

## New Pound-Net Design Spares Young Fish

By James Schultz

Within the last decade, balancing the competing interests of fisheries conservation, strong consumer desire for fresh fish, and a proud tradition of fishing for profit and pleasure has become increasingly difficult. VIMS graduate student Christian Hager, a licensed commercial fisherman, may have found part of the solution.

In two studies underwritten by the Potomac River Fisheries Commission (PRFC), Hager has shown that an inexpensive modification to traditional pound nets can, under optimal conditions, permit the escape of more than 80 percent of small fishes that by law cannot be retained for sale. Traditionally such juveniles are thrown back in the water—supposedly without damage. In fact, most die from the trauma of physical handling and/or oxygen deprivation. This “bycatch” is a continuing problem because it kills fish before they can provide a return to the fishery and before they can reproduce.

Hager’s innovation involves the addition of rings and slots to traditional netting. Field tests were used to determine optimal sizes for both mechanisms. Sub-legal flat fish, such as flounder, are able to slip through the slots, while cylinder-like finfish, such as trout, escape through the rings. Larger,



Commercial fisherman David Bradley and his son Bill with Chris Hager, raising “pocket” to harvest fish from pound net.

legal fishes cannot fit through either opening and are thus retained for harvest.

“Allowing sub-legal fishes to exit a pound net before it’s fished eliminates all the stresses associated with handling. Released fishes are completely healthy,” Hager says. “This new approach works without any effort expended by the fisherman. Over time, fishermen will actually catch more legal fish with less effort, and the

fisheries will realize a greater yield-per-recruit due to the reduction in juvenile mortality. These modifications work. Everybody’s happy.”

Pound nets are staked seasonally in shallow estuarine areas to capture fish as they migrate in and out of river systems. The basic concept behind the nets’ design pre-dates European arrival in North America and takes advantage of fishes’ tendency to funnel, or travel in one direction along boundary edges.

Once inside a series of three interconnected enclosures, fish are trapped, and few can find the narrow openings by which they entered the trap.

“It’s essential that we begin to deal with the negative impacts of bycatch on the fisheries,” says Hager. “We have to figure out ways to avoid killing the juveniles before they can contribute to their species’ reproductive effort. If fishing methods don’t allow for pre-mortality culling of sub-legal bycatch, then legal restrictions on size limits accomplish nothing.”

Hager’s new pound-net modifications are slated to be adopted in the Potomac River by the end of 2001. The PRFC will modify one net free of charge for each fisherman, placing two panels consisting of 1 7/8” rings and 7/8” x 5” slots at right angles to one another in each corner. Eventually, he hopes that fishermen throughout the Chesapeake Bay watershed—including those involved in the haul-seine fishery—might be persuaded to give the bycatch-reduction devices a try.

“Looking down the road, if this design is universally adopted, it will assist in the recovery of stocks that have been seriously depleted,” Hager says. “Reduce juvenile mortality and, as the fisheries rebound, you’ll see greater sustainable yields.”

## CBNERRVA Teams with New England Aquarium for the 1<sup>st</sup> of Five “Coastal Science for Lawyers” Pilot Workshops

A glorious spring day at the New England Aquarium (NEAq) in Boston was the setting for the premier of the NERR Coastal Science for Lawyers workshops. Fifty-four law students and practitioners from the Boston area attended the “crash course” in basic coastal science. Law students from Harvard University, Northeastern University, Boston University, Boston College and Suffolk University Law Schools along with lawyers from the Massachusetts Department of Environmental Quality were represented in the audience for the program.

The “Science for Lawyers” workshops were developed by Dr. David Niebuhr, education coordinator for CBNERRVA, VIMS graduate

and assistant research professor of education at the College of William and Mary in conjunction with Lynda Butler, professor of law at the William and Mary School of Law. The project is supported through a grant from NOAA to CBNERRVA and the College’s Environmental Science and Policy Cluster (ESPC).

Participants were treated to a variety of speakers who conveyed a sense of the vast amount of information required for them to make “informed decisions” about environmental issues. Along with Dr. Niebuhr, speakers included Dr. Gerry Schubel, coastal scientist and CEO of the NEAq; Dr. Scott Kraus who spoke about international regulations and right

## Juli Harding Honored

Juli Harding, Ph.D. was awarded the first Thatcher Award at the College of William and Mary commencement ceremony on Sunday, May 13, 2000. The Thatcher Award was established to recognize excellence in graduate and



professional study. While earning her Ph.D., Juli published 12 papers as first author and was co-founder of the Virginia Oyster Reef Teaching Experience for science educators. She also served as the co-principal investigator for the Veined Rapa Whelk Project since the non-native whelk was found in Chesapeake Bay in 1998. Through her performance, Juli has set a high standard for future recipients of this prestigious award and honored her School and her discipline.

whale research; Dr. Michael Tlusty addressed the clash of politics and science in aquaculture development; Ms. Britt Anderson, J.D. (assistant director of the ESPC) who presented a discussion on the role of the “public trust doctrine” in environmental legislation; and Dr. Michael Connor who gave two presentations on water quality issues and on environmental risk assessment and the scientific method.

This project will continue through this coming September, when four additional pilot workshops will be held throughout the country. Tentative plans have been made to offer workshops in Seattle, Baltimore, Raleigh and Williamsburg. For additional information on the “Coastal Science for Lawyers” please contact Dr. David H. Niebuhr, Education Coordinator, CBNERRVA at 804-684-7144.

