WILDLIFE & FISH HABITAT

A VISION

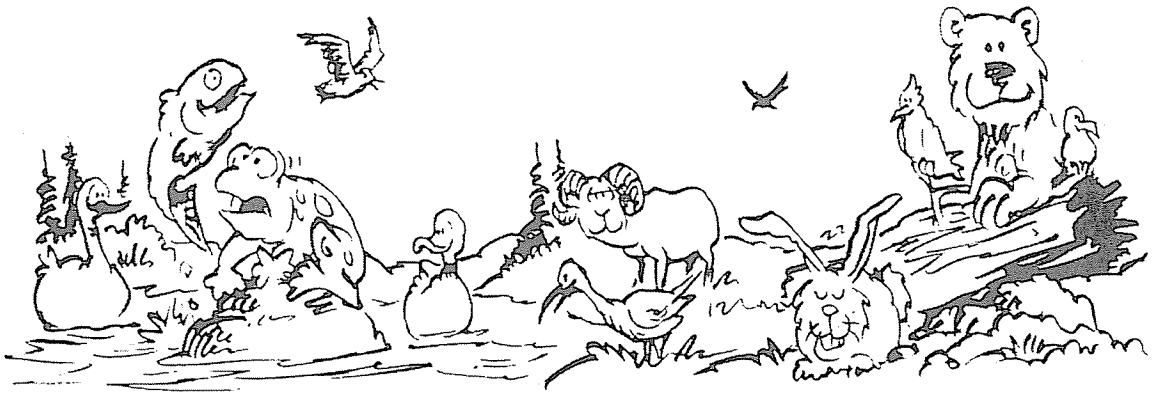
The forest is biologically rich due to the very diverse vegetation. This provides the habitats for the diverse wildlife and fishes. The various vegetation conditions are well distributed and evenly mixed to assure a continued biodiversity.

This looks into the future, although some of this may be happening now. It is stated in the 'present tense' as if it is already that way. This gives a feel of where we are heading. It paints a general picture with a broad brush.

MANAGEMENT HIGHLIGHTS

- Maintain habitat for viable populations of all wildlife and fish species found on the Forest and improve habitat for selected species. This will be accomplished indirectly through intensive coordination of habitat manipulation with other resource activities, and directly through intensive habitat management.
- Support New Mexico Game and Fish Department in meeting its objectives of the New Mexico Comprehensive Wildlife Plan and in the reintroduction of native wildlife and fish species. Favor native species over new exotic species in stocking and introductions whenever possible.
- Maintain and/or improve habitat for presently listed or endangered species of animals and other species as they are classified as threatened or endangered. Work toward the eventual recovery and delisting of species by the year 2000.

This snaps a more detailed picture. It gives a feel of the intent, purpose and goals. It is the framework for the standards and guidelines.



Setting The Stage

There is competition among wildlife species themselves as well as with other forest users. The wide variety of species, each with specific habitat requirements, will continue to add to the complexity of management. The number of different wildlife & fish species on the Carson are 7 Amphibian, 15 Reptiles, 72 Mammals, 223 Birds and 12 Fish.

One of the keys to managing wildlife is understanding their homes --wildlife habitat. Their habitat is the interrelationship of vegetation, water, animals and people. Ultimately, to have diverse wildlife levels and healthy animals/fish, the habitat needs to be diverse --large variety throughout the forest. A key element to wildlife is the riparian habitat --the area along our streams and around our lakes and marshes. The riparian is also in demand by most other users of the Forest.

Insufficient quantity or quality of winter range has continued to be a limiting factor in managing big game. People are also concerned about the decline in deer populations. It is unclear as to exactly why, but often poaching and habitat problems are raised as possibilities. A "put and take" fisheries is required on many streams and lakes due to the high demand.

Standards and Guidelines

MANAGEMENT INDICATOR SPECIES

MANAGEMENT INDICATOR SPECIES... Provide quality habitat for the Management Indicator Species for the Carson National Forest.

Management Area		Management Indicator Species											
		Elk	*Bighorn*	*Turkey*	*Abert's Squirrel*	*Red Squirrel*	*Hairy Woodpecker*	*Ptarmigan*	*Plain titmouse*	*Brewer's Sparrow*	*Resident Trout*	*Macro invertebrates*
1	Spruce Under 40% Slopes	X					X					
2	Spruce Over 40% Slopes	X					X					
3	Mixed Conifer Under 40%	X		X		X	X					
4	Ponderosa Pine Under 40%	X		X	X		X					
5	Mixed Conifer & Ponderosa Pine Over 40%	X		X	X	X	X					
6	Aspen	X		X			X					
7	Unsuitable Timber	X		X	X	X	X					
8	Pinon/ Juniper	X							X			
9	High Elevation Grassland	X	X					X				
10	Low Elevation Grasslands											
11	Revegetation Areas	X		X								
12	Sagebrush	X								X		
13	Oak	X		X								
14	Riparian	X					X				X	X
15	Potential Recreation Sites											
16	Recreation Sites											
17	Wilderness											
18	Wild & Scenic River											
19	Special Area											
20	Semi-Primitive											
21	Valle Vidal											

THREATENED AND ENDANGERED, AND SENSITIVE PLANTS AND ANIMALS:

IMPLEMENTATION PLANS... Inventory, evaluate, and prepare implementation plans for proposed, threatened and endangered (T&E), and sensitive plant and animal species in the first decade or as species are proposed. Monitor approved plans and effects of management activities within threatened, endangered, sensitive species habitats.

BIOLOGICAL EVALUATIONS... Evaluate potential resource impacts on T&E and sensitive species habitat on projects and activities through a biological assessment and evaluation (FSM 2670) and conduct appropriate consultation (FSM 2670) when necessary. (Amendment 11)

Habitat management for Federally listed species will take precedence over unlisted species. Habitat management for endangered species will take precedence over threatened species. Habitat management for sensitive species will take precedence over non-sensitive species. (Amendment 11)

CONFIDENTIALITY... Habitat locations for some listed plant and animal species remain confidential to prevent unnecessary disturbances, theft, or mortality.

IMPROVE HABITAT... Improve T&E and sensitive species habitat. Improvement projects give priority to recovery of threatened and endangered species and conform to approved recovery plans.

RECOVERY...

- Identify forest portions of recovery objectives in conjunction with the New Mexico Department of Game and Fish and U.S. Fish and Wildlife Service for federally listed threatened or endangered species. Refine habitat requirements and identify specific habitat projects needed to achieve recovery objectives for individual species habitats.

- Accomplish recovery projects included in approved recovery plans. Projects will be coordinated through integrated resource management practices.

DELISTING... Manage threatened, endangered, and sensitive animal, fish and plant habitats to achieve delisting in a manner consistent with the goals established with the U.S. Fish and Wildlife Service and the New Mexico Department of Game and Fish in compliance with approved recovery plans.

NM NATURAL HERITAGE PROGRAM... Cooperate with New Mexico Natural Heritage Program to achieve management objectives for threatened, endangered, and sensitive flora.

REINTRODUCTION... Studies will be conducted to ascertain suitability for reintroduction of endangered, threatened, proposed, and state listed native species into suitable habitats. This will be accomplished in conjunction with development and approval of recovery plans.

SENSITIVE SPECIES... Manage sensitive species not already on federal lists, to sustain viability and prevent the need for listing as threatened or endangered. Recovery activities will be pursued where pertinent. If a species is proposed for listing, monitor actions to determine effect of management practices on habitat and the need for conference with U.S. Fish and Wildlife Service. Identify areas where sensitive species occur and manage to maintain or enhance habitat in occupied territory.

