

# Soundings



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

**FEBRUARY 2018**

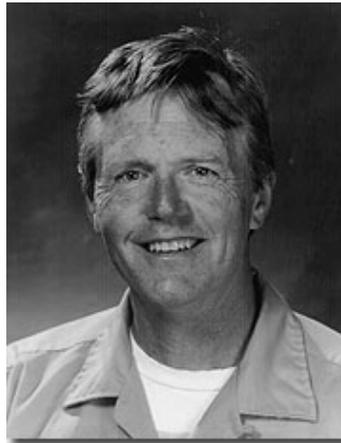
**MONTHLY MEETING AT HOPKINS MARINE STATION,  
LECTURE HALL BOAT WORKS BUILDING  
(ACROSS FROM THE AMERICAN TIN CANNERY OUTLET STORES)  
MEETING IS OPEN TO THE PUBLIC**

**Thursday, February 22, 2018  
Time: 7:30 PM**

PLEASE JOIN US AT 7:00 PM FOR REFRESHMENTS

**Speaker:** Dr. James A. Estes

After growing up in southern California, Dr. James Estes received a bachelor's degree from the University of Minnesota in 1967 and doctorate from the University of Arizona in 1974. He subsequently worked as a research scientist for the US Geological Survey for most of his career. After retiring from federal service in 2007, Dr. Estes joined the Department of Ecology and Evolutionary Biology at the University of California at Santa Cruz. He has conducted research on coastal marine ecosystems in Alaska, California, Canada, Mexico, New Zealand and Russia.



Dr. Estes is a Pew Fellow in marine conservation, a Fellow of the California Academy of Sciences, and a member of the U.S. National Academy of Sciences. He received the Western Society of Naturalist's Lifetime Achievement Award in 2011 and the American Society of Mammalogists' C. Hart Merriam Award excellence in research in 2012. He will be discussing his recently published book, a memoir entitled "Serendipity: An Ecologist's Quest to Understand Nature".

**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, March 29 at Hopkins Marine Station. Our speaker will be Gitte McDonald giving a presentation titled "Emperors Of The Ice". 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  
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**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

**Feb. 1:** Moss Landing Marine Laboratories Winter Seminar Series: “Bombs and Blue Marlin (*Maikaira nigricans*) - confirmation of rapid growth and longevity” by Allen Andrews, NOAA’s Pacific Island Fisheries Science Center. Open to the public at MLML Seminar Room, 4 PM.

**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.

**Feb. 8:** Moss Landing Marine Laboratories Winter Seminar Series: “Scaling of foraging rates in cetaceans” by Danuta Wisniewska, Hopkins Marine Station. Open to the public at MLML Seminar Room, 4 PM.

**Feb. 12:** International Darwin Day. Check <http://darwinday.org/events/> for local events!

**Feb. 15:** Moss Landing Marine Laboratories Winter Seminar Series: “How the Squid Lost Its Shell: An Adventure in Cephalopod Evolution and Science Communication” by Daana Staaf. Open to the public at MLML Seminar Room, 4 PM.

**Feb. 16-19:** Whale Tales 2018 hosted by Whale Trust, four-day event on Maui that brings together marine experts to collaborate and share the latest findings on humpback whales and their environment. Speakers will include Dr. John Ford, Dr. Scott Krause, Kathy Moran, Dr. Kate Stafford, and Jim Darling (Co-Founder)

**Feb. 21-24:** Pacific Seabird Group 45th Annual Meeting in La Paz, Mexico. Conference titled “Seabirds without Borders”. There are lots of exciting field trips scheduled – swim with whale sharks, daytrips to Espiritu Santo Island, or hike in the Sierra La Laguna and see endemic species.

**Feb. 22:** Moss Landing Marine Laboratories Winter Seminar Series: “A single-cell view of microbial activity in the deep sea” by Anne Dekas, Stanford University. Open to the public at MLML Seminar Room, 4 PM.

**Mar. 8-11:** 15<sup>th</sup> Annual International Ocean Film Festival (IOFF) at Cowell Theater, San Francisco, CA. The biggest festival of its kind in North America, featuring dozens of ocean-themed films by independent filmmakers from around our Blue Planet.

