UNITED STATES FOREST SERVICE
INTERMOUNTAIN REGION

BIOLOGICAL ASSESSMENT OF ENDANGERED AND THREATENED SPECIES FOR THE UTAH NORTHERN GOSHAWK HABITAT MANAGEMENT ENVIRONMENTAL ASSESSMENT

DRAFT 10-05-99 (revised)

I. INTRODUCTION

This programmatic Biological Assessment (BA) analyzes the potential effects of the Utah Northern Goshawk Habitat Management project (Alternative F) on species listed as Endangered, Threatened or Proposed under the Endangered Species Act (ESA) in Utah. All National Forest System lands within the Ashley, Dixie, Fishlake, Manti-LaSal, Uinta and Wasatch-Cache National Forests are being analyzed under this biological assessment (Map 1). The names and status of the species known or suspected to occur on the forests described above are shown in Table 1. The occurrence of these species by National Forest is documented in Table 2. The purpose of this biological assessment is to document a determination regarding the likely effects of the proposed action on the status of these species and determine whether formal consultation or conference with the U.S. Fish and Wildlife Service is required. Because this analysis is programmatic, all site-specific project proposals that implement this proposed action would be documented in a project level biological assessment and sent to the U.S. Fish and Wildlife Service for concurrence if it were determined to "may affect".

The objectives of this biological assessment are to: 1) Ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or contribute to animal species trends toward federal listing of any species. 2) Comply with the requirement of the Endangered Species Act that actions of Federal Agencies not jeopardize or adversely modify critical habitat of Federally listed species. 3) Provide a process and standard by which to ensure that threatened, endangered and proposed species receive full consideration in the decision making process (FSM 2672.24b-2676.17e Page 2 of 17).

All Federally listed species in Utah are being considered in this assessment. Table 3 documents the occurrence of these species in goshawk habitat[1], and the rational used for determining suitable habitat would not be affected directly, indirectly or cumulatively as a result of implementing the proposed action.

On August 25, 1999 a notice was published in the Federal Register delisting the American peregrine falcon. As of September 24th (30 days after notice) the peregrine falcon will have no federal status under the Endangered Species Act. This biological assessment recognizes the change in status of the peregrine falcon and has documented this change.

Table 1. Names and Status of Endangered, Threatened, or Proposed Species known or suspected to occur on National Forest System lands in Utah.

SPECIES
Vertebrates
Endangered
Peregrine Falcon *Falco peregrinus anatum*
Southwestern Willow Flycatcher *Empidonex traillii estimus*
California Condor (experimental population) *Gymnogyps californianus*
Black Footed Ferret *Mustela nigripes*
Whooping Crane (migrating population only) *Grus americana*

[1] Goshawk habitat is defined as habitat that is usable for nesting, roosting, and foraging. Forest habitat need not be occupied by goshawks to be considered habitat (Reynolds 1992).

Table 1. Names and Status of Endangered, Threatened, or Proposed Species known or suspected to occur on National Forest System lands in Utah.
(continued)

SPECIES
Vertebrates
Bonytail Chub *Gila elegans*
Colorado Squawfish *Ptychocheilus lucius*
Razorback Sucker *Xyrauchen texanus*
Humpback Chub *Gilia cypha*
June Sucker *Chasmistes liorus*
Virgin River Chub *Gila seminuda*
Woundfin *Plagopterus argentissimus*
Threatened
Bald Eagle *Haliaeetus leucocephalus*
Utah Prairie Dog *Cynomys parvidens*
Mexican Spotted Owl *Strix occidentalis lucida*
Desert Tortoise *Gopherus agassizii*
Lahontan Cutthroat Trout *Oncerhynchus clarki henshawi*
Proposed Threatened
Canada Lynx *Lynx canadenisis*
Mountain Plover *Charadrius montanus*
Plants
Endangered
San Rafael Cactus *Pediocactus despainii*
Clay Phacelia *Phacelia argillacea*
Threatened
Heliotrope Milkvetch *Astragalus montii*

Table 1. Names and Status of Endangered, Threatened, or Proposed Species known or suspected to occur on National Forest System lands in Utah.
(continued)

SPECIES
Maguire's Primrose *Primula maguirei*
Last Chance Townsendia *Townsendia aprica*
Ute Ladies' Tresses *Spiranthes diluvialis*
Winkler Cactus *Pediocactus winkleri*

E = Endangered – Taxa formally listed as Endangered
T = Threatened – Taxa formally listed as Threatened
P = Proposed E or T – Taxa proposed to be formally listed as Endangered or Threatened
C = Candidate – Taxa previously in Category 1, substantial biological information on file to support proposing to list as Endangered or Threatened.

Table 2 – Occurrence of Endangered, Threatened, and Proposed Species by National Forest in Utah

Species (Vertebrates)	Ash	Dix	Fish	M-L	Uin	W-C
Endangered						
Peregrine Falcon *Falco peregrinus anatum*	X	X	X	X	X	X
Southwestern Willow Flycatcher *Empidonex traillii estimus*	?	?	X	X	?	
California Condor *Gymnogyps californianus*		?[1]		?[1]		
Black Footed Ferret *Mustela nigripes*	?					
Whooping Crane *Grus americana*	X[2]					
Bonytail Chub *Gila elegans*						
Colorado Squawfish *Ptychocheilus lucius*						
Razorback Sucker *Xyrauchen texanus*						
Humpback Chub *Gilia cypha*						

This data was obtained in part from the U.S. Fish and Wildlife Service species occurrence by county list (July 1999)
1 = experimental population only
2 = migrant in spring, fall or winter, no known nests
3 = vocalizations recorded with no known nests
? = unknown at this time

Table 2 – Occurrence of Endangered, Threatened, and Proposed Species by National Forest in Utah
(continued)

Species (Vertebrates)	**Ash**	**Dix**	**Fish**	**M-L**	**Uin**	**W-C**
June Sucker *Chasmistes liorus*						X
Virgin River Chub *Gila seminuda*						
Woundfin *Plagopterus argentissimus*						
Threatened						
Bald Eagle *Haliaeetus leucocephalus*	X_2	X_2	X_2	X_2	X_2	X_2
Utah Prairie Dog *Cynomys parvidens*	?	X	X			
Mexican Spotted Owl *Strix occidentalis lucida*		$?_3$	$?_3$	X		
Desert Tortoise *Gopherus agassizii*		X				
Lahontan Cutthroat Trout *Oncerhynchus clarki henshawi*					X_1	X_1
Proposed						
Canada Lynx *Lynx canadenisis*	?			?	X	?
Mountain Plover *Charadrius montanus*	?			?	X	?

Species (Plants)	**Ash**	**Dix**	**Fish**	**M-L**	**Uin**	**W-C**
Endangered						
San Rafael cactus *Pediocactus despanniii*			X			
Clay phacelia *Andorsace chamaejasme carinata*					X	
Threatened						
Heliotrope milkvetch *Astragalus montii*				X		
Maguire's primrose *Primula maguirei*						X
Maguire daisy *Erigeron maguirei*			X			
Last chance townsendia *Townsendia aprica*			X			
Ute Ladies' tresses *Spiranthes diluvialis*					X	
Winkler cactus *Pediocactus winkleri*						

This data was obtained in part from the U.S. Fish and Wildlife Service species occurrence by county list (July 1999)
1 = experimental population only
2 = migrant in winter, no known nests
3 = vocalizations recorded with no known nests
? = unknown at this time

Table 3. Habitat and species occurrence in goshawk habitat for Endangered, Threatened, and Proposed species on National Forest System lands in Utah.

Species	Occurring Habitat Used By Goshawk	Habitat Unsuitable based on the Following
Vertebrates		
Endangered		
Peregrine Falcon *Falco peregrinus anatum*	*[1]	Does not require "goshawk habitat" for foraging or reproduction
Southwestern Willow Flycatcher *Empidonex traillii estimus*	*[1]	Does not require "goshawk habitat" for foraging or reproduction
California Condor (experimental population) *Gymnogyps californianus*		Experimental population
Black Footed Ferret *Mustela nigripes*		Not known to occur in forested landscapes where goshawks live. They occur in open landscapes
Whooping Crane *Grus americana*		Located in aquatic environment
Bonytail Chub *Gila elegans*		Located in aquatic environment
Colorado Squawfish *Ptychocheilus lucius*		Located in aquatic environment
Razorback Sucker *Xyrauchen texanus*		Located in aquatic environment
Humpback Chub *Gilia cypha*		Located in aquatic environment
June Sucker *Chasmistes liorus*		Located in aquatic environment
Virgin River Chub *Gila seminuda*		Located in aquatic environment
Woundfin *Plagopterus argentissimus*		Located in aquatic environment
Threatened		
Bald Eagle *Haliaeetus leucocephalus*	*[1]	Does not require "goshawk habitat[2]" for foraging or reproduction
Utah Prairie Dog *Cynomys parvidens*		Not known to occur in forested landscapes where goshawks live
Mexican Spotted Owl *Strix occidentalis lucida*		
Desert Tortoise *Gopherus agassizii*		Only occurs in open desert landscapes
Lahontan Cutthroat Trout *Oncerhynchus clarki henshawi*		Located in aquatic environment

*[1] = These species do not require "goshawk habitat" for foraging or reproduction

[2] = Goshawk habitat is defined as habitat that is usable for nesting, roosting, and foraging. Forest habitat need not be occupied by goshawks to be considered habitat (Reynolds 1992).

Table 3. Habitat and species occurrence in goshawk habitat for Endangered, Threatened, and Proposed species on National Forest System lands in Utah.
(continued)

Proposed Threatened		
Canada Lynx *Lynx canadenisis*		
Mountain Plover *Charadrius montanus*		Only occurs in open unforested landscapes
Plants		
Endangered		
San Rafael Cactus *Pediocactus despanniii*		Occurs in open landscapes and not effected by this action
Clay Phacelia *Andorsace chamaejasme carinata*		Occurs in open landscapes and not effected by this action
Threatened		
Heliotrope Milkvetch *Astragalus montii*		Occurs on windblown snowdrift sites and would not be affected by this action
Maguire's Primrose *Primula maguirei*		Occurs on rock cliffs and would not be affected by this action
Last Chance Townsendia *Townsendia aprica*		Occurs in open landscapes and would not be affected by this action
Ute Ladies' Tresses *Spiranthes diluvialis*		Occurs in riparian habitats and not be affected by this action
Winkler Cactus *Pediocactus winkleri*		Occurs in open landscapes and not be affected by this action

*$_1$ = These species do not require "goshawk habitat" for foraging or reproduction
$_2$ = Goshawk habitat is defined as habitat that is usable for nesting, roosting, and foraging. Forest habitat need not be occupied by goshawks to be considered habitat (Reynolds 1992).

Current Management Direction

Current policy as stated in the Forest Service Manual (FSM 2670.3) includes the following (USFS 1991):

1. Through the BA process, review actions and programs authorized, funded or carried out by the Forest Service to determine their potential for effect on threatened and endangered species and species proposed for listing.
2. Avoid adverse impacts on threatened and endangered species and their habitats except when possible to compensate adverse through alternatives identified in the BO rendered by the FWS or NMFS or when an exemption has been granted under the ESA. Avoid adverse impacts, to the extent practicable, on species proposed for listing during the conference period and while the Federal status is determined.
3. Initiate consultation with the FWS and NFMS when the Forest Service determines that a proposed activity or program may affect threatened or endangered or designated critical habitat.
4. Identify and prescribe measures to prevent adverse modification on destruction of designated critical habitat and other habitats essential for the conservation of endangered, threatened, and proposed species as part of project planning.

The management direction specified by Utah National Forests Land and Resource Management Plans is to manage classified species habitat to maintain or enhance their status through direct habitat improvement and agency cooperation and to manage and provide habitat for recovery of endangered and threatened species (USFS 1986).

Proposed Action

Purpose and Need for Action

Purpose: This project was initiated not because the agency was concerned that we would lose a viable population of goshawks prior to revision of Forest Plans in Utah (projected to be 4 years), but in response to identified concerns that current management strategies permitted actions that could degrade habitat and did not emphasize some actions needed to maintain or restore goshawk habitat. In addition, new direction was needed to provide greater consistency in management of habitat for the goshawk. Current direction is not sufficient to provide consistency, resulting in a variety of interpretations on how to manage goshawk habitat. For a far-ranging species such as the goshawk that spans multiple national forests and other jurisdictional boundaries, consistency in habitat management is an essential component of actions needed to provide reasonable assurances that habitat to support viable goshawk populations can be sustained in the future.

Due to the important role NFS lands play in restoring or maintaining habitat for the northern goshawk in Utah, the Intermountain Region elected to take action to determine how to incorporate principles recommended in the HCS into management actions proposed in the future. This action will contribute to on-going interagency efforts to prevent the goshawk from being listed as threatened or endangered. Once a species is listed as endangered or threatened, options for management can be reduced.

Need: A habitat assessment and management recommendations for the northern goshawk and subsequent habitat conservation strategy were developed for the State of Utah in response to suspected downward trends in goshawk habitat and/or populations. Due to the important role NFS lands play in restoring or maintaining forested habitat for the northern goshawk, there is an immediate need to incorporate the principles and recommendations from these documents into management direction, for the reasons stated below.

Changes in forest structure, especially large tree removal and other forest management activities singly or in combination, may negatively affect goshawk populations (Crocker-Bedford 1990). In addition, fire exclusion has resulted in an ingrowth of forest stands by shade tolerant species. This in and of itself would likely not lead to goshawk population declines. In the short term the increase in older seral conditions may actually be beneficial. The main issue is the changes in fire severity and risk of large scale habitat losses from catastrophic fire and insect events that would ultimately lead to a loss of nesting habitat (Bloom et al. 1986, Herron et al. 1985, Kennedy 1989) [Graham et al. 1999].

Each of the six national forests identified in Chapter 1.4.1 completed Supplemental Information Reports (SIRs). The SIRs assessed the sufficiency of management direction in current forest plans to allow use of new information, including management recommendations, found in the Assessment and HCS. While current management direction would allow for use of the recommendations at the project level, some direction was so broad that it also allowed actions that could degrade goshawk habitat. As a result, it was determined that amendments to current forest plans are necessary to address new information found in the assessment and strategy.

Geographic Range and Scope of the Action

Geographic Range: The Proposed Action provides management direction for affected forested habitats on NFS lands within the Ashley, Dixie, Fishlake, Manti-LaSal, Uinta, and Wasatch-Cache National Forests (NF) (hereinafter referred to as Utah's NFs) of the Intermountain Region. Specifically, the geographic area described includes the majority of NFS lands in the State of Utah, with small portions of Wyoming and Colorado. The total NFS lands within these six national forests is approximately 8.1 million acres; 7.98 million acres in Utah, 90,000 acres in Wyoming and 30,000 acres in Colorado. Coniferous and aspen forests occur on approximately 3.9 million acres of this 8.1 million acres.

Scope*: Under the provisions of the NFMA, this action will amend current management direction in six forest plans. It will provide consistency in future project design, implementation and monitoring on the Ashley, Dixie, Fishlake, Manti-LaSal, Uinta, and Wasatch-Cache NFs where habitat for the goshawk and its prey is involved. When forest plans for the affected national forests are revised, the management direction adopted through this amendment will be integrated as needed to best meet the intent of the conservation strategy and assessment.*

Components of the Preferred Alternative (Alternative F)

Categories of Management Direction: The proposed management direction will apply to all forested habitats on the affected national forests except as exempted (see "Features Common to All Action Alternatives"). Seven categories of management direction/requirements have been developed. These management direction categories are:

- *Category 1: Native processes.* This category applies to all aspects of a goshawk home range[2]. Natural disturbances (i.e., fire, insects, disease and wind) are integral processes in many systems. Species like the goshawk and its prey have evolved in response to environmental changes triggered by disturbance. Restoring or mimicing these disturbances is one of the best indicators of ecological sustainability, including sustaining populations of goshawks (Graham et al. 1999; HCS, 1998; R4 Properly Functioning Condition (PFC) Process, 1998).

- *Category 2: Forest composition.* This category applies to all aspects of a goshawk home range. Forest composition focuses on the importance of seral species and native species in landscape diversity. Landscape diversity is the variety of plant communities evaluated at the landscape level (including their identity, distribution, juxtaposition, and seral stage). The diversity of plant species present within a landscape, especially seral and native species, can have a profound influence on the resiliency of a system and the ability of a system to renew or maintain and propagate itself after disturbance. The continuing productivity of an ecological system, including its ability to produce desirable outputs such as habitat for goshawk and its prey, depends upon potential renewal (ibid.).

- *Category 3: Forest structure.* This category applies to all aspects of a goshawk home range. Alternatives address biological landscape structural attributes (i.e., vegetative structural stage, snags, down logs and woody debris, and canopy closure) important to habitat for the goshawk and its prey. The sizes, shapes, patterns, and connectivity of these habitat attributes all influence the ability of the goshawk and its prey to exist in landscapes (Graham et al. 1999; HCS 1998; Reynolds et al. 1992).

- *Category 4: Nest and post-fledgling areas only.* This category applies only to non-exempt forested acres within defined nest and post-fledgling areas. Direction provides additional requirements/guidance specifically designed to sustain nest and post-fledgling areas (Graham et al. 1999; HCS 1998; Reynolds et al. 1992).

- *Category 5: Other miscellaneous areas of concern.* Some alternatives provide a mix of additional direction addressing other areas of concern that may be important to sustaining habitat for the goshawk and its prey. When management direction is included in this category, it applies to all aspects of a goshawk home range, all forested acres except as exempted. Alternatives address items such as road disturbance, grazing practices, and the need to do landscape assessments to provide context for future project design and implementation (Graham et al. 1999; HCS, 1998; Reynolds et al. 1992; Arizona Game and Fish, 1992/93; Braun et al. 1996; conservation biologist for Forest Guardians and Southwest Center for Biological Diversity).

- *Category 6: Treatment prioritization.* Alternative F specifically addresses the importance of providing direction to prioritize treatments in areas requiring restoration or areas at high risk to being lost or degraded for the remainder of the current planning period. Management direction is applied to all aspects of a goshawk home range (Graham et al. 1999).

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[2] A home range refers to all non-exempt forested acres within nest, post-fledgling (brood rearing) and foraging areas where management direction under the category will apply.

- *Category 7: Monitoring Requirements*. Key features in any adaptive management strategy are implementation monitoring and, to a lesser extent, effectiveness monitoring; validation monitoring is not addressed. The short-term nature of this direction (remainder of the current planning period) will not allow for meaningful validation monitoring. Monitoring is incorporated into all alternatives, but will not be used to compare alternatives. Monitoring associated with this proposal does not preclude established monitoring efforts by the individual national forests (HCS, 1998).

***Desired Habitat Condition**:* The Assessment by Graham et al. (1999) states that all forested landscapes in Utah are potentially suitable as goshawk habitat for some portion of their life cycle (HCS, page 4). Forested landscapes include those areas dominated by coniferous and aspen forest; but not woodlands such as pinyon-juniper.

In general, when forested landscapes of Utah are in a properly functioning condition (PFC 1998) they will provide excellent habitat for the goshawk and its prey (Graham et al. 1999). Desired habitat attributes important to the home range of the goshawk and its prey, as stated in the HCS, include :

1. Diverse forest cover types with strong representation of early seral tree species dominate the landscape.
2. High quality habitat patches that are no more than 60 miles apart, preferably less than 20 miles apart, exist throughout landscapes (connected habitat).
3. Forested landscapes have 40% of the coniferous land area and 30% of the aspen land area dominated by large trees **(***older vegetative structural stages (VSS) 5 and 6)*, well distributed. Large trees are defined based on the average size of trees found in the area and by the site potential.
4. Habitats for prey and other associated species are present to meet their needs as described by Reynolds el al. 1992 and Graham et al. 1999 (e.g., snags, down woody, cover, etc.).
5. A variety of structural stages as recommended by Reynolds et al. (1992) are present.

A balance of structural stages across the landscape is needed to ensure the larger structural stages are sustained over time. Tree densities in the smaller structural stages should promote accelerated tree growth into the larger structural stages and maintain crown development important to meeting desired canopy closures in the larger stages. Outside of nest areas, there should be open understories in the larger structural stages with trees irregularly spaced (Reynolds et al. 1992; Graham et al. 1999).

