



*What We've
Learned:*

Vanilla grass is a rhizomatous meadow species that tolerates mechanical disturbance and benefits from conifer removal.

Monitoring vanilla grass response to overstory removal

We monitored the effects of lodgepole pine removal on vanilla grass (*Anthoxanthum nitens* ssp. *nitens*), a rare species in California. Permanent monitoring plots were established prior to treatment and monitored one, three, and five years after treatment to detect trends in vanilla grass frequency.

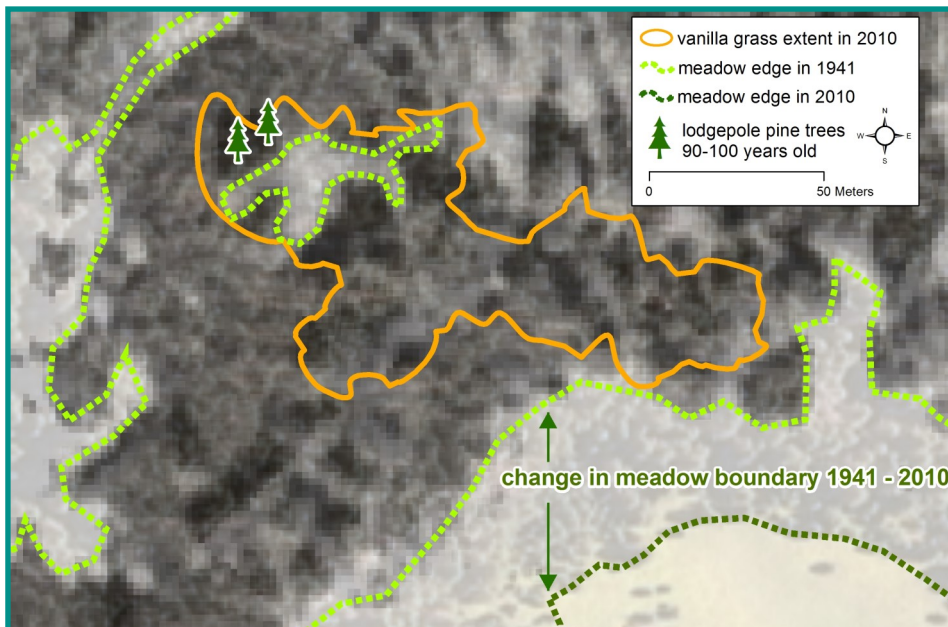
Key Findings (5 years post-treatment)

- Total vanilla grass frequency increased in response to overstory removal
- Flowering frequency also increased in treatment plots
- Vanillagrass rebounded quickly from mechanical disturbance.



In 2010 higher densities of vanilla grass were observed under canopy gaps.

Vanilla grass is typically a meadow species, but prior to treatment occurred under 70% canopy cover of dense lodgepole pine near Bunchgrass Valley



2010 extent of vanilla grass (orange) in relation to meadow boundaries in 2010 (NAIP imagery) and 1941 (georeferenced air photo).



Monitoring Overview

Vanilla grass (*Anthoxanthum nitens* ssp. *nitens*) is a perennial rhizomatous grass that occurs circumboreally, but is rare in California. A 1.7 acre occurrence of vanilla grass occurs within the CFLRP project area adjacent to Little Bunchgrass Valley in Shasta County. Prior to treatment, this vanilla grass occurred in the understory of a dense, even-aged lodgepole stand. Coring of lodgepole trees and examination of historical imagery suggested that this occurrence was once within a meadow, which is consistent with habitat for this species across its range. Lodgepole pine were removed from 70% of the vanilla grass occurrence as part of an aspen treatment.

Eight (12 m x 6 m) macroplots were established in 2012 to determine whether patches would expand or contract after treatment. Presence/absence of vanilla grass was assessed in 18 4-m² grid cells within each plot. Canopy cover values for each macroplot were assessed with a densitometer (50 points per plot).



Vanilla grass inflorescence.



In 2012, vanilla grass occurred in scattered patches under pine cover.



In 2014 (one year post-treatment) vanilla grass frequency was unchanged.



By 2018 (five years post-treatment) vanilla grass doubled in frequency.

Total and flowering vanilla grass frequency increased in treatment plots and varied by canopy opening.

(left) Positive changes in both total vanillagrass frequency (top) and flowering vanillagrass frequency (bottom) between 2012-2018 were associated with decreased canopy cover from mechanical thinning treatments.

