# An ocean of opportunities

Long Marine Lab – National Fisheries

## Dignitaries laud new marine lab

By LARRY O'HANLON
Sentinel staff writer

WATSONVILLE — It's the kind of overpopulation scientists like — more and more marine labs popping up near UC Santa Cruz's Long Marine Laboratory.

On Wednesday university and White House dignitaries gathered at the seaside facility to celebrate the groundbreaking of a new National Marine Fisheries Service.

The lab will replace a dilapidated facility in Tiburon, and will advance studies on commercial fish and other marine resources.

"We need the kind of research that this facility will provide if we are going to make progress," said Katie McGinty, chair of the White House committee on environmental quality.

The $19.4 million facility will cover 2.5 acres east of Long Marine Lab and feature 52,890 square feet of offices, labs, shops, conference rooms and a library. It will pump in sea water straight from the ocean for research use.

The lab will be a state-of-the-art facility for administering fisheries surveys all along the Pacific Coast and will compliment another lab in Oregon. Among the most critical fisheries to be studied more closely at the new facility are salmon and rock fish populations, said Mickey Eldridge, who until recently headed the Tiburon Lab.

Both salmon and rock fish fisheries show declines in the latest surveys, Eldridge said. Rockfish are now at their lowest number in the 16 years the surveys have been conducted, he said. The drop is at least partially due to El Niño, which reduced upwelling of nutrient-rich water from the depths.

"There are major things happening out there," Eldridge said, referring to Central Coast waters.

"We are stressing the oceans in ways we didn't even know before," agreed D. James Baker, undersecretary of commerce and top administrator for the National Oceanic and Atmospheric Administration, which oversees the

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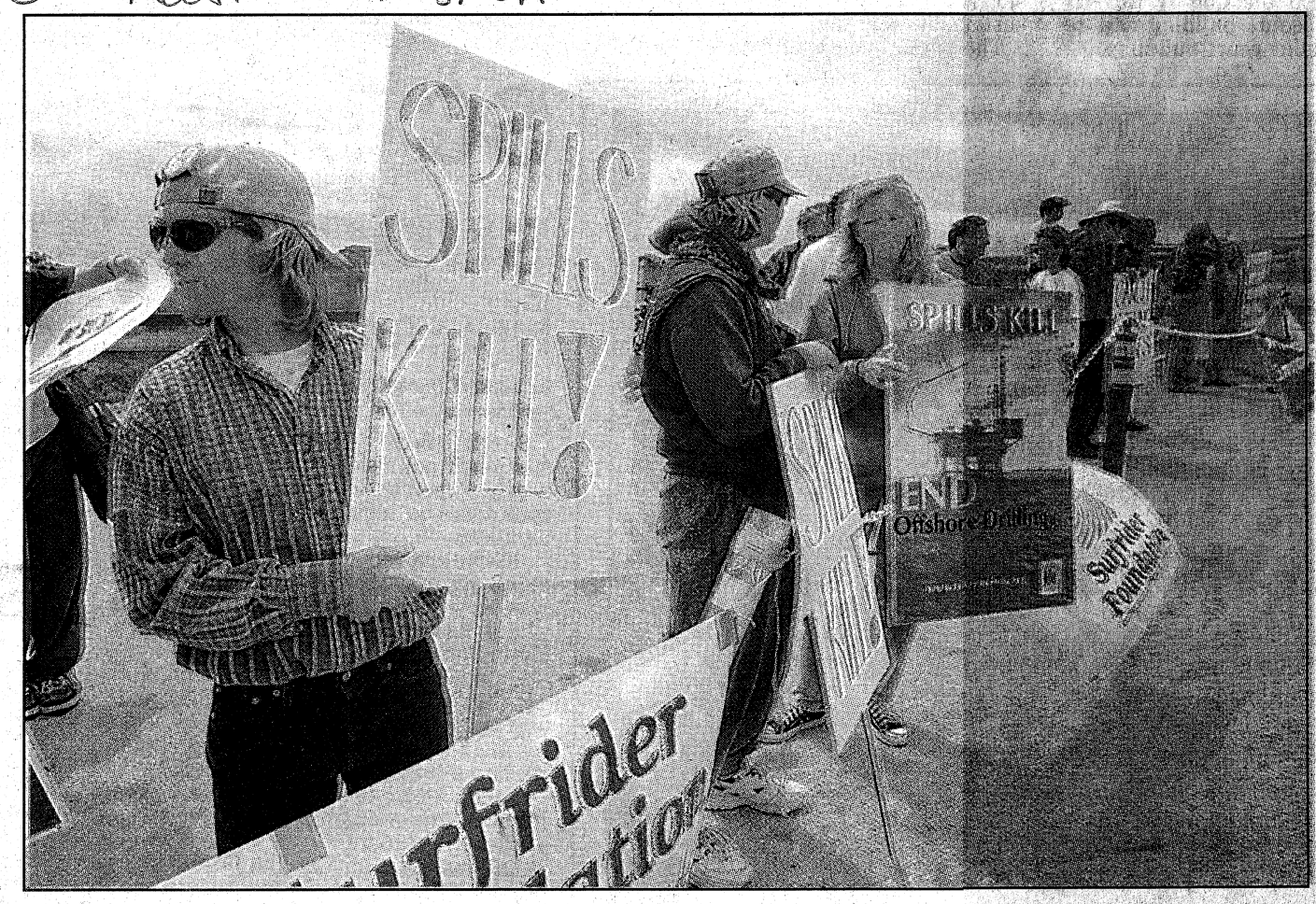


