

Fish Tales Newsletter

West Virginia's Aquaculture Newsletter is produced to help inform, educate, and update those interested in producing quality aquatic products, in a sustainable manner, for the recreational and food fish markets.

Ken's Corner

Who has a stake in W.Va. Aquaculture?

Perhaps there are more than first comes to your mind. Of course farmers head the list, but there are many other aquaculture professionals – people who work at government hatcheries, researchers at WVU, the National Center for Cool and Coldwater Aquaculture, The Freshwater Institute, and West Virginia State College to name a few. Teachers in our secondary schools use aquaculture as a tool to teach a variety of concepts. In support of these activities, vendors construct facilities, manufacture feed, grow fingerlings, distribute live fish, and furnish insurance, oxygen, fuel, equipment, and many other goods and services to the aquaculture industry. Landowners may derive income by providing access to water, and bankers receive a return by lending capital. Our representatives on both the state and federal levels have supported development of the aquaculture industry. Government agencies like DNR, DEP, Department of Agriculture, Division of Tourism, and the WVU Extension Service regulate and/or serve citizens of the state.
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West Virginia Welcomes Allegheny Aquaculture

A new company specializing in rainbow trout production and transport was formed earlier this year. **Mike Nardella** and **John Fitzgerald** have joined forces to form Allegheny Aquaculture. This new company is in the process of signing a lease with Colony Bay Coal Co., giving it rights to use the high-quality water draining from the inactive Robinhood mine in Boone County for commercial trout production.

The eight experimental (polypropylene) growout tanks at the Robinhood site will be included in the lease. An additional eight tanks are in the planning stages for that site. The new tanks will be made from a high density polyethylene (HDPE) material and will have a slightly larger volume. The expansion of this facility is planned for the spring of 2006.

Fish Health Research at the National Center for Cool and Cold Water Aquaculture by Dr. Greg Wiens

Approximately 30% of trout intended for sale are lost each year due to infectious disease. Developing strategies to reduce this loss is a high priority at the USDA National Center for Cool and Cold Water Aquaculture (NCCCWA), located in Leetown, West Virginia. The causes of disease outbreaks are often complex and can result from adverse environmental conditions in combination with changes in pathogen numbers and the fish immune system. At the NCCCWA, our research focuses on how these interactions lead to disease loss in both recirculating and flow-through aquaculture systems. The overall goals of our research are threefold: (1) select rainbow trout broodstock with increased disease resistance, (2) develop new therapeutics and vaccines to prevent and treat disease outbreaks, and (3) develop rapid assays to better track pathogens in the environment.

One trout pathogen we study is the bacterium that causes “cold water disease,” which is also known as “fin rot,” “peduncle disease,” or “rainbow trout fry syndrome.” The scientific name of this bacterium is *Flavobacterium psychrophilum*. It is a yellow pigmented bacterium that likes cool water temperatures for growth. (continued on page 2)

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This microorganism usually causes disease at water temperatures below 15°C (59°F) and does not survive at temperatures above 25°C (77°F). The disease often starts with erosion of the fins, usually the tail. As the disease progresses, tissue supporting the fins is destroyed; in some cases, spinal deformities result from infection. Morbidity can range from 1% to 50% and can be exacerbated by decreasing water temperatures. This bacterium, which causes disease most frequently in Rainbow, Brook, Brown, and Lake trout, results in significant economic losses to trout farmers throughout the United States.

In order to learn more about this pathogen we have begun to decode the genome (DNA sequence) of this bacterium. We have developed a preliminary map of the genome and have identified about 2420 genes (2004 annual report, www.ars.usda.gov/research/programs/programs.htm?np_code=106&docid=7162). From this research we have begun to identify which genes are involved in infection, replication, metabolism, and tissue damage. Based on this information, we are currently investigating candidate compounds for vaccine development against cold water disease. An important aspect of our studies is to determine whether our vaccine will induce immunity against bacterial isolates obtained from different locations. Often, vaccines are location- or strain-specific but can be broadened if common components among strains are incorporated into the vaccine. Thus, we would like to work in partnership with local fish farmers to obtain additional isolates of this bacterium that are currently causing disease problems. If fish are suspected to have cold water disease, and you would like to participate in this research, please contact Dr. Greg Wiens at the NCCCWA, 11861 Leetown Rd., Kearneysville WV 25430; telephone: (304) 724-8340, ext. 2137.

How People and Algae Are Similar

Algae, like people, come in many colors, shapes, and sizes. Some algae are single-celled drifters; others are attached. There are aggressive and passive algae, depending on the environment. In aquaculture, some algae are good and some are bad. However, like humans, there are a few things that all algae (there are thousands of species) have in common. To varying degrees, all algae need water, light, and nutrients. A pond contains many types of algae, interacting and competing for the available resources. This may be why it is so hard to control the algae in a pond. There is always somebody doing something to somebody else. Certain algae, just like certain humans, benefit under conditions when others may be a little stressed. That is why managing pond algae, like people, is rarely an easy job. And when there are too many, the odor is not pleasant.

Did YOU KNOW?

