

**Comments to the Draft Supplement  
to the  
Final Environmental Impact Statement  
for Amendment to Forest Plans,  
and Forest Service Responses**



November 15, 2004

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*Sent by USPS and electronic mail*

**Re: Draft Supplement to the Final Environmental Impact Statement for the  
Amendment of Forest Plans: Arizona and New Mexico**

**INTRODUCTION AND SUMMARY**

Forest Guardians is commenting here on the *Draft Supplement to the Final Environmental Impact Statement for the Amendment of Forest Plans: Arizona and New Mexico* (Goshawk DSEIS). Forest Guardians seeks to preserve and restore native wildlands and wildlife in the American Southwest through fundamental reform of public policy and practices. In our work, we aim to: protect and restore the native biological diversity and watersheds of the American Southwest; educate and enlist citizens to support protection of the forests, rivers, deserts and grasslands of this arid region; advocate for the principles of conservation biology in plans to restore degraded ecosystems and watersheds; enforce and strengthen environmental laws; support communities in efforts to protect their land and to practice and promote sustainable use of natural resources. Forest Guardians represents 1,400 members in and around the Southwestern states.

The Goshawk (*Accipiter gentilis*) DSEIS is seriously flawed and fails to cure the deficiencies found by the Ninth Circuit Court of Appeals.<sup>1</sup> Once again, after a limited review of the scientific literature the USFS concludes that its original findings and resulting guidelines still hold true, when in fact, the overwhelming majority of evidence points to significantly different conclusions and species requirements. It may be generally true that the northern goshawk will use a variety of forest types for foraging, depending upon circumstances, but logic does not lead one to conclude the species is therefore a forest generalist. Goshawks are forest specialists with a strong preference for mature forests. These forests support abundant prey species and contain attributes necessary for successful hunting of that prey. There is evidence that at least one of the goshawks primary prey species in the Southwest, the Abert's squirrel, is rare and declining because

FG-1

FG-2

<sup>1</sup> Center for Biological Diversity v. USFS D.C. No. CV-00-01711-RCB (9<sup>th</sup> Cir. 2003).

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of the loss of mid range VSS classes upon which it is dependent. Therefore the USFS' thinning program targeting these mid range VSS classes may be further jeopardizing the Goshawk and its main prey species in Region 3.

FG-2

Further, the Goshawk's population status in the Southwestern Region is not clear, but most evidence leads to the conclusion that the population is declining. It is obviously time for the USFS, in cooperation with wildlife management agencies, to undertake programmatic population monitoring and a status review.

FG-3

In addition, the northern goshawk is designated a Management Indicator Species (MIS) on several forests in Region 3 and should be considered for the remaining forests with substantial habitat for the species.

FG-4

Finally, the goshawk DSEIS ignores much of the current science regarding the impacts on goshawk habitat from domestic livestock management as well as the significant failure of the USFS to monitor the condition of that habitat. The agency is obligated both legally and professionally to review new science and any monitoring results regarding the impacts of grazing on the northern goshawk since the Amendment ROD was signed almost a decade ago.

FG-5

**DISCUSSION**

**I. Critical Science not Considered**

The present DSEIS is compelled under the 9<sup>th</sup> Circuit Court of Appeals ruling in Center for Biological Diversity v. USFS D.C. No. CV-00-01711-RCB (9<sup>th</sup> Cir. 2003).

In that opinion the court held: "that the Final EIS fails to disclose and discuss responsible opposing scientific viewpoints in the final statement itself in violation of NEPA and the implementing regulations."<sup>2</sup>

"Agencies shall insure the professional integrity, including scientific integrity, of the decisions and analysis in environmental impact statements."<sup>3</sup>

"They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."<sup>4</sup>

NEPA requires that the Forest Service candidly discloses in its EIS the risks of its proposals, and that it responds to adverse opinions held by respected scientists.<sup>5</sup>

<sup>2</sup> Ibid.

<sup>3</sup> 40 C.F.R. § 1502.24.

<sup>4</sup> Id.

<sup>5</sup> Seattle Audubon Society v. Moseley, No C92-479WD (1992). Friends of the Earth v. Hall, 693 F. Supp. at 934, 937.

“A disagreement among scientists does not in itself make agency action arbitrary or capricious, nor is the government held to a “degree of certainty that it ultimately illusory.”<sup>6</sup>

An EIS must serve the purpose of informing the decisionmaker and the public of the risks of its proposed action before the decision to proceed is made and must inform the decisionmaker of the full range of opinion.<sup>7</sup>

Conclusory statements, which do not refer to the scientific or objective data supporting them, do not satisfy the requirements of NEPA for a “detailed” environmental impact statement.<sup>8</sup> NEPA requires that the public receive the underlying environmental data from which a Forest Service expert derives their expert opinion.<sup>9</sup> NEPA’s implementing regulations require agencies to identify any methodologies used and make explicit reference by footnote to the scientific and other sources relied on for conclusions used in any EIS statement. 40 CFR § 1502.24.

Once again, it appears in the DSEIS that the Forest Service has selected science that casts no doubt on its *a priori* conclusions in regards to habitat and prey requirements of the northern goshawk. In addition, the Forest Service fails to include scientific information, what little exists, regarding population trends and viability of the species itself.

FG-6

Specifically, there is some work, though very limited, that indicates the population numbers for the northern goshawk are falling, on the Apache-Sitgreaves National Forest in particular.<sup>10</sup> Though the final report was unable to conclude that its data trends indicated long-term or short-term phenomenon, it concluded that in 44 territories on the Apache-Sitgreaves, “values of key demographic parameters suggest that goshawk reproduction was not sufficient to balance local mortality during the study period, and that the local population would decline in the absence of immigration.”<sup>11</sup> Ingraldi (2001) also found that “long-term goshawk response to forest restoration prescriptions are unknown and cannot be directly evaluated for at least a decade” and “management action that decrease canopy or tree density may decrease goshawk reproduction and survival.”<sup>12</sup>

<sup>6</sup> Seattle Audubon Society v. James Lyons, No. C92-479WD, December 21, 1994 quoting in part Greenpeace Action v. Franklin, 14 F. 3d 1324 (9<sup>th</sup> Cir. 1992).

<sup>7</sup> Seattle Audubon Society v. Moseley, No C92-479WD (1992). Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F. Supp. 908, 902 (1977).

<sup>8</sup> Citizens Against Toxic Sprays, Inc. v. Bergland, 428 F.Supp. 908 (1977).

<sup>9</sup> Idaho Sporting Congress v. Thomas, No. 97-35339, CV-96-0371-S-BLW (9<sup>th</sup> Cir. 1998).

<sup>10</sup> Ingraldi, M.F. *Demography and habitat characteristics of northern goshawks on the Apache-Sitgreaves National Forest 1993-2000*. Arizona Dept. of Game and Fish Final Report. June 2001.

<sup>11</sup> *Id.*

<sup>12</sup> *Ibid.*

Twenty years of scientific investigation by Dr. Jack States seems to also counter many of the conclusions and recommendations of Reynolds et al. (1992) as well as the Regional guidelines themselves regarding prey abundance and availability. See for example *Expert Declaration of Dr. Jack Sterling States in Support of Plaintiffs' Motion for Summary Judgment in Center for Biological Diversity v. Williams*.<sup>13</sup> Dr. States refers to a loss of squirrels in study areas on the North Kaibab Ranger District and attributes this negative population trend to the absence of Vegetation Structural Stage (VSS 4-6). Dr. States has suggested elsewhere that the main winter food source of Abert's squirrel, mycorrhizal fungi (in particular truffles) are significantly and positively correlated with stand canopy cover and basal area to a lesser degree.<sup>14</sup> Dr. States also notes that "plots characterized by densely canopied VSS 3's and 4's had the highest squirrel densities and also the highest fungus production."<sup>15</sup>

FG-7

If indeed Abert's squirrel contributes significantly to the goshawk prey base in the Southwest, as has been suggested, then this information regarding the squirrel's abundance and food requirements would be significant information perhaps conflicting with the recommendations of Reynolds et al. (1992). In fact, if this information is accurate, then the entire "thinning" and fire risk reduction program of the Southwestern Region of the USFS may be putting both the northern goshawk and Abert's squirrel populations viability at risk in violation of the National Forest Management Act (NFMA).

**II. Failure to Monitor Goshawk Populations in Southwestern Region**

Lack of population monitoring and the failure track of the number of projects affecting individual territories run the risk of reducing habitat below sustainable levels for individual territories, eventually leading to population declines. In order to ensure this does not occur, the Forest Service needs to conduct region-wide population surveys as well as site-specific project surveys and maintain a database of goshawk territories and projects and impacts taking place within their habitat.

FG-8

Some studies of goshawk population trends have been done on the Kaibab, Sitgreaves and Coronado National Forests- all have shown grave problems. According to the U.S. Fish & Wildlife Service "Preliminary data from Ingraldi (1998)<sup>16</sup> suggest that the Sitgreaves population may be unstable...goshawks may be exhibiting signs of decline..." (USFWS 1998). Goshawks are also declining on the Coronado National Forest

<sup>13</sup> *Center for Biological Diversity and Sierra Club v. Michael Williams*. Case No. CV 04-0355 PCT RCB (Dist. of Ariz.).

<sup>14</sup> States, J. *Draft Research Proposal: Response of Abert's Squirrels and Mycorrhizal Fungi to Management Modifications of Ponderosa Pine Vegetative Structural Stages*. Northern Arizona State University. See also: States, Jack S. and W. S. Gaud. 1997. *Ecology of hypogeous fungi associated with ponderosa pine. I. Patterns of distribution and sporocarp production in some Arizona forests*. Mycologia 89: 712-721 and Dodd N. L., J. S. States, and S.S. Rosenstock. 2003. *Tassel-eared squirrel population, habitat condition, and dietary relationships in north-central Arizona*. J. Wildlife Management 67:622-633.

<sup>15</sup> Text and citations from Center for Biological Diversity. <http://www.biologicaldiversity.org/swcbd/species/goshawk/swreview.PDF>.

<sup>16</sup> See note 5.

(Snyder 1995). A U.S. Forest Service researcher measured declines on the Kaibab National Forest and concluded that goshawks have declined by 75% since logging began (Crocker-Bedford 1990). His projection of the current population was confirmed by a more intensive study by other Forest Service researchers (Reynolds and Joy 1998). They found that goshawk nesting success was lower on the Kaibab than most areas in North America and that recent trends show a decline.

The New Mexico Department of Fish and Game (Williams 1997) reviewed all goshawk monitoring data on New Mexico national forests between 1991 and 1996. They concluded that "territorial occupancy by breeding goshawks has declined considerably while productivity has declined drastically."

### **III. Goshawk and MIS Designation**

Management indicator species (MIS) were defined in the 1982 forest planning regulations implementing the National Forest Management Act (NFMA) of 1976.<sup>17</sup> MIS are a subset of all animal and plant species in a planning area that are selected for planning and management purposes. "In order to estimate the effects of each alternative on fish and wildlife populations, certain [species] present in the area shall be identified and selected as management indicator species." A key reason MIS are selected is "because their population changes are believed to indicate the effects of management activities."<sup>18</sup> MIS are selected to represent several categories, such as commonly hunted or fished species, species representing rare habitats, non-game and threatened and endangered species (TES).

Because the USFS has, in name, transformed its logging program in Region 3 to a "thinning" and forest restoration program and claims that this new program has only beneficial effects on species such as the northern goshawk and Mexican spotted owl, it must adopt indicators that will reflect the benefits or costs of this new management paradigm. The USFS should select the goshawk as an indicator for the forest habitats that it professes its management programs promote. In fact, many of the agency's findings for sensitive species and TES are based on this assumption that the Region's new thinning programs can only have beneficial effects on these species. This assumption must be confirmed with concrete data.

FG-9

After a thorough review of the status of the northern goshawk population in Region 3, the Forest Service should amend the national forest plans in to designate the species a Management Indicator Species for mature and old growth aspen, ponderosa pine and mixed conifer forests. Such a designation is needed to ensure that the cumulative effects of multiple logging, fuel reduction, recreation and other projects don't compromise the long-term viability of the goshawk and other mature and old growth forest obligate species and to ensure its survival throughout forested habitats of the Region in accordance with the National Forest Management Act.

<sup>17</sup> 36 C.F.R. 219.

<sup>18</sup> 36 C.F.R. 219.19(a)(1).

There are at least five national forests already in the Southwestern Region which have taken this action: the Kaibab, Apache-Sitgreaves, Coconino, Tonto, and Prescott. The remainder of the National Forests in the region that support these rare habitat types and the northern goshawk should, at this time, consider revising their respective Land and Resource Management Plans to include the species as an MIS.

FG-10

**IV. Grazing Impacts Ignored**

Livestock grazing is known to adversely affect raptors in the Southwest and elsewhere.<sup>19</sup> Livestock grazing:

1. Causes unnatural levels of seedling establishment by removing the grasses and forbs which would naturally compete with seedlings;
2. Causes meadow encroachment by drying out meadows, thereby making them more suitable for tree growth. Meadows are dried out by ground cover removal, sheet erosion and gullyng; and,
3. Suppresses fire by removing the grasses and forbs which formerly served as the major carrier of low-intensity fire.

Forest Guardians completed a review of grazing allotments in the Southwestern Region on November 10<sup>th</sup>. The purpose of the review and ensuing report was to understand the degree to which the amended plan requirements were being met in regards to monitoring the forage utilization standard. The Forest Service’s 1996 plan, among many other things, incorporated a three-pronged approach to improve grazing management described in the U.S. Fish and Wildlife Service’s (FWS) Recovery Plan for the Mexican Spotted Owl (MSO).

The amendments required the Forest Service to:

- Impose grazing standards on each allotment, which are typically expressed as a “forage utilization” figure that prescribes the percentage of the plant’s biomass that may be consumed by the cattle.<sup>20</sup> (MSO Recovery plan at 94.)
- Monitor each grazing allotment to ensure compliance with the forage utilization standard. (*Id* at 94.)
- Restore or maintain riparian areas to good condition. (*Id* at 90. Riparian areas are ecologically important areas that border rivers and streams.)

Using the Freedom of Information Act (FOIA), Forest Guardians obtained the Forest Service’s monitoring records from 1999 to 2003 for all grazing allotments. We used this information to investigate and document to what degree these new requirements incorporated into the forest plan amendments were being implemented. The results of this

<sup>19</sup> Kochert, M.N., B.A. Millsap and K. Steenhof. 1993. *Effects of livestock grazing on raptors with emphasis on the southwestern U.S. Proceedings of the Southwestern U.S. Raptor Management Symposium and Workshop*; Newton, L. 1979. *Population Ecology of Raptors*. Buteo Books, Vermillion, SD 399 pp.

<sup>20</sup> Utilization is defined as the percentage, by weight, of a year’s growth of a plant that is consumed by grazing animals.

investigation showed significant numbers of allotments were not monitored, and of those allotments that were monitored, violations occur in significant numbers.<sup>21</sup>

The Forest Service has missed an obvious opportunity and failed to fulfill its legal obligations to revisit the impacts of grazing on goshawks in the Southwestern Region. The FEIS and Record of Decision for management of habitat for Mexican spotted owl and northern goshawk were signed in 1996: nearly a decade ago! New information and science are available that may be critical in managing the forest and grasslands in the Southwestern Region of the Forest Service and the agency is obligated by NEPA to consider this new information. Besides its legal obligation it has a professional obligation here as well to revisit the issue of grazing impacts on the northern goshawk.

FG-II

#### CONCLUSION

Thank you for consideration of Forest Guardian's concerns. If you have any questions, or wish us to provide you with any clarification or further documentation of the matters raised in these comments, please do not hesitate to contact the undersigned.

Sincerely,



Bryan Bird  
Forest Program Coordinator

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<sup>21</sup>Exhibit 1. *Grazing Out Of Control: Failed Grazing Management on the National Forests of New Mexico and Arizona, 1999-2003*. A report by Forest Guardians, November, 2004.

## FG-1

Together with the MRNG (Reynolds et al. 1992), the original environmental impact statement for amendment of forest plans, and this “Supplement to the Final Environmental Impact Statement for Amendment of Forest Plans,” the Agency has reviewed over 450 northern goshawk related materials that include peer-reviewed scientific papers, published journal articles, masters’ theses, unpublished non-peer-reviewed scientific papers, correspondence, and alternative views and scientific perspectives (see Bibliography, Project Record 140). In addition, many of the reviewed materials are based on literature references not specifically listed in the references sections of the above Agency documents.

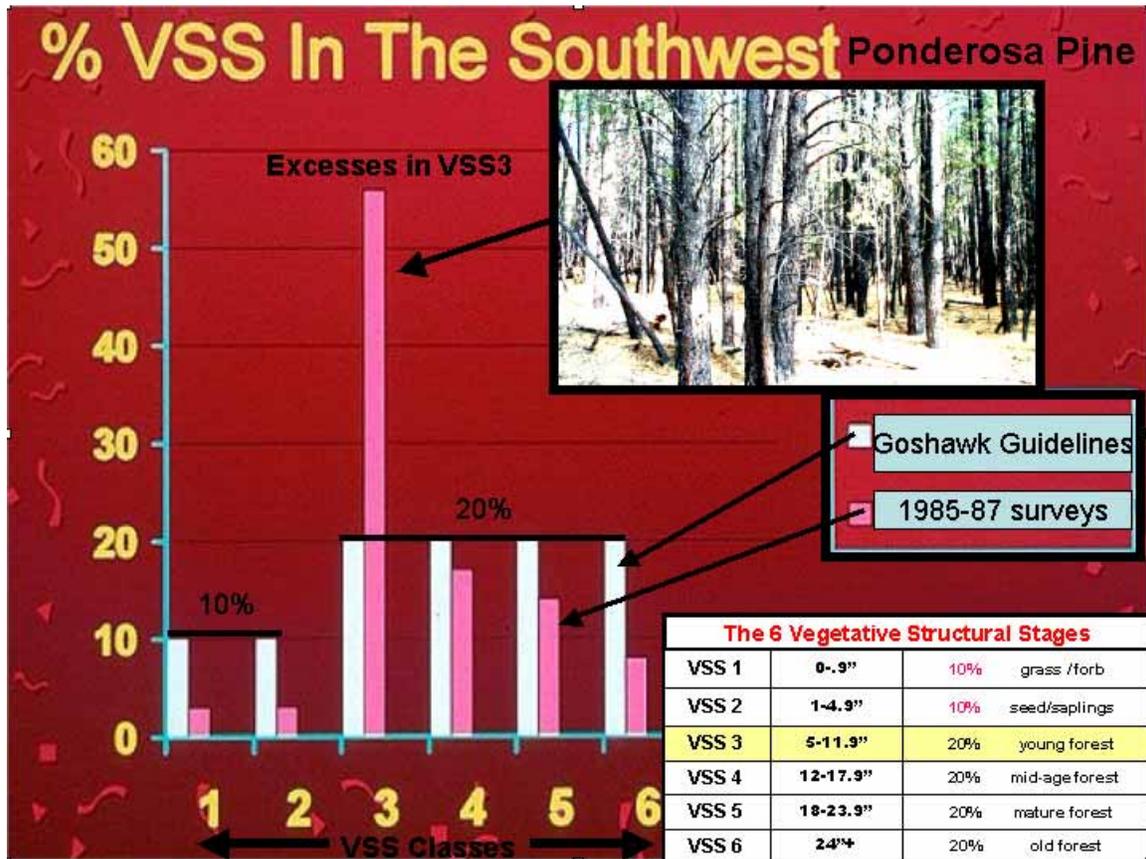
The Agency continues to review and assess northern goshawk related literature as it becomes available. Based on this indepth review of available literature the Agency has remedied the Ninth Circuit Court’s determination to disclose the scientific debate in the FEIS (USDA-FS 1995) and provide for an informed decision on management of forests within the Southwestern Region, and in particular, maintenance and management of northern goshawk habitat.

## FG-2

The contention made in FG-2 is that a further decline in the “rare” Abert’s squirrel (a goshawk prey species) may continue due to a loss of mid-range vegetative structural stages (VSS 3-4) resulting from implementation of the MRNG, and any reduction in squirrel prey base will have detrimental effects on the goshawk.

