

Dunkard Creek Fish Kill, Monongahela River West Virginia/Pennsylvania

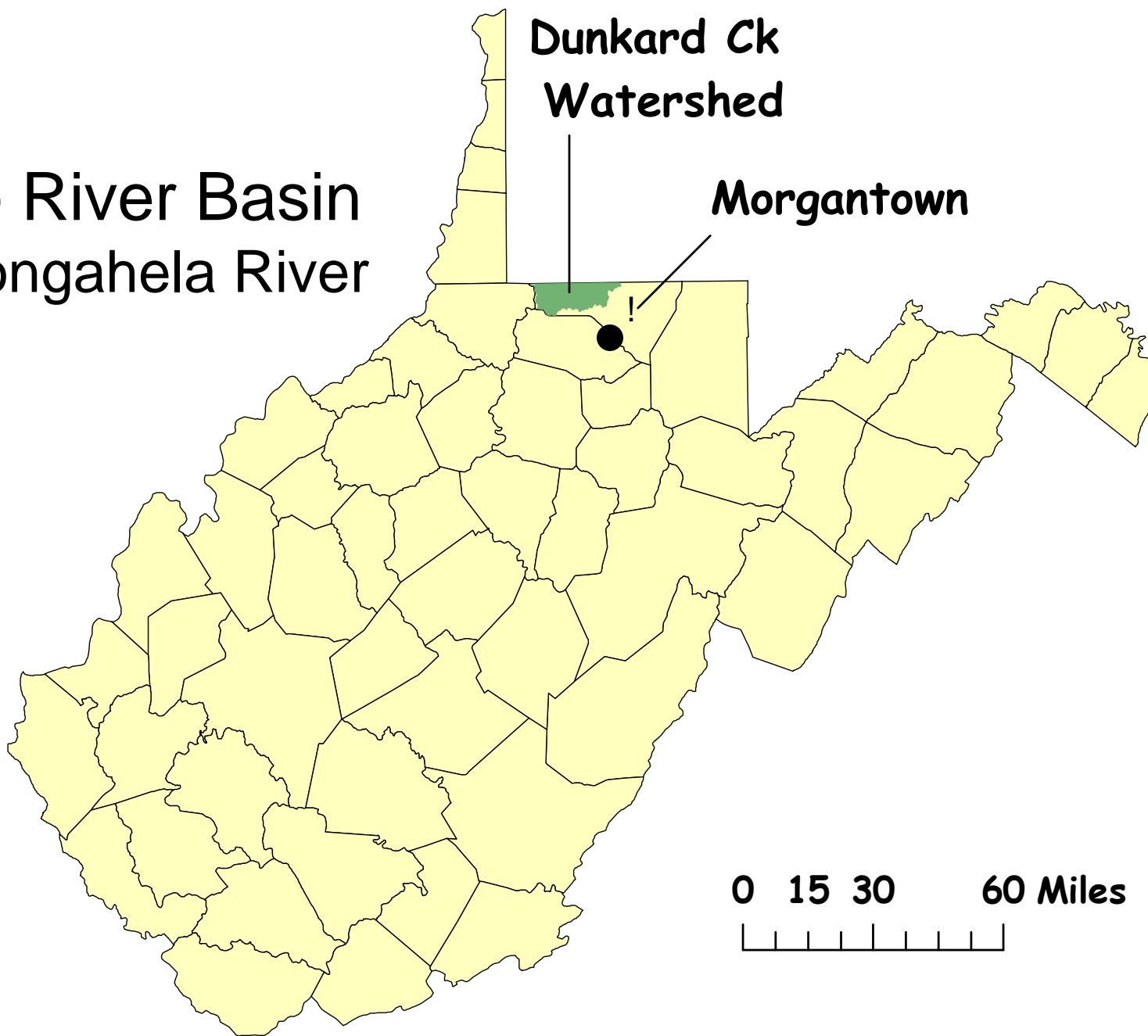


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and Aaron Yeager (WV Division of Natural Resources); and,
Stuart Welsh (US Geological Survey)

Ohio River Basin
Monongahela River

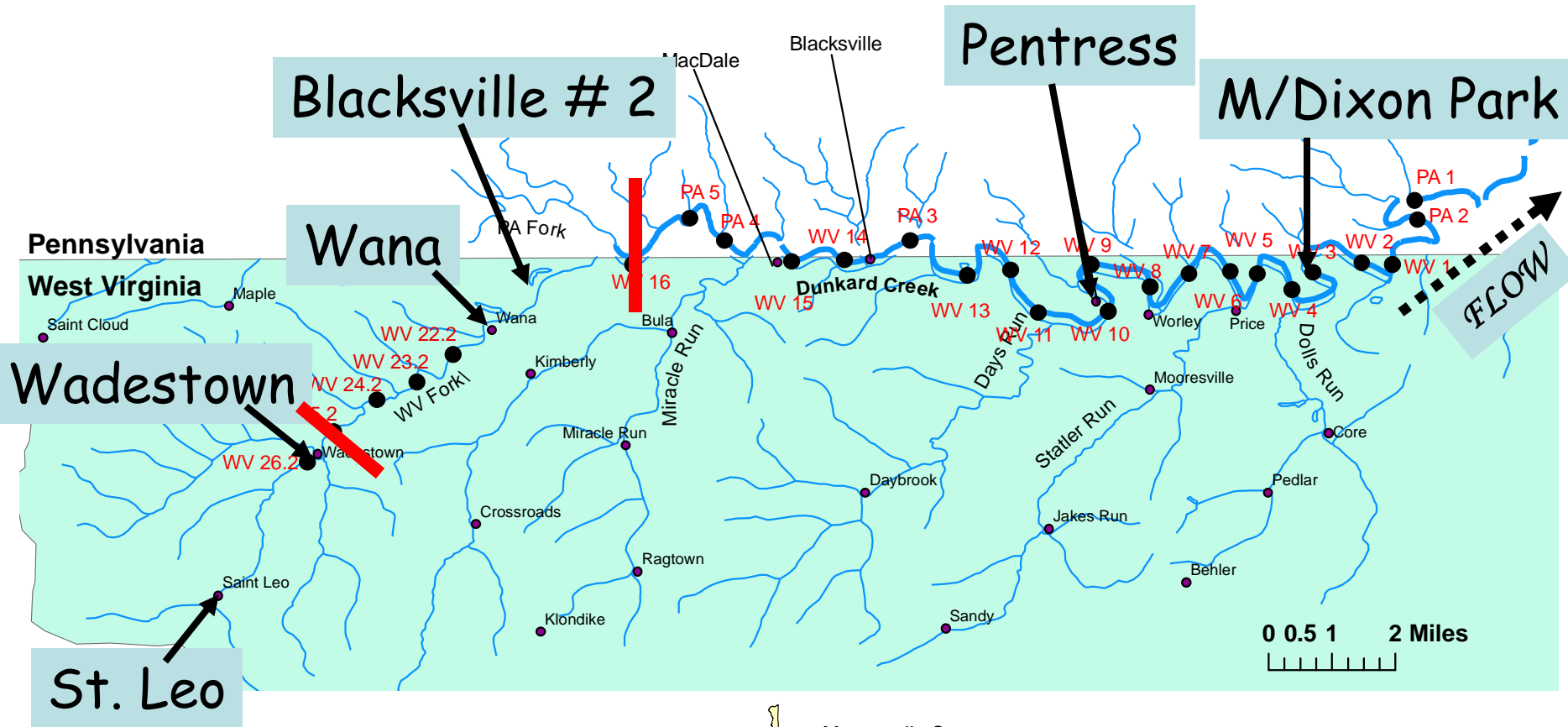
Dunkard Ck
Watershed

Morgantown



0 15 30 60 Miles

Dunkard Creek Watershed WV/PA



BACKGROUND



- August 27th visit to WV Fork
- WV Fork = 22,000-44,000 μS below Blacksville # 2 discharge (51,000 μS from pipe)
- WV Fork = 5,000 μS above discharge
- Seining survey done immediately above
 - only few fish found below discharge
 - noticed scales on fishes easily lost while handling
 - 22 species found above (5,000 μS)
- Two additional sites done above discharge
 - 22-23 species per site (5,000 μS)

