

INTRODUCTION

The land and resource management plan for the Carson National Forest (hereafter referred to as the Carson Forest Plan), initiated in 1986, was prepared in accordance with the implementing regulations established in 1982 for the National Forest Management Act. These regulations (36 CFR 219) outlined the process for developing a forest plan. They also provided guidance for selecting management indicator species (MIS) and included requirements for MIS monitoring population trends and determining relationships to habitat changes.

Management indicator species were identified during the development process of the forest plan. The 1986 Carson Forest Plan designates specific MIS with habitats that could best be used to analyze the effects of site-specific proposals on the Forest. Contained in this document are the profiles of the MIS identified for the Carson National Forest. Management indicator species are a subset of all animal and plant species in a planning area selected for planning and management purposes. Management indicator species are defined in the Carson Forest Plan as, “[t]hose species selected in the planning process to monitor the effects of planned management activities on viable populations of all wildlife and fish species, including those species that are socially or economically important” (USDA 1986c, Glossary p. 301). These species are:¹

MIS	Habitat
Hairy woodpecker	snag
Turkey	old growth pine (roost tree, roost tree groups)
White-tailed ptarmigan	alpine tundra, subalpine deciduous shrub
Plain titmouse	piñon-juniper canopies
Brewer's sparrow	sagebrush
Abert's squirrel	interlocking canopies
Red squirrel	mixed conifer
Elk	general forest
Bighorn sheep	alpine, subalpine tundra mountain meadow grassland
Resident trout	perennial stream, riparian
Aquatic macro-invertebrates	perennial stream, riparian

Management indicator species are selected to monitor the effects of planned management activities on populations of fish and wildlife species. Monitoring MIS habitats and determining how habitat trends relate to population trends can help identify what impacts management activities have on wildlife and their habitats on the Carson National Forest.

In order to inform the decision maker of the progress toward achieving the goals, objectives, and standards and guidelines, Chapter 5 of the Carson Forest Plan (USDA 1986c, p. 237) lists items to be monitored, including, “population and habitat trends of management indicator species.” Chapter 5 also provides several possible monitoring methods for nongame animal (birds only), game animals, threatened and endangered species, State listed species, sensitive plants, and fish and aquatic invertebrates. These should not be interpreted as required

¹ This list is taken from the Environmental Impact Statement for the Forest Plan (USDA 1986a, p. 97).

methods, only as suggested approaches. The Wildlife section of Chapter 5 concludes with the following statement:

It should be realized monitoring of wildlife resources on such a scale as proposed is at best tentative and exploratory. State-of-the-art knowledge indicates it is a suitable system at the present time, but it must be noted that modifications may be needed within the planning period to better indicate the effects of National Forest management activities on the Carson's wildlife resources (USDA 1986c, p. 244).

The Carson Forest Plan allows flexibility on how MIS habitat and population trends are monitored. Each MIS profile in this document incorporates the best available science and data using the most up-to-date monitoring methods to determine habitat and population trend for the species.

RECENT COURT RULING AND FOREST PLAN MIS MONITORING

The introduction to Chapter 5 (Monitoring Plan) of the Carson Forest Plan (USDA 1986c, p. 235) provides: "The purpose of monitoring and evaluating the implementation of the Forest Plan is to inform the decision maker of the progress toward achieving the goals, objectives, and standards and guidelines." This language indicates the Monitoring Plan's purpose is to help the Carson National Forest achieve its goals in the Forest Plan. A recent court case included a challenge to the purpose of MIS monitoring as stated in Chapter 5 of the Carson Forest Plan and the Agua/Caballos site-specific decision on the El Rito Ranger District, Carson National Forest.

In Forest Guardians and Carson Forest Watch v. U.S. Forest Service (CIV 05-0372 JB/DJS), plaintiffs argued the Forest Service violated NFMA's consistency provision by not complying with the Forest Plan's Monitoring Plan requirements as a part of the Agua/Caballos decision. The Court found the MIS monitoring requirements in the Carson Forest Plan's Monitoring Plan "do not constitute a condition precedent to project approval and thus the deficient monitoring claim is not cognizable" (FG et al. v. USFS p. 39). The Court (pp. 40-41) found "nothing in the Monitoring Plan that conditions a project's approval on fulfilling certain requirements of the Monitoring Plan -- specifically here, there is no such language in the Monitoring Plan concerning the five years of baseline data for MIS or other monitoring methodologies."

The Court concluded by stating, "[t]he Monitoring Plan itself is not a prescription or standard, but rather gives information to the decision maker on progress towards those standards. This provision does not appear to the Court to create a condition precedent to site-specific approval of projects, nor does it tie specific monitoring of MIS to project approval as a 'standard'..." (FG et al. v. USFS p. 44). In essence, the Forest Plan's Monitoring Plan outlines monitoring to assess the effects of plan implementation on various resources, including MIS, over time.

MONITORING MIS HABITAT TRENDS

The 1986 Environmental Impact Statement (EIS) for the Carson Forest Plan described the habitat groups and characteristics along with projected trends of management indicator species, based on current direction and management of these habitats. The basis for determining habitat trend is a comparison of estimated MIS habitats at the time of preparing the Forest Plan to the present. The methods used to determine current habitats were developed to approximate similarity (to the degree possible) to the acreages used in the 1986 Forest Plan EIS. In some cases, the estimated acres of MIS habitats are based on certain parameters of habitat quality.