The MRNG (Reynolds et al. 1992), identify three forest age classes (VSS) that are important to Abert’s squirrel: VSS 4, 5, and 6. The MRNG suggested that about 20 percent of a goshawk post-fledging family area (post-fledging area) and 20 percent of a foraging area (foraging area) be in VSS 3 and 20 percent in VSS 4, the “mid-range” VSS class in question in the FG-2 comment. The MRNG suggested that thinning of VSS 4 might help attain the larger trees specified in VSS 5 (mature forest) and 6 (old forest), but that thinning of VSS 4 should be constrained by the desire to have minimum canopy covers in the VSS 5 and VSS 6 of 50 percent in the post fledging area and 40 percent in the foraging area in ponderosa pine forests. These minimums should be easily attained because VSS 5 and 6 trees are in groups with interlocking crowns where canopy cover can easily exceed 80 percent. The MRNG recommended these minimums because it was recognized that very dense VSS 4 may never produce large trees due to excessive competition for light, moisture, and nutrients. Some very dense VSS 4 should be thinned to produce the desired larger trees in VSS 5 and 6. Thinned VSS 4 will develop denser canopies with time, tree growth, and crown spread. Minimums are specified, however, to prevent excessive opening of VSS 4, and subsequent VSS 5 and 6. Contrary to FG-2, the MRNG protects and perpetuates the habitats of Abert’s squirrels.

The following graph shows the VSS breakdown in the Southwest as of the time most forest plans were being published (1985-87). The graph shows nearly a twofold excess of VSS 3 (nearly 60 percent of the ponderosa pine landscape rather than a target level of 20 percent) with all other VSS categories below desired levels. VSS classes in shortest supply are VSS 1 and 2 (seedling/saplings) and VSS 6 (old-growth). There are also shortages of VSS 4 and 5, but to a lesser degree than shortages in VSS 1-2 and VSS 6.



Regional Forest Inventory and Analysis (FIA) data compiled by Jeff Hogg, Forestry and Forest Health Group, Southwestern Region of the Forest Service.

Due to unprecedented pine regeneration in the early 1900s, fire suppression, and past management practices involving a failure to thin to encourage growth on smaller trees, there now exists a considerable excess of VSS 3 throughout the Southwest (Braun et al. 1996, p 6)). The VSS distribution outlined in the MRNG promotes a more steady flow of VSS structural stages over time needed to optimize the amount of VSS 5 and 6 that can be sustained on the landscape (USDA-FS 2004, p 33) over time.

It is important to understand that all ecosystems, including forest ecosystems, are in a state of dynamic change. Individual trees become established as seedlings grow to maturity and eventually die. The same is true when discussing vegetative structural stages. VSS 1 openings are created on the landscape through a number of disturbance processes (insects, wind, fire, harvesting). Trees become established over time and move into the various structural stages as they grow, mature, and die. The MRNG recognize this dynamic nature of forest ecosystems and calls for the establishment of a VSS distribution on the landscape that can be sustained over time. The MRNG does not say that a particular vegetative structure stage must exist in the same location on the landscape over time. This is not biologically possible.

Excess VSS 3 areas are often selected for thinning and regeneration treatments for the following reasons:

1. The VSS 3 excess over much of the ponderosa pine forest type in the Southwest is primarily the result of excessive regeneration becoming established in the early 1900s, fire suppression, and a continued lack of thinning in immature seedling, sapling, and pole stands through most of the 1900s. Accelerated thinning is needed to compensate for the lack of thinning in the past.
2. Many VSS 3 areas are overly dense due to both past management actions (emphasis on large tree removal) and the lack of management actions (thinning in dense immature stands), resulting in hazardous fuel conditions and centers for bark beetle and disease outbreaks.
3. High tree densities in many VSS 3 areas result in a lack of surface vegetation needed to support a variety of goshawk prey base and to retain soils in place. The degradation of watershed conditions is an issue in the Southwest.
4. A solution to reducing shortages of VSS 4-6 is to thin excess VSS 3 areas to increase growth rates. Thinning shortens the time needed for VSS 3 areas to develop into VSS 4 areas.
5. An effective solution to increasing VSS 1 areas, while reducing excess VSS 3 areas, is to create small regeneration openings in VSS 3 areas rather than in VSS 5 and 6 areas. The larger, seed-producing trees within the VSS 3 areas, as well as adjacent VSS 5 and 6 areas, can provide the seed source to regenerate newly created VSS 1 areas.

Failure to promote VSS 1 and 2 areas at a steady rate today will result in shortages in the larger VSS classes over time. Failure to thin excess VSS 3 stands to conditions found within their historic range of variability will further slow stand development into needed VSS 4-6 conditions. In some cases, without adequate thinning, dense VSS 3 areas may never develop into VSS 4 areas due to the current threats from stand-replacement fires and increased insect epidemics in the Southwest.

Not all existing VSS 3 areas should be nor need be treated. Approximately 20 percent of the landscape needs to be retained as VSS 3 until existing VSS 1 and 2 areas can be developed to move into the VSS 3 condition. The review of Austin (1993) by the Goshawk Scientific Committee points out the need for a balance of VSS stages across the landscape (Reynolds et al. 2001, p 5).

A comparison of historic and present day stand data and writings of early explorers support the idea that historically there were fewer immature pole areas (VSS 3) in our ponderosa pine forests than there are today (Braun et al. 1996, p 5-8). Because the current surplus of VSS 3 areas may not be sustainable over time, even if a high correlation between acres of VSS 3-4 and Abert's squirrel numbers exists, it may not be possible to sustain current squirrel numbers.

Preliminary findings by Beier (1994, p 4) suggest that when selecting foraging sites, goshawks do not pay attention to prey density. A review of Beier's document by the Goshawk Scientific Committee (Reynolds et al. 2001, p 7) gives little support to Beier's conclusion concerning prey density, but adds that no Abert's squirrels and red squirrels were observed in Beier's study area. This lack of squirrels in Beier's study area indirectly shows that goshawks survive on a mix of prey species and that a decline or complete absence of one or more of these prey species may not

mean reductions in goshawk numbers, merely a shift in diet. Providing for a mix of prey species for the goshawk is a primary premise of the goshawk management guidelines to best guarantee goshawk continued survival.

### **FG-3**

There is little rigorous evidence that any goshawk population is currently declining. However, there is a presumption that goshawk populations declined in the northeastern U.S. following intensive tree harvests there in the late 19<sup>th</sup> and early 20<sup>th</sup> century. The presumption of a decline was based on recent discoveries of breeding goshawks in areas that have become reforested and where goshawks nested historically but not in recent decades (Speiser and Bosakowski 1984).

The published research that is often cited in FG-3 (e.g., Crocker-Bedford 1990) as demonstrating a goshawk population decline due to timber harvest is suspect because the annual sampling efforts for nesting pairs of goshawks in the Crocker-Bedford (1990) study appeared to have been insufficient (see Reynolds et al. (2005) for discussion of necessary sampling efforts to accurately estimate the reproductive status of goshawks). Furthermore, Reynolds and Joy (in press) and Reynolds et al. (2005) identified extensive annual variation in reproduction of goshawks on the Kaibab Plateau, the same area where Crocker-Bedford (1990) conducted his study. These intensive and long-term studies showed that goshawk reproduction is highly variable and appeared to be cyclic with a periodicity of around 8 to 10 years. Thus, the Crocker-Bedford (1990) study, which was conducted over just 3 years (1985-87), may have also been confounded by annual variation in goshawk reproduction. That is, the Crocker-Bedford study may have coincided with a period of decreasing reproduction, making it appear that the population was declining.

The “Final Supplement to the Final Environmental Impact Statement for Amendment of Forest Plans in Arizona and New Mexico” (FSFEIS) was prepared to display, discuss, and disclose scientific arguments and information which are in opposition to the findings in the original FEIS which were based on the MRNG (Reynolds et al. 1992). Reynolds and Joy (1998) demonstrated that goshawk productivity can vary widely by year, while nest or territory occupancy remains fairly stable. Boyce et al. (2005) has demonstrated that much of the goshawk survey data, often used to show population trends is invalid, based on the number of attempts at locating nest sites. Currently, all 11 national forests including 44 ranger districts, in the Forest Service’s Southwestern Region have collected nesting information on the northern goshawk.

### **FG-4**

The northern goshawk is identified as a management indicator species (MIS) on five national forests (Apache-Sitgreaves, Coconino, Kaibab, Prescott, and Tonto) in the Southwestern Region. Management indicator species are selected to reflect the habitat needs for a majority of forest species. An indicator species is a plant or animal whose population change reflects a population change of other species within a group. Indicator species respond to habitat changes early or at low levels of stress and, therefore, are sensors of the effect of management activities that occur in various habitats. Management indicator species were chosen for given vegetation types, seral stages, and the vegetative components of the given habitat. The northern goshawk is but one species that can reflect habitat changes. For the six national forests that do not have the northern goshawk as an MIS, other species were chosen that better reflect changes in populations of other species that use a particular habitat type.

## **FG-5**

The FSFEIS was prepared to display, discuss, and disclose scientific arguments and information which are in opposition to the findings in the original EIS which are based on the MRNG (Reynolds et al. 1992). The purported impacts of livestock grazing on the northern goshawk suggested in FG-5 are outside the scope of this assessment. The MRNG addresses forest structure not herbaceous vegetation. Further, the scientific literature which is suggested to be in opposition to the MRNG also addresses forest structure issues, not the effects of livestock grazing. We know of no scientific evidence directly linking long-term trends (10 plus years) in northern goshawk populations to the effects of livestock grazing in the Southwest.

In addition, the MRNG identified a desired condition regarding the grass/forb/shrub VSS and the desired maximum level of grazing (Reynolds et al. 1992, p 24).

## **FG-6**

Refer to Response FG-1. The Agency's literature review list includes numerous papers that discuss population trends and the viability of the northern goshawk. In addition, the FSFEIS includes a discussion of the U.S. Fish and Wildlife Service's June 29, 1998, announcement that listing under the Endangered Species Act of the northern goshawk population in the contiguous United States west of the 100<sup>th</sup> meridian was not warranted (63 FR 35183). It is anticipated that the debate of the habitat needs of the northern goshawk will continue, and the Agency will continue to review and assess northern goshawk related literature as it becomes available.

## **FG-7**

The MRNG described the importance of VSS 4 to Abert's squirrels (Reynolds et al. 1992, p 74), and this importance was based on Dr. J. States' research (States 1985, States et al. 1988) and his personal communication to the MRNG scientific committee during development of the MRNG. The MRNG recommended that 40 percent of both the post-fledging area and foraging area be in VSS 3 (20 percent) and VSS 4 (20 percent). This is the amount of VSS 3 and 4 that is needed to provide and sustain the VSS 5 and VSS 6 in goshawk landscapes.

Because the MRNG recommended reducing the density of trees and woody debris, both of which have increased since fire suppression, implementing the MRNG would significantly reduce fire risk (Reynolds et al. 1992, p 30).

## **FG-8**

National Forests in the Southwestern Region have been monitoring northern goshawks for over 10 years. Beginning in 1991, a standardized protocol became available for conducting goshawk surveys. This protocol included standard procedures for timing, intensity, and duration of goshawk surveys. Data has been summarized for each national forest in the Southwestern Region beginning in 1991 and ending in the 2004 field season. As reported in Reynolds et al. (2003), goshawk productivity on many national forests in the region was down during the drought. The summarized information is reported by post family-fledgling area. The post fledgling area is described in the MRNG (Reynolds et al. 1992, p 13).

In addition, refer to Response FG-3.

## **FG-9**

Refer to response FG-4. In addition, management indicator species are identified based on habitat types, not management activities.

## **FG-10**

Refer to response FG-4. In addition, it is anticipated that all 11 national forests will begin revising their forest plans within the next 2 to 4 years. The 2005 Planning Rule (36 CFR 219), which will guide the amendment and revision of forest plans, no longer includes management indicator species.

## **FG-11**

In 1996, the Southwestern Region's forest plans were amended. The provisions of this amendment as it related to grazing management are being implemented consistent with the 1996 Record of Decision which stated, in part, "The region-wide amendment to forest plans will be applied through project level decisions which will include site-specific environmental analysis and public involvement" (USDA-FS 1996, p 15).

With respect to grazing activities, the intent of the amendment is to require forest managers to make site-specific determinations regarding forage utilization for each allotment through the National Environmental Policy Act (NEPA) and allotment management planning processes. Grazing authorizations (permits) resulting from these NEPA analyses and decisions provide the appropriate guidance for forest utilization in compliance with the 1996 forest plan amendment and best available science.