

## Mexican Spotted Owl (*Strix occidentalis lucida*)

### Species Status Statement

#### Distribution

Of the three spotted owl subspecies, Mexican spotted owl has the largest geographic range (NPS 2015). This large owl is patchily distributed across southern Utah, Colorado, Arizona, New Mexico, and northern Mexico. Within Utah, Mexican spotted owl is found mainly in rocky canyons throughout the southern portion of the state, with additional small populations along the eastern Utah border. Individuals are non-migratory across most of the range, although in some areas, they may make altitudinal migrations to lower elevations in the winter (Ganey et al. 1988).

Table 1. Utah counties currently occupied by this species (eBird and Utah NHP)

<b>Mexican Spotted Owl</b>	
CARBON	KANE
DUCHESNE	SAN JUAN
EMERY	UINTAH
GARFIELD	WASHINGTON
GRAND	WAYNE
IRON	

#### Abundance and Trends

Global abundance estimates for Mexican spotted owl are coarse, and range between 1,000 and 10,000 individuals (NatureServe 2019). Currently, the best population estimate for a specific region (Upper Gila of Arizona and New Mexico) is 2,941 individuals (Ganey et al. 2004). The Upper Gila region is thought to have the highest density and largest population of this owl across its range. However, this estimate was produced using data from a single sampling season, and both global population trends and current global abundance are difficult to estimate using this study's findings.

Mexican spotted owl is listed as a federally threatened species by the United States and Mexican governments. In Utah, using NatureServe methodology this species is currently considered ranked *S2 – Imperiled*. Rangewide, Mexican spotted owl populations are predicted to decline 25 – 50% in the near future (NPS 2015). Fragmented habitat and reliance on historically undisturbed areas for nesting and foraging put this species at risk for future declines.

### Statement of Habitat Needs and Threats to the Species

### Habitat Needs

Mexican spotted owl is considered a habitat specialist (USFWS 2012), relying on rocky canyons and mixed age forests for nesting sites. Within Utah, this species often utilizes undisturbed canyons, caves, and cliff faces for both nesting and roosting sites (Willey 1998, USFWS 2012). In the Mexican spotted owl's southern range, it prefers mixed age forests with varied canopy structure, and will often nest in Douglas fir trees (*Pseudotsuga menziesii*) (NPS 2015). Winter and summer habitats are similar across this species' range, as Mexican spotted owls are largely non-migratory. However, during the winter, some spotted owls will shift downslope to warmer and wider canyons and valleys.

These owls primarily eat voles, mice, and woodrats, and they rely on foraging habitats with a high abundance of small rodents. When the chance arises, spotted owls may also take rabbits, bats, and songbirds (NPS 2015). In Utah, owls nesting and foraging in canyons consume mostly woodrats and other canyon mammals (USFWS 2012).

### Threats to the Species

Mexican spotted owl is threatened primarily by habitat destruction by wildfire, habitat degradation, habitat fragmentation, and human development and recreation.

Catastrophic fire and repeated burns may threaten Mexican spotted owl habitat, through direct habitat destruction and owl mortality, as well as habitat conversion to exotic annual plant communities (Fulé et al. 2004, USFWS 2012). Climate-driven increased incidence of fire is expected across the west, combined with expected increases in prolonged drought may increase destructiveness of fires throughout spotted owl habitat. However, low- and mixed-severity fire may alter habitat in beneficial ways. Bond et al. (2009) suggested that patchy, mixed-severity fires may benefit spotted owl populations in two ways: improvement of roosting and nesting habitat in lower-severity burned patches, and improvement of foraging habitat in higher-severity burned patches.

Logging, firewood collection, human development, and other direct habitat destruction poses a threat to Mexican spotted owl populations, by impacting available roosting, nesting, and foraging sites. In Utah, Mexican spotted owls typically use canyons and rocky cliff faces for nesting, but in the southern portion of their range, spotted owls prefer mixed forests with minimal logging history (USFWS 2012, NPS 2015).

Improper grazing may also negatively affect Mexican spotted owls, through degradation and destruction of the habitat for important prey species (USFWS 2012). Improper grazing may impact owls over the short term (e.g., browsing and resulting reduction in cover for prey species) and over the long term (e.g., fundamental plant community and soil composition changes).

Human disturbance through increased outdoor recreation may threaten this species. In Utah, human impacts of this nature may be especially prevalent. Outdoor recreation may disturb nesting and wintering sites, as well as impact foraging habitat and prey species (USFWS 2012).

Table 2. Summary of a Utah threat assessment and prioritization completed in 2014. This assessment applies to the species' entire distribution within Utah. For species that also occur elsewhere, this assessment applies only to the portion of their distribution within Utah. The full threat assessment provides more information including lower-ranked threats, crucial data gaps, methods, and definitions (UDWR 2015; Salafsky et al. 2008).

<b>Mexican Spotted Owl</b>
<b>Very High</b>
Inappropriate Fire Frequency and Intensity
<b>High</b>
Noise Pollution
OHV Motorized Recreation
Oil and Gas Drilling
Presence of Dams
<b>Medium</b>
Habitat Shifting and Alteration
Hiking / Foot Travel
Improper Forest Management
Invasive Plant Species – Non-native
Loss of Genetic Exchange/Inbreeding
Mountain Biking
Problematic Animal Species – Native
River Rafting
Temperature Extremes

### **Rationale for Designation**

In southern Utah this species is almost entirely dependent on canyon woodlands, a limited and increasingly impacted land cover type there. Ongoing threats to Mexican spotted owls require management. Sensitive species designation for this bird will also bolster state habitat programs in canyon habitats.

### **Economic Impacts of Sensitive Species Designation**

Mexican spotted owl is protected as a threatened species under ESA (USFWS 2012). This status incurs increased regulatory costs for land management actions including oil and gas leasing, grazing permitting, and recreation permitting across the southern half of the state.

### **Literature Cited**

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