

Soundings



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

MARCH 2010

**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, MARCH 25, 2010

TIME: 7:30 PM. **PLEASE JOIN US AT 7:00 FOR
REFRESHMENTS**

SPEAKER: GUY OLIVER, PH. D.

TITLE: NORTHERN ELEPHANT SEALS (*Mirounga angustirostris*)

The Northern Elephant Seal is one of the largest mammals on the planet with males approaching 5000 pounds and females exceeding 2000 pounds. They are found in the eastern Pacific from Baja California, Mexico to the Gulf of Alaska and the Aleutian Islands. They are one of the deepest diving mammals only surpassed by the sperm whale.

Like many species of whales, Northern Elephant Seals were hunted to near extinction by the end of the 1800s. Hauling out for extended periods of time during puping and breeding season they were easy targets for hunters. When rendered, their blubber yielded a highly sought after, clean burning oil used in lamps. Eventually they were reduced to a single breeding colony off the west coast of Baja, California.

In the early 1900s Northern Elephant Seals were protected by law in Mexico and United States. Further protection came with the passing of the Marine Mammal Protection Act of 1972. As a result of legal protection the population has made a robust recovery. Somewhat ironically, the demise of the grizzly bear in California has also contributed to their recovery allowing the Elephant Seals to expand their haul outs from off shore islands to include mainland sites.

Our speaker is a field investigator who has been studying the Northern Elephant Seal especially those just up the coast from us at Ano Nuevo. Not only has he studied the animal itself, he has also been fundamentally involved in designing instrument tags which allow collection of data from this deep diving hunter. Currently in the field, Guy is gathering data and checking up on individuals he has been following for some time.

Please join us for an informative presentation about this amazing creature that also represents a very successful conservation effort.

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CALENDAR

Thru April 24: "World of Fishes" Exhibit at the Pacific Grove Museum of Natural History. Exhibit will showcase diversity and biology of fishes from around the world.

April 10th (Sat) 8am-3pm. Sanctuary Currents Symposium: "Voices of Hope: Science and Innovation for the Ocean" Symposium will be held at CSUMB. ACS will be participating and is seeking volunteers. Contact Diane Glim at dianeglim@comcast.net to volunteer.

April 16-18: Sea Otter Classic bicycle event at Laguna Seca. Viva Vaquita will have a booth to inform participants and spectators about the most endangered cetacean.

April 18 (Sun) 10am-4pm: Earth Day Whale Festival. Leo Carrillo State Park 35000 W. PCH Malibu, CA.

April 27-29 : International Sea Turtle Society: 30th Sea Turtle Symposium. Goa, India.

May 17-20, 2010. 61st Tuna Conference. Lake Arrowhead, CA. It's Not About the Catch but the Bycatch

May 22 (Sat) 8am-4pm. ACS National Humpback Whale Fundraiser Trip will take place on the Condor Express Santa Barbara. For more info and to make reservations call Bernardo Alps at (310) 597-0449

August 25-29: Blue Ocean Film Festival Monterey, CA. A global Ocean Film and Conservation Event (www.bluefilmfest.com). More Info To Follow

August 28, 9am-1pm ACS Monterey Bay Chapter Summer Whale Watch Fundraiser. Cost-\$50.00 Boat-Sea Wolf 2
Location-Monterey Bay Whale Watch-Fisherman's Wharf, Monterey ,CA.

Whales of the summer include blue, humpback, fin, minke and killer whales
For more info and reservations call Tony Lorenz at 831-901-7259

UCSC Summer Marine Science Courses:

Biology of Marine Mammals Bio 129
Session Two: July 26-August 27, 2010

Marine Science Illustration SCIC 126
Session Two: July 26-August 27, 2010

Nov.12-14: The American Cetacean Society 12th International Conference will be held in Monterey at the Embassy Suites Hotel and Conference Center. Local Monterey Bay ACS chapter volunteers are needed, and sign-ups will be available at the monthly meetings

ACS National Executive Director Cheryl McCormick is currently attending preliminary meetings to prepare for the IWC meeting in Morocco. Daily postings are available at <http://iwcblogger.wordpress.com/>

BOOK

RECOMMENDATIONS

The Whale: In Search of the Giants of the Sea
By Philip Hoare (Winner of the Samuel Johnson Prize for Nonfiction)

People of the Whale. By Linda Hogan (Pulitzer Prize Finalist)

Southern Resident Community Orca Family Group 2010. Photos and descriptions of J, K and L Pods in their family groups. Available at the Whale Museum in Friday Harbor, Washington

Rare: Portraits of America's Endangered Species.
By Joel Sartore. 2010 National Geographic Publications

EXPERTS OBSERVE WHALE HUNT NOISE

Scientists on Shetland believe they may have discovered a previously unobserved technique being used by killer whales to catch herring.