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## BOOK RECOMMENDATIONS

Improbable Destinies: Fate, Chance, and the Future Of Evolution, by Jonathan Losos. 2017 Penguin.

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

A Perfect Day for an Albatross, illustrated by Caren Loebel-Fried. 2017 Phoenix St. Claire Publishing, LLC

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## **ANCIENT SEA COW FOSSIL DISCOVERED ON THE CHANNEL ISLANDS**

Nov. 27, 2017 — A fossil of an extinct species of sea cow was discovered on Santa Rosa Island, a new find for the Channel Islands and conceivably one of the oldest of its kind on the west coast of North America with an estimated age between 20-25 million years ago.



A fossil of an extinct species of sea cow was discovered on Santa Rosa Island, a new find for the Channel Islands and conceivably one of the oldest of its kind on the west coast of North America with an estimated age between 20-25 million years ago. (Credit: NPS).

Scientists think that the fossilized remains of a skull and partially articulated rib cage may represent a new species of sea cow, an ancient relative of dugongs known as sirenians. They anticipate this to be confirmed when the skull is analyzed by Dr. Jorge Velez-Juarbe, a marine mammal taxonomic expert at the Natural History Museum of Los Angeles County.

The discovery was made by United States Geologic Survey (USGS) scientists Scott Minor and Kevin Schmidt as they were mapping faults on the island on July 17, 2017. The find is located in a steep ravine, exposed to the elements and erosion.

A team of volunteers led by paleontologist Dr. Jonathan Hoffman with the Santa Barbara Museum of Natural History are protecting the specimen for the upcoming winter and planning for an excavation next spring or early summer.

“This sea cow may have only been exposed the past few years after being buried for millions of years,” said Hoffman. “It came from a different place and a different time period.”

Scientists believe the sea cow lived in shallow seas when the island’s coastal landscape was situated hundreds of miles south of its current location. Over the course of millions of years the Pacific Plate, the crust on which the land rests, migrated north and rotated, eventually uplifting the ancient sea floor to its current position nearly 1,400 feet above sea level.

The scientific team plans to analyze the sea cow’s skull shape and features to identify its relationship to other sirenians. They hope to find teeth remains, pay dirt used to detect the diet and age of the specimen. Sea cow teeth tend to be heavily worn due to the sand they ingest when feeding on seagrass, their primary food source.

To refine the era in which the sea cow lived, the team has collected marine microfauna fossils (snails, clam shells, and crustacea) within the surrounding rock strata for USGS experts to study. They will also search for carbon fragments in the fossil rock that could yield valuable information about the sirenian’s environment.

The remnants of at least four other sea cow fossils from different individuals were also found in the near vicinity. Samples have been collected to preserve the significant scientific information they may yield.

Sirenians or sea cows are torpedo-shaped aquatic mammals that live in shallow waters and grow to be massive in size, up to 10 feet in length. In some parts of the world their fossil records date back to 50 million years ago.

At one time there were over a dozen different genera of sirenians, a name derived from the

mermaids of Greek mythology. The cause of their decline is unclear but may be linked to changes in food availability and environmental and oceanographic conditions.

Their modern relatives include three manatee species and the one remaining direct relative, the dugong, found in the warm waters of the Pacific Ocean and the east coast of Africa. The last remaining dugong on the west coast of North America, the Stellar’s sea cow, was hunted to extinction by humans in the 1760s.

<https://www.nps.gov/chis/learn/news/pr112717.htm>

## THE HUNGER GAMES: TWO KILLER WHALES, SAME SEA, DIFFERENT DIETS

By Larry Pynn

Nov. 28, 2017 — The Salish Sea’s resident killer whales are in trouble—and garnering all the headlines—but transient killer whales traveling the same waters seem to be doing fine.

Bob Wright had a problem on his hands: five killer whales on a hunger strike.



A transient killer whale snags a harbor seal in Johnstone Strait off Vancouver Island. With harbor seals rebounding in the northeast Pacific, they make up a large proportion of the transient killer whale diet. (Credit: Don Johnston MA/Alamy Stock Photo).

