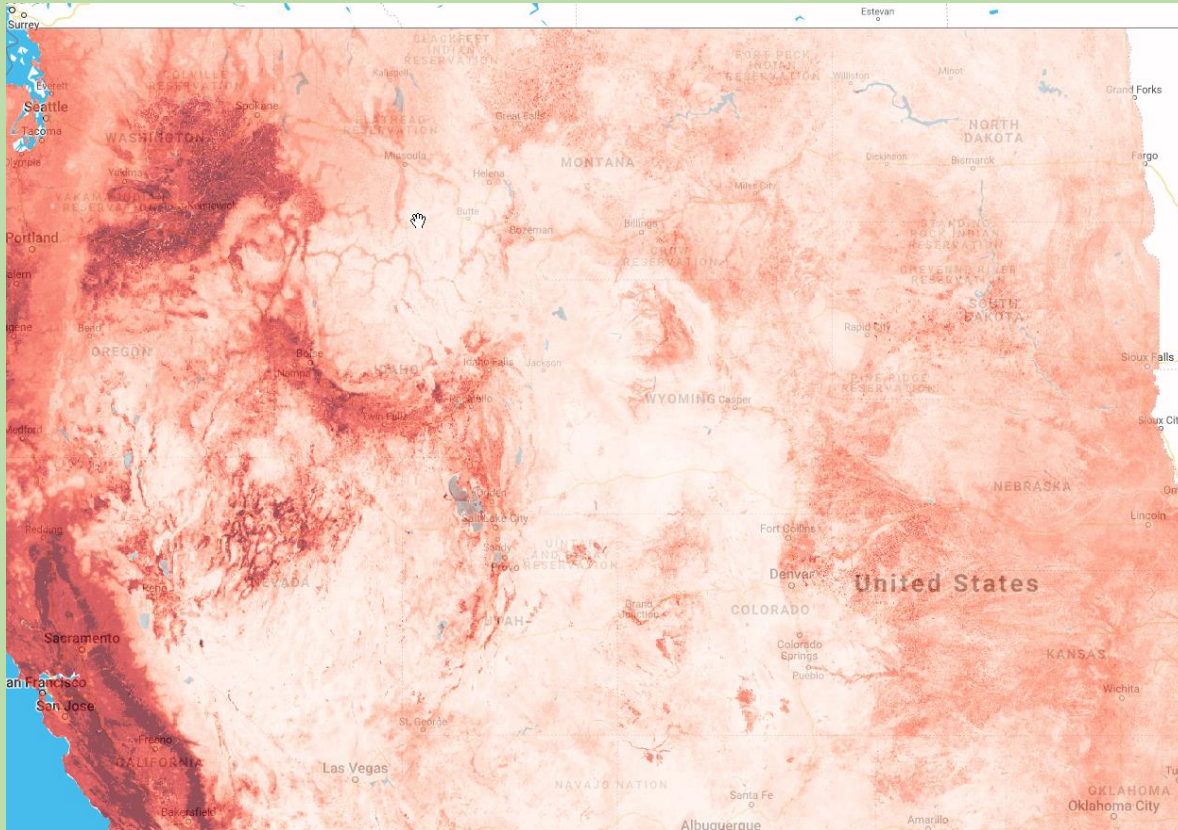


An Introduction to NutraFix[®]: a restoration tool to promote perennial species and out-compete weeds

Updated September 2024



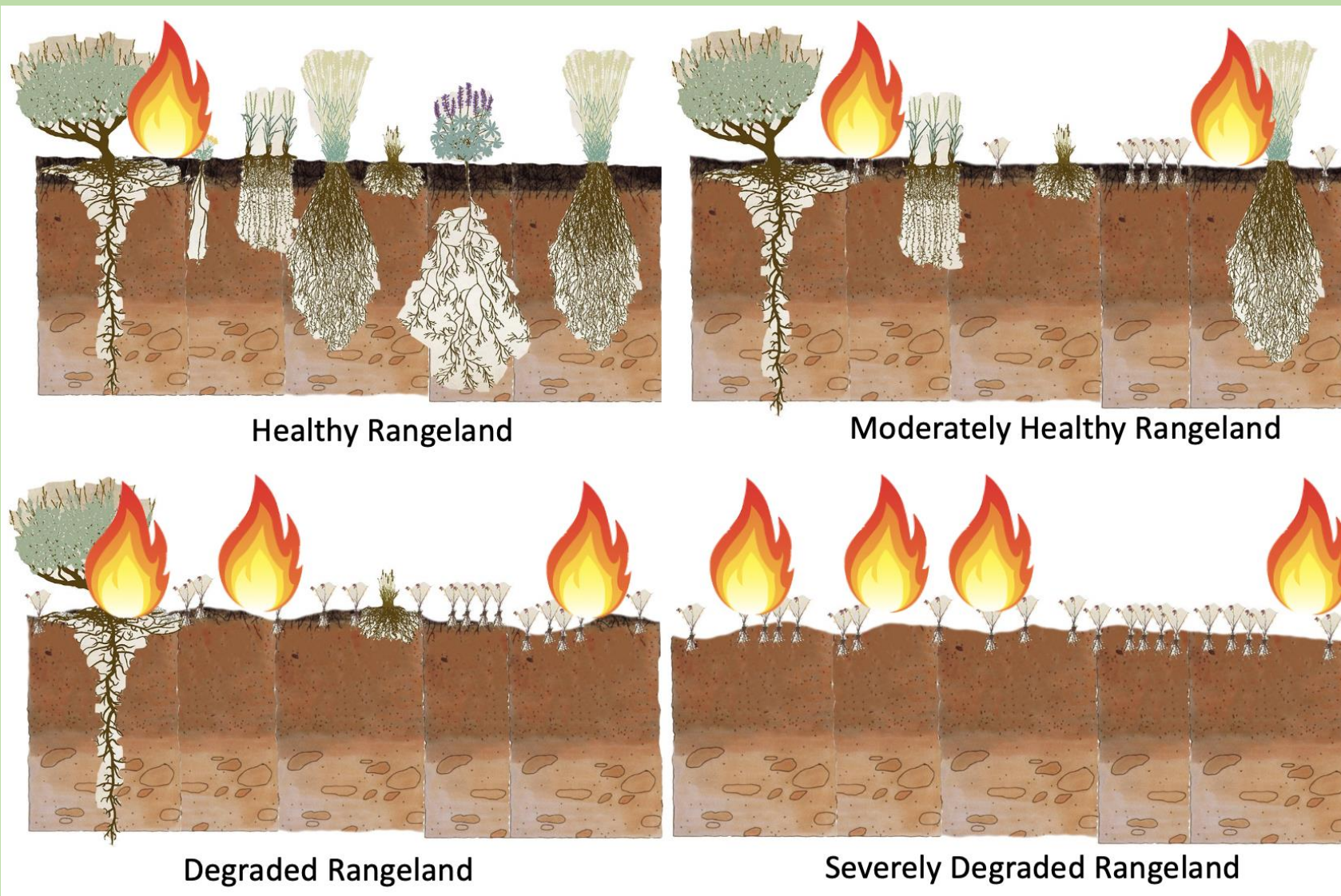
The Cheatgrass Problem



Red color denotes 2018 cover of annual grasses taken from Landsat Imagery.

Source: <https://rangelands.app/>

- >100M acres and increasing
- Wildfire accelerant
- Lost agricultural production
- Lost wildlife habitat
- Reduced soil carbon cycling
- Lack of effective treatment options
- Increased runoff/decreased infiltration/worsening soil drought



Cheatgrass to Fire Progression

Fire Reduction



NutraFix applications have been seen to shift the vegetation from annual, highly combustible invasive grasses to perennial, less combustible native grasses.



Abundant cheatgrass is a huge threat for large scale wildfires. Fires often result in soil degradation with companion loss of nutrients.



NutraFix application can help to minimize cheatgrass presence, and therefore minimize wildfire risks through improved perennial vegetation cover.



Improved soil fertility is an investment in soil health leading to improved rangeland condition better for wildlife, domestic grazing and watersheds.

Land Restoration Options

| Strategy | Efficacy |
|-----------------------|--|
| Reseeding | Ineffective: cheatgrass outcompetes seeded species, difficult to get seeds to establish |
| Targeted grazing | Ineffective: cheatgrass continues to produce seed, too few cows when cheatgrass can be grazed |
| Burning | Ineffective: may actually increase cheatgrass cover, may harm desirable plants |
| Mowing | Ineffective: cheatgrass persists |
| Herbicide Application | Largely ineffective: doesn't address underlying problem |
| NutraFix Fertilizer | Long-term Efficacy: changes soil chemistry to promote perennial vegetation |

What is NutraFix®?



- Edaphix® technologies emphasize micronutrient fertility to restore soil health to outcompete weeds
- Granular product can be applied using conventional equipment
- Application rates can be customized depending on site characteristics, budget, and goals
- Comprised of N, P, K, Fe, Cu, Zn, B, and Mn and applied at rates typical for fertilizers
- Made from naturally occurring, non-synthetic minerals, comprised of plant-necessary nutrients in unique formulations
- Effective and long-lasting



The use of NutraFix® fertilizer is protected by patents.

Easy to Apply

Granular NutraFix fertilizer is easily applied at multiple scales. The product can be applied with spreaders of all sizes depending on the area being treated.

