



# **SOUTH BRANCH OF POTOMAC RIVER**

## **FISH KILL SUMMARY**

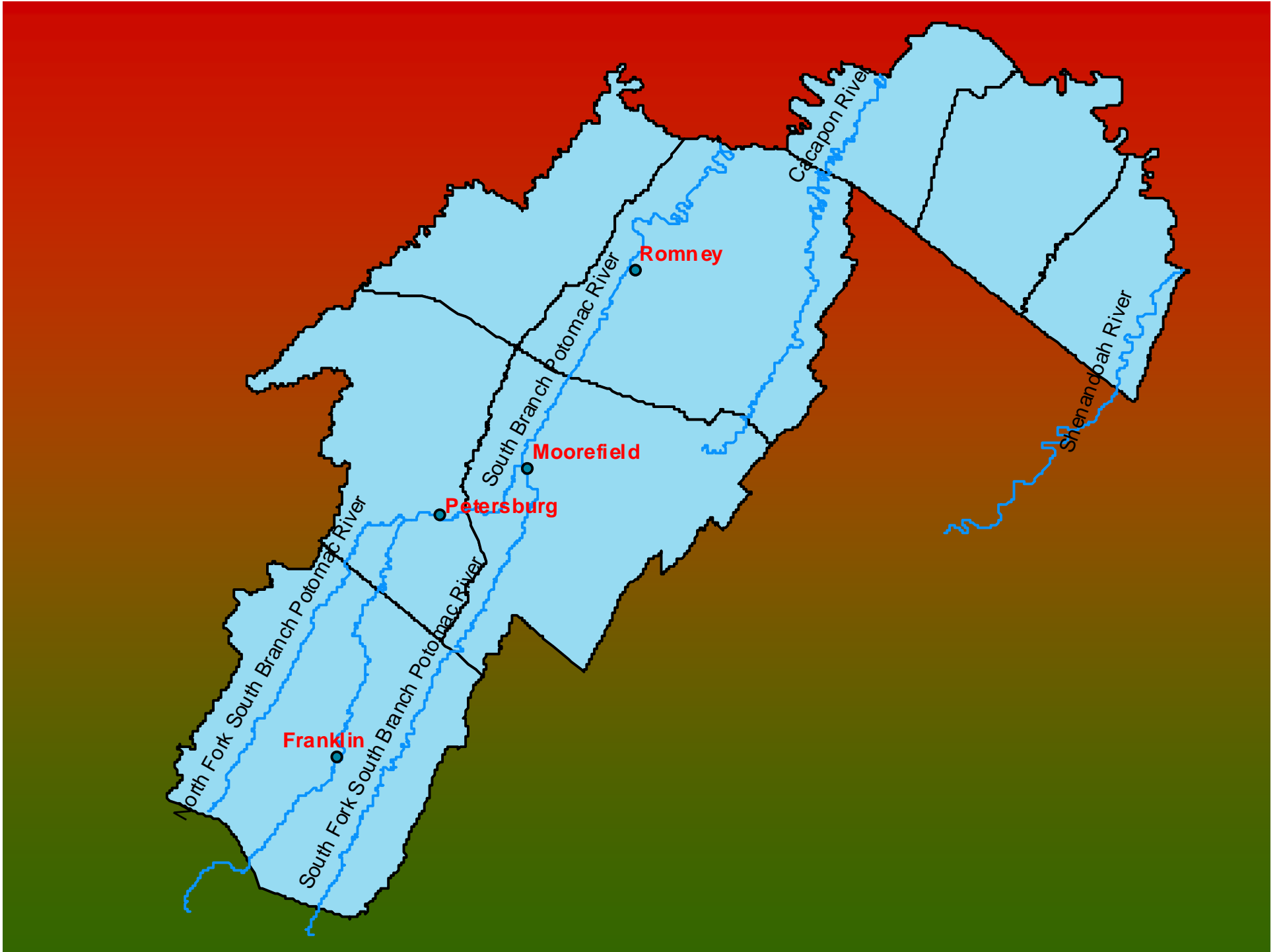
**2006**

**Jim Hedrick  
District Fisheries Biologist  
WV Division of Natural Resources**

# Summary of South Branch Fish Kills

-Small fish kills without determined cause have been occurring in the Potomac drainage for many years.

-Previous biologist noted nearly annual kills of suckers since the 60's with varying magnitude







STATE OF WEST VIRGINIA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF WILDLIFE RESOURCES

DISTRICT II  
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Romney, West Virginia 26757  
Telephone: (304) 822-3551

GASTON CAPERTON  
Governor

J. EDWARD HAMRICK III  
Director

LARRY W. GEORGE  
Deputy Director

MEMORANDUM

TO: BERNIE DOWLER

FROM: GERALD E. LEWIS *G E L*

DATE: MARCH 21, 1990

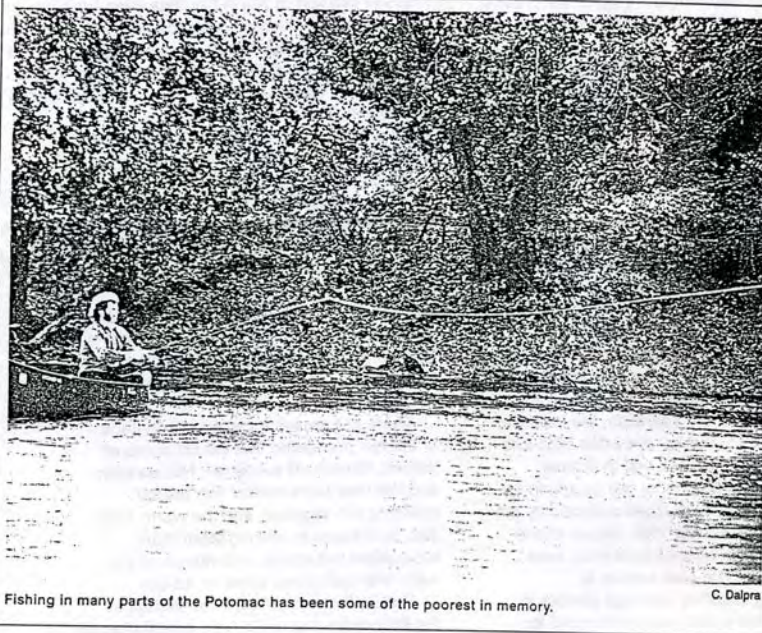
SUBJECT: SOUTH BRANCH SUCKER DIE-OFF

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During October and November 1989, we received 2 calls that a few dead suckers were being seen in the lower portion of the South Branch. On 12/1/89, I checked at 4 locations below Millesons Mill on the lower South Branch. I found no dead fish and only the scales from one dead sucker at Millesons Mill.

In February 1990, we received a couple more calls about dead suckers. One person stated seeing 2 dead bass and 2 dead catfish. From 2/20/90 to 2/23/90, I floated the lower 23 miles of the South Branch from Blue Beach to the mouth and observed only dead redhorse suckers sporadically scattered throughout the section.

On 3/9/90, Water Resources Supervisor, Jack Fleshman talked with employees of the South Branch Valley Railroad who said they saw a small number of suckers scattered through the 6-mile Trough section in late February and early March.



Fishing in many parts of the Potomac has been some of the poorest in memory.

C. Dalpra

### *Skin Lesions, Fish Kills, and a Lack of Smallmouth in Upper Potomac:*

## What's With the Fish?

**L**ife has been difficult for fish in the Potomac River over the past year, and while they have remained silent on their hardships, dedicated anglers who chase them have been very vocal in noting this season as one of the worst in recent memory, especially on the free-flowing river upstream of Washington, D.C.

Stocks of smallmouth bass, one of the most sought-after species on the upper river, have greatly decreased due to a combination of factors, according to fisheries biologists. Poor recruitment, high water levels throughout 1996, and flood events conspired to reduce smallmouth bass populations by about 50 percent, said Ed Enamait. Rivers and Reservoirs manager for

Enamait noted many factors. Spawning success ranged from poor to fair in 1995 and 1996. The latter year began with a large flood, that along with the subsequent September flood, trapped many fish on shore as the waters receded. Some of the fish were returned to the river through rescue efforts. The floods also scoured areas of the river, altering habitat, and reducing or eliminating submerged vegetation and the bottom-dwelling organisms that comprise an important part of the food chain. In addition to the floods, high waters throughout the year resulted in reduced water quality. The high waters also impeded the fishes' ability to feed throughout the year. Spawning is falling behind in

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-Massive fish kill including suckers, fallfish, and smallmouth bass in spring of 2002.





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Bob Wise  
Governor

Ed Hamrick  
Director

June 11, 2002

**MEMORANDUM**

**To:** Gerald Lewis  
**From:** Brct Preston *BRP*  
**Subject:** Fish collections from South Branch

Because of the extent of the recent fish kills on the South Branch, please collect fish for shipment and analysis at the USFWS Lamar Fish Health Unit in Lamar, PA. I spoke with John Coll, program director at Lamar and he offered the following suggestions for fish samples.

- Minimum of 5 individual fish per species of any size
- Collect distressed or dying fish if possible, otherwise live or very recently dead fish
- Double wrap in zip lock plastic bags and place on ice or freezer packs (not dry ice)
- Ship overnight express to:

John Coll  
U.S. Fish and Wildlife Service  
Lamar Fish Health Unit  
400 Washington Avenue



## United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
NATIONAL FISH HEALTH RESEARCH LABORATORY  
LEETOWN SCIENCE CENTER  
11700 LEETOWN ROAD  
KEARNEYSVILLE, WV 25430

Chris O'Bara  
West Virginia Division of Natural Resources

Sept. 27, 2002

Dear Chris:

Per your request, I am providing you with a summary of my findings from the fish we collected in the South Branch.

First, most of the skin lesions are surface only. They are acute and the inflammation is generally only in the epidermis and dermis. In a few fish it was extending into the top musculature. I believe these to be an opportunistic bacteria such as *Aeromonas hydrophila*. However, there are a number of changes that suggest water quality problems. Most of the gills look pretty bad - epithelial lifting, bacterial gill disease, fusion of lamellae. These types of changes can occur as water temperature rises when heavy nutrient loads are present. The excess nutrients allow opportunistic bacteria, fungi and parasites to proliferate at the same time that fish may be stressed by the increased water temperature and lower oxygen levels.

There were also some changes in the livers that suggest possibly sublethal toxicant stress - hepatocytes enlarged and vacuolated, focal areas where the cells stain differently. However, these are non-specific changes that do not allow a guess at what the cause may be.

My suggestion is that we be ready to get out and get fish and water, if or when the next event occurs and hopefully we can get closer to understanding what is going on.

If you have any questions, don't hesitate to call.

Vicki S. Blazer, PhD



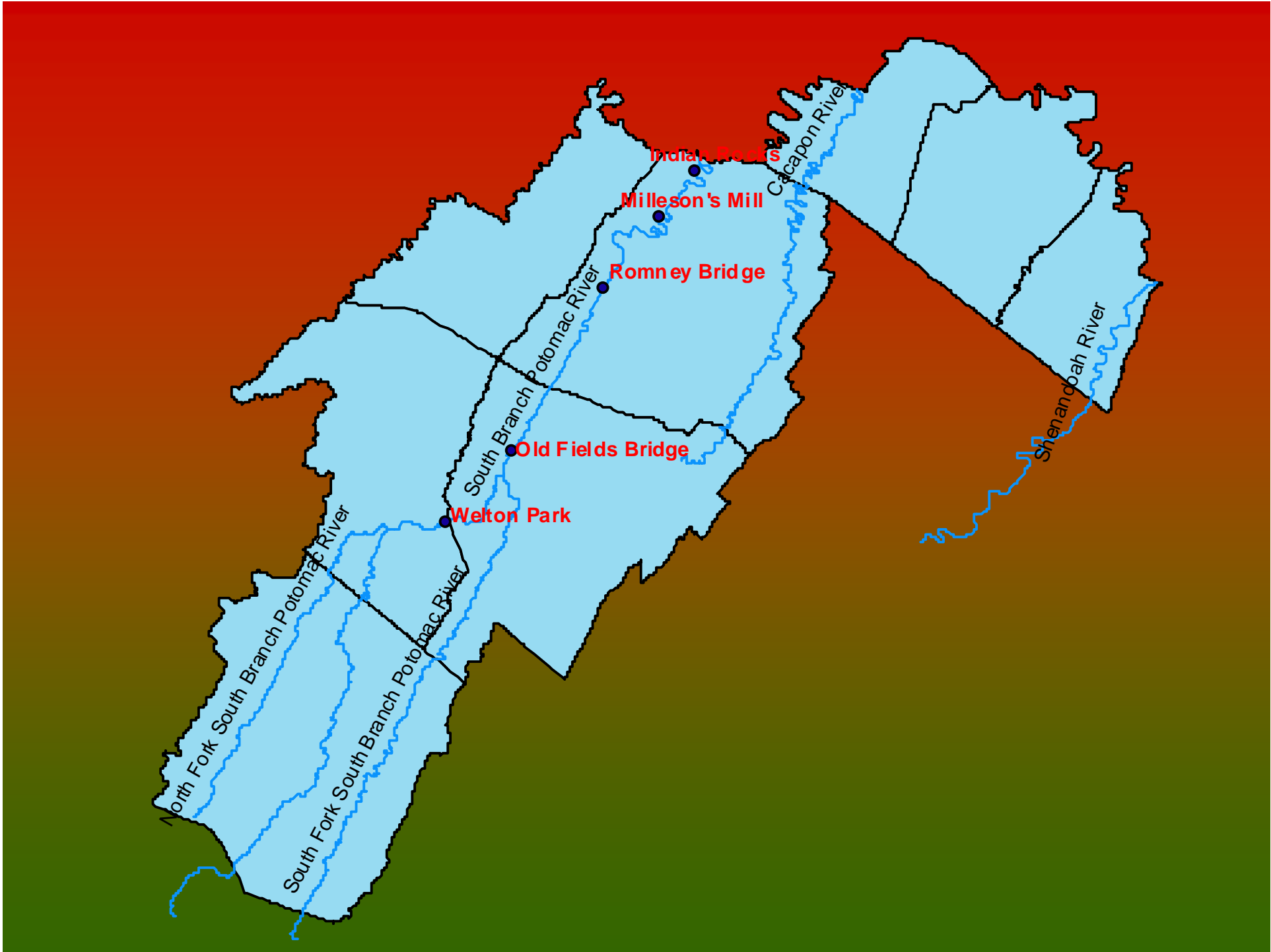
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Milleson's Mill Campground

May 25, 2006





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Margined Madtom – *Noturus insignis*

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Bluntnose Minnow – *Pimephales notatus*

