

## Climate Change Vulnerability Index

### Plant Species Assessment

Completed by John Gamon, Washington Natural Heritage Program

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Name: *Trifolium thompsonii*

Index Result: Not Vulnerable / Presumed Stable

#### Exposure to Climate Change:

- 1) Temperature – All occurrences fall within the same temperature category (3.9-4.4<sup>0</sup> F warmer).
- 2) Moisture – All occurrences fall within the same moisture metric category (-0.051 - -0.073).

#### Climate: Indirect

- 1) Exposure to sea level rise
- 2) Distribution relative to barriers
  - a. Natural barriers
  - b. Anthropogenic barriers
- 3) Predicted impact of land use changes resulting from human responses to climate change

#### Species-Specific Factors:

- 1) Dispersal and movements
- 2) Predicted sensitivity to temperature and moisture changes
  - a. Predicted sensitivity to changes in temperature
    - i. historical thermal niche - Species has experienced 'average' seasonal temperature variation in the last 50 years (in the 57-77<sup>0</sup> range).
    - ii. physiological thermal niche - Neutral
  - b. Predicted sensitivity to changes in precipitation, hydrology, or moisture regime
    - i. historical hydrological niche – Neutral. The species has experienced average precipitation variation in the last 50 years (21-40 inches).
    - ii. physiological hydrological niche - Neutral
  - c. Dependence on a specific disturbance regime likely to be impacted by climate change – Selected 'Somewhat decrease' vulnerability. Species seems to benefit from, perhaps even require, fire at some frequency.
  - 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
  - b. Dietary versatility (animals only)
  - c. Pollinator versatility (plants only) - 'Somewhat increase' due to flower structure favoring bumblebees and honey bees and apparent general decline in bees. Other morphologically similar (in terms of flower structure) species of clover have documented Lepidopteran pollinators as well.
  - d. Dependence on other species for propagule dispersal - Neutral
  - 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"*)
- 6) Phenological response to changing seasonal temperature and precipitation dynamics - Unknown