Wright, the owner of Sealand of the Pacific in Victoria, British Columbia, had assembled a team to hunt killer whales. He was determined to find a mate for one of his captive whales, Haida. It was 1970, the heyday of live killer whale captures in the northeast Pacific, before strong regulations and public outcry stopped the practice. Wright’s team was out near Race Rocks in the Juan de Fuca Strait on a windy winter day when they spotted a rare white whale swimming with four companions. They followed.

Just as the sun was going down, the five whales swam through the entrance of Pedder Bay. The team

quickly fixed a ratty gill net across the narrow entrance. To keep the hefty marine mammals away from the flimsy net, the men spent the night banging the hulls of aluminum skiffs with paddles and clubs. Periodically they dropped exploding “seal bombs”.

The next day, two fishing boats arrived with nets to better secure the entrance, and Wright prepared to move two females to Sealand and find buyers for the others.

For the once-free-roaming whales, a heartbreaking drama unfolded. Confined to the bay, they circled repeatedly, occasionally blundering into the net. And they refused to eat, despite offers of herring, salmon, and ling cod by their captors.

The white whale, Chimo, and another female, Nootka, endured Pedder Bay for 24 days until they were moved to Sealand to become Haida’s companions. The three other whales, one male and two females, remained at Pedder Bay and continued their fasts.

After 60 days of imprisonment, the three whales were so emaciated the contours of their ribs were starting to show. On day 75, one of the females charged the net, got stuck, and drowned. Her body was towed out to sea.

A few days later, the Pedder Bay male was offered yet another fresh salmon and finally bit. But instead of eating it, he started vocalizing and delivered it to the surviving female. She grabbed it by the tail, leaving the head hanging out the side of her mouth. The male came up beside her, grabbed hold of the head and the two circled the bay, before they each ate half. It was an astonishing scene, and it seemed to break the spell—for the next four and a half months, the whales ate the herring and salmon they were fed, until their

captivity ended. One night, activists used weights to sink the nets, allowing them to escape, reflecting growing public discontent with such captures.

Months before, it had taken another act of cetacean altruism to break the fasts of Chimo and Nootka.

When they arrived at Sealand, the females were kept apart from Haida by a net that divided their tank. Haida ignored Nootka at first, then retrieved a herring and pushed it through the net mesh. He did the same for Chimo. For the first time in months, the females began to feed and eventually ate the fish offered to them by the aquarium staff.

It took another whale to finally encourage Nootka and Chimo to feed, but remarkably, it was likely the first fish either of them had ever eaten. Unbeknownst to Wright and his team, and the whale biologists and trainers of the day, there are different types of killer whales, with distinctive behaviors, extending even to the food they eat.

That winter day almost 50 years ago, Wright had captured a group of transient killer whales, a distinct ecotype of *Orcinus orca* that eats seals, sea lions, and other marine mammals, and one markedly different in many ways from the resident killer whale ecotype—including Haida—which feeds almost solely on salmon.

Graeme Ellis, a recently retired Fisheries and Oceans Canada (DFO) research technician who worked with Wright at Sealand at the time, is still astounded by the cross-cultural sharing of food he witnessed between Haida, Chimo, and Nootka. “To share food across ecotypes, I still don’t know what to make of it,” he says.

In the wild, transient and resident killer whales do not share food. They rarely share space either, preferring to keep their distance. Today, this partitioning of the ocean and its food has affected the different populations unevenly. In the Salish Sea, home to an endangered population of killer whales called the southern residents, depleted stocks of chinook salmon—their preferred prey—are considered the main reason why the population has declined to a precarious 76. But transient killer whale populations in the same region have been increasing at an estimated rate of three percent annually since federal marine mammal protection in the United States and Canada in the early 1970s. The inshore population is now thought to number close to 300 from Washington to southeastern Alaska.

Adding to that population are the descendants of the two whales that escaped the net at Pedder Bay. Once they had access to the marine mammals that sustained them, they thrived. The female gave birth to



Two captives with entirely different histories. Chimo, a white transient killer whale, and Haida, a southern resident killer whale, were housed at Victoria, British Columbia’s Sealand of the Pacific in the early 1970s. (Credit: Jason Colby, University of Victoria).

at least three calves and was last seen in 2009. The male lived until at least 1992.

