

Restore New Mexico

Initiative Will Benefit Mule Deer in Southern New Mexico

BY JACK BARNITZ, BLM, Las Cruces, NM

The BLM, and a variety of partners in New Mexico, have undertaken an aggressive new initiative, aptly called the “Restore New Mexico Initiative”, to restore degraded watersheds and habitats to healthy, productive conditions that will support more diverse and prolific wildlife communities. Mule deer are one of the species that will benefit from this initiative. BLM’s New Mexico State Director is committed to establishing a legacy of restored habitats across watersheds and habitats on federal, state, and private lands. That’s the



Photo ~ J. Barnitz

key to what’s new and exciting about Restore New Mexico. It’s an effort between partners, old and new, to restore and reclaim habitats across political boundaries, on a

landscape basis. Restore New Mexico partners include federal and state agencies, industry, organizations and private citizens. Many Restore New Mexico projects focus on vegetation treatments where invasive species such as creosote bush, mesquite, juniper and salt cedar have come to dominate watersheds and landscapes that, at one time, were much



Photo ~ T. McKibben

more diverse and valuable to wildlife. Under the Restore New Mexico Initiative, projects have been implemented on more than 450,000 acres of public land since 2005.

Another key part of Restore New Mexico involves the reclamation of oil and gas well pads,

pipelines and roads. In the oil and gas fields of the state where past development left an array of impacts and degraded, fragmented habitat, we are working with oil and gas industry partners to reclaim unused well pads, pipelines and roads. A major benefit of this work will be to de-fragment habitat for species vulnerable to these forms of disturbance.

The BLM's Las Cruces District encompasses six counties in south-central and southwest New Mexico, which contain 5.5 million acres of public land.

The District has implemented a variety of Restore projects with an emphasis on herbicide treatments. Historic livestock management practices resulted in large-

scale changes in the vegetative assemblage on public, state and private land within the District. Landscapes that once supported desert grasslands are now dominated by creosote bush and mesquite. Both species are native and belong in the vegetative assemblage, but at one time were controlled to a large extent by fire. With the removal of grass cover to carry fire, both species rapidly increased in abundance and now dominate massive areas. Erosion increased and plant diversity decreased. In the absence of herbicide application creosote bush and mesquite will continue to dominate these areas.

As part of the Restore Initiative, the Las Cruces District applied herbicide to 91,500 acres of creosote; 3,080



Photo ~ Vince Martinez

acres of mesquite; and 300 acres of salt cedar in 2007. The District's preliminary goal for acres to be treated in 2008 is 50,000 acres of creosote; 25,000 acres of mesquite; and 1,000 acres of salt cedar. However, with additional funding, the District has the capability of treating up to 200,000 acres per year. Much of this work is along mountain bajadas, intermountain basins and rolling hills type habitats, which are

most often associated with game species such as quail and pronghorn. Mule deer occur throughout these areas also, in low density but with a fairly uniform distribution. Savvy hunters know how to find and hunt draws, arroyos, and other features preferred by desert mule deer in this type of terrain.

How can treating large areas with herbicide benefit desert mule deer



Photo ~ R. LaCasse

which depend on shrubs for food and cover and that are heavily dependent on forbs for fawn survival? The answer is two-fold; treatment design and post-treatment management.

Herbicide treatments are designed spatially to minimize impacts to non-target vegetation. Whether it be a draw, an arroyo, or just an inclusion inside an otherwise creosote-dominated site, areas that contain shrub species valuable to mule deer are not treated and are buffered to ensure herbicide drift does not impact palatable shrubs. And while an enormous amount of land is being treated, the individual treatments result in a mosaic pattern in the vegetation community with an increased amount of edge, or in other words, a habitat parameter favorable to desert mule deer. The pattern is amplified at the landscape or a watershed level where treatment areas of different ages and thus different recovery stages, are interspersed with untreated



This creosote treatment applied in 2003 on Otero Mesa already shows good herbaceous response. Untreated creosote shrubland in the background. Photo ~ R. Lister

areas—draws, arroyos, and other patches where important habitat occurs that will not be treated.

Creosote bush is treated with a pellet herbicide in the fall and winter. This avoids the relatively intense monsoon rains and takes advantage of gentle winter rain to break down the pellets and carry the active ingredient down through the soil to plant roots, minimizing the potential for overland movement of the chemical. Fall application also reduces the impact to annual forbs, of which several species are an important component of desert mule deer diet. For the most part, by the time annual species germinate, the chemical is below their root zone. There is always some loss of desirable perennial forbs, such as buckwheat and palatable shrubs, which are scattered in treatment areas, but the loss is minimized to the extent possible.

