

Species: Willow Oak (*Quercus phellos*)

Global Rank: G5

State Rank: S2

Climate Change Vulnerability Index: Moderately Vulnerable

Confidence: Very High

Habitat:

Willow oak occurs from Illinois and New York to Texas and Florida (NatureServe 2010). The natural habitat for willow oak consists primarily of bottomland forests along the Coastal Plain physiographic province in Pennsylvania but the species is occasionally planted as an ornamental tree throughout the state.

Current Threats:

Willow oak is threatened by deer herbivory and displacement by exotic plant species.

Main Factors Contributing to Vulnerability Rank:

*Distribution relative to anthropogenic factors:* The migration of willow oak in Pennsylvania is mostly restricted by heavy urbanization along the Coastal Plain. However, the fact that the species is planted as an ornamental may allow for movement beyond Philadelphia and the surrounding suburbs.

*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 small precipitation variation in the past 50 years.

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

*Restriction to uncommon geological features or derivatives:* The species is restricted to mostly to wet, sandy coastal soils in Pennsylvania.

References:

NatureServe. 2010. NatureServe Central Databases. Arlington, Virginia. USA.