

Amblema neislerii, Fat Threeridge: Recovery Possibilities and Options

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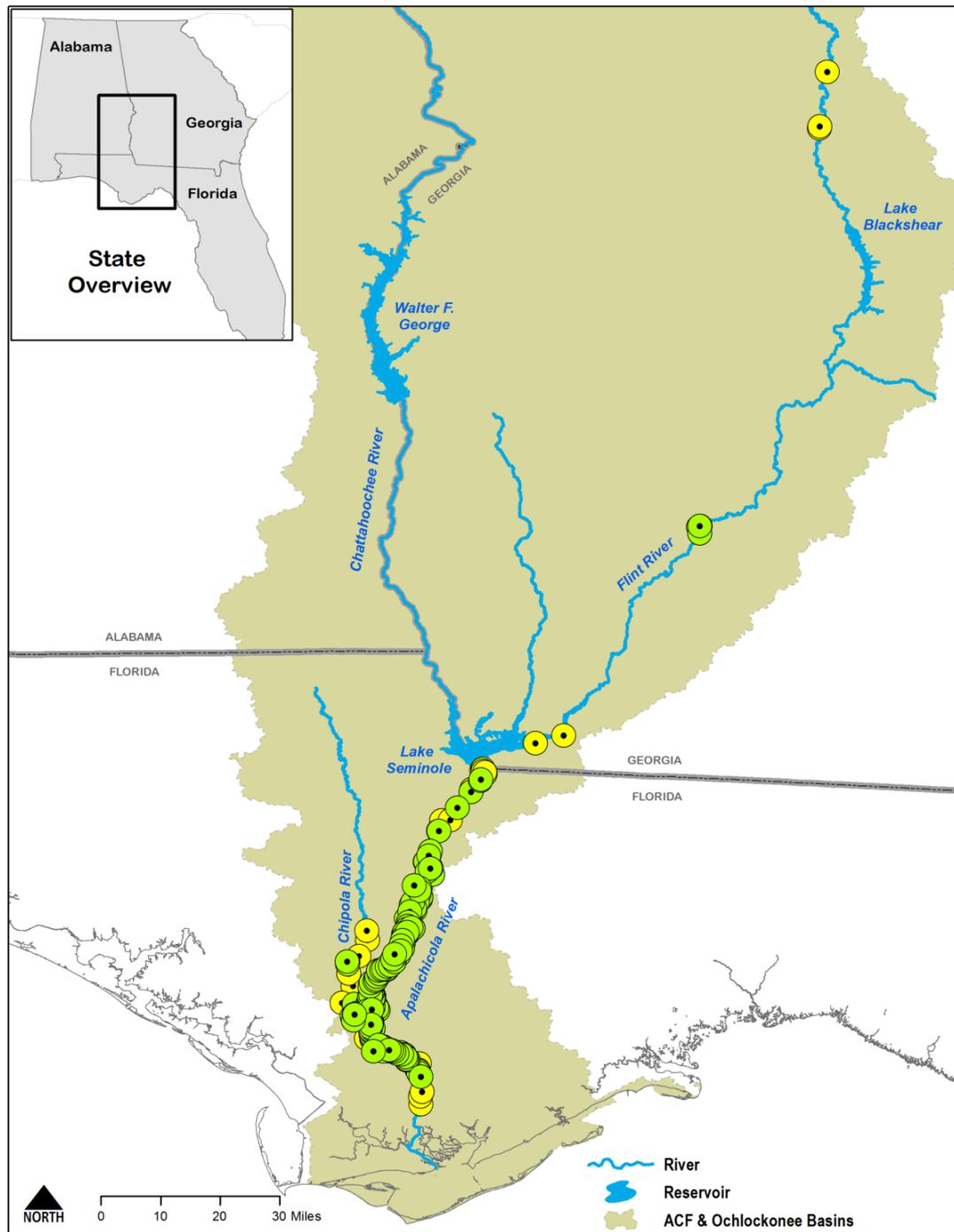
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Amblema neislerii



Upper image: length 70 mm -
Dead Lake at Chipola Park,
Calhoun County, Florida

Lower image: length 41 mm -
Apalachicola River, rm 46.8,
Gulf County, Florida



Amblema neislerii: Reproductive Biology and Host Fish

O'Brien & Williams 2002: *A. neislerii* collected early June, water 24°C

- + Centrarchidae – 2 *Lepomis* and 1 *Micropterus*
- + Percidae – 1 *Percina*
- + Cyprinidae – 1 *Notropis*
- Madtom (*Noturus*) and Mosquitofish (*Gambusia*)

Fritts & Bringolf 2014: “Metamorphosis of *Amblema neislerii* was observed on 23 species in seven families, indicating that this species is a host generalist”.

