

Pennsylvania Field Office

Northeast Region

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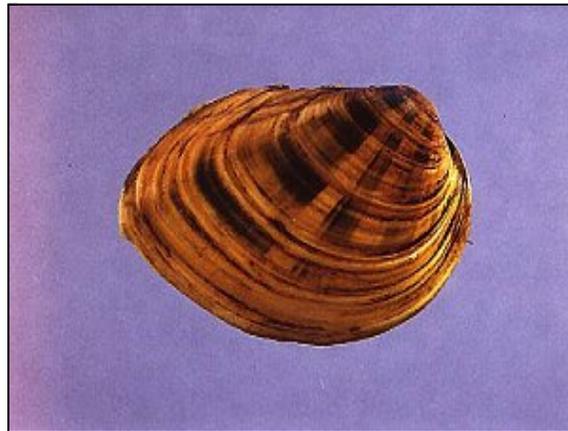
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Clubshell Life History and Biology



Pleurobema clava

STATUS: Endangered

DESCRIPTION: This is a small to medium size mussel, up to three inches long. The shell exterior is yellow to brown with bright green blotchy rays. The shell interior is typically white. The shell is wedge shaped and solid, with a pointed, and fairly high umbo.

The adult clubshell is a sedentary filter-feeder, obtaining oxygen and food (most likely algae and detritus with associated fungi and bacteria) directly from the water column or from water flowing through the substrate.

The breeding season appears to be initiated by seasonal changes, such as water temperature. Reproduction requires a stable, undisturbed habitat and a sufficient population of fish hosts to complete the mussel's larval development. When the male discharges sperm into the current, females downstream siphon in the sperm in to fertilize their eggs, which they store in their gill pouches until the larvae hatch. The females then expel the larvae. Those larvae which manage to attach themselves by means of tiny clasping valves to the gills of a host fish, grow into juveniles with shells of their own. At that point they detach from the host fish and settle into the streambed, ready for a long (possibly up to 50 years) life as an adult mussel.

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RANGE: The Allegheny River and its tributaries, and the Tippecanoe River in Indiana, support most of the remaining clubshells.

HABITAT: This mussel prefers clean, loose sand and gravel in medium to small rivers and streams. This mussel will bury itself in the bottom substrate to depths of up to four inches.

REASONS FOR CURRENT STATUS: Freshwater mussels are sedentary filter-feeders, and as such, they are vulnerable to substrate disturbance, silt deposition, scouring, sensitive to water quality degradation, changes in channel morphology, and alterations of river hydrology. Sedimentation from development, nutrients (nitrates and phosphates) and chemicals from agricultural runoff and potassium, zinc, copper, cadmium and other elements from industrial pollution and extensive impoundments for navigation are some of the main threats to this species.

Zebra mussels, an exotic (non-native) species which is spreading rapidly throughout the eastern U.S., also pose a threat. By attaching in great numbers to native mussels such as the northern riffleshell, zebra mussels suffocate and kill the native species.

The clubshell is long lived, and annually has low juvenile survival rates. This species, like many mussels, is susceptible to both temporary and periodic environmental degradation, as well as more permanent effects. Reduced populations may take several decades to recover, even if no further degrading events occur.

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