

**Non-herbicidal  
measures of control for  
slender false brome  
(*Brachypodium  
sylvaticum*), an invasive  
perennial grass**



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District

Slender false brome (SFB): a European perennial grass invading the understory of redwood & wet temperate forests





Drooping spikelets

kingcounty.gov  
Bruce Newhouse



Bright green clumps

kingcounty.gov  
Glenn Miller



Fine hairs,  
open sheath

kingcounty.gov  
Bruce Newhouse

- Perennial but not rhizomatous
- Cosmopolitan with respect to light & moisture
- Thrives in disturbed areas



Full sun, late summer

## “B” Rated Weeds

A weed of economic importance which is regionally abundant, but may have limited distribution in some counties

**False brome**  
*Brachypodium sylvaticum*

**Other common names:** Slender false brome

**USDA symbol:** BRSY  
**ODA rating:** B



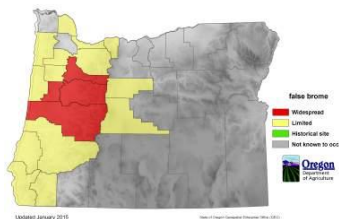
**Introduction:** False brome is native to Europe, Asia and North Africa, but is invading habitats in western Oregon, and elsewhere in our region at an alarming rate. The earliest record of the species in North America is a 1939 collection near Eugene in Lane County. By 1966, the species spread through intentional introductions in the Corvallis-Albany area of Benton County and on the Willamette National Forest where it has become naturalized. Logging equipment is the most active dispersal agent in forested regions.

**Distribution in Oregon:** Oregon is the epicenter of false brome in the U.S. with smaller outbreaks in California and Washington. Limited evidence suggests that false brome can also survive in the drier colder portions of Oregon. The Klamath, Ochoco, Blue Mountains and Siskiyou mountains may all be susceptible at specific locations.

**Description:** This attractive perennial grass forms bunches of lime-green leaf blades. Leaf color is bright green throughout the growing season turning bleached white during the winter, a strong indicator of false brome. Leaf margins and lower stems are hairy with no red streaking on the stems. Flowers and seeds are spiked and droopy with no stalks. False brome appears to be self-fertile producing few to a couple hundred seeds per plant. Isolated plants are observed to produce viable seeds becoming new weed epicenters complicating control efforts. Seed movement is by wildlife with both birds and small mammals transporting seeds. Long-distance dispersal is predominantly through logging activities, roadside maintenance equipment and recreational activities within infested areas.