With the dramatic rise of their prey—particularly harbor seals—to historical levels, transients are not starving. Besides their primary diet of marine mammals, they're also known to eat squid and even unsuspecting seabirds. Necropsies of dead transients reveal a “chamber of horrors”—stomachs filled with whiskers, claws, and other undigested prey parts, reports John Ford, an emeritus DFO whale scientist and adjunct professor at the University of British Columbia.

For now, times are good. With a changing ocean, what does the future hold for transient killer whales, their fish-eating cousins, and the ocean habitat they call home?

<https://www.hakaimagazine.com/features/hunger-games-two-killer-whales-same-sea-different-diets/>

## WONDERING ABOUT THE ECONOMIC IMPACT OF ECOTOURISM ON MARINE MAMMALS? READ HERE...

By Maddalena Bearzi

Jan. 10, 2018 — Marine tourism is now considered a “new frontier of late-capitalist transformation”, producing more revenue than aquaculture and fisheries put together. For many coastal communities, this industry is becoming the most significant economic activity.

Marine tourism spans from simple operations run by one or few people (charter fishing boat operators, sea kayak tour guides, scuba diving instructors, etc.) to medium-size operations (marine-nature-watching boats, charter-yacht companies, etc.) and large operations (e.g., cruise ship companies).

As part of this large industry, marine mammal-based ecotourism, especially whale-watching (while not all cetaceans are whales, cetacean-watching trips are often referred to as “whale-watching”) has risen as a novel form of commercial and non-consumptive (nonlethal) wildlife activity. Other forms of this kind of “green” tourism involving marine mammals comprise, among others, swim-with-wild-dolphin programs (occasionally combined with whale-watching tours), dolphin provisional feeding programs, watching polar bears, or visiting pinniped rookeries.

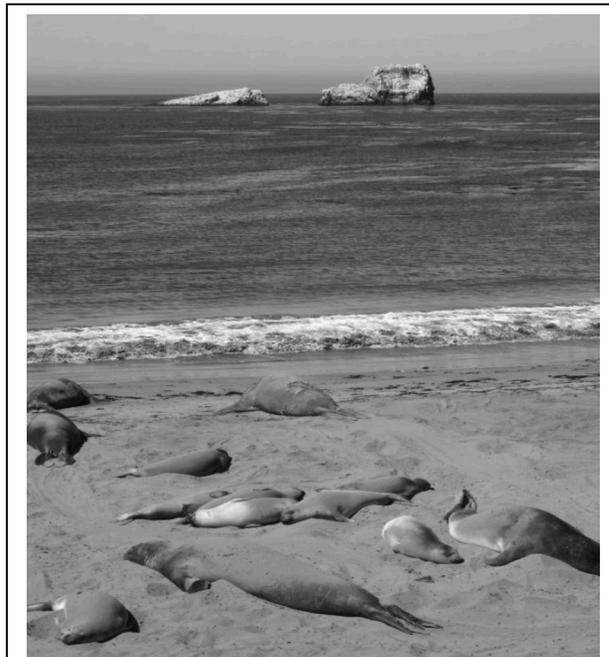
The rapid growth of this business is linked to the broad appeal that these charismatic and large animals have on many people and to coastal habitats that make some of them readily accessible. Nearly half of the human population on our planet lives near water and

uses the oceans as recreational playgrounds on a regular basis.

Whale-watching, the pillar of marine mammal-based ecotourism and currently the greatest economic activity reliant upon cetaceans, is not a new thing, as it has been ongoing as a commercial endeavor for more than 60 years. Its origin seems to coincide with a whale-watching trip that took place off California back in 1955. Here, a solo entrepreneur charged \$1 a person for a ride on his fishing boat to observe migratory gray whales (*Eschrichtius robustus*).

Based on the definition of the International Whaling Commission, whale-watching represents “any commercial enterprise which provides for the public to see cetaceans in their natural habitat.” Whale-watching, although mostly conducted aboard boats, also includes land-based or even aerial observations. In 2005, the IWC corrected the definition to include not only commercial businesses but also the public going to sea with their own vessels to observe cetaceans and/or research trips with paying guests.

