

Indaziflam and Imazapic Comparisons for Reducing Annual Grass Fuels in Forage Kochia Green Strips

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Cheatgrass (fuels) Suppression

Green-stripping is the practice of establishing fire resilient vegetation to reduce the occurrence and or size of wildfires. While competitive bunchgrasses with long “green” growing seasons are ideal, forage kochia (*Bassia prostrata*) is often used for green strips because it remains green and succulent throughout the year and can be readily established by aerial seeding.

The effectiveness of a green strip

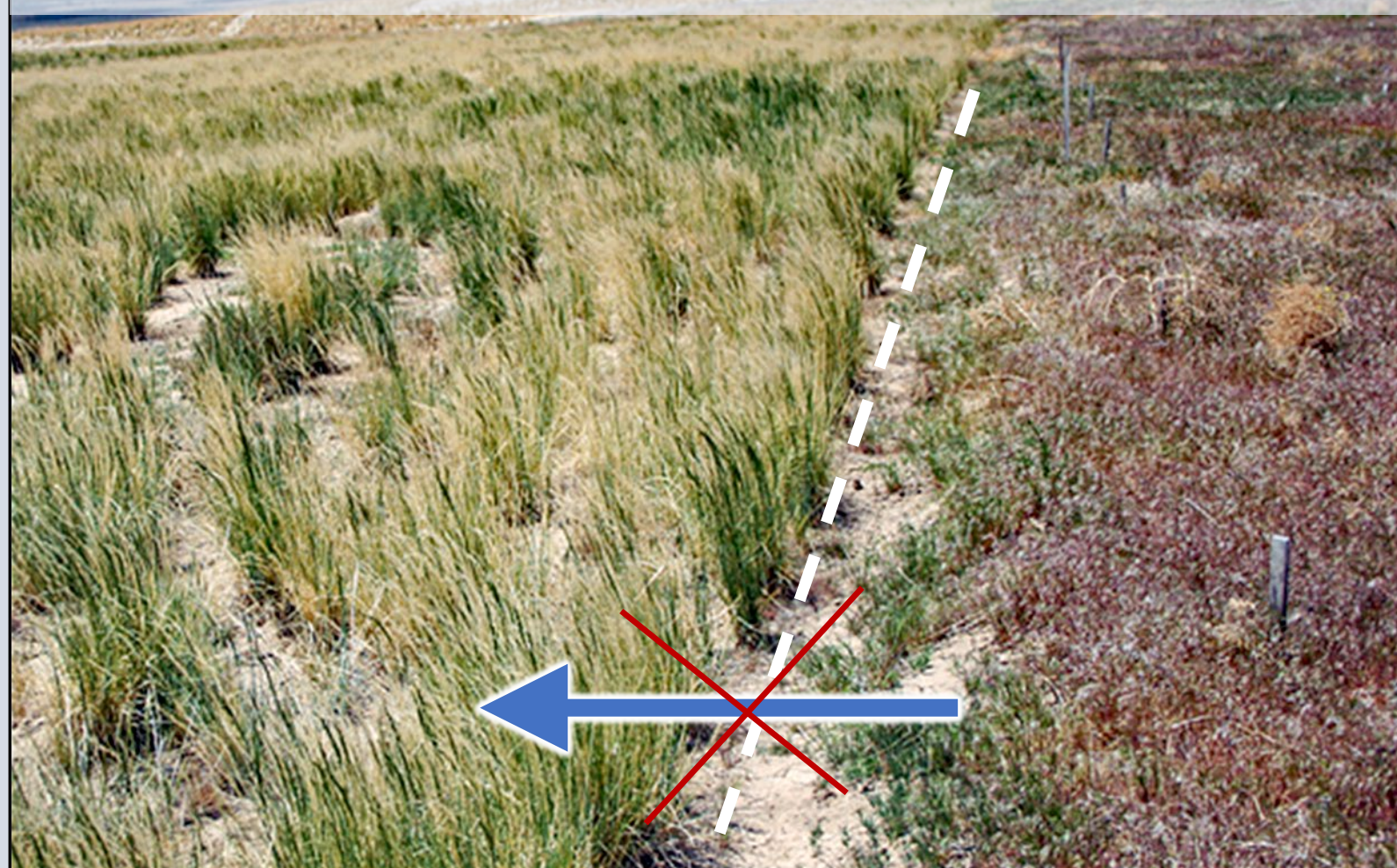
- relies on very little dry fuel occurring
- relies on perennial grass to competitively exclude “suppress” annual grass (fuel)
- requires a high density of perennial grass to achieve annual grass suppression
- forage kochia being a tap-rooted shrub is not as effective at suppressing cheatgrass