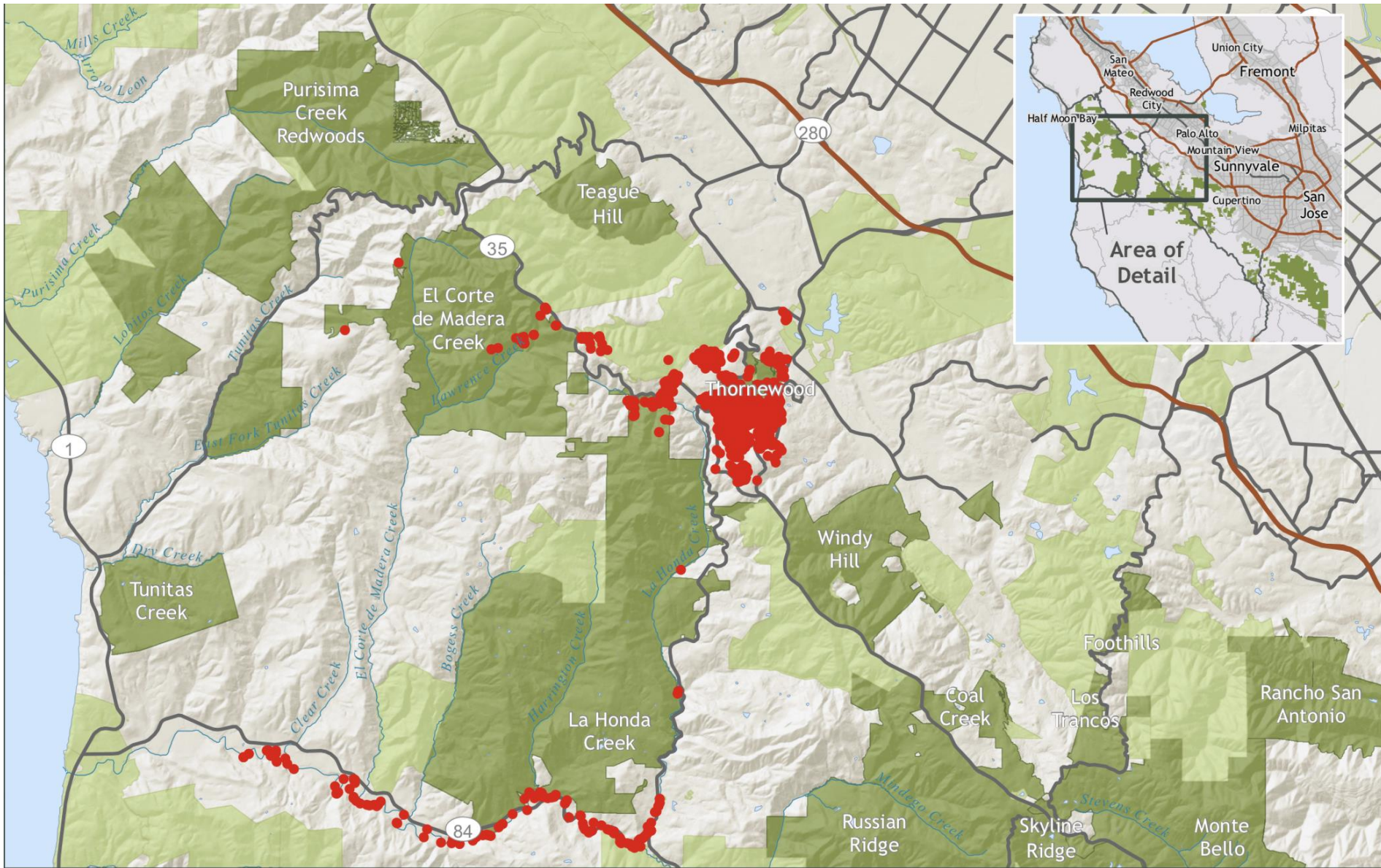
**Impacts:** False brome can quickly become the dominant plant species in forest understories, demonstrating great shade and drought tolerance. It is able to grow in a wide variety of habitats and competes strongly for early season moisture. Its presence in commercial timberlands creates a perfect environment for rodents causing young tree damage. It can dominate oak savannah habitats and can be expected to severely restrict native oak regeneration. While herbicides control the grass on private timberlands, the same cannot be said of public lands where such use is restricted. A secondary economic concern may involve false brome toxicity to livestock. The endophyte fungus *Epichloe sylvatica* has been identified in North American false brome populations. Existence of endophyte fungi in forage grasses has been linked to negative health defects in sheep and other livestock. Currently, no false brome pastures have been identified in Oregon but the threat may surface in the future.

**Biological controls:** No approved biological control agents are available.



Main infestation is in Oregon (intentionally introduced). Long-range dispersal is mainly by logging activity; short-range by birds & rodents spreading seeds.

- 10,000 ha invaded
- Noxious weed designation in OR, CA, and WA
- Unpalatable to wildlife and livestock
- Competes for water and suppresses herbs & saplings



**Slender false brome (*Brachypodium sylvaticum*)\***

\*Excludes Saratoga Gap Open Space Preserve

- MROSD Preserves
- Other Protected Lands
- Private Property
- Slender false brome observation (2009 - 2013)

Midpeninsula Regional  
Open Space District  
(MROSD)

