UC SANTA BARBARA

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UC Davis, Santa Barbara Get $6 Million to Help Estuaries

University of California researchers at the Davis and Santa Barbara campuses will receive $6 million in federal funds to develop much-needed health assessments for estuaries, the critical coastal ecosystems where fresh water meets salt water.

The grants, from the U.S. Environmental Protection Agency, will support the development of chemical, biological and physical standards for estuaries, particularly for estuarine wetlands.

Those standards will function rather like the measures of blood pressure, heart function and blood chemistry that are used to assess human health, said Susan Anderson, the project director and an associate research biologist at UC Davis' Bodega Marine Laboratory.

"We need to be able to assess the situation before the patient gets sick. Or if the patient is already sick, to assess how sick. Is it the ecological version of measles, cancer or just the common cold?" said Roger Nisbet, the project's associate director at UC Santa Barbara and a professor of ecology, evolution and marine biology.

Estuaries are vital components of the planet's ecosystem. They serve as nursery grounds for two-thirds of the fish and shellfish consumed by Americans; provide essential food and habitat for birds, fish and other wildlife; improve water quality by filtering pollutants; act as buffers to protect shorelines from erosion and flooding;

and are the sites of ports and marinas.

But estuaries are in serious trouble. In California, the problems include the loss of more than 90 percent of wetlands; invasive species that threaten natives and their habitats; and toxic runoff from industry, farms and neighborhoods.

"Public agencies like EPA and research centers like the University of California need to assess how our estuaries are doing," Anderson said. "But the health indicators we have now are not sophisticated enough. For instance, when pollution occurs or an exotic species invades, we can't discern subtle effects or predict responses at all levels in the ecosystem. Our challenge is to improve those indicators."

The Davis-Santa Barbara center, to be named the Western Center for Estuarine Ecosystem Indicator Research, is one of five regional research centers that will be funded through 2004 by the U.S. EPA. The others are at the Great Lakes, on the Atlantic Coast and on the Gulf of Mexico.

At the western center, about 25 UC scientists will work with each other, local agencies and the other four EPA centers so that their findings will be applicable both locally and nationally.

"The partnership draws on the major strengths of both UC Davis and UC Santa Barbara," said Nisbet. "We will create a bridge between state-of-the-art academic ecology and toxicology and practical environmental management."

The center's associate director at UC Davis is Bodega Marine Laboratory professor Gary Cherr. "With our current knowledge, we can easily see whether an estuary is highly impacted or very pristine. The real difficulty comes in assessing estuaries between those two endpoints, where the majority of our West Coast estuaries lie," Cherr said. "The only way to know their status with confidence is to take the very multidisciplinary approach that will be highlighted in the new center."

Laura Yoshii, acting regional administrator for the EPA's Pacific Southwest Office, said, "This funding will go a long way toward helping us learn more about the unique ecosystems found where our rivers, streams and creeks meet the Pacific. We need a better understanding of what impact human activity has had on California's estuaries before we can move forward on developing solutions for these critical habitats. We look forward to working with Davis and Santa Barbara in getting this much-needed project underway."

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.