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## The Seals Serve Science

Elephant seals are getting new publicity as monitors of the sea as scientists search the depths for signs of global warming. November's Popular Science magazine had an item about global warming and a chart of the routes of tagged female elephant seals. A featured story in the December/January issue of National Wildlife magazine focuses on studies originating in Ano Nuevo where UC Santa Cruz researchers attach devices to the seals to report oceanographic conditions.

These time/depth recorders simultaneously record the time and depth of each of a seal's dives, as well as light levels and temperatures as the seal moves up and down the water column.

Because elephant seals dive and travel so deep (they can dive nearly a mile deep) and migrate so far, they cover a vast sample of ocean waters.

The Ano Nuevo studies are part of a larger, multi-institutional program, Tagging of Pacific Pelagics (TOPP), in which scientists have tagged more than 2,000 animals of 23 species—ranging from seals and sea lions to seabirds, whales, tunas and sharks.

According to the article, tagging devices on elephant seals tell where they go and what they do, but also predict the course and detect the consequences of global warming. With more sophisticated tagging technology, researchers are getting a more detailed picture of elephant seal behavior. Males leave California rookeries and head directly north to feed along continental margins between Oregon and Alaska's Aleutian Islands. Females head out into the Pacific, foraging for fish and squid in deep waters. In this vast region, researchers have identified "feeding hotspots" that attract seals, sea turtles and seabirds. These feeding grounds are defined by specific combinations of temperature and current patterns that work together to concentrate prey, according to biologist Jason Hassrick, who is quoted in the article by Laura Tangley. He reports that individual elephant seals end up sticking to the same routes year after year. He notes that such route fidelity could become a problem if ocean conditions change too quickly in the future.



## Winter Wonders

Winter is the elephant seals' dramatic season of birthing and breeding – Mother Nature's big show of the year at the Piedras Blancas viewing site. The first act begins in late November or early December with the arrival of the huge adult males, returning from their long journey to Alaska and back. As they come in, one by one, the dominance hierarchy on the beach changes often as they try to set up their territories. A massive male, weighing as much as two tons, is impressive, with his long, dangling nose – the proboscis that gives elephant seals their name. He will settle in his chosen spot on the beach, appearing entrenched and snoozing comfortably. He must feel especially heavy as he hits the gravity of land after months of buoyancy in the sea. But another male may arrive, announcing his presence with a great bellow as he emerges from the surf, and the two will size each other up, first with sound and posturing. The hollow holler of an adult male is hard to describe. It's been said it sounds like a Harley revving up in a gym. Sometimes the big voice is all it takes to make one guy decide to back off. If not, they might fight, banging their chests together and biting necks with their sharp canine teeth. The thick, crusty callus on a male's neck is called a chest shield because it is so tough. Although it bleeds, the opponent's teeth seldom go deep enough to do serious damage. At this early stage of the season, they don't really want to fight. They will go without eating until late February, so they need to conserve their energy for the more serious confrontations during the actual mating activities.

*(Continued on page 2)*

### Docent Spotlight: Greg Glaze



Greg Glaze is on the bluff telling visitors about the elephant seals almost every Saturday and Sunday morning, usually at the north end of the parking lot. He lives in Paso Robles, works in Morro Bay during the week, and spends weekends with the seals. Thanks, Greg.

#### Winter Wonder (Continued)

The pregnant females begin arriving in mid-December and each one selects a comfortable location to give birth. Eventually, each alpha male will have as many as 40 females in his harem, and he expects to mate with each of them when she weans her pup, about a month after it is born. The first pup is usually born around December 20, and births continue through January.

After long migrations, eating continuously, the females have nourished their bodies to withstand a couple of months of fasting, birthing and nursing. Within a few days of arriving, a female gives birth to one pup, which weighs about 60 pounds. Visitors who are fortunate enough to see a birth will see the black pup emerge, with the gulls standing by to clean up the afterbirth. The pup may be born head first or tail first, the head first birth often being faster. In either case, the birth usually takes less than half an hour. The first thing the mother does is vocalize with her pup, bonding so that they can find each other if they become separated on the crowded beach.

The pups nurse for four weeks and can gain as much as 10 pounds a day on the rich milk, which is over 50 percent fat by the end of the nursing period. For every pound the pup gains, the mother loses two pounds.

The female goes into estrus late in the nursing period and mates. After four weeks of nursing she abruptly weans her pup and heads out to sea. It's important that the pup is fat enough to survive after its mother leaves because it will take up to eight weeks for the baby to teach itself to swim well enough to forage for food.

*Next column*

The mating season begins about a month after the first births, and there is plenty of action as the alpha males chase other males lurking around the harem and fight for mating rights. At the same time, females are squabbling over pups and space, and winter storms are threatening to separate pups from their mothers. It's a noisy, exciting season.

### Welcome new docents

Ten new volunteer docent guides have completed their training and donned their blue jackets. They are Kay Blaney and Betty Nelson of Los Osos, John and Sandy Bosworth of Atascadero, Karen Ganschow of Morro Bay, Christine Heinrichs, Tom Parsons, Tim Postiff and Bob Wilkins of Cambria, and Pam Rochell of Summerland.



Back row from left, Tim Postiff, Tom Parsons, John Bosworth and Bob Wilkins. Front row, from left, Pam Rochell, Sandy Bosworth, Betty Nelson, Christine Heinrichs, Kay Blaney, and Karen Ganschow

### From the Gift Shop

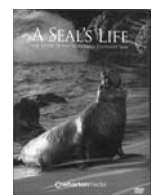
The following items are available for purchase from our Gift Shop. Prices include tax and shipping. Send checks payable to FES, PO Box 490. Cambria, CA 93428.



**Book**  
Price: \$9.90



**DVD**  
Price: \$26.90



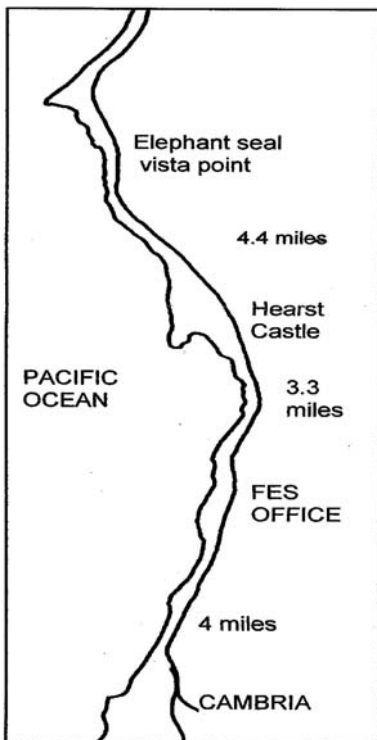
**DVD**  
Price \$23.00

Tips for Safe Viewing

- View from a safe and respectful distance.
- NEVER get between a seal and the water.
- Dogs and seals don't mix. Keep dogs away from the seals
- Please stay off sand dunes which are fragile areas for plants and animals.

Elephant seals are protected by law. It is illegal to harass any marine mammal. If you witness harassment, call 1-800-853-1964.

**Map to  
Elephant Seal Viewing  
Piedras Blancas**



**Friends of the Elephant Seal**  
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**Visit our office, gift shop,  
and displays at the  
Cavalier Plaza, Highway 1  
San Simeon**

## What's New at Friends

**IN THE SPOTLIGHT:** FES board president Ken Dunn was interviewed both on the bluff and in the office for a program on local Channel 2. Through someone he met on the bluff, Jim Brownell was interviewed for a program on San Francisco's radio station KKGN, titled "What Really Matters."

**MORE OUTREACH:** The elephant seals got more publicity this summer, as docents took their story to state parks in the area. Dave Shoemaker presented slide shows at Lime Kiln in Big Sur. Ken Cummings and Sharkey Warrick presented an interpretive program at San Simeon State Park. Kate Shelley set up a display booth about the seals and FES at the Cabrillo Marine Aquarium, Autumn Sea Fair Park in San Pedro. Ann Grossman and Joan Crowder set up a booth during a water festival at the Santa Barbara Zoo.

**NEW DVD:** "A Seal's Life" is a DVD about elephant seals produced in conjunction with National Geographic. It describes the seals' migrations with elegant photography, including underwater footage. The FES office has it for sale.

**OTHER GOODIES:** An assortment of tee shirts and sweatshirts include a long-sleeved tee shirt with the FES logo. Caps come in new colors, including, green, red and pink.

**WEB SITE CHANGES:** There have been three changes in www.elephantseal.org recently. Most significantly, the Marine Mammal section has been greatly expanded with informative pages by Carole Adams on each of the most frequent visitors to our coast. A slide show of current visitors to the beaches and an "Ask Us" link to a form for asking questions have been added to the home page. In the more than two months that "Ask Us" has been on the site, we have received an average of four questions a week. The largest number were about what to expect at a given time of year or when to come for particular events such as birthing, weaners learning to swim, and adult males on the beach. Most of the rest were general questions about elephant seals. One responder prompted the slide show noted above and urged a real-time web cam.