Background

- Fish kill starts Augsut 29
- Starts in main channel near Pentress below a reservoir
- Goes strong for 2 weeks
- 2nd kill starts above Blacksville # 2 between Wadesville and St. Leo
- St. Leo facility on So. Fork of WV Fork
- 2nd kill below a beaver pond near St. Leo
- Kill persists into October
- Fish database great due to proximity to WVU

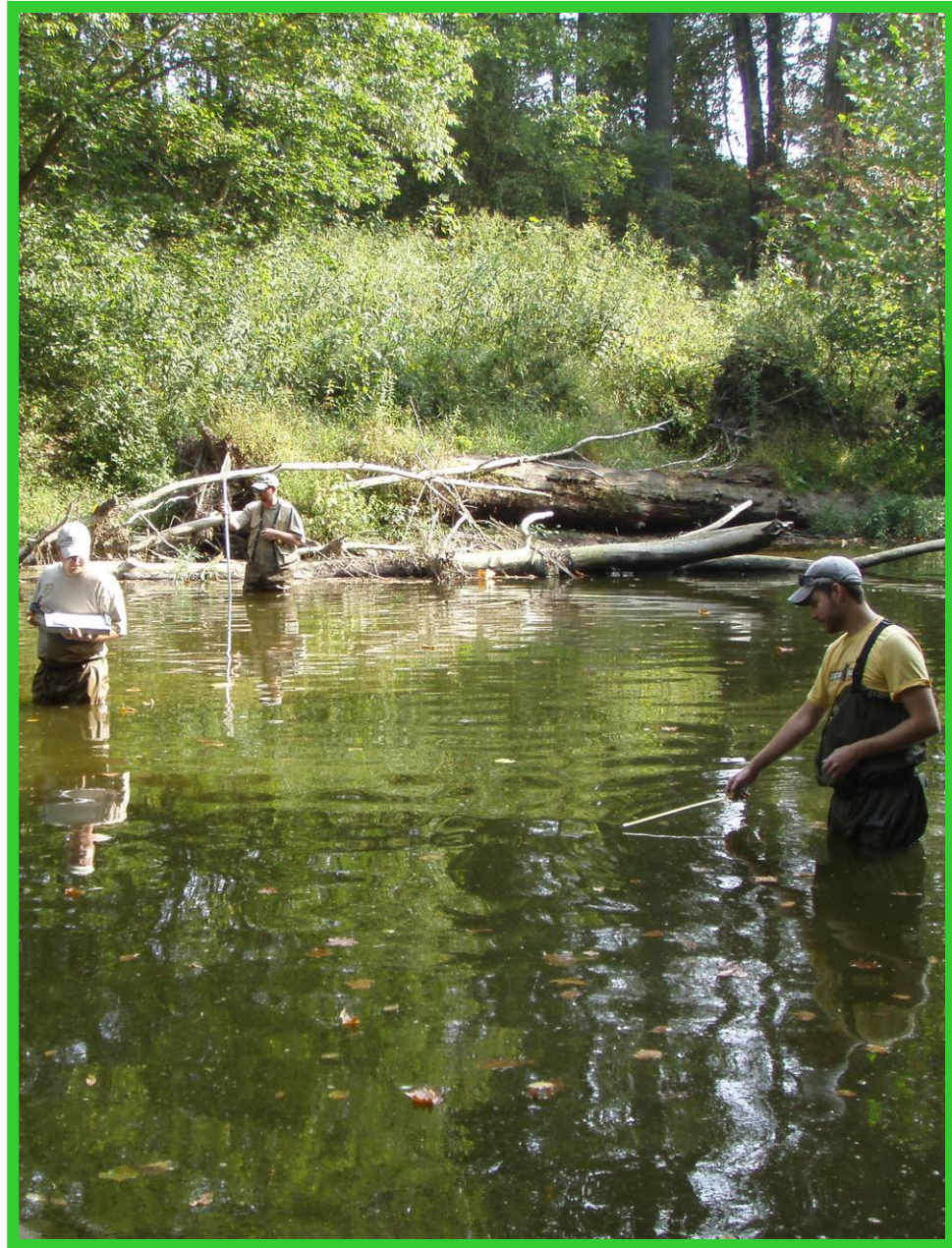
PURPOSE

- Briefly discuss the fish kill evaluation and preliminary estimates
- Report historic fish data at selected sites
- Compare past data with post kill collections



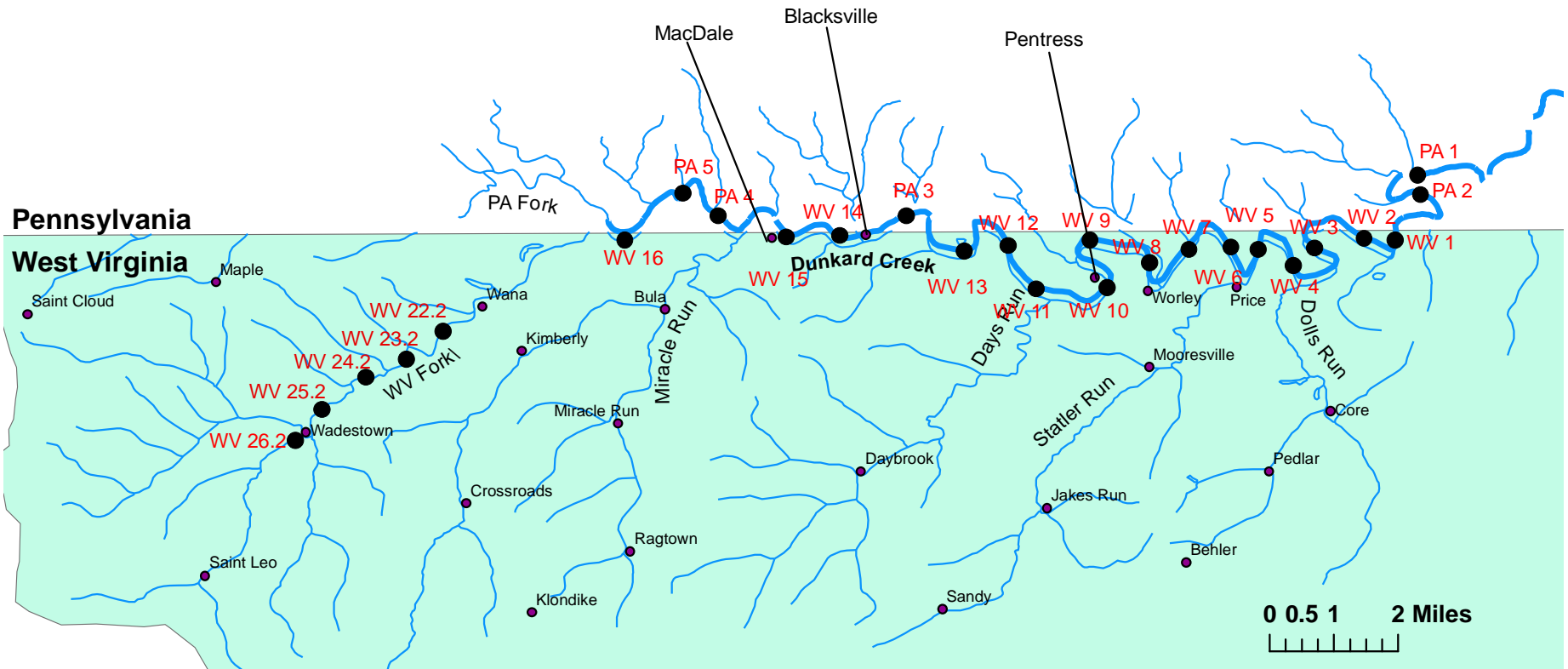
WVDNR role was to:

- use American Fisheries Society Fishkill Guidelines
- establish size groups of fish killed
- estimate the number of fish killed
- determine value of fish killed

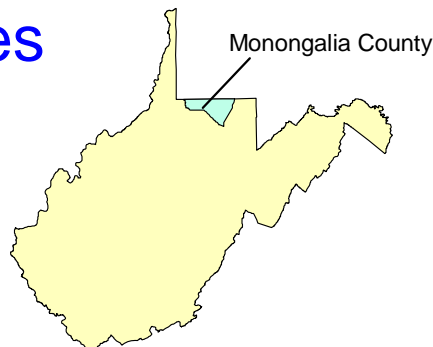


WVDNR FISH KILL ASSESSMENT SITES

DUNKARD CREEK DRAINAGE



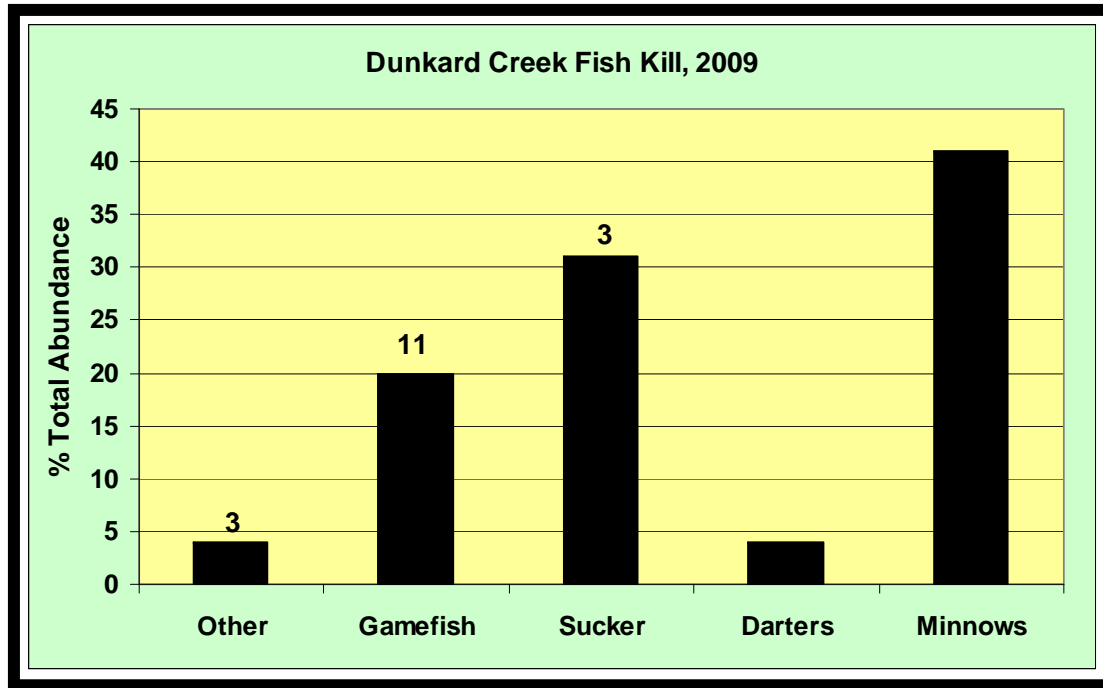
- 21 main channel sites
- 6 WV Fork sites



Milepoint 0 was established where Dunkard Creek crosses state line between Pennsylvania and West Virginia near Buckeye Church, West Virginia. Station WV 1 was randomly selected within the first mile of Dunkard Creek upstream of the state line. The remaining stations were then placed at 1 mile intervals.

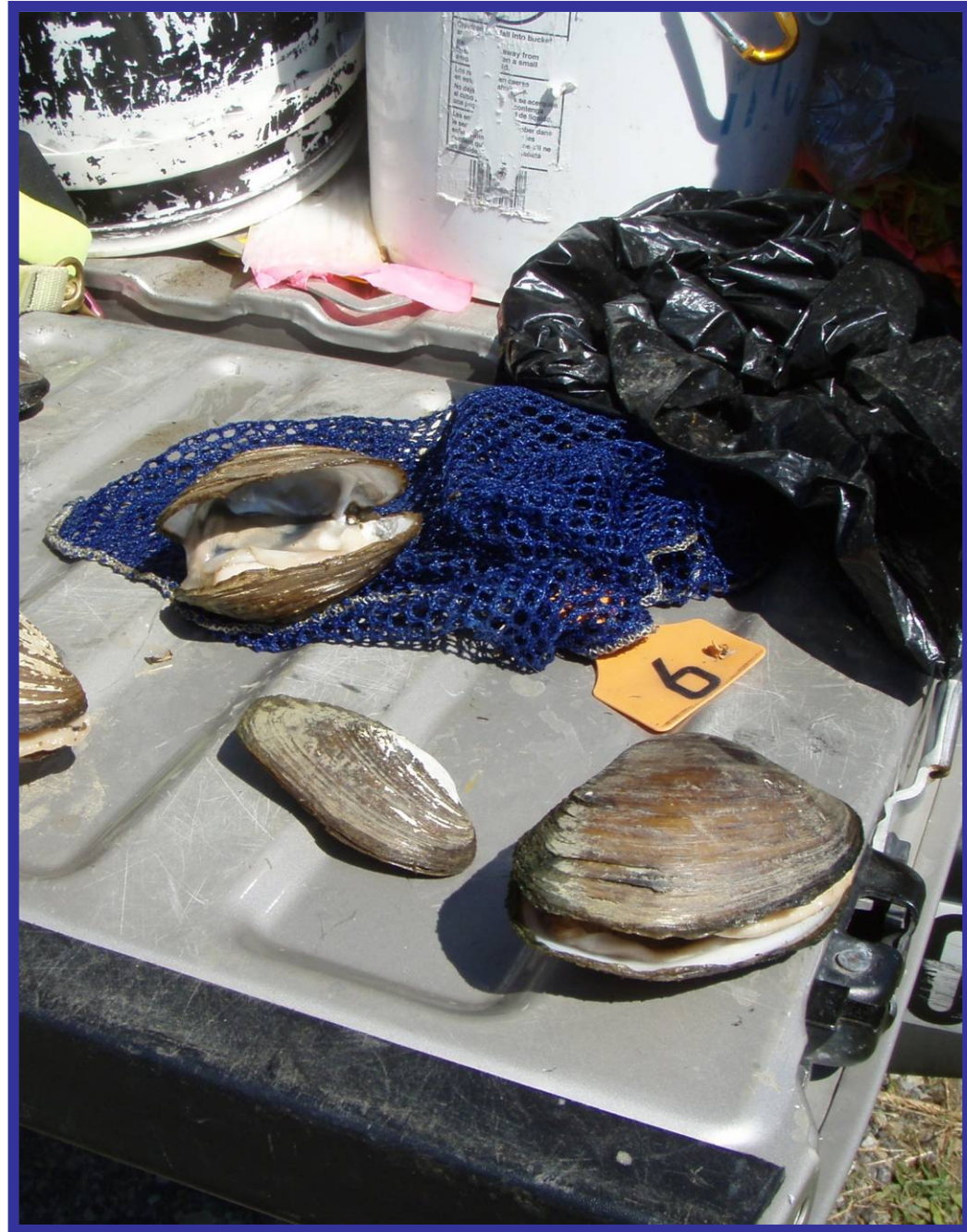
Fish Kill

- 20+ fish species
- Preliminary kill estimate: 15,000–22,000 in WV



Mussels

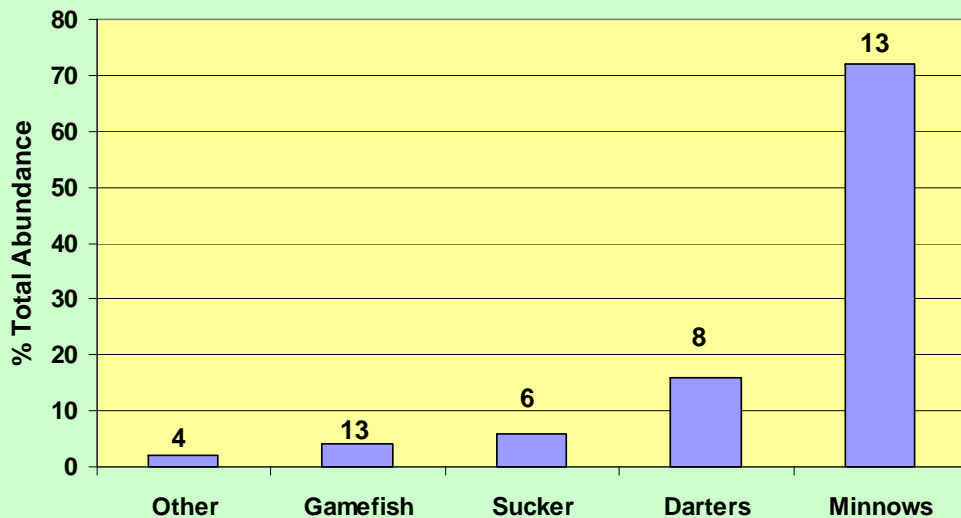
- 14 mussel species dead
- 100% mortality
- Was the last major stronghold for mussels in the Monongahela River drainage.
- May take generations to restore mussel population.

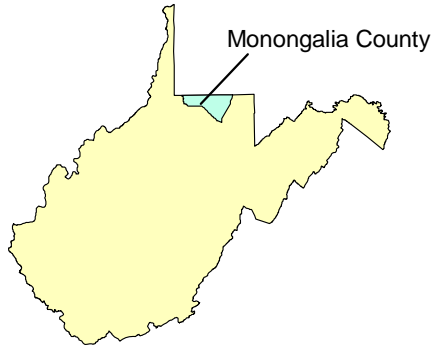
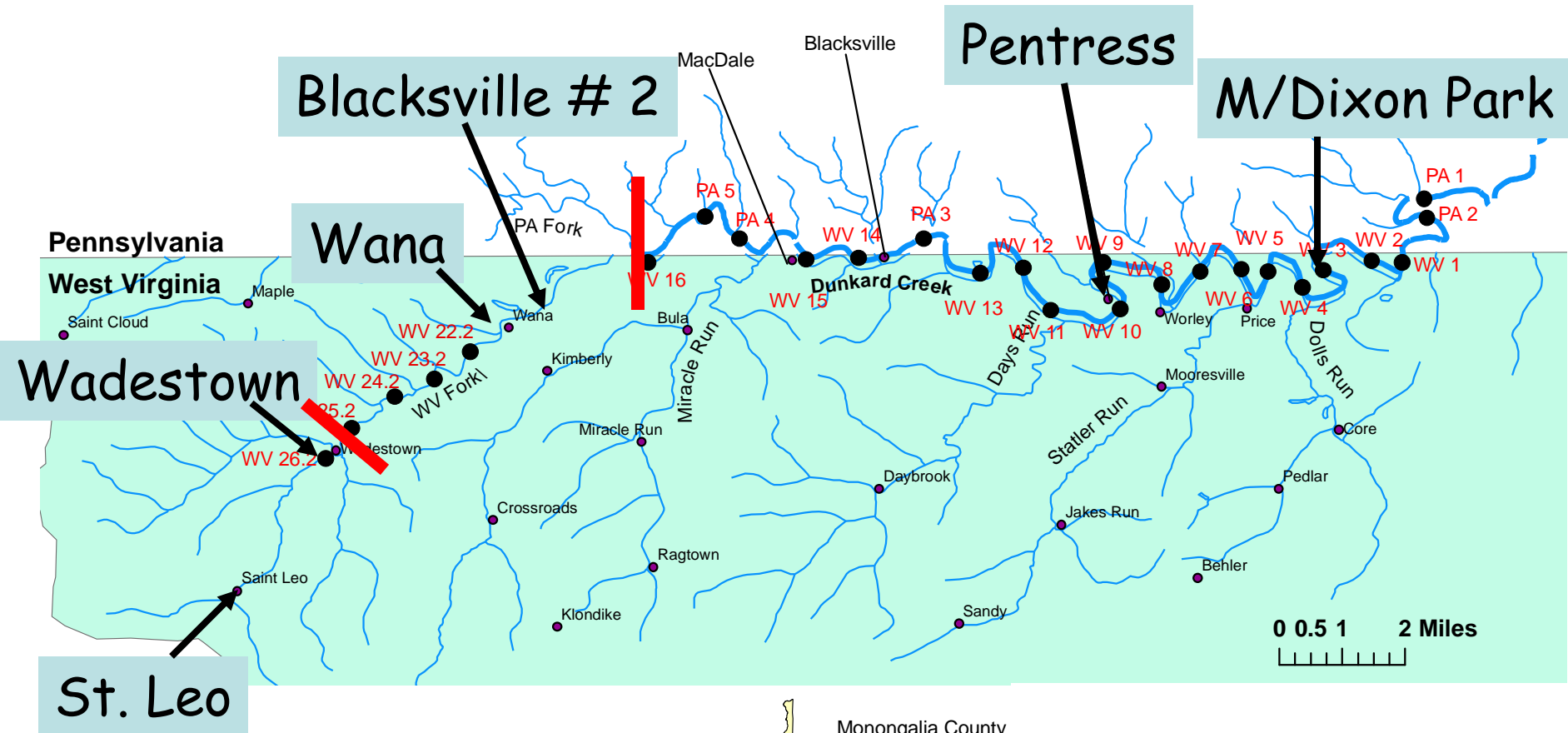


Historic Fish Data

- 11 surveys from 1959 - 2009
- 44 fish species
- 13 species of game fish, but most notably smallmouth bass and muskellunge.