Researchers from Aberdeen and St Andrews Universities recorded the whales emitting a low-pitched noise which caused the fish to bunch up.

The mammals then stun the fish with their tails before eating them.

The scientists said this behaviour has not been seen anywhere else in the world.

The findings have come to light in the BBC2 series "Simon King's Shetland Diaries".

Whale researcher, Dr Volker Deecke, demonstrated how his team used underwater microphones to record unusual sounds made by killer whales.

They included a low-pitched noise that the researchers believe caused the herring to bunch up in a tight shoal.

The whales then slap the shoal with their tails to stun the fish before killing and feeding on them.

It is only a theory at this stage and studies will resume in the summer, but the evidence is described as compelling, even though this behaviour hasn't been seen before in any orcas anywhere else in the world.

The use of a herding call was first described from Iceland by research colleagues of Dr Deecke.

However, it was believed that this hunting technique was confined to Iceland, as other killer whale populations feeding on herring did not appear to use it.

ACOUSTIC RESEARCH

Scientists said the fact that the herding call had been recorded in the waters around Shetland suggested that the large groups of killer whales seen feeding offshore are part of the Icelandic herring-feeding population.

Volker Deecke said: "It illustrates the value of doing acoustic research when trying to determine the population identity of killer whale populations.

"Even a short recording of sounds can answer questions that could take years of work using other methods such as photographic identification of individuals".

Simon King said: "There is something about the beast from the deep rising up. It is just amazing.

"These are sentient animals, with complex family structures, but being so close you really get the sense that there is so much more to these creatures than we currently know".

The research was funded by the Carnegie Trust for the Universities of Scotland with additional support from Scottish Natural Heritage and SEERAD.

DOLPHINS TURN DIABETES OFF AND ON -- HOPE FOR HUMANS? EVOLUTIONARY ADAPTATION MAY MIRROR ICE AGE MUTATION IN HUMANS

Victoria Jaggard in San Diego, National Geographic News. Feb19, 2010

Bottlenose dolphins have what could be called type 2 diabetes, but unlike humans, the animals are able to turn it off and on—perhaps an evolutionary adaptation to maintain their big brains, new research suggests.

Diabetes may have arisen in Ice Age humans for similar reasons, so the newfound dolphin on-off switch may be a key to curing type 2 diabetes in people.

Like humans, dolphins have relatively large brains compared to their body sizes—in fact, dolphins are second only to humans in the ratio between body and brain size.

Scientists know that humans need plenty of a sugar called glucose to keep their brains functioning. Some researchers think the same might be true for dolphins, since both species send high amounts of glucose through their bloodstreams.

Dolphins, however, primarily eat fish, which are high in protein and low in sugar. To get enough glucose from this diet, dolphins have evolved a mostly harmless form of insulin resistance, according to Stephanie Venn-Watson, director of clinical research for the U.S. nonprofit National Marine Mammal Foundation.

Insulin is a hormone that helps the body turn blood sugar into energy. People with type 2 diabetes either don't make enough insulin or are resistant to its effects. Without insulin to break down glucose, too much sugar builds up in the blood, leading to complications such as glaucoma, nerve damage, arterial disease, and kidney failure.

But unlike people, dolphins can activate their diabetes only when the animals need it—and without the serious side effects, Venn-Watson said. Dolphin diabetes "turns on during their short overnight fast and turns off when they have breakfast in the morning," she said.

Not all experts, however, are convinced that dolphins use blood sugar in the same ways that humans do. Even though both species are mammals, dolphins and people have very different metabolisms, noted Lori Marino, a neuroscientist and behavioral biologist who specializes in bottlenose dolphins at Emory University in Georgia and was not involved in the foundation's research.

"Dolphins have a layer of blubber, for example, but humans don't. That shows we have very different ways of storing energy," Marino said. "Whether dolphins have the same energy requirements we do is doubtful."



A bottlenose dolphin at the National Aquarium in Baltimore, Maryland.
 Photograph by Vincent J. Musi, National Geographic Stock

DON'T FEED THE DOLPHINS TWINKIES

The link between dolphins and diabetics first surfaced several years ago, when researchers at the National Marine Mammal Foundation began analyzing data from U.S. Navy studies done in the 1970s.

Those studies used blood and urine samples taken from captive bottlenose dolphins and examined changes in blood chemistry due to high-sugar versus high-protein diets.

The data showed that dolphins that were fed sugar developed long-lasting high glucose levels that mimic those seen in people with diabetes.

"If we started feeding dolphins Twinkies, they would develop type 2 diabetes," the foundation's Venn-Watson said Thursday at a meeting of the American Association for the Advancement of Science in San Diego, California.

In recent experiments, Venn-Watson's team found that dolphins that fast overnight experience changes in their blood chemistries like the fluctuations seen in human diabetics. But the dolphins go back to healthy blood sugar levels after they eat.

ICE AGE CONNECTION?

Most recently, the foundation's preliminary data has shown that some dolphins can develop harmful side effects from having too much insulin, such as kidney stones and a form of iron overload in the blood called hemochromatosis.

Hemochromatosis has been linked to insulin resistance in humans, and its symptoms can include everything from arthritis to liver cancer.

For the most part, however, dolphins seem to be able to control their diabetes-like condition to maintain healthy blood-sugar levels.

Venn-Watson pointed out that previous research had proposed a similar evolutionary event in humans: During the Ice Age, sugar-rich foods such as fruits became scarce in cold regions, so humans switched to a high-protein diet. Diabetes may have developed as a way for these early humans to cope.

CAPTIVE DOLPHIN DATA UNRELIABLE?

The combined evidence suggests to Venn-Watson and her colleagues that dolphins could be used as guinea pigs, broadly speaking, in the search for a cure for type 2 diabetes in humans.

Venn-Watson's team is now reaching out to diabetes researchers to help determine whether dolphins will in fact be good stand-ins for diabetic patients.

Marino, the brain expert, remains dubious. "In a general way our brains are very much alike," Marino said. "They're highly differentiated with a big neocortex"—the region of the brain associated with higher thought.

Still, there are vast differences among dolphin and human brain structures and nervous systems, which would make the marine mammals unlikely models for clinical trials, she said.

Marino and her colleagues are instead tying together a recent explosion of imaging data on dolphin brains to try and change how the marine mammals are treated.

"We want to talk about the implications of things like drive hunts"—herding dolphins into coves for slaughter—"and the effects of captivity," she said.

Those discussions would include a careful look at the reliability of data from captive dolphins, such as those used in the National Marine Mammal Foundation's original 1970s data and in the recent research highlighted at yesterday's meeting.

"You're talking about dolphins under high amounts of stress," she said. "There're questions about how good data on physiological processes affected by stress from captive animals can be."

Though their recent findings relied on captive dolphins, Venn-Watson emphasized that her team would not encourage any

pharmaceutical researchers to use live dolphins in the lab.

Instead, researchers could search the dolphin genome, which has been sequenced, for clues to the diabetic switch and compare the findings to observations of human genes.

HERRING THAT SURVIVED ALASKAN OIL SPILL MAY BE ENDANGERED BY HUMPBACK WHALES

February 23, 2010 ANCHORAGE -- Something is holding down the herring population of Alaska's Prince William Sound, and marine scientists are tailing some rather large suspects: humpback whales.

Humpbacks, once hunted to near extinction, are thriving in waters fouled 21 years ago by the Exxon Valdez, the supertanker that ran aground and leaked nearly 11 million gallons of crude oil.

The herring population crashed after the spill but should have rebounded by now. One hypothesis is that humpbacks, traditionally summer residents in the sound, are taking a big bite out of vast herring schools that form in the deep water of the sound's fjords each autumn.

