

Fishery Resource Grant update

The Virginia Fishery Resource Grant Program (VFRGP) rewards good ideas from fishing experts themselves – commercial fishermen.

The program, a partnership between industry and the Virginia Sea Grant Marine Advisory Program, was initiated in 1999 with a \$300,000 award from the Virginia General Assembly. This year's allocation to the VASG-MAP for the program is \$210,000.

VFRGP grants are awarded by VASG-MAP for work in four areas: new fisheries equipment or gear; environmental pilot studies; aquaculture / mariculture; and seafood technology.

Since its inception 52 competitively-selected VFRGP projects have been funded, including four initiated since the last RFP in 2004. These are:

FRGP 2004-10

Alternate methods for haul seine fishery to reduce possible impact on SAV beds
Mathew Scott Bloxum, Poquoson, Va.
Mar-Dec. 2005, \$4,901

FRGP2005-03

Feasibility Study on one-year grow-out of triploid *Crassostrea ariakensis*
Frances Porter, Newport News, Va.
May 2005-July 2006, \$50,435.

FGP2004-02

Assessment of Sturgeon Bycatch, Bycatch Mortality & Other Regulatory Discard Mortality in Virginia Winter/Spring Gill Net Fisheries
Kelly V. Place, Williamsburg, Va.
March-August 2005, \$32,266
(See feature page 6)

FRGP 2004-03

Value of Cownose Ray: Population Size, Harvesting, Processing and Market Acceptance
Bevans Oyster Company, Kinsale, Va.
April 2005-Dec. 2006, \$21,250

Proposed rule change will protect sea turtles



Image: Oxford Scientific Foundation

Virginia Sea Grant Marine Advisory Program Leader William DuPaul and an industry colleague have taken a lead role in researching gear changes to reduce loggerhead turtle mortalities and injuries as a result of sea scallop fishing operations.

The research, which will likely result in a new regulation requiring turtle exclusion chains, was conducted in cooperation with the NOAA's National Marine Fisheries Service (NOAA Fisheries Service) and the Fisheries Survival Fund, an organization representing most of the commercial scallop vessel owners and captains in the U.S.

The rule change, proposed by NOAA Fisheries Service, would prevent loggerhead turtles from entering scallop dredges, where they can be injured or killed during fishing operations. The gear change would require a chain grid across the dredge opening, with openings small enough to allow entry for sea scallops but not turtles. NOAA Fisheries Service concluded a comment period on the proposal on June 27.

The turtle chains are needed to reduce bycatch mortality of turtles and would be required on all scallop dredges with permits to fish in the Mid-Atlantic. Vessels would be required to be outfitted with the chains from May through November, when loggerheads are most likely to be in the area.

DuPaul, who is also a longtime marine science professor at the Virginia Institute of Marine Science, was joined by colleague Ron Smolowitz, a former NOAA researcher now with the Fishermen's Survival Fund.

Field tests completed during the summer of 2003 showed a dramatic decrease in the numbers of sea turtle interactions; scallop catches were affected very little. Education efforts include information cards that have been posted on roughly 150 commercial vessels in the region and explain turtle resuscitation techniques and the rigging of gear modifications.

see sea turtles, page 2

In This Issue

This issue of Tideline features activities from Virginia Sea Grant's Marine Advisory Program, in addition to other news items and a listing of new publications by our researchers and outreach specialists. In the next issue look for features on Virginia Sea Grant research projects. If you have news you'd like us to consider publishing, please contact editor Pauli Hayes at pauli@virginia.edu

Welcome

Welcome to **Carol Hopper Brill**, new Marine Education Specialist with the Marine Advisory Program at VIMS. Brill received a B.S. and M.A. in zoology from the University of California-Davis before pursuing doctoral research in Hawaii on the ecology and reproductive biology of reef-contributing snails. She received a Ph.D. in marine zoology from the University of Hawaii-Manoa.

Brill worked at the Waikiki Aquarium for more than 20 years, designing programs aimed at making marine science more accessible to a broad range of community audiences. In her position with VIMS, she will focus on programs for high school students (e.g. the Blue Crab Bowl and Outlook on Ocean Science) as well as professional development courses and other education initiatives that support teachers.

We'll miss you

With this issue of *Tideline*, we say farewell to **Sally Mills**, our Virginia Sea Grant communicator housed at the Virginia Institute of Marine Science in Gloucester Point. Sally edited the *Virginia Marine Resource Bulletin* for the past 6 years, and leaves that post on September 30th.

Mills will return to her small farm in Walkerton, where she and her family raise a suite of organic products including shiitake mushrooms, berries, herbs, honey, and eggs. She will continue to write about conservation topics on a freelance basis and plans to produce a monthly column about farm life.