CONSULTATION... Consultation will be initiated for situations where federally listed or proposed listed species may be affected. Review all planned, funded, executed, or permitted programs and activities to determine needs for consultation or conference with the Fish and Wildlife Service and the New Mexico Department of Game and Fish.

PEREGRINE FALCON...

- Continue to identify habitats necessary to the conservation and recovery of the peregrine falcon. Complete inventories and habitat management plans for those breeding habitats identified as necessary to the recovery of the species. Monitor management practices within designated habitats and evaluate the effects of management.

- Activities likely to cause disturbance, including public use, will be prohibited in the vicinity of suitable peregrine falcon nesting habitat between March 1st and August 15th, unless a biological evaluation and determination of "no effect" has been made. Should peregrines remain attached to nesting habitat after August 15th, this period may be extended; or should young peregrines disperse earlier than August 15th this period may be shortened. Seasonal restrictions will apply to all suitable nesting habitat unless the biological evaluation determines that the proposed activity will have no effect after May 15th. Activities likely to cause disturbance may include but are not limited to; human presence within 3/4 mile, light trucks, passenger vehicles, ATV's and trailbikes within one mile, and heavier motorized equipment including aircraft, within two miles. In addition, land-use practices and development which significantly alter or eliminate the character of suitable peregrine falcon hunting habitat or prey base (generally within six miles of nest site) will be prohibited. All activities proposed within six miles of suitable nesting habitat will be evaluated for potential short-term impacts and long-term cumulative effects.

BALD EAGLE... Develop habitat management plans for wintering bald eagle habitats as specified in approved recovery plans. Maintain bald eagle winter roost and perch trees. Accomplish riparian and fisheries improvements to maintain and enhance prey base for wintering bald eagles.

C. Forest-wide Prescriptions

PRAIRIE DOG TOWNS/BLACK-FOOTED FERRET... Proposed control and other activities which may disturb the integrity of prairie dog towns must be fully evaluated and managed to perpetuate the species. All such activities will be proceeded by approved inventory procedures to determine the occurrence of the black-footed ferret.

MEXICAN SPOTTED OWL... REPLACE with Alternative G, *Mexican Spotted Owl Standards and Guidelines* (Amendment 11).

NORTHERN GOSHAWK... INSERT Alternative G, *Goshawk Standards and Guidelines* (Amendment 11).

PINE MARTEN... Identify areas where pine marten occur and manage to maintain or enhance habitat in occupied territory. Complete Forest-wide surveys.

RIO GRANDE CUTTHROAT... Continue activities to improve Rio Grande Cutthroat habitat with the objective of securing the species. Develop Rio Grande Cutthroat trout fisheries within selected areas identified in conjunction with the New Mexico Department of Game and Fish.

STAND MANAGEMENT & WILDLIFE HABITAT:

INTEGRATION... Establish and maintain stand diversity through integrated stand management to maintain and improve wildlife habitat diversity and specific habitat components in lands suitable for timber and firewood production. Selected cutting units will average 10-100 acres except as needed to accomplish specific wildlife habitat improvement objectives.

STAND MGT. PRINCIPLES... Apply stand management principles to commercial timber sales, reforestation, timber stand improvement, firewood and fuels management, and other resource activities which result in vegetative management of timberlands.

DIVERSITY UNIT SIZE... Combine timber compartments, and wherever possible, big game seasonal ranges, to form an identifiable diversity unit averaging 8000-12000 acres.

STANDARDS & GUIDELINES AND DIVERSITY UNITS... Standards and guidelines are applied to, and monitored on, a diversity unit or larger basis rather than on an individual project basis.

HABITAT OBJECTIVES... Wildlife habitat objectives for each diversity unit are evaluated on an individual stand basis. This means that in designing timber sales and other projects the size, shape, juxtaposition, age, and crown closure of each stand will be evaluated against the wildlife habitat objectives established for the diversity unit.

EXCEPTIONS... Minimum management requirements may be exceeded where it is good management to do so, such as potential snags adjacent to meadows, riparian areas, and other water sources.

BIG GAME SUMMER RANGES... On big game summer ranges manage suitable timberlands to achieve a diversity of vegetative conditions by balancing timber age and canopy cover classes.

AGE AND CANOPY COVER CLASS DISTRIBUTION... The objective will be to achieve the following conditions (Table 32) on 70 percent of the suitable timberlands by the end of the 20th decade. (To be monitored by each Diversity Unit)

Appendix C. Standards and Guidelines in Selected Alternative (G)

Standards and guidelines to be added to each forest plan for Mexican spotted owl habitat, northern goshawk habitat, grazing utilization, and old growth designation follow. Standards and guidelines are the bounds or constraints within which all management activities are to be carried out in achieving forest plan objectives. The following standards and guidelines are packaged in parallel format. Parallel format means that a set of standards is described first which gives the primary constraint. Following the standards are guidelines which provide additional details on how each standard will be implemented. For example, one of the Mexican spotted owl standards is to "Establish a protected activity center at all Mexican spotted owl sites located during surveys and all management territories established since 1989".

The corresponding guidelines read "Delineate an area of not less than 600 acres around the activity center using boundaries of known habitat polygons and/or topographic features. Written justification for boundary delineation should be provided".

"The Protected Activity Center boundary should enclose the best possible owl habitat configured in as compact a unit as possible, with the nest or activity center located near the center."

"The activity center is defined as the nest site. In the absence of a known nest, the activity center should be defined as a roost grove commonly used during breeding. In the absence of a known nest or roost, the activity center should be defined as the best nest/roost habitat."

"Protected Activity Center boundaries should not overlap."

"Submit protected activity center maps and descriptions to the recovery unit working group for comment as soon as possible after completion of surveys."

As the foregoing example shows, the guidelines are the detailed information about implementation of the standards. While standards and guidelines both specify the management bounds and constraints, the standards contain no discretionary elements and the guidelines may occasionally contain discretionary elements. For example one of the Mexican spotted owl guidelines is "The Protected Activity Center should enclose the best possible owl habitat .....". The terms "should" and "best" imply some discretion on the part of the person implementing the guideline.

Mexican Spotted Owl

Standards

Provide three levels of habitat management—protected, restricted, and other forest and woodland types to achieve a diversity of habitat conditions across the landscape.

Protected areas include delineated protected activity centers; mixed conifer and pine-oak forests with slopes greater than 40% where timber harvest has not occurred in the last 20 years; and reserved lands which include wilderness, research natural areas, wild and scenic rivers, and congressionally recognized wilderness study areas.

Restricted areas include all mixed-conifer, pine-oak, and riparian forests outside of protected areas.

Other forest and woodland types include all ponderosa pine, spruce-fir, woodland, and aspen forests outside protected and restricted areas.

Survey all potential spotted owl areas including protected, restricted, and other forest and woodland types within an analysis area plus the area 1/2 mile beyond the perimeter of the proposed treatment area.

Establish a protected activity center at all Mexican spotted owl sites located during surveys and all management territories established since 1989.

Allow no timber harvest except for fuelwood and fire risk abatement in established protected activity centers. For protected activity centers destroyed by fire, windstorm, or other natural disaster, salvage timber harvest or declassification may be allowed after evaluation on a case-by-case basis in consultation with the US Fish and Wildlife Service.

Allow no timber harvest except for fire risk abatement in mixed conifer and pine-oak forests on slopes greater than 40% where timber harvest has not occurred in the last 20 years.

Limit human activity in protected activity centers during the breeding season.

In protected and restricted areas, when activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with the US Fish and Wildlife Service to resolve the conflict.

Monitor changes in owl populations and habitat needed for delisting.

Guidelines

A. General

Conduct surveys following Region 3 survey protocol.

Breeding season is March 1 to August 31.

B. Protected Areas

Protected Activity Centers: Delineate an area of not less than 600 acres around the activity center using boundaries of known habitat polygons and/or topographic features. Written justification for boundary delineation should be provided.

The Protected Activity Center boundary should enclose the best possible owl habitat configured in as compact a unit as possible, with the nest or activity center located near the center.

The activity center is defined as the nest site. In the absence of a known nest, the activity center should be defined as a roost grove commonly used during breeding. In the absence of a known nest or roost, the activity center should be defined as the best nest/roost habitat.

Protected Activity Center boundaries should not overlap.

Submit protected activity center maps and descriptions to the recovery unit working group for comment as soon as possible after completion of surveys.

Road or trail building in protected activity centers should be avoided but may be permitted on a case-by-case basis for pressing management reasons.

Generally allow continuation of the level of recreation activities that was occurring prior to listing.

Require bird guides to apply for and obtain a special use permit. A condition of the permit shall be that they obtain a subpermit under the U.S. Fish and Wildlife Service Master endangered species permit. The permit should stipulate the sites, dates, number of visits and maximum group size permissible.

Harvest fuelwood when it can be done in such a way that effects on the owl are minimized. Manage within the following limitations to minimize effects on the owl:

- Retain key forest species such as oak.
- Retain key habitat components such as snags and large downed logs.
- Harvest conifers less than 9 inches in diameter only within those protected activity centers treated to abate fire risk as described below.

Treat fuel accumulations to abate fire risk:

- Select for treatment 10% of the protected activity centers where nest sites are known in each recovery unit having high fire risk conditions. Also select another 10% of the protected activity centers where nest sites are known as a paired sample to serve as control areas.
- Designate a 100-acre "no treatment" area around the known nest site of each selected protected activity center. Habitat in the no treatment area should be as similar as possible in structure and composition as that found in the activity center.
- Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel treatment and prescribed fire to abate fire risk in the remainder of the selected protected activity center outside the 100-acre "no treatment" area.
- Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leafed woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.
- Select and treat additional protected activity centers in 10% increments if monitoring of the initial sample shows there were no negative impacts or there were negative impacts which can be mitigated by modifying treatment methods.
- Use light prescribed burns in nonselected protected activity centers on a case-by-case basis. Burning should avoid a 100-acre "no treatment" area around the activity center. Large woody debris, snags, clumps of broad-leafed woody vegetation should be retained and hardwood trees larger than 10 inches diameter at the root collar.
- Pre- and post-treatment monitoring should be conducted in all protected activity centers treated for fire risk abatement (See monitoring guidelines).

Steep Slopes (Mixed conifer and pine-oak forests outside protected activity centers with slopes greater than 40% that have not been logged within the past 20 years): No seasonal restrictions apply.

Treat fuel accumulations to abate fire risk:

- Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel removal, and prescribed fire.

- Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leafed woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.

- Pre- and post-treatment monitoring should occur within all steep slopes treated for fire risk abatement (See monitoring guidelines).

Reserved Lands (Wilderness, Research Natural Areas, Wild and Scenic Rivers, and Congressionally Recognized Wilderness Study Areas): Allow prescribed fire where appropriate.

C. Restricted Areas

(Mixed conifer, pine-oak, and riparian forests)

Mixed Conifer and Pine-oak Forests (See glossary definition): Manage to ensure a sustained level of owl nest/roost habitat well distributed across the landscape. Create replacement owl nest/roost habitat where appropriate while providing a diversity of stand conditions across the landscape to ensure habitat for a diversity of prey species.

The following table displays the minimum percentage of restricted area which should be managed to have nest/roost characteristics. The minimum mixed conifer restricted area includes 10% at 170 basal area and an additional amount of area at 150 basal area. The additional area of 150 basal area is +10% in BR-E and +15% in all other recovery units. The variables are for stand averages and are minimum threshold values and must be met simultaneously. In project design, no stands simultaneously meeting or exceeding the minimum threshold values should be reduced below the threshold values unless a district-wide or larger landscape analysis of restricted areas shows that there is a surplus of restricted area acres simultaneously meeting the threshold values. Management should be designed to create minimum threshold conditions on project areas where there is a deficit of stands simultaneously meeting minimum threshold conditions unless the district-wide or larger landscape analysis shows there is a surplus.

Attempt to mimic natural disturbance patterns by incorporating natural variation, such as irregular tree spacing and various patch sizes, into management prescriptions.

Maintain all species of native trees in the landscape including early seral species.

Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.

Emphasize uneven-aged management systems. However, both even-aged and uneven-aged systems may be used where appropriate to provide variation in existing stand structure and species diversity. Existing stand conditions will determine which system is appropriate.

Extend rotation ages for even-aged stands to greater than 200 years. Silvicultural prescriptions should explicitly state when vegetative manipulation will cease until rotation age is reached.

VARIABLE	MC ALL RU	MC BR-E RU	MC OTHER RU	PINE-OAK
Restricted Area Percent	10%	+10%	+15%	10%
Stand Averages for:				
Basal Area	170	150	150	150
18 inch + trees/ac	20	20	20	20
Oak basal area	NA	NA	NA	20
Percent total existing stand density index by size class:				
12-18"	10	10	10	15
18-24"	10	10	10	15
24+"	10	10	10	15

Save all trees greater than 24 inches dbh.

In pine-oak forests, retain existing large oaks and promote growth of additional large oaks.

Encourage prescribed and prescribed natural fire to reduce hazardous fuel accumulation. Thinning from below may be desirable or necessary before burning to reduce ladder fuels and the risk of crown fire.

Retain substantive amounts of key habitat components:

- Snags 18 inches in diameter and larger.
- Down logs over 12 inches midpoint diameter.
- Hardwoods for retention, recruitment, and replacement of large hardwoods.

Riparian Areas: Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should move degraded riparian vegetation toward good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Domestic Livestock Grazing: Implement forest plan forage utilization standards and guidelines to maintain owl prey availability, maintain potential for beneficial fire while inhibiting potential destructive fire, maintain and restore riparian ecosystems, and promote development of owl habitat. Strive to attain good to excellent range conditions.

Old Growth: Except where otherwise noted, implement forest plan old growth standards and guidelines to maintain and promote development of owl habitat.

D. Other Forest And Woodland Types

Apply ecosystem approaches to manage for landscape diversity mimicking natural disturbance patterns, incorporating natural variation in stand conditions and retaining special features such as snags and large trees, utilizing appropriate fires, and retention of existing old growth in accordance with forest plan old growth standards and guidelines.

E. Guidelines For Specific Recovery Units

Colorado Plateau: No special additional guidelines apply.

Southern Rocky Mountain - New Mexico: No special additional guidelines apply.

Upper Gila Mountains: No special additional guidelines apply.

Basin and Range - West: Emphasize restoration of lowland riparian habitats.

Management activities necessary to implement the Mt. Graham red squirrel recovery plan, which may conflict with standards and guidelines for Mexican spotted owl, will take precedence and will be exempt from the conflicting Mexican spotted owl standards and guidelines.

Basin and Range - East: Emphasize restoration of lowland riparian habitats.

Management activities necessary to implement the Sacramento Mountain thistle recovery plan, which may conflict with standards and guidelines for Mexican spotted owl, will take precedence and will be exempt from the conflicting Mexican spotted owl standards and guidelines.