In the last two decades, this marine tourism has increased substantially, becoming a worldwide profitable industry and affecting many nearshore populations of cetaceans. Since the 1990s, the number of people participating in boat-based whale-watching worldwide has expanded considerably, from 4 million in 31 countries in 1991 to 13 million in 119 countries in 2008.



“Pinniped Viewing” is quite popular because species such as elephant seals and sea lions are easily accessible by boat and/or on foot. (Credit: Maddalena Bearzi / Ocean Conservation Society).

The International Fund for Animal Welfare estimated the value of this business at \$2.1 billion back in 2008. Recently, the development of this eco-business has been increasing exponentially in Europe, Asia, the Caribbean, and South America.

Swim-with-wild-dolphin programs, considered a subset of the whale-watching industry, are also operated in different parts of the world, becoming exceptionally popular in the Caribbean. These types of programs are considered *active* or *passive*, depending on whether humans are interacting with cetaceans (usually dolphins) or cetaceans are allowed to approach swimmers of their own will. Another subset of whale-watching includes marine mammal “provisioning” activities, which usually involve feeding wild dolphins in shallow waters. Monkey Mia, in Australia, is one of the most popular spots for this type of tourism.

Cetaceans are not the only marine mammals affected by tourism. Weighing up to 1,200 pounds, manatees (*Trichechus* sp.) have been the focus of ecotourism and swim-with programs for several decades. The Crystal River Refuge in Florida, for instance, is a drawcard for people looking to swim with or kayak near these animals, hosting more than 327,000 visitors in 2014.

Pinnipeds also appeal to tourists due to their behavioral traits that make them easily accessible by boat and/or on foot. Often, whale-watching trips include some type of “pinniped viewing” in their on-the-water tours. Watching seals, sea lions, and other pinnipeds has become more popular in the last couple of decades, involving a wide range of species in various locations worldwide.

A study conducted by Kirkwood and other authors reported approximately 80 pinniped tourism sites in the Southern Hemisphere alone, with an economic value of around U.S. \$12 million; the Australian component included 53 operators visiting 23 sites and involving around 400,000 tourists. Pinnipeds also attract tourism in several locations in North America, the Galápagos Islands, and Europe.

An important breeding site in North America is located on San Miguel Island, in the Channel Islands National Park and Marine Sanctuary, California. Here, there are approximately 70,000 California sea lions (*Zalophus californianus*), 50,000 northern elephant seals (*Mirounga angustirostris*), 5,000 northern fur seals (*Callorhinus ursinus*), and 1,000 harbor seals (*Phoca vitulina*). In 2012, about 265,000 tourists visited these islands. Usually, seals and sea lions are observed at their breeding colonies and/or at the haul-out sites, but some pinnipeds—such as sea lions—can also be observed near urban centers.

Even the cold polar regions are not immune to the masses brought by marine mammal-based tourism. Visitors in the Arctic now exceed the host population at several destinations, and local communities are increasingly dependent on the jobs, income, and business revenues generated by this type of tourism.

On the opposite pole, things are not much different. Tourism in Antarctica has expanded greatly in the last decades, with shipborne tourists increasing by 430% in 14 years and land-based tourists by 757% in 10 years.

Going out to sea to observe dolphins, whales, and other marine mammals has gained even more momentum in the last few years, due to the crisis in the captivity industry. Anti-captivity campaigns and documentaries such as *The Cove* and *Blackfish* have helped to raise public awareness about the status of dolphins and whales kept in tanks. Inside academic circles, scientists have begun to recognize these animals as cognitive beings with personalities and emotions. As a result of this deepening “animal-human bond,” the number of people feeling empathy and compassion toward these and other animals is growing and so has the interest in experiencing wildlife away from bars or glass. Whale-watching, either boat-based from land or atop a paddleboard, seems the obvious and right alternative to visiting animals in captivity.

The benefits of marine mammal-based ecotourism span from a better appreciation of the marine environment to bolstering local economies, particularly in developing countries in which



Surfer and bottlenose dolphins off Los Angeles, California. (Credit: Maddalena Bearzi / Ocean Conservation Society).

ecotourism represents an alternative way of “using” natural resources.