Dan Coyro/Sentinel photos

Activists lining the road to the dedication ceremony urged the federal government to protect the coast and marine mammals from oil spills

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White House official Katie McGinty, second from right, said the new facility points out research challenges and opportunities.

## TCI airing conference

Can't get enough of the National Ocean Conference?

No need to miss a thing. The conference will be broadcast live both today and Friday by Community Television of Santa Cruz County, channel 72 on TCI.

Today's broadcast will be from 1 p.m. to 5 p.m. The Friday sessions will be covered from 9 a.m. to 3 p.m. Clinton's address is scheduled to take place between 12:30 p.m. and 1:30 p.m.

If you miss the whole thing, today's happenings will be re-broadcast on the same channel on June 30 from 5 p.m. to 9 p.m. Friday's coverage will be shown again on July 2 from 5 p.m. to 11 p.m.

# Dam projects may harm coast plant life

By KARIN JEGALIAN
Sentinel correspondent

Iron is a vital nutrient that supports the ocean food chain, and a UC Santa Cruz scientist who has studied California coastal waters worries that dams and water diversion projects may reduce supplies of the essential nutrient.

UCSC oceanographer Ken Bruland and David Hutchins of the University of Delaware say in today's issue of the journal Nature that tiny changes in iron concentration off our coast lead to big differences in what kind of life thrives there.

"In the last five years, there's a growing awareness of the role of trace elements in the oceans," Bruland said. "A lot of what we've worried about with the environment is having too much of a bad thing. What we're also worrying about now is having too little of a good thing."

Imagine ocean water filling five Olympic size pools. If a quarter teaspoon of iron is mixed into all that sea water, algae can grow, fish flourish, marine mammals thrive. But if the same amount of water contains just a drop of iron, the water will remain lifeless.

> 'It would be ill advised and irresponsible to do one kind of global manipulation to counteract another kind of manipulation. I don't know any scientists who advocate it.'
>
> — *Kenneth Coale, oceanography researcher*

IN DEPTH

"At home I grow orchids and begonias as potted plants, and to have them thrive I need to fertilize them with nitrogen and phosphorous. But if that's all you fertilize them with, the plants will grow anemic. They also need trace metals — iron, zinc, cobalt — to fulfill all sorts of essential enzymatic functions," Bruland said.

"The little things in the ocean water can make the difference. In this case, it's the iron," said Kenneth Coale, director of Moss Landing Marine Labs. "Very few labs in the world can measure iron at these levels."

Coale points out that finding such small amounts of iron is not just an analytical challenge for scientists; it's a survival challenge for creatures who live in the ocean.

In the ocean, phytoplankton — miniature, drifting plants, like algae — forms the base of the food chain. Some of the richest ocean environments in the world hug the western coasts of several continents, including North and South America and Africa because of the upward flow of cold, deep, nutrient-rich water, Bruland said.

During the spring and summer, northwest winds blow parallel to the California coast. The Earth's rotation eastward, combined with wind, cause cold water — full of nitrogen, silica, and phosphorous — to rise.

Bruland compares it to "bringing a bag of fertilizer up to the ocean's surface." A band about 10 to 50 miles wide along the shore has water about 10 degrees Fahrenheit cooler than the water farther offshore.

These surface waters have everything in the spring and summer — nu-

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