Georgia Aquatic Nuisance Species Overview

Keith Weaver
Aquatic Resources Biologist

December 9, 2008


Did someone say aquatic nuisance?

More than One Way to Skin a Cat: Controlling the Spread of Invasive Species through Outreach, Community-Based Research, and Education

NOAA

SOUTHEAST AQUATIC RESOURCES PARTNERSHIP SARP

The University of Georgia

MAREX

Education

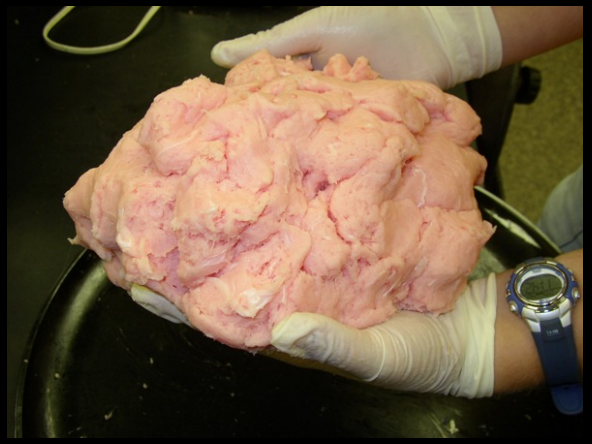
In one collaborative workshop, 12 students fisheries students from UGA had the opportunity to learn first-hand about current fisheries issues in Georgia.

First, they came to the Marine Extension office to learn about pressing issues such as contaminants in seafood and invasive species.

Education

Then, DNR biologists showed students how to capture Altamaha flatheads using electro-fishing methods. Students helped measure and weigh fish before they were released.

Community-Based Research



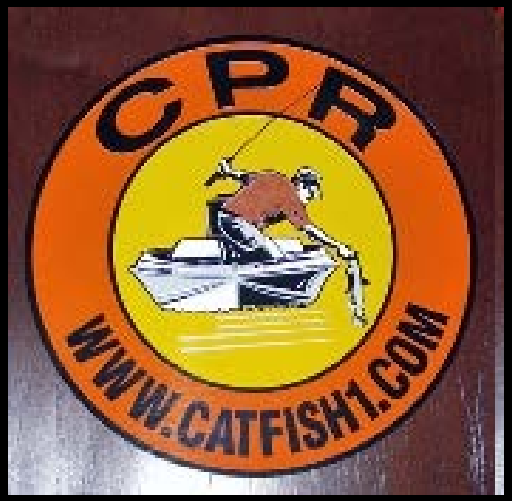
Twenty-five of these fish were sacrificed and collected for gut content and contaminant analysis. That weekend, local volunteers helped process the fish.

Community-Based Research

At Altamaha Regional Park, recreational fishermen have joined the effort. While processing their fresh flathead catches at the park, they analyze gut contents with fisheries biologists. These interactions have been very important for gaining local perspectives as well as raising community awareness about invasive species.

Community-Based Research

Interviews with the founder and members of “The Brotherhood of Catfishermen” revealed that many fishermen would not be receptive to outreach materials that appear too one-sided (e.g. messages such as “do not release any flatheads”). In fact, this group promotes active protection of flathead resources with education campaigns such as “CPR: Catch, Photo, and Release.”



However, there was an outreach message we could agree upon: “Either eat them or release them: never move live flatheads.” In addition to preventing the spread of invasive species, this message addresses the concern that trophy fish are being removed from the wild and transported to pay ponds, sometimes across state lines.

A CLOSER LOOK AT THE WASTED FLATHEAD CATFISH

"These two flathead catfish would be considered a trophy catfish for any sportsmen. These two flathead catfish, laying in a ***hot bucket*** in over ***100 degree heat***, sadly, are victims of this operator's greed. The Flathead catfish on the right is already dead, eyes bulged from the heat. The Flathead Catfish on the left, was still slightly alive, gasping for air, tail slightly moving."

