

The Crest

Current Issues in Coastal Ocean and Estuarine Science

VIMS Dedicates Kauffman Aquaculture Center

VIMS dedicated its new Kauffman Aquaculture Center in a ceremony at the Topping, Virginia facility in April. Guests of honor included NOAA Chief Administrator Conrad Lautenbacher, Virginia Secretary of Natural Resources W. Tayloe Murphy, Jr., and Susan Magill, Rector of William and Mary.

The Kauffman Aquaculture Center (KAC) was specifically designed to

enhance and extend the work and facilities of VIMS Aquaculture Genetics and Breeding Technology Center (ABC). The General Assembly established ABC in 1995 to explore and promote the development of aquaculture in the Commonwealth.

The Kauffman Center lies 30 miles north of Gloucester Point on a tributary of the Rappahannock River

known as Locklies Creek. Construction of the \$1.4 million Center was funded through a challenge grant by Boots and Jack Kauffman, with matching grants provided by Mr. Matthew T.

Blackwood; the D. Keith Campbell Foundation for the Environment, Inc.; Mr. and Mrs. Weston F. Conley, Jr. and Family; Dominion; the Elis Olsson Memorial Foundation; Mr. and Mrs. E. Claiborne Robins, Jr.; Mr. and Mrs. James E. Rogers; and the Smurfit-Stone Container Corporation.

ABC Director Dr. Stan Allen notes that "the Kauffman Center significantly expands the scope of aquaculture research at VIMS by providing a facility that was specifically designed to hold both native and non-native species in quarantine." Initial use of the facility will focus on studies of the



Kauffman Aquaculture Center in Topping, VA

Report Bolsters VIMS Agenda

Close parallels between VIMS programs and recommendations in the recent U.S. Ocean Commission report confirm the Institute's bearings

A long-anticipated report on national ocean policy calls for a shift in research emphasis toward fields of study long championed by VIMS scientists, including ecosystem-based management, ocean-observing systems, biodiversity studies, and whole-watershed approaches to coastal decision-making.

Other recommendations in the report bolster VIMS' long-standing mandate to provide policymakers and the public with unbiased scientific information, and support the Institute's on-going efforts to build collaborations with other marine science institutions.

"We were gratified to see the similarities between the commissioners' recommendations and our own programs," says VIMS Dean and Director Don Wright. "We were also pleased with the Commission's call to bring funding for marine research to the level it deserves."

The report notes that coastal watershed counties generate five trillion dollars in economic activity each year, one half the U.S. gross domestic product. It estimates that an annual investment of \$3.2 billion is needed to

help stave off the threats posed by continued degradation of ocean and coastal environments, and recommends payment through a trust fund composed of federal revenues from oil and gas development. Federal oil and gas revenues total approximately \$5 billion annually.

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native oyster *Crassostrea virginica* and the non-native oyster *C. ariakensis*.

The facility features four separate laboratories that were each purpose-built to protect Chesapeake Bay and its living resources from disease, parasites, and the unintentional introduction of non-natives:

Oyster Isolation Laboratory—This room is designed to hold recently

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*Kauffman Center**continued from page 1*

imported non-native species in quarantine from the rest of the facility and the external environment. Quarantine is maintained through use of a re-circulating seawater system whose effluent is subjected to temperatures high enough to kill any living contaminants. The room also operates at air pressures lower than its surroundings to prevent the unlikely release of any airborne pathogens, and is underlain by an impermeable membrane to prevent discharges to groundwater. Leak detectors further minimize the possibility of any groundwater leakage. This room can be entered and exited only through a decontamination area. This lab is named in recognition of a gift

from the Keith Campbell Foundation for the Environment.

Health Certification and Reproductive Containment Laboratory—This room is designed to further minimize disease concerns and to prevent spawn from any experimental oysters from entering the Bay. Residence in this room is restricted to second-generation oysters, a constraint that prevents the propagation of any disease or parasites that might be present in imported oysters. These second-generation oysters are certified disease-free according to protocols set forth in the Aquatic Animal Health Code, a set of internationally agreed standards established by the Office International des Epizooties. OIE is the official arbiter of the World Trade Organization for living animal products, including wild or aquacultured marine animals (VIMS is an OIE reference lab). Effluent from this room's re-circulating seawater system is treated with ozone to kill any spawn it may contain. This lab is named in recognition of a gift from the Weston Conley, Jr. Family.

