Ecotox Research Program

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Chesapeake Ecotox Research Program to Determine Contaminant Effects on Bay Ecosystem

The Chesapeake Bay Environmental Effects Committee (CBEEC) has awarded a consortium of Bay research institutions a five-year grant to determine how chronic exposure to chemical contaminants affects living organisms. Dr. Kenneth R. Tenore of the University of Maryland Center for Environmental Science and Dr. Eugene Burreson of the College of WIlliam and Mary's Virginia Institute of Marine Science are co-directors of the Chesapeake Ecotox Research Program (CERP).

Researchers from these institutions, the Academy of Natural Science Estuarine Research Center and Old Dominion University — all of which are members of the Chesapeake Research Consortium — will be conducting experimental studies to quantify how low, persistent levels of contaminants affect important Bay species. "We will be looking for the kinds of subtle effects that are not readily apparent but can have long-term implications," says Burreson, "for example, sub-lethal doses of contaminants that do not kill but affect growth and reproductive capacity of fish and other organisms."

"Our aim," Tenore adds, "is to provide resource managers with an ability to predict the ecological effects of alternative strategies for treating contaminated sediments." "It is in these sediments," he says, "that metals and organic compounds often settle and are then recycled over and over again through the food web."

While the research effort is focusing on potential problems affecting Baltimore Harbor, the Anacostia River and the Elizabeth River — three "regions of concern" that the Chesapeake Bay Program has identified as exhibiting high levels of contaminated sediments with evidence of impacts on fish and bottom-dwelling organisms — findings by CERP researchers, says Tenore, will have application throughout the Bay and for similar aquatic systems nationally.

Scientists will conduct much of their work in experimental mesocosms, containerized systems that are used to simulate ecological conditions of aquatic habitats. Using test organisms that will serve as surrogates for commercial species, which are rarely amenable to labora-

The Chesapeake Ecotox Research Program, supported by the Chesapeake Bay Environmental Effects Committee, is a multi-disciplinary project to determine the effects of contaminants on important species in the Chesapeake Bay. Collaborating institutions are members of the Chesapeake Research Consortium and include the University of Maryland Center for Environmental Science, the Virginia Institute of Marine Science, the Academy of Natural Sciences Estuarine Research Center and Old Dominion University. www.mdsg.umd.edu/CERP/ tory conditions, scientists will determine the effects of contaminant exposure on behavior and measure responses at molecular levels. Their aim is to link toxicological effects in the laboratory with quantitative predictions on fish production and growth in the Bay system.

To ensure that research is responsive to the needs of resource management agencies, a CERP advisory council includes representatives of major state and federal managers, research scientists as well as other community stakeholders.

For further information, see the Chesapeake Ecotox Research Program website at http://www.mdsg.umd.edu/CERP/

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The Chesapeake Bay Environment Effects Committee (CBEEC) is a joint effort of the National Oceanic and Atmospheric Administration's Chesapeake Bay Office and the Sea Grant Programs of Maryland and Virginia. Since 1985, CBEEC has overseen systemwide research on the Chesapeake Bay. The first phase of this research focused on oxygen processes in the Bay, with an emphasis on how nutrient loads and other factors affect levels of oxygen found in the Bay, as well as what impacts these changes have on the health of the Bay ecosystem.

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In 1990, with additional funds provided by the U.S. Environmental Protection Agency, CBEEC turned its attention to contaminants in the Bay, employing the same systemwide approach used in addressing the nutrient/oxygen issue. For more information on this research, please contact Maryland Sea Grant (301-405-6376) or Virginia Institute of Marine Science (804-684-7167) or visit the CBEEC website: http://www.mdsg.umd.edu/CBEEC/

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