

Chapter 3 The Affected Environment

3.1 Introduction

This chapter provides a summary of the physical, biological, and human resources that could be affected by the proposed action or alternatives to it. Chapter 3 provides a baseline from which comparisons can be made for the effects analysis in Chapter 4. The Council on Environmental Quality (CEQ) regulations directs agencies to describe the environment that could be affected as it relates to the importance of the projected impacts (40 CFR 1502.15). The affected environment information is provided by resource/discipline in the same order as Chapter 4 (Effects).

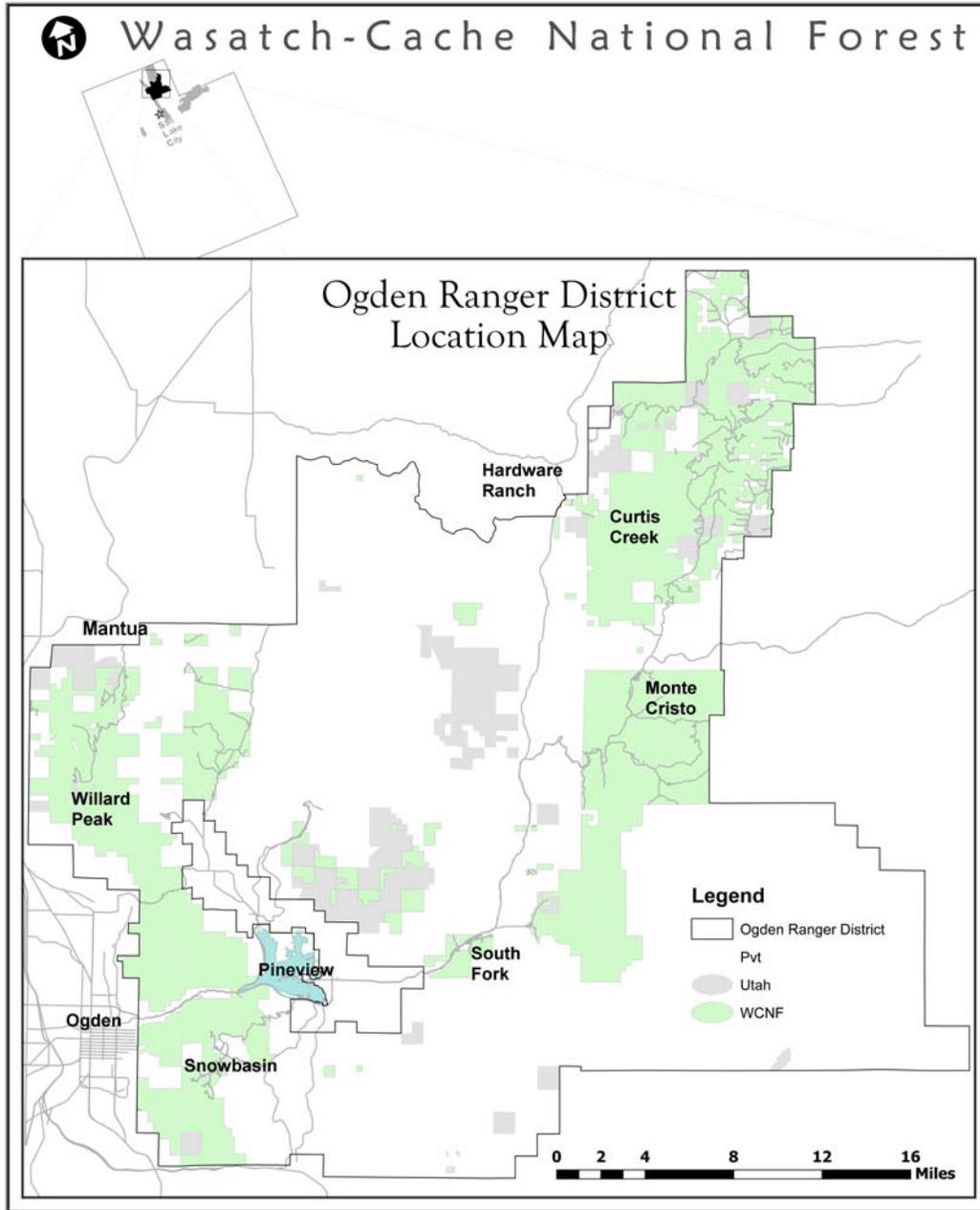


FIGURE 3.1: Land Ownership on the Ogden Ranger District of the Wasatch-Cache National Forest, Utah.

3.1.1 Travel Planning on the Ogden Ranger District

In 1977, President Carter issued Executive Order 11989 to clarify the agencies management of Off-Road Vehicles (ORV) on public lands. It directed each agency to adopt a policy that portions of the public lands within its jurisdiction should be closed to use by ORV's except those areas or trails which are suitable and specifically designated as open to such use. (E.O. 11989, May 24, 1977).

The chronology of travel planning on the Ogden Ranger District follows:

- The initial effort at travel planning was in 1980 and it included a travel plan map for both summer and winter use and a Special Closure Order that was signed by Forest Supervisor Chandler St. John on May 1, 1980 (USDA 1980).
- The first revision of the 1980 map and Special Closure Order was signed by Forest Supervisor Dale Bosworth on August 15, 1988 (USDA 1988).
- The 1988 plan and map were again amended three years later with a Decision Memo, signed by Forest Supervisor Susan Giannettino (March 5, 1991). This decision changed twenty-two roads or areas in the previous Travel Management Plan. A new travel plan map for the Ogden and Logan Ranger Districts was also printed (USDA 1991).
- The District released a new travel plan map in 1991 (USDA 1991).
- The 1991 travel plan map was again revised in 1997 with updates based on new land acquisitions (USDA 1997).
- The 2003 WCNF Forest Plan Revision provided a stand alone winter motorized travel map USDA 2003).
- A new combined Logan and Ogden Ranger Districts printed a new stand-alone summer motorized travel plan map in.
- Changes were made to correct minor landownership errors and reprinted in 2005 (USDA 2005).

The 2003 Forest Plan stated an objective to update the Salt Lake, Ogden and Logan District Travel Management Plans within 5 years. This objective includes a user created route inventory; maintenance levels 1 and 2 road analysis, updating of Road Management Objectives, and refining of winter decisions where appropriate (USDA 2003 p4-28).

3.2 Transportation Systems

In 2003, the Ogden RD began the current travel plan analysis with a road-by-road review of the electronic version of the Forest Transportation Atlas for roads. This atlas names and assigns a number to each road and describes how the road is being managed. In addition, the Wasatch-Cache completed a Roads Analysis (2002) of all maintenance level 1 and 2 roads on the Ogden RD (see table below for maintenance level description). Level 3, 4 and 5 roads are in the Road Analysis for the 2003 Wasatch-Cache Forest Plan. This road analysis lists each road and the relative effects of each road on key resources both social and natural. The USFS also uses an electronic database to inventory its system roads. The database is called INFRA, which refers to the Forest Service infrastructure (includes buildings, campgrounds, roads, etc). The following table lists the number of roads by maintenance level inventoried in INFRA for the Ogden Ranger District. It also shows the percentage of all road miles by each maintenance level. User created routes and trails are not described in the table.

Table 3.2.1 The number of roads by maintenance level and their percentage of total miles on the Ogden District.

Maintenance Level	Maintenance Level Description	# of Roads	% of Road Miles
Maintenance Level 1	Basic Custodial Care or Closed	9	4 %
Maintenance Level 2	High Clearance Vehicles	131	56%
Maintenance Level 3	Suitable for Passenger Cars	22	31%
Maintenance Level 4	Moderate Degree of User Comfort	4	1%
Maintenance Level 5	High Degree of User Comfort	22	8%
Total		188	100%

This environmental analysis used two sources of data for the roads and trails in this area. The first is the Geographic Information Systems (GIS) which is used primarily for analysis and computer-generated mapping. The GIS computer-

generated data includes calculations of the linear length of each route. This data was considered to be the most accurate data measuring the routes on National Forest.

The second source of data is the Forest Service INFRA database where the agency lists system roads and trails as managed assets (Infrastructure). When INFRA mileage was originally entered approximately seven years ago, it came from existing data such as maps, old surveys, and estimates.

The mileage from INFRA and the GIS, however, did not match perfectly. The current INFRA database is being linked with GIS data and will fix this consistency error. All of the tables used for the analysis in Chapter 4 used the GIS mileage.

A road analysis for the maintenance level 1 and 2 roads on the Ogden Ranger District was completed in January of 2004. This roads analysis is intended to provide the interdisciplinary team a review of the existing District's road system, and identifies issues that were considered for both existing roads and possible future roads. It considered environmental threat and access benefit considerations for each road segment. This review of the resource impacts and public values of these roads used a spreadsheet format. This was modified from the spreadsheet used for the Wasatch-Cache Roads Analysis (2002) of maintenance level 3, 4 and 5 roads. The road analysis for the Ogden District roads showed that none of these roads had a high rating for any of the items reviewed. (USDA Forest Service, 2004)

The Ogden Ranger District has for the last few years an annual discretionary budget of between \$22,000 and \$30,000 for minor maintenance of the roads and road signs. This funding has been sufficient to have a two-person road maintenance crew for minor repairs, law enforcement, and monitoring. Sign installation and maintenance is the responsibility of the Ogden RD. This funding is also used to finance administration staff salaries and vehicles in the District office. Annually, the Wasatch-Cache Road Maintenance crew works approximately three weeks on the Ogden Ranger District with heavy equipment. This work includes blading and shaping of roads, cleaning of culverts, spot graveling, graveling, clearing of brush and decommissioning (closing unauthorized roads and trails). In some years there is also money for additional contract work for maintenance, especially for asphalt roads. This amount has been mostly adequate to keep the system of road operational. See section 2.5.1 for additional information on maintenance.

Because this annual budget is limited, it has to be carefully allocated to the highest priority projects and as a result, some low priority work may not occur in a timely manner. The allocation and management of scarce resources has been one of the challenges with managing the transportation system. If weather destroys a sign or when a sign is vandalized, on the ground information regarding the status of the road may not be immediately available.

Trail maintenance and administration is the responsibility of the District. The annual discretionary funding for projects is approximately \$25,000 to \$30,000. This money is used for salary for a two to four person crew and to buy materials and tools. A portion of this money is used every year to match one or more financial grants from the State of Utah motorized or non-motorized program. Additional funding is allocated to finance administration staff salaries and vehicles. This funding has been sufficient to manage and maintain our system of trails to Forest Service trail standards.

3.2.1 Area of Influence

The area of influence is the Ogden Ranger District of the Wasatch-Cache National Forest. (See map page 3-1).

The Ogden RD manages 160,926 acres of National Forest system lands.

3.2.2 Existing Conditions

General

The transportation system on the Ogden RD is in generally good condition. One of the main reasons for this is that the annual maintenance and repair program includes the placement of gravel on critical sections of road. Over the years, the percentage of improved graveled sections of road has steadily increased and is now a common condition of much of the main road system.

The system roads that comprise the backbone of the Ogden RD's transportation system are in good condition and do not need to be changed.

The main roads (collector) that are open on the existing travel plan that are currently open will remain open under all of the alternatives considered in this analysis. Chapter 2.6.2 of this EIS identifies the roads and motorized trails that were analyzed for change by alternative. The routes that will not be changed under any alternative are included in Appendix A.

Shoshone ATV Trail

In April of 2002, H.R. 3936 to provide recreational trail opportunities for motorized users in northern Utah was proposed. The bill described a system of existing routes throughout public and private lands from the Idaho border south to SR 39, the Monte Cristo Highway, and west of Brigham City to Laketown, Randolph, and Woodruff in Rich County. The routes making up the Shoshone Trail totaled 623 miles of roads and motorized trails. The legislation directed the USFS and Bureau of Land Management (BLM) in cooperation with the State of Utah Department of Natural Resources and participating county governments to develop strategies and actions for managing the trail. Even though the bill was never approved, the idea of a motorized trail system in northern Utah, modeled after the other ATV trail systems such as the Piute Trail in central Utah, was a unique opportunity for multiple agencies to work together in providing a motorized system of routes.

As a result, a Memorandum of Understanding (MOU) was signed by the WCNF, the BLM, (Salt Lake Field Office), the Utah Division of Parks and Recreation (UDP&R), the Utah Division of Wildlife Resources (UDWR) and the Counties of Rich and Cache for the cooperative development, operation, and maintenance of an ATV trail system known as the Shoshone ATV Trail on February 27, 2004.

The Ogden and Logan Ranger Districts, the BLM, and UDP&R, who all are members of the Northern Utah Working Group for the Natural Resources Coordinating Council (NRCC), discussed the immediate implementation of the Shoshone ATV Trail. Under the suggestion of the MOU, the USFS and the BLM gave permission to the UDP&R to begin marking routes that were historically designated as open based on past environmental reviews beginning in 1988 and associated travel plans as the Shoshone ATV Trail. The UDP&R in cooperation with the USFS and the BLM produced a Shoshone ATV Trail Map that was made available to the public in 2004 (Utah SP&R 2003). Additional informational signs, displaying maps and appropriate regulations, were installed at key locations along the trail system, during the summer of 2004.

Approximately 65 miles of roads in the Curtis Creek area on the Ogden RD are marked and managed as the Shoshone ATV trail. The trail extends north onto the Logan Ranger District and west onto BLM lands in Rich County, Utah. Approximately 218 miles of routes in total are currently managed as the Shoshone ATV trail.

Motorized Trails

Maintenance of system trails is performed when necessary. The Forest Service standard for maintenance is based on a condition inventory done at a minimum every five years. This condition survey determines the priorities to protect the trail. Motorized and non-motorized trails are maintained in similar fashion. The Ogden Ranger District was awarded funding from Utah Parks and Recreation as well as a partnership with Ogden City to purchase a small trail maintenance tractor. This small bulldozer is used on those trails that physically will allow equipment of this size without causing resource damage. Motorized trails tend to meet this requirement more than non-motorized trails.

The motorized trails fall into two categories. The two categories were determined by physical features such as how wide the trails are to allow ATVs and those not wide enough for ATVs but are open to motorcycles. Motorcycles are allowed on all ATV trails as well as system roads. The only motorcycle-only trail on this Ranger District is the Skyline trail (6001) from Pineview Reservoir to Inspiration Point.

Non-motorized Trails

This system of non-motorized trails was not included in this analysis unless a change was proposed to convert the trail to motorized use or convert a motorized route to a non-motorized trail. In the recent past, the Ogden Ranger District has actively increased the miles of trails, especially along the Ogden Front. All of these miles are strictly non-motorized only uses.

3.3 Watersheds and Aquatic Resources

The purpose of this section is to describe the water, wetland, and aquatic resource conditions related to the road and motorized trail systems on the Ogden RD. Most of the motorized routes on the Ogden RD are a long distance from water

and located on dry ground near the tops of mountain ranges. This section highlights those USFS roads that have the highest potential for degradation related to aquatics, riparian zones, and water quality.

3.3.1 Area of Influence

For direct and indirect effects on water, wetland, and aquatic resources, the area of influence is the area that is hydrologically connected from the road and trail system to the first water feature encountered such as a stream, lake, reservoir or pond. This includes riparian habitat conservation areas (RHCA). For cumulative effects, it is the area within the sixth code watershed that drains the road and trail system.

Riparian habitat conservation areas are defined in the 2003 Forest Plan (USDA Forest Service) and include riparian corridors, wetlands, intermittent streams and other areas that help maintain the integrity of aquatic ecosystems. RHCA's are further described in section 4.3.2.

3.3.2 Existing Conditions

3.3.2.1 Hydrology

Several watersheds drain areas where roads or trails are located. Numbers in parentheses are the Fifth Hydrologic Unit Code (HUC) watershed numbers used for watershed identification.