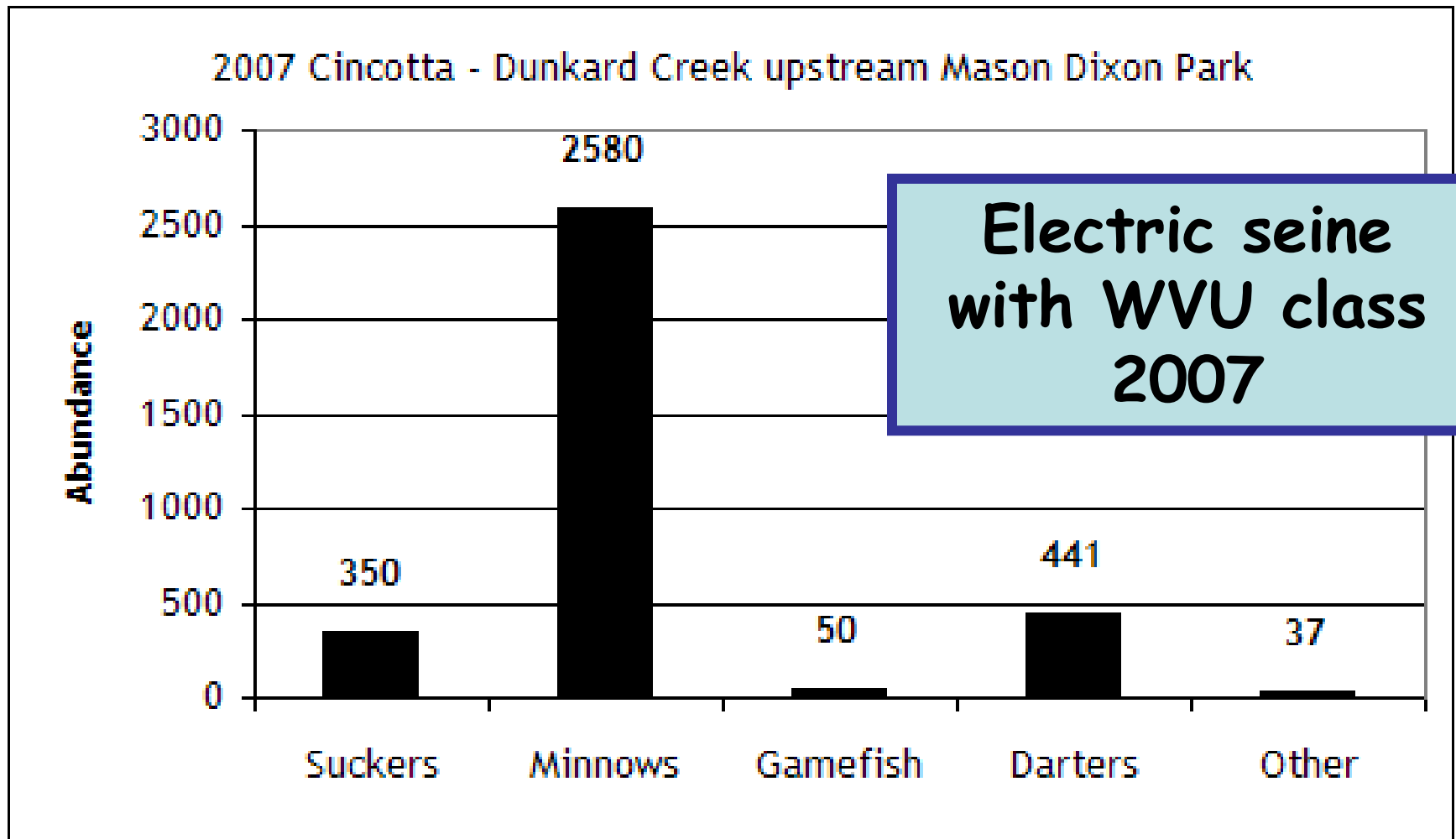
Dunkard Creek Historical Fish Data, 1959 - 2009





Lower Dunkard Creek

Mason-Dixon Park



Mason-Dixon Park

- Post Kill Survey (Oct.)
 - 400-600 μS



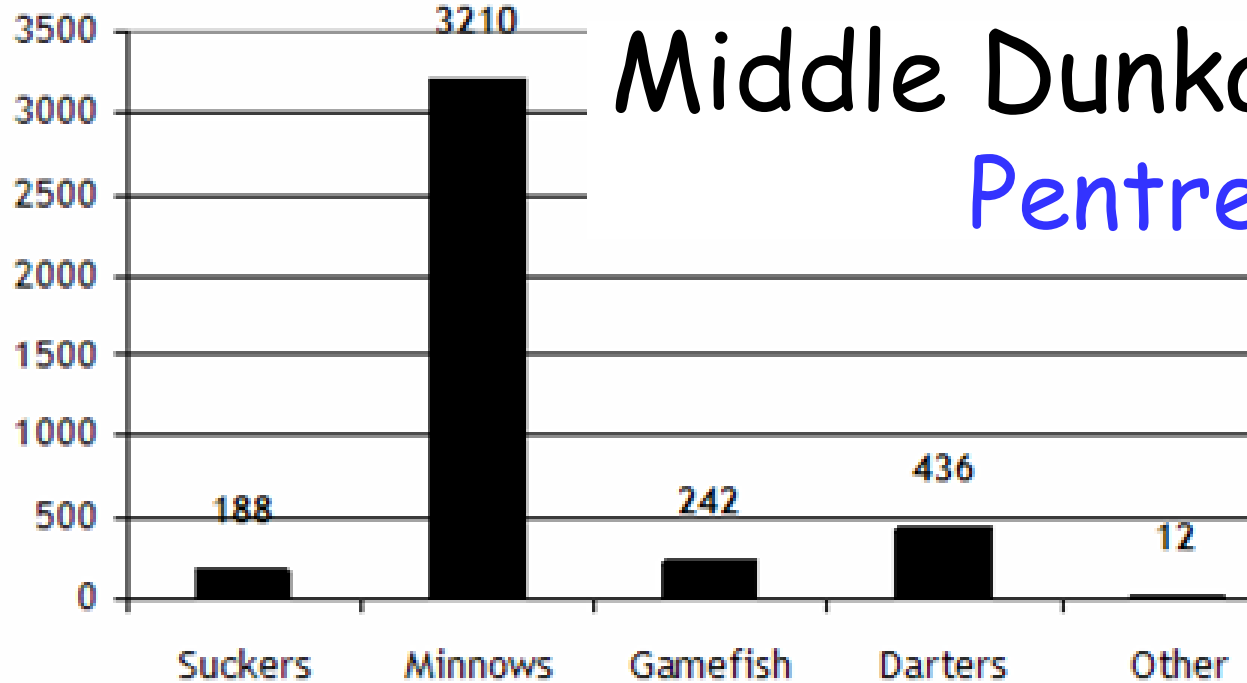
- 1 sucker
- 16 minnows
- 0 gamefish
- 2 darters
- 0 others



Middle Dunkard Creek Pentress

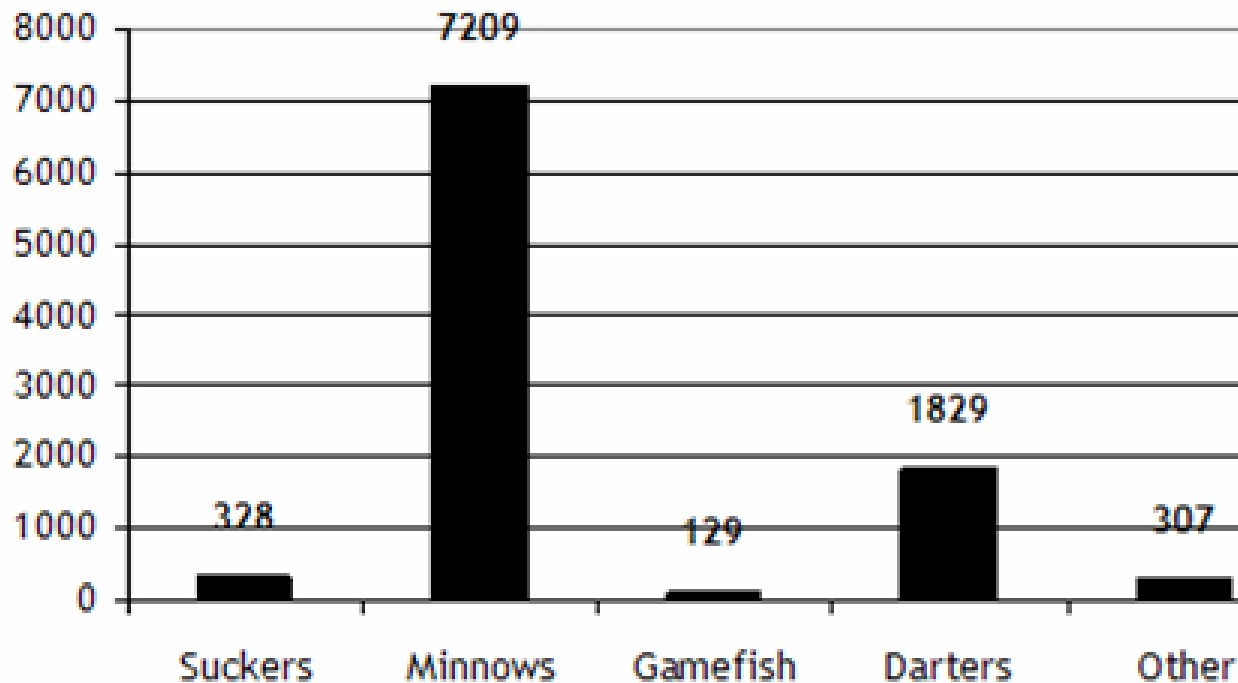
Abundance

- 1983
- rotenone



Abundance

- 1997
- rotenone



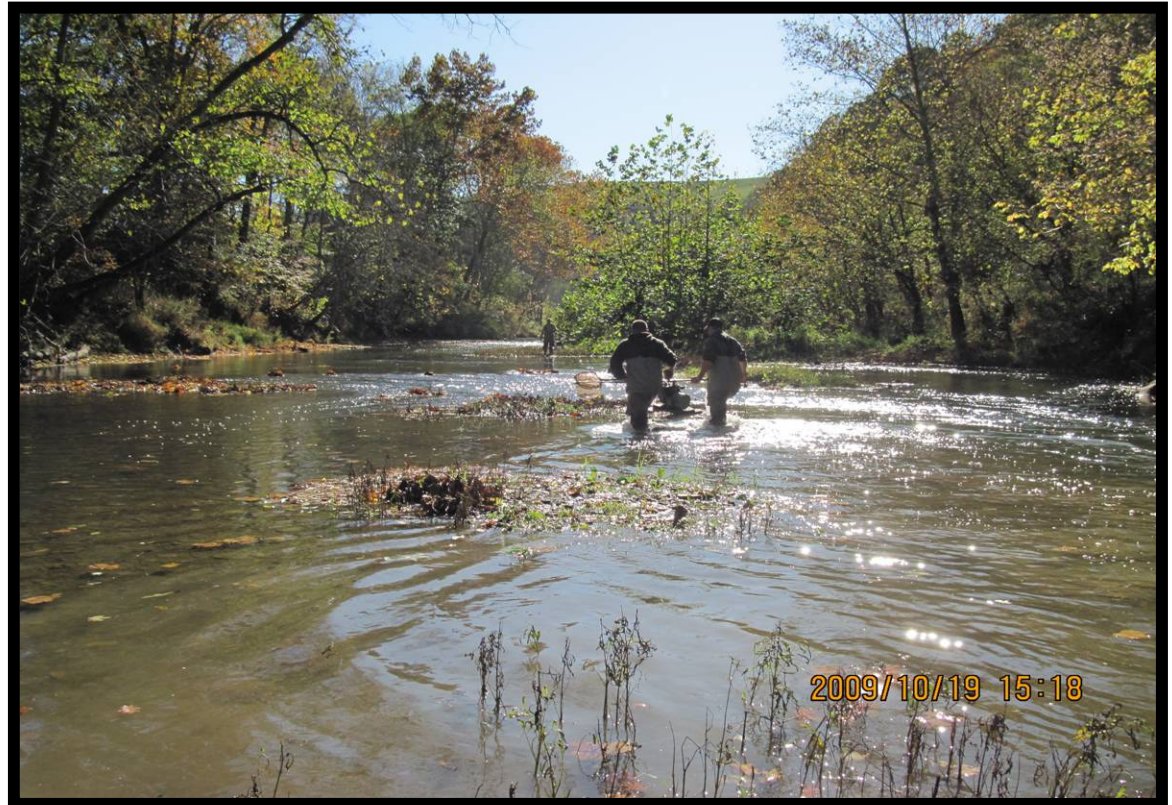
Middle Dunkard Creek

Pentress

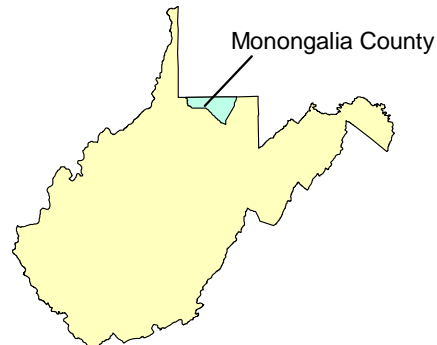
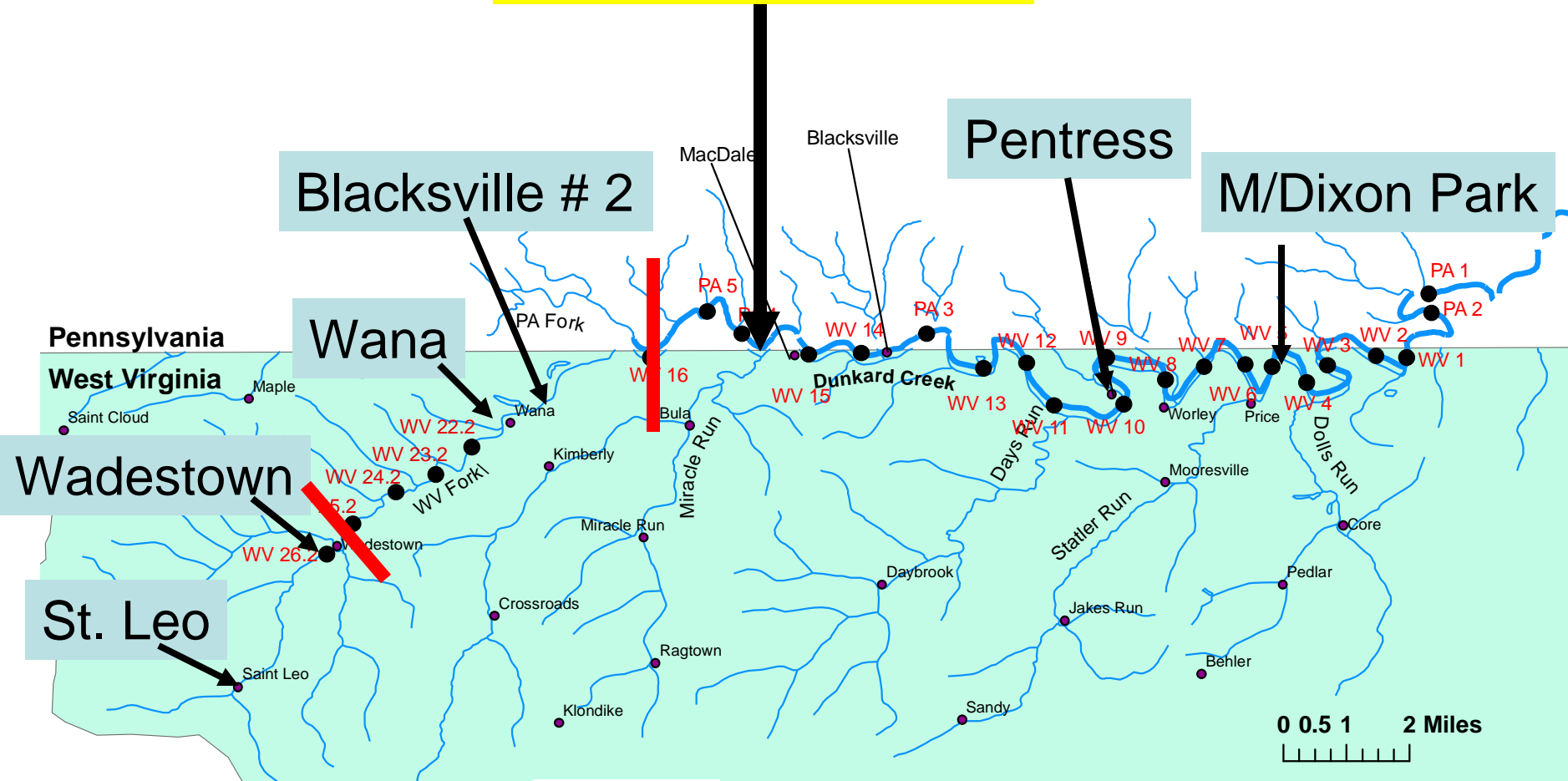
- Post Kill Survey (Oct.)
 - 400-600 μS

