

Grassland

Indian Potato / Tayiith / *Brodiaea coronaria*, etc.



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Cultural Importance

Indian potatoes refer to a variety of geophytes the bulbs and tubers of which are harvested by Karuk people for consumption including *Brodiaea spp.*, *Dichelostemma spp.*, *Triteleia spp.*, *Calochortus spp.*, *Lilium spp.*, and *Fritillaria spp.* (Karuk DNR 2010). *Brodiaea coronaria* serves as a good indicator for other Indian potato species, as it responds to soil moisture, precipitation/rain-fall, and ecological disturbances.

Life Cycle & Habitat

Indian potatoes grow in prairies and meadows in a variety of settings. Historically, species of Indian potato grew thick as grass in certain valleys in California (Anderson 2005). Karuk and other Native California peoples know proper harvesting techniques that further proliferate these species by promoting bulblet production. As with many prairie and meadow species, Indian potatoes have experienced declines as a result of land cover change, fire suppression, and a reduction in the ability of indigenous peoples to steward the landscape (Anderson 2005).

Mahtáyiith and Fire

Anderson (2005, p.300-301) describes the importance of cultural burning in the management of geophyte populations. Burning recycles nutrients, eliminates competitive grasses and shrubs, and may activate bulblet production. Burning also maintains prairies and meadows by reducing woody encroachment, which otherwise shade out and compromise Indian potato species Anderson 1997).

Effects of High Severity Fire Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> Trees, shrubs, and fuel loading are removed (consumed by fire) and residual geophytes express and become a dominant species. 	<ul style="list-style-type: none"> Open grassland/forb Indian potato dominated habitats increase flowering and provide pollinator forage. 	<ul style="list-style-type: none"> Forests and shrublands are converted to grassland, increasing the landscape potential for Indian potatoes.
Sources:	Sources:	Sources:

Effects of Karuk Cultural Burning Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> Competition from grasses and shrubs is reduced, and bulblet production is enhanced 	<ul style="list-style-type: none"> Soil nutrients released by fire enrich prairie and meadow soils, benefitting Indian potato species. 	<ul style="list-style-type: none"> Woody encroachment is controlled cultural burns, maintaining prairies and meadows open benefit of Indian potato species
Sources: Anderson 1997, 2005	Sources: Anderson 2005	Sources: Anderson 2005

Effects of Federal Fire Management Strategies on Species' Climate Change and Fire Resilience

Prior to Fire	During Fire	After Fire
<ul style="list-style-type: none"> Suppression leads to encroachment of meadows and prairies in which Indian potatoes grow, and prevents fire from adding valuable soil nutrients 	<ul style="list-style-type: none"> In high density heavy fuel load areas, geophytes impacted if soil productivity reduced Fire line construction can degrade geophyte habitat patches 	<ul style="list-style-type: none"> Post-fire BAER treatments can retard geophyte establishment Salvage logging can disturb geophyte colonies in the soil.
Sources: Anderson 2005	Sources:	Sources: