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Report on Surveying for Northern Goshawks on Shivwits Plateau, Lake Mead National Recreation Area 2004

Prepared by:
Carmen Sipe
Grand Canyon National Park Science Center

For:
Mike Boyles
Lake Mead Biologist

Summary

We completed Northern Goshawk (NOGO) surveys of four proposed burn units (Yellow John West, Halfway, Sawmill South, and Boundary) on Shivwits Plateau, Lake Mead National Recreation Area (LAME), Arizona. We surveyed the burn units as part of required clearance work for proposed prescribed burning for 2004 for Yellow John West and Halfway and for 2005 burning for Sawmill South and Boundary, per the GCNP Northern Goshawk Survey Protocol. We broadcasted NOGO alarm and food begging calls and searched for nests and whitewash along transects placed on a 300 meter grid throughout each burn unit. No NOGO were detected during the first survey set in the Yellow John West and Boundary Burn units. Unsafe weather and road conditions kept us from completing the second survey set for the Yellow John West burn unit. However, due to the habitat conditions and timing of management activities, it was decided that Yellow John West was clear to burn this year. The initial survey for Yellow John West indicated that the scattered vein of ponderosa pine within the burn unit is not good potential habitat for NOGO and the unit does not need to be surveyed a second time before a fall 2004/spring 2005 burn. Adult NOGO each with nests and single nestlings were detected in the Halfway and Sawmill South burn units.

Introduction

In 1982 the Northern Goshawk (*Accipiter gentiles*) was listed as a forest sensitive species by the U.S. Forest Service in the state of Arizona. Goshawks in this region rely on coniferous and mixed forests of various structural types but primarily require moderately dense, mature forest stands. Prescribed thinning and burning is an effective management tool but may adversely impact goshawk fecundity during months of nest activity (April- August) (Reynolds et al. 1992). The Northern Goshawk Fire Clearance Protocol adopted by Grand Canyon National Park requires two complete surveys of all potential NOGO habitat the year of and prior to management activities within the unit, including any use of mechanized equipment, such as chainsaw thinning, and before prescribed burning.

Methods

Four prescribed burn units including Yellow John West, Halfway, Sawmill South, and Boundary were surveyed in 2004 for NOGO on the Shivwits Plateau, Lake Mead National Recreation

Area. It was planned that only the 2004 burn units (Yellow John West and Halfway) were to be surveyed this year. However, I mistakenly surveyed the 2005 burn units and completed the correct surveys on my own time. Inventory was conducted in accordance with the GCNP Northern Goshawk Fire Clearance Protocol (GCNP 2001). These procedures were developed based on research in GCNP and historic and contemporary scientific literature on NOGO life history and survey techniques. Potential habitat in each burn unit should be completely surveyed twice with surveys at least 10 days apart on average. However, unsafe weather and road conditions prevented me from completing the second visit to the Yellow John West unit. Call stations were placed along transects on a 300 meter grid to acquire complete coverage of the burn units. These stations were modified after the first survey to exclude inadequate NOGO habitat (pinyon-juniper habitat with no large pines) according to protocol. Surveys were discontinued upon detection of adult NOGO and location of nests, due to the small size of the burn units. Surveys began June 19 and concluded July 18, 2004. These dates coincide with the NOGO nestling period, so both the alarm call and food begging calls were broadcasted and visual searches were made for nests and whitewash along all transects.

Results and Discussion

Habitat in the four burn units consisted of ponderosa pine dominating drainages and small ponderosa pine "island" stands surrounded by pinyon and juniper woodland.

Yellow John West

The Yellow John West burn unit (Appendix 1) is predominantly pinyon-juniper with scattered ponderosa pine occurring along the drainages. Goshawks select for areas of ponderosa pine with continuous canopy cover and tend to not use forest areas with <20% canopy cover in patches greater than 30 x 30 meters (La Sorte et al, 2004). Assessment of the Yellow John West Unit, including the portion on BLM land, is that the potential for this habitat supporting a goshawk is unlikely. As some goshawks have been found in more open areas of ponderosa and pinyon-juniper, I was going to complete the second survey set anyway. However, rain had rendered the roads impassable when I returned for my second survey set on July 18 and I was unable to get to the unit.

Halfway

The Halfway burn unit is a small unit comprised of open ponderosa pine and scattered pinyon-juniper. An adult NOGO was detected visually almost immediately upon initiation of surveys on July 4. A nest was located nearby (UTM's 276203/3998695) with a single nestling that looked to be 10-18 days old. The nest was located at the base of the live canopy about 50 feet up in a ponderosa pine tree 14-18" dbh. The nest was a relatively small stick nest 12-15 inches in diameter. The nest only had one green pine bunch and looks as if it could have been constructed in previous years. The adult remained in the area making the alarm call off and on until I left the area.

Sawmill South

The Sawmill South burn unit was comprised of pinyon-juniper with ponderosa pine occurring in drainages or pinyon-juniper with mostly rock and dirt as understory. Some of the best ponderosa pine for potential goshawk habitat was located along the road. An adult NOGO was located

during the first survey set on June 27. A nest was then located (UTM's 273616/4001080) with a single nestling that looked to be about two weeks old. The nest was a large stick nest about 24 inches diameter located about 45 feet up at the base of the live canopy in a ponderosa pine about 24 inches dbh. The nest tree is only about 25 feet from the road just north of a small drainage that heads east from the road and near what looks to be an area previously used as a campsite. The nest was monitored on July 4 and the nestling was present in the nest. The nestling made the food begging call and the adult was heard responding but not visually detected. The last monitoring visit was completed July 18. The nestling was not detected in the nest or in the surrounding area at that time. It is unlikely that the nestling would have fledged by that time, and if it had it would have remained within 0.1 miles of the nest. Newly fledged goshawks are generally very vocal and easy to locate at this age. Red-tailed hawks had been detected not too far from the nest stand and it is possible that the nestling was preyed on.

Boundary

The Boundary unit contained patches of habitat including pure ponderosa pine, open ponderosa mixed with scattered juniper, mostly juniper with scattered small ponderosa pine, or pure pinyon-juniper. A portion of the unit was located on the edge of a large meadow. The ponderosa stand characteristics were patchy, with varying age, age-class differentiation, density, and patch size. No NOGO were detected on the first survey. Because this burn is planned as a 2005 burn and surveys need to be completed the season prior to management activities, a second survey set was not completed this year.

SURVEY INFORMATION

Date	Burn Unit	Survey set	Observer	Wind	Temp	Detections	Results
6/19/04	Yellow John West	1	CS, JB	0-5	84 F	None	
6/19/04	Boundary	1	CS, JB	0-5	85 F	None	
6/27/04	Sawmill South	1	CS	0-5	81 F	Yes	Adult Nestling in nest
7/4/04	Halfway	1	CS	0	57 F	Yes	Adult Nestling in nest
7/4/04	Sawmill South	2	CS	0	65 F	Yes	Monitor nestling
7/18/04	Yellow John West	2	CS			NA	unable to survey
7/18/04	Sawmill South	3	CS			None	Monitor, nestling not detected

DETECTION INFORMATION

Date	Burn Unit	Nest Location	Age	Type
6/27/04	Sawmill South	273616 / 4001058	Adult; Nestling 10-14 days old	Survey, Audio/visual
7/4/04	Halfway	276203 / 3998695	Adult; Nestling 14-18 days old	Survey, Audio/visual
7/4/04	Sawmill South	273616 / 4001058	Nestling Adult	Monitor, Visual/Audio Audio only
7/18/04	Sawmill South	273616 / 4001058		Monitor, nestling not detected in area

Management Recommendations

The following are general management recommendations regarding Northern goshawks. All burn units need to be surveyed for NOGO before any chainsaw thinning or prescribed burning is initiated within the burn units. Presence of people and loud equipment could cause nest failure if the activity is performed in the vicinity of breeding goshawks. If crews working in ponderosa pine stands encounter a nest with raptors flying overhead, they should immediately give the area a 0.25 mile buffer until a biologist can assess the species and reproductive status of the birds. Prolonged activity near a nest site can cause that nest site to fail, and crews may not be able to confirm if the birds are Northern goshawks. It is necessary to give active goshawk nests a 500 acre buffer from activity around the nest. Another general management recommendation is to scrape the duff 5 feet from around all nest trees before prescribed burning. Scraping and dispersing the litter will help ensure the survival of the nest tree during a prescribed burn, as goshawks often return to nest trees in subsequent years.

The following are management recommendations resulting from the 2004 NOGO surveys.

Yellow John West
Upon discussion with Mike Boyles, it was decided that the second survey set was not necessary. This decision was based on the lack of quality habitat for goshawks in the unit and the timing of the management actions. Goshawks generally fledge in mid-late July and disperse in August. The timing of management activities made the disturbance of any goshawks in the area unlikely.

Halfway
Management recommendations were that no chainsaw thinning or prescribed burning occur within the 500 acre post fledging family area until after August 31. Activities were not planned until after this period and negotiation of management recommendations was not needed.

Sawmill South
This unit is planned as a 2005 burn and monitoring of this territory needs to occur before any chainsaw treatment or prescribed burning occurs.

Boundary
This unit is planned as a 2005 burn and survey of this unit needs to occur before any chainsaw treatment or prescribed burning occurs.

Appendices:
Appendix 1: Maps of burn units
Appendix 2: Data Forms

Literature

Reynolds, R., R. Graham, M. Reiser, R. Bassett, P. Kennedy, D. Boyce, G. Goodwin, R. Smith, and E. Fisher. 1992. Management Recommendations for the Northern Goshawk in the southwestern United States. USDA Forest Service General Technical Report RM-217. Ft. Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 90p.

Grand Canyon National Park, Science Center (GCNP). 2001. Northern Goshawk Fire Clearance Protocol.

La Sorte, F. A., R. W. Mannan, R. T. Reynolds, and T. G. Grubb. 2004. Habitat associations of sympatric red-tailed hawks and northern goshawks on the Kaibab Plateau. J. Wildlife Manage. 68(2): 307-317.