

# 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.

## Fishing Package at Pipestem State Park

Consider that you are a manager of a resort in West Virginia and you want to increase revenue with a fishing package supported by stocking the stream passing through your property with trout. Would it be possible to recover costs for stocking the stream from revenue generated by angler visits? What size or type of fish would you stock, and when would you stock? Do stocked fish move outside of the stocked area? Where are these fish located in the stream? How well do they survive? What happens when the water gets too warm for trout during the summer? If these questions could be answered, perhaps a local trout farm will gain another client and sell more fish.

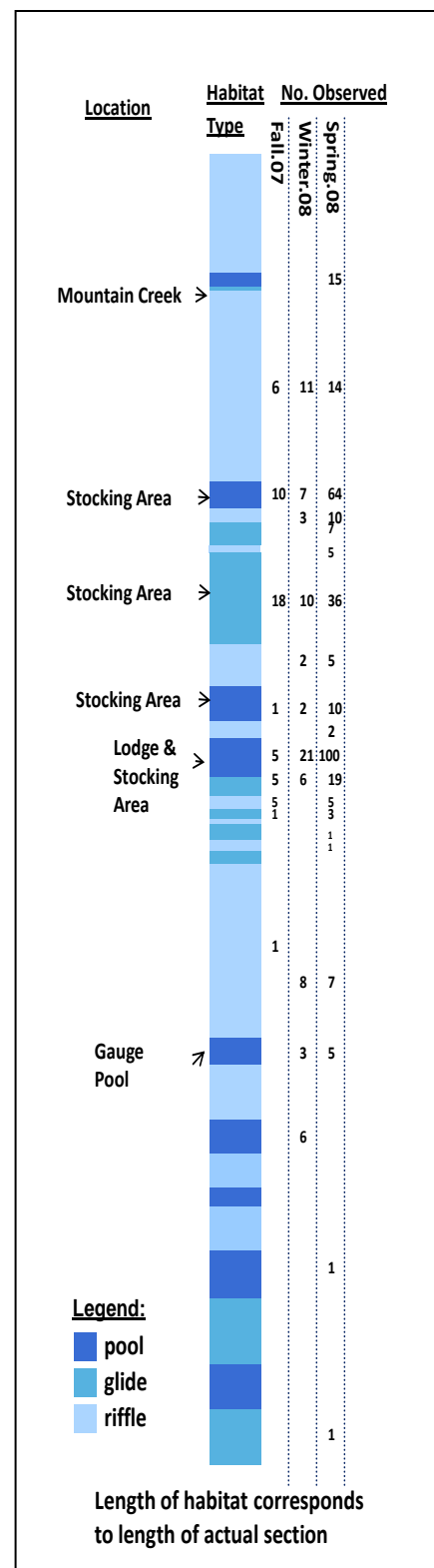
Researchers in Recreation and Parks at WVU and Concord University have teamed up with fishery biologists at WVU to study both the fish and the anglers to answer these questions and more. In this article, we will highlight the results of the Fishery Biology Task from the first stocking in fall of 2007 through the summer of 2008. Subsequent articles will highlight results from the Recreational Task.

**Dr. Kyle Hartman** and **John Howell**, investigators with the Davis College of Agriculture, Forestry and Consumer Sciences at West Virginia University, surgically implanted radio tags in trout and released them into the Bluestone River at Pipestem Resort. The Bluestone River at Pipestem does not currently contain trout because of its location above Bluestone Lake and because the stream temperatures become too warm during the summer. WVDNR does not stock trout in this stream. All trout observed in the stream and in the creel were stocked specifically by these investigators for this project.

A 1-mile section of river was stocked with rainbow trout ranging from 1 to 6 pounds on three occasions. One stocking was conducted in the fall (700 fish on 10/15) and two more the following spring (4/30 and 5/27 with 400 and 500 fish, respectively). A total of 20 trout were implanted with radio transmitters in October of 2007, and 20 more in April of 2008. The fish were tracked on 40 separate occasions between 10/16/07 and 6/14/08. The study site and areas upstream and downstream of Pipestem State Park were surveyed to locate the fish. In addition to monitoring survival, investigators recorded information on location, habitat, and persistence (see figure at left).

Access to the stream is restricted between November 1 and April 30. During this time the “tram” is not operating, and access is limited to a single 4-mile trail into the gorge from the park. Motorized access is not permitted.

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## WVDNR Denies Fish Farmer's Bear Damage Claim.

By Ken Semmens

In late September of 2008 an event occurred at a trout farm in Boone County that resulted in mortality of a large number of trout. Mike Nardella, owner of Rainbowhead farms who manages the raceway system, estimates the value of fish lost at \$88,000. Following the event, he applied to WVDNR to obtain compensation for bear damage. The claim was denied because DNR officers did not find enough evidence that the damage was due to bears.

The facility consists of a series of eight concrete raceways, and nine plastic raceways where the fish are confined. Ground water flows from one tank to another as it cascades down the hill. An electrified chain link fence surrounds the raceways to protect the fish.

At one corner, a galvanized pipe was disconnected from its insert. At least 6 standpipes had been removed causing the water to drain from the bottom of the tank instead of flowing into the tanks below it. Fish in these tanks would not have enough flow to survive. Losses included market size fish for sales in the last quarter of 2008, partially grown fish that would have been harvested in 2009, and some unique brood stock that would have generated fingerlings for sale in 2010.

The DNR report states that the event occurred on 9/22/08. The DNR officer and the farm owner did not meet immediately following the event. The facility was cleaned up by the farmer and put back in operation before the two parties met. Approximately two weeks after the event, DNR officials visited the site to determine if the damage could be attributed to bears.

Mr. Nardella contends that the damage was first noticed on Monday, 9/29 and that he reported bear damage on the following day. His workers commonly observe bears near the site. They are considered a continual threat to the operation. Presently, no other explanations for the loss are under investigation.

The farm sustained significant losses of trout in 2007 that was attributed to bear damage. One bear was trapped and removed. The West Virginia Department of Natural Resources accepted the 2007 claim and reimbursed Mr. Nardella for his losses. Following this event, more durable concrete raceways were installed and the fencing was improved.

There is no insurance on the fish so the farmer will receive no compensation for his recent loss. A second electrified barb wire fence will be added to protect the fish.

## If bear damage does occur...

By Ken Semmens

DNR officials are there to help both you and the bears. They deserve our respect and cooperation. Fortunately, West Virginia residents can apply for compensation for damage to miscellaneous real or personal property. The damage must be reported to a Conservation Officer within 48 hours of its occurrence, so it is important to call WVDNR promptly if you find damage that is caused by bears. If it is not reported promptly, WV DNR is under no obligation to accept or pay on a claim for bear damage. The officer must be able to attribute the damage to bears, so it is a good idea to conserve evidence before the officer arrives. It may be prudent to take photographs, or videos and obtain contact information from individuals who may have witnessed an event. When the officer arrives point out what damage you see and explain why you believe it is caused by the bears. There will be paperwork. Before you submit the paperwork, be sure the information submitted is accurate. If you are uncertain about something, find a way to verify the information before accepting the report as fact.



This is a 250 pound male black bear that was trapped inside a commercial trout production facility in West Virginia.

## Black Bears and Trout Farms

By Ken Semmens

The American black bear (*Ursus americanus*) has been increasing in numbers in response to management by state wildlife agencies. Along with that population increase comes the potential for conflict with humans and their livestock. Some trout farms are located in mountainous, wooded rural areas where bears may be encountered.

Fish farmers in West Virginia and adjacent states have increasingly encountered bear damage. Producers remark that the bears seem to range more widely for food when forage is scarce. Early spring and early fall are times when bears may seek out new food sources. Fish food is commonly the first item investigated. Bears are very curious and like to “mess things up.” They may pull out stand pipes and aerators from a raceway and damage tires, feeders, and hatchery plumbing. In Virginia, farmers have obtained depredation permits for black bears. In Pennsylvania and West Virginia, officials may trap and remove some bears.

**Gary Sharp** is a district wildlife biologist with the W.Va. Division of Natural Resources (DNR) who has years of experience managing black bears. When a problem is reported to the DNR, he will help the farmer using the “deter and desist” approach. It is best to keep a predator from being rewarded the first time. Once a predator receives a reward, it will become much more persistent. The DNR has a brochure on nuisance bears at: [www.wvdnr.gov/Hunting/PDFFiles/Nuisance%20Black%20Bear%20in%20WV%20brochure.pdf](http://www.wvdnr.gov/Hunting/PDFFiles/Nuisance%20Black%20Bear%20in%20WV%20brochure.pdf)

If bears cause a loss, there is a compensation program in West Virginia that requires the farmer follow a few simple procedures. If you have questions about the program, contact Mr. Sharp or your local DNR conservation agent. Mr. Sharp’s office is located in Point Pleasant (304-675-0871).

Biologists may use a culvert trap to capture a nuisance bear. The first time a nuisance bear is captured, basic information is collected from the bear, and orange ear tags are placed in both ears. It is then given a stern verbal warning to stay out of trouble and relocated to a remote area and released. If it is captured a second time, it will be destroyed after basic data is collected.

An electrified fence is recommended to deter bears. Use a 3-strand high-tensile wire to surround the area. Stake the wires 1 foot, 3 feet, and 5 feet above the ground, using stakes and insulators. A standard fence shocking device will work if it is maintained by removing grass to minimize grounding of the electrical current. Use an inexpensive indicator light to confirm that the wires are working properly.

Do not wait until bears are visiting regularly since this will greatly reduce the effectiveness of these actions.

## Didymo Rock

By Daniel Miller

Didymo rock may sound like the latest musical group, but it is another invasive species that is causing problems in the Elk River near Webster Springs. Anyone who uses our rivers for recreation should be aware of this malady so that they can promote proper actions to minimize the spread of didymo. Didymo is short for the formal scientific name *Didymosphenia geminate*. Commonly called “rock snot,” this algae (a stalked diatom that attaches to rocks) out-competes natural stream algae by forming thick brownish mats that reduce the biodiversity of larval insects and fish in the stream.

Those of us who use the resource most are the likely culprits in spreading it. Please make the simple effort to “leave the snot alone.” Boaters and anglers can easily spread didymo if they don’t follow a few simple precautions. They are:

- **Clean and disinfect all gear.**
- **Do not use felt-soled waders; they are porous and they do not dry quickly.**
- **Dry all equipment for 48 hours.**
- **Do not move upstream.**

Fly fishermen tend to work their way upstream in an effort to remain under the radar screen of fish. This approach will increase the likelihood of spreading rock snot. If you suspect a brownish mass attached to a rock is didymo, touch it to check for the non-slimy, wool-like feel. If you still think it is “rock snot,” note the details of where you are located and contact the WVDNR. This is another way outdoor recreationists can help protect the ecology from unwanted opportunists.

More information can be found at [www.wvdnr.gov/fishing/didymo.shtm](http://www.wvdnr.gov/fishing/didymo.shtm)



## South Branch Inn Hosts 2009 Aquaculture Forum



**The “Taste of W.Va. Aquaculture” was a highlight of the meeting. The W.Va. Department of Agriculture worked with local vendors to highlight products from state farms.**

On Jan. 17, a subfreezing Saturday, a group of dedicated fish farmers, pond owners, and others gathered at the South Branch Inn in Moorefield, W.Va., to learn and share information about aquaculture in the Mountain State. There were presentations for pond owners and fish growers by aquaculture practitioners in the region. Nearly 20 posters provided silent witness to the aquaculture research completed in the past year. Approximately 50 people attended the day-long event.

One of the more engaging presentations was given by **Fonda Holehouse**, who teaches environmental law at WVU. She reviewed some legal issues that need to be addressed by the legislature and regulators. She recommended adopting successful strategies used in other states. Aquaculture is agriculture, and the lead agency for aquaculture should be the Department of Agriculture. Because of the high level of interest in this topic, the program was modified to accommodate more discussion.

