

USACE Natural Resource Management Freshwater Mussels



Fat Threeridge

Fat Threeridge (*Amblema neislerii*): This is a medium-sized to large mussel which grows as large 4 inches in length. This mussel is inflated, sometimes to the point that the height is nearly the same as the length. This mussel is solid with a heavy shell that is subquadrate in shape. (USFWS)

Status: Endangered, listed 1998

Nature Serve: Critically Imperiled



Genus: *Amblema* is a genus of freshwater mussels in the family *Unionoida*. (NatureServe) Currently, there are three taxonomically valid species assigned to this genus. (Integrated Taxonomic Information System)

Range: Endemic to the Apalachicola-Chattahoochee-Flint River system, it has been extirpated from the Flint River. Now occurs in 15 locations between Apalachicola and lower Chipols Rivers. (USFWS)

Photo Left to Right: Fat Threeridge (USFWS), measuring a fat threeridge (USFWS) fat threeridge external (USFWS), & fat threeridge internal (USFWS)



Photo: NatureServe map of species' status by state.

Management and Protection:

- This mussel's historical range has been reduced by a variety of anthropogenic activities including impoundments, channelization, pollution, and sedimentation etc.
- Threats to the species' habitat continue including erosive land practices, construction of new impoundments, water withdrawals, and the impacts of invasive species. (USFWS)
- Due to decreased population levels and restricted ranges, these mussels have increased vulnerability to toxic chemical spills and other catastrophic events as well as the negative effects stemming from genetic isolation. (USFWS)
 - Conservation efforts for this mussel include securing extant subpopulations and occupied habitats as well as searching for additional populations and suitable habitat. (USFWS)



USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over \$794,411 on efforts related to the fat threeridge mussel since 2005. Costs have been incurred by multiple business lines including Environmental Stewardship, Planning and Program Management, Regulatory, and Water Supply. Expense types include Coordination and Determination as well Inventory, Survey, and Monitoring.



Fat Threeridge = \$794,411 (2005)

The Memphis District has a team of scientific divers experienced in qualitative and quantitative freshwater mussel surveys and aquatic habitat investigations.

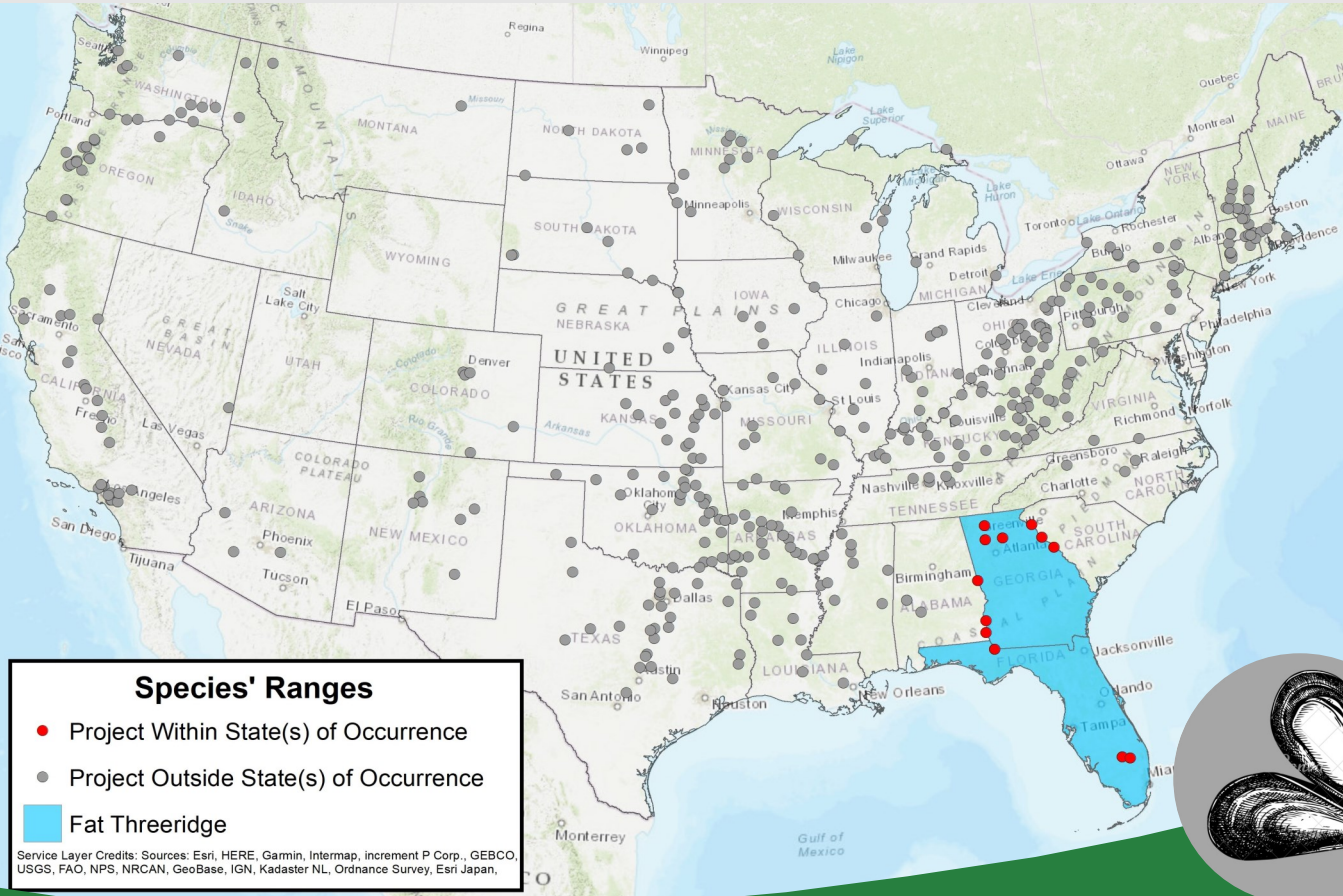
In October of 2019, the team traveled to the Apalachicola River. Here the team worked with Mobile District to establish baseline population numbers and age classes for the fat threeridge mussel and purple bankclimber mussels.

This project was undertaken to fulfill requirements of a biological opinion from the USFWS with the goal of developing a new water control manual for the operation of Jim Woodruff Lock and Dam. In the 2019 NRM Assessment, this project was the only projected noted to have rare occurrences of the species. The team, led by biologist Mike Thron, worked with biologist Heather Bulger from the Mobile District and fisheries Biologist Todd Slack from the U.S. Army Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi. Dives were done at three different locations eight times each day.



Photo: Dive team member Mike Smith with a bag of mussels collected during a dive.

This fact sheet has been prepared as an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced to provide its readers information about best management practices related to special status species. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.



Species' Ranges

- Project Within State(s) of Occurrence
- Project Outside State(s) of Occurrence
- Fat Threeridge

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,



Source: Map provided by Ashleigh Boss, ORISE Fellowship, Institute for Water Resources

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