

Species: Yellow Lampmussel (*Lampsilis cariosa*)
Global Rank: G3G4
State Rank: S3S4
State Wildlife Action Plan Priority: Immediate Concern Species
CCVI Rank: Highly Vulnerable
Confidence: Very High

Habitat:

Yellow lampmussels can be found in different aquatic habitats but appear to prefer the shifting sands downstream from large boulders in relatively fast flowing, medium to large streams and medium-sized rivers (Spoo 2008; NatureServe 2010). This species has a large geographic range, from Nova Scotia to Georgia in Atlantic drainages, and in the St. Lawrence River system westward to Ontario. While many historic occurrences are extirpated, the species still occurs in numbers in a few places, and the wide range is actually represented by several disjunct populations (NatureServe 2010).

Current Threats:

A major cause of the decline of freshwater mussels during the last century is the degradation and destruction of habitat by siltation, dredging, channelization, impoundments, and pollution (NYNHP 2010). Declining water quality and the introduction and establishment of zebra mussels have also contributed to the dramatic decline in mussel populations (Nalepa and Schloesser 1993; Metcalfe-Smith et al. 2000, 2003; Fisheries and Oceans Canada 2009).

Main Factors Contributing to Vulnerability Rank:

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

Predicted impact of land use changes designed to mitigate against climate change: Natural gas extraction in this region may alter water quality.

Dispersal and movements: As adults, yellow lampmussels 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 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 yellow lampmussel populations by altering water/habitat quality (e.g., increased siltation)

Dependence on other species for propagule dispersal: Yellow lampmussels depend on a few fish (yellow perch and white perch) to serve as glochidial hosts (Spoo 2008).

References:

Fisheries and Oceans Canada. 2009. Management Plan for the Yellow Lampmussel (*Lampsilis cariosa*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Fisheries and Oceans Canada. 42pp.

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