The herbicide mix used for mesquite kills other legumes, shrubs and

actively growing broad-leaf forbs. The herbicide are applied when mesquite is most vulnerable, (May through June), and they remain active generally less than 90 days. Reestablishment of forbs via the existing seed bank occurs readily. Unavoidably, there are losses of forage plants including shrubs, perennial forbs and perhaps some annuals in the short term. Again,

this is minimized to the fullest extent possible.

The second, and most important, part of the answer to the question of how herbicide application in areas dominated by creosote and mesquite benefits desert mule deer is in the BLM's commitment to a legacy of sustained health and productivity of habitats. It would be naïve to



Photo ~ R. LaCasse



Photo ~ T. McKibben

conclude that an application of herbicide in itself will restore healthy habitats. That's the easy part and just the first step, especially in the desert where recovery is slow. However, relatively small changes in the amount, or timing, of rainfall can result in large setbacks in terms of plant productivity and thus, watershed recovery is of the utmost importance. Careful management in the long term is what will ensure a good return on the Restore New Mexico investment.

Follow-up management, means ensuring the grass and forb components continue to increase and build soil, protect against erosion, compete successfully against invasive shrub species, and provide for periodic fire. The ability for bajada and foothill areas to carry fire is crucial for

improving desert mule deer habitat in the adjacent mountain areas, where a reduction in fire frequency has resulted in overgrown, unpalatable, stands of browse. Fire originating in the restored grasslands and burning up into the mountains will benefit both mule deer and coues deer.

In many cases, re-treatment with herbicide will be necessary. The existing seed bank for creosote and mesquite is enormous. Until fire can begin to play its role in killing seeds and seedlings, herbicide treatment will likely be the best option. With all brush treatments, livestock grazing with a primary objective of allowing herbaceous species a competitive edge is the major factor that will determine if landscapes are actually restored. The mix of deferment in the years following application in treatment areas,

combined with the commitment to managing for restoration of ecological functions, will benefit desert deer through increased browse and forb availability and nutritional quality. As grass cover increases in treated areas, overland water flow slows, and infiltration through the soil increases. This in turn slows runoff in draws and arroyos and can eventually bring the water table closer to the surface. Mule deer in these habitats benefit through improved browse and cover conditions as species such as little-leaf sumac, apache plume, wolfberry, hackberry, soapberry, and desert willow respond to water that is available in the soil for a longer period of time. Again, the success of the Restore New Mexico Initiative is based on the BLM's commitment to long-term management to ensure gains in ground cover are not lost due to vagaries in weather.

Additional habitat treatments that benefit deer and other wildlife species in the District include burning and mechanical treatments in pinion-juniper and mountain shrub habitats in the Big Hatchet, Little Hatchet, Cuchillo, and Burro Mountains. Additionally, projects to reduce unnaturally high build-up of



Photo ~ J. Barnitz



Photo ~ Ryan Hatch

woody vegetation near human populations in the Pinos Altos and Sacramento Mountains also benefit mule deer directly in the thinning areas but through time will allow for reintroduction of fire over a larger area.

The Las Cruces District is working to reduce the amount of net-wire fencing on public land. Replacing net-wire with four-strand fence increases the value of habitat to all big game species by improving their ability move throughout and between

areas. The District has also aggressively worked to replace old, ineffective wildlife water catchments, and has installed new water units at strategic locations to benefit mule deer, desert bighorn and other wildlife.

The Restore New Mexico Initiative will be successful in the long run because of the suit of partners involved. In the Las Cruces District the Habitat Stamp Program, the Natural Resources Conservation Service (NRCS), Soil and Water Conservation Districts, New Mexico Association of Conservation Districts, New Mexico Department of Game and Fish, National Fish and Wildlife Foundation, and Quail Unlimited are active partners.

Habitat Stamp funding is generated directly by sportsmen that hunt, fish or trap on Forest Service and BLM-administered public land in New Mexico. NRCS funds from the Farm Bill's Environmental Quality Incentive Program are now available for Restore projects on public lands in New Mexico, matched by BLM Range

Improvement Funds. Quail Unlimited is providing significant funding for planned 2008 vegetation treatment projects and the Southwest New Mexico Chapter has been an effective advocate for improved watershed conditions in the District. Local chapter funding has been matched with the National Fish and Wildlife Foundation's Answer the Call program. Private land owners provide matching funds and cooperation essential to restoration success on a watershed basis. The Restore New Mexico Initiative brings together a solid base of partners and creates the opportunity for the public in general, but especially for sportsmen, to have a stronger-than-ever vestment in managing public land for quality habitat.

This is only the beginning of an exciting, long-term initiative. The BLM is seeking new partners to join the Restore New Mexico effort. The Mule Deer Foundation could be an important partner in this effort, not only in helping to fund initial treatments to start the restoration process, but also in a commitment to active volunteer participation.

For information on how you can become involved, contact the Las Cruces District Manager at (575) 525-4311 or the Deputy State Director, BLM New Mexico State Office, at (505) 438-7667.

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