- + Clupeidae – 1 *Dorosoma*
- + Centrarchidae – 7 *Lepomis* and 1 *Micropterus*
- + Cyprinidae – 2 *Notropis*, 1 *Nocomis*, 1 *Pimephales*, and 1 *Pteronotropis*
- + Ictaluridae – 3 *Ameiurus* and 1 *Ictalurus*
- + Moronidae – 1 *Morone saxatilis*
- + Percidae – 3 *Etheostoma*
- + Poeciliidae – *Gambusia*
- Shiner (*Notropis*), Madtom (*Noturus*), Pygmy Sunfish (Elassomatidae) and Pirate Perch (Aphredoderidae)

Amblema neislerii

Population Status:

Apalachicola River:

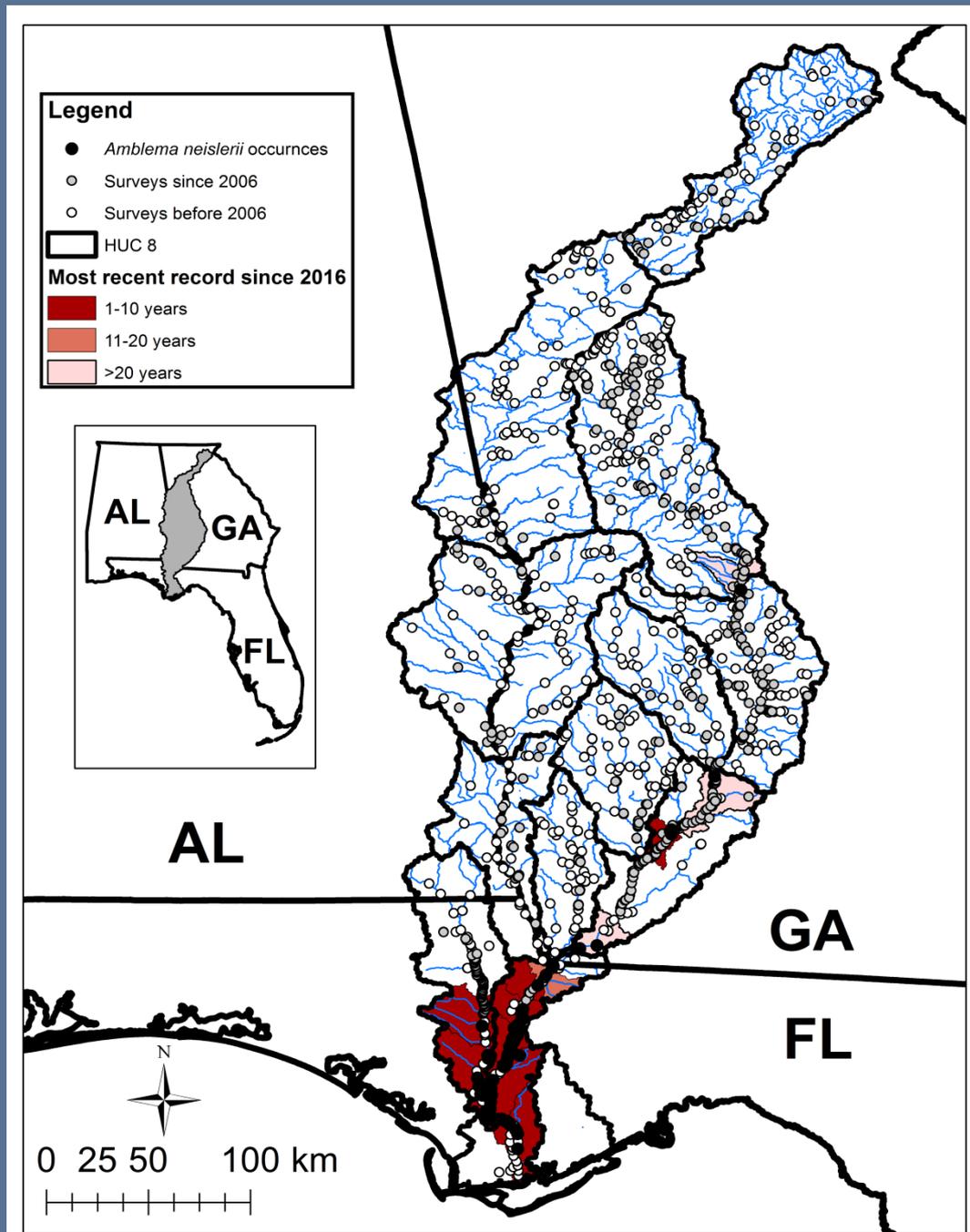
Above tide water to the dam

Chipola River:

Mouth upstream to above Hwy 20 bridge west of Blountstown

Flint River:

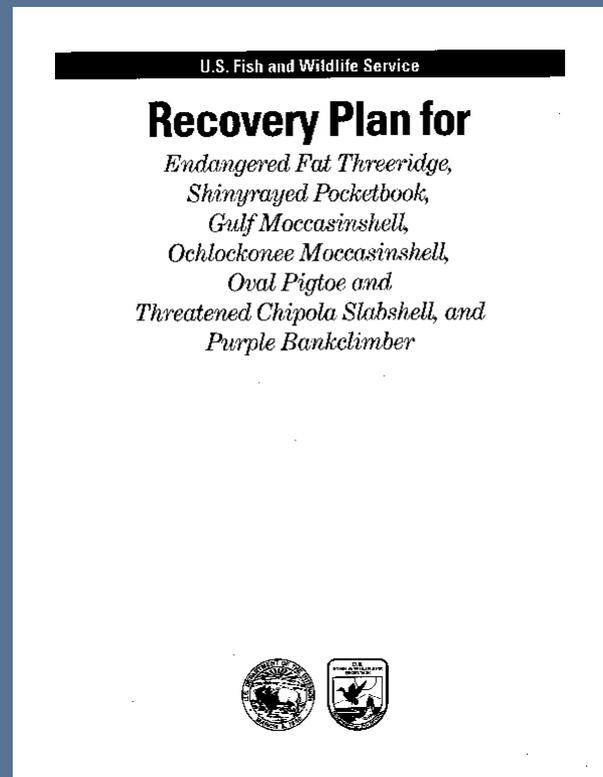
Vicinity of Newton, Georgia (few miles of River)



Amblema neislerii Conservation Landmarks

FWS Listing, Critical Habitat, and Recovery Plan Dates

- *Amblema neislerii* listed as endangered March 1998
- *Amblema neislerii* recovery plan finalized September 2003
- *Amblema neislerii* critical habitat designated November 2007



FWS Recovery Plan

Goal of 2003 Recovery Plan: Restore populations of *Amblema neislerii* within a significant portion of its historical range; and eliminate or reduce threats to survival so ESA protection is no longer required.

Amblema neislerii will be considered for reclassification to threatened status when it has:

1. Increased range to occupation of 50 percent of total historical habitat;
2. 3 viable subpopulations in each watershed that currently supports the species; and
3. 10 viable subpopulations within its historical range, for at least 3 generations.