From website:

The tone suggests how much members value flathead catfish.

Community-Based Research

Since members of “The Brotherhood” are passionate about not moving fish, this creates an unexpected area of common ground. Finding overlapping areas of interest between groups with different values and agendas is extremely important for successful outreach.

Rotating poster series:

Ecological impacts of flathead introduction: Rare mussels of the Altamaha

Freshwater mussels, some of the most imperiled species in the USA, rely on specific fish hosts (most likely sunfish species) during their development. Flatheads' appetite for these fish may have unseen impacts.

Although mussels are not the world's most charismatic animals, our interviews revealed a surprising amount of public interest in the rare species, especially possible connections between mussels, sunfish, and flatheads.

University of Georgia
Altamaha catfish project

Gender: M F

Age range: youth teen 20s 30s 40s 50s 60s 70s

(1) Do you consider yourself:

a catfish angler a bass angler both neither

(2) Where are you from? **Where do you live now?**

Lived here all my life

(3) Which of these animals have you heard of? (circle)

Zebra mussel	Y
Georgia elephant ear	N
Snakehead	Y
Pink fatmucket	N
Flathead	Y
Appaloosa	Y
Southern pondhorn	N

(4) What is the relationship between the flathead catfish, sunfish, & Altamaha mussels?

Flatheads eat the sunfish and sunfish eats the mussels

(5) Which methods do you use to catch catfish? (circle)

Trotlines **Limb lines** **Juglines**

Noodling **Rod/reel**

(6) Are there any kinds of catfish that are not good to eat? (sizes or species)

No, all are good to eat

(7) Some people eat the catfish belly meat and some people don't—do you eat it? (circle)

Always **Only in big fish** **Only in small fish** **It depends** **Never**

(8) How would you define an "invasive species"?

(9) Are flatheads native to the Altamaha River?

Yes No Not sure

(10) Right now, there are no harvest limits or size limits for flathead catfish. Should there be?

Yes, there should be limits. You don't want to lose the flatheads, bream have re-populated naturally

(11) Have you heard of anyone catching catfish here and taking them live to other rivers? NO

(12) Is it legal to take live fish from a river to stock your own pond? (circle)

Yes, it's legal No, that's against the law Not sure

13) In the Satilla River, DNR managers are catching flatheads to remove them from the system. Right now they have no plans to do this in the Altamaha. In your opinion, should they? No, they are good for business, fun to catch, and good to eat as long as bream are coming back

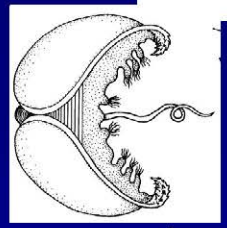
Have you ever heard of a pink fatmucket??

RARE MUSSELS OF THE ALTAMAHA

Actually…
the **Rayed pink fatmucket** is just one of the 11 species of rare freshwater mussels found in the Altamaha River.

SOUTHEAST AQUATIC RESOURCES PARTNERSHIP SARP MAREX The University of Georgia Public Service & Outreach

Rare Mussel Reproduction



(3) Glochidia (glow-kid-ee-uh) turn into juveniles & become free living mussels.

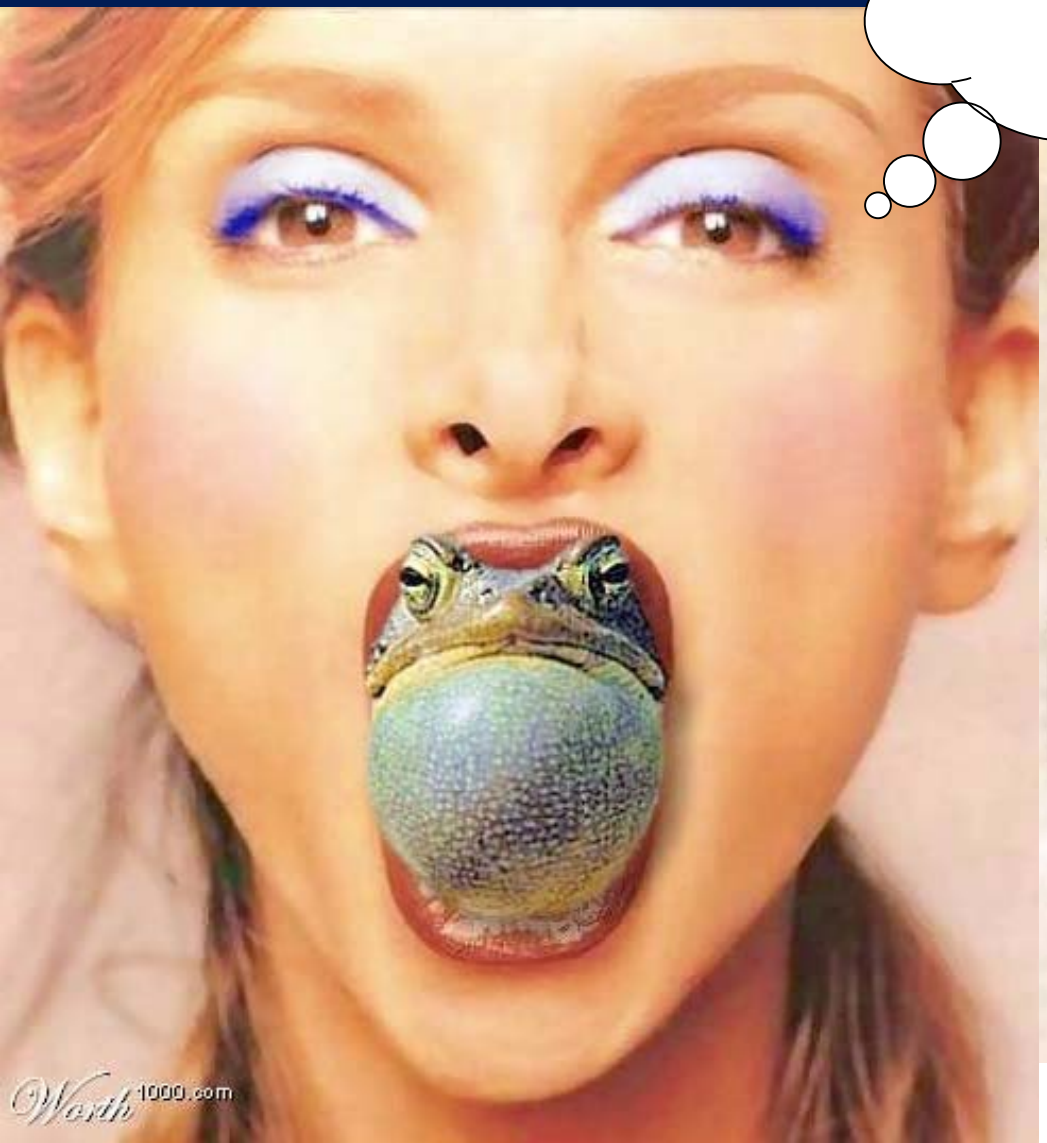
(2) Eggs develop into *glochidia*, which look like Pac-Man. They need to attach to the gills or fins of fish to survive.

(1) Male mussels release sperm and females fertilize eggs internally.

Adapted from: http://animaldiversity.ummz.umich.edu

9y/95

Rare mussels of the Altamaha



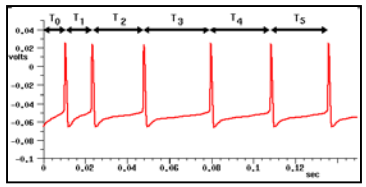
Have you ever heard of a Southern pondhorn?

Actually… the **Southern pondhorn** is a rare freshwater mussel species found in the Altamaha River.

