAN THAN THOUGHT

ScienceDaily (July 26, 2012) — Until now it was thought that fin whales in the Strait of Gibraltar and the Alboran Sea made up part of the distribution of this species of whale in the Mediterranean. However, an international team of scientists led by a Spaniard has revealed that their population has been overestimated by including specimens from the Atlantic that visit at certain times the western Mediterranean, where the noise generated by human activity affects their survival.

In 1991 the fin whale (*Balaenoptera physalus*) population in the Mediterranean Sea was estimated at 3500 specimens. A new study, published in *Marine Mammal Science*, now shows that this record included specimens from the Atlantic, and suggests that the distribution and size of the current population of this whale, which is threatened with extinction, should be reconsidered.

"The Mediterranean population has easily been overestimated, as the census included the whole of the southeast Mediterranean, incorporating Atlantic fin whales within the Mediterranean census", reported to SINC Manuel Castellote, the lead author of the study and researcher in the National Oceanic and Atmospheric Administration (NOAA), Seattle (USA).

The research team analyzed 29,822 hours of recordings of the songs emitted by these marine mammals -which can reach a length of 27 metres, and are the second biggest cetaceans in the world- in order to identify the distribution limits of the Mediterranean fin whale and those of the north Atlantic fin whale in the Straits of Gibraltar, where the two populations overlap.

The results reveal that the presence of fin whales in the areas of the Straits of Gibraltar and the Alboran Sea -southwest of the Mediterranean- is exclusively limited to Atlantic fin whales that visit the Mediterranean Sea, above all in autumn and spring.

As a consequence, "the population of Mediterranean fin whales presents a much more limited distribution than currently described, excluding a significant region of the western Mediterranean", confirms Castellote, who highlights the fact that this region had previously been identified as a feeding area.

The importance of the study is the critical state situation of the whale in these waters where it is the only mysticete (it has a baleen instead of teeth). The species is particularly susceptible to collisions with merchant vessels and ferries, which is the main cause

of fin whale mortality.

Among other threats, an "insufficient" knowledge of their basic ecological characteristics such as distribution and population size stands out. For the biologist, "from a conservation point of view, it is essential to understand the geographical distribution and population size of the Mediterranean fin whale, because if not, appropriate management methods cannot be implemented".

The danger of undersea noise

Maritime traffic and geophysical exploration - including the search for hydrocarbons- "drastically" reduces the song effectiveness -linked to reproduction and which propagates hundreds of kilometers beneath the Sea- of the whales, which are also the group of marine mammals with the greatest acoustic sensitivity at low frequencies. "The noise generated through human activity in the oceans leads to possible chronic effects on the health of this species" Castellote states.

To control these threats the same researchers identified in another report the possible impact of noise generated by human activity on the acoustic behaviour and geographical movement of the fin whales in various regions of the Mediterranean Sea and in the northeast Atlantic.

After analyzing 20,547 hours of recordings of the sounds emitted by the whales, the study published in Biological Conservation indicated that the whales modified the characteristics of their songs in order to try to reduce the impact of noise on their propagation.

In addition the researchers recorded a massive displacement of fin whales, triggered by the noise from geophysical prospecting at a distance of 285 km from the study area. "These recurrent displacements, together with the changes in acoustic behavior, could increase the energy expenditure and reduce the reproductive success of whales affected by the noise", the expert indicated.

In the long-term the consequences for these mammals are clear: chronic effects which impact on their survival emerge. "Noise in the marine medium, despite being recognized as a significant pollutant, is far from being controlled and regulated within the waters of the Exclusive Economic Zone of Spain", warns Castellote.

HUMPBACK WHALES STAYING IN ANTARCTIC BAYS LATER INTO AUTUMN

ScienceDaily (July 30, 2012) — Large numbers of humpback whales are remaining in bays along the Western Antarctic Peninsula to feast on krill late

into the austral autumn, long after their annual migrations to distant breeding grounds were believed to begin, according to a new Duke University study.

The study, published July 30 in the journal *Endangered Species Research*, provides the first density estimates for these whales in both open and enclosed habitats along the peninsula in late autumn.

It suggests that the little-studied bays are much more important late-season feeding grounds for humpback whales than scientists previously thought. It also highlights changes that are occurring in the region in response to the increasingly delayed arrival and reduced extent of annual winter sea ice cover, associated with rapid climate change.

"The old dogma is that by late autumn, the ice is heading in and the whales have headed out. But 70 percent of our surveying took place in waters with no ice, and we detected 371 groups of humpback whales over a 654-kilometer survey area, with density estimates of up to 1.75 whales per square kilometer," said David W. Johnston, research scientist at Duke's Nicholas School of the Environment and lead author of the paper.

At that density, Johnston said, "if you were to walk to the bridge of a ship and look around, you'd spot two whales within 500 meters of the boat. That's higher than anyone expected."

The scientists found the highest densities of whales in narrow, enclosed sections of Wilhelmina Bay, Andvord Bay and the Errera Channel. They found the lowest densities -- as low as 0.02 whales per square kilometer -- in the open water of the adjacent Gerlache Strait, which separates the Palmer Archipelago from the Western Antarctic Peninsula.

They conducted the study aboard the National Science Foundation (NSF) research vessel *Laurence M. Gould* in late April through early June of 2009. NSF funded the study.

Johnston's co-authors are Ari S. Friedlaender, research scientist; Andrew J. Read, Rachel Carson Associate Professor of Marine Conservation Biology; and Douglas P. Nowacek, Repass-Rodgers University Associate Professor of Marine Conservation Technology. All four are stationed at the Duke University Marine Laboratory. Nowacek holds a joint appointment as associate professor of electrical and computer engineering at Duke's Pratt School of Engineering.

Scientists have long known the waters around the Western Antarctic Peninsula are important foraging grounds for humpback whales that feed on swarms of shrimp-like krill there, but previous studies have

been conducted earlier in the season or in open waters farther from land.

"Establishing the autumn density of humpback whales in the inshore regions of the Western Antarctic Peninsula is crucial for understanding the role they play in this rapidly changing ecosystem," said Friedlaender. "Our results provide a new perspective on the magnitude of predator-prey relationships in the region as the Antarctic winter sets in.

Being the first to estimate densities in the peninsula's narrow in-shore waters was a challenge, Johnston said, because the line-transect techniques and distance sampling methods scientists traditionally use for this type of study weren't well suited to the bays' tight quarters, tricky currents and jutting shorelines.

"We had no idea that the whales were going to be packed up in these narrow channels and passages. We had to think on our feet a bit and use alternative sampling approaches and incorporate data from other portions of the project," he said. For instance, data collected from tagging the whales and tracking their underwater movements turned out to be inordinately useful for estimating densities, too.

"Once we knew their dive behaviors, we could establish how likely it was that we might miss them as we were traveling along the surface of the water," Johnston said. "That's not something we would have been able to do using only the traditional methods."

EASING THE COLLATERAL DAMAGE FISHERIES INFLICT ON SEABIRDS

Two recent studies highlight the harm that industrial fisheries are doing to the world's seabirds, either by overharvesting the birds' favorite prey or by drowning birds hooked on longlines. But tighter regulations and innovative technologies are starting to significantly reduce seabird "bycatch," slashing it by 90 percent in some regions.

By Jeremy Hance

A little more than a decade ago, thousands of seabirds — including the magnificent wandering albatross, with the longest wingspan of any bird in the world — perished annually in the Southern Ocean surrounding Antarctica when they dove for baited hooks set by longline fishing boats. Impaled on the hooks, the birds were dragged underwater and drowned.

But in recent years, increased regulations, stricter enforcement, and innovative gear — including the adoption of technologies that weigh down baited hooks well below the surface or scare seabirds away from longlines — have had a dramatic impact on so-

called seabird bycatch. The number of drowned seabirds in the Southern Ocean surrounding Antarctica has fallen to near zero in the legal fishery, experts say. Another key factor was a requirement by the Commission on the Conservation of Antarctic Marine Living Resources that a scientific observer be placed on every fishing boat operating in the Southern Ocean.

"Where environmental organizations, fishery managers, and fishermen work together — great results have been achieved," says Ramunas Zydulis, a seabird expert with the Center for Marine Conservation at Duke University. "Seabird bycatch has been reduced by 90 percent and more in longline fisheries in the Southern Ocean, Hawaii, Alaska, South Africa, and New Zealand."

Such efforts are sorely needed, as the number of seabirds drowned by longline fisheries — estimated at 160,000 to 320,000 annually — remains hugely unsustainable. This toll is emblematic of a wide array of threats facing seabirds today. Having navigated the perils of marine life for 65 million years, seabirds face unprecedented challenges, particularly from industrial fisheries.

Two recent studies have highlighted the intensifying pressure on the world's seabirds. A recent paper in *Bird Conservation International* noted that 28 percent of the world's 346 seabird species are listed as threatened by the International Union for Conservation of Nature's Red List — more than double the percentage of birds imperiled as a whole (12 percent). The study concluded that nearly half — 47 percent — of the world's seabirds are in decline.

And a recent study in *Science* drew attention to another, less publicized danger facing seabirds: the decimation by fishing fleets of the small fish and other prey species that seabirds depend on. The study, published last December, concluded that whenever prey populations fall below one third of their maximum abundance, seabird breeding suffers and populations fall.

Scientists say the decline in seabird populations is a warning sign of a broader assault on the world's oceans, from overfishing, to pollution, to climate change.

"Seabirds are found across all of the world's oceans, are well-known, relatively easy to monitor, and are sensitive indicators of ocean health," explains Stuart Butchart, co-author of the *Bird Conservation International* paper and global species officer with the conservation group, BirdLife International. "They act as the marine equivalent of canaries in the coal mine

because they respond to many of the most important threats to the marine environment.”

Solutions to Bycatch

While tackling the broader problem of overfishing has proven exceedingly difficult, doing something about seabird bycatch has proven to be a more tractable problem. Fisheries agencies such as the U.S. National Oceanic and Atmospheric Organization (NOAA) and conservation groups such as the World Wildlife Fund (WWF) — which for the past seven years has sponsored the International Smart Gear Competition to reduce by-catch of seabirds and other species — have been working with fishermen and enjoying success where regulations are enacted.

The main culprit is longline fisheries, which spool out fishing lines up to 80 miles long that are baited with thousands of hooks. Currently 40 of the world’s seabird species are killed as bycatch, including those most connected to the open ocean: albatrosses and petrels.

How do you make bait less attractive to seabirds? Common methods include using weighted lines that sink below the surface or attaching streamers to longlines — known as tori lines — to scare off birds. Shifting how and when fisheries work also is important, such as setting lines in low light when birds are less active or no longer throwing offal, or chum, when setting lines.

Pamela Toschik, an international affairs specialist with NOAA, says marine researchers refer to these methods as “shrink and defend” — shrink the area in which the hooks are available by weighting the lines so the baited hooks sink faster, and then defend the remaining area with bird-scaring lines. She and others said that independent scientific observers also are vital to collecting data on lone boats that ply the sea thousands of miles from enforcement agencies.

An anonymous observer who did several tours on longline fisheries in the Pacific says ships used several methods to mitigate bycatch, including dyeing bait blue for camouflage. The observer said that while mitigation procedures have had a “huge” impact on reducing seabird bycatch, several albatrosses drowned on the ships where she was stationed. “These vessels set upwards of 2,000 hooks per day, each having the capability to catch a fish — or a bird, turtle, or whale,” said the observer. “It’s impossible to control for all conditions.”

WWF’s smart gear competition, which gives prize money for the best new ideas to reduce bycatch, has resulted in some effective innovations. Last

year’s winner, the Yamazaki Double-Weighted Branchline, was developed by a Japanese boat captain. Already in use in several tuna fisheries, the technology weighs the line and reduces line recoil, lessening the chance of injury to fishermen. The 2009 winner, which sets baited hooks at preset depths in a vessel’s wake, is currently being field-tested.

Researchers are now working to reduce seabird bycatch from gillnets, a largely unstudied and unmitigated threat. Experts believe that hundreds of thousands of diving seabirds — such as loons, grebes, seaducks, auks, cormorants, and shags — drown in gillnets every year. Gillnets ensnare diving birds when they are attracted to floundering fish. Duke’s Zydalis says knowledge of gillnet seabird bycatch remains “patchy” because the nets are operated by thousands of small-scale fishermen. But he said that once researchers begin monitoring the threat, mitigation methods could be rapidly developed; already, some fishermen have employed more visible nets and moved them to areas where seabirds are less likely to become entangled.

“Fisheries should learn that adoption of minor changes in methods can save seabirds, while at the same time create more efficient operations that help their bottom line,” says Stephen Kress, the Audubon Society’s vice president for bird conservation. “There is great value in educating fishers about this win-win opportunity.”

Overfishing: A third for the birds

A more daunting challenge is overfishing of seabirds’ prey species. The recent study in *Science* found that not only are seabird populations intrinsically connected to prey abundance, but also documented for the first time at what level overfishing begins to hurt these slow-breeding birds. Looking at 14 seabird species in seven marine ecosystems, scientists discovered that every time prey populations dropped below one third of their maximum abundance, seabird breeding suffered.

“What this is saying is that [seabirds] have evolved to exploit average to above-average feeding conditions,” says co-author Ian Boyd, director of the Scottish Oceans Institute at the University of St. Andrews. “This isn’t really very surprising, but some things don’t become obvious until the evidence is right in front of you.”

The research incorporated everything from penguins to gannets, as well different prey species. One case involves the Peruvian anchovy fishery. Boyd says that there is circumstantial evidence of

“long sustained declines of seabirds as the fishery has grown,” although scientists lack conclusive data directly linking the fishery to seabird declines. Penguin expert David Ainley, a senior marine wildlife ecologist with H.T. Harvey & Associates, says that anchovy fisheries have put several penguin species at risk.

“This is especially true of the African penguin and the Humboldt penguin in the Benguela and Peru currents, respectively, where the fisheries for anchovies are immense and have led to the severe depression in almost all seabird species breeding along those coasts,” Ainley said in an e-mail, noting that the Humboldt penguin is also a victim of drowning in gillnets.