- The Curtis Creek North area drains into Bear River Frontal (1602010101) at the head of Laketown Canyon, Bear River-Big Creek (1601010106), and Blacksmith Fork (1601020302).
- Curtis Creek South area drains into Bear River-Big Creek (1601010106), and Blacksmith Fork (1601020302), and Woodruff Creek (1601010107).
- Monte Cristo area drains into Woodruff Creek (1601010107), Blacksmith Fork (1601020302), and the headwaters of the Ogden River (1602010202).
- South Fork area drains into the headwaters of the Ogden River (1602010202).
- The Lewis Peak area drains into Outlet of the Ogden River (1602010203) and Third Salt Creek (1602010207) of the lower Weber River.
- The Public Grove area drains into the Headwaters of the Little Bear (1601020301).
- The Willard area drains into Box Elder Creek - Bear River (1601020405) and into upper part of Outlet of the Ogden River (1602010203).

3.3.2.2 Water Quality

The State of Utah has designated the streams draining the area above the National Forest boundary as Antidegradation Segments. This indicates that the existing water quality is better than the established standards for the designated beneficial uses. Water quality is required by state regulation to be maintained at this level. The beneficial uses of streams within this area, as designated by the Utah Department of Environmental Quality, Division of Water Quality, are:

- Class 2B – protected for recreation
- Class 3A – protected for cold water species of game fish and other cold water aquatic species
- Class 4 – protected for agricultural uses.

The numeric water quality standards can be found in Section R317-2, Utah Administrative Code, *Standards of Quality of Waters of the State* (Utah, State of. 2000).

In the most recent assessment of water quality, the State of Utah has determined that the waters within the watersheds that drain the study area fully support their beneficial uses with the exception of Pineview Reservoir and the North Fork of the Ogden River (Utah, State of. 2002). Pineview Reservoir has had a total maximum daily load (TMDL) assessment completed for all parameters except temperature. The North Fork of the Ogden River is partially supporting its beneficial uses and is listed as impaired for dissolved oxygen. The Utah Division of Water Quality is requesting that this water body be removed from the impaired list because the recent drought is not representative of conditions since water has been removed from the stream for irrigation (USDA Forest Service, 2004-personal communication with Utah Division of Water Quality).

3.3.2.3 Wetland and Riparian Resources

The roads analysis identified several roads that may potentially affect wetlands. These roads are:

- Perry Reservoir (road #20070),
- Willows Campground (road #20075),
- Lower Meadows Campground (road #20076), #20077),
- Botts Flat Campground (road #20078),
- Magpie Campground (road #20079),
- Upper Meadows Campground (road #20080),
- Jefferson Hunt Campground (road
- South Fork Campground (road #20089),
- Perception Park Campground (road #20095),
- Camp Red Cliff (road #20191).

The road near Perry Reservoir is located next to the reservoir and is currently closed. The other roads are located in campgrounds that are in flat areas next to the South Fork Ogden River.

3.3.2.4 Aquatic Resources

The Ogden Ranger District roads analysis identified three roads that may contribute to fishing, poaching, or direct loss for at-risk species. These roads are Anderson Campground Road (20044), Port Boat Ramp (20098), and Pineview Marina (20190) (USDA 2004). These roads have boat ramps that meet the water where aquatic organisms may be transferred directly from one water body to another.

Aquatic Threatened, Endangered, Sensitive and Management Indicator Species

No threatened or endangered aquatic or semi aquatic species occur on the ORD. The Fat-whorled Pondsail (*Stagnicola bonnevillensis*) is a Candidate species found in three ponds in Box Elder County. None of the ponds are located on National Forest lands, and the species will not be impacted by activities taking place on the Ogden RD.

Fish

Bonneville cutthroat trout (*Oncorhynchus clarki utah*, BCT) and Colorado River cutthroat trout (*Oncorhynchus clarki pluriticus*, CRCT) are currently listed as a USFS Intermountain Region sensitive species and Management Indicator Species (MIS) on the WCNF. BCT are the only native trout found in the Bonneville Basin, which includes portions of Idaho, Nevada, Utah, and Wyoming. CRCT are not found in the travel plan project area. This project will therefore have no impact nor affect the trend of this sub species. The CRCT will not be discussed further. BCT were distributed in all suitable waters of the Bonneville Basin when Europeans reached the region (Behnke 1992).

Bonneville Cutthroat Trout: Currently, pure strains of Bonneville cutthroat trout are found in Idaho, Nevada, Utah, and Wyoming. They are found in a variety of habitats including mainstream rivers, and small headwater streams. Bonneville cutthroat trout require cool, clear water throughout their lives. Optimum habitat characteristics include areas with a 1:1 pool to riffle ratio and slow, deep water with vegetated stream banks for shade, bank stability, and cover. They prefer summer water temperatures of about 59 degrees F, but can survive in water up to 70 degrees F. They may also inhabit lakes (Sigler 1996; Young et al. 1996).

Declines in Bonneville cutthroat trout populations elsewhere have been attributed to hybridization with introduced trout (rainbow and other sub-species of cutthroat trout), competition with and predation by introduced fish, loss and fragmentation of habitat from man-made causes such as water diversions, overgrazing of riparian areas, poor timber harvest practices, poor road and trail building practices, and water pollution (Behnke 1992, Kershner 1995, Sigler and Sigler 1996, NatureServe 2000). Another historical problem has been overfishing (NatureServe 2000).

Within the Ogden RD, BCT are found in several watersheds. In the Blacksmiths Fork Watershed, BCT are found in Rock Creek and Curtis Creek. BCT are found in the Little Bear Watershed, although no fish occupy National Forest lands.

Within the Woodruff Watershed, BCT occupy Sugar Pine, Wheeler, and Big Spring Creeks. BCT also occur in several streams within the Ogden River watershed. These include the South Fork Ogden River (Wheatgrass, and Left Fork South Fork Ogden River), North Fork Ogden River (South Fork Wolf Creek, Durfee Creek, Sheep Creek, Cold Canyon, and Cutler Creek). Wheeler Creek also contains BCT. Most of these populations were last surveyed in 2000 in a cooperative effort by the Utah Division of Wildlife Resources and the USFS (Thompson and Smith 2001).

MIS TREND: Surveys for BCT (as a MIS species) on the forest are designed to allow for monitoring of population trends. This differs from . Information is collected on population numbers, fish conditions and fish biomass as well as species composition. This approach consists of extensively surveying one drainage area (4th level hydrologic unit code or HUC) each year. This provides a snapshot of the entire HUC at one time and builds on what has been done over the past ten years in collecting baseline data. This approach allows for the comparison over time of results for the full HUC or for what is happening in individual stream sections surveyed. Over a ten-year period (about two full generations of fish) all of the HUCs will be surveyed to provide a Forestwide perspective of changes in fish populations and species composition for trends. In 2003, the Forest Service surveyed the Upper Bear, in 2004 the North Cache and South Cache watersheds were sampled and in 2005 the Smiths Fork and Blacks Fork watersheds were sampled. Most of the streams on the Ogden RD are scheduled for monitoring in 2008. A Forest Plan monitoring report (USDA 2004) and Management Indicator Species reports (USDA 2005, USDA 2006) include information on MIS species on Wasatch-Cache National Forest.

There are 37 populations of cutthroat trout within the Wasatch-Cache National Forest (WCNF, 2005). Hydrologic Units within which the Ogden Ranger District is located include nine populations of Bonneville cutthroat trout on National Forest System lands. Table 3.3.1 lists the potentially affected metapopulation/population and its associated MIS trend.

Table 3.3.1 Management Indicator Metapopulations/Populations and Projected Trends of Bonneville Cutthroat Trout potentially affected by this Travel Plan on the Ogden Ranger District of the Wasatch-Cache National Forest, Utah.

Metapopulation/ Population.	Trend
Upper Woodruff Creek	Flat
Blacksmith Fork 1	Flat
Blacksmith Fork 2	Flat
Ogden Canyon	Flat
North Fork Ogden	Flat
Causey Reservoir	Flat
South Fork Ogden	Down
Wheeler Creek	Flat
Middle Fork Ogden	Down

SENSITIVE SPECIES CALL: See the biological evaluation for the affects on Bonneville cutthroat trout as a sensitive species in regard to this project.

Amphibians

Two amphibians are identified as species of concern on the WCNF, the Columbian spotted frog (*Rana pretiosa*) and the Boreal toad (*Bufo boreas boreas*).

Columbian Spotted Frog (*Rana pretiosa*) Columbian spotted frogs are not found in Rich, Cache, Weber, Morgan, or Box Elder Counties (Stebbins 1985) and will not be affected by activities taking place on the Ogden RD.

Boreal Toad (*Bufo boreas boreas*). The Boreal toad is currently listed as a State of Utah sensitive species. Boreal toad, also known as the western toad, are found in the southern portions of Alaska and across the boreal forests of Canada south into Washington, Oregon, Idaho, Montana, Nevada, and Utah. Small populations are also found in California, Colorado, Wyoming, and New Mexico (Stebbins 1985).

Amphibian surveys conducted on the WCNF from 2000-2004 primarily focused on determining the distribution of Boreal toad. Over 100 sites have been surveyed for amphibians on the Ogden RD (Thompson and Chase 2001, 2003 and 2005 and Thompson et. al. 2003). Surveys were conducted at springs, stockponds, beaver ponds, and within streams. Boreal toads

have been found in several locations on the District, all of them in the Monte Cristo and Curtis areas. Adult Boreal toads have been pit-tagged at several localities on the ORD by the UDWR to determine population sizes and to track movement.

Boreal toads occupy a wide variety of habitats including mountain meadows, grasslands, forests, and deserts. Within these habitat types, toads are most commonly found in the vicinity of a water source such as streams, springs, ponds, lakes, reservoirs, and stock ponds, but they are capable of traveling several kilometers across dry terrain (Stebbins 1985). Breeding habitat is characterized by shallow reservoir, wet meadows, stock ponds, and stream backwaters. Vegetation associated with breeding habitat includes: sedges (*Carex* spp.), cattails (*Typha* spp.), grasses, willow (*Salix* spp.), reeds (*Phragmites*), and algae. Hibernacula can consist of rodent burrows, beaver lodges, and beaver dams. A continuous flow of groundwater is necessary to prevent freezing (Campbell 1970).

In Utah, emergence from hibernacula generally occurs in April and May, coinciding with snowmelt (Hogrefe et al. 2005). Breeding typically occurs from April to early July, although paired toads have been observed as late as mid-July (Hogrefe 2000, personal communication). Egg strands are often found entwined in vegetation in shallow water. Egg and tadpole development is temperature dependent. Tadpoles have been observed migrating to the warmest area in a breeding pool to expedite growth and development. In Utah, metamorphosis typically occurs from mid-July to mid-August. Reproductive efforts occasionally fail because ponds dry up prior to tadpole metamorphosis (Campbell 1970).

Historic distribution of Boreal toads in northern Utah included many high elevation canyons (7,500 – 12,000 feet) and mountains of Salt Lake, Utah, Juab, Summit, Wasatch, Rich, and Cache counties (Stebbins 1985, Hogrefe et al. 2005). Currently, Boreal toad populations are absent from the majority of these historically occupied habitats (Thompson 1999). The reasons for the decline of the Boreal toad have not been defined with any degree of certainty. Most habitat alterations from timber harvest, grazing, recreation, and water development would likely not be beneficial to long-term enhancement of Boreal toad habitats (Hogrefe et al. 2005). Road construction and development has probably impacted the toad.

3.4 Soils

The purpose of this section is to describe the geomorphology and soils related to the road and motorized trail systems on the Ogden RD. Most of these motorized routes on the Ogden RD are a long distance from water and located on dry ground near the tops of mountain ranges.

3.4.1 Area of Influence

The area of influence is the Ogden Ranger District.

3.4.2 Existing Conditions

Several geomorphological units on the Ogden RD were described during Forest Plan revision (USDA Forest Service, 2003).

Bear River Highlands – These are gently sloping, eastward tilting uplands at elevations ranging from 5,200 to 9,500 feet. The structure is a plateau-like surface of uplifted portions of overthrust fault zone and the lithology is Wasatch limestone, dolomite and quartzite with Cambrian rocks (Tintic quartzite, Maxfield limestone) on the west side. Geomorphic processes are fluvial and glacial; peri-glacial features are widespread.

Monte Cristo-Weber Valley Hinterlands – These are a modified ridge and valley network between the Wasatch Front and the high Wyoming Basins at an elevation range of 5,400 to 9,000 feet. The structure is graben-like and the lithology is Wasatch sandstone, limestone, conglomerates with pockets of Tertiary volcanics and Precambrian crystalline rocks. Alluvium is in the valleys and drainage ways. The geomorphic processes are fluvial and colluvial.

Northern Wasatch – This is a bold, straight mountain front crossed by large east-west canyons at elevations ranging from 5,000 to 9,700 feet. The structure is an uplifted fault block; the lithology is mostly Farmington Canyon crystalline rocks, gneiss, quartzite, and dolomite. The geomorphic processes are fluvial, glacial, and colluvial.

Soils and influence of human use - Soils are deep to moderately deep at elevations from 4,300 to 10,000 feet. Slopes are mostly steep to very steep with some slightly steep slopes on the alluvial fans along the foothills. Soils are moderately well to somewhat excessively drained. Permeability is slow to moderately rapid. Runoff is slow to rapid and sediment production is low to moderate.

The main human influences that affect soil conditions are timber management activities, livestock grazing, recreational activities, and roads. Timber has been harvested in many of the drainages and livestock graze throughout the area. This area was overgrazed in the late 1800s and early 1900s and poor soil productivity is found in some areas. Topsoil losses through erosion have been particularly severe in the tall forb communities, where low ground cover annuals such as tarweed have supplanted the native forbs. In general, the downward trends in topsoil losses have been reversed through a combination of allotment stocking reductions, livestock exclusion from riparian area and tarweed eradication efforts.

Recreationists use the main dirt and gravel surfaced roads through the area as well as many trails. Motorized dispersed recreation use occurs also along these routes. A few roads and trails are located in riparian habitat conservation areas (described in 3.3.1) and contribute sediment to the streams. Where motorized vehicles are using system trails and roads according to intended designs and travel plan direction, soil conditions are stable and within established standards. Recent expansions in off-road and all-terrain vehicle (ATV) use threaten to reverse the positive trend. Erosion has been accelerated in some areas by the illegal uses of cutting of new undesignated routes and other over land use. Overall soil conditions are stable, although problem spots exist in some areas that have been identified in the roads analysis such as the Dry Fork Road (20162) and others described in table 4.3.1.

Table 3.4.1 displays the results of the most recent inventory of motorized trails and open roads on the Ogden District. This includes private, county, city, state, and forest service routes within the District boundary. Equivalent acres are calculated based upon an assumed road width of 12 feet and an assumed trail width of 5 feet. This is approximately 315 equivalent acres.

Table 3.4.1 Acres of Total Soil Resource Commitment (TSRC) on the Ogden RD from Roads and Trails*

Analysis Area	Miles of open Roads	Miles of Motorized Trail	Road Acres	Trail Acres	TSRC Acres
Willard Public Grove	29	13	42	8	50
South Fork	9	0	13	0	13
Monte-Wheatgrass	49	2	71	1	72
Pineview	31	17	45	10	55
Curtis Creek	80	14	116	8	125
Totals	198	46	287	28	315

*Table values for miles (from GIS) and acres are approximate and have been rounded to the nearest whole number.

3.5 Vegetation

3.5.1 Area of Influence

The area of influence is the Ogden Ranger District.

3.5.2 Existing Conditions

3.5.2.1 Rare Plants

The Endangered Species Act, the Forest Service Manual and Forest Plan require that plants that are recognized by the US Fish and Wildlife Service, Forest Service and the State of Utah have special consideration when projects are planned (USDA Forest Service, 1989). The plants in the following table have been documented on the Ogden RD for such consideration (UNHP 2003; Welsh, et. al, 1993). Additional information on the occurrence and classification regarding protection policies for endangered threatened and sensitive species of the Ashley, Uinta and Wasatch-Cache National Forests is in the project record (USDA Forest Service 1999).

Table 3.5.1 Status and habitat of rare plants known on the Ogden RD

Species	Status	Habitat
Logan buckwheat <i>Eriogonum brevicaulum</i> var. <i>loganum</i>	FS Sensitive	Shrubland
Burkes Draba <i>Draba burkei</i>	FS Sensitive	(Sub)Alpine, Rock crevice, Scree
Maguire’s draba <i>Draba maguirei</i>	FS Sensitive	(Sub)Alpine, Rock crevice, Mountain forest
Mt.Naomi penstemon <i>Penstemon compactus</i>	FS Sensitive	(Sub)Alpine, Rock crevice, Scree
Clustered (Brownie) lady’s slipper <i>Cypripedium fasciculatum</i>	FS Sensitive	Mountain Forest
Utah Ivesia <i>Ivesia utahensis</i>	Recommended Sensitive	(Sub)Alpine, Rock crevice, Scree
Case’s corydalis <i>Corydalis caseana</i> ssp. <i>Brachycarpa</i>	Recommended Sensitive	Mountain Forest
Broadleaf penstemon <i>Penstemon platyphyllus</i>	Recommended sensitive	Shrubland, Open Rock crevice and Scree
Wasatch daisy <i>Erigeron arenarioides</i>	Recommended sensitive	Shrubland, Open Rock crevice and Scree
Wasatch rockcress <i>Arabis lasiocarpa</i>	FS Watch list	Shrubland
Kings aster <i>Aster kingii</i> bar. <i>Kingii</i>	FS Watch list	Shrubland

These plants can be negatively affected by a variety of activities, human and non-human. Human activities include impacts associated with illegal ATV use, hiking, camping, picnicking and other activities that cause people to congregate in unique areas, such as ridge tops, for long durations. Animal activities, both domestic and wild, may impact populations by herbivory and/or trampling.

The Willard area, especially from Inspiration Point south to Ben Lomond, is of concern. The Ogden RD’s highest concentration of rare plants is in this area. There are two major concerns regarding the plants in this area, illegal OHV use and an increasing mountain goat population that can potentially affect these plant species. Foot traffic use of the area might also be considered a concern for rare plants, but probably to a lesser extent.

3.5.2.2 Noxious Weeds

Noxious weeds are generally designated as such because they have significant negative effects (or potential for) on agriculture, economics, or ecosystems, and are usually not so abundant that eradication is infeasible. Noxious designation, as described in the Wasatch-Cache National Forest Weed Strategy has legal ramifications for interstate transport, nursery stock inspections, hay and seed certifications (USDA, Forest Service 2004).

Table 3.5.2 Established populations of Noxious Weeds on the Ogden RD

Species	Status	Habitat
Canada thistle <i>Cirsium arvense</i>	Noxious	Disturbed areas in open space/ riparian
Musk thistle <i>Carduus nutans</i>	Noxious	Disturbed areas in open space/ riparian
Diffuse knapweed <i>Centaurea diffusa</i>	Noxious	Disturbed areas in open space/ riparian
Spotted knapweed <i>Centaurea maculosa</i>	Noxious	Disturbed areas in open space/ riparian
St. Johns wort <i>Hypericum perforatum</i>	Noxious	Disturbed areas in open space/ riparian
Leafy spurge <i>Euphorbia esula</i>	Noxious	Disturbed areas in open space/ riparian
Yellow Star thistle <i>Centaurea solstitialis</i>	Noxious	Disturbed areas in open space/ riparian
Dyers woad <i>Isatis tinctora</i>	Noxious	Disturbed areas in open space/ riparian
Black henbane <i>Hyoscyamus niger</i>	Noxious	Disturbed areas in open space/ riparian
Purple loosestrife <i>Lythrum salicaria</i>	Noxious	Disturbed areas in open space/ riparian

Transport by wind, vehicles, clothing or animals are all mechanisms for noxious weed dispersal into new habitats. Table 3.5.2 lists weeds with known infestations on the Ogden Ranger District. The Wasatch Front, Curtis Creek, and Monte Cristo have the highest numbers of infestations. The infestations appear higher along roadsides in the Curtis Creek and Monte Cristo areas. Whether this is because of ease of mapping; or due to motorized travel; or a combination is unclear. Motorized travel has been documented to increase the spread of noxious weeds. (Gelbard 2003) While motorized travel

may accelerate the spread of weeds it is important to note that non-motorized travel, in high volume also serves to accelerate the spread of weeds. This would account for the high number of infestations along the Wasatch Front where there is minimal motorized travel.

Emphasis on managing noxious weeds has increased significantly in recent years, as more people recognize invasive species' effect on all other resource areas. The Forest Service National Strategy and Implementation Plan for Invasive Species Management identify invasive species management as one of our top four priorities. This is because of their impacts and their threat to our mission. Thousands of invasive species have infested hundreds of millions of acres of land and water across the nation, causing massive disruptions in ecosystem function , reducing biodiversity, and degrading ecosystem health in our Nation's forests. (USDA Forest Service 2004). In addition to the national emphasis, locally the Forest Plan provides clear direction to increase noxious weed management (USDA Forest Service 2003).

3.6 Wildlife

The purpose of this section is to describe existing and potential habitat for and occurrences of wildlife with an emphasis on big game species, neotropical migratory/song birds, management indicator species, threatened, endangered, and Forest Service sensitive species within the Ogden Ranger District.

3.6.1 Area of Influence

The area of influence for direct and indirect effects to wildlife is the area within the Ogden Ranger District. Information regarding game species such as deer, elk, moose, and mountain goats is displayed by UDWR harvest unit. The Ogden Ranger District lies within the Ogden, Morgan-South Rich, and Cache Harvest Units (Figure 3.6.1). Table 3.6.1 displays the amount of area in which the Ogden Ranger District occurs within each harvest unit.

Also, the Ogden Ranger District is located within a portion of a wildlife corridor, which has regional importance in providing linkage to other larger habitat areas (Figure 3.6.2). This is especially true for forest carnivores, such as the Canada lynx (see section 3.6.2.3 Threatened, Endangered, Proposed, and Candidate Species). Most forest carnivores have some preference for forested conifer patches and maintaining connectivity between these patches throughout the corridor is of importance.

3.6.2 Existing Conditions

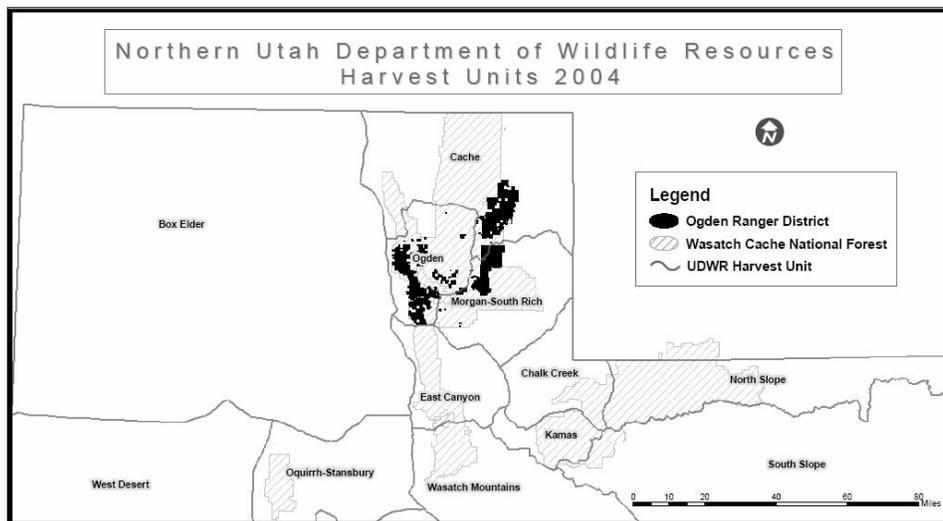


Figure 3.6.1 UDWR Harvest Units in relationship to the Ogden RD

Table 3.6.1. The number of acres and the percentage of the Ogden Ranger District within each UDWR harvest unit.

UDWR Harvest Unit	Acres of USFS Land (Ogden RD)	Percentage of USFS Land (Ogden RD)
Cache	55,784	4.7%
Ogden	70,353	17.1 %
Morgan-South Rich	34,789	5.9 %

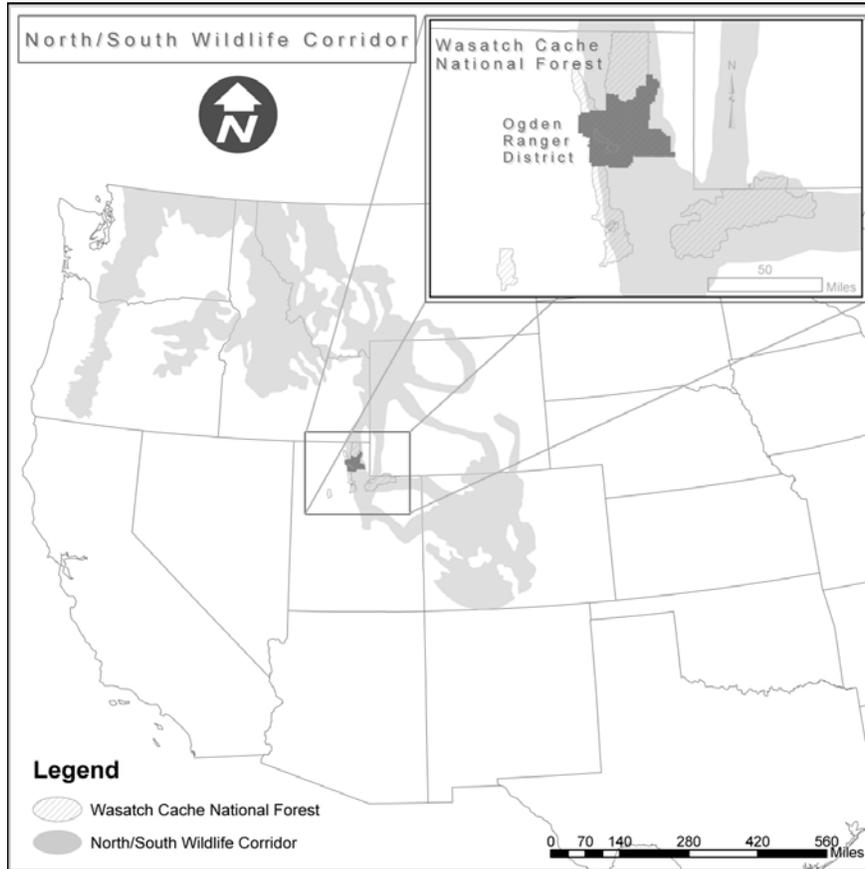


Figure 3.6.2 Map showing relationship of the Ogden RD to the regionally significant north-south wildlife corridor.

Vertebrate wildlife species of the Wasatch-Cache National Forest were listed in the Forest Plan FEIS (USDA Forest Service 2003 Appendix E). For game species, Utah Division of Wildlife Resources GIS habitat maps have been used for this analysis.

USFS GIS vegetation information was utilized to group and summarize the existing condition of specific vegetation/habitat types. These types should be referenced as related to the discussion below for individual species.

Table 3.6.2 Acres of Habitat Type and Miles of Open Road or Motorized Trail within each of the Major Vegetation Types on the Ogden RD

Habitat Type *	Total Habitat Acres	Miles of Open Road or Motorized Trail Existing Condition
Conifer Forest	47,082	50.06
Grass/Shrubland	42,968	60.79

Aspen Forest	25,029	33.25
Oak	29,413	22.70
Juniper	5,666	3.65
Other	10,769	9.88
Total Acres	160,927	

* Conifer Forest consists of mixed conifer, lodgepole pine, limber pine, spruce/fir, Douglas-fir, and conifer/aspen vegetation types; Grass/Shrubland consists of sagebrush/grass and tall shrub vegetation types; and Aspen Forest consists of aspen/conifer and aspen vegetation types. Other vegetation types consist of less than 1,600 acres per type within the Ogden Ranger District, except for the barren/rock type and water which consist of 3,939 and 3,081 acres respectively. Other types include tall forb, mahogany, maple, agricultural, willow, wet meadow, and bottomland hardwood.

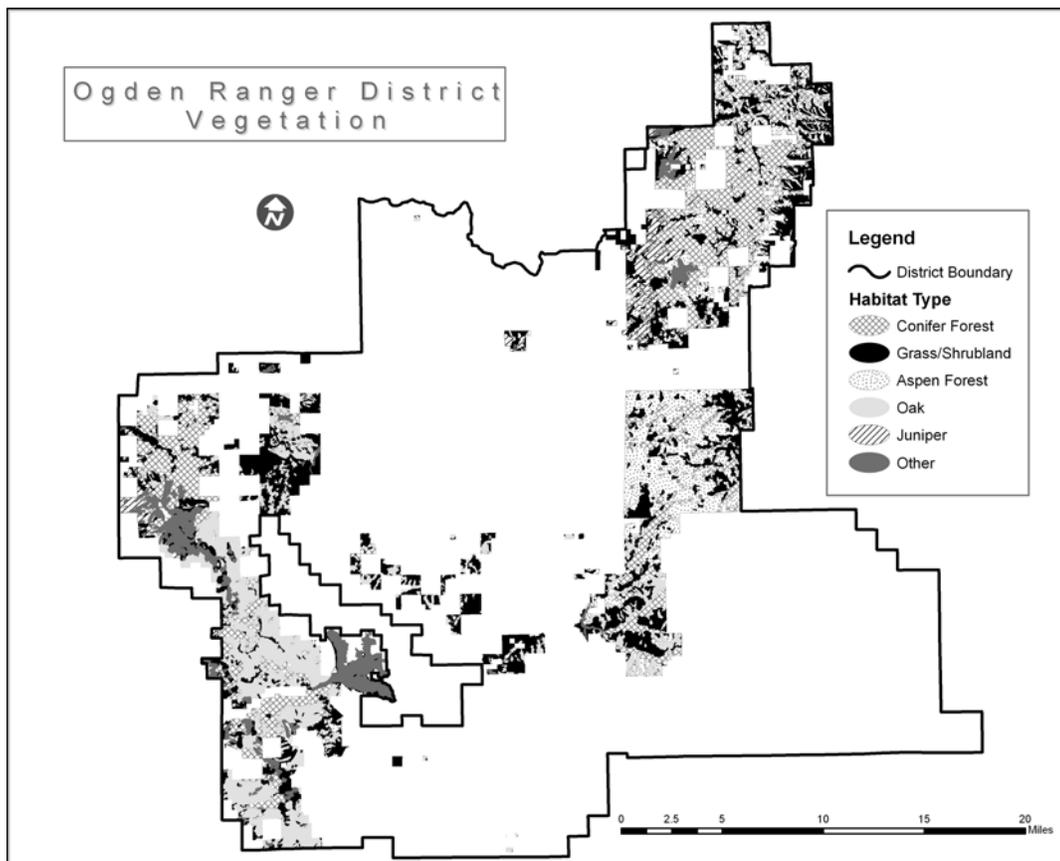


Figure 3.6.3 Vegetation habitat types on the Ogden Ranger District.

3.6.2.1 Big Game Species

Big game species that reside within the boundaries of the Ogden Ranger Districts include mule deer (*Odocoileus hemionus hemionus*), elk (*Cervus elaphus nelsoni*), moose (*Alces americanus shirasi*), and mountain goats (*Oreamnos americanus*). Table 3.6.3 through 3.6.5 display the estimated numbers of animals and population objectives in the Ogden, Morgan-South Rich, and Cache Harvest Units. Table 3.6.1. displays the number of acres and the percentage of the Ogden Ranger District within each harvest unit. Figure 3.6.1 displays the harvest units in relationship to the Ogden Ranger District.

Table 3.6.3 Estimated numbers of animals and population objectives in the Cache Harvest Unit for deer, elk and moose.

Species	Population Objective	2004 Population Estimates
Deer	25000	13700
Elk	2300	2026
Moose	n/a	275

Table 3.6.4 Estimated numbers of animals and population objectives in the Ogden Harvest Unit for deer, elk, moose and mountain goats.

Species	Population Objective	2004 Population Estimates
Deer	12000	5500
Elk	1200	690
Moose	n/a	650 (2005)
Mountain Goat*	75 by 2005	130

* A recent survey of the mountain goat population has occurred in the summer of 2004; The population objectives may be revised in the next mountain. goat plan.

Table 3.6.5 Estimated numbers of animals and population objectives in the Morgan-South Rich Harvest Unit for deer, elk and moose.