ABUNDANCE

- 1 sucker
- 19 minnows
- 0 gamefish
- 0 darters
- 0 others

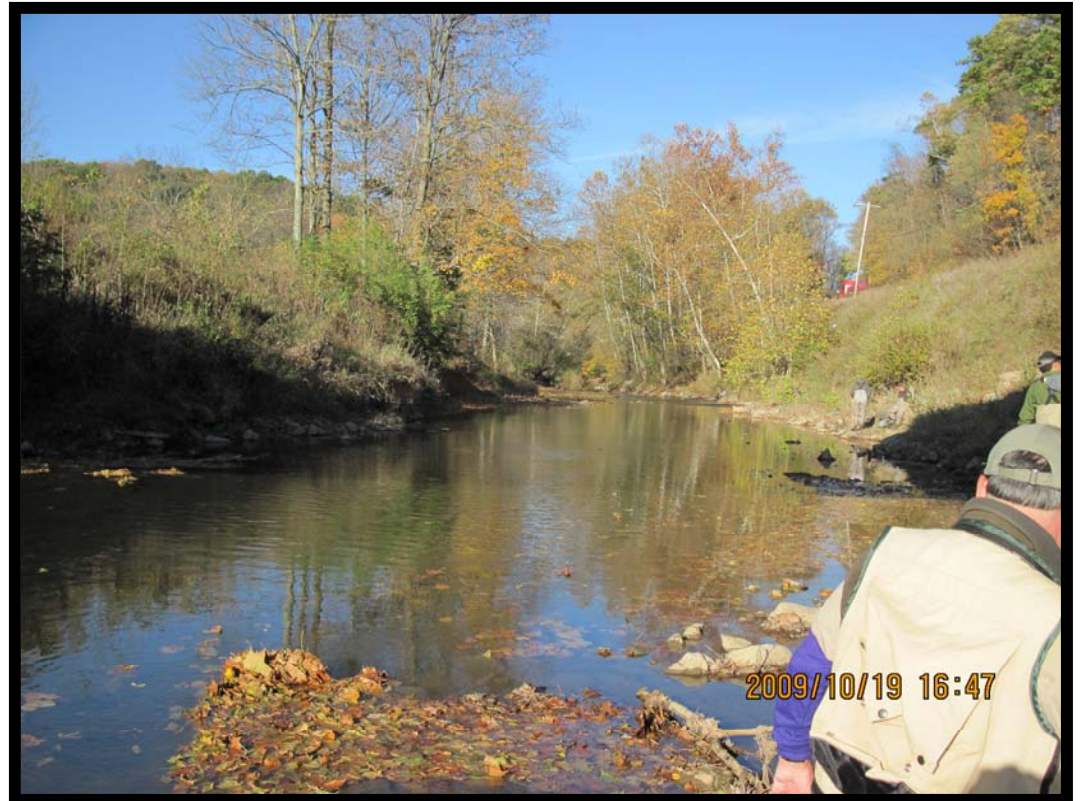


Mouth of Miracle Run

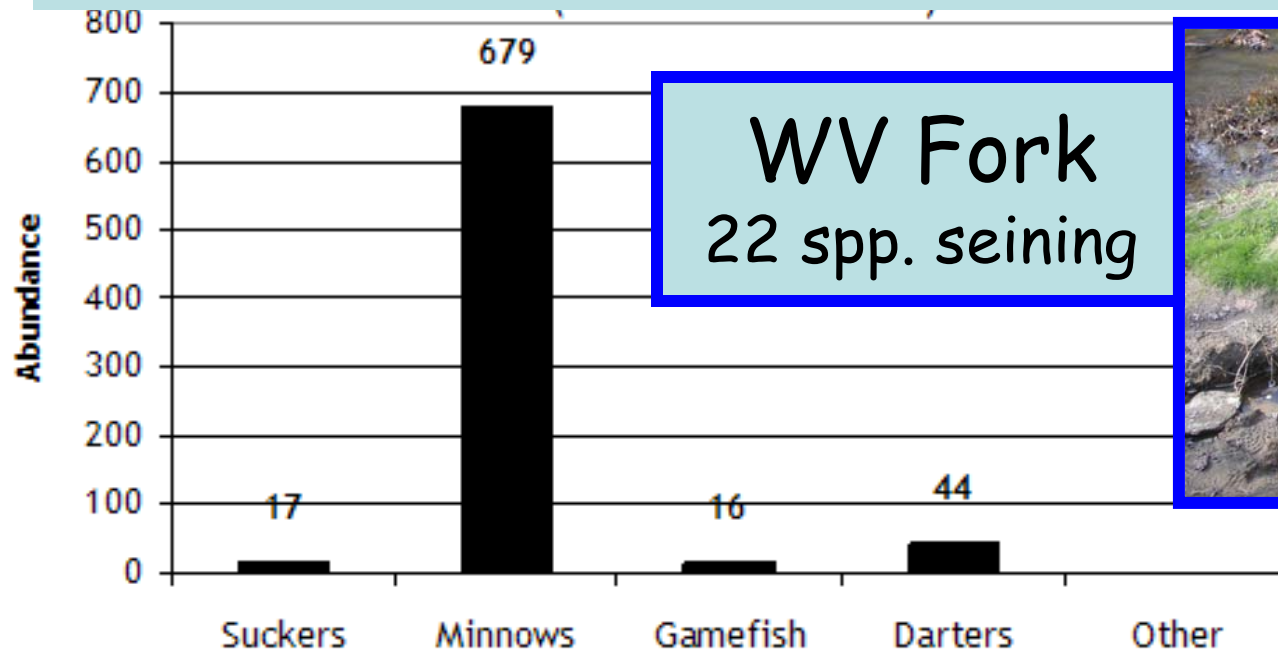


Dunkard at Miracle Run

- ELECTROFISHING ABUNDANCE
- 9 suckers
- 48 minnows
- 6 gamefish
- 21 darters
- 0 others