F. Monitoring Guidelines

Monitoring and evaluation should be collaboratively planned and coordinated with involvement from each national forest, USFWS Ecological Services Field Office, USFWS Regional Office, USDA Forest Service Regional Office, Rocky Mountain Research Station, recovery team, and recovery unit working groups.

Population monitoring should be a collaborative effort with participation of all appropriate resource agencies.

Habitat monitoring of gross habitat changes should be a collaborative effort of all appropriate resource agencies.

Habitat monitoring of treatment effects (pre- and post-treatment) should be done by the agency conducting the treatment.

Prepare an annual monitoring and evaluation report covering all levels of monitoring done in the previous year. The annual report should be forwarded to the Regional Forester with copies provided to the recovery unit working groups, USFWS Ecological Services field offices, and the USFWS Regional Office.

Rangewide: Track gross changes in acres of owl habitat resulting from natural and human caused disturbances. Acreage changes in vegetation composition, structure, and density should be tracked, evaluated, and reported. Remote sensing techniques should provide an adequate level of accuracy.

In protected and restricted areas where silvicultural or fire abatement treatments are planned, monitor treated stands pre- and post-treatment to determine changes and trajectories in fuel levels; snag basal areas; live tree basal

areas; volume of down logs over 12 inches in diameter; and basal area of hardwood trees over 10 inches in diameter at the root crown.

Upper Gila Mountain, Basin and Range East, and Basin and Range West Recovery Units: Assist the recovery team and recovery unit working groups to establish sampling units consisting of 19 to 39 square mile quadrats randomly allocated to habitat strata. Quadrats should be defined based on ecological boundaries such as ridge lines and watersheds. Quadrat boundaries should not traverse owl territories. Twenty percent of the quadrats will be replaced each year at random.

Using the sample quadrats, monitor the number of territorial individuals and pairs per quadrat; reproduction; apparent survival; recruitment; and age structure. Track population density both per quadrat and habitat stratum.

Ecosystem Management In Northern Goshawk Habitats

Applicability

The northern goshawk standards and guidelines apply to the forest and woodland communities described below that are outside of Mexican spotted owl protected and restricted areas. Within Mexican spotted owl protected and restricted areas, the Mexican spotted owl standards and guidelines take precedence over the northern goshawk standards and guidelines. One or the other set of standards and guidelines apply to all forest and woodland communities but the Mexican spotted owl standards always take precedence in areas of overlap.

Standards

Survey the management analysis area prior to habitat modifying activities including a 1/2 mile beyond the boundary.

Establish, and delineate on a map, a post-fledgling family area that includes 6 nesting areas per pair of nesting goshawks for known nest sites, old nest sites, areas where historical data indicates goshawks have nested there in the past, and where goshawks have been repeatedly sighted over a 2 year or greater time period but no nest sites have been located. Manage for uneven-age stand conditions for live trees and retain live reserve trees, snags, downed logs, and woody debris levels through out woodland, ponderosa pine, mixed conifer and spruce-fir forest cover types. Manage for old age trees such that as much old forest structure as possible is sustained over time across the landscape. Sustain a mosaic of vegetation densities (overstory and understory), age classes and species composition across the landscape. Provide foods and cover for goshawk prey.

Limit human activity in nesting areas during the breeding season.

Manage the ground surface layer to maintain satisfactory soil conditions i.e., to minimize soil compaction; and to maintain hydrologic and nutrient cycles.

When activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Within the ranges of the Kaibab pincushion cactus, *Pediocactus paradinei,* and the Arizona leatherflower, *Clematis hirsutissima arizonica,* management activities needed for the conservation of these two species that may conflict with northern goshawk standards and guidelines will be exempt from the conflicting northern goshawk standards and guidelines until conservation strategies or recovery plans (if listed) are developed for the two species.

Guidelines

General

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should restore degraded riparian areas to good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Refer to USDA Forest Service General Technical Report RM-217 entitled "Management Recommendations for the Northern Goshawk in the Southwestern United States" for scientific information on goshawk ecology and management which provide the basis for the management guidelines. Supplemental information on goshawk ecology and management may be found in "The Northern Goshawk: Ecology and Management" published by the Cooper Ornithological Society as Studies in Avian Biology No. 16. In woodland forest cover types, use empirical data to determine desired habitat conditions.

Inventory

Use the R3 survey protocol to get complete coverage of the management analysis area (Kennedy and Stahlecker 1993, as modified by Joy, Reynolds, and Leslie 1994). Management analysis areas should be entire ecosystem management areas if possible.

Complete at least 1 year of survey, but 2 years of survey should be done to verify questionable sightings, unconfirmed nest sites, etc. If nesting goshawks are found during the first year of inventory, a second year of inventory is not needed in that territory.

For areas where complete inventories cannot be done, use aerial photographs to locate vegetative structural stages (VSS) 4-6 within the project area and inventory just those sites for goshawk nest areas using R3 inventory protocol. All uninventoried areas (VSS 1-3) will be managed to post-fledgling family area (PFA) specifications while in that stage. If while using this inventory option evidence suggests goshawks are present (such as finding plucking perches or molted goshawk feathers), conduct a complete inventory as outlined above.

If forests have goshawks commonly nesting in stands classified as VSS 1-3, use the complete inventory methods for those areas. There may be situations where an area is classified as a VSS 3, based on the predominant VSS class, but in actuality a combination of VSS 4 & 5 predominate the area. For those situations, use the complete inventory methods.

Home Range Establishment

Post-fledgling family areas (PFA) will be approximately 600 acres in size. Post-fledgling family areas will include the nest sites and consist of the habitat most likely to be used by the fledglings during their early development.

Establish a minimum of 3 nest areas and 3 replacement nest areas per post-fledgling family area. The nest areas and replacement nest areas should be approximately 30 acres in size. A minimum total of 180 acres of nest areas should be identified within each post-fledgling family area.

Nest site selection will be based first on using active nest sites followed by the most recently used historical nest areas. When possible, all historical nest areas should be maintained.

Manage for nest replacement sites to attain sufficient quality and size to replace the three suitable nest sites.

Management Scale

Distribution of habitat structures (tree size and age classes, tree groups of different densities, snags, dead and down woody material, etc.) should be evaluated at the ecosystem management area level, at the mid-scale such as drainage, and at the small scale of site.

Vegetation Management

Landscapes Outside Goshawk Post-fledgling Family Areas

General: The distribution of vegetation structural stages for ponderosa pine, mixed conifer and spruce-fir forests is 10% grass/forb/shrub (VSS 1), 10% seedling-sapling (VSS 2), 20% young forest (VSS 3), 20% mid-aged forest (VSS 4), 20% mature forest (VSS 5), 20% old forest (VSS 6). NOTE: The specified percentages are a guide and actual percentages are expected to vary + or - up to 3%.

The distribution of VSS, tree density, and tree age are a product of site quality in the ecosystem management area. Use site quality to guide in the distribution of VSS, tree density and tree ages. Use site quality to identify and manage dispersal PFA and nest habitat at 2 to 2.5 mile spacing across the landscape.

Snags are 18" or larger dbh and 30 feet or larger in height, downed logs are 12 inches in diameter and at least 8 feet long, woody debris is 3 inches or larger on the forest floor, canopy cover is measured with vertical crown projection on average across the landscape.

The order of preferred treatment for woody debris is: 1) prescribed burning, 2) lopping & scattering, 3) hand piling or machine grapple piling, and 4) dozer piling.

Canopy Cover: Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass/forb/shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3).

Spruce-Fir: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60% and 2/3 40%, mature forest (VSS 5) should average 60+%, and old forest (VSS 6) should average 60+%. Maximum opening size is 1 acre with a maximum width of 125 feet. Provide two groups of reserve trees per acre with 6 trees per group when opening size exceeds 0.5. Leave at least 3 snags, 5 downed logs, and 10-15 tons of woody debris per acre.

Mixed Conifer: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+% and 2/3 40+%, mature forest

(VSS 5) should average 50+%, and old forest (VSS 6) should average 60+%. Maximum opening size is up to 4 acres with a maximum width of up to 200 feet. Retain one group of reserve trees per acre of 3-5 trees per group for openings greater than 1 acre in size. Leave at least 3 snags, 5 downed logs, and 10-15 tons of woody debris per acre.

Ponderosa Pine: Canopy cover for mid-aged forest (VSS 4) should average 40+%, mature forest (VSS 5) should average 40+%, and old forest (VSS 6) should average 40+%. Opening size is up to 4 acres with a maximum width of up to 200 feet. One group of reserve trees, 3-5 trees per group, will be left if the opening is greater than an acre in size. Leave at least 2 snags per acre, 3 downed logs per acre, and 5-7 tons of woody debris per acre.

Woodland: Manage for uneven age conditions to sustain a mosaic of vegetation densities (overstory and understory), age classes, and species composition well distributed across the landscape. Provide for reserve trees, snags, and down woody debris.

Within Post-fledgling Family Areas

General: Provide for a healthy sustainable forest environment for the post-fledgling family needs of goshawks. The principle difference between "within the post-fledgling family area" and "outside the post-fledgling family area" is the higher canopy cover within the post-fledgling family area and smaller opening size within the post-fledgling family area. Vegetative structural stage distribution and structural conditions are the same within and outside the post-fledgling family area.

Spruce-Fir: Canopy cover for mid-aged forest (VSS 4) should average 60+% and for mature (VSS 5) and old forest (VSS 6) should average 70+%.

Mixed Conifer: Canopy cover for mid-aged (VSS 4) to old forest (VSS 6) should average 60+%.

Ponderosa Pine: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+% and 2/3 50+%. Mature (VSS 5) and old forest (VSS 6) should average 50+%.

Woodland: Maintain existing canopy cover levels.

Within Nesting Areas

General: Provide unique nesting habitat conditions for goshawks. Important features include trees of mature to old age with high canopy cover.

The structure of the vegetation within nest areas is associated with the forest type, and tree age, size, and density, and the developmental history of the stand. Table 5 of RM-217 presents attributes required for goshawks on locations with "low" and "high" site productivity.

Preferred treatments to maintain the desired structure are to thin from below with non-uniform spacing and use of hand tools and fire to reduce fuel loads. Lopping and scattering of thinning debris is preferred if prescribed fire cannot be used. Piling of debris should be limited. When necessary, hand piling should be used to minimize compaction within piles and to minimize displacement and destruction of the forest floor and the herbaceous layer. Do not grapple or Dozer pile debris. Manage road densities at the lowest level possible to minimize disturbance in the nest area. Use small, permanent skid trails in lieu of roads for timber harvesting.

Spruce-fir, Mixed Conifer and Ponderosa Pine Cover Types: The nesting area contains only mature to old forest (VSS 5 & 6) having a canopy cover (measured vertically) between 50-70% with mid-aged VSS 6 trees 200-300 years old. Non-uniform spacing of trees and clumpiness is desirable.

Woodland: Maintain existing canopy cover levels.

Human Disturbance

Limit human activities in or near nest sites and post-fledgling family areas during the breeding season so that goshawk reproductive success is not affected by human activities.

The breeding season extends from March 1 through September 30.

Low intensity ground fires are allowed at any time in all forested cover types, but high intensity crown fires are not acceptable in the post-fledgling family area or nest areas. Avoid burning the entire home range of a goshawk pair in a single year. For fires planned in the occupied nest area, a fire management plan should be prepared. The fire management plan should minimize the risk of goshawk abandonment while low intensity ground fire burns in the nesting area. Prescribed fire within nesting areas should be planned to move with prevailing winds away from the nest tree to minimize smoke and risk of crown fire developing and driving the adults off or consuming the nest tree.

Ground Surface Layer

(All forested cover types)

Manage road densities at the lowest level possible. Where timber harvesting has been prescribed to achieve desired forest condition, use small skid trails in lieu of roads.

Piling of debris should be limited. When necessary, hand or grapple piling should be used to minimize soil compaction within piles and to minimize forest floor and herbaceous layer displacement and destruction.

Limit dozer use for piling or scattering of logging debris so that the forest floor and herbaceous layer is not displaced or destroyed.

Table Wildlife-1. Percent Condition on Suitable Timberlands.

Age and Canopy Cover Class (CC)	% of Suitable Timberlands Managed for Balanced Age and Cover Class
Grass/Forb	10-13
Shrub/seedling	10-13
Sapling/Pole<40% CC	10-13
Sapling/Pole 40-70% CC	10-13
Sapling/Pole>70% CC	10-13
Mature <40% CC	10-13
Mature 40-70% CC	10-13
Mature >70% CC	10-13
Old Growth	6.00

COVER NEEDS... On primary big game winter ranges and primary calving and fawning areas, manage to achieve identified cover requirements to meet big game population goals and objectives. The remaining suitable timberlands will be managed to provide habitat diversity.

EDGE CONTRAST... Maintain at least a medium amount of edge contrast between stands and cutting units created by even-age management. This means that cutting units prescribing regeneration cuts shall be placed at least 75 percent of the time adjacent to stands which will result in at least two age class difference after treatments, unless stands are being regenerated to manage aspen or to correct insect and disease or other natural catastrophies.

COVER AND OPENINGS:

NATURAL OPENINGS... A natural opening is an area with less than 10 percent crown cover that has never supported a higher tree density, for example, a meadow, rock slide, or swamp.

CREATED OPENINGS... A created opening is a contiguous area greater than two acres in size that was created by vegetative manipulation and that does not meet tree height and stocking requirements. When an opening results from a natural occurrence, such as wildfire or windstorm, the opening will be treated as a created opening.

NO LONGER OPENING... A created opening will no longer be considered an opening when the following conditions are met:

Table Wildlife-2. Conditions When Created Openings Are No Longer Openings.[1]

Forest Type	Average Tree Height (feet)	Trees Per Acre	Crown Cover (%)[1]	Residual Trees[3]	
				Trees Per Acre	d.b.h. (inches)
Aspen	15	500	25	N/A	
Spruce-Fir	10	200	25	10-30	>6 but <11
Mixed Conifer	10	175	25	10-30	<6 but <11

C. Forest-wide Prescriptions

Table Wildlife-2. Conditions When Created Openings Are No Longer Openings.[1] (continued)

Forest Type	Average Tree Height (feet)	Trees Per Acre	Crown Cover (%)[1]	Residual Trees[3] Trees Per Acre	d.b.h. (inches)
Aspen	15	500	25	N/A	
Ponderosa Pine	5	150	35	5-10	>6 but <11

[1] The criteria for the definition of when an area would no longer be classified as an opening were based on the reduction in forage and initiation of hiding cover for wildlife along with the watershed considerations of snow distribution and melt. Hiding cover is defined as vegetation capable of hiding 90 percent of an adult elk from view at a distance of 200 feet.

[2] A canopy cover percentage used to determine if an area is still an opening when a variety of tree sizes are present. When only sapling size trees are present, the specifications referred to under residual trees will prevail.

[3] Other trees present in the stand (with or without regeneration present) that would prevent classification of an area as an opening.

PJ OPENINGS...

- An area is no longer considered an opening in the pinon-juniper type if one of the following conditions is met:

There are at least 35 trees per acre that are 10 feet or taller
There are at least 80 trees per acre that are 6 feet or taller

- The minimum distance between newly created openings will be 660 feet in the pinon-juniper type.

CLEARCUT SIZE... Clearcuts may not be larger than 40 acres without Regional Forester approval. The standards shown in table 34 also apply, except in the following situations:

- In the harvest of salvageable wood in areas subjected to catastrophic conditions, such as fire, insect and disease attack, or windstorm.
- In the harvest of dwarf-mistletoe-infested overstory trees that threaten the established regeneration. A biological evaluation by Regional forest pest management experts is required.

Table Wildlife-3. Forested Land Permitted in Created Openings

Forest Type	Maximum Opening Sizes (Acres)	Maximum % of Acres in Openings [1]	Minimum Spacing Between Openings (feet)
As	40	35	330
SF	40	35	330
MC	40	35	330
PP	40	40	330

[1] Percent of forested land within a diversity unit which is permitted to be in created openings at any point in time.

- For nontimber species, such as the pinon-juniper, oak and sagebrush, standards and guidelines are established for the maximum size, dispersal, and duration of created openings. These standards and guidelines are designed to address concerns for wildlife and plant species.

- In the pinon-juniper type, created openings in areas that have been identified as big-game winter range will be designed so that an animal will be no more than 600 feet from hiding cover at any location within the opening.

- Limitations in the above table apply to newly created openings in the pinon-juniper type. Improve the interspersion of vegetated areas in existing openings.
- Limitations in the above table apply to newly created permanent openings in the oak and sagebrush types. A permanent opening is an area that is maintained with no more than 50 percent of the potential natural crown cover.

DIVERSITY EDGE INDEX... Newly created openings will be designed so they have a diversity edge index of at least 1.41. (41 percent greater circumference than a circle of equal size)

SUMMER BIG GAME COVER... The following cover standards and guidelines will apply in areas where threatened, endangered, or sensitive species habitat requirements do no conflict. Threatened, endangered, or sensitive species habitat requirements take precedence over cover requirements (Amendment 11).

- Ecological Management Unit dominated by forested vegetation types, including pinon-juniper will be managed so that no less than 40 percent summer big game cover will be maintained over time (Amendment 11).
- Ecological Management Unit dominated by non-forested vegetation types will be managed to minimize impacts to summer big game cover. The standards in Table 4 will apply (Amendment 11).

Table Wildlife-4. Forage Cover Ratios

Percent of Unit with Forest Vegetation	Percent of Forested Area in Cover
35 - 50%	At least 60%
20 - 34%	At least 75%
Less than 20%	At least 90%

SUMMER BIG GAME THERMAL COVER... On suitable timberlands manage for no less than 10 percent summer big game thermal cover within each diversity unit. The allocation of thermal cover will be stands of at least 30 acres in the sapling-pole stage or older, with canopy closures of 70 percent or greater. Stands on north-facing aspects should receive priority in the allocation of thermal cover.

SUMMER BIG GAME HIDING COVER...

- Manage suitable timberlands, and pinon-juniper, so that no less than 10 percent hiding cover is maintained on big game summer ranges that occur within each diversity unit. Stands allocated for cover should have at least a 450 foot radius from the stand center to any point on the exterior perimeter (approximately 20 acres).

- In forested management areas, including pinon-juniper, the objective will be to maintain summer big game hiding cover on 60 percent or more of the perimeter of all natural and created openings, and along at least 75 percent of the edge of arterial and collector roads.

- Summer big game hiding cover will be maintained or improved adjacent to special features (seeps, springs, wet meadows, wallows, salt licks, water developments). The following standards will apply:
  - Timber cutting within a minimum radius of 300 feet of the feature will be accomplished only if big game cover can be maintained or improved.
  - Cutting unit boundaries will be designed so that at least one third of the perimeter around the feature is contiguous to adjacent forest cover.
  - Permanent roads will not be constructed within 200 feet of special features unless there is no feasible alternative to build the road in another location.
  - Temporary roads will not be constructed within 100 feet of special features.
  - Skidding equipment will be authorized to within 75 feet of the feature and logging debris removed from all trails leading to the feature.

- Forested areas, including pinon-juniper, within at least 1200 feet of primary big game winter and calving and fawning forage areas, will be managed to maintain or improve the integrity of hiding and thermal cover.

C. Forest-wide Prescriptions

All other summer range cover standards and guidelines will apply to winter ranges and big game calving and fawning areas.

BIG GAME COVER... Big game cover requirements may be reduced temporarily during periods when stands are being regenerated to meet cover standards, to correct tree disease, to rejuvenate aspen stands, or where windthrow or wildfire has occurred.

BIG GAME HIDING AND THERMAL COVER LEVELS... In planning for the cover requirements of big game on each diversity unit utilize table 36 in conjuction with available timber stand data. Refinement of the stand conditions suitable to meeting cover requirements will be made as a result of field verification on an individual stand basis. As specific information is developed on the Forest this table may be modified if needed to reflect the appropriate range of cover conditions.

Table Wildlife-5. Big game hiding and thermal cover levels in ponderosa pine (pipo), mixed conifer (mc) and Spruce-Fir (sf).

Species	Size Class	Minimum	Acceptable	Optimum
Pipo Hiding	1-5" dbh 5-9" dbh 8-12" dbh Area Size	120 GSL 120 GSL 140 BA 10 Acres	150 GSL 150 GSL 160 BA 15 Acres	170 GSL 180 GSL 200 BA 25 Acres
MC, SF Hiding	1-5" dbh 5-9" dbh 8-12" dbh Area Size	60 GSL 80 GSL 80 GSL 10 Acres	80 GSL 100 GSL 100 BA 15 Acres	100 GSL 120 GSL 120 BA 25 Acres
Pipo Thermal	5-9" dbh 9-12" dbh 12-15" dbh Area Size	120 GSL 140 BA 160 BA 10 Acres	180 GSL 180 BA 200 BA 30 Acres	200 GSL 210 BA *220-240 BA 40+ Acres
MC, SF Thermal	5-9" dbh 9-12" dbh 12-15" dbh Area Size	120 GSL 120 BA 120 BA 10 Acres	140 GSL 140 BA 160 BA 30 Acres	160 GSL 160 BA 180 BA 40+ Acres

*BA in more than one size class, presence of Gambel Oak preferable.

SNAGS & DOWN LOGS:

NUMBER AND SIZE OF SNAGS... Snags will not be felled on major sales as a fire protection measure. Manage for at least 300 snags/100 acres on 60 percent of suitable timberlands not determined by interdisciplinary team review to be highly vulnerable to fuelwood collection. The guideline is:
- Conifers: 12 inch DBH and 15 feet tall.
- Aspen: 10 inch DBH and 12 feet tall.

SNAG RECRUITMENT... During stand treatment retain for snag recruitment disease-free cull or poor form trees within at least 100 feet of ponds, lakes, springs, seeps, wet meadows, and openings for snag replacement. Trees may be girdled or otherwise treated if needed to achieve future stand condition objectives. Stands that are biologically incapable of producing this quantity of snags, or are highly vulnerable to fuelwood cutting, are excluded as determined by interdisciplinary team review. The guideline is to retain at least three culls per acre (100 feet x 440 feet) around the perimeter of the feature.