Green strip maintenance

- perennial grass can be lost overtime
- cheatgrass (litter) can increase in favorable (precipitation) years

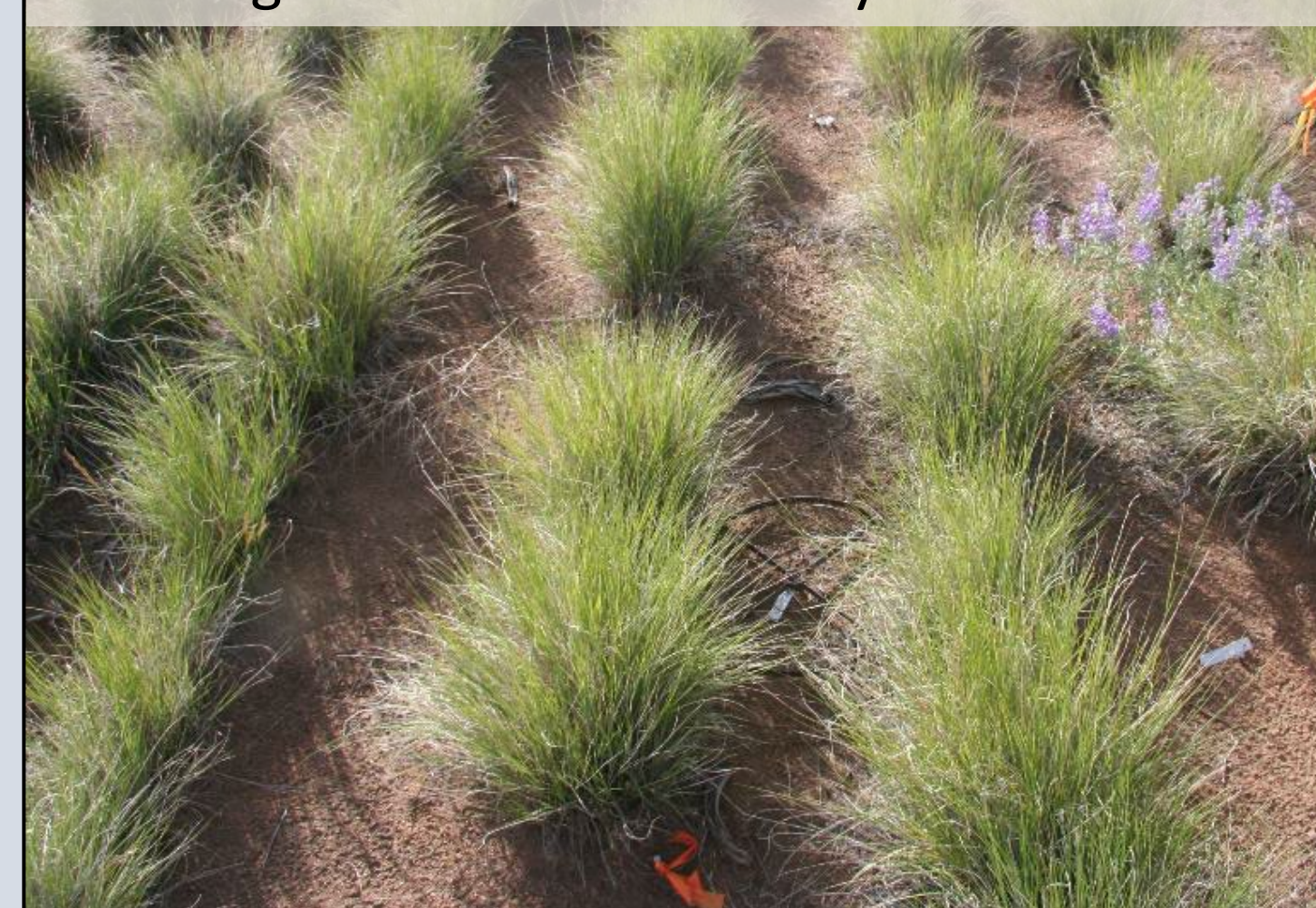
This can lead to a dense cheatgrass interspace and understory in forage kochia stands.

Perennial grass “resists” invasion by cheatgrass through resource competition



Perennial grass roots utilize soil resources, leaving none for cheatgrass, creating a “suppression zone” around the plants

Competitively excluding cheatgrass reduces the dry fuels for most of the fire season, reducing fire risks dramatically



In average or dry years perennial grass suppresses cheatgrass by limiting soil resources, creating a “cheatgrass resistant” plant community. Compare suppression (bare) zones around plants to below (same rows) in a wet year. Crested Wheatgrass left, Sherman Big Bluegrass right



In “wet” years, perennial grass can’t reduce soil resources (moisture) enough to exclude cheatgrass. Cheatgrass litter builds up and increases soil moisture in subsequent years along with a flush of soil nitrogen when it senesces, creating a “non-resistant” plant community that cheatgrass continually occupies. Pre-emergent herbicides can help return to a “resistant” community

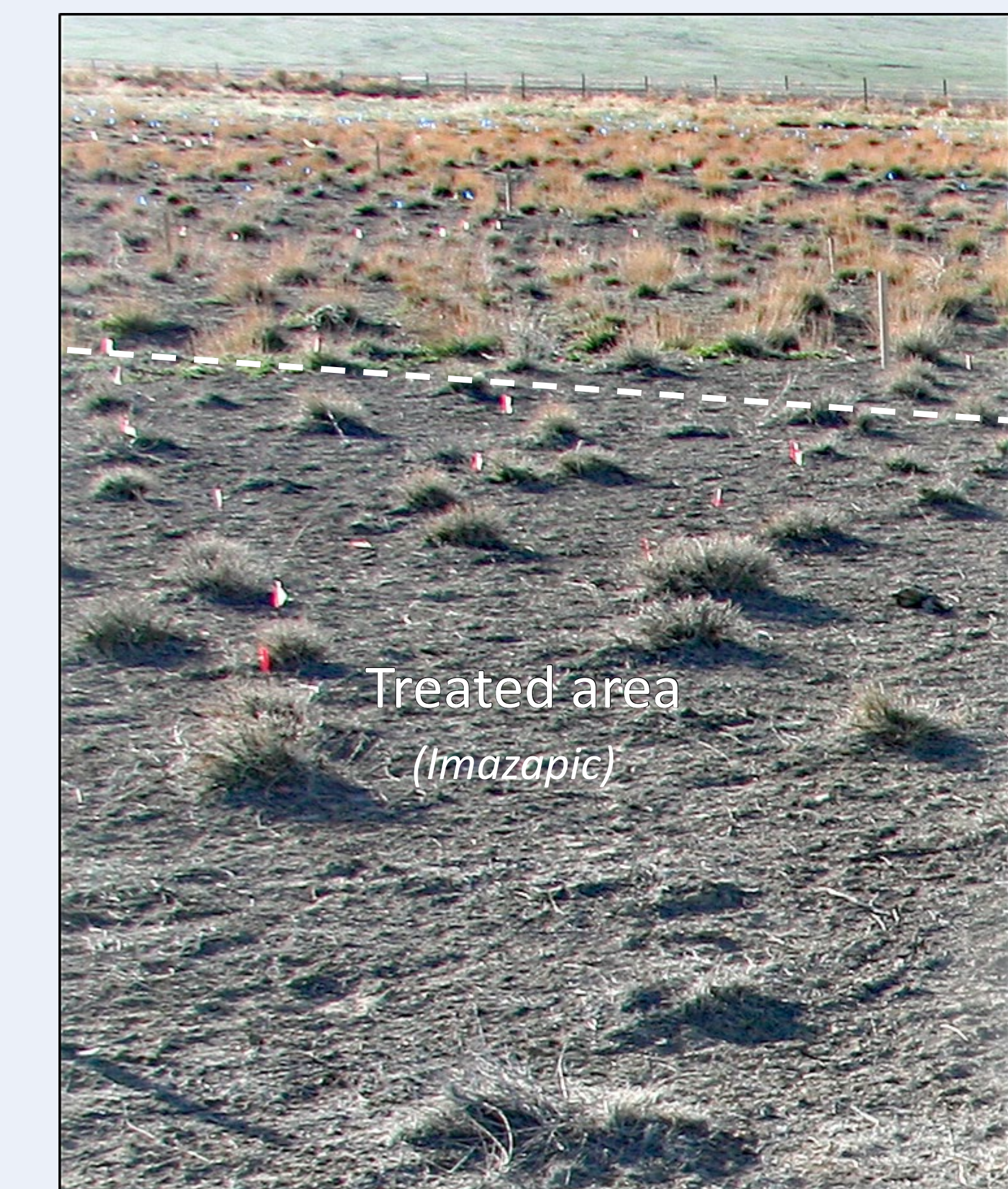
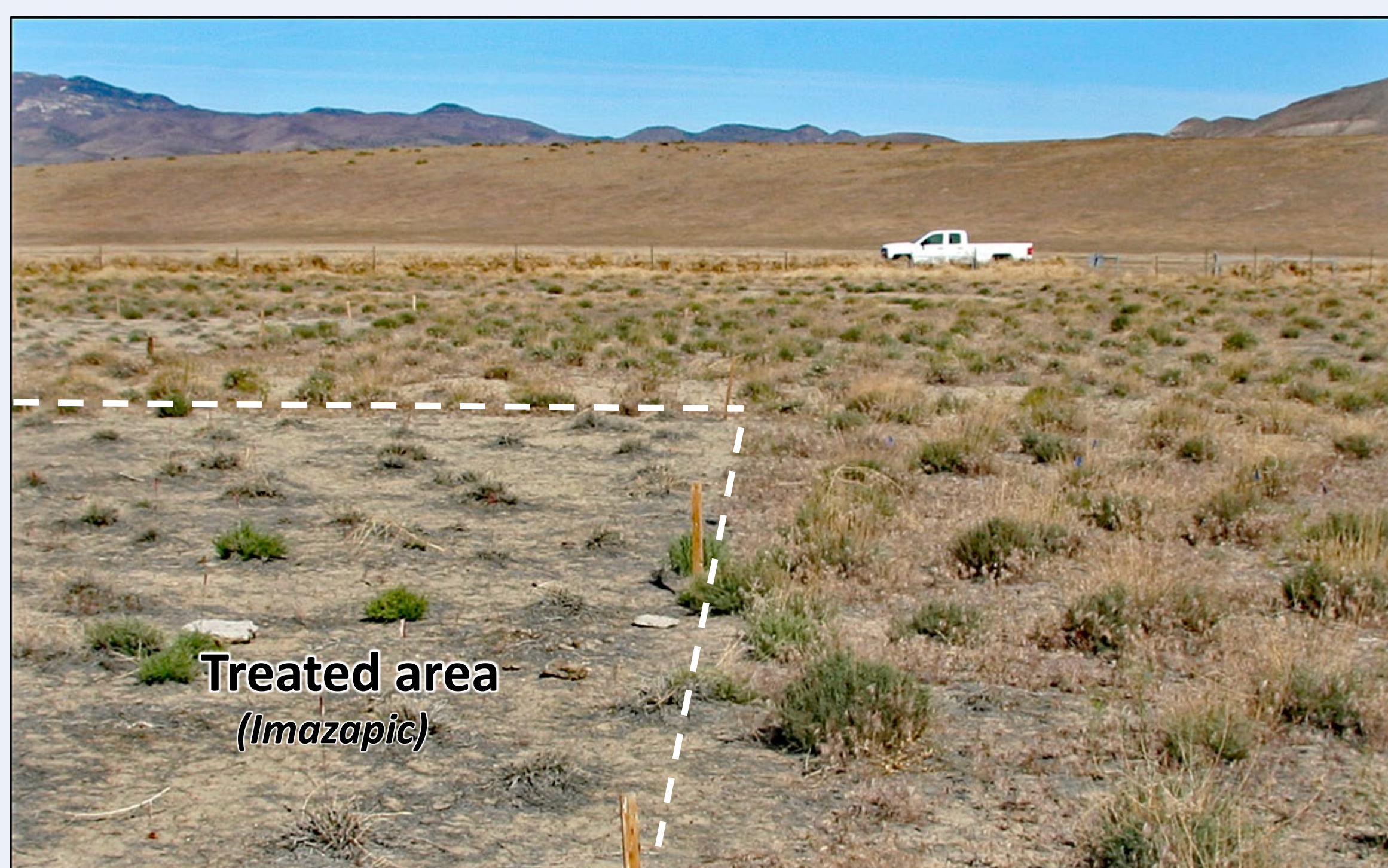


Using Pre-emergent herbicides to reduce annual grass fuels

Imazapic treatments (6oz/acre)

Herbicide was applied September 2020 and 2021. Monitoring occurred June 2021 and 2022.

	Green	Stressed	Dead
2021	35	32	33
2022	50	33	12



Discussion

Both herbicides were effective at controlling cheatgrass, however Imazapic plots experienced forage kochia plant damage and death. We observed no negative effects on forage kochia from Indaziflam applications. Indaziflam (Rejuvra) has been reported to have effective control for at least up to 4 years. This is very effective at reducing annual grass fuels and also the annual grass seed bank, which is critical for long term control. **seeding can not occur while herbicide is active with effective weed control (up to 4 years)*

