

High Elevation Forest

Bear Grass / Panyúrar / *Xerophyllum tenax*



@ Kirsten Vinyeta

Cultural Importance

Panyúrar is an important plant species for Karuk basket weavers and regalia makers. The long blades of grass are among the materials used to make traditional baskets and regalia. The blades are considered best for basket weaving the first year after a fire (Crane 1990, Hummel et al. 2015, Hummel and Lake 2015).

Life Cycle & Habitat

Bear grass is a perennial, subalpine herb that inhabits upper slopes, often near or beneath coniferous forests. Flowering typically occurs on a 5-7 year cycle. After fruiting, plants die off but are replaced by vegetative reproduction via rhizomes. Bear grass flower stalks are browsed by ungulates such as deer and elk. (Crane 1990, Hummel et al. 2012)

Panyúrar and Fire

Panyúrar can be stimulated by fire, and is adapted in that it can sprout from rhizomes following fire, or reestablish by seed. At the same time, the part of the rhizome capable of sprouting can be damaged by fires that are hot enough to remove most or all of the duff layer in a site. Whether bear grass can re-inhabit a site after hot fire destroys existing rhizomes depends on how suitable the site's conditions were for bear grass to begin with (Crane 1990, Hummel et al. 2012.)

Effects of High Severity Fire Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> High intensity fire may burn duff into soil deep enough to destroy bear grass rhizomes, delaying or preventing post-fire re-establishment 	<ul style="list-style-type: none"> Depending on site conditions, panyúrar may still struggle to re-inhabit a formerly occupied site in which vegetative reproduction was compromised by fire. 	<ul style="list-style-type: none"> Reestablishment of beargrass in the understory depends on soil productivity and reduced competition with coarse woody material, shrubs, and trees
Sources: Crane 1990, Hummel et al. 2012	Sources: Crane 1990	Sources: Hummel et al. 2012.

Effects of Karuk Cultural Burning Across Time

Immediate	2-Year	Long-Term
<ul style="list-style-type: none"> Cultural burning can take place during seasons and under conditions that reduce the chance of bear grass rhizomes being severely scorched 	<ul style="list-style-type: none"> Fire, particularly low intensity fire that preserves the plant's rhizomes, can rejuvenate bear grass and stimulate growth and flowering. 	<ul style="list-style-type: none"> Cultural burning at desired frequencies (5-10 yrs.) in different geographic areas helps maintain preferred gathering source areas.
Sources: Anderson and Lake 2016, Hummel and Lake 2015	Sources: Crane 1990, Hummel et al. 2012	Sources: Hummel and Lake 2015

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"> Fire suppression deprives bear grass of the stimulating effect fire can have under mix severity burning circumstances 	<ul style="list-style-type: none"> Fire suppression activities, such as line construction can remove beargrass patches. 	<ul style="list-style-type: none"> Burn Area Emergency Response treatments, associated with soil erosion mitigation can reduce beargrass reestablishment.
Sources: Hummel et al. 2012, Hummel and Lake 2015	Sources: Hummel et al. 2014	Sources: Lake pers. obs.