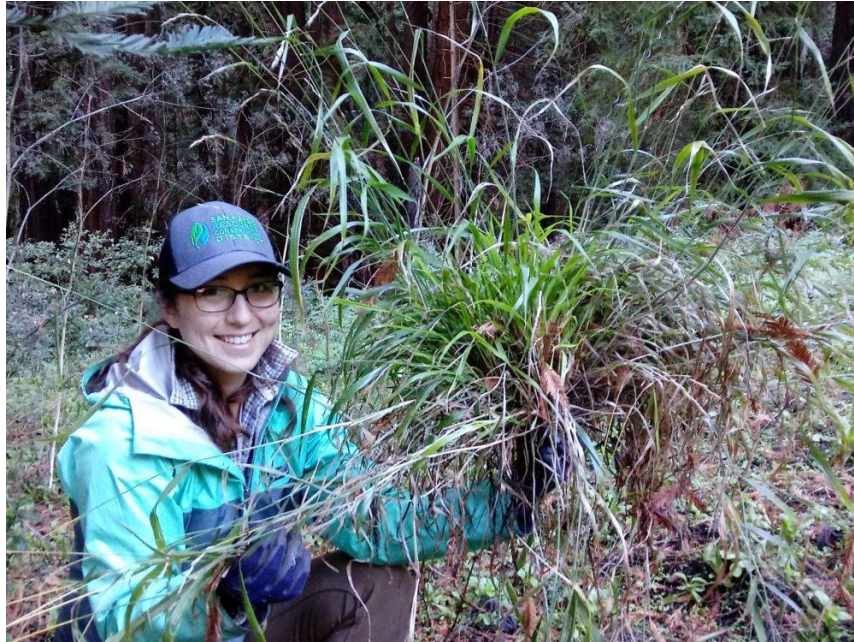


Miles 0 1 2

January, 2016

A satellite photograph of a rural landscape. The left side is dominated by a large, dense forest of dark green trees. To the right, there is a mix of cleared land, including fields, a road, and a small cluster of buildings. A red location pin is placed in the center of the image, pointing to a specific spot in the forest. The text 'Thornewood Preserve' is overlaid in white, bold font below the pin.

**Thornewood  
Preserve**



- 
- Herbicides
  - Hand-pulling
  - Incentives to private property owners to treat adjacent lands



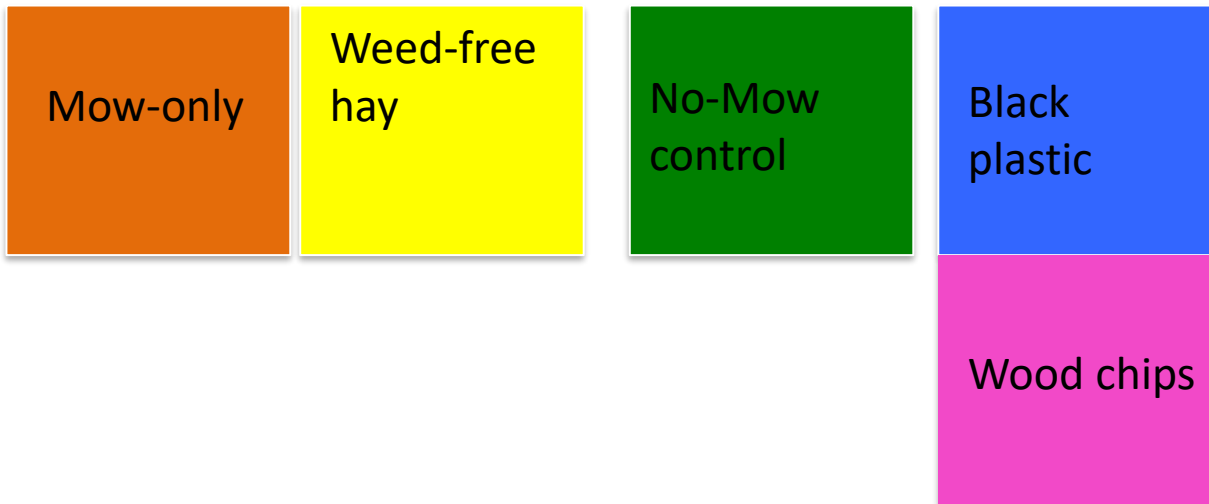


Experiment: test non-herbicidal methods for use on adjacent homeowners properties



