

Low Elevation Forest Tanoak Zone

Tanoak / Xunyêp / *Lithocarpus densiflorus*



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Cultural Importance

Xunyêp is an ecologically, culturally, and economically important species. Tanoak acorns (xuntápan) are a staple food for Karuk people and are also vital for many wildlife species. Additionally, the roots of tanoak trees support the growth of another important food, tanoak mushrooms.

Life Cycle & Habitat

Xunyêp is an evergreen hardwood tree endemic to California and southern Oregon. It is versatile and varies in form, from shrub to tree, depending on the environment. It can grow as an understory species, while also benefitting from extra light resulting from openings in the forest canopy. It can take 30-40 years for xunyêp to produce acorns in abundance. Ripe acorns are harvested in the fall. The most critical environmental factor determining the fate of tanoaks is fire. (Bowcutt 2013, Hillman 2016, OWIC 2016)

Xunyêp and Fire

Xunyêp is very susceptible to high intensity fire (Karuk DNR 2010, OWIC 2016), but can benefit from cultural burning that decreases tree and acorn pests, and reduces competitive vegetation (Bowcutt 2013).

Effects of High Intensity Fire Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> • Fire may destroy entire groves that are critical to people and wildlife • When burned, tanoak generates thick smoke and particulate matter that can have health repercussions 	<ul style="list-style-type: none"> • Vital species that depend on tanoak groves for habitat and food, such as tanoak mushrooms, black-tailed deer, various bird species, etc., may experience impacts as they cope with fire-related grove impacts. 	<ul style="list-style-type: none"> • If able to regenerate, groves that have been lost to high intensity fire may take decades to once again produce acorns in abundance
Sources: Karuk DNR 2010	Sources: Bowcutt 2013	Sources: Hillman 2016

Effects of Karuk Cultural Burning Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> • Promotes grove and acorn health by periodically reducing predatory insect populations 	<ul style="list-style-type: none"> • Reduces competition from other tree species and brush, making grove more productive 	<ul style="list-style-type: none"> • Healthy groves sustained by low intensity fires sustain other culturally vital species and ecosystem health
Sources: Hillman 2016, Karuk DNR 2010, Bowcutt 2013	Sources: Hillman 2016, Bowcutt 2013, Halpern 2016	Sources: Bowcutt 2013

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 practices lead to overgrown understories that compete with tanoak • Suppression leads to fuel loads that increase future fire risk 	<ul style="list-style-type: none"> • Fire lines cutting through tanoak stands may damage or destroy the tanoak's mycelium net. • Higher severity fires that kill overstory trees (host), and damage soil productivity reduce mycorrhizal connectivity 	<ul style="list-style-type: none"> • Structural conversation of tanoak dominated forest from larger trunked trees to shorter multi-stemmed brushy growth form. • Reduced suitable habitat for many forest animal species
Sources: Bowcutt 2013	Sources:	Sources: