Soundings

American Cetacean Society ~ Monterey Bay Chapter **June 2007**

The Newsletter of the Monterey Bay Chapter of ACS
AMERICAN CETACEAN SOCIETY - MONTEREY BAY CHAPTER
Monthly meeting at HOPKINS MARINE STATION, Lecture Hall, Boatworks Building
(Across from the American Tin Cannery Outlet Stores)

Date: Thursday, June 28, 2007

Time: 7:30 PM PLEASE JOIN US AT 7:00 FOR REFRESHMENTS

Speaker: Steve Shimek

Title: Sea Otters and Safe Seas: What can be done?

Sea otters are important to us and our ecosystem in many ways. As apex predators they play an important function in their own food web, as a keystone species they have an impact outside of their food web by playing a key roll in maintaining the kelp forest habitat and as an indicator species they provide insight into the health of the near shore environment.

Sea otters are perhaps the most studied and best understood marine mammal. It is clear now that sea otters often suffer from suppressed immune systems and they are swimming in an ever thickening soup of disease. Our speaker will discuss current population trends along with actions that can be taken to encourage sea otter recovery and improved ocean health. This discussion will include the impact of toxic chemicals, sewage, domestic and feral cat feces, jet skis and fishing gear on the well being and recovery of the sea otter population.

Our speaker, Steve Shimek is executive director of both The Otter Project, a non-profit organization dedicated to the recovery of the California sea otter and near shore ocean health and the Monterey Coastkeeper, a water quality watchdog group. Steve also serves on the US Fish and Wildlife Service Sea Otter Recovery Implementation Team and is Co-Chair of the Monterey Bay National Marine Sanctuary Conservation Working Group.

Saving sea otters is the right thing to do and benefits us all. Please join us and learn about real solutions and real actions that will support the continued recovery of this important marine mammal.

Program information is by Bob Mannix.

Photograph courtesy of Jeff Foott, provided to *Soundings* by Jamie Dagdignian, Dagdignian Designs

C A L E N D A R

July - wait for it! We'll have news on July events soon. Traditionally, July is barbecue time for the chapter.

August 18: Benefit whale watch cruise for ACS Monterey Bay . This is one way we fund education, research and the newsletter, so sign up as soon as details are available.

So, where are the blue whales?

Each year we look at evidence of the productivity of the Bay and we wonder if krill will be available in quantities to feed the largest animals on earth. Tony Lorenz joined the ACS whale watch on May 13, off southern California, and reports blue whales feeding there. During a good year, we may see blue whales arriving by the first part of July and remaining into November or so. Stay tuned.

Note: just in case you've been away from all press, tv and web news, here are excerpts from one of the articles about the return of a humpback mom/calf pair to the Pacific after their sojourn in San Francisco Bay and the delta.

Whales assumed to have returned to ocean May 31, 2007

Oakland Tribune, The (CA) Author: Cassandra Braun, Rowena Coetsee and Judy Prieve, MEDIANEWS STAFF

SAN FRANCISCO — After more than two weeks of swimming up and down the Delta, a humpback whale and her calf appear to have returned quietly to the Pacific Ocean. Marine experts are optimistic that the long, worrisome sojourn of the two humpback whales, dubbed Delta and Dawn, is finally over. The two whales that swam their way 90 miles to Sacramento were last seen around 8:40 p.m. Tuesday near Tiburon, a five-mile home stretch from the Golden Gate Bridge. They have not been spotted since.

By mid-day Wednesday, rescuers had moved their command center to the Farallones National Marine Sanctuary at San Francisco's Presidio to be closer to the Golden Gate Bridge in case the whales resurfaced nearby. At the rate they had been traveling for the past two days, U.S Coast Guard officials had guessed that the whales would have reached the bridge around noon.

The whales' quiet leave-taking came on the tail of a surprising burst of breakneck swimming, following weeks of lollygagging in the Delta. Experts began to worry that the two were struggling to find their way down the tributary and out to sea. For days they appeared to retrace their course back and forth under the Rio Vista Bridge, prompting rescuers to try a multitude of things to coax them downstream to the Bay. It was at this point they became seriously concerned about the whales' health, particularly the condition of their skins. They administered antibiotics on Saturday, the first time that had been done with humpback whales in the wild. By Monday, they saw improvements in skin tone, possibly from the antibiotics, the salt water or both.

Experts also took samples of the whales' skin to try to learn which migration group they came from and more about their general health. They hope to eventually track the whales by their dorsal markings, as they did with Humphrey another humpback who swam into the Delta in 1985 and returned to Candlestick Point in 1990.

Continued: **Karl Kenyon...** *From page 3, opposite.*

I remember the day Jud and I toured both Kenyon and Scheffer through the sea otter working areas of the Monterey Bay Aquarium in 2000. I watched three pioneer sea otter researchers – watching otters.

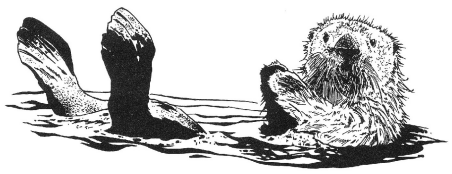
Jud says he asked Kenyon if he felt honored to have the Alaskan sea otter sub species named for him: *Enhydra lutris kenyoni.* The split into sub species was controversial when it began in 1990. Kenyon replied that he was furious about it because he didn't believe the Alaskan sea otter was a sub species.

The newspaper obituary for Karl Walton Kenyon, Seattle Times, 4/8/2007, states he was born and raised in LaJolla and attended Pomona College and Cornell University. He served in World War II as a naval aviator aboard the USS Sangamon escort carrier. He is said to be largely responsible for the reintroduction of the sea otter to the Washington coast. His research projects included studying the Laysan Albatross on Midway Island and the Hawaiian Monk seal in the northwestern Hawaii islands. "Both his professional and private life were distinguished by his continual work on environmental causes and wildlife protection." It's hard to see giants pass away. Obviously his work will live on. Let's make sure his sea otters do, too. ~ /2

Karl Kenyon and His Classic Book

By Esta Lee Albright

The Sea Otter in the Eastern Pacific Ocean, by Karl Kenyon, Dover Publications, 1975, remains a milestone in the literature of marine mammals. The energetic scientist, with sharp, twinkling eyes, who wrote this book, died March 27th of this year in Hilo, Hawaii.



On the "first brief visit to Amchitka in the late fall of 1947, Dr. V.B. Scheffer and I found dead otters on the beaches," and his research started. His study for U.S. Fish and Wildlife Service began in 1955, to determine the status of the sea otter and provide information for future decisions on management. Alaska became a state in 1959 and the statehood act provided that Alaska had jurisdiction over the exploitation of game and fur-bearing mammals, including the sea otter. A harvest of sea otter pelts was declared. "One thousand pelts were available for the first public auction (since protection in 1911) on 30 January 1968, at Seattle, WA." This harvest helped make specimens available for biological research and, in his Introduction to the book, Kenyon states that many of the facts "thus obtained are presented in this report."

It's true that many of the studies, elements of physiology, anatomy, habitat, foraging, reproduction and wild behavior, are benchmarks. Some were updated by U.S. Fish and Wildlife Service Biological Report 90 (14), Sep. 1990, ***The Sea Otter (Enhydra lutris): Behavior, Ecology and Natural History*****,** by Marianne L. Reidman and James A. Estes. The bibliography of that report carries six references to Kenyon's publications. In 1996, ***Endangered Species Update*****,** University of Michigan, published a special issue on "Conservation and Management of the Southern Sea Otter." One third of the twenty-one articles listed Kenyon in their bibliographies.

The Dover edition of his work was first published in 1975. It states that it is an unabridged and corrected republication of the work originally published in 1969 by the Bureau of Sport Fisheries and Wildlife at the U.S. Government Printing Office... as Number 68 in the North American Fauna series. List of references. Appendices. 123 illustrations, 64 tables. Both editions can be found in used book stores. When I once asked Karl Kenyon which edition he preferred, he immediately answered, "The reprint. We got to correct all our errors."

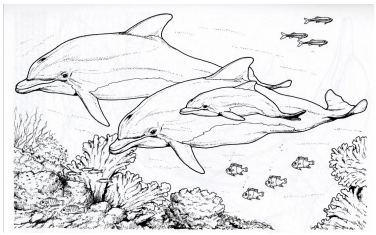
This was in July of 1991, and he had just returned to the Seattle area after participating in a census of sea otters off Neah Bay, WA. His early research had tackled the prospect of translocation, too. In the 1949-53 period, Aleutian National Wildlife Refuge Manager R.D. Jones initiated a translocation but all captive otters soon died. "This experience demonstrated that until further knowledge of the animals' biological needs was gained, transplanting attempts would be futile," said Kenyon. Bulletin number 68 helped that situation. According to Jud Vandevere, pioneer research biologist re the southern sea otter, the Alaskan sea otters later translocated to Oregon swam north to Washington. The population faltered but recovered. When I met him, Karl Kenyon was still going strong forty- seven years after his "brief visit" to Alaska. His dry sense of humor delivered a few comments about that!

That sense of humor was often evident. Jud Vandevere remembers Kenyon's comment during the question and answer section of Jud 's presentation at the 1970 **Annual Conference on Biological Sonar and Diving Mammals,** entitled "Reproduction in the Southern Sea Otter." Kenyon commented to the assemblage that, if he had spent as much time observing sexual behavior in Alaskan otters as Jud had spent in southern sea otters, the differences that Jud had listed would have been far fewer.

At the time of the Dover book's publication, the southern sea otter surveys had counted 638 in 1957, to 618 in 1966. "These surveys indicate that the California sea otter population has not increased in recent years.
Other observations suggest, however, that the population in the area surveyed [Point Conception to Monterey Bay]did not increase because sea otters wandered to other areas," Kenyon wrote. He never stopped checking on this. Jud Vandevere remembers walking with him along the shoreline of Julia Pfeiffer Burns State Park in Big Sur, where they spotted a foraging sea otter. Jud says Kenyon had a stop watch on his wrist and was timing the dives as they watched.

Continued on previous page, p.2.

ACS Monterey Bay
Supports Research Projects for 2007



Those dollars you donate at the meetings, plus the fund-raising barbecues and whale watches you attend, all go a long way toward funding research projects about whales, dolphins and related critters. In addition, two long-term donations, made to honor Dr. Bethel and Alan Baldridge, fund two others. ACSMB is proud to announce the winning research proposals below. In the short excerpts from introductory paragraphs of the proposals, we have deleted references. Proposals are submitted with references, budgets, objectives, data and listing of methods. The ACSMB Board and Scientific Advisory Committee evaluate and rank proposals. For more information, contact the chapter president, Jerry Loomis, loomis@mbay.net.

Baldridge Award $1000 Tanya Graham, Moss Landing Marine Laboratories, Moss Landing, CA

Foraging ecology of leatherback sea turtles (Dermochelys coriacea) in Monterey Bay, California

"Leatherback sea turtles (*Dermochelys coriacea*) travel to the productive waters off California from May through October each year to feed on seasonally abundant swarms of jellyfish. The predictable arrival of critically endangered leatherback sea turtles to central California, particularly Monterey Bay, provides a unique opportunity to study the foraging ecology of this species. The objectives of my study are to characterize the poorly understood foraging grounds of leatherback turtles by assessing the abundance, distribution and nutritional content of jellyfish prey in the Monterey Bay area. Aerial surveys will be used to assess abundance and distribution of leatherbacks and jellyfish at the surface. Hydroacoustics will be used to assess distribution of jellyfish at depth, and elemental analysis will be used to determine nutritional content of jellyfish collected in net tows. I expect sightings of leatherback turtles in Monterey Bay will be positively correlated with jellyfish distribution. I predict the distribution of jellyfish to be concentrated around a hydrographic gradient, and skewed toward the northern portion of the bay.... This study will assist scientists in understanding the link between productive foraging off central California and successful nesting in the south Pacific, which will guide conservation and management decisions for critically endangered leatherback sea turtles."

Bethel Award $1000 Faviola Janette Guerrero de la Rosa,
Inst. Politecnico National, La Paz

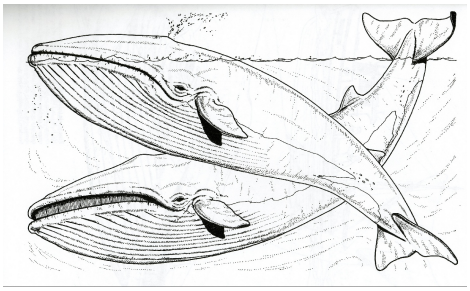
Diet variation in sperm whale of the Gulf of California using C and N stable isotopes.