Laroussi awarded patent for UV lamp

A U.S. patent recently was granted to Old Dominion University researcher Mounir Laroussi for his excimer ultraviolet lamp, which was developed in part using Virginia Sea Grant support from a National Strategic Investment in ballast water technology.



Mounir Laroussi

Laroussi, an electrical and computer engineering faculty member, and Fred Dobbs, an ODU professor of biological oceanography, received Sea Grant support for a project studying the utility of photon engineering in inactivating human pathogens, e.g. *E. coli*, in the ballast water of ships. Although similar processes have been used to minimize potentially harmful agents in drinking water and wastewater, this particular process was refined to use less power and result in lower costs.

Beyond its use in sterilizing water, the process is being tested by the Air Force Office of Scientific Research for decontaminating equipment exposed to biological warfare agents.

The patent number is 6,858,988. See [more information](#).

See additional information about [Laroussi's work](#) here.

sea turtles (continued)

Mature loggerheads may weigh as much as 350 pounds and live up to 50 years. They have been listed as a threatened species since 1978. Current data estimate that roughly 750 loggerheads are captured annually in scallop dredges, with an almost 65 percent rate of mortality or serious injury.

DuPaul and Smolowitz recently conducted research in Florida, where they simulated turtles being struck by scallop dredges to evaluate the possibilities of "turtle bumpers" to further protect turtles from dredges. A next step will be to videotape dredges in the Mid-Atlantic to analyze gear-turtle interactions.

The current research recently has been featured in *Commercial Fisheries News* and *National Fisherman* magazines and has received wide visibility in academic and environmental arenas.

More information may be obtained here:

[VIMS Marine Advisory Services Fisheries page](#)



New Virginia Sea Grant publications

(Virginia Sea Grant authors in bold)

Peer-reviewed publications

Flick, Jr., G. J. and L. A. Granata. Biogenic amines in foods. 2004. In: *Toxins in Food*. W. M. Dabrowski and Z. E. Sikorski Eds., CRC Press., Boca Raton, FL. pp. 121-154.

Gedamke, T., **W. DuPaul** and J. Musick. 2005. Observations on the life history of the barndoor skate, *Dipturus laevis*, on Georges Bank. *J. Northwest Atlantic Fishery Science* 35:67-78.

Koo, J., **M.L. Jahncke**, P. Reno, X. Hu, and P. Mallikarjunan. 2005. Inactivation of *Vibrio parahaemolyticus* and *Vibrio vulnificus* in phosphate-buffered saline and in inoculated whole oysters by high pressure processing. *Journal of Food Protection* (Accepted for Publication).

Lindquist, and J. P. Dubey. 2004. Survival of *Toxoplasma gondii* in Eastern Oysters (*Crassostrea virginica*) *Journal of Parasitology* 90(5):1054-1057.

Lindsay, D. S., M. V. Collins, S. M. Mitchell, C. N. Wetch, A. C. Rosypal, **G. J. Flick**, A. M. Zajac, A. Mowry, D.E., **M.H. Schwarz**, K.P. Hughes, **M.L. Jahncke**, **S.A. Smith**. 2005. Efficacy of hydrogen peroxide in marine recirculating aquaculture systems holding summer flounder (*Paralichthys dentatus*). *Journal of Applied Aquaculture* 17(1):65-75.

Smith-Asher, J. L., L. A. Granada, **G. J. Flick**, **M. L. Jahncke**, and R. E. Croonenberghs. 2005. Cleaning effectiveness and hand washing procedures in the removal of *Listeria spp.* in blue crab (*Callinectes sapidus*) processing plants. *Journal of Aquatic Product Technology* 14(1):39-53.

Xiaopei, H., P. Mallikarjunan, J. Koo, L. Andrews, and **M. Jahncke**. 2005. Comparison of kinetics on high pressure and irradiation inactivation of *Vibrio vulnificus* and *Vibrio parahaemolyticus* in buffer solutions and whole oysters. *Journal of Food Protection* 68(2):292-295.

Non-Peer-Reviewed Publications

Arritt, F., **M.L. Jahncke**, and J. Eifert. 2005. Reduced oxygen packaging and safety of refrigerated raw flounder and refrigerated fully cooked battered and breaded fish portions. WFLO Research Project #147. *World Food Logistics*

Arritt, F., **M. Jahncke**, D. Eifert. 2005. Reduced oxygen packaging and safety of refrigerated

(continued page 4)

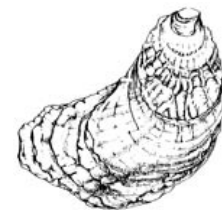
Oyster processors get boost from approval of quick-freeze method

After testing a process of quick freezing raw oysters to reduce the human pathogen *Vibrio vulnificus* to undetectable levels, Michael Jahncke has received a letter of approval from the Virginia Department of Shellfish Sanitation that will allow Virginia oyster processors to label their oyster products accordingly when the process is used.