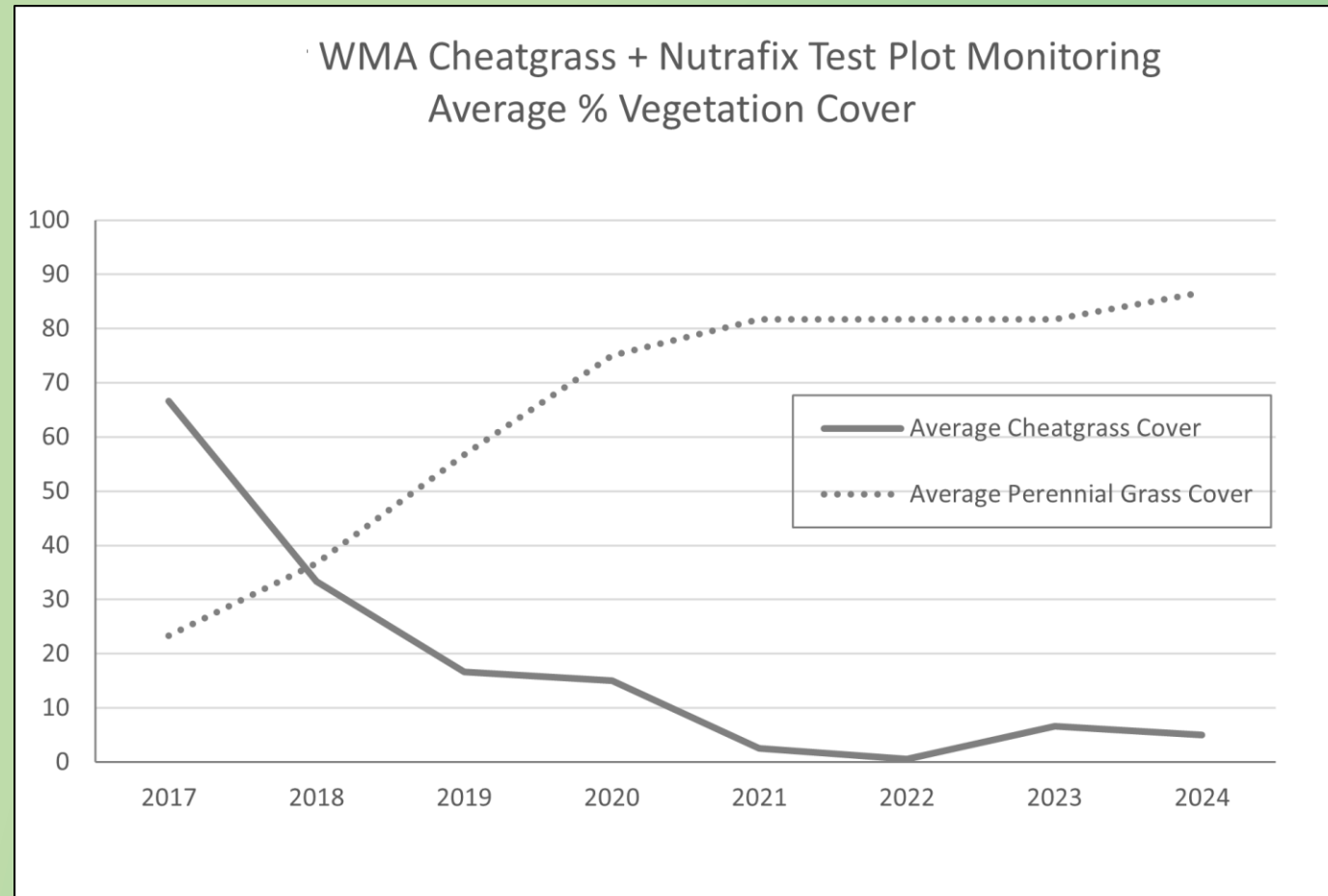


Long Term Data - Wildlife Management Area



These plots were installed in 2017 and have been consistently monitored by Montana Fish Wildlife and Parks staff. NutraFix was applied to these plots once and has not been applied since.

NutraFix replaces the soil nutrients that have been lost due to various landscape disturbances (including fire, grazing, agricultural activities, urbanization, drought, and others), which are beneficial to late successional native perennial plants.



A Montana Ranchland Site

One-time application of NutraFix in 2019:

- The treatment has performed well to promote the growth of perennial grasses at this location.
- This treatment has persisted for six years (installation May 2019).
- There seems to be a visible improvement in the soil structure of the treated vs. untreated pasture.
 - This is likely due to the deeper and more connected roots perennial grasses have.



TREATED



UNTREATED



UNTREATED

TREATED



TREATED

UNTREATED

Glenwood Springs, CO



- The upper third (red and grey) is the active underground mine fire area
- The middle third is a “weedy disaster” (seeding only, without NutraFix®)
- The lower third is NutraFix® plus seed (yellow box)

Glenwood Springs, CO - NutraFix + Seeding



April 2021

Site was seeded + NutraFix, Fall 2020



May 2022

Beginning of second growing season



June 2023



June 2024

- NutraFix applications can help perennial grasses outcompete annual grass establishment in areas after burning.
- NutraFix applications + seeding efforts can help accelerate the natural successional processes in grasslands and other habitats.
- Seed-friendly!

Thank you!

For questions relating to the product,
availability, and R&D please contact:
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