USACE Natural Resource Management
Freshwater Mussels

Black Clubshell, Southern Clubshell, Ovate Clubshell, Clubshell

Black Clubshell (*Pleurobema curtum*): The shell is about 2 inches long and varies in color from light green in young mussels to a dark greenish-brown in older ones.

Status: Endangered, listed 1987

Nature Serve: Possibly Extinct

GH Possibly Extinct

Clubshell (*Pleurobema clava*): This wedge-shaped mussel typically does not exceed 3 inches in length. Its shell is yellow to brown with bright green blotchy rays (USFWS).

Status: Endangered, listed 1993

Nature Serve: Critically Imperiled

G1 Critically Imperiled

Southern Clubshell (*Pleurobema decisum*): Averages 2.8 inches in length. Considered a thick-shelled species, the species is rectangular in shape and the outer shell surface is yellow to yellow-brown in color.

Status: Endangered, listed 1993

Nature Serve: Imperiled

G2 Imperiled

Ovate Clubshell (*Pleurobema perovatum*): Rarely exceeds 2 inches in length. This species has an oval to elliptical yellow to dark brownshell. The posterior ridge is often well developed, rounded, and concave. Can be distinguished from the Southern clubshell by its thinner shell and rounded posterior ridge.

Status: Endangered, listed 1993

Nature Serve: Critically Imperiled

G1 Critically Imperiled

Genus: Pleurobema genus of mussels consists of 32 species which are often difficult to distinguish because of shell similarities and shapes that may vary with age and ecological conditions. (USGS) Over recent years, molecular tools have proven to be useful supplement to traditional, morphology-based taxonomic methods. (USGS)

Photos L to R: Southern Clubshell (Georgia Biodiversity), Clubshell (USGS), Clubshell (USFWS)

Management and Protection: Like many freshwater mussels, this group of species within the genus Pleurobema are sensitive to changes within their habitat.

- The black clubshell has declined significantly throughout its range and there is no evidence of recruitment. No recent specimens have been found in over a decade. Further survey work is needed to determine whether this species is still extant. Continued existence is dependent upon habitat in the tributaries of the Tombigbee River.
- The Southern clubshell was found in nearly every major stream and river of the Mobile River Basin region of Georgia, Alabama, and Mississippi. With a greatly reduced range, it is estimated there are only 6 viable populations remaining due to pollution, sedimentation, and habitat degradation. (University of Georgia)
- The ovate clubshell requires a high quality, clean river with sandy or gravel bottom to survive. Extirpation from areas has been the result of habitat degradation, sedimentation and pollution. The species may also be threatened by overutilization for commercial, recreational, scientific, and education purposes. (USFWS)
- An experimental population of the clubshell was introduced along with 15 other mussel species and 1 aquatic snail into historical habitat in the free-flowing reach of the Tennessee River.

USACE ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over $530,000 on efforts related to the black clubshell, Southern clubshell, ovate clubshell, and clubshell. The USACE Planning, Regulatory, Navigation, Hydropower, Environmental Stewardship, and Flood Risk Management programs have all incurred costs associated with inventory, survey, monitoring, and coordination efforts.

Clubshell = $402,000

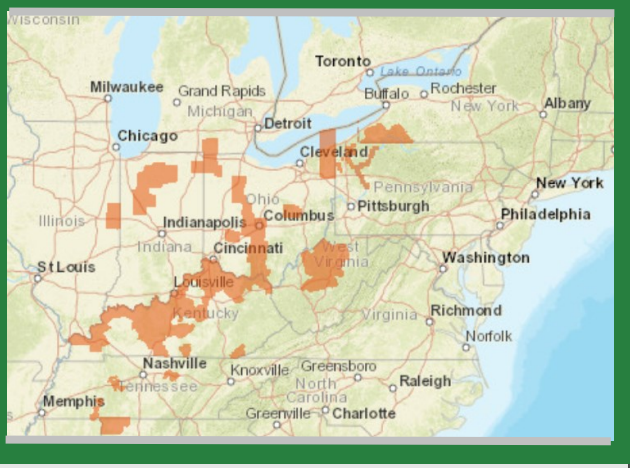
Black Clubshell = $11,000

Southern Clubshell = $63,000

Ovate Clubshell = $55,000

The Allegheny River in Pennsylvania, part of the Pittsburgh District, now supports the largest reproducing population of clubshells. USACE coordinates actions with the USFWS to ensure no adverse effects to the species. The Pittsburgh District operates 23 locks and dams on the Allegheny, Monogahela and Ohio Rivers.

For the **ovate** clubshell, flood control projects within range have been modified by USACE to protect this listed mussel. Much of the range for this species falls within the jurisdiction of the Nashville and Mobile Districts.



Graphic: ECOS mapped range for the clubshell. (USFWS)

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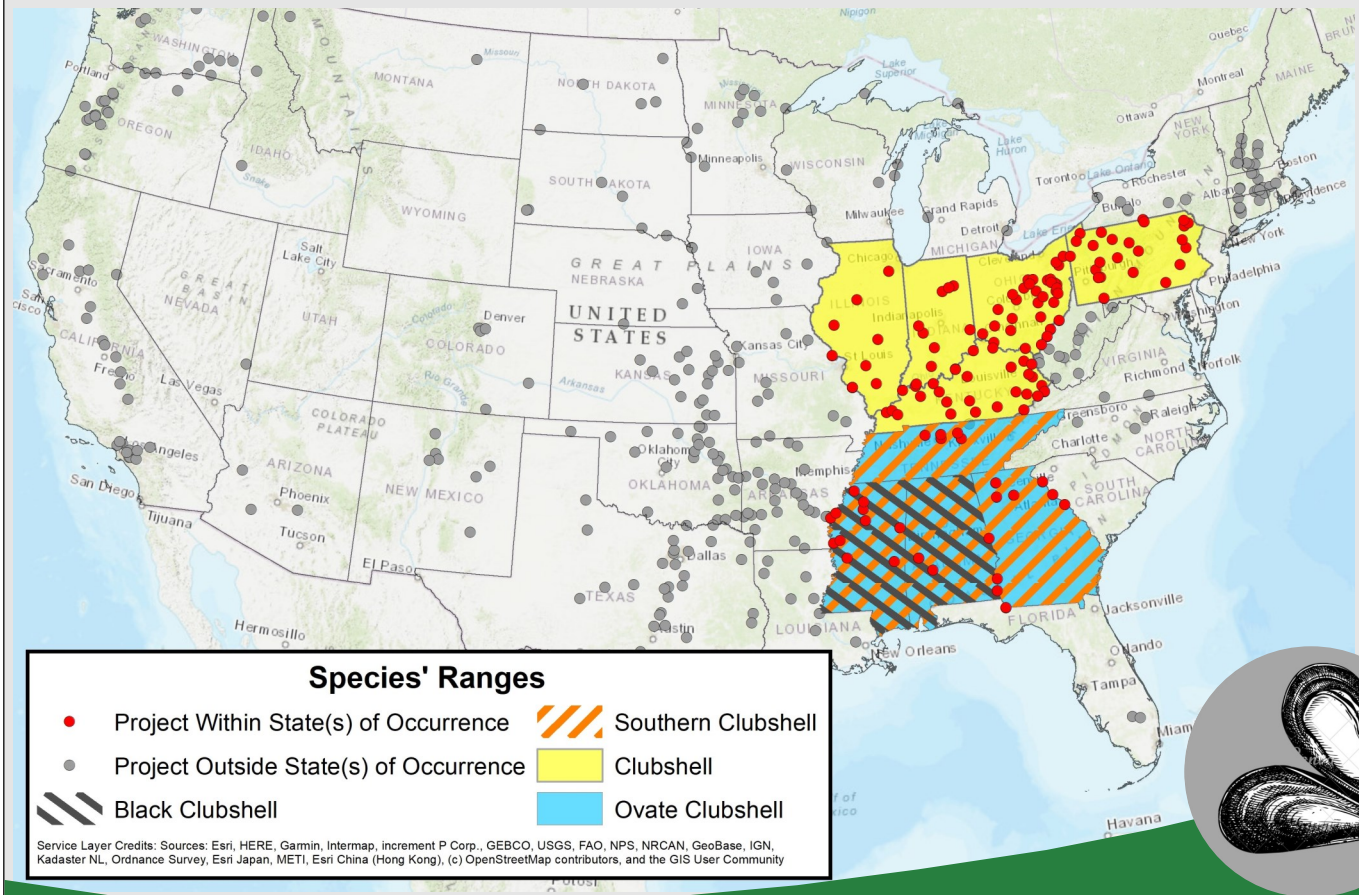

Source: Map provided by Ashleigh Boss, ORISE Fellowship, Institute for Water Resources

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