The eastern portion of West Virginia drains into the Chesapeake Bay. In the Bay watershed, agriculture contributes more than a third of the nitrogen and about half of the phosphorus that enters the Chesapeake. These excess nutrients spur water-fouling algae blooms. To learn more about the Chesapeake Bay watershed, send an e-mail to: www.chesapeakebay.net/enewssubscribe.htm

Jim Stiles Goes to a Better Place
Heaven is even better now that Jim Stiles, a longtime county Extension agent, has left our world. Jim spent his later years volunteering much of his time to running the Mountain Aquaculture and Producers Association (MA&PA) in Tucker Co. He is missed by many people.

An Irish Proverb

If you wish to be happy for one hour, get intoxicated...
if you wish to be happy for three days, get married...
if you wish to be happy forever, learn to fish!

U.S. catfish production in 2004 was 630 million pounds. The average price paid to the farmer was \$0.69/lb.

U.S. trout production in 2004 was 55 million pounds. The average price for the farmer was \$1.04/lb.

U.S. shrimp imports in 2004 were 1.1 billion (with a "b") pounds.

Farmer Profile



photo by Rodney Kiser

John (left) and George (right) Cottle, owners of **Twin Fork Trout**, have been raising trout in Mercer County for more than 30 years. The first site started in 1969; it has an average flow of 300 gpm. The Cottle brothers raise 12,500-15,000 fish there each year.

The second site, started in 1984, has an average flow of 600gpm. About 40,000 rainbow trout are produced each year along side the trout hatching house.

Twin Fork Trout is located in one of the many beautiful valleys just south of Princeton. Take I-77 onto the 460E (Oakvale) Exit. Turn right onto 112W; turn left in front of the fire hall; then turn right onto Pigeon Creek Rd.

Both production sites are in Willowton, W.Va., about a mile from the Virginia boarder.

The Cottle brothers sell their high-quality product for recreational stocking as well as for processing. They also have a stream they stock so people can have an unforgettable fishing experience fish with excellent results. This is a bargain at \$35/day with a limit of five trout.

Changes for Dr. Julie Delabbio of Bluefield State College

West Virginia's salmonid specialist, who has taught the two year Aquaculture degree program at Bluefield State College for many years, recently accepted a new position in Louisiana as Director of a small research station associated with Northwestern State University in Natchitoches. Julie came to West Virginia from Canada, her native country. She has had a positive impact on commercial producers and students alike, utilizing her extensive experience in salmonid production. We will miss you Julie, best wishes in Cajun Country.

Tucker County Processing Plant Reopens for Business

The cooperative processing plant previously known as Mountain Aquaculture and Producers Association (MA&PA) is once again processing fish for the value-added market. The facility is now called **Five Forks**. It is managed by **Junior Pittman**, who previously managed the processing plant in Sophia when it was run by High Appalachian LLC.

Five Forks has a new smoking machine that it is using to produce value-added products like fresh trout pate (rhymes with bay). One of the largest shipments for processing this year was delivered by **Twin Fork Trout** (see farmer profile at left). Those trout were processed to make the famous Original Trout Cakes sold at the 2004 and 2005 West Virginia Wine and Jazz Festival.

Fish Wagon sells more variety at the 2005 West Virginia Wine & Jazz Festival



On Sept. 17 and 18, the West Virginia Wine and Jazz Festival was held at Camp Muffly just south of Morgantown. This year the famous Appalachian Trout Cakes came in "Original" and "Cajun" flavors. In addition, a smoked fillet, a trout pate, and an artichoke dip were sold with crackers. The state Department of Agriculture's Fish Wagon was used to promote the locally raised trout products. All products were produced at the **Five Forks** plant in Tucker Co.

(Ken's Corner continued from page 1) Consumers purchasing farm raised fish are the reason an aquaculture industry developed in the first place. Processing plants, restaurants, food markets, and the individual purchasing fish for a delicious and healthful meal have a stake in the aquaculture industry. So do fee fishing businesses, resorts, outfitters and others serving the angler whose fishing experience is based on farm raised fish. Landowners purchase grass carp to control aquatic weeds and fish to enhance stocks in their pond or stream. Gardeners purchase ornamental plants and fish for a water garden. Why then does the West Virginia Aquaculture Association choose to characterize itself as a producer organization?

UPDATED W.Va. FEE FISHING BROCHURE NEEDS SPONSORS

Two years ago WVU's Extension service coordinated and published 40,000 copies of a brochure, listing all of the fee fishing sites in our state, with contact information, on a map. Efforts are underway for an updated version to be published for the 2006 fishing season. In order for the brochure to become a reality, a total of \$500 must be contributed from the stakeholders. Any individual business or organization can sponsor this great project for only \$100. By doing so they will get special recognition in the brochure and up to 1000 brochures. You can't beat that for advertising all over the state for two years. **Interested businesses should send a check, before November 1st**, made out to "West Virginia University" to WVU - P.O. Box 6108 c/o Dan Miller, Office 2026, Morgantown, WV 26506

We are encouraging contributions to Fishtales newsletter by W.Va. residents. If you are interested in contributing, please contact Dan Miller at dmille31@wvu.edu or call 304-293-4832, ext. 4465. The deadline for the next issue of Fishtales is December 15, 2005.

This publication is available in a printable format, on the web at:
<http://www.wvu.edu/~agexten/aquaculture/newsletter.htm>