As a result of the new labeling approval, Virginia oystermen will be better able to sell their processed oyster products in the high-demand California market.

Jahncke's research, funded in part by Virginia Sea Grant, provided the data for review by regulatory officials, who subsequently gave the processing method the official stamp of approval.

Jahncke is professor of food science and technology, director of the Virginia Seafood Agricultural Research and Extension Center in Hampton, and Co-Principal Investigator of Marine Advisory Services at Virginia Tech .



Congratulations

George Flick, University Distinguished Professor at Virginia Tech and Co-Principal Investigator of the Marine Advisory Program at Va. Tech, received the annual national 2005 Elizabeth Fleming Stier Achievement Award given by the 30,000-plus member Institute of Food Technologists. The award recognizes the pursuit of humanitarian ideals and unselfish dedication resulting in significant contributions to the well-being of the food industry, academia, students, or the general public. [See details here.](#)

Vicki Clark, Virginia Sea Grant marine education specialist at VIMS, received the 2005 Virginia Chefs Association Service Award for educational programming in support of chefs' continuing education. Clark has for many years been instrumental in the Virginia Sea Grant Seafood Education Program at VIMS, which provides current research information on seafood through workshops and seminars, cooking demonstrations, and professional development programs for chefs. [See details here.](#)

New publications (continued)

raw flounder and refrigerated fully cooked battered and breaded fish portions. WFLO Research Project #147. World Food Logistics Association. 11 pp.

Correa, A. (ed.) 2005. CFAST News 9(1), 12. pp.

Correa, A. (ed.) 2005. The Big Squeeze: News from the High Hydrostatic Pressure Laboratory at Virginia Tech 2(1), 2 pp.

Craig, S.R., M.H. Schwarz, E. McLean. 2005. Nutrition research with cobia. Global Aquaculture Advocate 8(1):76-78

Flick, Jr., G. J. 2005. High pressure processing of oysters Part 1: Biological composition, physical properties. Global Aquaculture Advocate. 8(12):36-37.

Hayes, P. (ed.) 2005 Tideline 18(1), 4 pp.

Jahncke, M. 2005. Improving quality of raw fishery products. Global Aquaculture Advocate 8(1):38-39

Lee, D.J., X Xu, **R.M. Lane**, and P. Zhan 2005. Shape analysis for an automatic oyster

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Seeking reader input

The Virginia Sea Grant College Program invites public comment on its long-range strategic plan, developed in 1999. During 2006 we will modify and update the plan, which identifies program priorities related to the following topical areas: aquaculture, commercial fisheries, seafood technology, coastal economic development, coastal ecosystem health, and fostering an environmentally and scientifically informed citizenry.

At this time, we invite public comment on the strategic plan, its priorities and its directions. If you feel that a marine or coastal issue or problem or opportunity has been overlooked, please let us know what you believe should be modified in the strategic plan.

We welcome comments from any interested individual, and will consider all input provided us. Virginia Sea Grant is on the web at www.virginia.edu/virginia-sea-grant/ and the strategic plan is under "About Us."

Please mail comments to Director, Virginia Sea Grant College Program, 170 Rugby Road, Charlottesville, VA 22903; fax 434-982-3694, or e-mail wlr4z@virginia.edu. Please include your name and address as well as a brief description of your connection to Virginia's coastal and marine resources and/or environments.



Juvenile bluefin tuna tagging program nets migration data

A new electronic tagging program for juvenile Atlantic bluefin tuna may help managers and commercial fishermen better understand the migratory patterns of juvenile bluefins - information that is necessary to develop a more biologically realistic conservation program for bluefin tuna Atlantic wide.

Jon Lucy, Virginia Sea Grant marine advisory specialist at the Virginia Institute of Marine Science (VIMS), is one of several individuals heading up this project on the Atlantic Coast. Scientific colleagues in the Bay of Biscay are undertaking the same tagging of juvenile bluefin on the other side of the Atlantic.

The data returned from these archival tags will be an important first step in understanding the behavior, distribution and migration paths of juvenile bluefin tuna.

The cooperative pilot tagging project was initiated with the Virginia Sea Grant Marine Advisory Program at VIMS, Massachusetts Division of Marine Fisheries, National Marine Fisheries Service, and the University of New Hampshire.

Researchers will attempt to deploy 100 tags this season. So far, 46 tags have already been deployed on juveniles off the

coast of Virginia. A bright green spaghetti ID tag denotes the presence of the data recording tag in the fish. These juvenile bluefin are likely moving up the coast and are being seen now off the coasts of New Jersey and Massachusetts. Small juvenile bluefin may be tagged soon in both these areas late this summer and into the early fall.