Milleson's Mill Campground

May 25, 2006





Redbreast Sunfish – *Lepomis auritus*

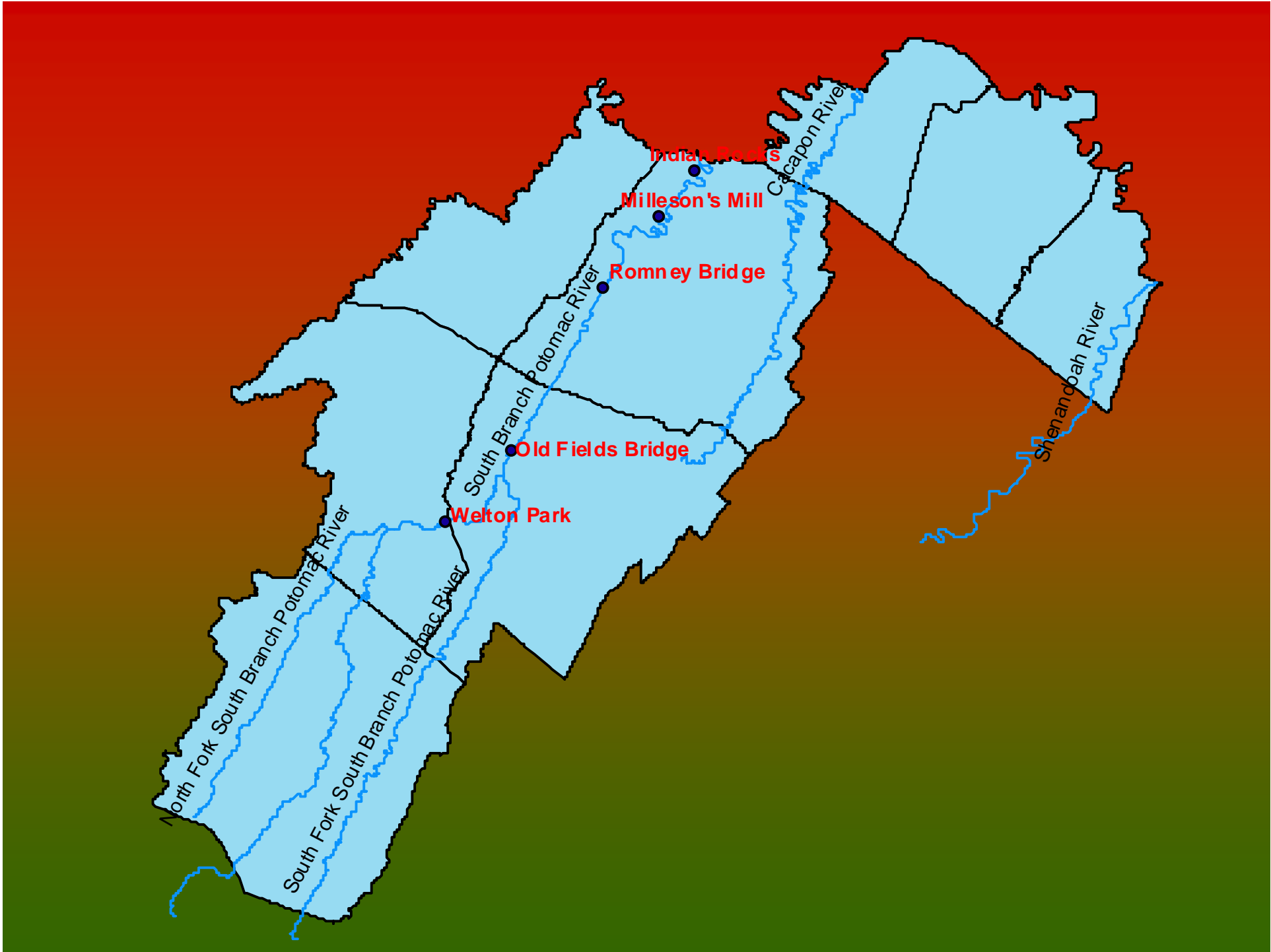
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# 2006 South Branch Fish Kill Chronology

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- Immediately contacted Vicki Blazer with USGS and fish were collected on May 26.





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Oldfield Bridge

May 26, 2006





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Oldfield Bridge

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Fallfish – *Semotilus corporalis*