Species	Population Objective	2004 Population Estimates
Deer	12500	10100
Elk	3500	4100
Moose	n/a	1055 (2003)

Data provided by Justin Dolling, UDWR Wildlife Manager (Personal Communication 2005).

Mule deer habitat within the Ogden RD consists of 17,616 acres of high value and 9,821 acres of critical value *winter* range and 125,354 acres of high value and 4,227 acres of critical value *summer* range (see Figure 3.6.3). The amount of and quality of winter range is often the limiting factor for deer on most harvest units. The Cache and Ogden Harvest Units are far below the population objective for deer, while the Morgan-South Rich Harvest Unit is near population objective.

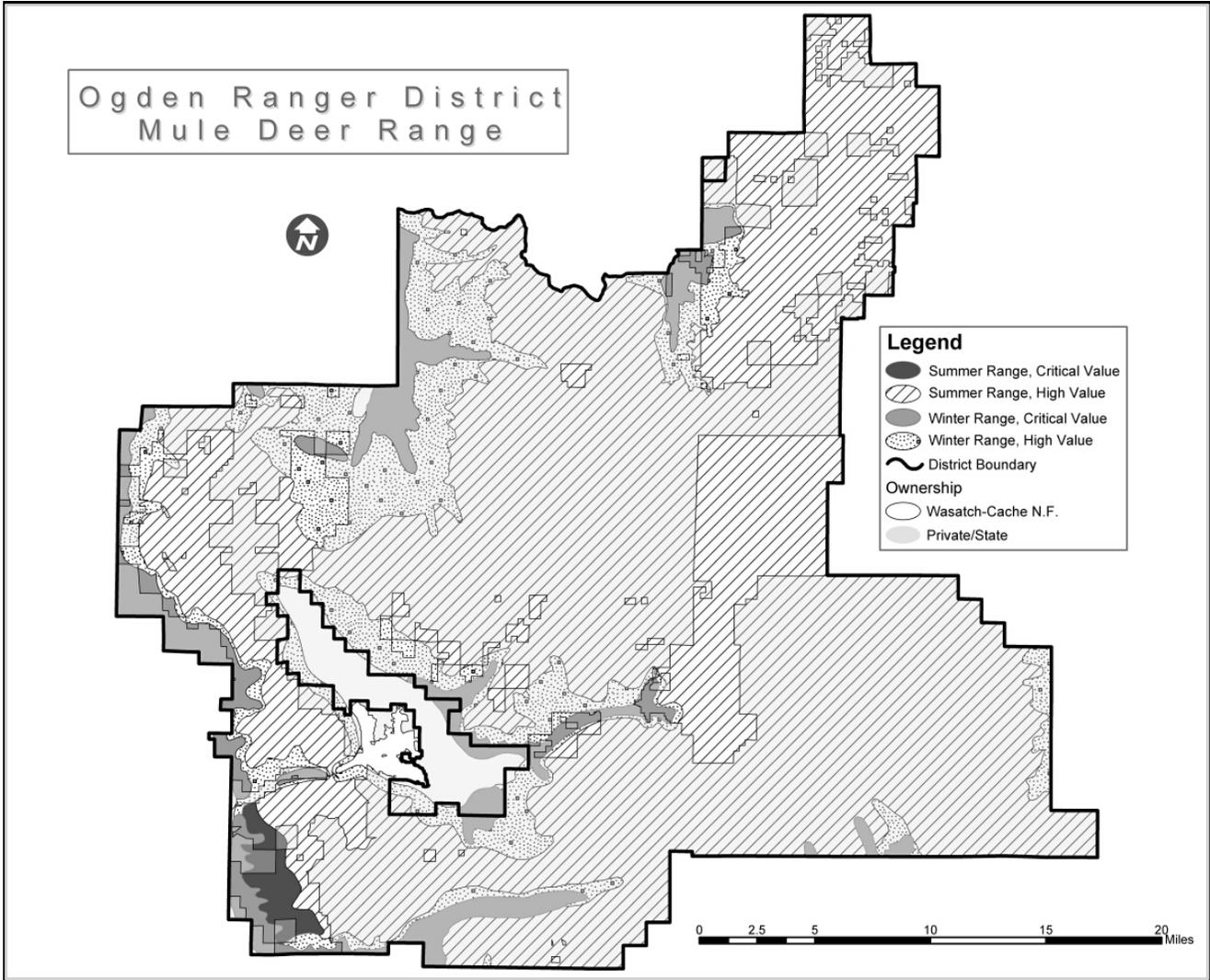


Figure 3.6.4 Mule deer habitat within the Ogden RD (UDWR GIS Habitat Maps)

Elk habitat within the Ogden Ranger District consists of 27,908 acres of high value and 12,941 acres of critical value *winter* range and 86,536 acres of high value *summer* range (see Figure 3.6.4). The transition areas between summer and winter range are often important areas for calving. Elk feed primarily on springtime grass and forb species until curing or loss of herbaceous material occurs, at which time diet's shift to a preponderance of deciduous browse species. The Ogden Harvest Unit is below the population objective for elk, the Cache Harvest Unit is near objective, while the Morgan-South Rich Harvest Unit is above the population objective.

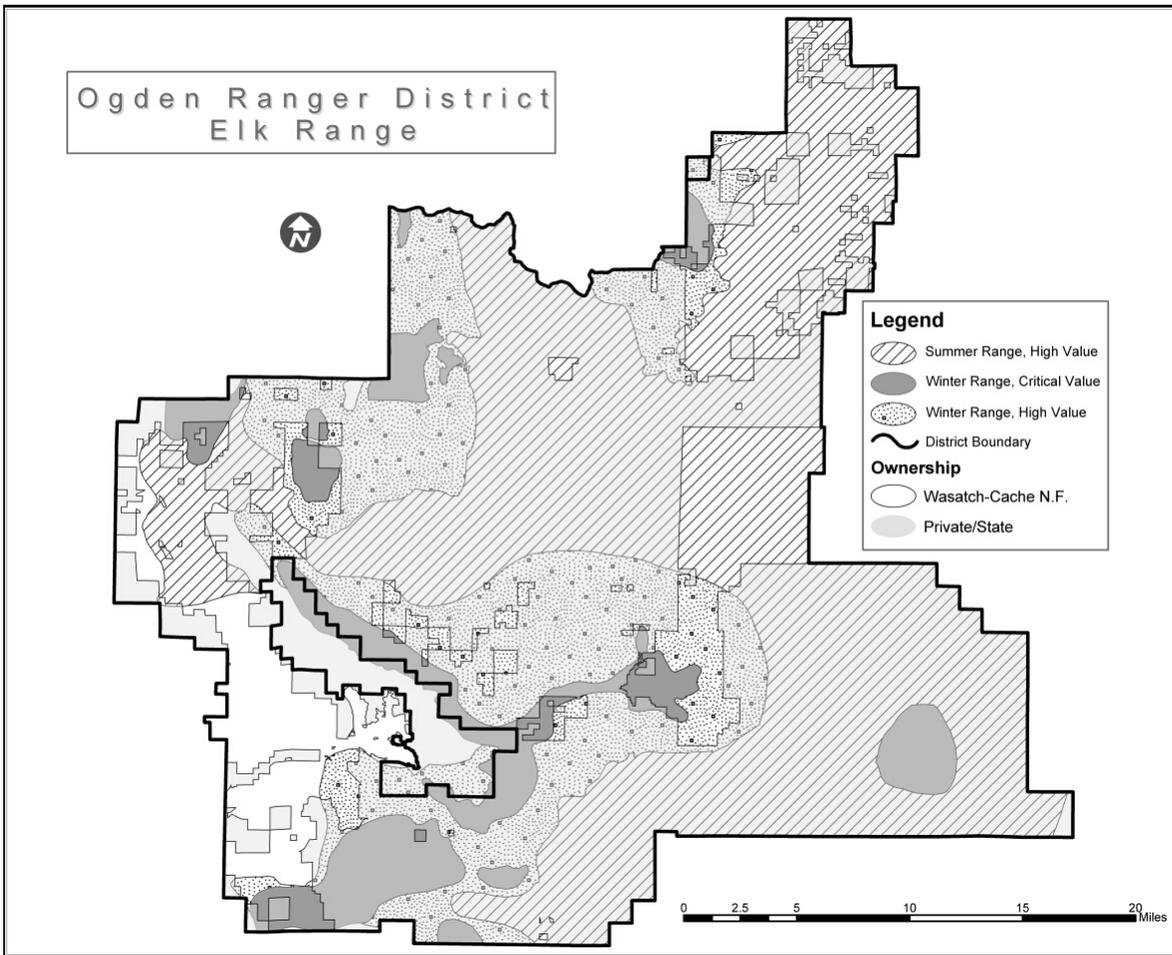


Figure 3.6.5 Elk habitat within the Ogden RD (UDWR GIS Habitat Maps)

Moose are well established in the northern half of the state. Moose are yearlong residents moving little between summer and winter ranges. Their large body mass and long legs allow the need for only minor adjustments between summer and winter ranges. Habitat primarily used by moose includes riparian areas with plentiful willow browse and areas such as ridgelines with abundant mountain mahogany shrubs. Numbers are currently within Utah Division of Wildlife Resources management objectives for each harvest unit.

Mountain goats on the Ogden District only occur primarily within the alpine and subalpine areas associated with the Willard Analysis Area. In summer, goats usually prefer/utilize the upper 1/3 of mountainous habitat, while in winter goat populations move to lower elevations, utilize windswept slopes, or forested cover to avoid deep snow. Goat habitat is closely associated with cliffs, which are essential as escape cover and avoidance of predators. Kids are usually born between the middle of May and the middle of June. Generally one kid is born, but twins are not uncommon.

In 1994, six mountain goats were introduced at Willard Peak by the Utah Division of Wildlife Resources. After introduction, the population has rapidly increased and is currently (2004) estimated at 130 animals. Within this area, most of the mountain goats are currently centralized around Ben Lomond and Willard Peaks (~ 80% and 20% of 2004 locations, respectively), though goat habitat occurs from the ridgeline north of North Ogden Canyon to Grizzly Peak (USFS habitat map located within the planning record). Additional unoccupied habitat occurs within the Ogden Ranger District from Weber Canyon north to North Ogden Canyon (only occasional sightings have been documented in this area).

During the review of the DEIS, questions were been raised whether mountain goats were native to Utah and if so where. Regardless, the USFS is required to manage habitat for native and desirable non-native species. The mountain goat is not a USFS sensitive species nor has status under the endangered species act.

Though the introduction has been successful and the population has increased, there are concerns related to the density of goats within the area and how recreational activities are affecting the distribution of the population. Schenck and Suring (1993) reviewed mountain goat literature (Chadwick 1973, Quaedling et al 1973, Kuck 1977, Phelps et al. 1983) and found that significant declines of mountain goat populations occurred following modifications of habitat and disturbance from human activities and that mountain goats will abandon suitable habitat following the initiation of human activities. McFetridge (1977) specified that the total area used by goats or the frequency of excursions from a core area of high security might be reduced by disturbance.

In southeast Alaska, Schenck and Suring (1993) modeled goat habitat by using a density of 6.0 goats/square mile for spring, summer, and fall (a native population with predators). This was based on populations with a range of 1.3 to 10.9 goats/square mile with an average of 3.9 goats/square mile. A density of 37.7 goats/square mile on summer range was reported from Mount Dana within Olympic National Park, when extensive vegetation/habitat issues were occurring (an introduced population without predators or hunting). In South Dakota, Richardson (1971) estimated a goat density of 11.9 goats/square mile at a time when forage was being over utilized. Based on the 2004 survey, the density of goats within the Willard/Ben Lomond area is 12-27 goats per square mile based on a moderate sized area (9.4 square miles) or a core area (4.2 square miles), respectively. It seems as if existing recreational activities are restricting goat distribution and habitat use, but it is not certain since the goat population has been recently introduced.

Within the North Ogden Canyon to Grizzly Peak mountain goat habitat area, there are currently 7.31 miles of open road, 10.56 miles of motorcycle trail, and 1.54 miles of ATV trail; all of which have no restrictions on the timing of use. The motorcycle trail which follows closely to the ridgeline, bisects approximately $\frac{3}{4}$ of the mountain goat habitat. All of the road and ATV trail miles are located in the northern third of the area, primarily associated with Willard Basin. Within this area, only one goat was observed during the 2004 survey though the habitat characteristics seem favorable to goats.

Gray wolf - Up until 2002, the last verified gray wolf taken within the State of Utah was in 1930. During the past several years, sightings of wolf-like animals have occurred in Utah. Many of these have been identified as wolf-dog hybrids (Utah Division of Wildlife Resources, Craig McLaughlin 2003). In 2002, a wolf from Yellowstone National Park was captured near the town of Morgan in northern Utah, southeast of Ogden. The animal was returned to Grand Teton National Park where it later rejoined its pack. In Utah, the gray wolf is not part of the US Fish and Wildlife Service experimental recovery effort as it is being conducted in Wyoming, Idaho, and Montana. There has not been a breeding pair or a pack identified in Utah to date, only a dispersing animal. If wolves from the federal recovery areas enter Utah, they will receive protection under the Endangered Species Act. Wolves are not included in the list of threatened or endangered species for Rich, Weber, Box Elder, Morgan, or Cache County.

Small mammals that occur or are likely to occur within the Ogden RD include various squirrels, chipmunks, shrews, mice, voles, marmot, rabbit/hares, and gophers (see the list of vertebrate wildlife species for the Wasatch-Cache NF in the Forest Plan, USDA Forest Service, 2003). Monitoring of small mammals on the ORD has been limited; therefore abundance or trends are largely unknown.

3.6.2.2 WCNF Management Indicator Species (MIS)

The WCNF Revised Forest Plan identified the goshawk (*Accipiter gentilis*), the snowshoe hare (*Lepus americanus*), the beaver (*Castor canadensis*), the Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) and the Bonneville cutthroat trout (*Oncorhynchus clarki utah*) as management indicator species (Forest Service 2003b:J4-J5). Because its range does not extend into the project area the Colorado River cutthroat trout has been eliminated from further analysis in this document. The most current direction for MIS is contained in 36 CFR 219.14(f) of the 2005 Planning Rule (Federal Register, Vol.70, No.3, pps.1022-1061). National Forests, such as the Wasatch-Cache, that revised under earlier regulations and whose plan requires population monitoring or population surveys are required to comply with the Forest Plan. Site-specific monitoring or surveying of a proposed project is not required.

The following information is found in Management Indicator Species of the Wasatch-Cache National Forest, Version 2005-2. For additional information on Forest MIS refer to that report.

Northern goshawk – aspen, conifer and mixed conifer

The range of the northern goshawk is circumpolar. In the West it is found from Alaska through the Rocky Mountains to New Mexico. The goshawk is a forest habitat generalist that uses a wide variety of forest ages, structural conditions, and successional stages. While all forested landscapes are used to some extent, certain forest cover types appear to be occupied by goshawks more than others (Graham et al. 1999). Cover types most often occupied by goshawks, based on sightings and nest locations, are Engelmann spruce, subalpine fir, lodgepole pine and quaking aspen, in either single or mixed species forests. The population under consideration for MIS is forest-wide.

Three components of a goshawk's home range have been identified including the nest area (approximately 30 acres), post fledging-family area (approximately 420 acres), and foraging area (approximately 5,400 acres). Goshawks nest in a wide variety of forest types including aspen, coniferous, and mixed conifer forests. It typically nests in mature and old forests.

The goshawk preys on large-to-medium-sized birds and mammals, which it captures on the ground, in trees, or in the air. Observations of foraging goshawks show that, in fact, they hunt in many forest conditions. This opportunism suggests that the choice of foraging habitat by goshawks may be as closely tied to prey availability as to habitat structure and composition.

Specific habitat attributes used by these species include snags, downed logs and woody debris, large trees, herbaceous and shrubby under-stories, and a mixture of various forest vegetation structural stages.

It was concluded in the Conservation Strategy and Agreement for the Management of Northern Goshawk Habitat in Utah that goshawk populations in Utah were viable. This conclusion was based on the findings of Graham et al. (1999) that good quality habitat is well distributed and connected throughout the state, the absence of evidence of a population decline on National Forest System lands since 1991, and conclusions of the U.S Fish and Wildlife Service in their decision to not list the northern goshawk under the Endangered Species Act (Federal Register, 1998).

Monitoring results and trend

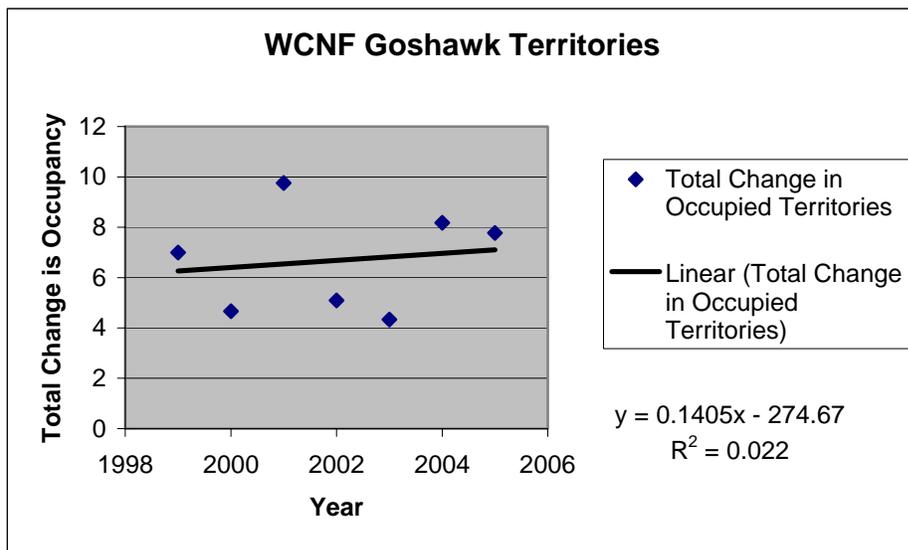
Territory occupancy has been monitored consistently on the Forest since 1999. Table 3.6.6 shows the results of that monitoring (USDA Forest Service 2006)

Table 3.6.6: Goshawk Territories – Forest-wide

Year	1999	2000	2001	2002	2003	2004	2005
Number of Known Territories	29	31	34	35	45	51	50
Territories Monitored	20	31	23	33	41	36	48
Occupied Territories	7	7	11	14	16	22	20
Percent of Monitored Territories Occupied	.35	.23	.48	.42	.35	.61	.49

When monitoring started in 1999, there were a total of 29 known territories on the Forest. In 1999, 20 of the known territories were surveyed of which 7 were observed as occupied. Every year a percentage of territories have been monitored and new territories found. The number of territories monitored in 1999 was divided by the number of territories monitored in the current year. This gave us the percent of territories monitored for occupancy each year compared to the baseline data. The change in occupancy was obtained by dividing the number of territories occupied by the number of territories monitored for the current year then multiplying the percent monitored for the year and the number of territories monitored in 1999. These calculations were completed for each district and a sum was taken to show the total change in occupancy for the Forest. Figure 3.6.6 shows the total change in territory occupancy from 1999 to 2005. The results are similar to the 2005 version 2 monitoring report and show a static trend in occupancy.

Figure 3.6.6. Total change in occupied Goshawk territories on the WCNF (USDA Forest Service 2006).



Year	1999	2000	2001	2002	2003	2004	2005
Total Change in Occupied Territories¹	7	4.66	9.76	5.09	4.33	8.18	7.775

¹Sum of each Districts change in territory occupancy.

Snowshoe Hare - pole/sapling aspen, conifer and mixed conifer

Snowshoe hares were selected as management indicators for pole/sapling aspen, conifer and mixed conifer. The snowshoe hare is a valuable prey species to the lynx, goshawk, and to other predators. In the Rocky Mountains and westward, hares mainly use coniferous forests in the higher mountainous areas. They are predominately associated with forests that have a well-developed under-story that provides protection from predation and supplies them with food.

For snowshoe hares, the Wasatch-Cache National Forest has been divided into two separate populations (the Wasatch/Bear River Range and the Uinta Mountain “North Slope Range”). These two populations were identified because of the large habitat gap between mountain ranges essentially blocking interactions between the two populations.

The Wasatch/Bear River Range population consists of the Salt Lake, Ogden, and Logan Ranger Districts. The Uinta Mountain Range consists of the Mountain View, Evanston, and Kamas Ranger Districts.

In Northern Utah, a study was done in the Bear River Range on the Wasatch-Cache National Forest where snowshoe hare use was determined in different vegetation types (Wolfe 1982). Table 3.6.7 displays the associated hare density using information from Wolfe (1982) which was converted to hares/hectare by Hodges (2000).

Table 3.6.7 Snowshoe hare density by vegetation cover type (Wolfe 1982 and Hodges 2000).

Vegetation Type	Hares/Hectare
Subalpine Fir	0.99
Douglas Fir	0.57
Aspen dense understory	0.22
Aspen-conifer edge	0.17
Engelman spruce	0.1
Aspen-sparse understory	0.01

Wasatch/Bear River Range

As part of the forest plan monitoring effort for Management Indicator Species, snowshoe hare plots were established across the forest. In 2003, two, six, and seven grids were established on the Salt Lake RD, Ogden RD, and the Logan RD, respectively. Each grid consists of 50 square meter sample points. The two grids established on the Salt Lake Ranger District contain the following vegetation types: aspen/conifer and mixed conifer. The six grids established on the Ogden Ranger District contain the following vegetation types: Spruce-fir, aspen/conifer, aspen, douglas-fir, mixed conifer and mature lodgepole pine. The seven grids established on the Logan Ranger District contain the following vegetation types: Spruce-fir, aspen/conifer, aspen, douglas-fir, mixed conifer, mature lodgepole pine, and young/mid-age lodgepole pine. At each of the 50 sample points, the number of snowshoe hare pellets is tallied on an annual basis. On some surveys, individual sample points cannot be relocated (e.g. they are lost or stolen) and the sample size is less than 50. Those instances where the sample size is less than 50 are indicated in the table below as n=XX, where n is the number of sample points. Pellet counts have been used in many studies to infer snowshoe hare densities. Table 3.6.8 displays the results of pellet counts for 2004 and 2005 within each district.

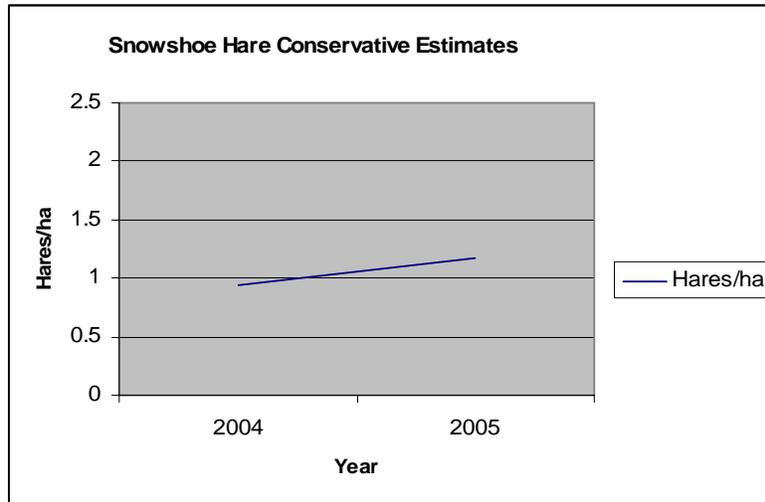
Table 3.6.8 Snowshoe Hare pellet counts for the Wasatch-Bear River population on the Wasatch-Cache National Forest (USDA Forest Service 2006).

District	Vegetation Type	Total Pellet Counts	
		2004	2005
Ogden	Douglas fir	409	459
Ogden	Mixed Conifer	354	361
Ogden	Aspen/Conifer or Conifer/Aspen	313	229 (n=49)
Ogden	Lodgepole Pine - Mature	216	184 (n=48)
Ogden	Spruce/Fir	41	17
Ogden	Aspen	1 (n=49)	0
Salt Lake	Mixed Conifer	252 (n=44)	650
Salt Lake	Aspen/Conifer or Conifer/Asp	106	155
Logan	Lodgepole Pine/Aspen – young/mid aged	583	863
Logan	Douglas fir	147	85 (n=47)
Logan	Spruce/Fir	135	84
Logan	Aspen/Conifer or Conifer/Aspen	96	41 (n=49)
Logan	Mixed Conifer	53	111
Logan	Lodgepole Pine - Mature	52	183
Logan	Aspen	7 (n=48)	27 (n=49)

Table 3.6.12. Conservative and Liberal Estimates of Hares per Hectare Based on the Average Pellets per Plot between 2004 and 2005 for the Wasatch/Bear River Range.

	2004	2005
Average Pellets per Plot	3.73	4.65
Conservative and Liberal Estimates (Hares/ha) *	0.94-1.79	1.18-2.24

Figure 3.6.7. Conservative Estimates of Hares per Hectare Based on the Average Pellets per Plot between 2004 and 2005 for the Wasatch/Bear River Range.



The pellet count data between 2004 and 2005 from the Wasatch/Bear River Range suggests an increase of 25 % (3.73 vs 4.65 pellets per plot) in snowshoe hare numbers. Table 3.6.12 displays the conservative and liberal estimates for hares/hectare based on the number of pellets per plot.

North Amazon Basin: Since 1998, Dennis Austin (UDWR-retired) and the USFS have been conducting snowshoe hare pellet surveys (sampling methods are not similar to those described above) in Amazon Basin on the Logan Ranger District. The pellet count data from North Amazon Basin suggests that the snowshoe hare population was stable or displayed very little change from the summer of 1998 thru the summer of 2001. From the summer/fall of 2001 the data suggests an increase in snowshoe hare numbers with the highest numbers so far occurring during August 2004 to July 2005 (the most recent survey). This pellet count data represents an increase of 34% between 2004 and 2005, which is similar to the 25% increase suggested by the USFS data (USDA Forest Service 2006).

Beaver - Riparian

Beaver occur in permanent slow moving streams, ponds, small lakes, and reservoirs. They play an important role in maintaining and enhancing riparian and aquatic ecosystems (Olsen and Hubert 1994) and are important for the creation of habitat for several species of fish, big game, waterfowl, and neo-tropical birds. A beaver colony is typically about 5 to 6 beavers and consists of an adult pair, the present year young, and young of the previous year.

For beaver, the Wasatch-Cache National Forest has been divided into two separate populations (the Wasatch/Bear River Range and the Uinta Mountain “North Slope Range”). The Wasatch/Bear River Range population consists of the Salt Lake, Ogden, and Logan Ranger Districts. The Uinta Mountain Range consists of the Mountain View, Evanston, and Kamas Ranger Districts.

As part of the forest plan monitoring effort for Management Indicator Species, square mile sections were surveyed across the forest. To achieve an unbiased, well-distributed sample, sample units were systematically selected sections (1 section =

1 m² = 640 acres). With a 10% sampling intensity, every 10th section was sampled (the first section sampled was selected randomly, and then every 10th section were systematically selected). Only complete sections of National Forest System lands are sampled. By surveying sections and recording the location of active dams, the number of colonies can be determined and converted into the number of beaver by using an average of 5 beaver per colony.

Information regarding the monitoring of the beaver sections for the entire Wasatch/Bear River Range for 2004 and 2005 are contained within the planning record. In the beaver section of the 2006 Report for Management Indicator Species of the Wasatch-Cache National Forest, additional information is provided regarding both populations (Wasatch/Bear River Range and the Uinta Mountain Range).

Tables 3.6.10 and 3.6.11 display the monitoring results and the estimated number of beaver per square mile within the Wasatch/Bear River Range (USDA Forest Service 2006). At the present time the Forest has only established baseline information for beaver populations.

Table 3.6.10: Wasatch/Bear River Range Beaver Monitoring Results (baseline data: 2004-2005)

District	Number of Sections	Completed sections monitored	Sections monitored w/active dams	Sections-w/old activity, no new activity	Sections w/no activity or H ₂ O present
Wasatch/Bear River Range					
Salt Lake	14	14	1 (1 dam)	3	10
Ogden	17	17	3 (9 dams)	2	5
Logan	32	32	3 (20 dams)	5	15
Total	63	63	7 (30 dams)	10	30

Table 3.6.11 Beaver Population Estimates for the Wasatch/Bear River Range (baseline data: 2004-2005).

Population	Active dams	Number of colonies	Individuals	Estimated # of beavers/mi ²
Wasatch/Bear River Range Population	30	7	35	.55

UDWR DATA

Currently there are not enough years of Forest Service monitoring population data on beaver to indicate a trend. However, there are other source documents provided by the Utah Division of Wildlife Resources (UDWR) that currently indicate a trend. Several UDWR reports provide information regarding the historical beaver trends for the Forest: The 1979-80 and 1998-1999 Furbearer Harvest Reports ((State of Utah, 1980, 1999 respectively) and the 1971-1982 Beaver Distribution, Habitat and Population Survey (published in 1993 Blackwell) provide relevant information on beaver.

The 1993 Blackwell report restates the trend from the 79-80' Report but calculates carrying capacity for each of the 52 beaver units in the state. Blackwell used beaver habitat data collected from 1971-81 to determine the carrying capacity.

There are 11 trapping units that include some National Forest System lands administered by the Wasatch-Cache National Forest. UDWR beaver units include all land ownerships.

Table 3.6.12. UDWR Units occurring, at least partially, on NFS Lands

Unit	Unit Location	Status of beaver population 81'
Wasatch/Bear River Population		
2	North ½ Cache County	Static
3	Rich County	Static
5	South ½ Cache County	Static
6	West Weber County	Static
7	East Weber County	Static
8	Davis County	Static
9	Morgan County	Static
10	Northern ¾ Summit County	Static
11	Southern ¼ Summit County	Increasing
14	Southwest Salt Lake County	Static
15	Southeast Salt Lake County	Increasing

Source: UDWR 1971-1982 Beaver Distribution, Habitat and Population Survey (Published 1993)

With the exception of a few specific locations, Forest Service management of suitable beaver habitat within National Forest boundaries has not changed significantly from 1980 to the present. Therefore, until Forest Service monitoring yields data for population trends, it is assumed that the determinations made in the State of Utah Survey Report remain valid for both populations on the Forest.

Additional information regarding Forest Plan monitoring and trend is contained within the project record (USDA Forest Service 2006 Management Indicator Species of the Wasatch-Cache National Forest).

3.6.2.3 Threatened, Endangered, Proposed, and Candidate Species (Wildlife species)

The U.S. Fish and Wildlife Services lists two Threatened, one Endangered Species, and two Candidate species as occurring, or potentially occurring, in Cache, Weber, Box Elder, Morgan, and Rich Counties. These include the bald eagle (T), Canada lynx (T), black-footed ferret (E) in Rich County only, yellow-billed cuckoo (C) in Weber, Box Elder, Morgan, and Cache Counties only, and the Ogden Rocky Mountainsnail (C) in Weber County only.

Canada lynx

The Canada lynx occurs across the boreal forests of Canada and Alaska in association with snowshoe hare habitat or habitat of other suitable prey species. They have also been found in isolated spruce, fir, and lodgepole pine forests of Washington, Idaho, Montana, Wyoming, and Colorado. Early succession stands with high densities of shrubs and seedlings are optimal for hares, and subsequently important for lynx. Mature forest stands are used for denning, cover for kittens, as well as travel corridors. Home ranges of lynx are generally 6-8 square miles, but range from 5-94 square miles. Males have larger ranges than females. Overlapping ranges do occur, mainly among animals of different sex and age classes. Adult lynx of the same sex tend to keep exclusive home ranges. Density of lynx in an area is highly dependent on prey (snowshoe hare) abundance. Most densities range from one lynx per 6-10 square miles.

In 1999-2001, lynx hair snares were established throughout Utah and other western states. No lynx hair samples occurred in northern Utah during this effort.