Natives Laboratory—This "reverse quarantine" room is designed to keep native oysters from being exposed to MSX and Dermo, two diseases that have devastated wild oyster populations in Chesapeake Bay. Maintenance of disease-free specimens of the native oyster *C. virginica* is important in light of on-going breeding and restoration efforts for this species. Isolation is accomplished using a flow-through seawater system equipped with high-efficiency filters. This lab is named in recognition of a gift from the Smurfit-Stone Container Corporation.

Operations and Analysis Laboratory—This lab will be the "nerve center" for the facility. It will hold equipment for monitoring water quality in the seawater systems on the main floor and for assessing the condition of animals held in quarantine. Digital connections to sensors elsewhere in the facility will allow the Center manager to monitor many systems remotely. Because almost all tanks in the Center are "closed" systems that use re-circulating seawater, it is important to monitor their metabolite levels, which indicate the health of the biological filters. This lab is designed for future addition of cryopreservation capabilities, which will allow for long-term storage of frozen sperm for breeding purposes. The lab is named in recognition of a gift from Dominion Corporation.

The remainder of the building is devoted to equipment for algal culture (to produce the algae that are needed to feed oysters in a re-circulating seawater system), mechanical systems, and a small lobby area with educational displays describing the Center's work.

Public access to the working parts of the facility will be limited due to biosecurity concerns.

Allen predicts that the Center's unique design and capabilities will within five years make it a worldwide magnet for investigators seeking to explore and exploit new genetic resources for shellfish. Says Allen, "The Center will serve as a resource for conserving rare genetic material, in the form of live animals and their genes, and provide genetic resources for creating a new kind of aquaculture



VIMS researcher Dr. Mark Luckenbach (with oyster) discusses the merits of the Kauffman Aquaculture Center with (from L) Virginia Secretary of Natural Resources W. Tayloe Murphy, Jr., VIMS Dean and Director Dr. Don Wright, Mr. Jack Kauffman (for whom the facility is named), and Vice Admiral Conrad C. Lautenbacher, Jr., Chief Administrator of the National Oceanic and Atmospheric Administration.

industry for Chesapeake Bay. It will also aid efforts to repopulate the Bay with oysters."

VIMS began construction of the Kauffman Aquaculture Center in May 2002. Architectural services were provided by Gregory Brezinski of A2RCI Architects in Yorktown. The structure was built by Dobson Construction of Newport News.

Isabel Recovery in Full Swing

Like many of its neighbors, VIMS is still working to restore, replace, and rebuild areas hit by Hurricane Isabel in September. The storm destroyed all three of VIMS' research piers, claimed 18,000 sq ft of workspace, and displaced 34 scientific and support personnel.

"We've made a great deal of progress this spring," says VIMS Director of Facilities Management Joe Martinez. "The finfish aquaculture building, submerged aquatic vegetation greenhouse, and sea turtle greenhouse are all operational. The seawater distribution system, required for research support, is back up and running as well."

"The Teaching Marsh and Maritime Forest were open again for the public in May, just in time for Marine Science Day and public tours," adds Public Relations Coordinator Susan Maples. "We owe great thanks to CCRM [Center for Coastal Research and Management] staff for their efforts to re-

plant the vegetation that was lost to the storm and to re-landscape the area."

Reconstruction of VIMS' new piers will be completed by the end of June. Replacement windows for Chesapeake Bay Hall are scheduled to be installed by mid-July.

"While some buildings are still waiting to be repaired, most of the reconstruction needed for continued research has been completed," says Martinez.



Construction crews have been using a barge-mounted crane to help rebuild the VIMS Ferry Pier, which was destroyed by Hurricane Isabel on September 18, 2003.

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