

Species: Bog Laurel (*Kalmia polifolia*)

Global Rank: G5

State Rank: S4/S5

Climate Change Vulnerability Index: Extremely Vulnerable

Confidence: Very High

Habitat:

Bog laurel is found in bogs and peaty wetlands in northeast Pennsylvania (Rhoads and Klein 1993; Rhoads and Block 2007). Bog laurel occurs in the boreal region of North America from Canada to the northern United States where it reaches its southern extent in Pennsylvania.

Current Threats:

Bog laurel is likely to be sensitive to changes in temperature or hydrology at the sites it inhabits.

Main Factors Contributing to Vulnerability Rank:

Distribution relative to natural barriers: Bog laurel is limited to isolated, high elevation wetlands in northeast Pennsylvania where it represents the southern edge of its range. These wetlands are often surrounded by extensive forests potentially making movement to new suitable habitat difficult.

Dispersal and movement: Bog laurel seeds are mostly wind and water dispersed (Campbell et al. 2003) and mostly limited to short distance dispersal within the site where established.

Predicted micro sensitivity to changes in temperature: Bog laurel occurs in microsites/microhabitats towards the cooler end of the spectrum. In Pennsylvania, bog laurel is confined to the cooler, northeastern portion of the state.

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

Predicted micro sensitivity to changes in precipitation, hydrology, or moisture regime: Bog laurel is moderately dependent on a moisture regime that is highly vulnerable to loss or reduction with climate change and the expected direction of moisture change is likely to reduce the species' distribution, abundance, or habitat quality.

Interspecific interactions: Reliance on a mycorrhizal symbiont somewhat increases the vulnerability of bog laurel to climate change effects (Largent et al. 2006).

References:

Campbell, D.R., L. Rochefort, and C. Lavoie. 2003. Determining the immigration potential of plants colonizing disturbed environments: the case of milled peatlands in Quebec. *Journal of Applied Ecology* 40(1): 78-91.

Largent, D.L., N. Sugihara, and C. Wishner. 2006. Occurrence of mycorrhizae on ericaceous and pyrolaceous plants in northern California. *Canadian Journal of Botany* 58(21): 2274-2279.

Rhoads, A. and T. Block. 2007. *The plants of Pennsylvania*. 2nd Edition. Philadelphia. University of Pennsylvania Press.

Rhoads, A. and W.M. Klein. 1993. *The vascular flora of Pennsylvania annotated checklist and atlas*. American Philosophical Society, Philadelphia, PA.