On July 3, 2003, the U.S. Fish and Wildlife Service (USFWS) issued a Notice of Remanded Determination of Status for the contiguous United States distinct population segment of the Canada Lynx (USDI, 2003). The notice states that there is no evidence of lynx reproduction in Utah and that lynx, which occur in Utah, are dispersers rather than residents.

On 9 November 2005, the USFWS proposed critical habitat for the Canada Lynx within the United States; no critical habitat is proposed within the project area or within Utah (50 CFR Part 17, Volume 70, No. 216). Within the USFWS Recovery Outline for the Canada Lynx (USFWS, September 14, 2005), core areas, provisional core areas, secondary areas, and peripheral areas were identified; none of these areas have been identified to occur within the project area

Reports of lynx in Utah indicate sightings between 1961 and 1982 on the Ashley and WCNF, but no sightings between 1983 and 1993 (USDA Forest Service, 1994). In August/September 2004, a transplanted lynx released in southwestern Colorado traveled to the WCNF and moved northward through the Ogden and Logan Ranger Districts and into Idaho.

In Utah, Engelmann spruce, white fir, subalpine fir, and lodgepole pine forests at the higher elevations, 7,300 to 10,500 feet (2,250 – 3,250 m), are the primary vegetation cover types that may contribute to lynx habitat. Quaking aspen dominates much of the landscape, but snowshoe hares, important to lynx as a food source, may use aspen stands much less than conifer stands in this area (Wolfe et al. 1982), probably because they lack dense overstory cover (Hodges 2000). Where aspen is intermixed with spruce-fir and lodgepole pine stands, aspen stands would constitute secondary vegetation that may contribute to lynx habitat (Ruediger et al. 2000).

Habitat for Canada lynx occurs within the Ogden Ranger District, primarily in the conifer cover types dominated by various combinations of lodgepole pine, Douglas-fir, subalpine fir, and Engelmann spruce interspersed with the aspen cover type. The Ogden Ranger District is a “travel corridor” between two larger habitats areas (in Idaho and within the Uinta Mountains of Utah) and is not considered permanent resident habitat (Figure 3.6.2). In a letter from the USDI Fish and Wildlife Service dated November 6, 2002, lynx habitat within the Ogden Ranger District was reclassified from Lynx Analysis Unit (LAU) to linkage area due to a low percentage of primary habitat.

Maintaining connectivity with Canada and between mountain ranges is an important consideration for the Northern Rocky Mountains Geographic Area (Ruediger et al. 2002). It is likely that the Northern Rocky Mountains Geographic Area and the Southern Rocky Mountains Geographic Area of Colorado and southern Wyoming are poorly connected. Shrub-steppe communities in central and southern Idaho, Wyoming, southeast Montana, and eastern Oregon may provide connectivity between adjacent mountain ranges. Along the Continental Divide, they may also provide an important north-south link between large patches of lynx habitat. Figure 3.6.5 displays lynx primary and secondary habitat for the northwestern portion of the WCNF. Based on the location of primary and secondary habitat and the connectivity of habitat, the most direct connection passes through the eastern portion of the Ogden RD (Curtis Creek and Monte Cristo areas); thus connecting to the Logan Ranger District to the north and the Uinta Mountains to the southeast.

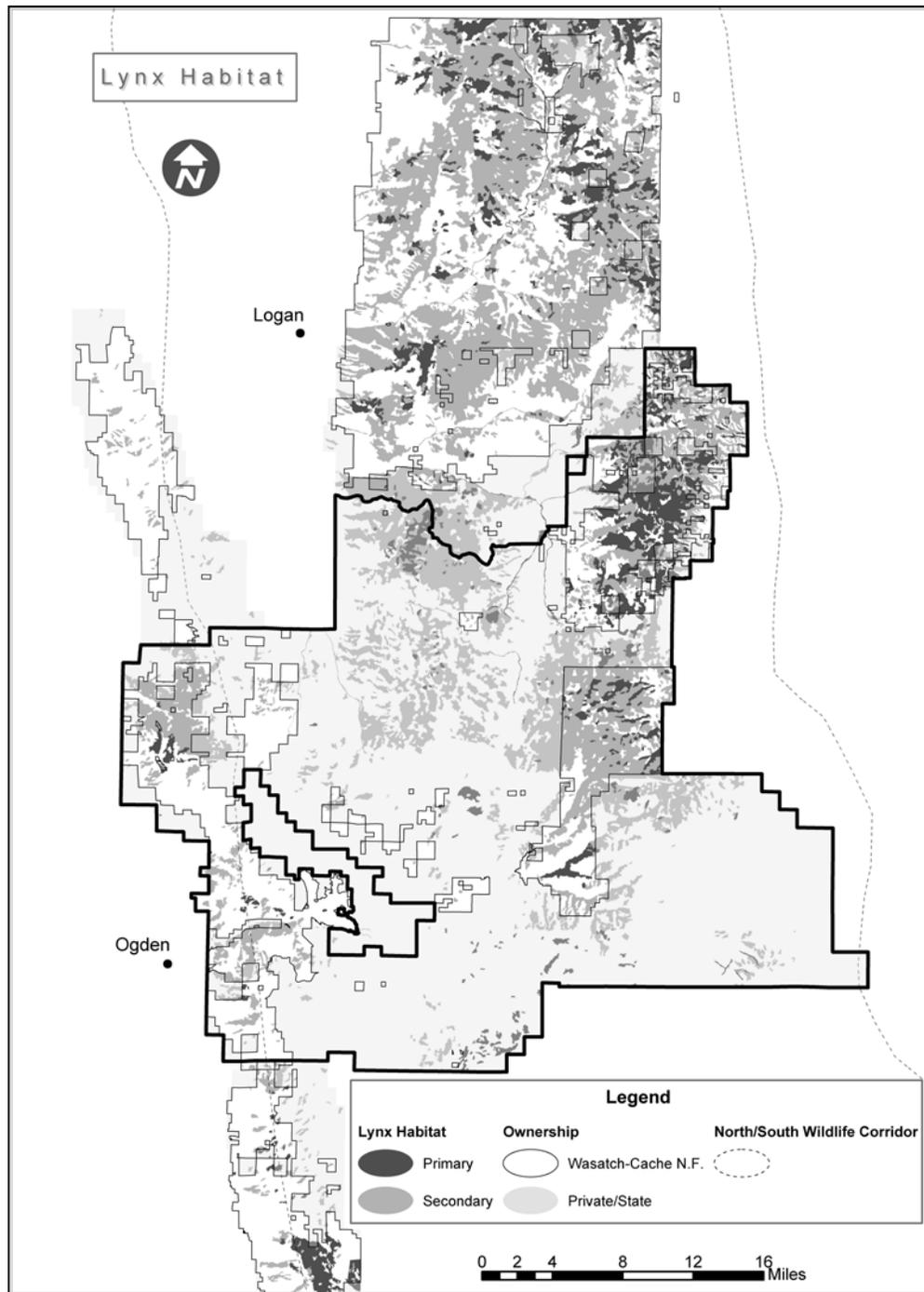


Figure 3.6.7 Lynx primary and secondary habitat for the northwestern portion of the WCNF

Table 3.6.16 displays the percentage and number of acres of primary and secondary habitat that occurs on the Ogden RD (only USFS managed lands). Primary habitat within the Ogden RD consists of 5.6% of the WCNF. Secondary habitat within the Ogden RD consists of 15.9% of the WCNF. Figure 3.6.6 displays lynx primary and secondary habitat within the Ogden RD. Table 3.6.13 gives the miles of open motorized trails and roads with primary and secondary lynx habitat.

Table 3.6.16 Acres and percent of USFS managed lands with suitable lynx habitat on the Ogden Ranger District.

Location	Total Acres	Primary Habitat	Percentage	Secondary Habitat	Percentage
Ogden Ranger District	160,927	20,975	13	51,379	32

Table 3.6.17 Existing miles of motorized trail and open roads within lynx habitat on the Ogden RD (only USFS managed lands).

Miles within Primary Habitat	Miles within Secondary Habitat
30.26 miles	53.72 miles

*for lynx, motorized trail only includes ATV and motorcycles (not snowmobiles).

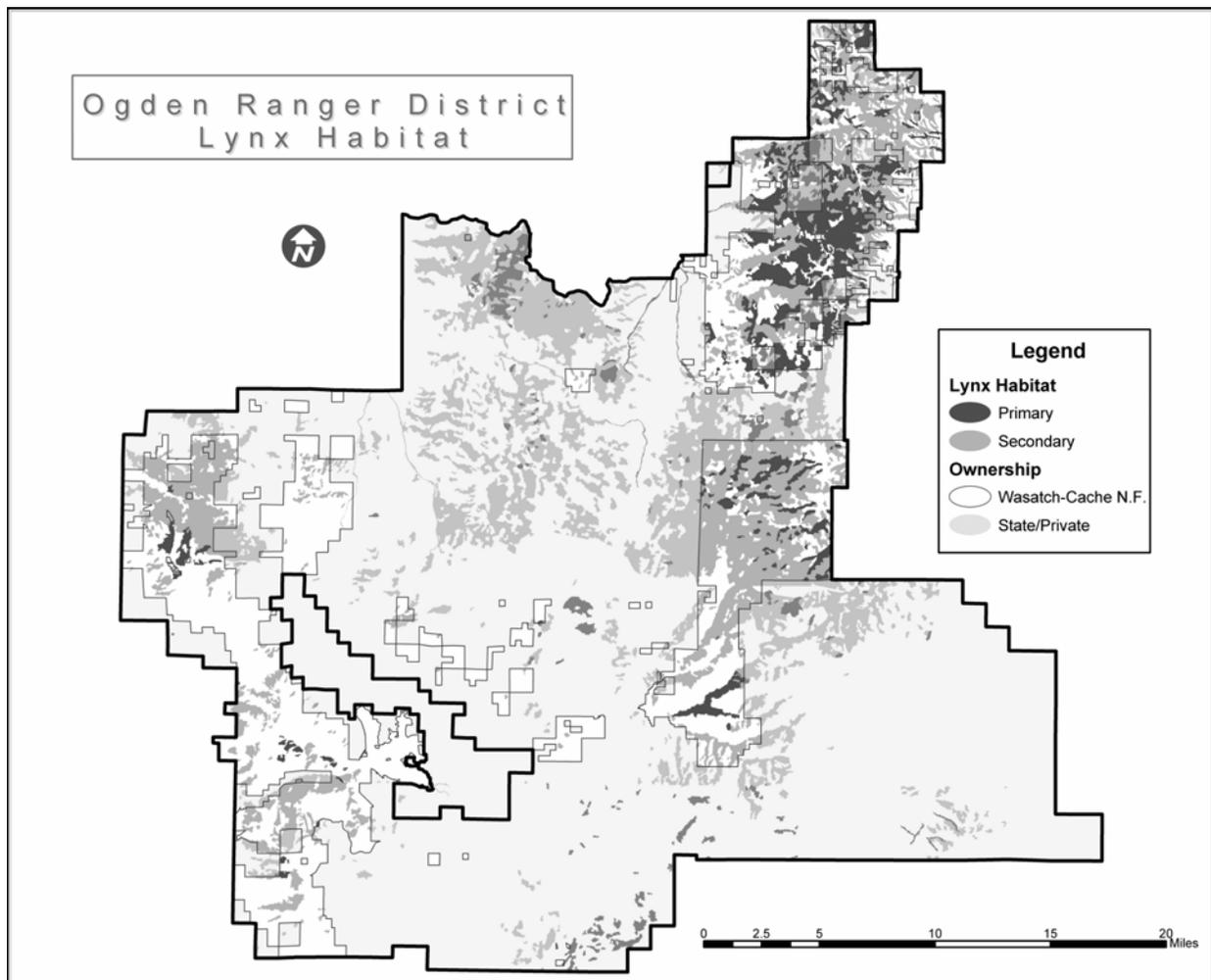


Figure 3.6.7 Lynx primary and secondary habitat on the Ogden RD of the WCNF

Bald eagle

Bald eagles are winter visitors for the most part to Utah and tend to congregate wherever food is available, often near open water where fish and waterfowl can be caught. Within the Ogden RD, bald eagles roost east of Willard Bay approximately 1 mile from the forest boundary and around Pineview and Causey reservoirs. Monitoring of wintering bald eagles at Pineview reservoir has occurred during the past two winters, with several of the sighting locations occurring within the community of Huntsville (USDA Forest Service 2005 Map of Eagle Survey Locations).

Black-footed ferret

These ferrets are a prairie species almost entirely obligate on prairie dog towns for food and shelter. Portions of Rich County are considered to be historic range for black-footed ferrets. The Wasatch Cache National Forest is probably on the very edge of this range, if included at all. None are expected to occur within the Ogden RD.

Yellow-billed cuckoo

The current distribution of yellow-billed cuckoos (*Coccyzus americanus*) in Utah is poorly understood, though they appear to be an extremely rare breeder in lowland riparian habitats statewide. Historically, cuckoos were probably common to uncommon summer residents in Utah and across the Great Basin (Parrish et al. 2002). No records of occurrence of this species exist for the Ogden RD. Nesting habitat is classified as dense lowland riparian characterized by a dense sub-canopy or shrub layer (regenerating canopy trees, willows, or other riparian shrubs) within 100 m (333 ft) of water. Overstory in these habitats may be large, gallery-forming trees, 33 to 90 feet in height or developing trees 10 to 27 feet in height, usually cottonwoods. Nesting habitats are found at elevations below 6,000 ft. Cuckoos may require large tracts of contiguous riparian nesting habitat between 100 and 200 acres. However, cuckoos are not strongly territorial and home ranges may overlap during the breeding season (Parrish et al. 2002). On the Ogden RD, the NFS lands associated with the South Fork of the Ogden River is the only area of potential yellow-billed cuckoo habitat, though recreational development (e.g. numerous campgrounds) likely restricts the use of this area. No observations have occurred for this species on the Ogden RD (see Appendix B).

Ogden Rocky Mountainsnail

The location of this “subspecies” is near the eastern city limits of Ogden, near Rainbow Gardens. The Ogden Rocky Mountainsnail (*Oreohelix peripherica wasatchensis*) occurs under maple and gambel’s oak trees and is restricted in distribution to a very small area (~ 100 acres). Snail surveys in other locations of the Ogden and Logan Ranger Districts have not found it to be present. Recent genetic testing (Perez-Losada et al. 2004) suggests that the separation of this “subspecies” of *Oreohelix peripherica* is not justified and thus it does not qualify for listing.

3.6.2.4 Forest Service Intermountain Region Sensitive Species

Sensitive species are defined in the Forest Plan as “Plant and animal species, selected by the Regional Forester, for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, and significant current or predicted downward trends in habitat capability that would reduce a species’ existing distribution” (USDA Forest Service 2003). Of those species listed as sensitive for the Wasatch-Cache NF, only the following occur within the Ogden Ranger District: sharp-tailed grouse, flammulated owl, northern goshawk, three-toed woodpecker, peregrine falcon, and the Townsend’s big-eared bat. Currently, the greater sage grouse and pygmy rabbit are not known to occur on the district, but do occur in areas adjacent to the district boundary. The wolverine, great gray owl, spotted bat, and boreal owl may possibly occur on the district. The peregrine falcon was recently identified as a Forest Service sensitive species after the U.S. Fish and Wildlife Service removed it from endangered status. Detailed habitat requirements and general distribution information for all sensitive species on the Wasatch-Cache National Forest are discussed in the Revised Forest Plan (USDA Forest Service 2003).

Northern goshawk

The range of the northern goshawk is circumpolar. In the West it is found from Alaska through the Rocky Mountains to New Mexico. While all forested landscapes are used to some extent, certain forest cover types appear to be occupied by goshawks more than others (Graham et al. 1999). Cover types most often occupied by goshawks, based on sightings and nest locations are; Engelmann spruce, subalpine fir, lodgepole pine, and quaking aspen, in either single or mixed species forests. The goshawk preys on large to medium sized birds and mammals, which it captures on the ground, in trees or in the air. Although goshawks will use a variety of vegetation age classes and structural stages, they are more commonly found in

forests with mature and old growth characteristics. Three components of a goshawk’s home range have been identified including the nest area (approximately 30 acres), post fledging-family area (approximately 420 acres), and foraging area (approximately 5400 acres). In addition to being a MIS, the goshawk is also a USFS Sensitive species.

