

Purple bankclimber (mussel)

Elliptoideus sloatianus

Taxonomic Classification

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Order: Unionoida

Family: Unionidae

Genus/Species: *Elliptoideus sloatianus*

Common Name: Purple bankclimber

Listing Status

Federal Status: Threatened

FL Status: Federally-designated Threatened

FNAI Ranks: G2/S? (Globally: Imperiled/ State: Unknown)

IUCN Status: EN (Endangered)

Physical Description

The purple bankclimber is a large fresh water mussel that can reach a length between 4-5.5 inches (10-14 centimeters). This species has a nearly rhomboidal (only opposite sides of shell are equal in size) shell, with a well-sculpted grey to black colored outer section, and an inner shell that is white but transitions to purple towards the shell edge. The left valve contains two teeth and the right valve contains one tooth (Florida Natural Areas Inventory 2001).

Life History

The purple bankclimber is a filter feeder (filters food out of water). This species' diet primarily consists of plankton and detritus (dead organic matter) (University of Georgia 2008).

Little is known about the life history of the purple bankclimber. Reproductive females have been found from February to April in water with a temperature of 46.6-59°F (8.1-15°C). It is believed that males release sperm in the water and females receive the sperm through a siphon. Eggs are fertilized in the female's shell and the glochidia (larvae) release into the water. The larvae attach to the gills or fins of a host fish to develop. The mosquito fish (*Gambusia holbrooki*) and the blackbanded darter (*Etheostoma edwini*) are thought to be the host fish for the purple

bankclimber (University of Georgia 2008). When the larvae metamorphose into juvenile mussels they release from the fish and settle in their primary habitat.

Habitat & Distribution

Purple bankclimbers inhabit slow to moderate current rivers with a sandy floor, which can have a mud or gravel mixture. This species can be found in the Ochlockonee and Apalachicola rivers in Florida, and the Flint River in Georgia (Florida Natural Areas 2001).

Threats

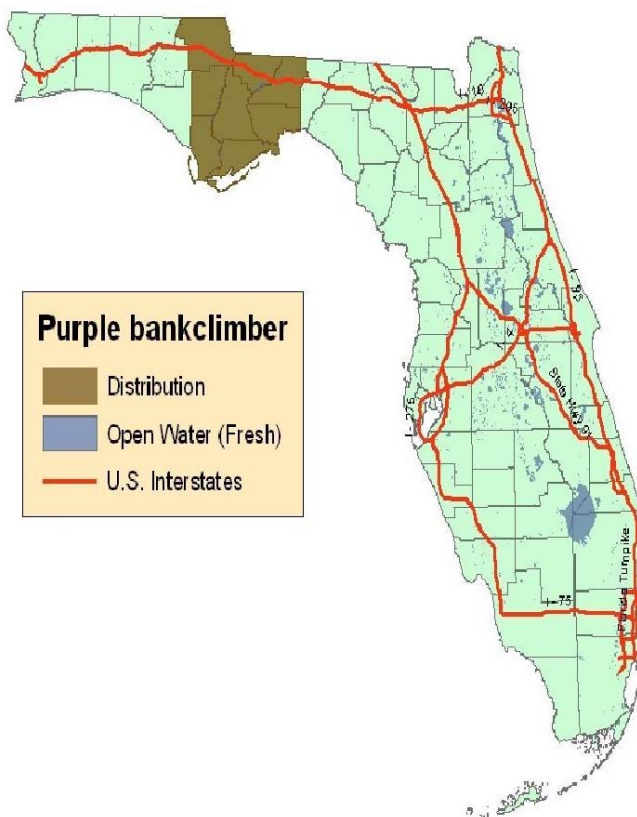
Freshwater mussels face a host of threats due to an increased human population and development. The main threat to freshwater mussels is the impoundment of waterways.

Waterways are impounded for fresh water supply, flood control, and hydropower. Impounding waterways causes the water current's velocity to decrease, causing sediment to build up in the river and covering the mussels located in the substrate (surface of habitat). Impoundments also cause habitat fragmentation, separating mussel populations and also individual mussels from algae and host fish (U.S. Fish & Wildlife Service 2006). River dredging also threatens to destroy freshwater mussel populations on the river floors. The Asian clam (*Corbicula fluminea*), an invasive species, can out-compete the purple bankclimber for resources in its habitat (Florida Natural Areas Inventory 2001). Pesticide and chemical pollution poses a significant threat to mussels since they are filter feeders and may ingest chemicals directly from their habitat.

Conservation & Management

The purple bankclimber is protected as a Threatened species by the Federal Endangered Species Act and as a Federally-designated Threatened species by [Florida's Endangered and Threatened Species Rule](#). It is one of the target species in a [7-species Federal Recovery Plan](#). Specific actions needed to recover the species include (USFWS 2003):

- Secure extant subpopulations and currently occupied habitats and ensure subpopulation viability.
- Search for additional subpopulations of the species and suitable habitat.



- Determine through research and propagation technology the feasibility of augmenting extant subpopulations and reintroducing or reestablishing the species into historical habitat.
- Develop and implement a program to evaluate efforts and monitor subpopulation levels and habitat conditions of existing subpopulations, as well as newly discovered, reintroduced, or expanding subpopulations.
- Develop and utilize a public outreach and environmental education program.
- Assess the overall success of the recovery program and recommend actions.

Other Informative Links

[Florida Natural Areas Inventory](#)
[University of Georgia](#)
[U.S. Fish & Wildlife Service](#)

References

- Florida Natural Areas Inventory. 2001. Field guide to the rare animals of Florida.
http://www.fnai.org/FieldGuide/pdf/Elliotoideus_sloatianus.PDF
- NatureServe. 2010. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available
<http://www.natureserve.org/explorer>. (Accessed: July 11, 2011).
- University of Georgia. (2008). *Purple Bankclimber Elliotoideus sloatianus*. Retrieved July 9, 2011, from Museum of Natural History: <http://naturalhistory.uga.edu>
- U.S. Fish and Wildlife Service. 2003. Recovery Plan for Endangered Fat Three ridge (*Amblema neislerii*), Shinyrayed Pocketbook (*Lampsilis subangulata*), Gulf Moccasinshell (*Medionidus penicillatus*), Ochlockonee Moccasinshell (*Medionidus simpsonianus*), and Oval Pigtoe (*Pleurobema pyriforme*): and Threatened Chipola Slabshell (*Ellioto chipolaensis*), and Purple Bankclimber (*Elliotoideus sloatianus*). Atlanta, Georgia. 142 pp.
- U.S. Fish & Wildlife Service. (2006, June 8). *Current Threats*. Retrieved July 9, 2011, from Freshwater Mussels : http://www.fws.gov/midwest/mussel/current_threats.html