DIAMETER AND LENGTH... Retain sufficient size and length per 100 acres of down logs (where biologically feasible) on 75 percent of suitable timberlands not determined to be highly vulnerable to fuelwood collection. The guideline includes:

Conifers: 12 inch minimum diameter and 5000 linear feet per 100 acres.
Aspen: 10 inch minimum diameter and 3300 linear feet per 100 acres.

TIMING, SIZE & PERIOD OF TIMBER MANAGEMENT ACITIVITIES:

DISPLACEMENT... Minimizing the displacement of big game and other sensitive wildlife, and providing sufficient security areas will be emphasized in the planning and implementation of the Forestwide timber sale program.

ACTIVITIES NOT ADJACENT... The objective will be to arrange timber sales over time and space so that concurrent activities do not occur adjacent to one another. Manage adjacent areas at least as large as the affected area of activity for wildlife security habitat.

ACTIVITIES WITHIN DRAINAGES... When designing timber sales attempt to keep activity perimeters within one major drainage at a time. Utilize subdivision design and contract stipulations (such as requiring the completion of a block before beginning activities in another area of the sale) as necessary to minimize impacts on security habitat.

THREE YEAR LIMIT... Timber sales will be designed so that activity time frames will minimize displacement of wildlife. A primary objective will be to limit logging disturbance in an activity area to no more than three years whenever possible on each timber sale.

WINTER LOGGING... On big game summer ranges where winter logging operations are environmentally and economically feasible encourage operations during this period.

SEASON LIMITS...

- On primary big game winter ranges timber management activities, including timber sale preparation, logging, timber stand improvement, and brush disposal will be authorized only during the period April 15 - December 15.

- Within identified turkey nesting areas timber management activities will not be authorized during the period April 15 - June 30.

- Within primary big game calving and fawning areas timber management activities will not be authorized during the period May 1 - July 25.

TURKEY HABITAT:

SLASH PILES... Within actual or potential turkey nesting areas (Ponderosa pine and mixed conifer) develop over time 200 slash piles or unlopped tree tops per 100 acres within one-half mile of dependable waters. Piles should be approximately three feet high and 10 feet in diameter and preferably loosely piled by hand.

ROOST TREE GROUPS...

- Retain and/or develop an average of two turkey roost tree groups per section in actual or potential summer turkey habitat (8-11 trees of at least one-tenth acre in size).

C. Forest-wide Prescriptions

- Retain and/or develop an average of four turkey roost tree groups per section in actual or potential winter turkey habitat.

RAPTOR HABITAT:

NEST TREES... Protect active raptor nest tree groups and maintain inventory of nest locations. Nest group consists of nest tree and adjacent trees and is maintained as follows:

Goshawk: **DELETE** (Amendment 11)
Coopers hawk: 15 acres of uncut area around active nests.
Other raptors: 10 acres of uncut area around active nests.

PERCH AND ROOST TREES... Adequate perch and roost trees for raptors will be managed adjacent to cliffs, major ridges, and openings. Trees should be open-crowned, either living or dead, and be maintained over time.

ROCK TALUS... Protect rock talus as a unique habitat component and because it provides a major prey base for raptors and other predators. Requests for rock from these locations will receive interdisciplinary team review.

SQUIRREL HABITAT:

ABERT AND RED SQUIRREL... By creating a diversity of stand conditions and providing juxtaposition of stands over time and space, suitable habitat components of Abert and red squirrels will be maintained over time. During the intensive reconnaissance phase of integrated stand management State and Federal biologists should identify those stands where squirrel activity is especially high and recommend deferment of cutting during the entry.

ROAD MANAGEMENT/WILDLIFE INTEGRATION:

ROAD MANAGEMENT... Emphasize road management and resource/wildlife protection as a primary Forest policy. Focus media attention on road management at least biannually, especially management to provide wildlife security and reduce impacts to soil, water and fisheries.

MIGRATION ROUTES... Do not construct permanent roads across major big game migration routes unless no feasible alternative exists, as determined by interdisciplinary team review.

ROAD DENSITIES... Road management will provide for an environment relatively free from human disturbances to wildlife. Manage over time to achieve the following guidelines for maintaining or improving effective big game habitat:
- Summer big game range: 60% habitat effectiveness (approximately 1.0 mile/square mile of roads open to public use).
- Winter big game range: 75% habitat effectiveness (approximately .5 mile/square mile of roads open to public use during the period December 15 - April 15).
- Primary winter big game forage and associated cover areas: 90% habitat effectiveness (approximately .1 mile/square mile of roads open to public use during the period December 15 - April 15).

EFFECTIVE CLOSURES... Whenever possible, design roads so they can be easily and effectively closed (either permanently or temporarily) at a low cost.

AVOIDANCE AREAS... Permanent roads will be designed to avoid saddles, meadows, ridge tops, and riparian areas whenever economically and physically possible.

CLOSURES... Install gates or other effective closure methods at onset of road building activity when the objective is to prevent human use patterns from becoming established. Closures will be implemented during any period of inactivity exceeding 24 hours. During big game hunting seasons closures will be implemented full-time if necessary to provide additional wildlife security areas.

SIGNING... Include signs where appropriate on gates and other closure devices indicating the reasons for and dates of all road closures.

CLOSURE TIME FRAMES... All local terminal roads will be completely closed to public use by no later than two years following completion of a timber sale contract. All other temporary roads will be closed and/or obliterated upon completion of the activity.

BIG GAME WINTER RANGE & FORAGE/COVER AREAS... On big game winter ranges authorize new permanent road construction only if needed to meet priority objectives outside the winter range, as determined by interdisciplinary team review. Minimize impacts by locating roads outside of identified primary forage and cover areas.

CALVING AND FAWNING AREAS... Locate new arterial, collector and local service roads outside of primary big game calving and fawning areas. Close other roads as needed during periods of calving and fawning activity May 1 - July 25.

TRAVEL MANAGEMENT/WILDLIFE INTEGRATION:

The following wildlife-related criteria will be used to evaluate the need for future travel closures and restrictions including over-the-snow vehicles:
- Habitat for threatened, endangered, or sensitive species is threatened.
- Meadows and other forage areas likely to be, or being damaged.
- Key wildlife areas being threatened or damaged.
- Areas important to wildlife reproduction, such as calving and nesting areas, where disturbance is causing, or likely to cause, significant stress and/or reduction of reproductive success.
- Important seasonal security areas, such as big game winter ranges, where disturbance would result in significant displacement and/or loss of habitat values.
- Riparian areas which are being threatened or damaged.

RANGE/WILDLIFE INTEGRATION:

RANGE MANAGEMENT PLANS... Design range management systems and plans with input from State and Federal wildlife biologists to minimize conflicts with fish and wildlife. Whenever possible design grazing systems to minimize domestic livestock impacts on important seasonal wildlife ranges such as primary calving and fawning areas, winter ranges, and primary turkey nesting areas.

SALT... Livestock salt shall not be placed in or adjacent to any riparian area or other identified key wildlife area where degradation of wildlife habitat would be likely to occur.

FORAGE ALLOCATION... Wildlife will be allocated forage on the basis of mutually agreed-upon population goals and objectives of the Forest Service and New Mexico Department of Game and Fish.

C. Forest-wide Prescriptions

WATER... During summer months, where free water has been identified as limiting desired wildlife population levels, maintain water in livestock troughs for wildlife use after domestic animals have been removed from the grazing unit. In winter months on identified primary big game winter ranges, provide water where freezing will not damage existing facilities, or install bubblers or other devices to prevent freezing.

