

Species: Water Bulrush (*Schoenoplectus subterminalis*)
Global Rank: G4G5
State Rank: S3
Climate Change Vulnerability Index: Moderately Vulnerable
Confidence: Low

Habitat:

Water bulrush has disjunct eastern and western North American ranges. The species is absent from the Great Plains, but is found in the west from southern Alaska to California, Idaho, Utah, and Montana. In the east, water bulrush occurs from Newfoundland to Ontario, south to South Carolina, Georgia, and Missouri (Williams 1990; NatureServe 2011). In Pennsylvania, water bulrush is found in quiet waters of lakes, ponds, vernal pools, and slow-moving boggy streams in the northeast, northwest, and south central portions of the state (Rhoads and Klein 1993; Rhoads and Block 2007).

Current Threats:

The species may experience some low-level threats from drainage of wetlands such as beaver ponds and bogs (Southern Appalachian Species Viability Project 2002; NatureServe 2011). Sudden changes in water levels and mechanical disturbance of submerged vegetation may also threaten this species (Cusick 1984).

Main Factors Contributing to Vulnerability Rank:

Distribution relative to natural barriers: Water bulrush occurs in isolated ponds, vernal pools, lakes, and slow-moving streams where movement to another body of water for establishment may be very limited or improbable.

Dispersal and movement: Like many *Schoenoplectus* species, water bulrush dispersal is probably mostly limited to the site where it occurs. Seeds drop from the parent plants and form seed banks in the sediment. The potential for dispersal to new sites could occur if water bulrush is found in a stream and seeds are dispersed downstream.

Predicted macro sensitivity to changes in precipitation, hydrology, or moisture regime: Within the species range in Pennsylvania, the species has experienced a small precipitation variation in the past 50 years.

Predicted micro sensitivity to changes in precipitation, hydrology, or moisture regime: Water bulrush is a wetland obligate species but is usually found in deeper portions of shallow bodies of water that may or may not be dramatically affected by moisture loss due to climate change.

Forms part of a mutualism: Like other *Schoenoplectus* species, water bulrush probably shares a similar reliance on mycorrhizal associations (Hossler 2010).

References:

Cusick, A.W. 1984. *Schoenoplectus subterminalis* (Torr.) Sojak. Ohio Department of Natural Resources, Division of Natural Areas and Preserves.

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