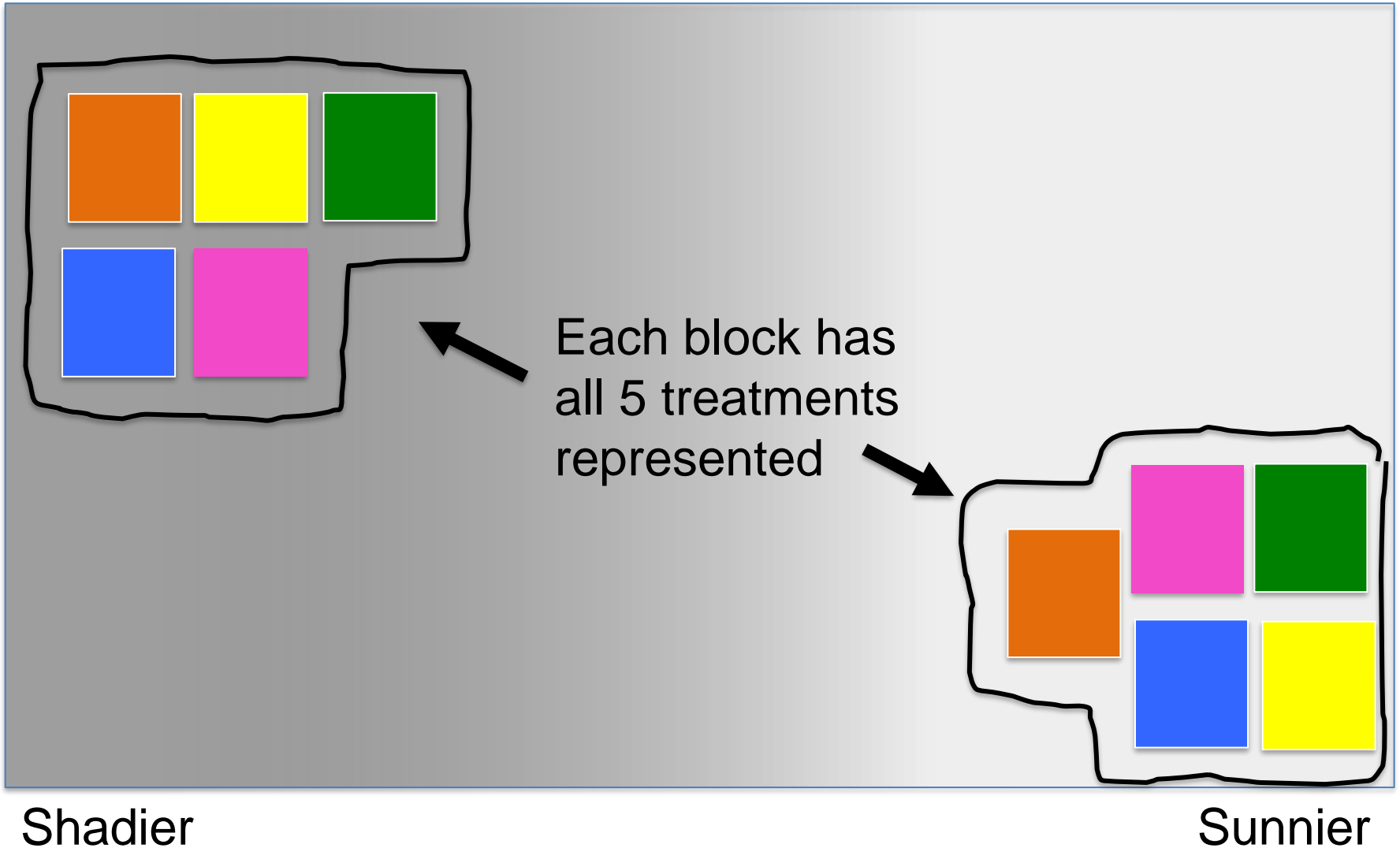
3 mulches  
(plastic, hay,  
wood chips)

2 controls (no-  
mow, mow-only)



“randomized  
block design”

Randomized block designs are used when you know you have an environmental gradient affecting your field plots



We actually have 2 gradients to worry about:  
light and slope



In each block, the five plots shared light conditions, slope, and initial SFB density



