

Mojave Scrub



Mojave Scrub habitat in Esmeralda County. Photo by Elisabeth Ammon.

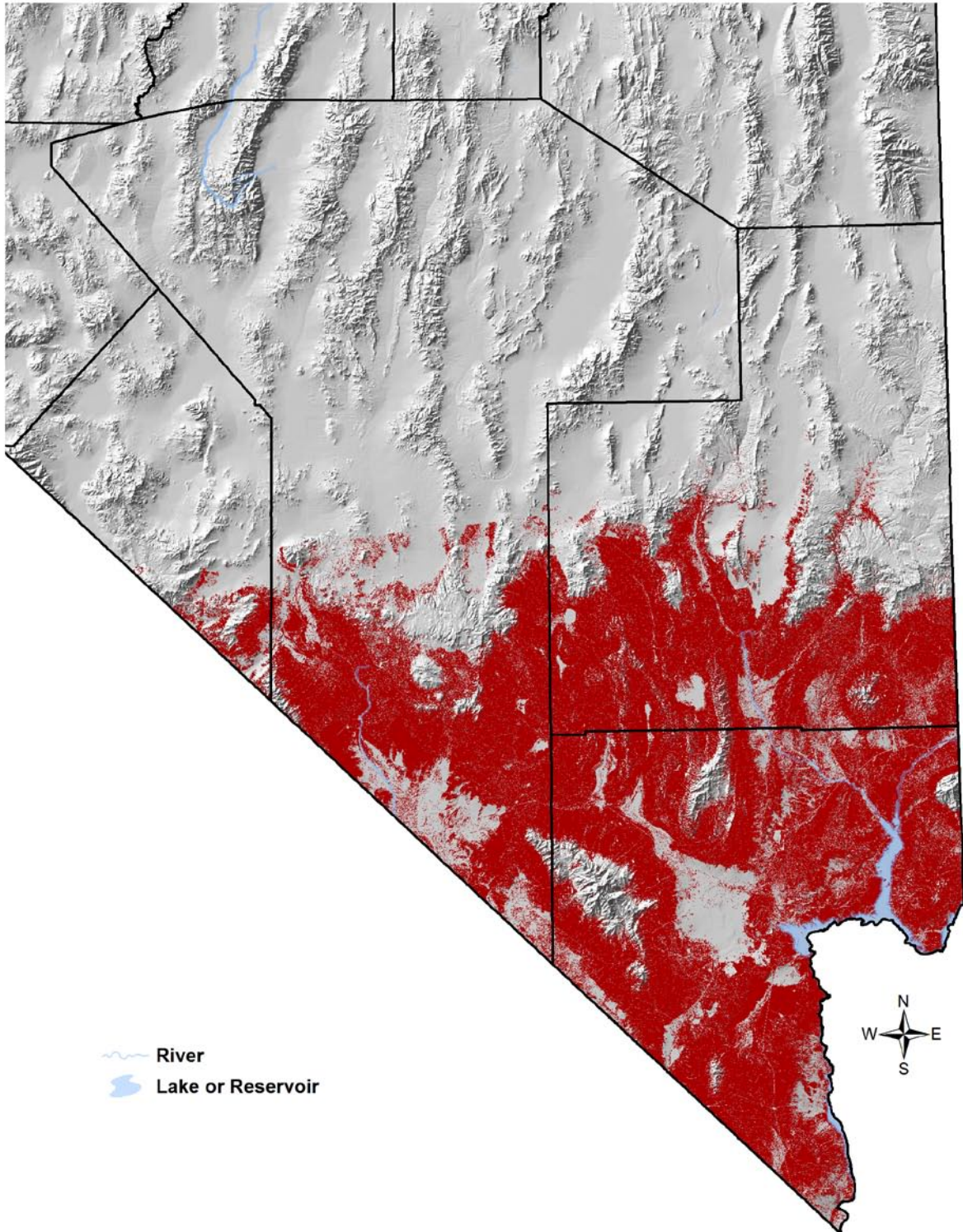
Key Bird-Habitat Attributes

Stand Structure	Mixed creosote-bursage stands at natural densities including other xeric shrub species; plant litter, cryptobiotic soils, and forb understory important
Ideal Scale for Conservation Action	1,000 ha [2,500 ac] or larger
Distance to Riparian/Spring Habitats and Ephemeral Washes	Proximity of mesic habitat types, springs, or presence of ephemeral washes increases value to birds
Presence of Cliffs > 30 m [100 ft] Tall	Presence of tall cliffs increases value to birds

Conservation Profile

Estimated Cover in Nevada	3,120,000 ha ([,706,000 ac] 11% of state
Landownership Breakdown	BLM = 55% DOD = 17% DOE = 8% NPS = 6% Private = 4% Other = 10%
Priority Bird Species	Prairie Falcon Costa's Hummingbird Le Conte's Thrasher (Golden Eagle) (Peregrine Falcon) (Burrowing Owl) (Common Poorwill) (Bendire's Thrasher)
Indicator Species	Black-throated Sparrow
Most Important Conservation Concerns	Energy development Urban, suburban, and industrial development Climate change (change in precipitation and temperature) Mining Motorized recreation Invasive weeds Increased fire frequency or intensity Grazing by wild horses and burros
Habitat Recovery Time	25-50 years
Regions of Greatest Conservation Interest	Clark, Nye, and Lincoln counties
Important Bird Areas	Ash Meadows NWR Catclaw Washes Lake Mead Moapa Valley Oasis Valley Virgin River Wee Thump Joshua Tree Forest

Mojave Scrub



Habitat classified from a synthesis of Landfire and Southwest ReGap vegetation maps.
Some areas may be misclassified.

Mojave Scrub

Overview

Mojave Scrub habitat covers most of southern Nevada. Yet, the Priority species that specialize on this habitat are sparsely distributed on the landscape, and their local presence is often unpredictable from year to year (e.g., Le Conte's Thrasher, Burrowing Owl, and Golden Eagle). The majority of the Mojave scrub landscape is dominated by the creosote-bursage (*Larrea - Ambrosia*) shrub assembly, but can also include blackbrush (*Coleogyne ramosissima*) at higher elevations and in the transitional zone with the Great Basin. Minor occurrences of Joshua trees and other *Yucca* species are sometimes present, but where these are common, we classify them as Joshua Tree habitat for the purpose of this plan. Thorny vegetation components, such as cholla cactuses and low-growing, dense scrubs, are also sometimes present, and are particularly valuable for some Priority species. Finally a suite of native understory plants and cryptobiotic soils are important for several Priority species, including litter probers such as Le Conte's Thrasher, and the Costa's Hummingbird that seeks out flowering plants.

Birds in the Mojave Scrub environment are generally thought to be living at the edge of their physiological limits, particularly with regard to obtaining sufficient water and thermal cover. Resources used by these birds are often ephemeral and unpredictable in this environment and, because of this, most Mojave Scrub specialist species are known to be somewhat nomadic in their year-to-year movements. For instance, Le Conte's Thrashers search for arthropods in the sparse litter around live shrubs, but the presence of arthropods in any given location is not highly predictable from year to year. Similarly, Golden Eagle and Prairie Falcon depend on terrestrial vertebrates that undergo significant population fluctuations in the desert environment. Therefore, we recommend targeting very large patch sizes (> 900 ha [2,200 ac]) for effective conservation and land management. Especially useful are areas that feature tall and semi-mesic shrubs, such those found along ephemeral washes. Similarly, areas that are located within 2 km [1.2 mi] of springs, wetlands, or riparian areas, which provide reliable resources to birds even in difficult years, are a priority. Figure Hab-12-1 illustrates the landscape features of Mojave Scrub habitat that, to the best of our knowledge, promote its Priority species, at least if they occur at a sufficiently large spatial scale.

Mojave Scrub habitat is not the subject of active management efforts in most cases, although some high-priority areas are protected as ACECs (Areas of Critical Environmental Concern) by the BLM, and domestic livestock have been removed from Clark County public lands. Still, large expanses of scrubland are at risk of loss to urban and suburban developments, energy development, and mining. Therefore, our recommendations for conservation focus primarily on avoidance of habitat conversion where possible (or failing that, minimizing fragmentation that results from habitat conversion), and minimizing major soil disturbances (e.g., OHV use) by channeling recreational activities into appropriate designated areas.