Within the Ogden Ranger District there are six known territories. Table 3.6.7 displays the monitoring history for each of these territories. Table 3.6.8 displays the distance to the closest open road and/or motorized trail from all nests (those which have been active since 1998) within the territories and the miles of road or motorized trail associated around each nest which includes the nest areas and the PFA for the existing condition.

Table 3.6.18 Goshawk territory history within the Ogden RD

Territory Name	Nests	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
OCB	2		F2	I	I?	I?	I?	I?	F2	E	F2	F2	J	I
RF	2	I	F2	owl	I/N	I/N	I/N	I/N	A?	F1	F2	I	I	I
RW	2									F2	F2	F3	O/I	O/E
SNB	4								F2+	E	E	I	O/I	I
SPB	3		I	I	X	X	A*	I	I	I	I	I	O/I	I
WC	1											F?	O/F2	O/F?

- O – Occupied Territory during predawn survey
- A - Active Nest unknown number of fledglings
- F –The documented number fledged (plus sign means additional may have been observed) F?- Uncertain number of fledglings.
- I – Inactive I? - Uncertain from the records whether this territory was inactive or not visited.
- I/N- Inactive for one or more nests/other nest not visited.
- X – Not Surveyed
- E – Nest active but failed.
- A?- Active by some species of hawk
- Owl- Nest was occupied by a great horned owl.
- * - one dead young at base of tree
- J – Juveniles observed within the territory.

Table 3.6.19 Distance to the Closest Open Road and/or Motorized Trail from the Most Recent Active Nest and the Miles of Road or Motorized Trail within each PFA by Goshawk Territory for the Existing Condition.

Territory Name and Nest*	Distance to the Closest Open Road and/or Motorized Trail from the Nest	Miles of Open Road or Motorized Trail within each PFA**
OCB-B	0.20 miles	1.23 miles
RF-A	0.97 miles	0 miles
RW-A	0.06 miles	1.48 miles
RW-B	0.04 miles	1.95 miles
SNB-A	0.33 miles	0.54 miles
SNB-B	0.25 miles	0.66 miles
SNB-C	0.16 miles	0.92 miles
SNB-D***	0.16 miles	2.28 miles
SPB-A	0.44 miles	0.86 miles
SPB-WC	0.14 miles	1.88 miles
WC-A	0.17 miles	1.53 miles****

All open roads (USFS, state, county, and private roads) and motorized trails were used for the analysis within goshawk territories. Roads designated for administrative use only, will have very limited motorized use, thus for this analysis there will be little to no affect on goshawks from these roads. All USFS managed roads within the SNB territory are seasonally closed (between March 1st and September 30th) for the protection of the goshawk; all roads assessed for the SNB territory are private or under state or county jurisdiction. Maps displaying the specific nests and roads are located within the project record.

* All nest locations known to have been active at some time since 1998 have been analyzed. Nest OCB A was not active since 1995 when the nest condition was poor and the nest fell out of the tree. Within the RF territory, Nest PC(A) associated was last active in 1994 and the nest had fallen out of the tree by 2001. SPB territory consisted of two other nests which were active prior to 1998 and have fallen from the trees.

** The effects within Post Fledgling Areas (PFA) and Nest Areas are assessed by utilizing a circle of 600 acres centered on the specific nest location.

*** This nest is located on private property, but adjacent to the forest.

**** Sixty-one percent of the road miles within this PFA are seasonally closed during a portion of the season that goshawks are present.

Peregrine falcon

Peregrine falcons were recently identified as a Forest Service sensitive species after the U.S. Fish and Wildlife Service removed it from endangered status. There are no known nest sites on the Odgen RD. Several peregrine falcon observations have been documented in this area by the Utah Natural Heritage Program prior to 1984 (UDWR 2003 & Peregrine Falcon Database UDWR 2004) The most suitable habitat for the peregrine falcon occurs on the cliffs on the west side of the District, just south of Brigham City to Weber Canyon.

Boreal owl

Boreal owls have a range that is circumboreal. In North America, it breeds from Alaska east across Canada, and south into the mountains of Washington, Idaho, Montana, Wyoming, and Colorado. Boreal owls are closely associated with high elevation spruce-fir forests because of their dependence on this forest type for foraging year round. Nesting habitat structure consists of forests with a relatively high density of large trees (12 inch diameter at breast height or DBH), open understory, and multi-layered canopy. Owls nest in cavities excavated by large woodpeckers in mixed conifer, aspen, Douglas-fir, and spruce-fir stands. In winter, they may move down in elevation and roost in protected forested areas. Boreal owls avoid open areas, such as clearcuts and open meadows, except for occasional use of the edges of openings for foraging.

Boreal owls have responded to taped calls in northern Utah in 2-3 locations on the Ashley, Uinta, and Wasatch-Cache National Forests. The Wasatch-Cache NF observation/responses have been concentrated along the Rich and Cache County line on the Logan Ranger District. Nest locations have not been found. In 2001, on the Uinta National Forest, a nesting boreal owl was located; this being the first documented nesting of a boreal owl in Utah (Mika 2000 personal communication). During the winter/spring of 2001 and 2002 broadcast calling surveys were conducted within the ORD. No responses were heard during these surveys.

Great gray owl

These large owls breed from the boreal forests of Alaska, east to Ontario, and south to northeastern Minnesota, northwestern Wyoming, western Montana, Idaho, and through the Sierra Nevada Mountains of California and Nevada. Great gray owls use mixed coniferous and hardwood forests usually bordering small openings or meadows. They forage along edges of clearings. Semi-open areas, where small rodents are abundant, near dense coniferous forests, for roosting and nesting, are optimum habitat for great gray owls. During winter some birds stay on or near their breeding territories and others make irregular movements in search of prey and favorable snow conditions. In the Intermountain Region, great gray owls occur primarily in lodgepole pine/Douglas-fir/aspen zone and in ponderosa pine. Great gray owl surveys have been conducted on the Ogden RD. Data collected from these surveys yielded no evidence of great gray owls. In general, it is felt that these winter vagrants only occasionally visit Utah.

Wolverine

The wolverine is a circumboreal species. In North America, they occur in Alaska and across the boreal forests of Canada south into Washington, Oregon, Idaho, Montana and Wyoming. They also occur in backcountry areas of California, Colorado, and northern Minnesota. Recent data searches (USDA Forest Service 1994a) indicate that no wolverines were sighted in Utah between 1961 and 1983, but there were sightings between 1983 and 1993, on the Ashley and WCNF. A 1995 survey conducted in Franklin Basin did not produce any tracks or photographic evidence of wolverines (Bissonette et al. 1995). On March 29, 2002 a helicopter survey for wolverine conducted by the Caribou National Forest identified

probable wolverine tracks just south of the Idaho/Utah state line (USDA Forest Service 2002). On March 17, 2004 a vehicle hit and killed a wolverine on U.S. Highway 30 near Fossil Butte National Monument west of Kemmerer. There have been unconfirmed sightings on the WCNF.

Townsend's big-eared bat

Townsend's big-eared bats occur throughout western North America, from British Columbia to southern Mexico, and east to South Dakota and western Texas and Oklahoma. Isolated populations exist in southern Missouri, northwestern Arkansas, northeastern Oklahoma, eastern Kentucky, West Virginia, and western Virginia. They are widely distributed throughout the Intermountain Region. The species have been identified in Bat Cave on the Ogden District and in Logan Cave on the Logan District. They may exist in other areas of the Forest where there is suitable roosting habitat. Western big-eared bats use juniper/pine forests, shrub/steppe grasslands, deciduous forests, and mixed coniferous forests from sea level to 10,000 feet. During winter, they roost singly or in small clusters in caves, or rocky outcroppings, occasionally in old buildings, or mine shafts.

Bat Cave, near Causey Reservoir was visited during 1992 and 1993, with Townsend's big-eared bat numbers varying from 5-245 individuals (Lengus 1994). Bat cave is not easily accessible to the public: the cave is located several miles from any road, the cave is difficult to locate, and the entrance is not easily accessible without climbing gear.

Spotted Bat

Spotted bats (*Euderma maculatum*) have been found from southcentral British Columbia to southern Mexico, in a variety of habitats most often in rough, rocky, semi-arid to arid terrain varying from Ponderosa pine to scrub country to open desert. They roost alone in rock crevices high up on steep cliff faces in cracks and crevices. Their diet consists of moths and they have a regular circuit for foraging, usually searching clearings within pine forests for prey. Although there is habitat on the Forest, no spotted bats have been found.

Flammulated owls

These owls breed from southern British Columbia south to Veracruz, Mexico and from the Rocky Mountains to the Pacific. Their winter range is thought to extend from central Mexico to Guatemala and El Salvador. Flammulated owls are a migratory species that occur in mixed conifer forest with spruce and fir at higher elevations and have also been found in aspen communities. They prefer ponderosa pine-Douglas-fir forests with open canopies. Large diameter (>20 inch dbh) dead trees with cavities at least as large as northern flicker cavities are important site characteristics. Territory size varies from 20 to 59 acres and is determined by age and patchiness of overstory trees.

Flammulated owls are present on the WCNF and appear to be fairly well distributed. On the Ogden RD, flammulated owl habitat primarily consists of mature stands of aspen, aspen/ conifer, and conifer/ aspen. Flammulated owl studies have occurred on the Ogden RD, these studies focused on the effects of disturbance and feeding habits (Mika 2003).

Three-toed woodpeckers

The circumboreal distribution of these woodpeckers coincides with the range of spruce habitat, however they can be found in sub-alpine fire, Douglas-fir, grand fir, ponderosa pine, aspen, and lodgepole pine forests. The three-toed woodpecker is dependent on recent burns and bark beetle infestations for food resources. Coniferous forests generally above 8000 feet (2400m) in elevation are typical of wintering and nesting habitat. In Utah, three-toed woodpeckers also use aspen for nesting where intermixed or adjacent to coniferous forests (Hill 2000). Territory occupancy is year-round however outbreaks or beetle infestations may cause irregular movements.

Sharp-tailed Grouse (*Tympanuchus phasianellus*)

In Utah, the sharp-tailed grouse historically ranged through central Utah to Piute County, but they are now limited to remnant populations in north central Utah. The sharp-tailed grouse preferred habitat occurs within bunch-grass areas of the foothills and benches interspersed with deciduous shrubs. Summer habitats are characterized as shrub steppe vegetation with a diversity of forbs and bunchgrasses or mountain shrub dominated by serviceberry and Gambel oak. In winter deciduous trees and shrubs in upland and riparian areas as well as in draws are critical habitat. Giesen and Connelly (1993) specified that winter habitat (deciduous trees and shrubs for food and cover) may limit sharp-tailed grouse populations and the loss this habitat has been associated with declines in Utah.

Male sharp-tailed grouse gather on established leks during early spring for courtship. Females visit these areas where mating takes place. Nesting begins in April. Nests are shallow hollows lined with grass and leaves, usually placed near a

bush or clump of grass. Primary food items are grass seeds, green vegetation, fruits and buds of wild shrubs and trees. Insects are readily taken during the summer.

Figure 3.6.8 displays the location of sharp-tailed grouse habitat (UDWR Habitat Map Information) (lek site information is contained within the planning record, due to the sensitive nature of this information). Surveys for the sharp-tailed grouse have been conducted by UDWR for several years, primarily centered on locating leks and conducting population counts at lek sites. The primary sharp-tailed grouse habitat associated with the Ogden Ranger District is located in the northern portion of the Public Grove Analysis area. No lek sites are known to occur on the Ogden Ranger District, but leks do occur within close proximity.

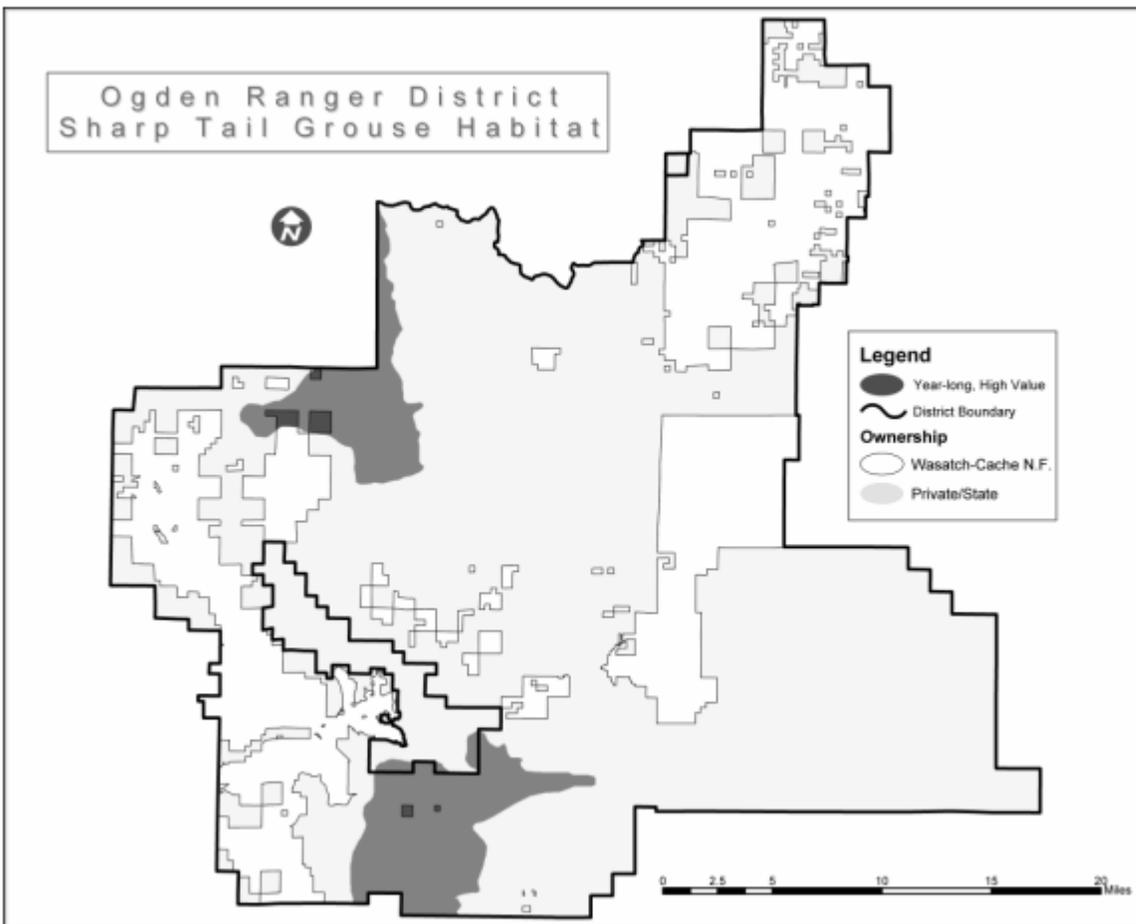


Figure 3.6.8. Sharp-tailed Grouse Habitat within the Ogden Ranger District (UDWR GIS Habitat Maps).

Greater Sage Grouse

Greater sage grouse were added to the Intermountain Region Sensitive Species list on November 17, 2003. Recent research has documented population declines of this species and identified concerns over the amount and quality of its habitats. The largest of the North American grouse, these birds inhabit sagebrush plains, foothills, and mountain valleys. Sagebrush is the predominant plant of quality habitat. Where there is no sagebrush, there are no sage grouse.

Males gather on traditional "strutting grounds" (leks) during March and April and put on a spectacular courtship performance - strutting with tails erect and spread, and air sacs inflated. Females visit the grounds during the first part of April. A few dominant males do most of the mating. Nesting begins in April. Nests are shallow depressions lined with grass or twigs and are usually located under sagebrush. The female lays from five to nine eggs, which hatch after 25 days of incubation.

