

Species: Great spurred violet (*Viola selkirkii*)
Global Rank: G5?
State Rank: S3
Climate Change Vulnerability Index: Extremely Vulnerable
Confidence: Moderate

Habitat:

Great spurred violet occurs from Pennsylvania and Colorado to Alaska and Canada (NatureServe 2010). The species occurs in circumboreal forests underlain by basic soils or limestone in Pennsylvania

Threats:

Great spurred violet is threatened by deforestation and displacement by exotic plant species.

Main Factors Contributing to Vulnerability Rank:

Predicted impact of land use changes designed to mitigate against climate change:
The rich soils where the species occurs may be attractive for plantation development for bio-diesel farms.

Dispersal ability: Seeds are both ant and ballistically dispersed with a mean dispersal distance of less than a meter (Ohkawara and Higashi 1994).

Predicted micro sensitivity to changes in temperature: Climate models suggest a likely increase in temperature for Pennsylvania that may likely impact the cooler microclimates that this species prefers.

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.

Physical habitat specificity: The species is restricted to circumboreal forests underlain by limestone or basic soils in northern Pennsylvania. High quality examples of such habitat are uncommon in Pennsylvania.

Literature Cited:

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

Ohkawara, K. and S. Higashi. 1994. Relative importance of ballistic and ant dispersal in two diplochorous *Viola* species (Violaceae). *Oecologia* 100:135-140.