

Conservation Strategies Series

Mesquite Removal



When mesquite overtakes grasslands, both livestock and prairie wildlife lose out. Removing mesquite increases forage production and improves habitat for lesser prairie-chickens and other grassland-dependent species.

For ranchers in Texas and New Mexico, honey mesquite encroachment can pose a real problem. Mesquite outcompetes desirable grasses and forbs. If a ranch's stocking rates remain the same as mesquite cover increases, overgrazing can result, reducing the grassland's health and resiliency.

While honey mesquite is a natural part of the prairie ecosystem in this region, its density has increased since the late nineteenth century due to suppression of natural fires and spreading of mesquite seed by domestic livestock. Depending on the site and climate, honey mesquite can grow to 25 feet in height with main stems as large as 2 feet in diameter.

The prairies of North America evolved under the tag-team disturbances of bison grazing and fire. Bison herds grazed infrequently but intensely. Areas that went ungrazed built up dry fuels that supported wildfires that kept mesquite shrubs in check. Historic cattle ranching brought continuous and often heavy grazing that reduced the grass fuel load needed to carry wildfires.



Mesquite isn't just a problem for livestock forage production—it's a problem for native wildlife. Studies show that lesser prairie-chickens greatly prefer landscapes with less than 1% mesquite canopy cover. That's likely because mesquite provides hiding and perching sites for predators.



Managing Mesquite

Killing the plants

Chemical treatment of mesquite can effectively kill mesquite, if done under the right conditions. While hand spraying has the greatest accuracy, it's very expensive, so aerial spraying is a commonly used option.

- Aerial spraying
- Hand spraying

Removing the skeletons

Killing the mesquite plant isn't enough. The mesquite plants continue to occupy potential grassland space, limiting forage production for livestock. What's more, studies show that prairie chickens avoid mesquite shrubs whether or not they have leaf cover.

- Grubbing
- Mowing

Preventing re-encroachment

Prescribed fire is the least expensive of the treatment methods—a cost-effective way to prevent reencroachment. Fire suppresses young mesquite seedlings and limits the number of seed-bearing plants. Older mesquite plants will resprout following fire.



Rancher Spotlight: Bret Riley, New Mexico

In his own words...

"The one thing my grandpa used to tell me over and over is that if you take care of your country it'll take care of you. I think that's where it starts."

"The most practical way to control mesquite is by spraying it by aircraft, and that's what we've started doing. Mesquite is hard to kill, and the timing of it is critical. We've had one pasture we've been planning on spraying for the last three years, and we haven't got it sprayed yet just because the climatic conditions haven't been right."

"In areas that have been treated—the next year even—the grass back in there will be unbelievable because of the amount of moisture that is available, especially in an ecosystem like this where we're short [on water]."



Benefits of Mesquite Management

- ↑ grassland acreage and productivity, meaning more forage for cattle and more grassland habitat for wildlife.
- ↑ nutrients and water available for grasses and forbs.
- ↑ grassland health, which provides more resiliency and options for producers when drought hits.
- ↑ surface water flow and groundwater recharge for springs.

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