SARP MAREX The University of Georgia Public Service & Outreach

Rare mussels of The Altamaha

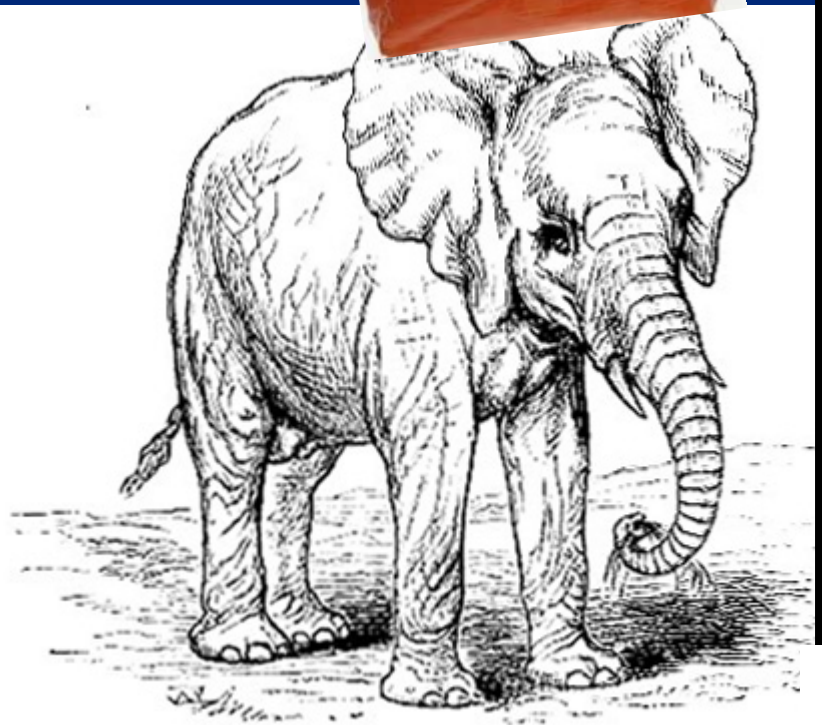
Pssst... have you ever heard of a variable spike?



A **Variable spike**
is one of freshwater mussels found in the Altamaha River.

SOUTHEAST AQUATIC RESOURCES PARTNERSHIP SARP MAREX The University of Georgia Public Service & Outreach

What do the Altamaha Pocketbook and the Georgia elephant ear have in common?



Rare mussels of The Altamaha

....both are **exclusively native** to the Altamaha and lower Ohoopee rivers.

SARP MAREX The University of Georgia Public Service & Outreach

Want to see an inflated floater?

Don't try this at home.

Rare mussels of The Altamaha

You can look high and low, but the rare pearly mussel called the **Inflated floater** is only found in the Altamaha River basin.

SARP MAREX The University of Georgia Public Service & Outreach

Current results:

•Exploitation study was replicated (methods used from 2007) from March 28th to May 8th, 2008

•Ninety six flatheads were tagged to assess baseline information needed to determine the effectiveness of the removals.

