NONPERIODIC GRASSLAND RESTORATION MANAGEMENT CAN PROMOTE NATIVE WOODY SHRUB ENCROACHMENT

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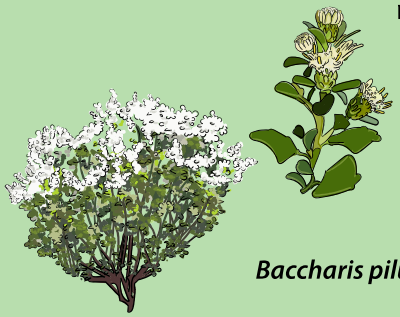
Woody species encroachment is increasingly displacing native grasslands, negatively impacting regional plant richness, and reducing economic productivity from grazing. This study examines the role of drought and one-off restoration actions (nonperiodic) in contributing to woody encroachment in California coastal grasslands.



Baccharis pilularis

Experimental Design

Younger Lagoon Reserve
Santa Cruz, CA

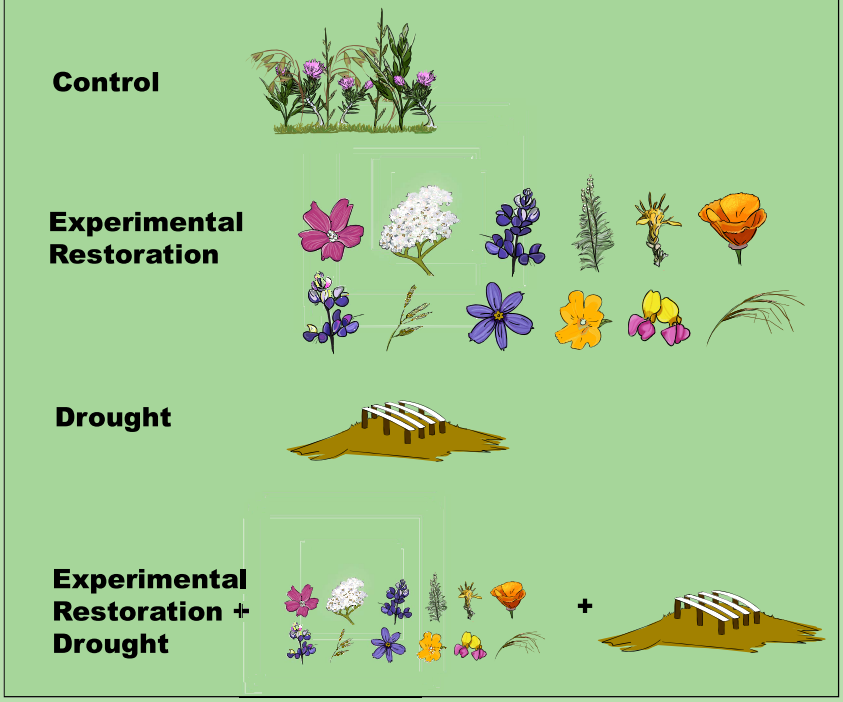
Data Collected:

B. pilularis cover

Leaf Functional Traits

- Area
- Thickness
- Major Vein Length (Low → High)
- Stem Diameter
- Lobedness (Low → High)
- Specific Leaf Area = Total Leaf Area / Total Leaf Dry Mass (Low → High)

Drought and Restoration Factorial Design



Treatments included no experimental restoration or drought (control), experimental restoration only, drought only, and drought and experimental restoration combined. The experimental restoration included planting 12 native species and weeding once in the first year resulting in nonperiodic soil disturbance. *Baccharis pilularis* cover was collected from 2019 - 2021 and functional traits were quantified in 2020.

Results and Management Recommendations

Results:

There were fewer *B. pilularis* individuals but percentage of cover was similar regardless of drought or control. This could be related to adjustments in functional leaf traits. For example, thicker leaves observed decrease transpiration and lower VLA decreases water transport requirements in drought conditions.

Recommendations:

Nonperiodic disturbances, such as grazing, prescribed burns, mowing, and weeding can result in woody shrub encroachment in california coastal prairies. Periodic disturbances could potentially stunt woody encroachment.

Periodic Disturbances