The day before the forum, about a dozen people visited the aquaculture facility and greenhouse at the Reymann Memorial Farm near Wardensville. They also toured the National Center for Cool and Coldwater Aquaculture, in Leetown. It was a very educational day.

A link to the posters and presentations from the event can be found at [www.wvu.edu/~agexten/aquaculture/forums.htm](http://www.wvu.edu/~agexten/aquaculture/forums.htm)

## Biosecurity Workshop in W.Va.

On Wednesday, July 29<sup>th</sup>, 2009 **Michele Walsh, DVM** from Micro Technologies Inc. will present a biosecurity workshop at the Reymann Memorial Farm near Moorefield. The program will cover current training in biosecurity theory and practices and give participants adaptable tools to implement as Best Management Practices (BMP's) at their own facilities.

Funding is available to reimburse producers for travel, accommodations, meals, and lost salary. Applicants must submit a written request to Ken Semmens at [ksemmens@wvu.edu](mailto:ksemmens@wvu.edu)

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## W.Va. Aquaculture Association Changing of the Board

The 2009 annual meeting of the West Virginia Aquaculture Association (WVAA) was held following the Aquaculture Forum on Jan.17. **Rob Nichols** provided the minutes from which this update is written.

Four newly nominated board members were elected to serve as leaders. **Jake Musick, Tom Ort, and Mike Nardella** were all elected for three-year terms on the board. **Josh Hedrick** was elected to fill the remaining year of an unexpired three-year term.

**Ken Semmens** explained the Northeast Regional Aquaculture Center (NRAC) opening for an industry representative. He was nominated to represent WVAA and accepted the nomination. A motion to endorse the W.Va. Farm Bureau policy regarding aquaculture was approved by the floor.

WVAA members discussed the idea of the next aquaculture forum being held in the Huntington/Ashland area in cooperation with the Ohio and Kentucky. Members agreed to this idea.

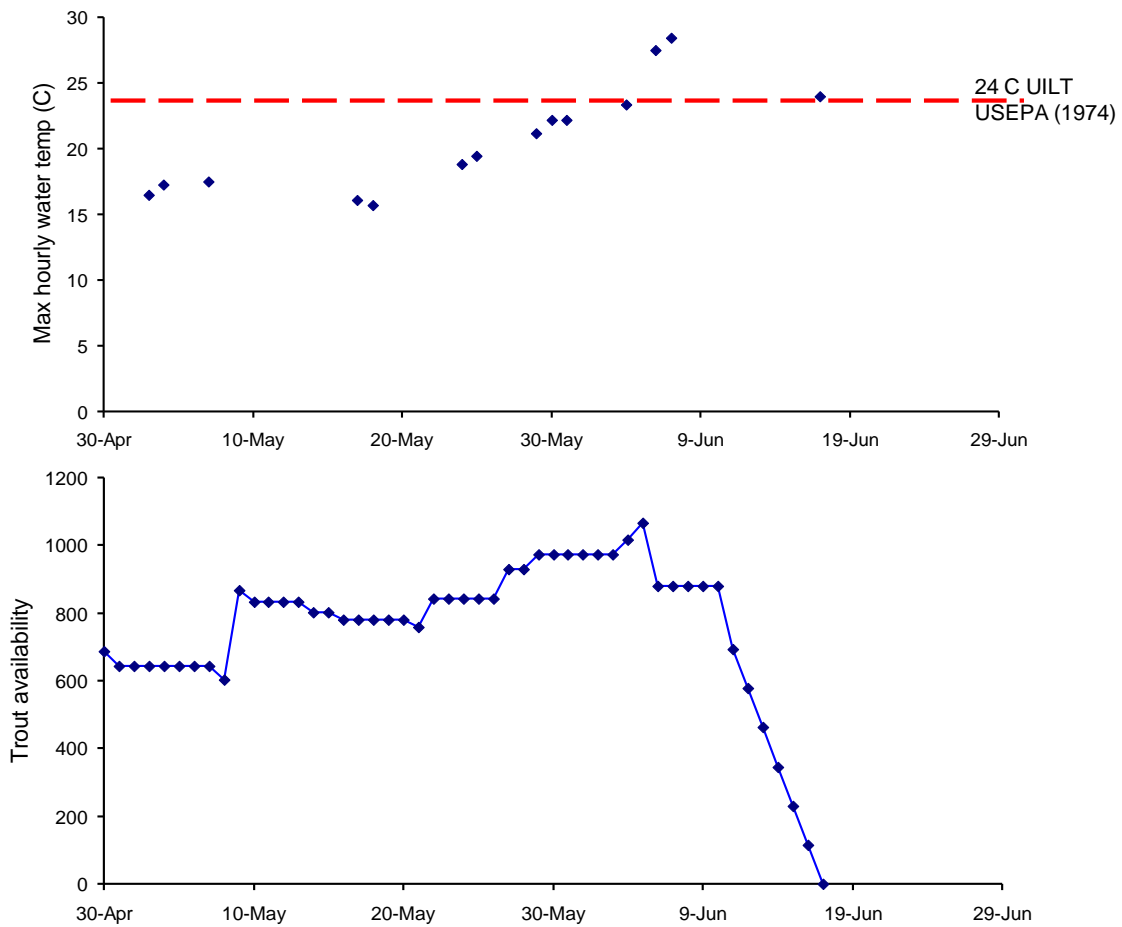
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(Pipestem from page 1)