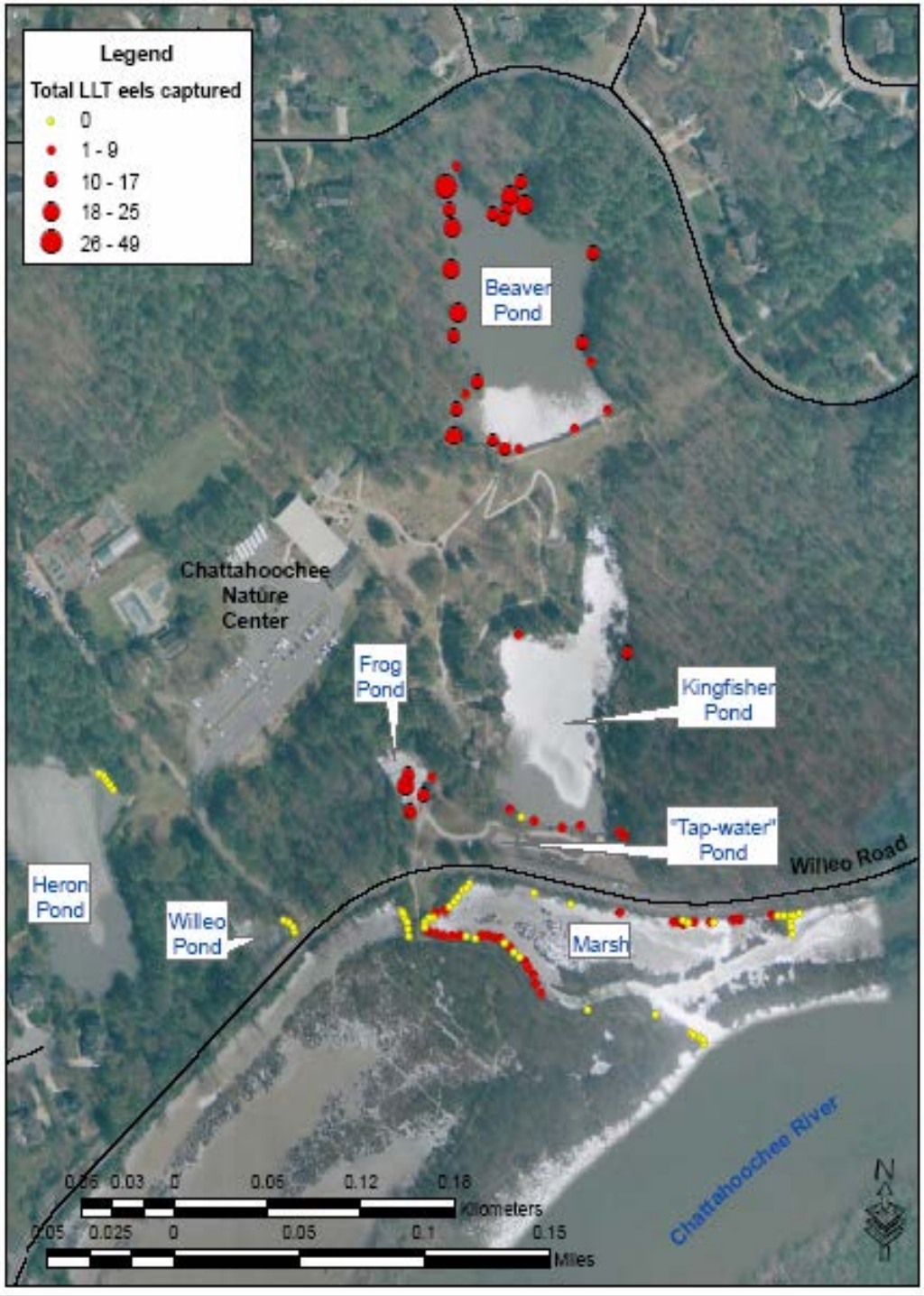
•Removal for 2008 took place from May 12th, 2008 until October 17th, 2008 with the Waycross crew successfully removing 3,285 fish totaling 9,398 lbs (last year 4,399 removed weighing 25,357 lbs.)from the Satilla River.

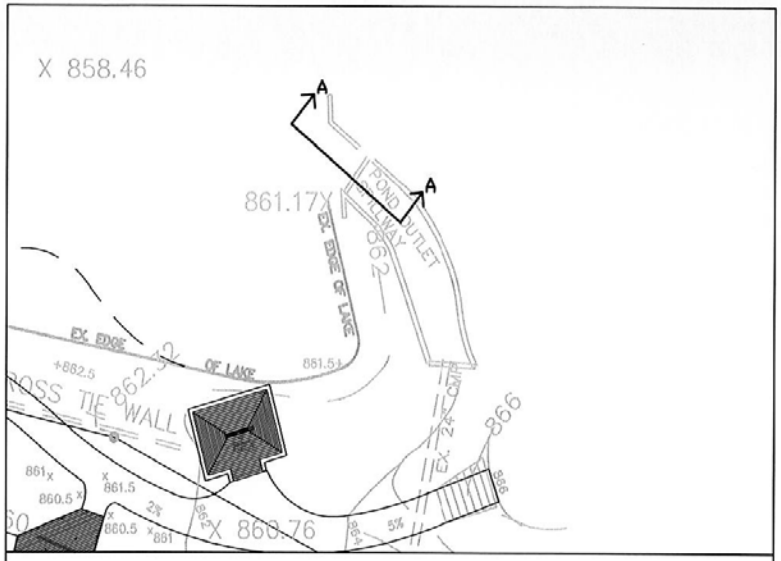
• Fifty percent (50%) of the tagged fish were removed via electrofishing and angler harvest. Dramatic shifts in the size distribution were observed in 2008 with the average size flathead dropping from 5.8 pounds to 2.9 pounds in just the second year of the full-time project. Sagittal otoliths were removed for age and growth analysis and are currently being examined.

•Auburn has reported tremendous strides in artificially spawning triploid flatheads. Analysis revealed 100% triploid induction rate. The bottom line is, triploids can reliably be produced in a lab situation and much was learned from the 53 adult flatheads that were initially transported to Auburn back in May of 2007. In future years, WRD plans to grow out at the Bowen's Mill Fish Hatchery the surviving thirty triploids to maturity and perform some experiments to determine if the triploid does indeed reduce or inhibit reproduction of normal diploid flatheads. The WRD may again call on Auburn University to assist in future sexual reproduction experiments.

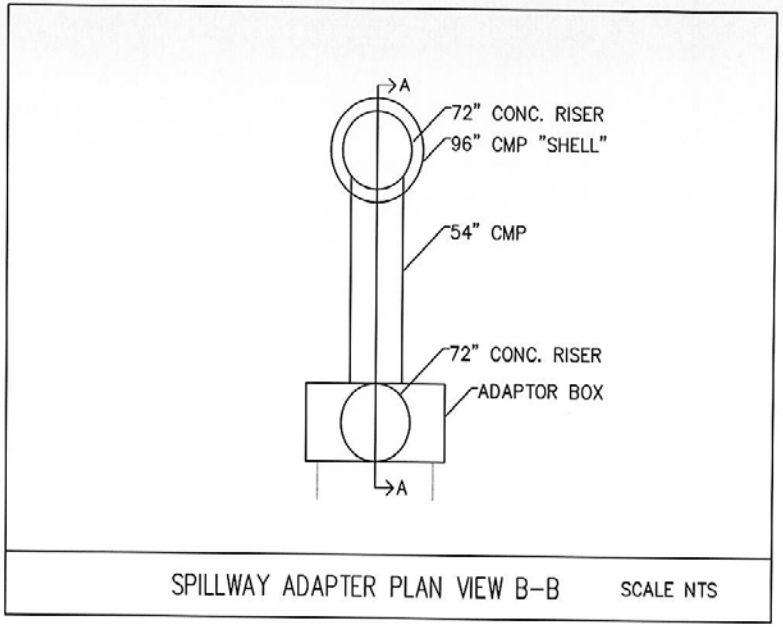
Swamp Eels

Photo Credit: Leo G. Nico, USGS, Gainesville, FL

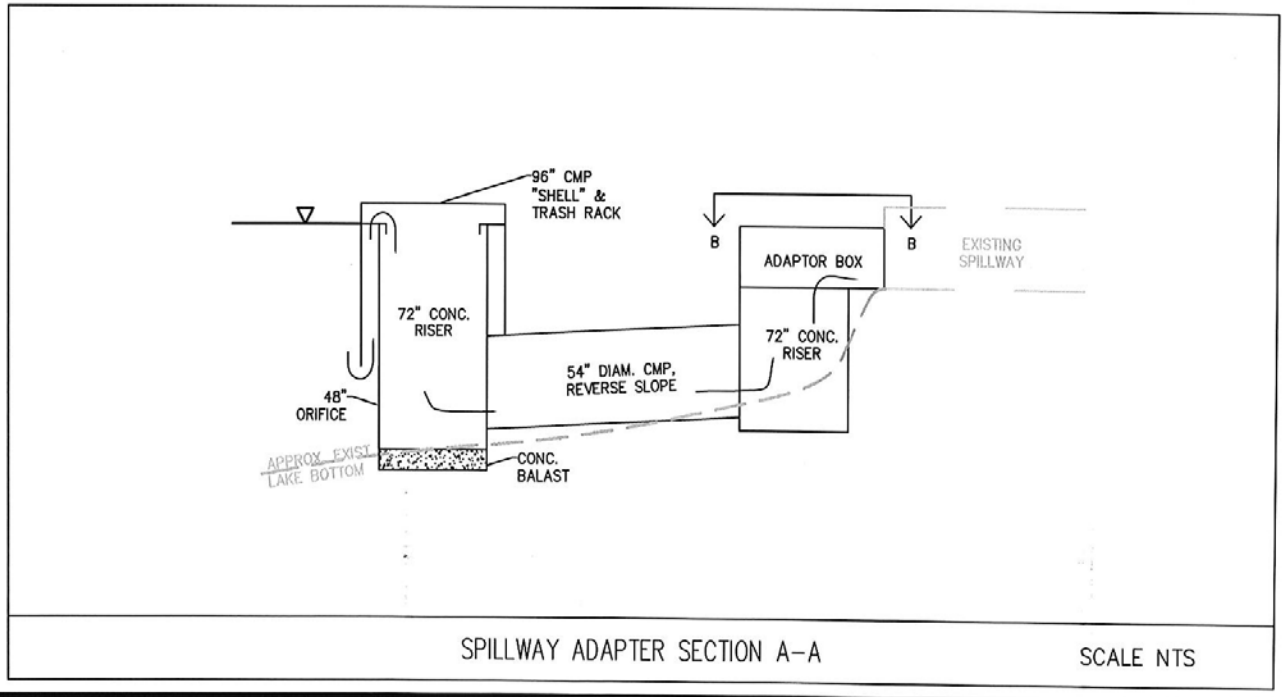

Legend
Total LLT eels captured
0
1 - 9
10 - 17
18 - 25
26 - 49
Beaver Pond
Chattahoochee Nature Center
Frog Pond
Kingfisher Pond
"Tap-water" Pond
Willeo Road
Heron Pond
Willeo Pond
Marsh
Chattahoochee River
0.06 0.03 0 0.06 0.12 0.18
Kilometers
0.05 0.025 0 0.05 0.1 0.15
Miles
N



↑NORTH APPROXIMATE LOCATION FOR ADAPTER BOX SCALE 1" = 30'



SPILLWAY ADAPTER PLAN VIEW B–B SCALE NTS



SPILLWAY ADAPTER SECTION A–A SCALE NTS

AEC inc.

MODIFICATION #3 - ADAPTER BOX

Chattahoochee Nature Center
Eel Excluder
ROSWELL, GA

DATE
REVISIONS
NO.

