

Species: Clubshell (*Pleurobema clava*)
Global Rank: G2
State Rank: S1
State Wildlife Action Plan Priority: Immediate Concern Species
CCVI Rank: Highly Vulnerable
Confidence: Moderate

Habitat (adapted from NatureServe 2010):

Clubshells are generally found in clean, coarse sand, and gravel in the runs of medium-sized to large rivers (Spoo 2008). Historically, the species was distributed across nine states in the Wabash, Ohio, Kanawha, Kentucky (Danglade 1922; Clarke 1987), Green, Monongahela, and Allegheny rivers and their tributaries. It has been recorded from most of the tributaries in Kentucky, Illinois, Indiana, and Ohio, as well as from more isolated systems in Michigan, Pennsylvania, and West Virginia. Records from Nebraska, Minnesota, and Iowa (Simpson 1900) are erroneous (USFWS 1994).

Current Threats:

Major threats leading to the decline of clubshells include siltation, impoundment, in-stream sand and gravel mining, pollutants, and competition by non-native mussels (USFWS 1994).

Main Factors Contributing to Vulnerability Rank:

Distribution relative to natural barriers: In Pennsylvania, the species is limited to the Allegheny River drainage.

Distribution relative to anthropogenic barriers: Dams are located upstream of some locations of this species in the Allegheny River that could possibly hinder the establishment of new populations upstream from known occurrences.

Predicted impact of land use changes designed to mitigate against climate change: Waterways where the species occurs may be suitable for future placement of hydropower plants thus potentially blocking upstream migration. Natural gas extraction may alter water quality.

Dispersal and movement: As adults, clubshells are mostly non-migratory with only limited vertical movement and possibly passive movement due to flood events (NYNHP 2010).

Predicted macro sensitivity to changes in precipitation, hydrology, or moisture regime: Considering the range of the mean annual precipitation across the species' range in Pennsylvania, the species has experienced a slightly lower than average precipitation variation in the past 50 years.

Dependence on specific disturbance regime likely to be impacted by climate change: More intense flooding events, likely associated with climate change in Pennsylvania, may affect clubshell populations by altering water/habitat quality of rivers and streams (e.g., increased silt load) and/or fragmenting populations.

Dependence on other species for propagule dispersal: Clubshells depend on a few fish (central stoneroller, striped shiner, logperch, and blackside darter) to serve as glochidial hosts (Spoo 2008). “Migration” may occur in the glochidial stage when juveniles are transported by host fish but this distance is probably less than 10 km (NatureServe 2010).

References:

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