Nesting habitat is an essential component of goshawk home range. With the associated post-fledgling family area, it contributes to habitat connectivity across landscapes and the continuous recruitment of goshawks into the population (Graham et al. 1999). Both habitat connectivity and continuous recruitment are important components for sustaining viable populations of the northern goshawk in Utah. Thus, it is desirable to have nesting habitat and the associated post-fledgling areas well-distributed within and across forested landscapes. Desired nest area habitat varies from the overall home range habitat in that it typically occurs in older-aged stands that have a higher density of large trees, high tree canopy cover, and higher understory tree density.

To understand relationships of these desired habitat conditions they must be viewed in scales at tens of thousands of acres or larger. Scales greater than hundreds of thousands of acres are too large to ensure that desired habitat connectivity attributes are sufficiently distributed.

***Where the Proposed Management Direction Will and Will Not Be Applied**:* The proposed management direction will apply to National Forest System lands within the Ashley, Dixie, Fishlake, Manti-LaSal, Uinta, and Wasatch-Cache National Forests found within the State of Utah, with small portions of these forests in Wyoming and Colorado.

This direction will apply to forested habitats found within the approximately 8.1 million acres of National Forest System lands within the six Utah National Forest identified, *except* in the following areas:

(1) Designated wilderness areas;

(2) Administratively or Congressionally designated areas with a defined purpose (e.g., Research Natural Areas, National Recreation Areas, etc.);

(3) Areas currently managed or allocated for concentrated recreation use and development (does not include ski resorts; ski resorts included under category #5 below);

(4) National Forest System lands that are significantly influenced by lands in other ownership (e.g., high use urban interface areas); or,

(5) Areas allocated for leasable mineral activities in current forest plans[3], areas under existing special use permits (includes ski resorts) which allow vegetative disturbance or treatments (vegetation will be managed to meet the intent of the permit), or current administrative site uses and development.

In these areas, current forest plan direction will still apply. However, *when the direction adopted for management of goshawk habitat through this amendment does not conflict with the primary use in the exemption area, it will be applied*. Refer to Table 1 for acres by forest and exemption area.

While the direction adopted in this amendment will only be applied when it does not conflict with the primary use of an area, the contribution of these areas to sustaining habitat components for the goshawk and its prey are still important and will be analyzed and evaluated through the landscape assessment process. For example, areas such as wilderness may provide suitable goshawk habitat which may influence how habitat attributes in areas outside the wilderness are managed through time. However, vegetation in the wilderness is managed to meet the goals of the wilderness resource which may or may not be contrary to suitable goshawk habitat.

Areas where the proposed direction will and will not apply (#1-5 above) are shown on Maps 1 through 7 in *Appendix D*, when of sufficient size to be mapped. Due to the small size of some areas included under #5, all areas are not shown on the attached map. Examples of these types of areas include existing electronic sites, Federal Aviation Administration (FAA) sites, research plots, and some utility corridors and rights-of-way.

In addition to areas defined in #1-5 above, any valid, prior existing rights on National Forest System lands will not be affected by this amendment. Also, locatable, mineral material or leasable mineral activities and facilities[4] that have been authorized for such use under existing plans, licenses or permits[5], or have been leased or authorized for leasing[6] prior to the decision date of this amendment, will not be affected by this amendment. Restrictions required on mineral activities in these situations must be consistent with the

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[3]***Areas Allocated for Mineral Activities under a Forest Plan***: Areas designated by existing Forest Plans with management emphasis on mineral activities. For example: This includes MMA management units (Minerals Management Area) on the Manti-La Sal National Forest where coal mine facilities exist or are reasonably foreseeable and are specifically managed for leasable mineral activities.

[4]***Mineral Activities and Facilities***: Those activities and facilities needed to reasonably explore for and produce locatable and leasable minerals and mineral materials consistent with the rights granted by a plan of operation, permit, license, lease and requirements of applicable laws, regulations, and lease terms, conditions, and stipulations.

[5]***Plans or Permit Areas***: Areas where plans, licenses or permits have already been approved or issued for mineral related activities. They will include the permit areas for mines, oil and gas fields, oil and gas exploratory and development wells, preliminary exploration activities such as geophysical surveys, as well as ancillary facilities within or outside of existing leases, including (but not limited to) access roads, sediment ponds, staging or office facilities, pipelines, ventilation breakouts/shafts, etc.

[6]***Areas Authorized for Leasing***: Area included within existing leases and those areas authorized and forwarded to the responsible agency for leasing by the Forest Service prior to the date of the Goshawk decision. This does not include all areas potentiality available for mineral leasing under Forest Plans.

mining laws, lease rights, and existing lease stipulations. Leasable mineral uses and activities that will not be affected include both on and off-lease activities and facilities[7] reasonably required to exercise rights granted by the mineral leases. However, appropriate measures will be taken to protect goshawk habitat and nesting activity to the extent agreed to by the lessee, permittee, or operator and/or within the legal authorities of the responsible agencies.

The proposed direction will not apply in areas 1-5 above, or relative to existing uses or rights discussed, because:

- the forested habitats in these areas are managed for other purposes as defined by current policy, permits or regulations; or,
- the existing use permitted under the current forest plan will not always allow for the management of habitat as outlined in the proposed management direction; or
- the degree of influence resulting from adjacent lands in other ownership may preclude application of this direction.

Managing these areas consistent with current management direction and allowing for uses discussed above is important to meeting other goals and objectives in the forest plan. Doing so will not result in the loss of sufficient habitat needed to support the currently viable population of goshawks in the State of Utah (refer to Chapter 4, section 4.3.2).

Application of Management Direction*:* The management direction in the selected alternative will only apply to projects for which there has not been a decision document issued prior to the effective date of this amendment; prospective only.

[7]***Activities/Facilities Required to Exercise Rights Granted by a Lease***: This will include such activities and facilities within or outside of existing leases reasonably necessary to exercise pre-existing rights granted by a lease and subject to existing lease terms, conditions, and stipulations. They will include exploration and production facilities, reconstruction of existing Forest Service roads for access to leases/facilities, and construction of new access/transportation facilities (roads, pipelines, powerlines).

Table 1: Acres by forest and exemption category

			Acres Direction will not apply (acres rounded to thousands)					
National Forest	Total National Forest Acres (millions)	Acres (Millions) and Percent of Total Acres Direction *Will* Apply	Total Acres (Millions) and Percent of Total Acres	#1 Wilderness	#2 i.e., RNAs, NRAs, etc.	#3 Developed Recreation[8]	#4 Urban Interface	#5 MMAs, Special Uses[9]
Ashley	1.3	0.9 -- 70%	0.4 -- 30%	273,000	83,000	57,000	0	6,000
Dixie	1.9	1.8 -- 94%	0.1 -- 6%	83,000	14,000	13,000	0	7,000
Fishlake	1.5	1.4 -- 96%	0.1 -- 4%	0	10,000	37,000	0	8,000
Manti-Lasal	1.3	1.2 -- 94%	0.1 -- 6%	45,000	20,000	5,000	0	9,000
Uinta	0.9	0.8 -- 88%	0.1 -- 12%	58,000	4,000	20,000	11,000	6,000
Wasatch-Cache	1.2	0.8 -- 64%	0.4 -- 36%	313,000	6,000	9,000	51,000	53,000
Totals	8.1	6.9 -- 85%	1.2 -- 15%	772,000	137,000	141,000	62,000	89,000

***Alternative F*:** This alternative responds to the issue that "Management activities should concentrate on maintenance of habitat areas at risk to provide for the greatest opportunity to minimize any further degradation of habitat and loss of management options." This alternative focuses management on goshawk habitat acres at-risk. Acres at-risk are defined as those that, during the life of this amendment, may lose sufficient habitat elements important to the goshawk and its prey, such that they will no longer be rated as high and optimum habitat based on the Graham et al. (1999) rating process. By focusing management on those forested acres that are at greatest risk of dropping from high and optimum goshawk habitat to low or moderate, the agency will do the most it can do in over the projected 4 year life of this amendment to minimize any further loss of key habitat areas. Graham et al. (1999) use the current distribution and connectivity of high and optimum habitat as their basis for determining if sufficient amounts of habitat are available in the State of Utah to support the currently viable population of goshawks.

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[8] Total Forest acres includes both forested and non-forested. Though recent Forest Inventory and Analysis (FIA) work has estimated that approximately 3.9 million acres of the total 8.1 million acres are forested (not including woodland), there is no data set currently available to spatially tie this data set to locations on the ground. GAP data was considered for this purpose, but based on reviews was determined not to be accurate enough for addressing location information of items in categories 3,4 and 5; and marginal in categories 1 and 2. GAP data was intended to be used at the state scale; use at smaller scales has mixed results. Therefore, direction relates to any forested acres found outside exemption areas within the total 6.9 million acres it will be applied to.

[9] #5 - Includes ski resort acres. Several special use permit areas are of small spatial area and highly dispersed. It is impractical to map these small special use areas at the scale of maps contained in Appendix D and forestwide mapping of these areas is still being developed; therefore they are not included on these maps. However, these areas are in the acreage calculation in Table 1 based on acres estimated under permit. Refer the special uses section in chapter 3 and 4 of this document (3.5.6 and 4.5.6, respectively) for a discussions relating to this subject.

This alternative is similar to Alternative C. The key elements that changed in this alternative are:

1. All long term goals common to Alternative C and other action alternatives were deleted and replaced with a single goal which focuses on short-term maintenance or restoration of high or optimum habitats (per Graham et al. 1999 assessment process);
2. Unlike other action alternatives, an objective was added which emphasizes the need to treat at least 1000 acres per year on each administrative unit to further achievement of the short term goal previously discussed.
3. This alternative includes grazing direction. The focus is on the need to change grazing practices only in those areas where landscape assessments determine grazing is a factor in putting a landscape at-risk relative to habitat needs of the goshawk.

Six monitoring requirements are included under this alternative, m-1 through m-5, and m-7. This is the same as Alternatives C, D and E except the grazing requirement under Alternative D, m-6, is replaced with m-7.

II. EFFECTS OF THE PROPOSED PROJECT

A total of 25 Endangered, Threatened, and Proposed plant and animal species occur on National Forest System lands in Utah (Table 3). Of the 25 identified, two vertebrate species occur in habitats that are used during spring, summer, or fall by goshawk. These includes 1) Mexican spotted owl and the 2) Canada lynx. The peregrine falcon, Southwestern willow flycatcher, and the bald eagle may occasionally be observed in forested landscapes; however they do not require them for foraging or reproduction. For example the bald eagle only occurs on National Forest System lands during fall and winter periods. While the Southwestern willow flycatcher inhabits National Forest System lands during the spring and summer, however it is only located in riparian habitats, which is not targeted for vegetation manipulation in the proposed action.

Existing Environment

A complete list of all Federally Listed Species can be found in Table 1. In addition, location information by National Forest can also be found in Table 2.

A. Peregrine Falcon

On August 25, 1999 the U.S. Fish and Wildlife Service published a final rule in the Federal Register (Volume 64, Number 1641, pages 46541-46558) delisting the American peregrine falcon as an endangered or threatened species pursuant to the Endangered Species Act of 1973, as amended (Act). This action will remove the American peregrine falcon throughout its range as an endangered species from the Federal list of Endangered and Threatened wildlife, thereby removing all protections provided by the Act. It will not affect protection provided to this species by the Migratory Bird Treaty Act (MBIA), or state laws and regulations.

B. Southwestern Willow Flycatcher

The Southwestern willow flycatcher subspecies is one of ten North American flycatchers in the genus *Empidomax*.

The Southwestern race breeds in riparian habitats along rivers, streams, or other wetlands, where dense growths of willows (*Salix* sp.), seepwillow (*Braccharis* sp.), arrowweed (*Pulchea* sp.), buttonbrush (*Cephalanthus* sp.), other shrubs and medium-sized trees are present, often with a scattered overstory of cottonwood (*Populus* sp.) (Tibbitts et al. 1994). This flycatcher is known to net in thickets dominated by tamarisk (*Tamarix chinensis*) and Russian olive (*Eleagnus angustifolia*) but prefers native plan communities (Tibbitts et al. 1994, USFWS 1995b). thickets and shrubs are approximately 13-23 feet or more in height, with dense foliage from approximately 13 feet above ground, and often a high canopy cover percentage. Nest site vegetation may be even- or uneven-aged, but is usually dense and structurally homogeneous (USFWS 1995b).

Southwestern willow flycatchers build nests and lay eggs in late May and early June (incubation is approximately 12 days) and fledge young in late June or early July, with some variations observed (Tibbitts et al. 1994) which may be related to altitude, and renesting. This flycatcher typically raises one brood of young per year, but has been known to raise two (Whitfield 1990, cited in Tibbitts et al. 1994).

The Southwestern willow flycatcher is an insectivore that forages within and adjacent to riparian vegetation. No information is available on specific prey species (USFWS 1995b).

Minimum habitat patch size required to support a nesting pair has not been determined. The available information indicates that habitat patches as small as 1.23 acres can support one or two nesting pairs (Sogge et al. 1993, cited in USFWS 1995b and Tibbitts et al. 1994). The nest is a compact cup of fiber, bark, and grass, typically with feathers on the rim, lined with a layer of grass or other fine, silky plant material, and often has plant material dangling from the bottom (unpublished notes of Herbert Brown, University of Arizona, Tucson in Tibbitts et al. 1994). It is constructed in a fork or on a horizontal branch, approximately 3.2-15 feet above ground in a medium sized bush or small tree, with dense vegetation above and below the nest (Sogge et al. 1993, cited in USFWS 1995b and Tibbitts et al. 1994).

Willow flycatchers are neotropical migrants. The Southwestern willow flycatcher arrives on breeding grounds as early as mid-May and may be present until mid-August. Migration routes and wintering ranges are not well known. Southwestern willow flycatchers most likely winter in Mexico, Central America, and perhaps northern South America. Habitat types used as this time are not known, but tropical deforestation may restrict wintering habitat for this and other neotropical species (Finch 1991 in Tibbitts et al. 1994). Conversion of plant communities to housing and shopping centers along migration routes may also affect this species.

