



FORESTRY PRACTICES AND MULE DEER HABITAT

Fact Sheet #15

OVERVIEW

From the Yukon Territory to northern Mexico, mule deer live in a variety of ecosystems across western North America where forests play an important role in their nutrition and survival. However, persistent lack of disturbance, primarily from fire suppression and decreased forest management activities, including forest harvest, has resulted in dense forests that lack the plant diversity and understory production necessary to optimize mule deer nutrition.

WHAT DOES A HEALTHY FOREST LOOK LIKE FOR DEER?

Mule deer require high-quality forbs and shrubs, and some grasses, to support reproduction, body maintenance, and antler growth. High quality understory forage production is promoted by forest disturbances such as thinning, selective harvest, clearcutting, prescribed fire, and/or other forestry practices that increase sunlight penetration to the ground and decrease competition for nutrients and precipitation. Overall, a mosaic-type forest landscape, composed of stands of different cover types and ages, is most beneficial to mule deer, because a mixed landscape will have greater plant diversity, more nutritious forage, and provide areas for all life history needs such as fawning, thermal, and hiding cover. Where aspen occurs, healthy forests include multi-aged aspen stands that provide cover for adults and fawns and optimal forage during the summer.

BENEFICIAL FOREST PRACTICES

The U.S. Forest Service, Bureau of Land Management, private forest landowners, and other land-managers, have long recognized importance of conifer forests for wildlife. Habitat manipulations, forest harvest, controlled burns, natural disturbances, annual weather patterns, and changing climate influence mule deer habitat. In general, mule deer populations increase following favorable weather patterns and forest disturbance, primarily because of increased production of high-quality forage. When implementing habitat projects, such as controlled burns, it is best to conduct them on a large scale to create the favorable forest mosaic that mule deer prefer and to allow for regeneration of forbs, shrubs, and saplings plants that are important to mule deer. Treatment areas should be large enough that domestic livestock and native ungulates do not completely consume the regenerating plants.

Depending on location and past management, several forest practices can improve mule deer habitat:

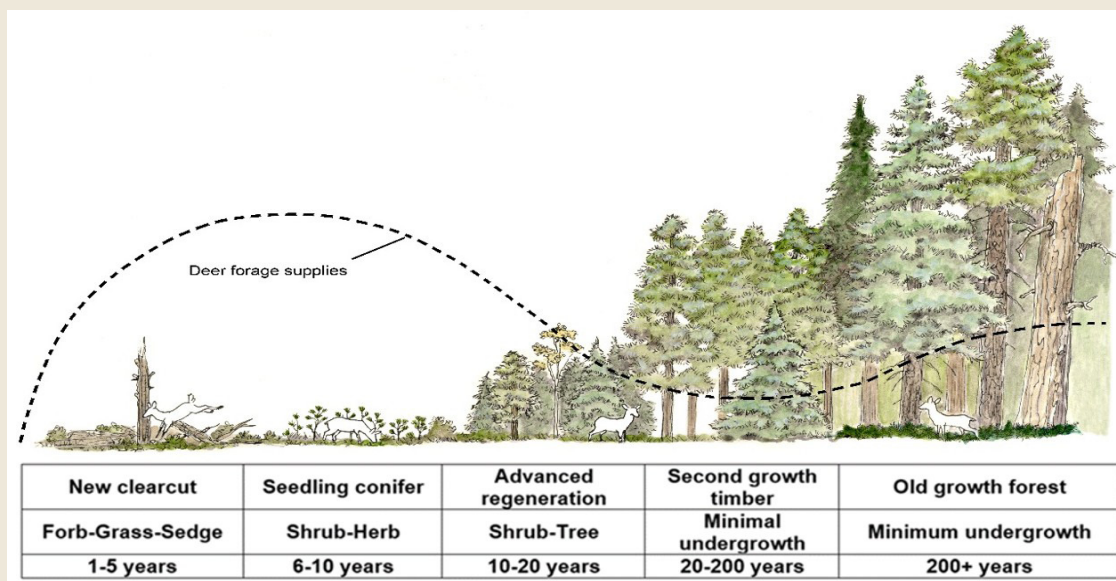
- Timber harvest (e.g., clearcuts, patch cuts and thinning) to open stands and encourage growth of early successional forage will typically increase vegetative diversity and abundance and quality of mule deer forage for 5-25 years post-treatment.
- Burning (both prescribed and wildfire) to reduce midstory density and remove diseased and over-stocked stands of trees and shrubs will release site nutrients for increased soil productivity which, along with more sunlight on the forest floor, will allow for understory forage to flourish. Prescribed burning can also be used to maintain forest stands that are currently in good condition.
- Mechanical removal of encroaching juniper in aspen stands, sagebrush, and other winter ranges.

OTHER CONSIDERATIONS

- Continued fire suppression often leads to dense even-aged stands, trees that are prone to disease, conifer encroachment, and a non-productive forest understory.
- When managers plan habitat projects involving timber harvest they strive to maintain cover for travel corridors within stands, especially for large project areas.
- Invasive plants can be detrimental to wildlife habitat unless aggressive monitoring and management practices are followed and maintained for several years after treatments.
- Grazing distribution, timing, and intensity should be managed to achieve optimal herbaceous species composition, plant vigor, and to maintain residual forage post-grazing.
- Application of herbicides after timber harvest to kill and suppress shrub and forb growth may be counterproductive if the goal is to maximize nutrition for deer.
- Forest management practices are timed to avoid disturbance during local peak fawning periods.
- State agencies are responsible for managing wildlife, yet most forest landscapes managed by federal agencies or private landowners. Partnerships and collaborative land-management efforts are essential to conserve habitat for mule deer and other wildlife.

CONCLUSIONS

- Forest practices to benefit mule deer focus on management that ensures a mosaic across the landscape, which include forests of early succession, mixed-age classes, mature stands, and a healthy understory of forbs, shrubs, and grasses.
- Habitat projects are most beneficial when implemented on a large scale to ensure plant regeneration can withstand grazing pressure. If disturbance occurs on a small scale, fencing is often used to allow plants to recover. Natural barriers, range riders, virtual fencing, or techniques like dropping conifers in a crisscross style to make a natural fence are sometimes useful around small aspen stands or where standard fencing is impractical.
- Aspen communities are very important for mule deer during summer. Conserving and enhancing aspen is often a priority for land managers using conifer removal, aspen cutting, burning, and/or disking to stimulate sapling sprout, and fencing.
- Sustainable, healthy mule deer habitat is maintained by leaving mature trees to provide thermal cover and seed sources, and managing motorized travel, soil erosion, and invasive species.
- Monitoring programs are important to assess forest health after natural or human-caused disturbance to ensure quality habitat for mule deer and other wildlife, continued invasive species management, and use of adaptive management when conditions change.



More information on mule deer can be found at www.muledeerworkinggroup.com