Climate Change Vulnerability Index
Plant Species Assessment
Completed by John Gamon, Washington Natural Heritage Program
December 2013

Name: *Sidalcea hirtipes*
Index Result: Moderately Vulnerable

Exposure to Climate Change:

1) Temperature – 95% of occurrences fall within the <3.9^0 F temperature category; the remaining 5% fall within the 3.9-4.4^0 F warmer category.
2) Moisture – All occurrences fall within the same moisture metric category (-0.074 - -0.096).

Climate: Indirect

1) Exposure to sea level rise – Neutral
2) Distribution relative to barriers
    a. Natural barriers - – Neutral
    b. Anthropogenic barriers – Selected 'Somewhat increase' due to the degree of conversion and development of land within the range of the species.
3) Predicted impact of land use changes resulting from human responses to climate change – Neutral

Species-Specific Factors:

1) Dispersal and movements – Selected 'Somewhat increase' vulnerability on assumption that at least 5% of propagules will be dispersed between 10 and 100 meters, but rarely further than that.
2) Predicted sensitivity to temperature and moisture changes
    a. Predicted sensitivity to changes in temperature
        i. historical thermal niche – Selected 'Somewhat increase' vulnerability. Considering the mean seasonal temperature variation for occupied cells, the species has experienced slightly lower than average (47.1 - 57° F/26.3 - 31.8° C) temperature variation in the past 50 years.
        ii. physiological thermal niche – Neutral
    b. Predicted sensitivity to changes in precipitation, hydrology, or moisture regime
        i. historical hydrological niche - Selected 'Somewhat decrease' vulnerability. Considering the range of mean annual precipitation across occupied cells, the species has experienced greater than average (> 40 inches/1,016 mm) precipitation variation in the past 50 years.
        ii. physiological hydrological niche – Selected 'Increase' vulnerability due to dependence on sites being seasonally quite wet.
    c. Dependence on a specific disturbance regime likely to be impacted by climate change – Selected 'Somewhat increase' and 'Neutral' to indicate that periodic spikes in how wet the sites get probably act as a disturbance factor, slowing/reducing invasion of the open habitat by shrubs and trees.
    d. Dependence on ice, ice-edge, or snow-cover habitats – Neutral
3) Restriction to uncommon geological features or derivatives – Neutral
4) Reliance on interspecific interactions
    a. Dependence on other species to generate habitat – Neutral
    b. Dietary versatility (animals only)
    c. Pollinator versatility (plants only) – Selected 'Somewhat increase' vulnerability.
    d. Dependence on other species for propagule dispersal – Selected 'Somewhat increase' vulnerability.
    e. Forms part of an interspecific interaction not covered by 4a-d
5) Genetic factors
    a. Measured genetic variation - Unknown
    b. Occurrence of bottlenecks in recent evolutionary history *(use only if 5a is "unknown")* – Neutral
6) Phenological response to changing seasonal temperature and precipitation dynamics - Unknown