Oldfield Bridge

May 26, 2006



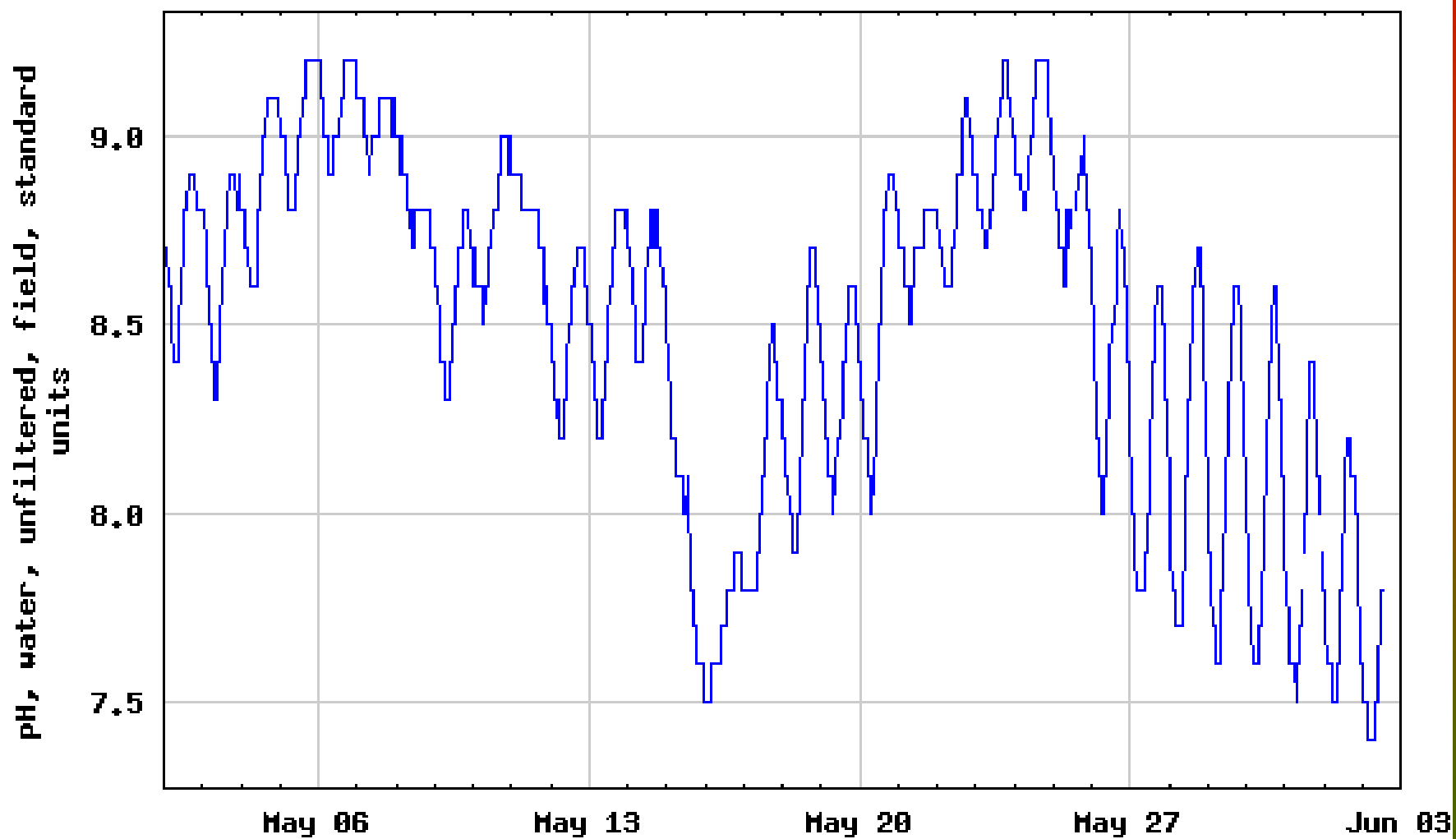


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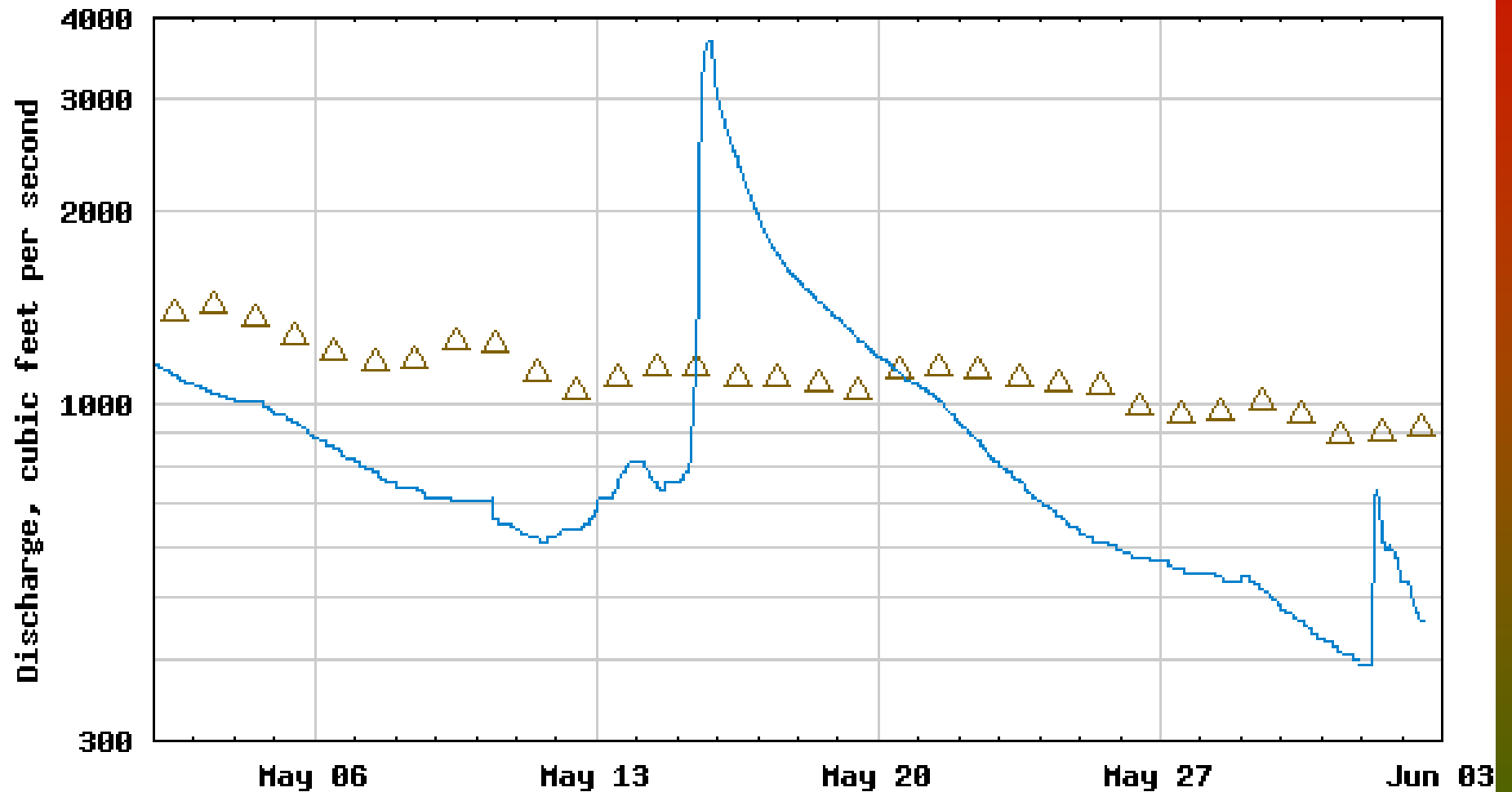
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- Numerous reports of dead and dying fish over Labor Day weekend May 27 – 29.

USGS 01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV



---- Provisional Data Subject to Revision ----

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△ Median daily statistic (81 years) — Discharge