The southwestern willow flycatcher faces threats of extensive loss of breeding habitat, which have occurred due to urban, recreational, and agricultural development, water diversion and impoundment, channelization, livestock grazing, off-road vehicle and other recreational uses and hydrological changes resulting from these and other uses. It is also severely threatened by brood parasitism by the brown-headed cowbird and perhaps increasingly by the bronzed cowbird (USFWS 1995c). Cowbirds lay their eggs in other bird species' nests, and their young are raised by these host birds. Young cowbirds are more aggressive and usually larger than the host's young and either push the host's young out of the nest or obtain all the food from the host adult, thereby eliminating the host's reproduction for the year (Robbins et al. 1983).

Another likely factor in the loss and modification of southwestern willow flycatcher is invasion by the exotic tamarisk (*Tamarix* sp). Significant changes in riparian plant communities have occurred from spread of tamarisk. Invasion of tamarisk has corresponded with reduction or complete loss of bird species strongly associated with cottonwood-willow-habitats, including the yellow-billed cuckoo (*Coccyzus* americanus), summer tanager (*Piranga rubra*), northern oriole (*Icterus galbula*), and the southwestern willow flycatcher. Tamarisk is thought to be inferior habitat because it may not provide sufficient thermal protection that native broad-leaf species provide, and tamarisk branch structure and wispy foliage may allow flycatcher nests to be more readily detected, and thus parasitized, by cowbirds.

No Recovery Plan for the southwestern willow flycatcher has been developed, and no critical or essential habitat has been designated.

Effects to the Southwestern willow flycatcher or habitat they inhabit is not expected to occur because proposed action will be focused on forested landscapes which are goshawk habitat.

C. Bald Eagle

The bald eagle was listed as a threatened species in 1978 and is managed under the Northern States Bald Eagle Recovery Plan (USFWS 1983).

Bald eagles range across North America breeding from south of the Arctic tundra to the southern United States and Baja, California. They generally move south to open water during winter. Bald eagles can be found in every state for all or part of the year (Spahr et al. 1991).

The breeding range of the bald eagle has receded during the 19th and 20th centuries. Historic records indicate that bald eagles formerly nested in at least 45 of the contiguous 48 states. As of 1981, only 30 states had nesting birds with 90 percent of the 1,250 known pairs occurring in just 10 states. Parts of Alaska and Canada have 10 times that number of nesting bald eagles (USFWS 1983). Four nesting bald eagles have been located in Utah, with three found in the southeastern part of the state. Results of the National Wildlife Federation mid-winter bald eagle survey indicate that at least 627-743 bald eagles winter within Utah (USFWS 1983).

The Northern States Bald Eagle Recovery Plan (USFWS 1983) states that the primary characteristic of winter habitat is abundant and available food supply in conjunction with one or more suitable night roost sites. At winter areas, bald eagles commonly roost in large groups. In the Pacific Northwest, these communal roosts are usually located in mature multi-layered forest stands with mean tree diameters ranging from 20-24 inches and heights between 81 and 91 feet. Predominant cover type is usually Ponderosa pine, mixed conifer, or black cottonwood (Anthony et al. 1981). According to the recovery plan, locations that are protected from wind by vegetation or terrain provide a more favorable thermal environment. In addition to the natural features, roost sites generally are isolated from humans. It is estimated that 50 percent of the bald eagles in the northern states region occur in congregations; others are present in hundreds of locations that are used regularly by one to 20 birds (USFWS 1983). Collectively, these small groups are probably as important as the large concentration areas.

In the bald eagle, sexual maturity is reached at four to six years of age, but the birds may be considerably older before they breed (USFWS 1983). Bald eagles establish pair bonds in winter and initiate nesting February-March. One to three eggs are laid in March or April, incubated 35 days and young are fledged at 8-14 weeks. Bald eagles are long-lived (30 years) with a low reproduction rate. Mortality is high in the immature age classes but much lower after two years of age (Sherrod et al. 1977).

The main threats to the bald eagle population are: 1) loss of suitable habitat, 2) mortality from shooting, trauma, poisoning, disease, electrocution, and other causes, and 3) reduced reproduction caused by environmental contaminants (USFWS 1983).

D. Mexican Spotted Owl

The Mexican spotted owl is listed as Threatened (USFWS 1993) under the Endangered Species Act and is managed under the Mexican Spotted Owl Recovery Plan (USFWS 1995a). Critical habitat has been designated on any National Forest System lands in Utah.

Spotted owls in Utah are generally found in the pinyon-juniper zone, below the mixed conifer forests typical of owl habitat in Arizona and New Mexico. These birds select steep, narrow, cool canyons for roosting and nesting. These sites are characterized by small clumps of fir (*Abies* spp.) and deciduous trees growing within cool canyons or on steep north-facing slopes. Ponderosa pine/gamble oak forests are also used if they exhibit characteristics of large cavity trees, broken tops, numerous snags, and heavy accumulations of down woody material. During the winter, the owls tend to move out of the canyons and onto mesa-tops, benches and warmer slopes (Wiley 1992).

Structural characteristics associated with forested Mexican spotted owl habitat vary depending on the behavioral function it supports. Spotted owls apparently use a wider array of habitat types for foraging than for nesting and roosting, including fairly open and non-contiguous forest, small openings, and pure ponderosa pine stands. Little is known about the habitat requirements for dispersal.

Mexican spotted owls are mostly solitary outside of the breeding season. They have a low reproductive success of 0.5 young/pair. Age at first breeding is usually two years. Mexican spotted owls show high nest site fidelity.

Reproductive season begins in early March when pair formation occurs. Two to four eggs are laid in mid-April, incubated 30 days and hatch mid-May. Owlets are fledged early- to mid-June (Spahr et al. 1991).

The earliest recorded spotted owls in Utah were in Zion National Park in June 1928 (Hayward et al. 1976). The most northerly occurrence was in 1958 in the Book Cliffs of northeast Utah. The largest population of Mexican spotted owls in Utah occurs in Zion National Park where surveys indicate 17 confirmed sites in and around Zion National Park (Rinkevich 1991). Mexican spotted owls are generally absent from high elevations with the only sightings in high elevations having been in June 1958 in an aspen grove (Behle 1960) and in 1990, a response at 10,000 feet on the Manti-LaSal National Forest (Wiley 1990). Current Mexican spotted owl records in Utah indicate there are approximately 60 locations (Rodriguez 1996).

Spotted owls have been confirmed on the Cedar City, Teasdale, and Escalante Ranger Districts of the Dixie National Forest, Loa Ranger District, of the Fishlake National Forest, and Moab and Monticello Ranger Districts of the Manti-LaSal National Forest. The only known nesting pairs on National Forest System lands in Utah occurs on the Manti-LaSal National Forest.