Jan Straley, a marine biology professor at the University of Alaska Southeast, and other researchers have studied whales the last two winters with surprising results. Humpbacks are showing up in significant numbers, even in winter.

This research "did show that whales were exerting predation pressure on Prince William Sound herring, which is potentially impeding the recovery," Straley said.

The gash in the 987-foot-long Exxon Valdez on March 23, 1989, oozed oil into the sound about the time adult herring were laying eggs. By 1993, just 25 percent of the expected adults were returning to spawn. State regulators closed commercial fishing in 1993, and it has stayed closed most of the time since then.

Herring play a vital role in the food chain. The silvery fish with blue-green upper bodies, considered large when they reach nine inches, are

food for eagles and other seabirds, halibut, cod and -- most important to humans -- five varieties of Pacific salmon.

The Exxon Valdez Oil Spill Trustee Council, formed to oversee restoration of the injured ecosystem, says the reasons for the poor recovery remain largely unknown. It sees no indication that herring spawning areas overlap with remaining oil. Other suspects include disease, ocean changes, contaminants and competition from other fish. Straley and others funded by the trustee council are looking at humpbacks.

Humpbacks are baleen whales. Their throats expand to ingest large volumes of water, which the whales force out across baleen, which are flat, flexible plates that filter out and catch herring, zooplankton or krill, tiny floating crustaceans.

Though still listed as endangered, humpbacks have made a promising comeback, increasing 5 to 7 percent per year in the North Pacific.

Anecdotal evidence from fishermen and other boaters, Straley said, indicated that humpbacks were increasingly using Prince William Sound in winter. Straley's research confirmed that whales were feeding mostly on herring. Ron Heintz, another research biologist, set up a model to estimate the proportion of spawning biomass that could be consumed by whales in winter, when herring bunch in schools that can be miles long and hundreds of feet deep.

Heintz's model gave a range of how much herring the whales might be eating: between 2,200 and 13,000 metric tons over the winter, a significant portion of the estimated total.

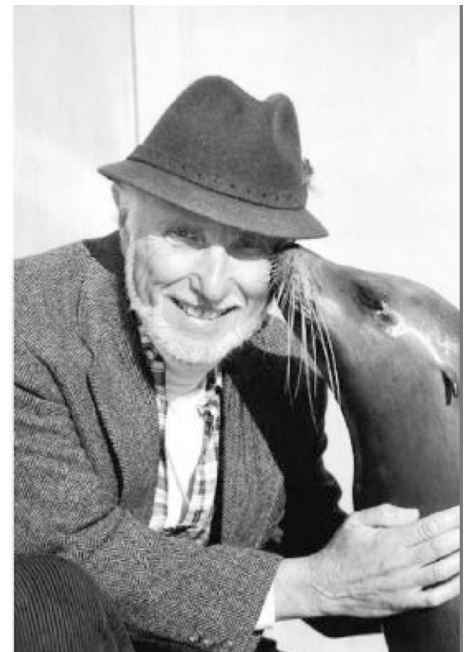
"The whales were able to consume somewhere between 10 and 66 percent of that pre-spawning biomass," Heintz said. "Another way to look at that is that the last commercial fishery in Prince William Sound was about 3,500 metric tons, so the whales are clearly capable of consuming a biomass that would be in the ballpark of a commercial fishery in Prince William Sound." The biologists say that their work is just a snapshot and that more research is

needed. They want to find out if whales are feeding at night and whether humpbacks have reached juvenile herring.

PIONEERING MARINE MAMMAL SCIENTIST RONALD SCHUSTERMAN DIES AT AGE 77

By Alia Wilson
LA SELVA BEACH -- Ron Schusterman, a pioneer in studying the behavior of marine mammals, died on Feb. 11 at Stanford Hospital. He was 77.

Schusterman was a research marine biologist and adjunct professor of ocean sciences at UC Santa Cruz from 1985 until his retirement in 2003. He founded the Pinniped Cognition and Sensory Laboratory at UCSC's Long Marine Laboratory. He worked there with California sea lions, harbor seals and elephant seals conducting experiments to understand how they perceive and think about the world.