"The sperm whale (*Physeter macrocephalus*) is considered a top predator in the mesopelagic ocean and his principal preys are mesopelagic and bathypelagic cephalopods. In the eastern South pacific and Gulf of California, the most important sperm whale prey is Dosidicus gigas, a large muscular squid commonly named "jumbo squid" and commercially harvested. These findings differ from other areas where sperm whales are considered opportunist predators. The signature of carbon (C) and nitrogen (N) stable isotopes in sperm whale skin and squid muscle confirmed that large size jumbo squid were the principal preys of sperm whales sampled mainly in the San Pedro Martir area, thus it is not known if there is a temporal or spatial variation in the sperm whale diet from the GC. The main objective of this project is to determine sperm whales' dietary variations according to different areas, seasons, and social organization using stable isotopes of carbon and nitrogen. This will provide more information about the diet and predator-prey relationship between sperm whales and the jumbo squid to improve the understanding of the ecological role of the sperm whale in the GC. In the process we will use sloughed and biopsy skin samples from the tissue collection of the CICIMAR-IPN research center (2000-2007), each skin sample corresponding to a known photo-identified individual according to the CICMAR sperm whale catalogue. Additionally we will determine if different lipid extraction protocols for stable isotope analysis affect the isotopic value in skin samples."

/4

ACSMB Chapter Award $1000 Christian Javier Salvadeo, Centro Interdisciplinario de Ciencias Marinas, La Paz

Space-temporal distribution and diversityof odontocetes and their environment, at the southwestern side of the Gulf of California, Mexico (2003-2006)



Bottlenose dolphin and Blue whale drawings by John Green, Dover Press

"The distribution and diversity of organisms has been one of the fundamental aims of ecology related research. This stems from the fact that these studies permit understanding the relations between organisms and environment, including other organisms.... high diversity and abundance of organisms inside the Gulf is determined by its high primary productivity (which supports the trophic nets in the marine environment), the environmental heterogeneity (resultant of the latitudinal differences of temperature and morphology) and several oceanographic processes. The odontocetes .... use predictable habitats to feed, so their distribution and movements are directed by oceanographic characteristics (physical and biological) that allow the growth and persistence of planktonic organisms (patterns of productivity and abundance of prey). In this aspect, the study and characterization of the areas where these animals are distributed, and the understanding of the physical mechanisms that influence the formation and persistence of these aggregations, is essential for the definition ....of areas with special interest in the managing of protected species, as well as for planning and execution of programs and managing politics. In addition, the studies .... are useful from the ecological point of view, because the odontocetes are top predators and their presence reflects the condition of the primary production of the system, which may give us an idea of the health of the ecosystem. The present work is part of the project "Determination of the present status of the large whale populations in the Gulf of California, and integration of a program for management and regional protection. The aim of the present work is to analyze the distribution and diversity in space and time of the odontocetes in La Paz Bay, Loreta and the adjacent oceanic zone."

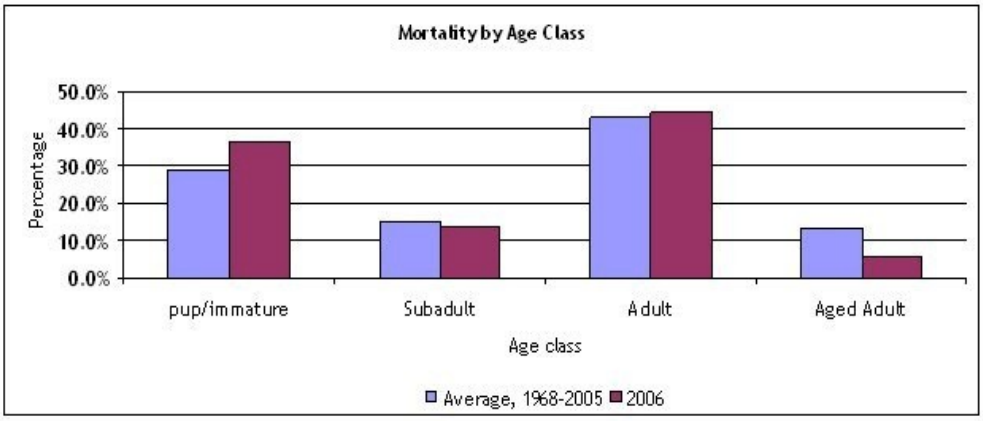
Award $1000 Christian Daniel Ortega Ortiz, Centro Interdisciplinario de Ciencias Marinas, La Paz

Population structure of the blue whales (*Balaenoptera musculus musculus)* ***from Gulf of California***