Effects to Mexican spotted owls and their habitat would be minimal if any because site specific consultation at the project level would occur along with full implementation of the Recovery Plan recommendations.

E. Canada Lynx

Canada lynx are medium-sized cats, 75-90 cm long and weighing 8-10.5 kg (Quinn and Parker 1987). They have large feed adapted to walking on snow, long legs, tufts on the ears, and black-tipped tails. Their historical range extends from Alaska across much of Canada (except for coastal forests), with southern extensions into parts of the western United States, the Great Lakes states, and New England.

Snowshoe hares (*Lepus americanus*) are the primary prey of lynx, comprising 35-97% of the diet throughout the range of the lynx (Koehler and Aubry 1994). Other prey species taken by lynx include red squirrels (*Spermophilus* spp.), mice, voles (*Microtus* spp.) porcupines (*Erithrizon dorsatum*), beaver (*Castor canadensis*), and ungulates as carrion or occasionally as prey (O'Donoghue et al. 1998, Koehler 1990, Brand and Keith 1979, Brand et al. 1976).

During the cycle when hares become scarce, the proportion of other prey species, especially red squirrels, increases in the diet (Apps 1999, O'Donoghue et al. 1998, Brand et al. 1976). However, Koehler (1990) suggested that a diet of red squirrels alone may not be adequate to ensure lynx reproduction and survival of kittens.

Most research has focused on the winter diet. Indications are that the summer diet includes a greater diversity of prey species (Koehler and Aubry 1994, Quinn and Parker 1987).

There has been little research on lynx diet specific to the southern portion of its range except in Washington (Koehler 1990). In areas characterized by patchy distribution of habitat, alternate prey could include white-tailed jackrabbit (*Lepus townsendii*), black-tailed jackrabbit (*Lepus californicus*), ground squirrels, sage grouse (*Centrocercus urophasianus*); and Columbian sharp-tailed grouse (*Tympanichus phasianellus*) (Lewis and Wenger 1998, Staples 1995, Quinn and Parker 1987).

Lynx Habitat

Lynx occur primarily in the boreal, sub-boreal and western montane forests of North America (Koehler and Aubry 1994). These include the Canadia Taiga, subalpine forests of the Rocky Mountains and Cascades, and mixed coniferous/deciduous forests of southeastern Canada, the Lake States and New England (Aubry et al. 1999). In Canada, lynx typically inhabit boreal spruce-fir forests on terrain of low to moderate relief, with deep winter snow packs.

There are several stand-replacing disturbance processes associated with typical conifer and conifer-hardwood lynx habitats (Agee 1999). The dominant natural disturbance process throughout much of the range of lynx is stand-replacing fire, with moderate to high fire severity (Kilgore and Heinselman 1990). Catastrophic wind events, insect infestations, and disease outbreaks interact with fire and also play a role in creating early successional habitats. Depending on site conditions, fire severity, and

other factors, post-disturbance stands may be dominated by pines, hardwoods, or by mixed conifer and hardwood species.

Lynx seem to prefer to move through continuous forest, and particularly use ridges, saddles, and riparian areas (Koehler 1990). Although cover is important to lynx when searching for food (Brand et al. 1976), lynx often hunt along edges (Mowat et al. 1999), Kesterson (1988) and Staples (1995) reported that lynx hunted along the edge of mature stands within a burned forest matrix, and Major (1989) found that lynx hunted along the edge of dense riparian willow stands. Lynx have been observed (via snow tracking) to avoid large openings, either natural (Koehler 1990) or created (J. Rohrer, pers. comm..), during daily movements within the home range.

Snowshoe hares prefer areas with dense protective understories composed of edible shrubs and trees (Wolfe et al. 1982). Overstory trees do not appear to be necessary, but may have the benefit of reducing snow accumulation (Hodges 1999). Population densities and overwinter survival are positively correlated with understory density, particularly of conifers that provide winter forage, thermal cover and escape cover (Litvaitis et al. 1985, Wolff 1980, Pease et al. 1979, Adams 1959).

During summer, snowshoe hares forage on a variety of forbs, grasses, and small shrubs. During the winter, food for snowshoe hares is limited to shrubs, seedlings and saplings that are above the snow surface (Pease et al. 1979).

In northern boreal forests, major predators of snowshoe hare include lynx, northern goshawk (*Accipiter gentiles*), and great horned owls (*Bubo virginianus*) (Keith et al. 1977, O'Donoghue et al. 1997). Leverets are preyed upon by small raptors, red squirrels, ground squirrels, and weasels (O'Donoghue et al. 1994). In southern portions of snowshoe hare range, a more complex suite of predators that also includes bobcat, coyote, red fox (*Vulpes vulpes*), and mountain lion (*Puma concolor*) probably limits hare populations (Koehler and Aubry 1994), Dolbeer and Clark 1975).

Red squirrels are primarily associated with the coniferous forests of northern and western North America, but are common in eastern forests containing some mature conifers nor nut-bearing hardwoods. Red squirrel densities tend to be highest in late successional, closed-canopy forests with substantial quantities of coarse woody debris, and lower in young stands that lack cone production (Layne 1954, Obbard 1987, Klenner and Krebs 1991, Larson and Boutin 1995).

The basis of the red squirrel's year-round diet is coniferous seeds, but deciduous and coniferous buds are also important components during winter and spring. (Reichard 1976, Rusch and Reeder 1978).

Red squirrels are commonly preyed upon by a variety of mammalian predators (Obbard 1987). Among the most common are fisher (*Martes pennanti*) (Brown and Will 1979) and marten (*Martes Americana*) (Soutiere 1979). Lynx are also known to prey on red squirrels, especially during periods of low snowshoe hare availability, when their remains occurred in 56% (10 of 18) winter scats from the Northwest Territories (More 1976) and 9% (2 of 23) of the summer digestive tract samples from northern Alberta and the Northwest Territories (Van Zyll de Jong 1966). The most common avian predator is northern goshawk (Meng 1959) but, they were also preyed upon by great horned owls (Rusch et al. 1972), red-tailed hawks (*Buteo jamaciensis*) (Luttich et al. 1970), broad-winged hawks (*Bueteo platypterus*) (Rusch and Reeder 1978) and Cooper's hawks (*Accipiter cooperii*) (Meng 1959).

Effects to the Canada lynx and their prey would be expected as a result of implementing the proposed action. These effects would not exceed desired conditions recommended in the Draft Canada Lynx Assessment and Strategy (1999). Because the lynx and northern goshawk use similar habitats and prey, implementation of the proposed action would help establish practices that would promote sustainable lynx and goshawk habitat. Furthermore, the proposed action would establish a strategy that would manage for important prey species, and their habitats such as the snowshoe hare and red squirrel. All site-specific effects would be disclosed during Section 7 Consultation at the project level.

Indirect Effects

In addition to the direct and indirect effects discussed by species, the following discussion pertaining to indirect effects are common to all species.