For animal lovers, whale-watching and other types of marine mammal viewing in natural habitats are an incredible and often once-in-a-lifetime experience. For conservationists, it’s a chance of educating the public, raising awareness and interest in conservation issues facing cetaceans and other marine mammals, finding sustainable alternatives to fishing, and ending captivity in marine parks. For instance, in places like Japan, where the whaling industry still seems unstoppable, whale-watching could represent a lucrative alternative to the hunting of cetaceans and a response to the country’s recent cultural shifts.

Marine mammal-based tourism, if conducted properly and on a sustainable basis, is a “benign” industry. Ecotourism done right cannot only work, but it can work well. Marine mammals’ welfare should, however, remain the main objective of this industry because, without these animals, there will be no ecotourism at all.

<https://blog.nationalgeographic.org/2018/01/10/wondering-about-the-economic-impact-of-ecotourism-on-marine-mammals-read-here/>

## SIGHTINGS

Sightings are compiled by Monterey Bay Whale Watch. For complete listing and updates see <http://www.montereybaywhalewatch.com/slstcurr.htm>

Date	#	Type of Animal(s)
1/23 10 am	19	Gray Whales
1/22 10 am	7	Gray Whales
1/21 1:30 pm	8	Gray Whales
1/21 11:30 am	12	Gray Whales
1/21 10 am	18	Gray Whales
	15	Risso’s Dolphins
1/20 10 am	7	Gray Whales
	8	Risso’s Dolphins
1/20 8 am	3	Gray Whales
	1	Humpback Whale
1/18 10 am	14	Gray Whales
1/17 10 am	1	Humpback Whale
	1	Bottlenose Dolphin
1/16 10 am	30	Gray Whales
1/15 1:30 pm	11	Gray Whales
	40	Risso’s Dolphins
1/15 10 am	15	Gray Whales
1/15 8 am	23	Gray Whales
	7	Humpback Whales
	60	Risso’s Dolphins

1/14 1:30 pm	16	Gray Whales
1/14 11:30 am	42	Gray Whales
1/14 10 am	1	Gray Whale (breaching)
	6	Humpback Whales
1/13 1:30 pm	14	Gray Whales
1/13 11:30 am	6	Humpback Whales
1/13 10 am	5	Gray Whales
	6	Humpback Whales
1/12 11:30 am	1	Gray Whale
	6	Humpback Whales (lunge feeding)
1/12 10 am	9	Gray Whales
	7	Humpback Whales
1/11 10 am	5	Gray Whales
	6	Humpback Whales
1/10 1:30 pm	1	Gray Whale
	4	Humpback Whales
1/10 10 am	1	Gray Whale
	8	Humpback Whales
1/8 11:30 am	3	Gray Whales
	3	Humpback Whales
	20	Risso’s Dolphins
	2	Harbor Porpoise
1/7 1:30 pm	17	Gray Whales
	3	Humpback Whales
1/7 11:30 am	22	Gray Whales
	5	Humpback Whales
1/7 10 am	7	Gray Whales
	5	Humpback Whales
1/6 1:30 pm	8	Humpback Whales
1/6 11:30 am	3	Humpback Whales
1/6 10 am	18	Gray Whales
1/6 8 am	24	Gray Whales
1/5 1:30 pm	4	Gray Whales
	4	Humpback Whales
1/5 11:30 am	3	Humpback Whales
	10	Harbor Porpoise
1/5 10 am	12	Gray Whales
	45	Pacific White-sided Dolphins
1/5 8 am	5	Gray Whales
	4	Humpback Whales
1/4 10 am	3	Gray Whales
	1	Killer Whale (Lonesome George)
	9	Humpback Whales
1/3 11:30 am	6	Humpback Whales
1/3 10 am	10	Gray Whales
1/3 8 am	8	Gray Whales
	1	Humpback Whale
1/2 1:30 pm	3	Gray Whales
	5	Killer Whales
1/2 11:30 am	5	Gray Whales
	5	Killer Whales
	1	Humpback Whale
	5	Harbor Porpoise
1/2 10 am	2	Gray Whales
	5	Killer Whales
	4	Humpback Whales
	50	Dall’s Porpoise
	1	Blue Shark

American Cetacean Society  
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