Conclusions regarding survival and fish availability relied on radio-tagged fish to “represent” all stocked fish. Fish availability was the number of trout in the study area (N) times the percent of radio-tagged fish within study area. The number of trout in the study area (N) was the sum of Fall 2007 carryovers and the Spring 2008 stockings. Using this approach, N decreased by proportion of radio tagged fish “lost.”

The majority of trout stocked found acceptable habitat within the 1-mile area adjacent to the State Park lodge (Figure). The fish tended to seek out “pools” regardless of the season or stocking year. Overwinter survival of fall-stocked trout was 63%. The number of fish removed by anglers during this interval is not available. This means that many of the fish stocked in the fall are available to the creel in the spring. Successive stocking increased fish availability through the season. For example, the pool near the lodge had 5 observations in the fall and 100 observations in the spring. Summer heat was another story (Top graph, below). Between 6/11 and 6/17, 81% of the fish were lost. This corresponded to a sustained water temperature of 75° F (24° C). As water temperatures increased, trout sought out the deeper pools or small streams discharging cooler water into the river. Some dead trout were observed. Despite this, some trout were caught by anglers through the month of June.

Given suitable habitat, the fish tend to stay where they are stocked. A small segment of stream can be targeted for stocking. The trout survive well until it gets too hot; then they are lost to the creel. To minimize stocking costs, it makes sense to adopt a catch-and-release-only policy from October through May. A cool summer or a trout more tolerant of warm water could lengthen the fishing season.



**This figure shows maximum hourly water temperature (C) (top) and trout availability (bottom). Note how fish availability drops precipitously between June 11 and June 17 when water temperature is above 24° C.**

**Trout Farm Facility for Sale – Pocahontas Co.**

The facilities consist of two 800-gal. hatching tanks; the remaining tanks are round fiberglass production tanks: 1 x 10,000 gallon; 12 x 1500 gallon; 6 x 500 gallon tanks. In addition, a feed shed and a trailer are within the 8' high 3-strand barb wire fence. Land and water is leased at \$100/mo. McNeil Spring is the water source.

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Fred Hays 304-548-7117, A W.Va. Farmer

We encourage contributions to Fishtales newsletter by W.Va. residents. If you are interested in contributing or would like to be put on the mailing list, please contact Dan Miller at [dmille31@wvu.edu](mailto:dmille31@wvu.edu) or call 304-293-4832, ext. 4465. The deadline for contributions to the next issue of Fish Tales is May 1, 2009.

This publication is available, in a printable format, on the Web at:

[www.wvu.edu/~agexten/aquaculture/newsletter.htm](http://www.wvu.edu/~agexten/aquaculture/newsletter.htm)

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