PROJECT NO. - 08-2778
DRAWN - DAS, CMY
DESIGNED - CHM, DAS, MDB
CHECKED - CHM
DATE - 04-23-2008

SHEET
4 OF 4

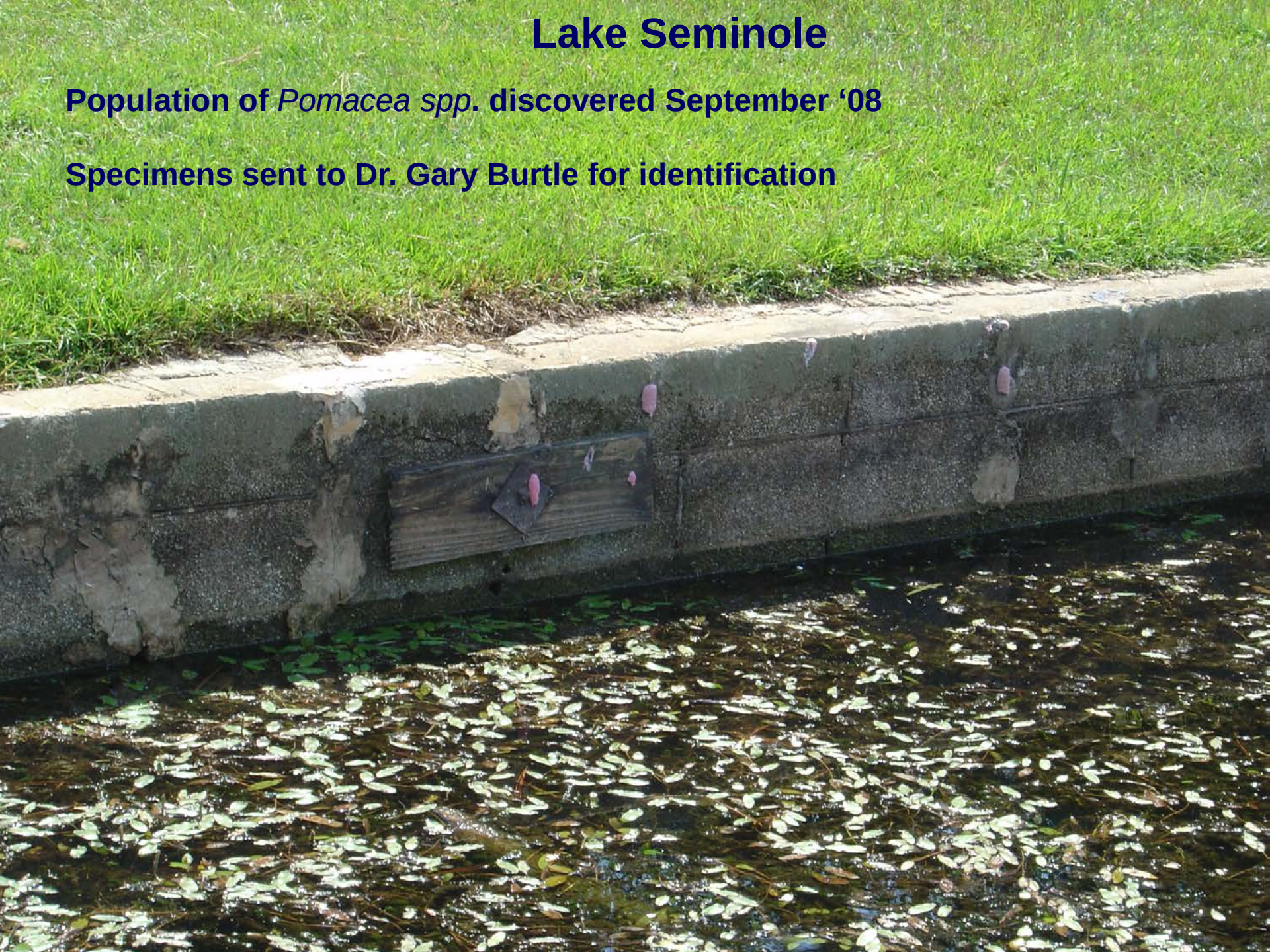
Discussion:

- Twenty-four YOY eels captured in the swamp (Summer ’08)
  - ->lengths and weights
  - ->Otiliths were pulled and awaiting results
- Did these eels originate in KingFisher Pond or reproducing in the Marsh?
- Microchemistry analysis needed in ’09 to determine if the eels originated in the swamp or CNC ponds

Lake Seminole

Population of *Pomacea spp*. discovered September ‘08

Specimens sent to Dr. Gary Burtle for identification




I think I found one!!!