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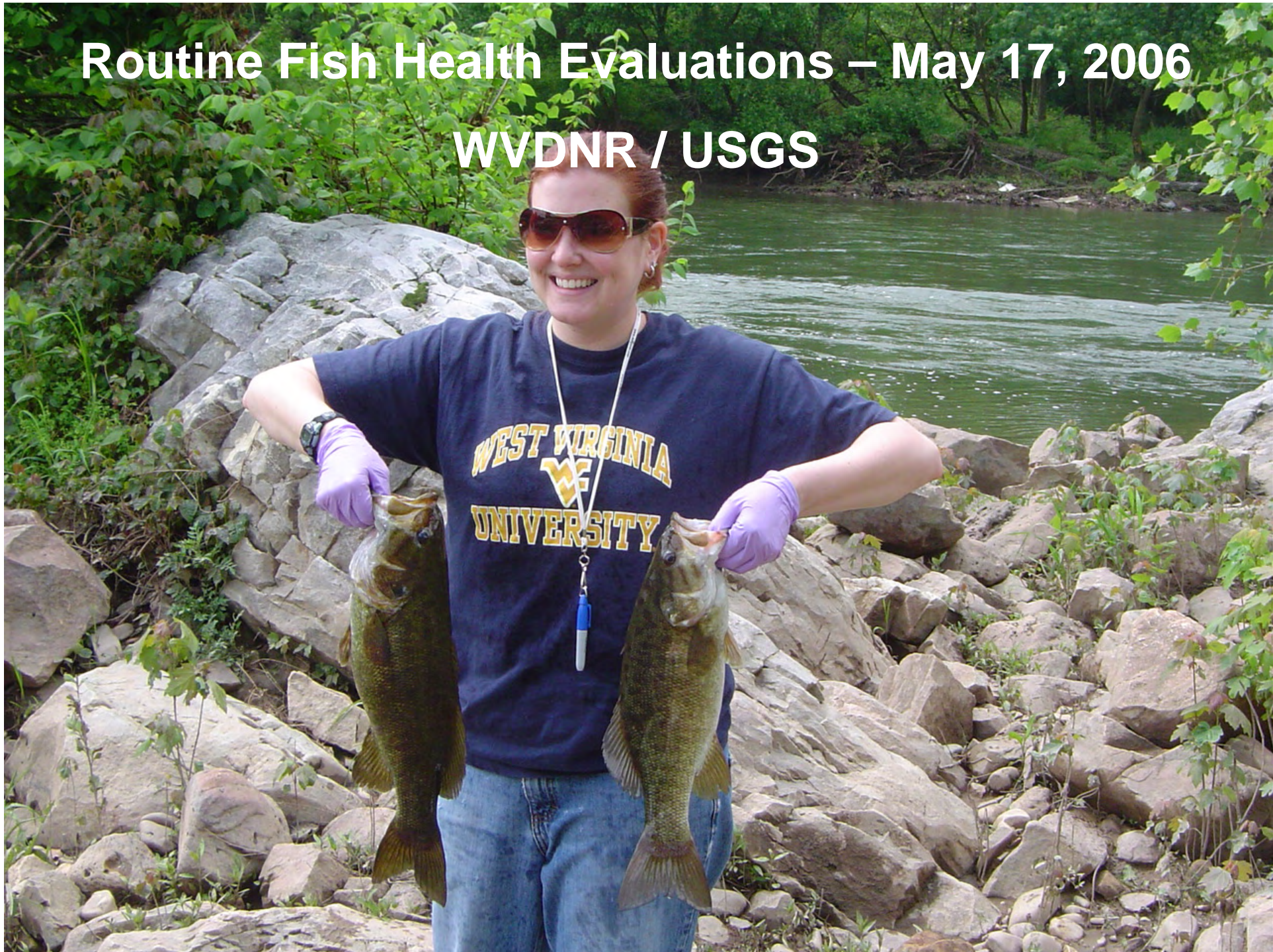
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- No dead or dying fish observed after May 30.



# Routine Fish Health Evaluations – May 17, 2006

WVDNR / USGS





# Top 3 things we know about Potomac basin fish kills!

1. Fish kill in the Potomac basin begin and end quickly.

- OR NOT

2. Fish kills involve mainly suckers.

- OR NOT

3. Dying fish may have external sores or lesions.

- OR NOT



# What is consistent with Potomac basin fish kills?

1. Potomac River tributaries have large daily variations in pH.
2. “Low human population density” and agriculture is the primary land use.
3. Fish kills occur in late winter and spring.
4. Effected fish species are observed in high densities throughout the river (smallmouth bass, redhorse)

# Shenandoah River

## Jefferson County, West Virginia