*Criteria for downlisting to threatened status
2003 Recovery Plan, page 81*

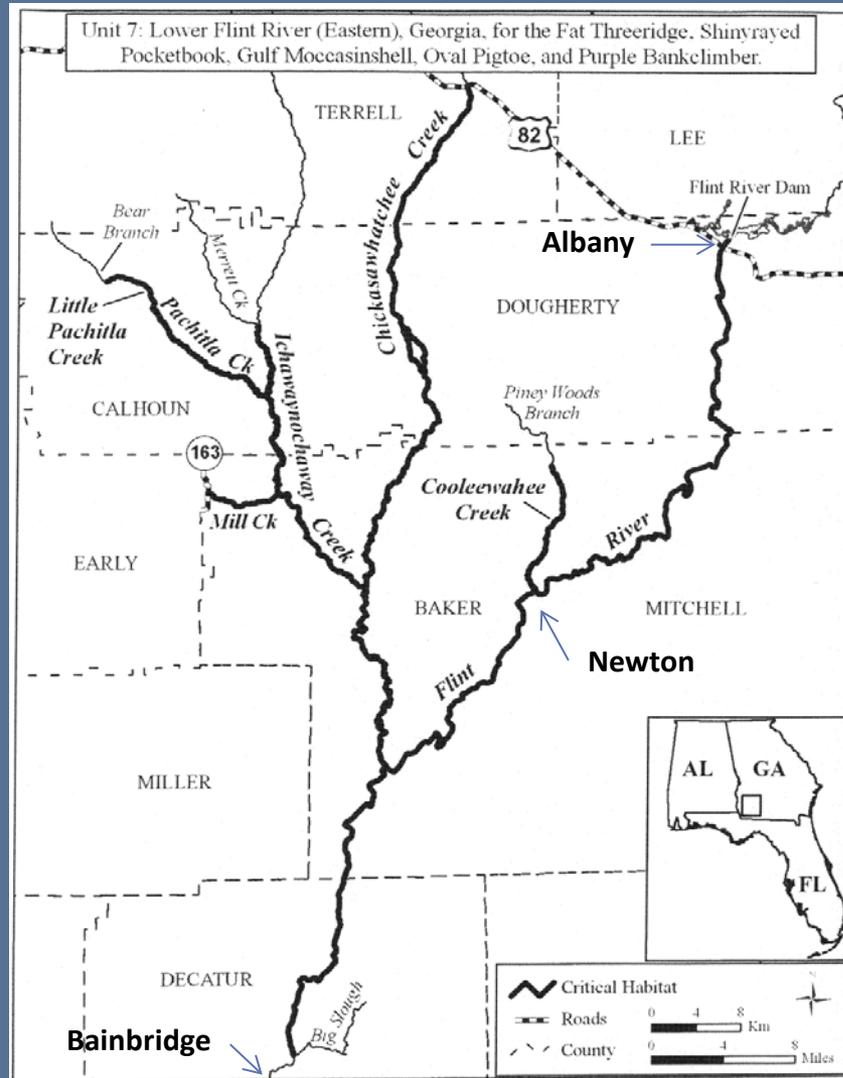
Fat threeridge

“**Reintroduction of viable subpopulations to the Flint** would reduce the risks of extinction from a catastrophic event to the majority of the existing subpopulations located in the Apalachicola River.

An increase of 26 rm in the Flint River basin is needed to achieve a current extent of occurrence that is 50 percent of the total historical occurrence (from 128 to 154 rm).

An increase from 0 to 3 subpopulations in the Flint River basin is necessary to support the range increase and to establish a minimum of 3 subpopulations per watershed”.

Amblema neislerii – Critical Habitat in Georgia (about 245 stream miles), November 2007



Albany to Bainbridge
about 55 stream miles

Since the 2003 Recovery Plan...

- The USACE has not dredged the channel since 2001.
- In 2006, a small population *A. neislerii* discovered in the Flint River near Newton, GA; and is recruiting.
- Results of a PVA indicated that the population can sustain periodic reductions of 1–2% (Miller 2008, 2011).
- Recent work (Smit and Kaeser) indicates that populations in lower and middle Apalach/lower Chipola are larger than previously known.
 - Current estimates 6–18 million; mean = 12 million.
 - *Amblema neislerii* is dominant species in middle reach Apalachicola River—(35%), *Glebula rotundata*, (30%), and *Elliptio pullata* (25%).

Since the 2003 Recovery Plan...(continued)

- Under the updated WCM—

There is potential for negative but not appreciable impact to *Amblema neislerii* survival and recovery.
- Threats related to climate change—
 - More intense and frequent droughts
 - Rising temperatures
 - Salt water encroachment into lower portions of river—At the Apalachicola tide gage, sea level is presently rising about 2.0 mm per year (NOAA website).

Reintroduction of *A. neislerii* to Flint River

Open Discussion at Regional Mollusk & Crayfish Meeting, Eufaula AL, Jan 19th

- Assuming all regulatory requirements are met . . .
Step one is a Reintroduction Plan with stakeholder input and agreement (similar to Plans for TN and Mobile Basins).
- Do Not Augment the small pop near Newton, GA—could genetically swamp it.
- Select good recipient sites—Survey potential sites in upper Flint River and Chattahoochee River near Columbus.
- Before a large relocation—start with a small “pilot population” to determine if site will support *A. neislerii*.
- Could use individuals salvaged during low flows.

Apalachicola River, RM 88.8 at mouth of Graves Creek (bluff at boat ramp) Calhoun, County Florida, 11 October 2012.



Looking upstream



Looking downstream

Steamer W. C. BRADLEY"
Chattahoochee Fla 1903
Capt A. A. Lind, Master
W. L. Salisbury, Purser.

