

Wildlife Resources Section  
Wildlife Diversity Unit  
**Mussel Program**







**We are responsible for the protection of all  
Wildlife in WV**



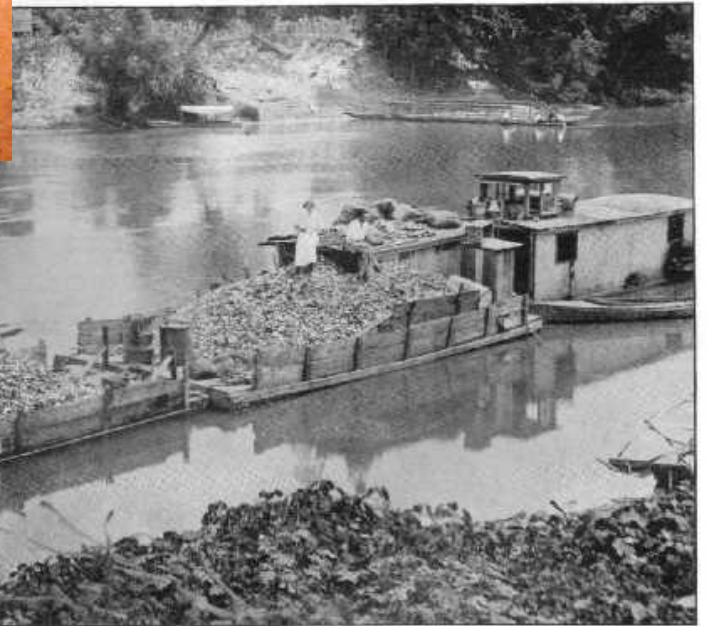


FIG. 2.—Barges loaded with shells and two shellers' house-boats, in Arkansas. (See p. 59.)





# State flexes muscle against mussel thefts

By JOHN MCCOY  
DAILY MAIL OUTDOORS EDITOR

A tip from an observant fisherman has led state conservation officers to one of their biggest catches ever — 16 people, all charged with poaching freshwater mussels from the Ohio River near Parkersburg.

Arrested were Arlene Treece, Larry Wayne Hobbs, Paul D. Webb, Charles V. Collins, Bobby Webb, Charles V. Collins, Benny Carol Gray, Junior Webb, Perry Lanham, Aaron Lanham, Perry Lanham, David Applegate, Larry Curtis, a 17-year-old juvenile, and four other yet-identified adults. The suspects have been charged with taking mussels without a permit, illegal transport of wildlife beyond state lines, illegal sale of aquatic life, fishing without proper licenses, and an assortment of unsafe boating violations.

All were arraigned Wednesday by Wood County Magistrate J. Atkinson, but court officers could not be reached to determine suspects' pleas.

Gragg, who is for the

Aug. 27

## 18 Tennesseans Charged With Poaching Mussels

PARKERSBURG (AP) — Eighteen Tennessee residents were charged with illegally digging up mussels in Ohio, authorities said. Wood County Magistrate J. Atkinson said the suspects pleaded guilty to illegal poaching and received fines of \$1,788. Seven were sentenced to 30 days in jail.

Gragg said the suspects admitted they could net \$3,000 a day digging up mussels from the river bed. The suspects intended to take the mussels back south, where they could receive \$7 per pound rather than up to \$4 per pound in West Virginia, he said.

"They were taking them back to shell companies there that buy them and ship them overseas."

Authorities said black-market mussels often are shipped to Japan or Indonesia where they are used in cosmetics. For cultured pearls, a plug is cut from the mussel and implanted in an oyster. Within two years, a cultured pearl is formed.

### Hunters Kill 'Abnormal'

## STATE BRIEFS

### State Fines 8 for Taking Mussels

HINTON (AP) — Eight men who pleaded guilty to possession of mussels have paid fines of \$300 each, the Division of Natural Resources said Thursday.

Summers County residents tipped off wildlife officers when they noticed several strangers at the New River near Hinton, said Col. Richard Hall, chief of law enforcement.

Pounds of mussels were seized, Hall said. The mussels were destined for New York, where they would be used to grow

Monday were Eleazer Garcia, 20, Poh-Ngoke Mark, 22, of Princeton; Sarapio Santiago, 23, Shyh-Ching Chiou, age unavailable, of Elkins, N.C.; and Chin-Shu Chen, of Hinton.

CONTINUED FROM 1A

Apparently depleted rivers th



1991-1992





**63 Extant Species**





## 9 Federally Endangered Species

Home				Create	External Data	Database Tools	Add-Ins
View	Copy	Paste	Format Painter	Font	Rich Text	Records	Sort & Filter
Views	Clipboard	Font	Rich Text	Records	Sort & Filter	Window	Find

EventID: 3608

Event Source: WVDNR 2012

### Division of Natural Resources Wildlife Resources - Event Record Entry

Project Name: WVDNR 2012

Project ID: 0

WorkPlan ID: 0

Job ID: 0

Form Completed By: mike everhart

Date: 7/17/2012

Time (24H):

Form Id: 20040010

**General Location** **Collectors** **Mussel Surveys**

Site ID: 815568393402

[Edit Site  
Information](#)[Add New  
Site](#)

Site Name: OHIO RIVER

Directions: RM 179-179.9 RDB (TOLIN SITE 11)

Site Type: POINT

Origin Longitude: -81.5568

Origin Latitude: 39.3402

Datum: 1983 PDOP:

Site Accuracy: COORDINATES EXTRACTED FROM AN APPROX. POINT PLACED ON A 7 1/2 QUAD. (+/- 500 M)

Rover File (.ssf):

Corrected File (.cor):

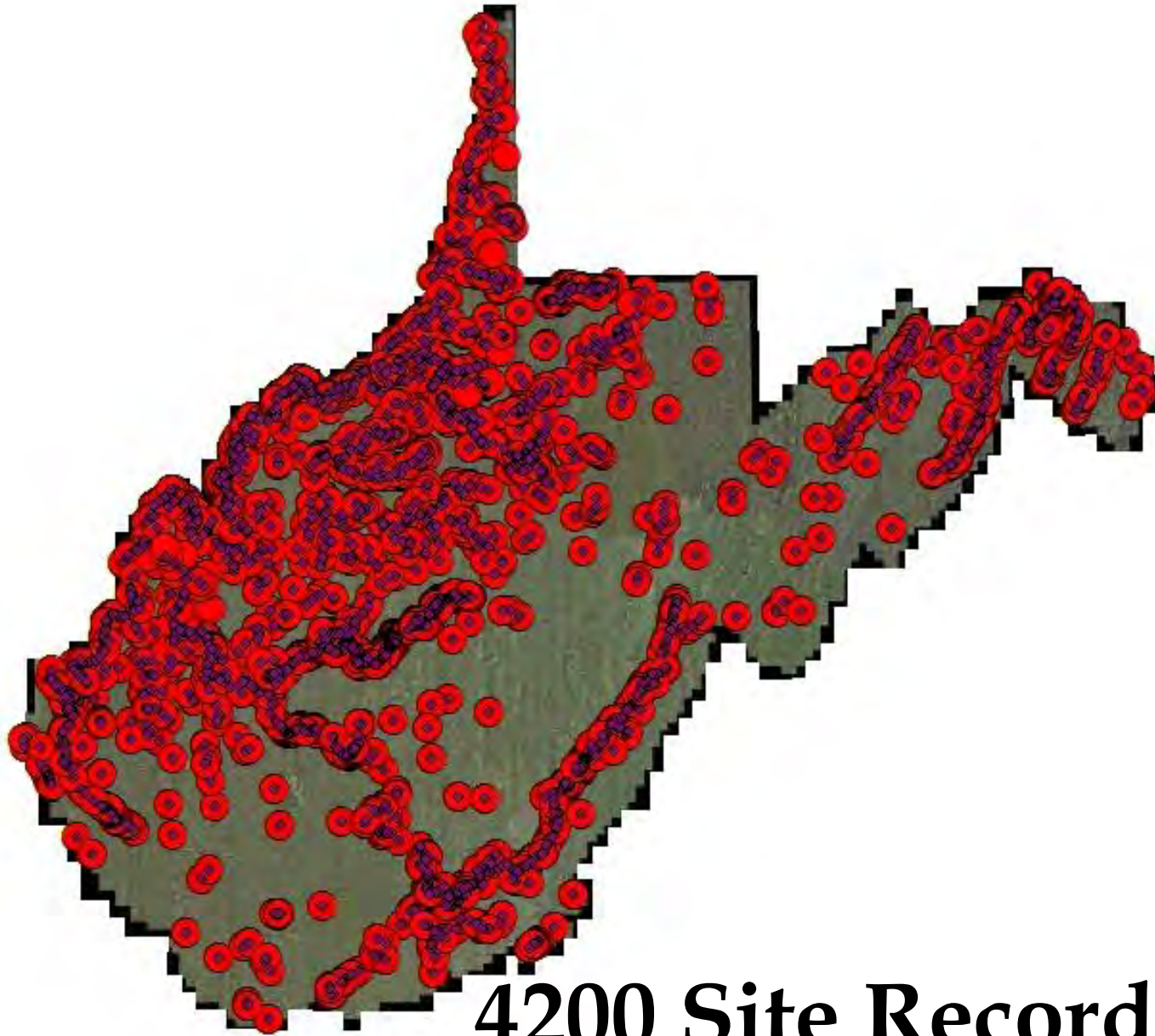
County Name: WOOD

Quadrangle Name: PARKERSBURG

Established By: TOLIN

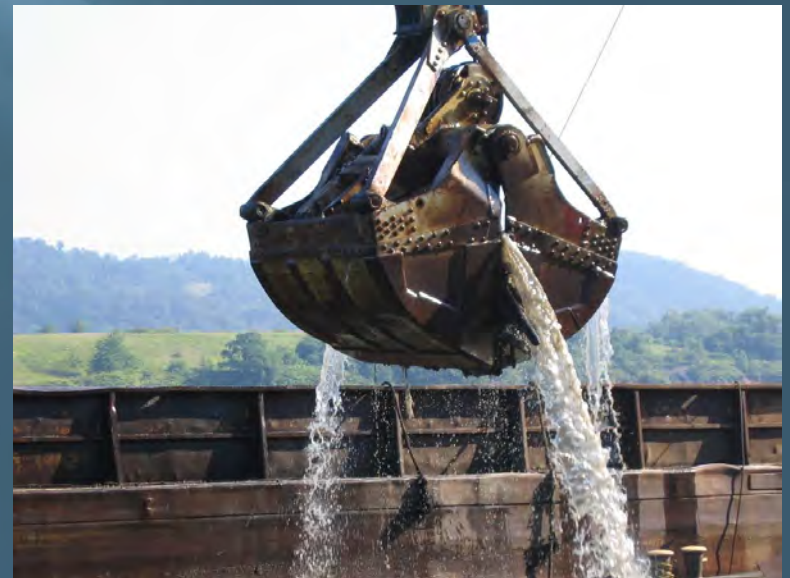
Date Established: 8/1/1983





**4200 Site Records**





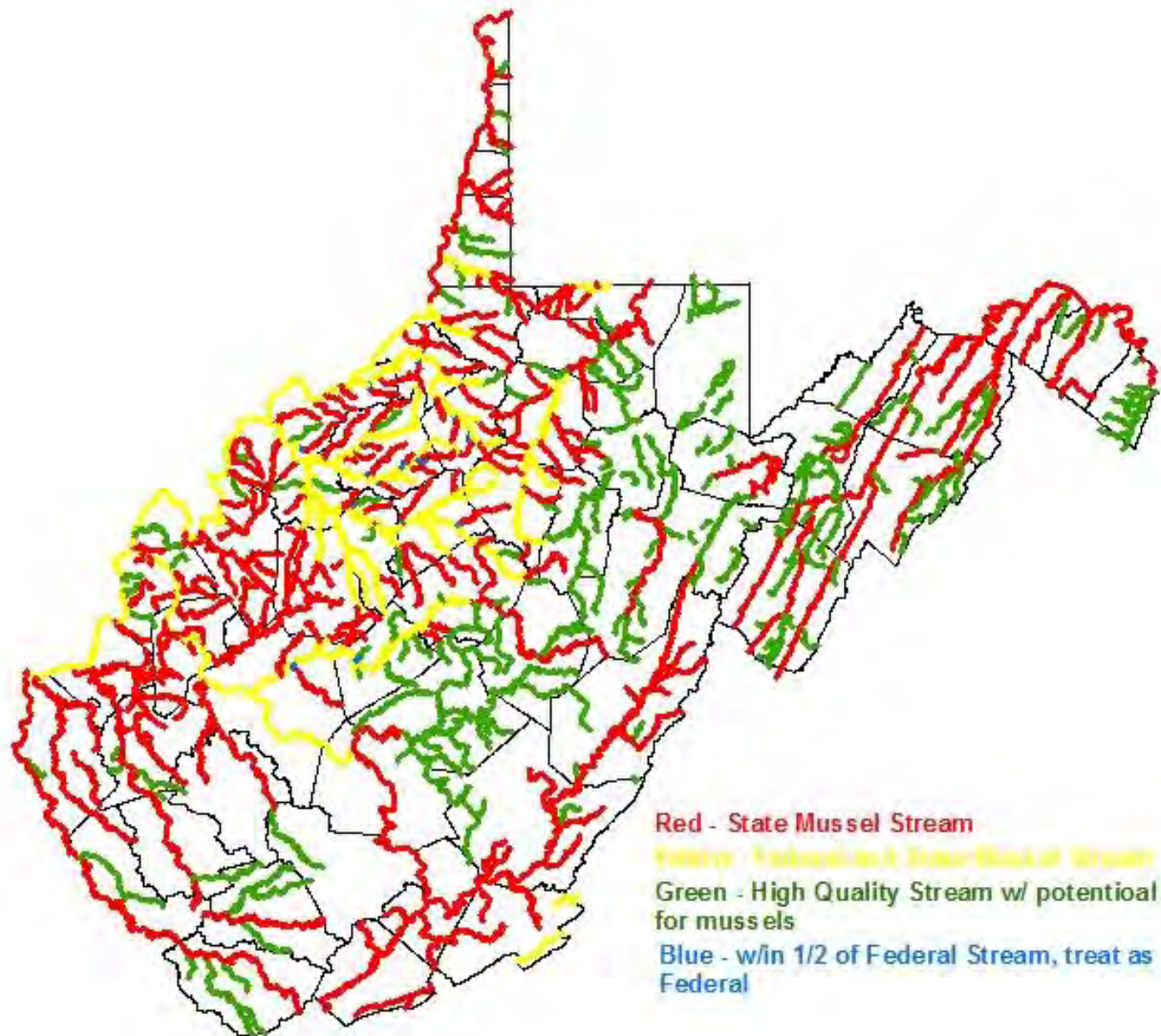
In stream impacts  
require surveys



# Bridge Construction, Repair & Maintenance









# West Virginia Mussel Survey Protocols

April 2015



Middle Island Creek mussels including federally endangered Snuffbox. Photo by Janet L. Clayton

Prepared By

Janet L. Clayton (WVDNR)  
Barbara Douglas (USFWS)  
Patricia Morrison (USFWS)





# Surveys





# Monitoring

3 Random Start Systematic Sampling

Mark/Recapture

Pit-tagging





**Systematic sampling of substrate samples**







# Mark / Recapture





# Pit-tagging





# Mussel Kill Assessments



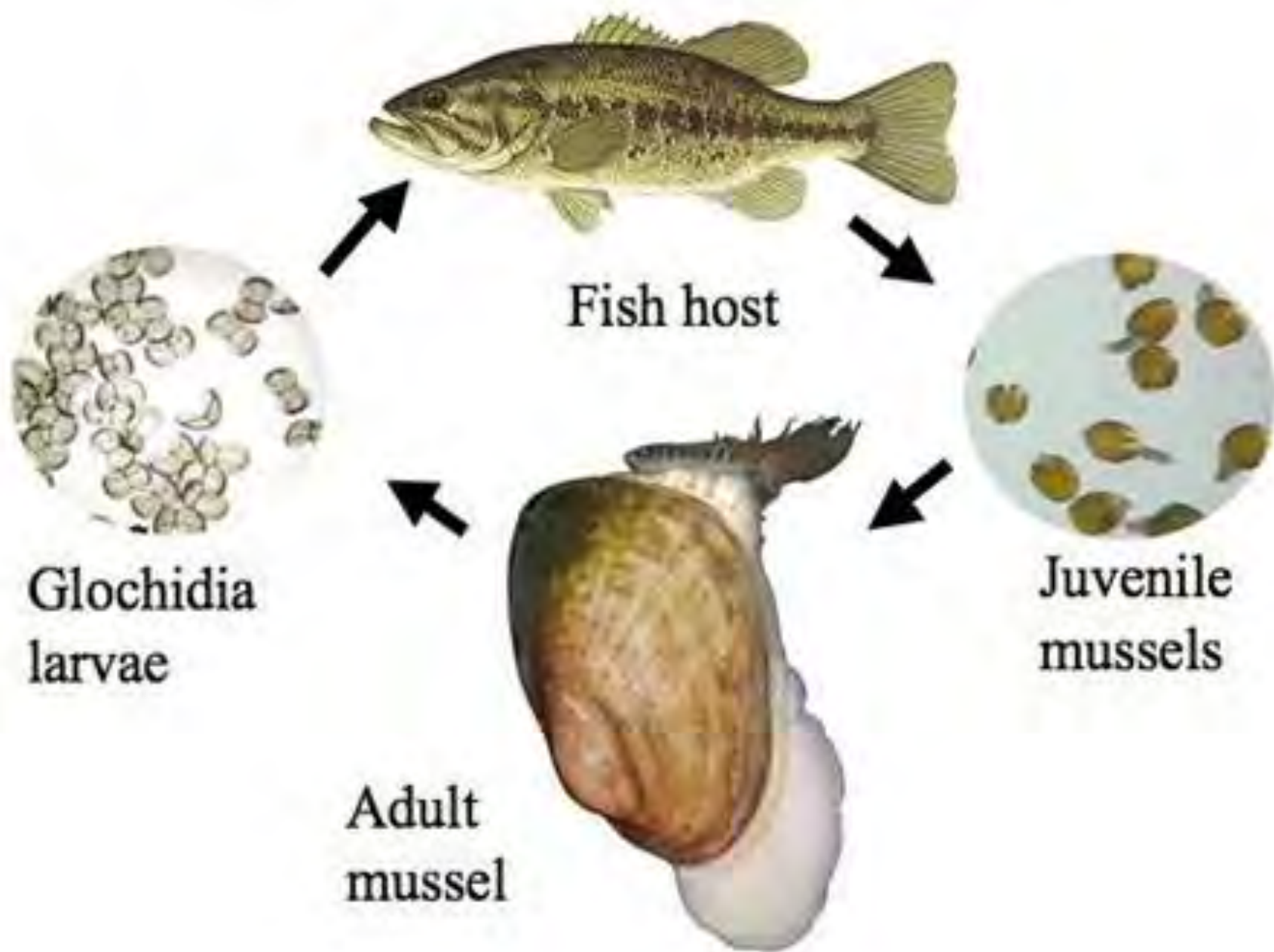


- Ohio River/Elkem Metals/Eramet Corporation .....1999
  - NRDA ---WV, OH, USFWS
  - \$2.4 million for restoration
- Tug Fork River/Martin County Coal Corporation.....2000
  - \$19,000
- Ohio River/B&H Towing .....2005
  - \$143,200
- Ohio River/Degussa.....2008
  - \$43,310 (included snails)
- Dunkard Creek/Consolidated Coal.....2009
  - \$500,000
  - Total Kill, WV portion 25,000+mussels, 17 species



# Restoration



















# Technical Committee



WVDNR

Janet Clayton  
Scott Morrison



ORINWR

Patricia Morrison



WSSNFH

Catherine Gatenby  
Rachael Mair



OSU/CZ

Tom Watters



Elkins Field Office  
Barb Sargent



GNFH

Tony Brady  
Nathan Eckert



Region 3

Dave DeVault

ODNR

John Navarro

## Other Cooperators

TTU

KY Center for Mollusk Conservation

KYDFWR

PA Department of Fish and Game

THE Wilds

USEPA Wheeling







Site 11 Restoration  
5 years later  
21 species  
3.36/m<sup>2</sup>  
15 Species Recruiting





# Ohio River

Site 11 and Neal Island (A,J,F)

Buckley Island (A)

Muskingum Island (A, J)

# Monongahela River

Opekiska and Hildebrand (A)

# Dunkard Creek

4 sites (F, A)

Kanawha Falls (A)

Elk River (A)



Ohio River

Greenup Pool (A)

Little Kanawha River (A)

Middle Island Creek (A)





# Research

## EPA – Wheeling eDNA Study