WILDLIFE/FENCE CONFLICTS... Install let down fences, top-rail fences, barbless bottom wire, or elk jumps wherever necessary to reduce wildlife/fence conflicts. On newly constructed fences the bottom wire will be at least 18 inches above the ground, and the top wire will be at least 38 inches, but no more than 42 inches above the ground. Do not construct new net wire fences on identified pronghorn ranges and modify existing fences as needed to provide for seasonal movement of pronghorn.

ESCAPE RAMPS... On open storage tanks and drinkers provide entry and escape ramps for wildlife.

RIPARIAN WOODY VEGETATION... On wet meadows and other riparian areas, favor the establishment of woody riparian vegetation as defined in FSH 2509.23. Control livestock and wildlife grazing through management and/or fencing to allow for adequate establishment of vegetation and the elimination of overuse.

SEEDING FOR DIVERSE VEGETATION... Vegetative treatments which require seeding will utilize a mix of plant species which will result in increased plant cover and improved quality and diversity of forage for both wildlife and livestock.

OTHER RESOURCES/WILDLIFE INTEGRATION:

Integrate the seasonal and yearlong habitat needs of fish and wildlife into the planning and implementation of other resource activities and uses. Minimize or eliminate adverse impacts and cumulative effects, and determine opportunities to improve habitat conditions through the management of these other activities. Some examples include:

- Utilize oil and gas exploration holes as water wells where wildlife waters are determined desirable, and establish wildlife forage and cover plants on disturbed areas.
- Build campgrounds and other developed recreation sites in areas not identified as important habitat.
- Locate recreation trails outside of important habitats.
- Build trailhead facilities in heavy use big game hunting areas and provide other facilities for wildlife and fish oriented recreational use.
- Coordinate with, and use watershed improvement funds, to close and obliterate roads in important wildlife habitats, and in the restoration and protection of riparian areas.
- Coordinate with the land adjustment and acquisition programs to exchange for or purchase identified important wildlife habitats.
- Utilize other resource personnel in collecting information on wildlife species, numbers, locations, habitat use and other information useful to wildlife and fish management.
- Utilize market demand for wood products to achieve desired wildlife conditions in forested management areas.
- Coordinate with range management in locating range water improvements in areas where wildlife waters are limited.

COOPERATION WITH OTHER AGENCIES AND ORGANIZATIONS:

Consult and cooperate with the New Mexico Department of Game and Fish (NMDG&F) to achieve goals and objectives specified in the New Mexico Wildlife, Fisheries, and Endangered Species Comprehensive Plan. Cooperate with the U.S. Fish and Wildlife Service and other agencies and organizations as neces-

sary. Cooperate with NMDG&F in evaluating proposals for reintroducing extirpated species into suitable habitat and on fish stocking and public access for fishing.

EXOTIC SPECIES... Manage in cooperation with NMDG&F for indigenous fauna. Exotic species will not be introduced. Unapproved exotics which become established on National Forest System Lands will be managed toward the goal of elimination.

POPULATIONS... Cooperate with NMDG&F and other agencies to maintain wildlife and fish populations within identified habitat capabilities.

ANIMAL DAMAGE... Manage animal damage in cooperation with other agencies to prevent or reduce damage to other resources. Direct control efforts toward preventing damage or removing only the offending animals as necessary to meet land management objectives.

PATROLS... Provide sufficient patrol personnel during hunting seasons, including weekends, and cooperate fully with the NMDG&F in the enforcement of State and Federal regulations.

PUBLIC INVOLVEMENT...

- Evaluate each proposed activity to determine public involvement needs. Agressively pursue public input and cooperation in the achievement of wildlife and fish habitat management goals and objectives. Enlist the support of interested groups or individuals who are willing to help inform and involve the public.

- Provide timely public information on proposed management activities, such as road and area closures and other activities which achieve the maintenance or improvement of wildlife and fish habitats.

COOPERATE WITH NM DEPT. OF GAME & FISH... Cooperate fully with the NMDG&F in determining mutually agreeable wildlife population goals and objectives, and in the identification of important wildlife habitats.

POPULATION ESTIMATES... Cooperate with NMDG&F and provide commensurate funding where necessary, in obtaining reliable big game population estimates, winter range use, and other seasonal use patterns.

BASELINE DATA FOR INDICATOR SPECIES... Establish current baseline information for management indicator species habitats in conjunction with the NMDG&F and monitor trends at agreed upon intervals. Cooperate with NMDG&F and other agencies and organizations in monitoring indicator species populations and habitats.

OTHER WILDLIFE AND FISH PLANNING AND HABITAT IMPROVEMENT:

COLD WATER FISHERIES... Inventory, evaluate, and improve areas of streams, lakes, and wetlands for cold water fish, especially the Rio Grande cutthroat trout.

FISH PASSAGE... Provide for fish passage under all roads crossing perennial streams.

TROUT FISHERIES CAPACITY... Increase carrying capacity for put-and-take wild trout fisheries through the installation of stream improvement structures, including the use of beaver to build and maintain beaver dams.

RIPARIAN VEGETATION... Inventory riparian vegetation conditions and manage to achieve acceptable riparian standards. Direct habitat improvements may include planting, seeding, fencing, and rejuvenation of woody vegetation through selective cutting and burning.

C. Forest-wide Prescriptions

HABITAT IMPROVEMENT PROJECTS... Plan for, and include game/nongame wildlife and fish habitat improvement projects in sale area improvement plans for all timber sale areas including pinon-juniper, where there is a potential to improve wildlife and fish habitat conditions.

RECORDS... Identify and maintain records of important wildlife and fish habitats and integrate wildlife and fish requirements through interdisciplinary team review of all planned programs and activities occurring on National Forest System Lands.

WILDLIFE AND FISH OBJECTIVES... Provide wildlife and fish objectives and expected outputs throughout the integrated resource management process for commercial timber sales and other proposed management activities. Identify, on a diversity unit or herd unit basis, wildlife and fish habitats necessary to meeting identified objectives, as stated throughout Forestwide and management area standards and guidelines.

WATER IS LIMITING... Identify areas of the Forest where the lack of dependable water is a limiting factor. Determine priority areas and schedule wildlife water improvements including, but not limited to, spring developments, trick tanks, verticle and horizontal water wells, and earthen tanks. Wildlife water developments will be fenced if needed to exclude livestock and wild horse use. Top-rail fences will be installed as necessary to minimize wildlife injuries and to reduce the need for yearly maintenance.

FORAGE AND COVER CONDITIONS... Improve forage and cover conditions through seeding and establishment of forage and browse species desirable to wildlife.

PRESCRIBED FIRE... Improve forage conditions by using prescribed fire where environmental analysis shows beneficial effects and in accordance with approved burning plans.

RESTRICT VEHICLE ACCESS... Install structures, such as gates or barriers, necessary to manage roads to limit or restrict vehicular access into important wildlife habitats.

NEST, ROOST AND COVER STRUCTURES... Install and/or create nesting, roosting and cover structures for wildlife to improve habitat conditions. Sign trees and snags which are susceptible to removal for fuelwood and other wood products.

MAINTENANCE OF STRUCTURES... Plan for and provide necessary maintenance of all structural wildlife and fish habitat improvements. Give priority to maintenance of structures for threatened, endangered, and sensitive species.

PROGRAMING AND PRIORITIZING... Program and develop improvements on the basis of a management area concept (diversity unit, big game winter range, turkey nesting area, etc.). Prioritize improvements based on habitat conditions which studies have indicated are the greatest limiting factors to desired wildlife and fish populations.