Ron Schusterman, who established one of the first marine mammal labs in the country at Coyote Hills in the 1960s, died Feb. 11. His research program moved to Long Marine Lab at the UC Santa Cruz in 1985 where it continues today. He did pioneering research on the behavior and cognitive abilities of marine mammals and is credited with dispelling the notion that pinnipeds echo-locate.

"Ron carried out truly pioneering work on cognition and sensory physiology of marine mammals," said Daniel Costa, professor of ecology and evolutionary biology at UCSC. "He was an exceptional experimentalist, and his research has stood the test of time, ranking among the classic

works on marine mammals and animal cognition."

Schusterman was born in New York and grew up in the Bronx. He earned a bachelor's degree in history and political science at Brooklyn College and a master's and doctorate in psychology at Florida State University. His first research position was at the Yerkes Laboratory of Primate Biology in Florida, where he investigated the cognitive and social behavior of chimpanzees, gibbons and monkeys.

In 1963, Schusterman was recruited to the Stanford Research Institute in Palo Alto to study the behavior and sensory physiology of pinnipeds. There he helped debunk the idea that pinnipeds use echo-location like dolphins and bats. He continued to study hearing and vision in pinnipeds, first at Stanford and later at CSU East Bay where he held a joint appointment in the psychology and biology departments. In 1985, he moved his research program to the Long Marine Lab.

A photo of a sea lion on the cover of World Magazine first sparked Colleen Reichmuth's interest in working for Schusterman at the Long Marine Lab.

"I came all the way from the Midwest to learn more about the research and fell in love with whole program," said Reichmuth, who now directs the research program that Schusterman founded.

A founding and honorary member of the Society for Marine Mammalogy, Schusterman was a fellow of the Animal Behavior Society, Acoustical Society of America, American Psychological Association, American Association for the Advancement of Science and the California Academy of Sciences.

"He was a very intelligent man, a hard worker, and he definitely loved what he did," said Nicole Montez, one of Schusterman's daughters. "He was a great teacher and a dedicated father. He always took the time to take us to cultural and sporting events and of course aquariums and all the different marine parks in the states. I have a lot of great memories."

SIGHTINGS compiled by Monterey Bay Whale Watch. For complete listing and updates see www.gowhales.com/sighting.htm

<u>Date</u>	<u>#</u>	<u>Type of Animal(s)</u>
2/18	11	Gray Whales
	120	Risso's Dolphins
2/17	9	Gray Whales
2/16	8	Gray Whales
	25	Risso's Dolphins
2/15 p.m.	5	Gray Whales
2/15 a.m.	3	Gray Whales
2/14 p.m.	10	Gray Whales
	445	Risso's Dolphins
2/14 a.m.	2	Gray Whales
	1	Humpback Whale
2/13 p.m.	3	Gray Whales
	850	Risso's Dolphins
2/13 a.m.	9	Gray Whales
	850	Risso's Dolphins
2/13 early a.m.	2	Gray Whales
	25	Risso's Dolphins
2/12 p.m.	6	Gray Whales
	30	Risso's Dolphins
2/12 a.m.	9	Gray Whales
	150	Risso's Dolphins
2/11 p.m.	6	Gray Whales
2/11 a.m.	8	Gray Whales
	45	Risso's Dolphins
2/10 p.m.	3	Gray Whales
	15	Pacific White-sided Dolphins
	400	Long-beaked Common Dolphins
	40	Risso's Dolphins
2/10 a.m.	9	Gray Whales
2/9 p.m.	11	Gray Whales
2/9 a.m.	8	Gray Whales
2/7	1	Gray Whale
	185	Risso's Dolphins
2/6	16	Gray Whales
	200	Risso's Dolphins
2/5 p.m.	3	Gray Whales
	60	Risso's Dolphins
2/5 a.m.	9	Gray Whales
2/4 a.m.	5	Gray Whales
	500	Risso's Dolphins
2/3 p.m.	13	Gray Whales
2/3 a.m.	11	Gray Whales
2/2 p.m.	8	Gray Whales
2/2 a.m.	16	Gray Whales
	125	Risso's Dolphins
2/1	12	Gray Whales
	125	Pacific White-sided Dolphins
	450	Northern Right Whale Dolphins
	8	Killer Whales *

Skipped dates indicate no trip
*transient types

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