

Wet Meadow

Leopard Lily / Mahtáyiith / *Lilium pardalinum* ssp. *Wigginsii*



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Cultural Importance

Mahtáyiith is among the most prized bulbs in the Karuk diet. It is dug in the fall and is traditionally cooked in an earth oven like many other bulbs (Schenk and Gifford 1952).

Life Cycle & Habitat

In the Klamath Mountains, leopard lily is found in high country wet meadows, especially on serpentine soils. This rare and endangered herb grows from bulbs that are small and often clustered, and typically blooms in July (CNPS 2016).

Mahtáyiith and Fire

According to Pacific Forest Trust (2016), "mountain meadows are among California's most threatened habitats due to fire exclusion." In the absence of fire, conifers and other woody species encroach upon these meadows, lowering the water table and thus compromising the stability of this wet habitat. As such, mahtáyiith depends on fire to maintain the wet, open high country meadows in which it is found (Pacific Forest Trust 2016). Anderson (2005, p.349) describes conditions in which leopard lily populations that had produced harvestable bulbs for 30+ years collapsed as a consequence of fire suppression that led to overly shaded meadow conditions.

Effects of High Severity Fire Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> Removal of competing tree and shrub vegetation, and fuel loading favors post-fire lily response 	<ul style="list-style-type: none"> Reduced vegetation (trees and shrubs) and surface fuels (duff and litter) promotes lily flowering and animal foraging which can re-establish or spread lily populations 	<ul style="list-style-type: none"> Continued high severity burns could favor or enhance lily persistence across the landscape
Sources:	Sources:	Sources:

Effects of Karuk Cultural Burning Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> Removal of competing tree and shrub vegetation, and fuel loading favors post-fire lily harvesting 	<ul style="list-style-type: none"> Saplings that were encroaching the meadow have been burned and the meadow remains open, benefitting mahtáyiith 	<ul style="list-style-type: none"> Repeat cultural burns prevent woody encroachment, helping retain the water table at a level that can continue to supply the wet meadows in which mahtáyiith lives.
Sources:	Sources: Anderson 2005	Sources: Anderson 2005, Pacific Forest Trust 2016

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 coniferous encroachment and desiccation of meadows where leopard lily is found, and has directly affected leopard lily populations. 	<ul style="list-style-type: none"> Fire line construction can damage short-term lily populations. 	<ul style="list-style-type: none"> BAER treatments to control or mitigate erosion may prevent lily recovery.
Sources: Anderson 2005, Pacific Forest Trust 2016	Sources:	Sources: