

Humboldt State University  
News

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**[Press Releases: With CICORE, the Coast is Clearer](#)**

By Frank Shaughnessy

From the waters near California's shore, a cadre of scientists is harvesting a valuable commodity: information about coastal waters, including those of Humboldt Bay, and detailed maps of marine habitats.



The data illustrate a wide range of phenomena, such as daily changes in water temperature caused by tidal fluctuations and the monthly shift in the makeup of fish communities. The information is being collected and made freely available to the public through the Center for Integrative Coastal Observation, Research and Education (CICORE).

Established in 2002 by the National Oceanic and Atmospheric Administration, CICORE (pronounced Sea Core) is a consortium of research efforts affiliated with numerous coastal campuses of the California State University, including Humboldt State University.

The on-going project, with \$5 million requested in federal funding for 2006, examines the 1,200-mile California coast, from 100 meters deep in the water to 100 meters high on land. Its coordinated data enhances many diverse efforts to better understand coastal habitats in California. CICORE's yield also supports global ocean-monitoring efforts, economic and environmental research, and the development of models for predicting change in the coastal environments.

[On Tuesday, Aug. 2, scientists involved in North Coast CICORE efforts will gather](#) at Humboldt State with those from a related effort the Central and Northern California Ocean Observation System. Billed as a users meeting, the purpose of the session is to provide a chance for resource managers, policymakers, industrial representatives, conservationists, educators and others to learn more about using the data, and to let CICORE know how it can better assist this diverse community. The day-long meeting, free and open to the public, will begin at 8:30 a.m. in HSU's Science B 135. (Advance registration is requested, see this web site for details: <http://tinyurl.com/be6ef>.)

To bring the dynamic underwater world into a clearer focus, CICORE uses three main types of technology:

Water-quality sensors stationed at an array of locations transmit information such as temperature, salinity, dissolved oxygen, chlorophyll, nutrients, plankton, turbidity, pH and tidal depth. For example, through a cooperative effort between CICORE, the Table Bluff Reservation, California Sea Grant and the City of Eureka, the quality of Humboldt Bay water is monitored at the Mad River Slough, Indian Island, Eureka's Dock B, McNulty Slough and the bay entrance. A similar sensor will be installed under Trinidad Pier in the

coming months; and CICORE is also collaborating with the National Weather Service on Woodley Island to get real-time meteorological data presented to the public.

Two other technologies, hyperspectral imagery and acoustic soundings, are being combined by CICORE to produce informative maps of coastal marine habitats. Hyperspectral imagery is collected by airplane-mounted equipment that simultaneously records many bands of light. Flights over the North Coast last fall provided increased detail of areas within and around Humboldt Bay; the image data are available to the public now and habitat maps are being produced. At the end of July, as soon as the upcoming low-tide series passes, CICORE researcher Rikk Kvittek from CSU Monterey Bay will use an acoustic approach, the sending and receiving of sound, to measure the depth, topography and hardness of the bottom in Humboldt Bay. This effort is supported by Coast Seafoods and the Humboldt Bay Harbor District.

CICORE also provides critically important baseline information about an eelgrass fish community in the bay. For two years, HSU Professor Tim Mulligan and graduate student Rebecca Studebaker have conducted monthly fish surveys using a centuries-old method, trawling with nets. Their work has revealed how the bays eelgrass beds are home to a wide variety of important fishes, with species abundance and diversity varying greatly from season to season. For example, the January 2005 survey was heavily dominated by tubenouts and bay pipefish; and the July 2004 survey, with nearly eight times as many fishes, was dominated by juvenile black rockfishes and sand lances.

California's coastal habitats are an incredibly dynamic world. By offering proverbial portholes into this ever-changing and fascinating environment, CICORE and other oceanic observatories can help us to better understand this world and its denizens, enhance water quality, and respond more effectively to protect this critical natural resource.

(You can find more information about CICORE at HSU at its web site <http://cicore.humboldt.edu> or at the Aug. 2 meeting.)

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