

Fossil find at Ano Nuevo of 'tiny' whale

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SANTA CRUZ — Brian Fadely had some time on his hands last May 12, so he decided to take a walk.

He was at Ano Nuevo Island that day as part of a UCSC research team working on the beach to recover a recording device from a female elephant seal.

He didn't walk far. Near where the group was working on the elephant seal, Fadely, a graduate student in physiology who was taking an introductory geology course at the time, spotted an irregularity in a sandstone formation about 12 feet above the beach.

Fadely quickly saw that the irregularity was something more than a geologic oddity — it was clearly a skull. "That's kind of interesting," he thought to himself.



Bill Lovejoy/Sentinel

UCSC marine scientists and graduate students unearthed rare fossil last May.

But he had to get back to the elephant seal. Not until several hours later could Fadely and the other researchers — including Ano Nuevo's director of research, UCSC professor Burney LeBoeuf, — return to the skull.

Fadely started digging with a tool no self-respecting paleontologist would use, except in an emergency: a rusty pipe he found nearby. Finally, Fadely removed the skull, which weighed nearly 40 pounds. After dusting it off with seawater, he knew he had something unusual.

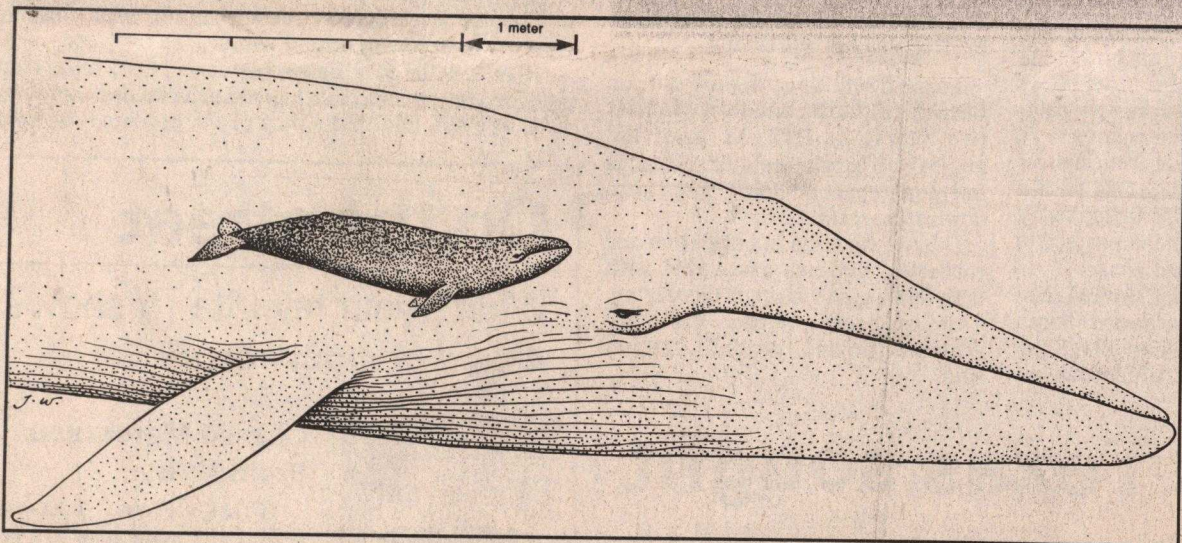
Just how unusual was the subject of a crowded press conference Tuesday at UCSC's Long Marine Lab.

The remarkably preserved skull found by accident at Ano Nuevo, about 30 miles north of Santa Cruz, is between 12 and 14 million years old. It belonged to one of the smallest baleen whales ever, a creature that probably measured no more than 15 feet in length, according to scientists who have examined the fossil.

That tiny whale in all probability was an ancestor of modern baleen whales, most closely gray whales. Another species of baleen whale is the blue whale, which can be 100 feet long. The smallest known modern baleen whale — the pygmy right whale — measures about 20 feet long.

Indeed, said Ken Norris, head of the Dolphin Research Facility at Long Marine Lab and an expert on cetaceans, the whale which was once attached to the fossilized remains was an adult probably no bigger than a baby gray whale.

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Illustration/Jenny Wardrip

A blue whale dwarfs artist's conception of the pre-historic 15-foot baleen whale.

Fossil

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The questions that arise from the find, said Norris, are how such tiny whales fed themselves, and what happened to them in the evolutionary procession.

Baleen whales, explained Norris, strain their food from sea water, extracting small organisms such as plankton and tiny crustaceans by forcing them through their long, bristly baleens, anchored to the upper jaw.

Larger whales can live off the food they deposit as blubber, but a "tiny" whale such as the fossil represents, might have to be a "generalist," said Norris, eating whatever it could capture in the mid-Miocene era seas.

Norris said that the "beautifully preserved specimen" still has its earbones intact — a fortuitous circumstance that may help researchers understand how cetaceans over time developed their acute senses of hearing.

The jury is still out on how important a scientific discovery the whale fossil is, said LeBoeuf.

After further study by paleontologists, the whalebones — including several vertebrae and a shoulder blade as well as the skull — will become part of a display at Long, and could be available for public view as early as summer.

Norris was asked why it took 12 million years, give or take an epoch or so, for the bones to appear as part of the Ano Nuevo beachscape.

The island, he replied, is constantly eroding, and the fossil, probably buried beneath the sea, finally was exposed.

The Monterey formation in which the fossil was found may also be home to another geologic phenomenon, one that was probably not important in the Miocene era, but that engenders intense interest today — oil.

Norris pointed out that the fertile and productive seas of that time may have supported a population of tiny whales off the northern Santa Cruz County-southern San Mateo County coast, but remains from that same area may soon support oil companies, who want to drill into them to find fossil fuel.