"The Gulf of California, a known nursing area of the Northeast Pacific blue whale, represents an ideal area for assessing the current status of the population. A unique database of 460 blue whale sighting histories, based on photo-identification and tissue sampling, exists. About half of the individuals have been sexed and haplotyped (DNAmt) and 57 individuals were photo-identified when born and now are of a known age. However, no information exists on the size or age structure of the popoulation, due to lack of a method to measure whales at sea. To fill this gap, we have developed a photogrammetric method to measure the length of individual blue whales.... Preliminary results suggest that our technique provides accurate size, but it is necessary to obtain a large data set of measured whales from different congregation areas in the Gulf of California, together with information about each individual in order to describe the population structure. .... Part of the Northeastern Pacific blue whale population feeds and nurses during the winter and spring in the Gulf of California, possibly the only nursing area for the entire Northeastern Pacific stock. Because it includes all segments (calves, juveniles, adults of both sexes), it is ideal for the determination of the current status of the population.... Knowledge of their length will allow us to estimate the distribution of blue whales in different size-classes in this nursing area. Size-classes are the principal component of population structure and allow us to infer age and growth rate, essential parameters for ecological studies."

By Steve Shimek of The Otter Project : Sea Otter Census Data and Analysis

"Beachcast California sea otters by age. More otters would live to be aged adults in a healthy population"



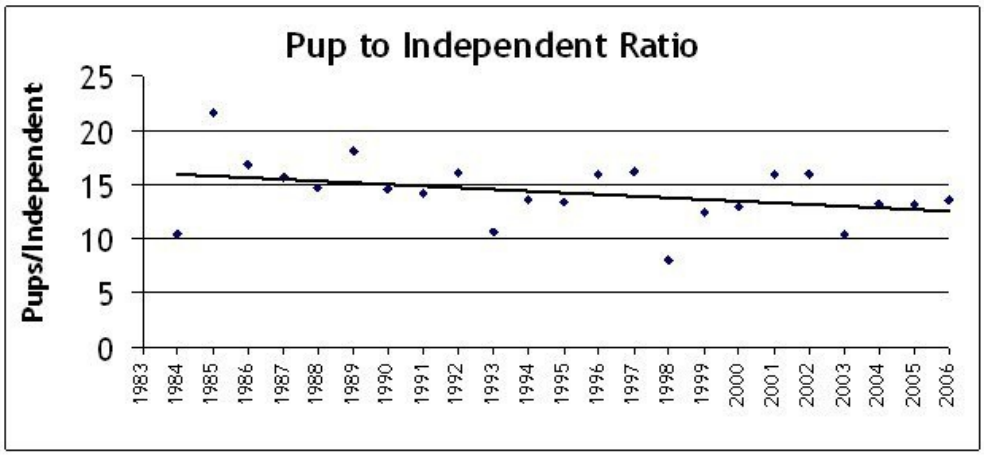
Spring survey

The sea otter population is surveyed twice a year. There is consensus that the spring survey is more accurate (usually better conditions and less surface kelp) than the fall survey. The survey does not include "replicate surveys" which might give a measure of statistical error. Most likely, not every otter is counted, so the survey may represent a minimum number. We don't know what percentage of the population is surveyed, how the survey is influenced by conditions, or if a different percentage is counted every year. The spring 2006 survey found 2692 sea otters, down 1.6-percent from the 2005 survey.

Mortality by age class

Every sea otter found dead on the beach has a tooth pulled and aged. Again, the sample size is large and statistically significant. While there is no consensus on how to look at this factor, The Otter Project averages all previous years and then compares the most current year against that average. Intuitively, we would hope otters live to old age – mortality in all early ages classes would go down, and mortality in "aged adults" would correspondingly go up. In 2006 the number of pup and adult carcasses found was elevated.

There is some discussion whether we should look at "all" otters, or just females (demographically, the more important sex). A recent doctoral thesis indicated persistent high mortality of reproductive females. [Steve's charts originally are in blue and maroon. TheAverage 2000-5 are bars to the leftand 2006 numbers are the bars to the right in each pair, both charts.]



Pup to independent ratio

High prime-age adult mortality could lead to a reduction in the number of pups born each year. This may be happening.

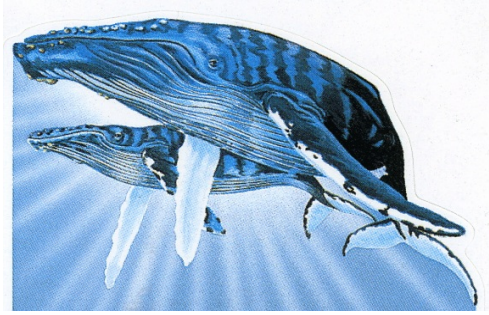
Although we are uncertain about the population trend, we find the stranding and mortality by age class numbers most compelling and indicative of a problem.

Notes The above data was compiled from agency and peer reviewed data. Data tables to support the graphs and citations are available on request to: Steve Shimek, The Otter Project, 831/883-4159. Exec@otterproject.org

S I G H T I N G S

Compiled by staff of Monterey Bay Whale Watch. For updates, see www.gowhales.com/sighting.htm

date	# Type of animal(s)
5/1 am	14 Humpback whales
5/1 pm	8 Humpback whales
5/2	12 Humpback whales
5/3 pm	11 Humpback whales 100 Pacific white-sided dolphins 30 Northern right-whale dolphins
5/4	20 Humpback whales
5/5	4 Humpback whales
5/6 am	12 Killer whales (transient type, predation on gray whale) 8 Humpback whales
5/6 pm	8 Killer whales (transient type, predation on gray whale)
5/7 am	8 Killer whales (transient type) 6 Humpback whales
5/7 pm	8 Humpback whales 200 Risso's dolphins
5/8 am	14 Humpback whales 10 Dall's porpoise
5/8 pm	12 Humpback whales
5/9	7 Humpback whales 8 Harbor porpoise
5/10	12 Humpback whales 60 Pacific white-sided dolphins
5/11 am	8 Killer whales (transient type) 4 Humpback whales 30 Risso's dolphins
5/12 am	2 Humpback whales
5/12 pm	10 Killer whales (transient type)
5/13 am	9 Humpback whales 2 Gray whales
5/13 pm	3 Humpback whales
5/14 am	11 Humpback whales 8 Killer whales (transient type) 600 Pacific white-sided dolphins
5/14 pm	8 Humpback whales
5/15	14 Humpback whales
5/16	6 Humpback whales
5/17 am	14 Humpback whales 6 Dall's porpoise
5/17 pm	8 Humpback whales
5/18 am	32 Humpback whales 3000 Pacific white-sided dolphins
5/18 pm	10 humpback whales
5/19	35 Humpback whales 2200 Pacific white-sided dolphins 45 Risso's dolphins
5/20	35 Humpback whales (60-80 in area) 75 Risso's dolphins 2 Killer whales reported
5/21 am	30 Humpback whales (lunge feeding) 100 Pacific white-sided dolphins
5/21 pm	10 Humpback whales
5/22 am	40 Humpback whales 450 Pacific white-sided dolphins
5/22 pm	15 Humpback whales
5/23 am	42 Humpback whales (lunge feeding) 450 Pacific white-sided dolphins
5/23pm	12 Humpback whales
5/24am	23 Humpback whales 350 Pacific white-sided dolphins 6 Dall's porpoise
5/24 pm	15 Humpback whales (lunge feeding;friendly)
5/25 am	26 Humpback whales
5/25 pm	14 Humpback whales
5/26 am	15 Humpback whale (lunge feeding;friendly) 200 Pacific white-sided dolphins)
5/26 pm	12 Humpback whales



Definitions:

lunge: A term for thrusting of the forward part of an animal through the water surface, showing less than about 40% of the body (often the result of feeding at the surface). *Encyclo. f Marine Mammals,* Academic Press 2002

lateral lunge feed: Plowing through prey parallel to the surface with mouth agape, frequently performed rolled over on the right side *Voyaging with the Whales,* Cynthia d'Vincent, Oakwell Boulton 1989

Looking for information about the amazing sightings of humpbacks in the latter half of the month, we asked Richard Ternullo (*Sea Wolf II*) what the whales were eating; he replied they were feeding on fish. A huge supply of small fish evidently brought unusually large numbers to Monterey. As of June 1st they may have moved elsewhere. Check future listings on the web site.

Comments on humpback lunge feeding on krill, by Cynthia d'Vincent, seem also to apply to the thrilling foraging seen recently in Monterey Bay: "Instead of raising their flukes into the air for a deep dive, they now skim the prey concentrated at the surface by rolling over onto their sides with their mouths agape. This behavior is called lateral lunge feeding, and is one of the most popular humpback strategies... The lateral orientation refers to the pitch of the whale's jaw in relation to the water's surface. Plowing through the water in this manner, a humpback can travel nearly 50 yards in a single lunge."

Humpbacks have been seen taking advantage of fish schooled against the surface (sometimes by dolphins or from bubble bursts made by the whale underwater) by rising vertically or at an angle, mouths wide open and throat pleats extended. It has to be seen to be believed.

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