‘Anchovy fisheries are immense and have led to severe depression in seabird species breeding along those coasts,’ says one expert.

Ainley said the best solution is to create marine protected areas encompassing much of the foraging range of these seabird species.

Bycatch and overfishing are not the only threats to the world’s seabirds. Pollution — from dumped plastics to nitrogen runoff to oil spills — also has detrimental impacts on seabirds. Invasive predators on breeding islands are another problem, but one where conservationists are making significant progress; Scientists have successfully eradicated invasive rodents from 284 breeding islands, though at least 75 islands still require such efforts. Finally, climate change is threatening to swamp low-lying breeding islands and possibly impact prey abundance.

Boyd and his co-authors argue that their findings should propel a new way of thinking about fisheries management, with a rallying cry of “one third for the birds” — not just to preserve seabird abundance but to help other species as well.

“It is possible that the relationship also applies to many components of the ecosystem,” says Boyd. “If this was used as a general rule in fisheries it is more likely to lead to sustainable fishing than current systems of management.”

Many of the problems that plague seabirds also imperil other marine species and even people. Moving fisheries toward sustainability would help people as much as it does birds, Butchart says.

“Managing fisheries unsustainably not only denies future generations of people from using these food supplies, but also has detrimental impacts on other biodiversity,” Butchart says. “Ensuring that harvesting is sustainable provides long-term benefits both to people and nature.”

For biologist Carl Safina — author of *Eye of the*

Albatross and president of the Blue Ocean Institute — the reasons to protect seabirds go well beyond the practical. Says Safina, “They are exquisitely beautiful, they are extreme athletes, and their travels and migratory skills inspire awe.”

SIGHTINGS Compiled by Monterey Bay Whale Watch.

For Complete listing and updates see gowhales.com/sighting

Date	#	Type of Animal(s)
9/7 p.m.	2	Humpback Whales (mom & calf), 5 in the area
	7	Dall's Porpoise
9/7 a.m.	3	Humpback Whales
	1	Possible Sei Whale
	7	Dall's Porpoise
9/6 p.m.	2	Humpback Whales (breaching behaviors)
	75	Risso's Dolphins
9/6 a.m.	2	Humpback Whales
	50	Risso's Dolphins
9/5 p.m.	3	Humpback Whales
9/5 a.m.	3	Humpback Whales
	2	Harbor Porpoise
9/4 p.m.	4	Humpback Whales
9/4 a.m.	3	Humpback Whales
	150	Risso's Dolphins
9/3 p.m.	10	Humpback Whales
	7	Harbor Porpoise
9/3 a.m.	6	Humpback Whales
	20	Harbor Porpoise
9/2 p.m.	4	Humpback Whales
	60	Risso's Dolphins
9/2 a.m.	32	Humpback Whales
	30	Harbor Porpoise
9/1 p.m.	15	Humpback Whales
9/1 a.m.	25	Humpback Whales
	80	Risso's Dolphins
8/31 p.m.	8	Humpback Whales
8/31 a.m.	50	Risso's Dolphins
	6	Dall's Porpoise
8/30 a.m.	3	Humpback Whales
8/29 a.m.	5	Killer Whales
8/28 a.m.	1	Humpback Whale
8/27 a.m.	1	Humpback Whale
8/26 p.m.	2	Humpback Whales
8/26 a.m.	2	Humpback Whales
	5	Blue Whales
	1	Killer Whale
	3	Fin Whales
8/25 p.m.	2	Killer Whales (transient type)
	2	Bottlenose Dolphins
8/25 a.m.	2	Killer Whales (transient type)
	2	Harbor Porpoise
8/24 p.m.	2	Humpback Whales
8/24 a.m.	2	Humpback Whales
	50	Risso's Dolphins
8/23 a.m.	1	Humpback Whale
	1	Elephant Seal
	2	Mola Mola (Ocean Sunfish)
8/22 p.m.	2	Humpback Whales

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

American Cetacean Society Membership Application Chapter#24

New Membership/Subscription ___ Gift Membership/Subscription ___
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, 2012**

Jerry Loomis, *President*
Richard Ternullo, *Vice President*
Randy Puckett, *Past Chapter President*
Diane Glim, *Publicity*
Katy Castagna, *Treasurer*
Sally Eastham, *Membership*
Jennifer Thamer, *Secretary*
Tim Thomas, *Historian*
Carol Maehr, *Conservation*
Bob Mannix, Donna Beckett *Programs*
Rene Rodriguez, *Education*
David Zaches, Art Haseltine,
Debbie Ternullo, Thom Akeman
Members at Large

Evelyn Starr, *Webmaster*
Tony Lorenz, Mary K. Paul, *Editors*
Email: tonylorenz@bigbluebay.com
kmarypaul@gmail.com