Mojave Scrub

Main Concerns and Challenges

The following top conservation concerns were identified in our planning sessions for Mojave Scrub habitat in Nevada:

- Energy development
- Urban, suburban, and industrial development
- Change in precipitation and snowmelt related to climate change
- Change in temperature related to climate change
- Mining
- Motorized recreation
- Invasive weeds
- Increased fire frequency or intensity
- Wild horses and burros

This long list of concerns highlights the challenge of managing lands that are subject to a variety of demands, many of which stem from urban development associated with the metropolitan area of Las Vegas. Most important, perhaps, is the recognition that many plants and animals are likely to be near their physiological limits in this very arid and hot environment. Climate change effects (increased temperature and reduced winter/spring precipitation) are expected to exacerbate natural drought effects, leading to reduced plant vigor and recruitment even in these drought-adapted communities. Of particular concern are secondary effects on arthropod and vertebrate prey communities that depend on healthy vegetation and intact soils. Energy development (particularly new, renewable energy projects), urban and industrial development, and mining are a particular concern for this habitat type. Additive impacts from many of these developments scattered across the landscape result in significant habitat loss and fragmentation, which are problematic given our large recommended patch size for conservation in this habitat type.

Motorized recreation, invasive weeds, and increased fire frequency are also conservation concerns in Mojave Scrub habitat, and they are generally most intense near urban areas. Off-highway-vehicle (OHV) recreation, among the most popular outdoor activities in the Mojave Desert, generates networks of dirt roads, disturbs soils and burrows, damages cryptobiotic soils, reduces vegetation cover, and increases soil erosion (Brooks and Lair 2005). It also concerns us because of introduction of invasive weeds (particularly red brome) into vulnerable sites, which increase the flammability of the vegetation and thereby increase the chances of large fires.

Livestock use has been reduced significantly since Clark County removed domestic livestock from most lands in the county. However, horses and burros continue to use this habitat and pose a concern in high-use areas (Abella 2008).

Mojave Scrub

Not To Scale



Suitable Patch Size: > 1,000 ha (2,200 acres)

Figure Hab-12-1: Idealized Mojave warm desert scrub landscape to maximize the number of associated priority bird species.

Mojave Scrub

Conservation Strategies

Habitat Strategies

- **Manage at a large landscape scale** (> 1,000 ha [2,500 ac] with the goal of maintaining **natural shrub densities, cryptobiotic soils, understory and litter**. Areas with ephemeral washes and nearby wetland, spring, or riparian habitats are of particular importance
- Proximity to **water** (riparian areas, desert springs, wet meadows), presence of **cliffs** > 30 m [100 ft] tall, or **abandoned mines** (which may be gated) raise the priority level of a site for bird conservation
- **Invasive plants** should be controlled to the extent possible to avoid impacts on fire frequency and integrity of native understory.
- Recreational uses, particularly **OHV recreation**, should be managed to avoid sensitive areas, which include ephemeral washes, and areas adjacent to mesic habitats and tall cliffs. Large patches of creosote-bursage that are currently occupied by Priority species may be fully excluded from off-road motorized recreation
- The majority of priority bird species nest between **April 1 and July 1**, and some of them are particularly sensitive to nest disturbance. This is the time period when disturbances should be minimized

Research, Planning, and Monitoring Strategies

- **Map suitable habitat** for Mojave Scrub Priority species at the recommended patch scale for effective conservation planning and impact avoidance
- **Monitor invasive weeds and OHV trails** for adaptive management
- Study **effects of OHV use** on Priority landbirds and habitat integrity
- Continue **long-term monitoring of landbirds** statewide through Nevada Bird Count

Public Outreach Strategies

- **Promote public appreciation** of fragile desert environments, their bird communities, and threats from off-road vehicle recreation and weed invasion. This may be done through brochures, nature trails, and promotion of other low-impact outdoors activities.