The rationale and methods used to reach the current habitat estimates are described for each species or group. The methods generally included developing queries from existing stand exam data. The processes used for determining habitat trends for the Carson National Forest's management indicator species are outlined by species at the end of this document in an appendix called "Rationale for Determining Habitat Trend Lines."

This forest-wide MIS assessment provides information on the relationship of the species to a forest community(s), forest successional class(s),¹ aquatic community(s), rare community(s) or relevant habitat parameters. These relationships are supported by documentation of published/unpublished research, professional opinion, administrative studies/surveys, effectiveness monitoring or from ongoing research/validation monitoring.

MONITORING MIS POPULATIONS TRENDS

Because methods to determine population numbers and/or estimate trends vary by species, conclusions that relate population trends to habitat conditions are also reached through a variety of methods. This assessment uses a combination of methods to determine the population trend for each of the MIS identified for the Carson National Forest. Information sources on MIS populations include (but are not limited to) the BISON-M, Biota Information System of New Mexico (2004), National Forest System (e.g., local Forest and Regional data), Forest Service Research (e.g., Forest Service Intermountain Research Station literature), university research, other federal and state government agencies (e.g., Patuxent Wildlife Center breeding bird surveys) and an assortment of non-governmental organizations (e.g., Partners in Flight, NatureServe Explorer).

From known relationships between species and habitat, trends in amount and condition of habitat over time may also reflect population trends. This is not necessarily the situation in all circumstances. Population trends can often relate to other outside forces, such as predation, nest parasitism, detrimental impacts to other migratory habitats, or climatic changes. To help determine population trends for each MIS, this assessment uses a step-down method. The Forest reviews and document information related to a species, beginning with information at a very broad scale going down to a Forest level or other local information.

Since there has been some misunderstanding in the use of Breeding Birds Surveys (BBS) information to help determine population trends, the assessment documents how this data is currently being used. BBS data are useful, but do not provide a population estimate for species. Appropriate use of the information involves estimation of population trend for a specific time interval. Overall, BBS trend information compares well to local, site specific studies although few comparisons have been made for the western U.S. The use of BBS trend information at state and physiographic province (including Bird Conservation Regions) scales is reliable and appropriate for common species (USDA 2006). To help show the regional and New Mexico population trend for bird species we use the state and physiographic province BBS information along with NatureServe ranking and other data that is available at that scale. While the Forest does review and document the data from local transects, these are only used to see how they correlate with other local or Forest-wide data.

¹ Forest succession is the change in vegetation and in animal life that takes place as a plant community evolves from bare ground to climax (Managing Forested Lands for Wildlife 1987). The steps or classes in the process of ecological succession are referred to as "seral stages."

POPULATION VIABILITY

The FEIS for the Carson Forest Plan analyzed seven alternatives (USDA 1986a). Each of the alternatives proposed a combination of management activities that, if implemented, would continue to maintain viable wildlife populations, including MIS. The Carson Forest Plan decision alternative is described relative to projected impacts on management indicator species over the life of the plan. The FEIS describes,

The Proposed Action [decision] will over time provide moderate to high amounts and quality of most habitat components within the suitable timberlands and other management areas. Requirements for management of old growth, cover, vegetative diversity, raptor nesting habitat and many other habitat components receive greater emphasis and specific direction than other alternatives. Populations of all indicator species, with the possible exception of certain rare animals, will be managed at levels greatly exceeding minimum viable populations (USDA 1986a, p.152).

Population viability was determined with the development of the Carson Forest Plan. Since all management activities implemented on the Carson National Forest are consistent with the Forest Plan, then population viability is being maintained. For example: Figure 1 shows the projected harvest level over the period of the Forest Plan compared to the actual harvest. The FEIS determined that MIS would be managed at levels greatly exceeding viable populations at the projected harvest levels. The actual harvest level on the Carson National Forest has averaged only about 30 percent of what was projected; therefore it is assumed the Forest is well within its ability to maintain viable populations for MIS *dependent on forested vegetation*.

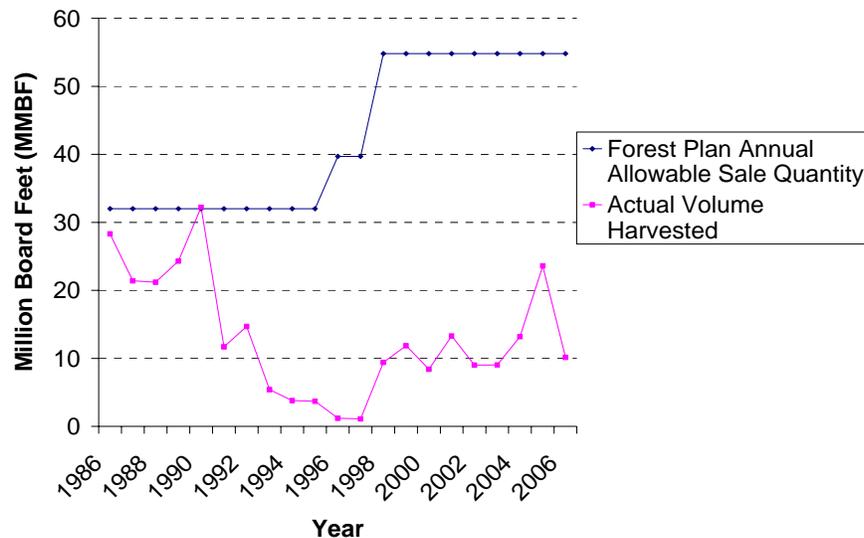


Figure 1. Comparison of Forest Plan Allowable Sale Quantity to Actual Harvest

REFERENCES

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