# Metrics of effectiveness:

SFB cover class

SFB stem number

Germination success from seedbank

Cost



After 2 years of  
mulching



Untreated SFB

Wood chips

exposed 1/2 of  
black plastic

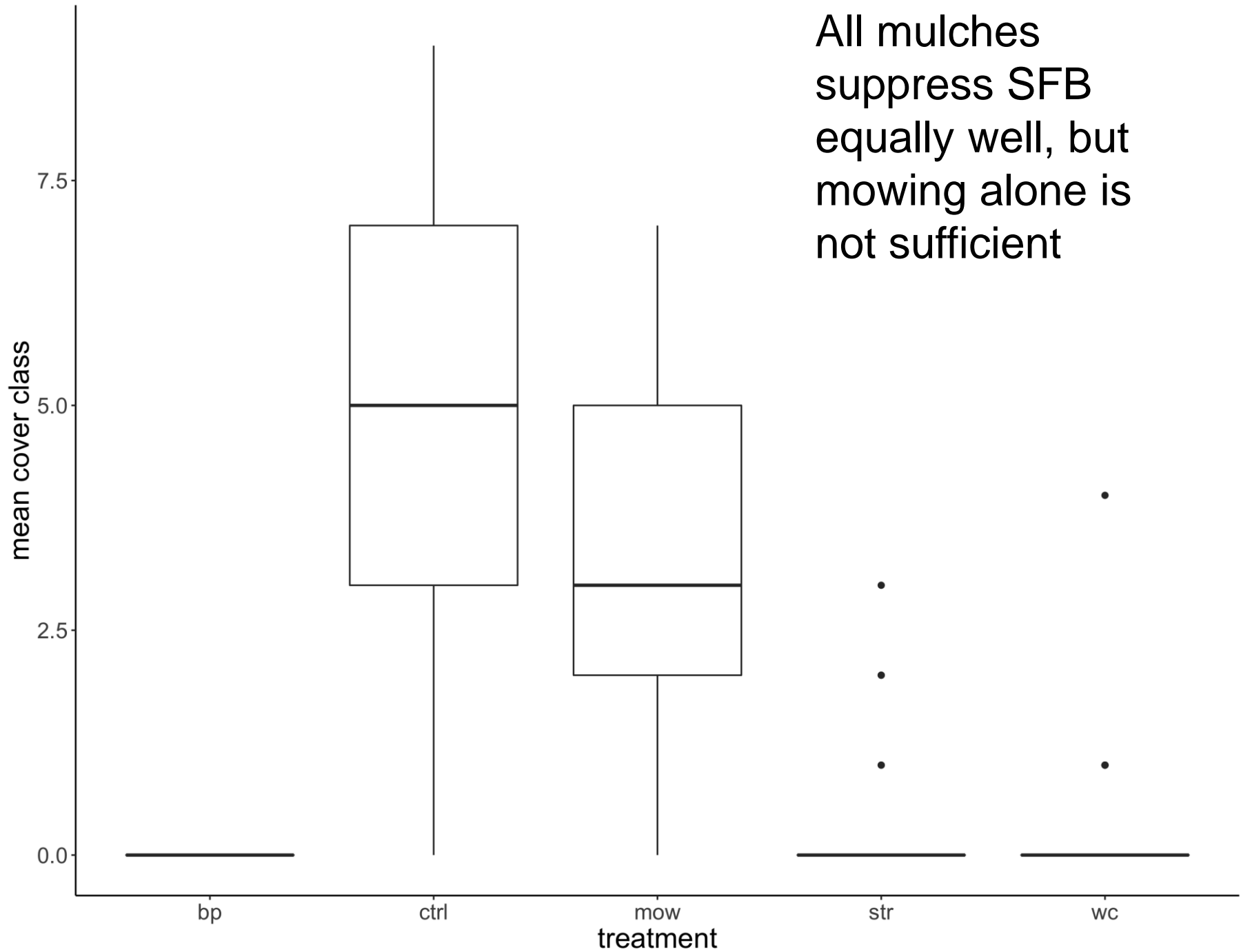




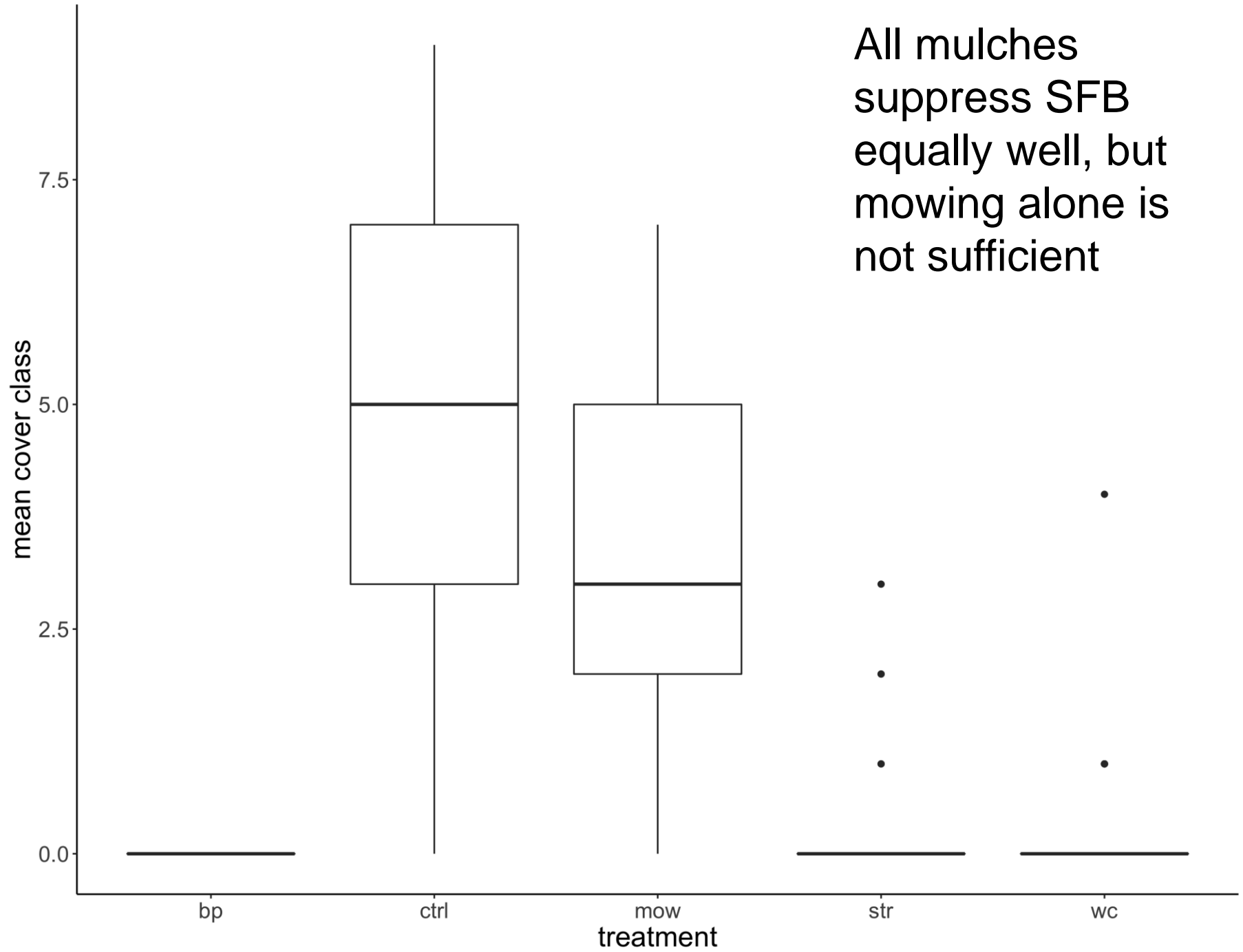
Split plot  
black  
plastic

Wood  
chips



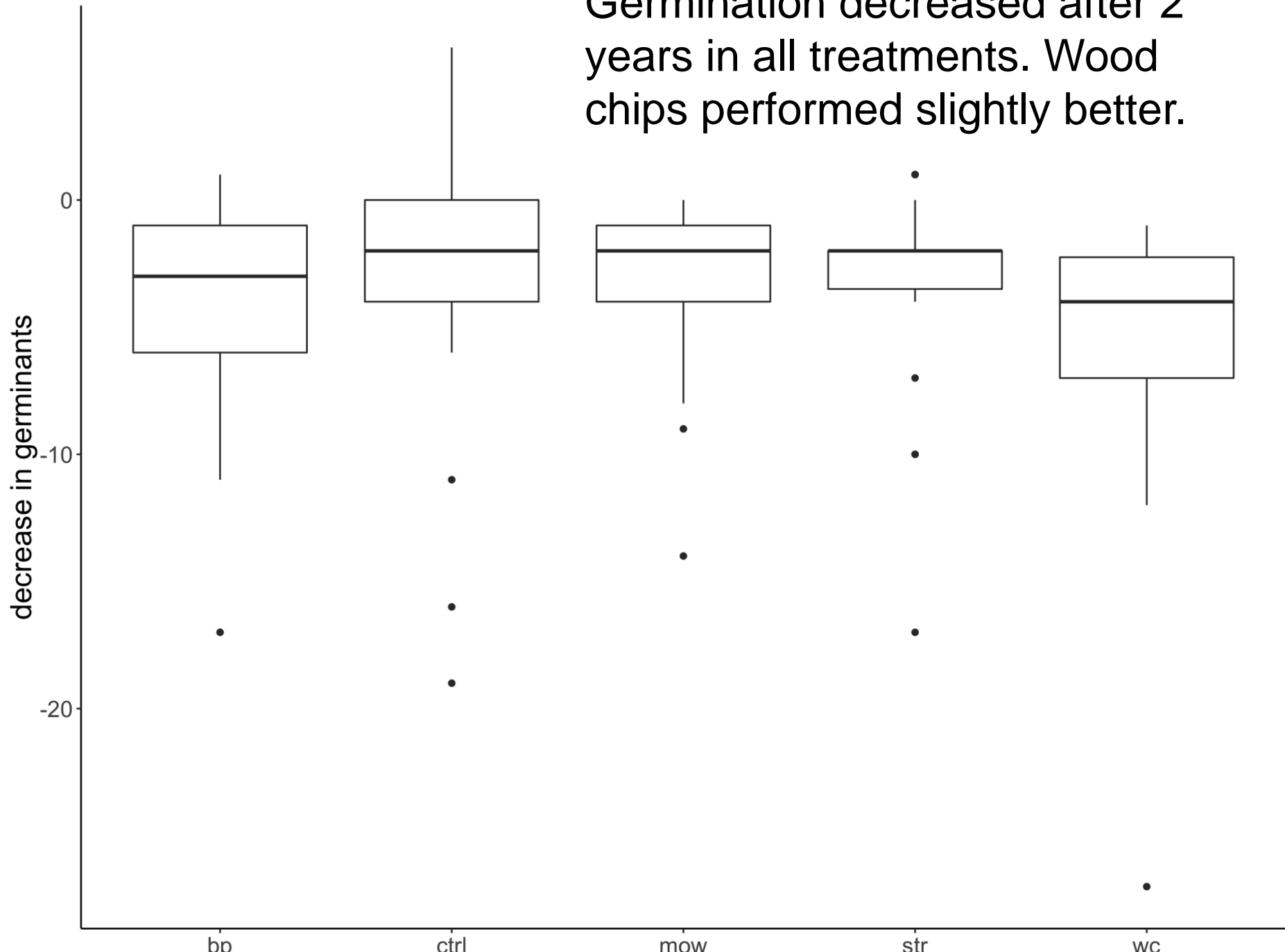


All mulches  
suppress SFB  
equally well, but  
mowing alone is  
not sufficient



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Germination decreased after 2 years in all treatments. Wood chips performed slightly better.



## Other considerations:

- Hay was least durable mulch
- Wood chips were most expensive mulch, but also longest-lasting
- Black plastic was least costly by far, but also unsightly and needs to be removed
- Long-term recovery of native plants after removal of black plastic mulch was not measured
- Continued mowing prior to seedset is likely necessary with both biomulches

## Other lessons learned



Thanks to:



Santa Clara University College of Arts & Sciences  
for supplemental funding



Cleopatra Taday  
Kathleen Dickey

Terilynn Langsev  
Oliver Bock