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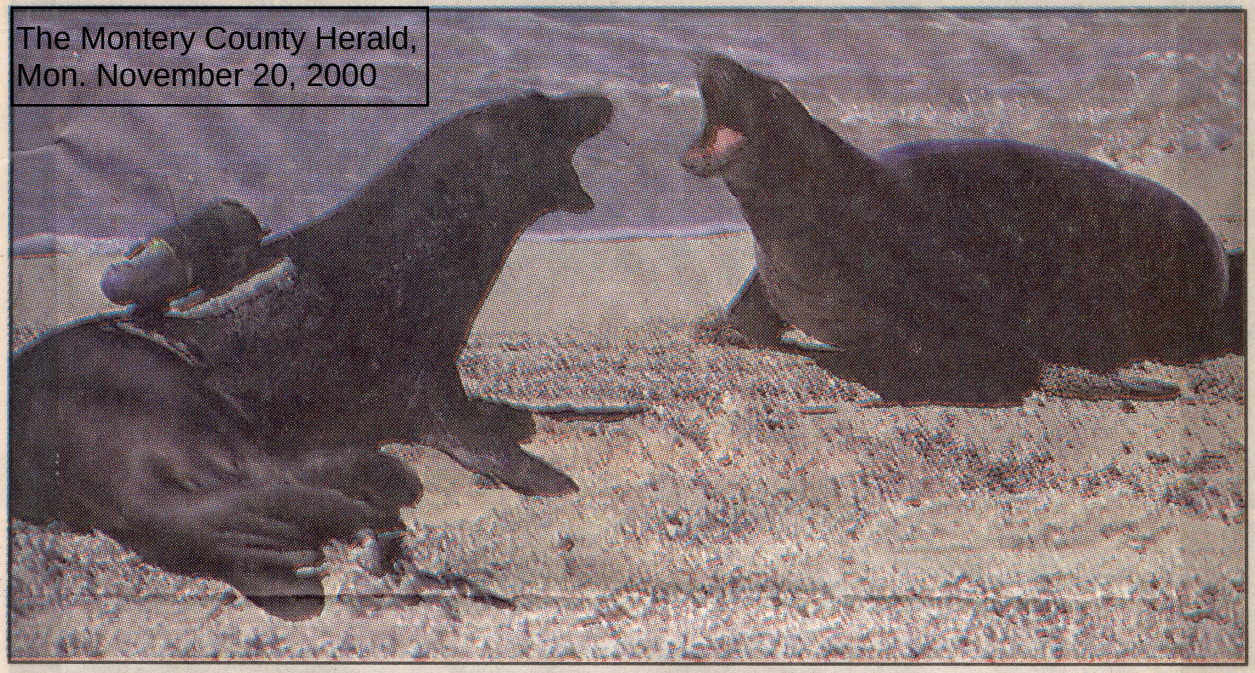

Courtesy of National Geographic

A Crittercam sits on the back of a Hawaiian monk seal.

Camera shows seal's view

By **HOLLY DAVIS**
Special to the Herald

The room at the Monterey Conference Center is packed, and all eyes are focused on the video screen. Fish and seals stream past as if everyone in the room is sitting on the back of a seal, seeing the world from his perspective.

He spirals around a few times, pauses a moment, then glides down to forage for food along the coral bottom.

This Hawaiian monk seal has a Crittercam on his back, allowing whale, dolphin and porpoise researchers and enthusiasts at the Whales 2000 conference this weekend to see what the world of a seal looks like when humans aren't around to interfere.

"Animals are doing interesting things we wouldn't be able to see any other way," said Greg Marshall, father of the Crittercam.

Marshall first began putting camcorders into watertight cases and attaching them to wild animals 15 years ago to record video images from the animal's perspective for scientific purposes.

Since then, scientists cooperating with National Geographic have used Crittercams on more than 300 dives to study 30 species, including whales, seals, sea lions, sharks, turtles and penguins.

In the case of the endangered Hawaiian monk seal, researchers learned that the seals eat both in shallow waters and as deep as 900 feet. Shallow-water monk seal habitat is protected, but their deeper haunts aren't, so protecting the deep-water habitat is critical for their survival, Marshall said.

Some new information about sperm whales came about when a camera attached to the back of a whale floated to the surface only 12 seconds after it was attached.

Researchers found that another sperm whale had bumped the nose of the whale carrying the Crittercam, knocking free a chunk of skin that would normally have flaked off later. That caused more skin to unravel up the spine, knocking the camera free and suggesting for the first time that sperm whales may participate in cooperative grooming.

In the case of emperor penguins, researchers thought they dove deep to feed but discovered they actually feed near the ice surface, trapping fish between themselves and the ice.

Looking like a little kid strapped into a big backpack, the penguin is hampered a bit but still appears to do all the things a penguin does, including sliding down ice hills and zooming around in the water, said Kyler Abernathy, a National Geographic production specialist. National Geographic hopes to make smaller Crittercams to minimize the impact and allow their use on smaller creatures.

Crittercams come in two sizes, 10 and 12 inches long, and record for up to six hours. They can record underwater sounds and depth — technicians are confident the cameras can go as deep as 4,800 feet without being damaged by the intense pressure.

Scientists attach the camera in different ways. For dolphins and sharks, they clamp it to their dorsal fin with a padded clamp. They epoxy it to seals' furry backs. Some epoxy is left on the seal's fur, but it will fall away because the creatures molt each year.

Some conference attendees raised concerns over the negative impact Crittercams have on their host animals.

"We are very intent on making the systems as noninvasive as possible," Abernathy said. "We are only using noninvasive procedures now."

To attach a Crittercam to a whale, scientists drive a boat close to the whale, reach a pole with the Crittercam on the end out over the whale, and gently place the camera on the whale's back. Instead of pushing down on the whale, scientists create a vacuum under a 1-foot-diameter suction cup to get it to stick.

National Geographic hopes to be able to use Crittercam on terrestrial animals in the future. Marshall has already tested it on his own cat, producing a short clip of "kitty-cam," which readers can see on National Geographic's television home page — www.nationalgeographic.com — under the features section.

"I can just sit and watch this for hours," Abernathy said. "You just can't see this stuff any other way."