Above Blacksville # 2 discharge – Aug. 27

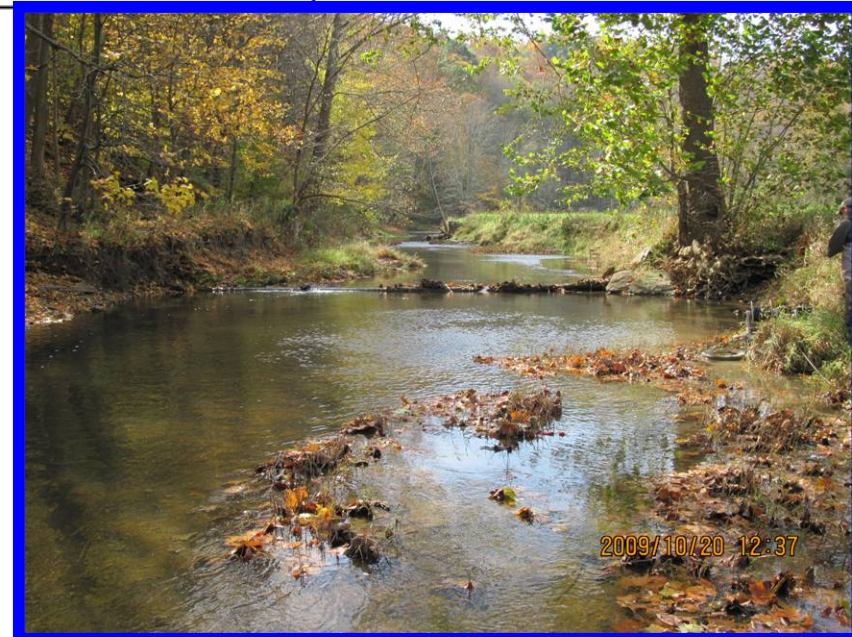


WV Fork
22 spp. seining



Below discharge Oct. survey:

- electrofishing found fishes in reduced numbers
- reduced species



WV Fork Below Blacksville # 2

• BEFORE ABOVE

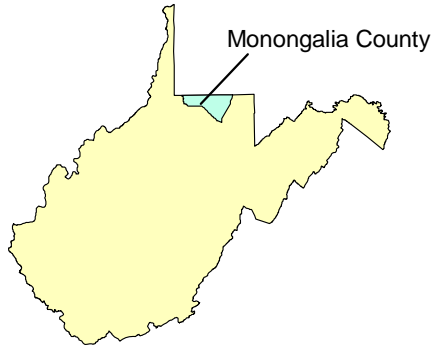
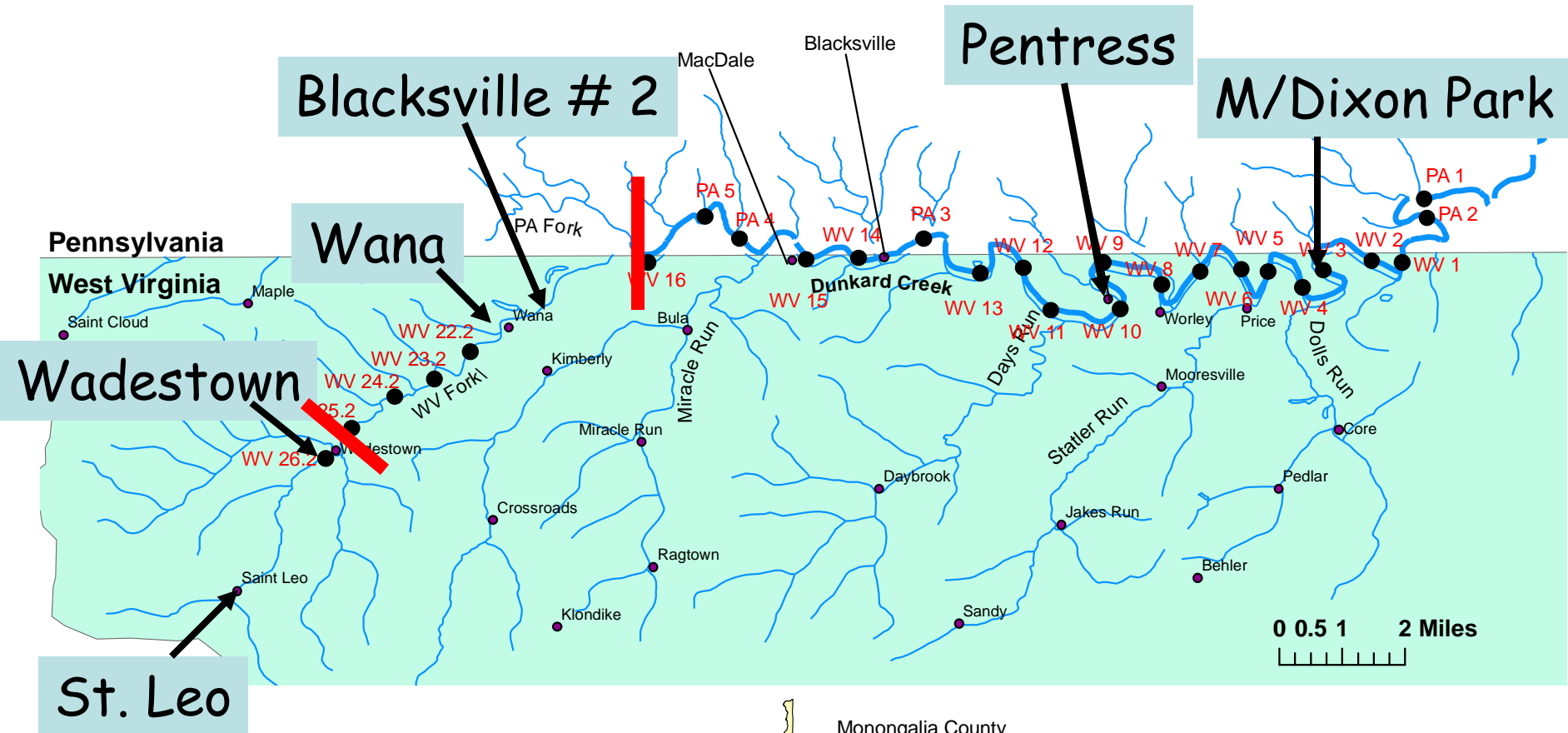
Seine abundance

- 17 suckers
- 679 minnows
- 16 gamefish
- 44 darters
- 0 others

• AFTER BELOW

Electricity abundance

- 11 suckers
- 431 minnows
- 1 gamefish
- 6 darters
- 0 others



WV Fork at Wadestown

- BEFORE - SEINE

- 16 suckers
- 130 minnows
- 20 gamefish
- 94 darters
- 0 others

- AFTER - ELECTRICITY

- 24 suckers
- 162 minnows
- 20 gamefish
- 367 darters
- 0 others



Upper Dunkard - South Fork WV Fork

- Below beaver pond and St. Leo discharge
- 1 greenside darter



- Above beaver pond - Live area, which is below St. Leo discharge
- 3 suckers
- 1402 minnows
- 95 gamefish
- 110 darters
- 0 others

CONCLUSIONS

- Golden algae caused a major fish kill in the main channel Dunkard Creek WV/PA
- 15,000-22,000 fishes were est. killed in WV alone, which appears to be underestimated
- Fishes were essentially eliminated from main channel below Pentress dam
- Upstream from Pentress to at least Miracle Run some fishes survived in reduced numbers and species

CONCLUSIONS

- In the So. Fork WV Fork a second kill occurred below a beaver pond, but not above
- 2nd incident was essentially a total kill in So. Fork until mitigated by flows from tributaries and the North Fork
- Fishes above the St. Leo discharge were apparently not appreciably affected
- Tributaries in WV contain most of the lost fishes, but a full recovery will probably take years to be realized

Questions?

