#### U.S. Fish & Wildlife Service

# **Conserving Greater Sage-Grouse**

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# Nevada Fish and Wildlife Office

Conserving the natural biolgical diversity of the Great Basin, eastern Sierra, and Mojave Desert

# What are the threats to greater sage-grouse?

#### **Habitat Loss and Fragmentation**



Habitat loss and fragmentation caused by pinyon and juniper encroachment

Habitat loss and fragmentation are the primary causes of greater sage-grouse population declines. They result from natural processes which may include, wildfires, invasion by non-native plants, or pinyon and juniper forest expansion or man-made activities such as energy development, construction of powerlines, roads, fences, and other physical infrastructure.

Greater sage-grouse cannot survive in areas where sagebrush does not exist. Sagebrush not only provides cover for greater sage-grouse, it constitutes 99 percent of their winter diet.

#### Wildfire and Invasive Plant Species

The interaction between wildfire and invasive plant species represents the single largest threat to greater sage grouse in Nevada. Over the past decade more than three million acres of sagebrush habitat in Nevada has been impacted by wildfire, representing a loss of nearly 15 percent of available greater sage grouse habitat. Burned area rehabilitation requires many years and can be further complicated by invasive nonnative species such as cheatgrass. Unfortunately, rehabilitation efforts continue to be surpassed by the wildfire frequency and expanse in Nevada.

#### Pinyon and Juniper Encroachment

Pinyon and juniper forests have been encroaching into key greater sage-grouse habitat at a rapid rate. Forest expansion removes available sagebrush habitat and creates barriers, fragmenting important greater sage-

grouse habitats. In addition, these trees provide artificial roosting and nesting sites for greater sage-grouse predators.

#### Development

Conversion of sagebrush habitats to industrial uses or any non sagebrush ecosystem condition removes these areas from greater sage-grouse use. Placement of energy and mineral developments in otherwise intact sagebrush communities can hinder movement of greater sage-grouse, ultimately leading to isolation of populations from each other or from important habitats.

Powerlines, roads, fences and other features that support human developments can alter the quality and use of sagebrush habitats by the species. These structures can lead to direct mortality. In addition, they facilitate the occurrence of predators and invasive species and act to fragment intact sagebrush habitats by creating both physical and behavioral barriers to greater sage grouse movements.

#### Lek and Nesting Habitat Disturbance

Greater sage-grouse courtship

begins on traditional strutting grounds (leks), where birds congregate to display and breed. Leks are typically used for many generations and represent the focal point for reproduction. However, successful reproduction depends on maintenance of surrounding nesting habitat. Degradation of these sagebrush sites can lead to reproductive failure of populations.

#### **Meadow Degradation**

Upland meadows and riparian habitats provide vital food sources for greater sage-grouse chicks and adults during the spring and summer. Degradation and loss of these limited habitats can have a significant influence on overall population health.

#### Grazing

Grazing by native wildlife, feral horses, and livestock can influence the quality of sagebrush and meadow habitats. Changes to soil properties, loss of understory grasses and forbs, and degradation of sagebrush plants can present significant challenges to nesting success and chick recruitment in greater sage-grouse populations.

#### **Predators**

Greater sage-grouse are eaten by a variety of predator species. Species, such as common ravens, have increased dramatically in the Great Basin due to human activity. Their increased presence on the landscape can significantly alter the ability of greater sage-grouse hens to successfully raise young. Degradation of nesting habitat can greatly compound the degree of impact ravens and other predators exert.



# **Achieving Greater Sage-Grouse Conservation**



Steven Fulstone removes pinyon and juniper to restore greater sagegrouse habitat on his land.

Protecting key seasonal habitats for greater sage-grouse by reducing or removing the threats is essential for healthy sustained populations. If key areas are conserved, greater sage-grouse will likely be conserved, and populations should stabilize and increase.

### Preventing Wildfire and Invasive Species Establishment

Sagebrush plant communities should be conserved were they currently exist. Fire suppression and prevention efforts should be targeted in intact sagebrush communities. In areas impacted by wildfire, sagebrush communities should be immediately reestablished with mixes of native shrub and herbaceous species to prevent cheatgrass and other weeds from invading.

#### Reducing Pinyon and Juniper Encroachment

Removing pinyon and juniper or other conifers that are invading greater sage-grouse habitat should be accomplished with measures that minimize ground disturbance and be supplemented with reseeding efforts, as needed.

#### **Avoiding Development Impacts**

Proper placement of industrial developments, including their associated infrastructure, is critical to limiting further loss and fragmentation of key greater sagegrouse habitats. Appropriate information must be evaluated and greater sage-grouse needs should be considered before developments occur.

#### Protecting Leks and Nesting Habitat

Conservation of important breeding habitat is essential for successful reproduction and



population stability. Development and disturbance through and around leks and surrounding nesting habitat should be avoided. This

includes building fences and other infrastructures that may impact greater sage-grouse as they move to and from leks and may provide artificial roosting and nesting sites for predators.

#### **Restoring Meadows**

Areas that maintain moisture longer than surrounding uplands are important to greater sage-grouse broods as well as adults. These areas provide large quantities of food in spring and summer. Restoring these important sites will ensure forbs and insects are available for greater sage-grouse brood rearing.

Forb species with milky juice such as hawksbeard, milkvetch,

dandelion, and western yarrow should be considered for range seeding and will provide spring and summer forage for greater sage-grouse. These forbs also host insects which are a high source of protein critical to greater sagegrouse chicks during the first month of life.

#### **Managing Grazing**

Proper grazing management is critical to prevent long-term degradation of sagebrush habitats. Conserving the resiliency and preventing the degradation of sagebrush and meadow communities is essential to conserving the health of greater sage-grouse populations.



Nest and female greater sage-grouse

Photos: A Sands and G Gray

#### **Discouraging Predators**

Ravens should be discouraged by preventing access to human or livestock waste. Other predators can by discouraged by removing unused culverts and outbuilding that attract badgers, foxes, and coyotes. Domestic dogs and cats should not be allowed to become feral.

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