The archival tag is surgically implanted in the dorsal muscle of the fish with a pale white, thin light stalk sticking out of the fish (to collect light data). The fish also have a conventional green streamer tag anchored in its muscle near its 2nd dorsal fin (see figure above). The intact tag, with the light stalk attached, is what is needed from anglers. Intact fish are desired as well, but the realities of distances involved, the need to keep fish iced, etc. may prevent that in some cases.

As noted on the figure, there is a \$500 reward for returning the intact archival tag. Additionally, boats keeping one of the specially tagged fish on board will not have that fish count against the boat's daily bag limit or present a problem regarding size limits. In addition to the tags, data on the fish's size and recapture location are requested.

Laminated hard copies of the poster are also available by contacting Jon Lucy at VIMS, 804-684-7166 or lucy@vims.edu.

To find out more about this bluefin

research visit www.tunalab.unh.edu.

Additional details may be obtained from Molly Lutcavage at the University of New Hampshire, 603-862-2891, fax 603/862-2717, molly.lutcavage@unh.edu



Reproduction of poster publicizing bluefin tagging program

(new publications continued)

grading system, SPIE Optics East, two and three-dimensional vision systems for inspection, control and metrology II, Philadelphia, PA. Proceedings publication.

Jahncke, M.L. 2005. Improving quality of raw fishery products. *Global Aquaculture Advocate*. 8(1):38-40.

Jahncke, M.L. 2005. Requirements to validate a freezing method to ensure safe raw oysters. *World Food Logistics Association (WFLO)*. In *WFLO Showcase: Food Science, Trends, Trade, Technology*. Annual Meeting, Las Vegas, Nevada. April 30-May 4, 2005.

Kauffman D., 2005. Live markets: Opportunity for U.S. Aquaculture, *Global Aquaculture Advocate*. 8(1):26-27.

Lucy, J. and C. Bain. 2005. *Virginia Game Fish Tagging Program Annual Report 2004*. 37 pp.

Lucy, J. 2005. Angling for Answers. *Sea Grant Virginia Marine Resource Bulletin*, 37(1)14-17.

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Sturgeon restoration effort benefits from Fishery Resource Grant

Thanks in part to a Virginia Fishery Resource Grant, the declining sturgeon population in Chesapeake Bay has better odds for a comeback.

Scientists at the Virginia Institute of Marine Science have teamed up with local watermen and state and federal agencies in Virginia and Maryland to help monitor and restore the Chesapeake Bay sturgeon, which once supported the U.S. East Coast's second largest fishery before decades of overharvesting and habitat loss sent its numbers plummeting.

Goals for the project are twofold: 1) capturing broodstock for future reproduction, and 2) tracking juveniles to determine habitat.

A dramatic highlight of the restoration program occurred in early May when Chris Hager, Virginia Sea Grant fisheries bycatch specialist at VIMS, and Kelly Place, a local waterman, hauled a six-foot, 85-pound sturgeon from the James River and transported it to a spawning facility in Maryland.

Media coverage of the event included articles in the May 19 issues of the

Richmond Times-Dispatch and Hampton Roads Daily Press.

Following that, two more large males joined the first; the two largest of the three were then hormonally induced to produce sperm. Hager says that these specimens were stored for future use when watermen can



capture a large spawning-age female from the Chesapeake Bay.

Additionally, two juvenile sturgeon were surgically implanted with transmitters and tracked moving up the York River. Two fish tagged during the study have already been recaptured - one had returned to its original capture location and the other moved into Maryland waters. Hager says he hopes that tracking efforts will continue next spring to expand knowledge of sturgeons' temporal habits in the bay.

Cooperating agencies will meet in

September to plan future restoration efforts, and several outreach activities are scheduled, including the Watermen's Seafood Festival August 20 in Yorktown. These events aim to educate the public about the project and its objectives including why the sturgeon matters and should be restored.

Hager said he is pursuing various funding sources to continue the work past its 2005 end date. To that end he also is soliciting ideas from fishermen for creative avenues of future cooperative research.

More information on the VFRGP is [available here](#).

(new publications continued)

Mills, S. (ed.) 2005. Virginia Marine Resource Bulletin, 36(3), 24 pp.

Mills, S. (ed.) 2005. Virginia Marine Resource Bulletin, 37(1), 24 pp.

Musick, S. 2005. Summer opportunities: TROLLS at NMEA. NMEA News 21(1):3

Scott, V., M. Weidman, D. Hicks, R. Collete, **M. Jahncke** and K. Gall. 2005. Guidelines for *Listeria* testing of environmental, raw product and finished product samples in smoked seafood processing facilities. Food Production Trends, 25(1):23-24

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