Effects occurring at a later time may be: 1) increase grass, forb, and shrub species diversity, 2) increase animal species diversity, 3) changes in localized animal distribution, 4) increased human disturbances, 5) fragmentation of forested habitats, and 6) increased forested edge to interior ratios.

Indirect impacts on these species consists of human activity due to improved road access which may displace them to other areas. Improved access coupled with fuelwood gathering opportunities may cause further disturbances partially a reduction in snags from woodcutting; however, these disturbances would be seasonal and short term (1-5 years)

Cumulative Effects Area

"Cumulative effects" or cumulative impacts are those impacts on the environment which result from the incremental effects of a proposal added to other past, present or reasonably foreseeable future actions regardless of which agency or person undertakes them (see CFR 1508.7). In light of the extremely broad geographic scope of the proposed action and the level of spatial resolution involved, the analysis does not in most instances address all possible cumulative effects that may result at the site-specific level. A more detailed analysis would be conducted at the site-specific level on all projects that may potentially impact suitable goshawk habitat. Furthermore, this analysis is only effective over the next 4 years until forest plans are revised. Therefore, the effects that may be cumulative are minimal, whereas, in an extended timeframe they may be more important. In the short timeframe involved, effects from past, present and reasonably foreseeable future actions on potentially suitable habitat may include those occurring from the following: ungulate grazing, timber harvest, recreation, existing policies (e.g. fire management), endangered species act, recovery plans, existing conservation, and assessments, strategies and agreements.

The cumulative effects area for endangered, threatened, and proposed species includes the entire State of Utah and contiguous forested lands in the adjoining states of Colorado and Wyoming (Map 2). This area includes all or portions of the sections as adapted from the Baileys Ecoregions of the United States (1994). All or portions of the following sections were included in this analysis: Grand Canyon Lands, Uinta Mountains, Bonneville Basin, Northern Canyon Lands, Uinta Basin, Southeastern Great Basin, Tavaputs Plateau, Overthrust Mountains and Utah High Plateaus and Mountains sections. This area was selected because it represents an area where endangered, threatened, or proposed species may inhabit during all or part of their life cycles. Winter habitat use is not included in this discussion because most of these species migrate to unknown locations, some of which could be outside of Utah. The exception to this is the bald eagle, which is only known to winter on National Forest System lands. Bald eagles are only known to be present in National Forest System lands in Utah during fall (beginning in October), winter, and early spring, therefore the discussion of the Bald eagle addresses spring, fall, and winter habitat use only.

1. Past Use or Management

Past use or management has been highly variable throughout the State of Utah. It has included practices such as oil, gas and mining, timber harvest, livestock grazing, a variety of recreational uses; and many other special uses. These and other uses have had varying levels of impact on habitats for endangered, threatened and proposed species. Timber management has likely had the greatest effect to habitats for the listed species discussed in this document. Listed below is a brief discussion of past use or management regarding timber.

Past and present timber sales in the State of Utah have and will remove varying amounts of timber. Intensive timber management practices have occurred in ponderosa and lodgepole pine stands. Within the spruce/fir and mixed conifer areas, only moderate harvesting has occurred. These areas have varying amounts of endangered, threatened and proposed species habitat remaining.

Average road densities from past timber harvest has left densities variable throughout the State. Road closures are an ongoing practice on most National Forests and are expected to continue.

Positive effects that will likely occur as a result of implementing the proposed action along with reasonably foreseeable future actions may be: 1) improved stand health, 2) regulation of age and size class distribution, 3) sustainable progression of vegetation classes, 4) management of open roads, 5) wildlife game cover, and 6) irregular spacing and the retention of groups of old live trees with

interlocking crowns distributed throughout the area which will provide good wildlife cover, through time, and provide habitat for many species of wildlife, including the Mexican spotted owl and Canada lynx.

Strategies to retain old growth in past actions have not been strongly emphasized on National Forest System lands in Utah or in the Intermountain Region. This was partially due to the lack of a definition and information that Federal and State agencies had on old growth and old growth dependent and related wildlife species. Timber management has contributed to the loss of some old growth. Forest Plan guidance in Utah recommends varying amounts of old growth be retained, or managed for on National Forest System lands, if it exists. The proposed action would implement a strategy for the management of vegetation ages or structural stages (including old growth) at the landscape level to be carried out and maintained through time. Some areas will be deficient of large old trees due to the nature of how and where past events have occurred, such as catastrophic loss from beetle and/or fire, however, at the landscape level, old growth will be enhanced so that it may be managed and sustained through time.

A positive cumulative effect of the proposed action in the spruce/fir zone would be that it may slow down the catastrophic loss of large old trees (old growth) such as that occurring on the Dixie, Fishlake, and Manti-LaSal National Forests and that it establishes a long range strategy which maintains and enhances important wildlife habitat components with emphasis on Mexican spotted owl and Canada lynx foraging and denning habitat. Future management action would attempt to sustain old growth characteristics throughout the state. This would likely lead to long-term positive effects to all endangered, threatened, and proposed species.

Past, present, proposed, and reasonably foreseeable actions should not adversely affect any of the species evaluated within this document. The retention of old growth for the Mexican spotted owl and Canada lynx along with uneven-aged management will help sustain potential habitat through time. Suitable, or potentially suitable habitat will be managed to meet the needs of the owl as research data is obtained and habitat needs are clarified.

Past, present, and reasonably foreseeable timber management practices have not impacted riparian habitats, which may support prey species for both the Mexican spotted owl and Canada lynx. Effects from past livestock grazing has most likely degraded potentially suitable habitat for both of these species. Cumulatively, however, the proposed action would not add to this past habitat degradation.

The number of occurrences of endangered, threatened, and proposed species and the amount of suitable habitat that has been adversely affected by previous management activities and programs on private and federal lands has not been recorded from past activities. Given the magnitude of these activities during the past 100 years, it is likely that suitable habitat for endangered, threatened, and proposed species being evaluated has been degraded by fire suppression, overgrazing, road construction, and timber management.

III. COMPLIANCE WITH MANAGEMENT DIRECTION

This biological assessment process has served to review the effects to endangered, threatened, and proposed species as the result of implementing the proposed action (Alternative F) on National Forest System lands in Utah. The effects from site-specific projects throughout the state will go through individual Section 7 Consultation with the US Fish and Wildlife Service field office in Salt Lake City, Utah. The effects of the proposed action are in compliance with the current Mexican Spotted Owl Recovery Plan and the Canada Lynx Conservation Assessment and Strategy (Draft 1999). Adverse impacts that may affect the viability of these species have and will be avoided.

IV. DETERMINATION

As a result of this assessment and its requirements, it is my professional determination that implementation of the proposed action (Alternative F) may affect some habitat for the Mexican spotted owl and Canada lynx. But that those effects are not likely to adversely affect species viability and will

not jeopardize or adversely modify critical habitat. Furthermore, site-specific analysis will be conducted through Section 7 Consultation on each project proposed in suitable or potentially suitable habitat. This will further ensure that any site specific proposed projects will not jeopardize or adversely modify critical habitat.

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