

Northern Goshawk - *Accipiter gentilis*

Abundance: Common

Status: NSSU

NatureServe: G5 S3

Population Status: population status and trends are unknown; species-specific surveys are needed as current state-wide bird monitoring efforts are not adequate to determine population status and trends

Limiting Factor: Habitat (incl. climate change): limiting factors are severe; loss and fragmentation of mature coniferous forest habitat due to beetle kill, extensive logging in past decades, large-scale fires, and climate change is on-going; species is sensitive to human disturbance during nesting; nest success is limited by prey availability and early spring weather (March-May)

Comment: change is attributed to unknown population status and trends; moved from NSS4 to NSSU

Introduction

The Northern Goshawk is associated with boreal and temperate forest habitat throughout the Holarctic, and is the largest and heaviest bodied of the three accipiter species that occur in North America. In North America, it breeds from Alaska, east to Newfoundland, and south to the southern Rocky Mountains in the west, and to the Upper Great Lake states and New England states south to Pennsylvania in the east. It also occurs locally in the highlands of Mexico. It winters throughout its breeding range and irregularly southward. It nests in mature forest habitat and preys on a variety of forest species including snowshoe hare, red squirrel, forest grouse and woodpeckers. Although it uses a variety of tree species for nesting, characteristics that distinguish nesting areas include forest areas with high canopy cover stands of mature trees with high basal area and fairly open understories away from human development. Nesting areas that remain undisturbed can be used over many decades and include as many as 8-10 alternate nests located as far as 0.9 km apart. It is a year-round resident in Wyoming, and is found in mountain ranges across most of the state where larger patches of conifer forest habitat occur. The Northern Goshawk is considered a common resident in the mountains of Wyoming but data are lacking on nest sites, density of nesting pairs, seasonal and winter habitat use, population trend, and effects of disturbance. Effective conservation planning for the Northern Goshawk should help conserve adequate habitat for a large number of wildlife species in Wyoming that are associated with older age forest habitats.

Habitat

The Northern Goshawk inhabits coniferous and mixed conifer/aspens forest habitat, and forages in a wide variety of forest ages, structural conditions, and successional stages. Goshawks defend an area approximately 12 ha (30 ac) surrounding active nest trees but nest trees are located in larger patches of forest habitat. A nest area (72 ha [180 ac]) can include from one to more than 8 alternate nests located 100-900 meters apart. Nest sites are characterized by high canopy cover, large tall trees, fairly open understories, and are often near small openings. Nest stands have high basal area, tall trees, and are located in topographically protected areas such as the lower third of moderate slopes with northerly exposures or in drainages or canyon bottoms protected by such slopes. The majority of nest stands are found in the montane zone, below the subalpine zone (approx 3600 m [9000 ft]). Available water sources tend to be intermittent or first order streams, or small forest seeps and pools. The post-fledging family area, about 170 ha (420 ac) which encompasses the nest area, is characterized by a high proportion of dense mature forest habitat that provides hiding cover for the fledglings. The foraging area, where the male secures food for the female and young during the nesting season (approx. 2160 ha [5400 ac]), averages 50% mature forest cover but includes a wider variety of forest types and structures, often interspersed with shrublands or bordering larger openings (Squires and Ruggiero 1996, Patla 1997, Squires and Reynolds 1997). Winter habitat is poorly understood, but a few studies suggest that goshawks use a variety of vegetation types, such as forests, woodlands, shrublands, including major riparian cottonwood corridors outside of normal summer ranges (Squires and Ruggiero 1995, Stehpens 2001).

Problems

- h Poorly planned habitat improvement projects may reduce and fragment extensive areas of mature forest habitat especially in lower elevation areas of montane forests which likely contain the highest nesting density of goshawks and their prey species. Goshawk nest stands take 80-100 years to develop in the Rocky Mountain region.
- h Population status and trends are largely unknown in Wyoming.
- h Timber harvesting can fragment and reduce high quality nesting and foraging habitat, and degrade habitat quality by reducing stand density and canopy cover. Over extensive harvesting can reduce available nest stands, reduce abundance of forest prey species, and increase number of more habitat-generalist raptors such as red-tailed hawk and great horned owl that can prey on goshawk young and out-compete goshawks for nest sites and prey.
- h Fire suppression in Ponderosa pine forests, catastrophic fire, and extensive insect and tree disease outbreaks can result in the deterioration, fragmentation and loss of mature forest nesting and foraging habitat.
- h This species is sensitive to human disturbance during nesting.

Conservation Actions

- h Evaluate the effectiveness and efficiency of the recently developed US Forest Service national northern goshawk monitoring protocol in different forest types in Wyoming.
- h Conduct annual monitoring surveys to determine territory occupancy, nest success, and productivity at known nesting areas.
- h Develop a cooperative, statewide, interagency/non-governmental organization database of nest sites, with data sensitivity built in.
- h Work cooperatively with other agencies to conduct surveys and manage habitat for this species.
- h Use landscape planning as developed for the USFS Southwestern Northern Goshawk management guidelines to maintain adequate forest habitat for nesting goshawks over the long-term on public lands where the species occurs in Wyoming. This will require planning forest treatments both temporally and spatially.
- h Manage Northern Goshawk nesting areas to minimize human disturbance during the breeding season.
- h Develop more accurate GIS vegetation mapping methods to identify and quantify existing high quality goshawk nesting habitat based on stand size, slope, tree size/age and canopy cover.

Monitoring/Research

Current monitoring efforts are inconsistent across the state and management boundaries. A current WGFD State Wildlife Fund project is focused on the east side of the Wyoming Range to obtain data on nesting density and habitat for use in planning future habitat projects in the area. The U.S. Forest Service and BLM are encouraged to monitor historic nest sites using standardized procedures, and to survey new project areas at least two years prior to management activities.

Research is lacking on goshawk population dynamics, population monitoring, goshawk-habitat relations, and goshawk-prey interactions for Wyoming. Further refinements in satellite transmitter technology will make year-round studies on goshawk movements and survival more feasible and should be encouraged. Development of regional databases that track forest treatments and change in forest structure would be useful to predict changes in goshawk populations and plan future treatments.

Recent Developments

Funding was obtained by the USFWS and WGFD in 2009 to conduct surveys in some areas in Wyoming in USFS Region 2 and in the Wyoming Range of Region 4 using the recently developed USFS Northern Goshawk nationwide monitoring protocol (Woodbridge and Hargis 2006). Comparison of this method with a more traditional survey approach that focused on finding actual nest sites in the Wyoming Range suggests that for management purposes, locating nest sites still provides the most valuable information for the dollars spent. Nest site data are needed to understand habitat use, distribution and how to design forest management projects to maintain viable populations of Northern Goshawk and their prey species.

References

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SOURCE: Digital maps of ranges and predicted distributions for Wyoming Species of Greatest Conservation Need: April 2010. Wyoming Natural Diversity Database. University of Wyoming, Laramie, Wyoming. Note that brown indicates the predicted distribution of the species; heavy black lines indicate outermost boundaries of possible occurrence.