Figure 3.6.8 displays the location of sage grouse habitat (UDWR Habitat Map Information) (lek site information is contained within the planning record, due to the sensitive nature of this information). Surveys for the sage grouse have been conducted by UDWR for several years, primarily centered on locating leks and conducting population counts at lek sites. The primary sage grouse habitat and active leks sites associated with the Ogden Ranger District are outside of and east of the project area or associated in the area of Hardware Ranch. No active lek sites are known to occur on the Ogden Ranger District. Only one historic lek site has been documented to occur in the area of Public Grove; information on this lek site is limited and no birds have been observed at this location since at least 1965 (personal communication and Table of Lek sites, Ron Greer, UDWR Habitat Biologist 2005). Note: Based on sightings of sage grouse associated with the Ant Flat road and the active leks associated with Hardware Ranch, the Curtis Analysis Area is most likely more valuable for sage grouse than the Willard and Public Grove analysis areas.

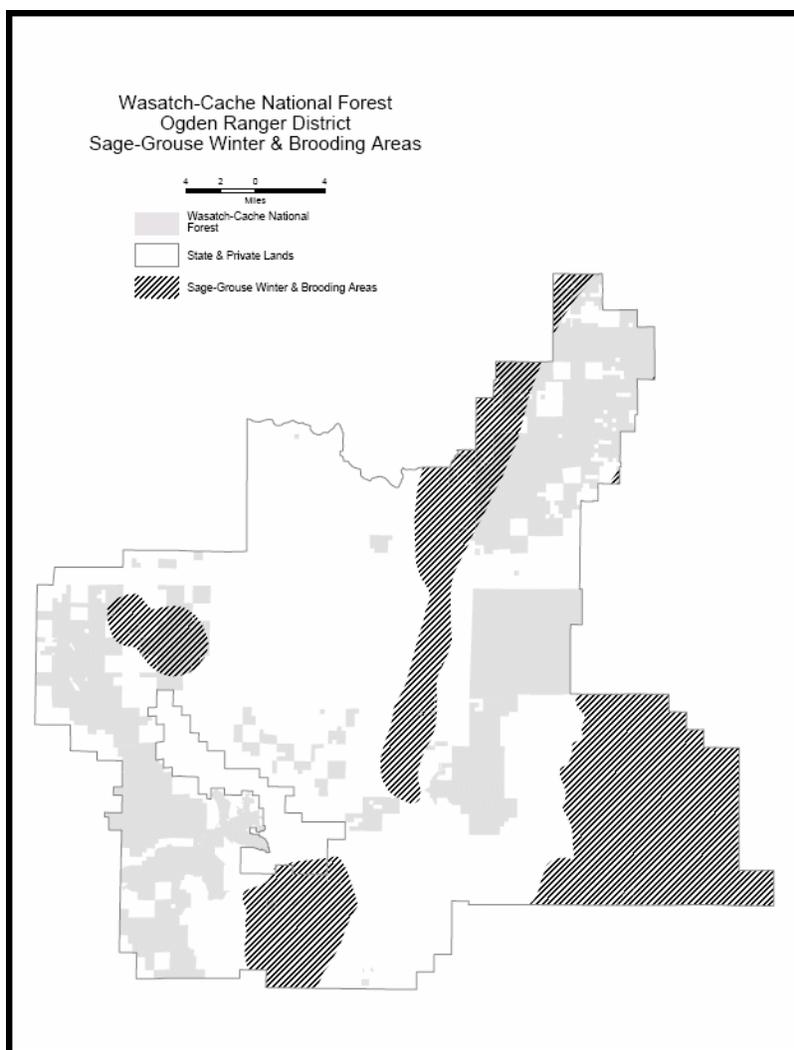


Figure 3.6.9. Sage Grouse Habitat within the Ogden Ranger District (UDWR GIS Habita Maps).

Pygmy rabbits

Pygmy rabbits were also added to the Intermountain Region Sensitive Species list on November 17, 2003, for the same reasons listed under the greater sage grouse. Pygmy rabbits prefer habitats of dense, tall stands of sagebrush associated with deep soils. The pygmy rabbit is not known to occur on the Ogden RD. The pygmy rabbit is known to occur at lower elevations in the tall sagebrush habitats to the east near Bear Lake (Janson 2002).

On June 23, 2003, Adam Kozlowski (UDWR Biologist) conducted surveys for pygmy rabbits near Birch Creek, approximately 1-2 miles north of highway 39 near the eastern boundary of the Ranger District. The survey results were

negative, though suitable habitat appeared to be present, there were concerns regarding the elevation and isolation from known locations of pygmy rabbits (UDWR Survey Results 23 June 2003, Adam Kozlowski).

In 2004 a survey was conducted as part of the North Rich Allotment EIS; the results of this survey would reflect very similar conditions as in the Ogden RD. A winter survey (January 15, 2004) was conducted to determine the presence or absence of pygmy rabbits within the sagebrush habitats in South Sinks, Peter Sinks, Middle Sinks, and the area southwest of South Sinks. Neither pygmy rabbits nor their sign were observed during the survey. Coyote, fox, snowshoe hare, squirrel, and weasel tracks and den entrances were observed. Within the area surveyed, the amount of sagebrush exposed above the snow was very limited. Snow depths were about three feet except for windswept slopes. Snow depths in the area likely preclude use by pygmy rabbits. During the end of March 2004, snow depths in the Sinks area and Tincup Springs area were deep enough that the amount of sagebrush exposed above the snow was still very limited.

On July 7, 2005 a survey for pygmy rabbits was conducted in the vicinity of Big Crawford Spring (~ one mile north and south) along the eastern boundary of the Ranger District. Numerous mounds with tall sagebrush were investigated but no pygmy rabbits were found. Numerous animal burrows occurred at these sites, but most were occupied by ground squirrels.

According to Dennis Austin (UDWR Biologist, retired), pygmy rabbits do not occur within Strawberry Valley, an area of private land in the northeastern portion of the Ogden RD with similar sagebrush habitats (personal communication, December 2003).

3.6.2.5 Neotropical Migratory/Song Birds

Nineteen USFS neotropical migratory bird survey point counts routes have been established within the Ogden RD of which 9 routes have survey information for more than one year. These nine are located at Snow Basin, Dairy Ridge, Arbs Basin, Port Ramp, Taylor Canyon, Rock Creek, New Canyon, South Fork, and Davenport; while the other locations include Wasatch Ridge, Baldy Ridge, Lightning Ridge, Running Water, Grizzly Peak, Public Grove, Black Mountain, Sugar Pine, Baldy South, and Pineview. The results of these surveys are located in Appendix B.

Priority migratory bird species that occur within the WCNF identified in the Utah Bird Conservation Plan (Parrish et al. 2002) and/or those identified by USFWS as birds of conservation concern have been identified as species at risk in the Revised Forest Plan (see Forest Plan FEIS, Appendix B-2). The Species at Risk List was revised on February 23, 2004 (USDA 2004). Of those species, the Brewer's sparrow, broad-tailed hummingbird, gray catbird, Williamson's sapsucker and Virginia's warbler occur within the Ogden RD.

Brewer's Sparrow: Snow Basin, Dairy Ridge, **Arbs Basin, Rock Creek**, New Canyon, South Fork, Davenport, **Baldy Ridge**, Running Water, **Grizzly Peak, Baldy South** (highlighted are locations with the most observations).

Broad-tailed Hummingbird: **Snow Basin**, Dairy Ridge, **Port Ramp, Taylor Canyon**, Rock Creek, **New Canyon, South Fork**, Davenport, Baldy Ridge, Lightning Ridge, Grizzly Peak, Public Grove, Black Mountain, Sugar Pine, Baldy South, and **Pineview** (highlighted are locations with the most observations).

Virginia's Warbler: Observed at Snow Basin, Dairy Ridge, and Port Ramp.

Gray Catbird: Only observed at South Fork

Williamson's Sapsucker: Only observed at Dairy Ridge.

Black-Throated Gray Warbler: Only observed at Taylor Canyon.

Black Rosy Finch: None observed.

Black Swift: None observed.

Sage Sparrow: None observed.

Additional data summarized within the project file include observations conducted by Dennis Austin, UDWR wildlife biologist 2004.

Brewer's Sparrow (*Spizella breweri*)

This sparrow occurs in shrub steppe habitats in the western U.S., particularly in the Great Basin area (UDWR 2000).

Brewer's sparrows breed primarily in shrub steppe habitats in Utah and are considered to be shrub steppe obligates. In Utah,

Brewer's sparrows are common to very common summer residents. The species winters in the southwest U.S. and into Mexico. It nests in the mid-upper canopy of dense sagebrush and are usually located in patches of sagebrush that are taller and denser, with more bare ground and less herbaceous cover, than the surrounding habitat. Clutch size is usually 3-4 eggs. Brewer's sparrows will re-nest in a few days if the initial clutch is lost. Brewer's sparrows are primarily insectivorous during the breeding season. Loss of sagebrush steppe habitat is considered the main threat to the species.

Broad-tailed Hummingbird (*Selasphorus platycercus*)

The broadtail is a common breeder in the eastern and central parts of the Great Basin. It winters primarily in Mexico. It nests primarily in riparian habitat though also occurring within aspen, ponderosa pine, Engelmann spruce, subalpine fir, and Douglas fir dominant habitats. The broad-tailed hummingbird typically requires streamside areas adjacent to open patches of meadows or grasses with good quantities of wild flowers available throughout the breeding season. This hummingbird feeds on nectar of wildflowers.

Nests are as low as 3 feet and can be up to 30 feet above the ground, and are often found overhanging a stream. Threats to this species would include loss of riparian habitat and lack of wildflowers.

Virginia's Warbler (*Vermivora virginiae*)

The breeding range of the Virginia's warbler lies almost entirely within the southwestern United States and it winters primarily in Mexico (UDWR 2001). It is an uncommon to common breeder in montane areas of the Great Basin region. Habitat includes oak canyons, brushy slopes, and pinyon-juniper on dry mountainsides. Virginia warbler requires rather dense undergrowth for both foraging and nesting. Breeding may also occur in aspen or Douglas-fir forests where a good understory of shrubs is present. It is primarily insectivorous. Virginia's warbler is a ground nesting species.

Gray Catbird (*Dumetella carolinensis*)

The gray catbird breeds over most of the United States and winters in Central America and southeastern United States. The species may have once been common in Utah, but it is now rare in the state, breeding only in a few locations in north-central Utah. The gray catbird prefers dense shrublands and forested areas with thick undergrowth. Nests are built in brush or low in trees, usually less than ten feet above the ground. This species is often produces two clutches typically contains four eggs each. This species is known to occur at the North Arm of Pineview Reservoir and along the South Fork of the Ogden River.

Williamson's Sapsucker (*Sphyrapicus thyroideus*)

This is an uncommon summer resident in Utah, but occurs throughout most mountainous areas (UDWR 2001). This sapsucker is known to the Rocky Mountain States and to the interior coastal ranges of the western U.S. These are found in Utah mainly in the mountainous areas of the eastern two-thirds of the state, where it is an uncommon breeder. Breeding habitats used by this species is middle - to high - elevation coniferous forests and mixed deciduous-coniferous forests containing aspens. They drill holes in trees to extract sap along with the insects it attracts. This woodpecker excavates a cavity in a tree for nesting, typically an aspen or a conifer. Threats are from the loss of snags for cavities.

Black-throated Gray Warbler (*Dendroica nigrescens*)

The breeding range of the black-throated gray warbler lies within the western United States and southern British Columbia. Preferred breeding habitat includes dry oak slopes, pinyon and juniper woodlands, open mixed woodlands, chaparral, and dry coniferous and mixed woodlands with a brushy understory. The black-throated gray warbler winters primarily in Mexico. The black-throated gray warbler occurs statewide in Utah as a common summer resident. This species prefers densely wooded areas over areas where trees are more widely spaced; open areas are extensively used for foraging.

3.6.2.6 Species at Risk

Species at risk have been identified in the Revised Forest Plan as "federally listed endangered, threatened, candidate, and proposed and other species for which loss of viability, including reduction in distribution or abundance, is a concern within the plan area. Other species at risk may include sensitive species and state listed species."

As the Plan explains, legal mandates and regulations (i.e. Endangered Species Act) and policy (such as sensitive species management) will continue as separate processes for threatened, endangered, and sensitive (TES) species listed under species at risk. These species require analysis for any project implemented under the Revised Forest Plan to ensure that negative effects are avoided and viability is provided for these species. MIS species are also considered in project specific analyses. Species with federal status (such as endangered, threatened, candidate, proposed, and USFS sensitive species) are

addressed elsewhere in this document under their respective categories. Species not specifically addressed through implementation and monitoring for TES or MIS will be managed opportunistically. By managing within the range of historic variation and properly functioning conditions it is expected that these species will be sustained in the long term. For additional information see the WCNF Final Environmental Impact Statement (USDA Forest Service 2003) Appendix B-2: Terrestrial Wildlife Diversity and Viability. The Species at Risk List was revised on February 23, 2004. The following species are species at risk which have not been discussed anywhere else within this document (e.g. TES species and neotropical migratory/song birds). For the Deseret Mountainsnail (*Oreohelix peripherica*), please refer to the section pertaining to the Ogden Mountain Snail (*O.p.wasatchensis*). Recent sampling and genetic testing includes samples of *Oreohelix perpherica*.

Fringed Myotis (*Myotis thysanodes*)

The fringed myotis is a small bat that occurs in most of the western United States, as well as in much of Mexico and part of southwestern Canada (UDWR 2001). It is uncertain whether this species occurs within the Ogden RD, since only specimens from southern and east-central Utah have been reported in the literature (Hasenyager 1980). The fringed myotis inhabits caves, mines, and buildings, most often in desert and woodland areas. The species commonly occurs in colonies of several hundred individuals. The fringed myotis has been found in Utah in a moderately wide range of habitats: lowland riparian, desert shrub, juniper–sagebrush, sagebrush–rabbitbrush, pinyon–juniper–sagebrush, pinyon–juniper, mountain meadow, ponderosa pine forest, and montane forest and woodland (Douglas fir–aspen) (Oliver 2000). Females generally give birth to a single offspring during the summer. The major prey items are beetles which are plucked from vegetation or the ground.

American Pine Marten (*Martes Americana*)

The marten is a fur-bearing mammal that is about two feet in length from head to tail and yellowish-brown in color. It occurs in much of Alaska and Canada, and its range extends into several areas of the contiguous United States (UDWR 2001). In Utah, the species has been found in many of the high remote mountainous areas of the state. Pine martens prefer forest habitat, where their dens can be found in logs, hollow trees, stumps, and rock crevices. The species mates during the summer, and females give birth to a litter of one to five young during the following spring; litters are often smaller when food is scarce. Martens are typically solitary animals that may cover great distances each day looking for food. The diet of the species consists primarily of small mammals, although birds, insects, and fruits are occasionally consumed.

3.7 Recreation

The growing population of the Ogden-Salt Lake City area creates heavy demand for recreational opportunities. The Ogden RD of the WCNF supports a variety of those recreational activities.

3.7.1 Area of Influence

The area of influence is the Ogden Ranger District.

3.7.2 Existing Conditions

Existing conditions for general recreation, motorized recreation, non-motorized recreation, and recreation opportunities spectrum (ROS) are provided in this section.

3.7.3 General Recreation

Water related sports -The water-based recreation activities at Pineview Reservoir have consistently been one of the most popular forms of summer recreation on the Ogden RD. Causey Reservoir is also a popular water-based recreation site.

Camping in developed campgrounds is another popular of form of summer recreation on the Ogden RD. The twelve developed campgrounds operate at near capacity on Friday and Saturday nights during the summer months. Dispersed camping is also occurs in portions of the Ranger District. This type of camping often has additional activities associated with it such as hunting, fishing, hiking and ATV use.

Table 3.7.1 Recreation Facilities Managed by the Ranger District

Recreation Infrastructure	Amount
Summer Motorized Motorcycle Trails (miles)	23.9
Summer Motorized ATV Trails (miles)*	22.0
Summer Non-Motorized Trails (miles)	110.4
Winter Snowmobile Trails (miles)	34.6
Boating Sites	3
Campgrounds	12
Picnicgrounds	2
Fishing Parking	5
Group Picnicgrounds	3
Overlooks	3
Beaches	3
Trailheads	12

* Includes roads that are currently managed for ATV use only.

The existing condition of the recreation infrastructure identified above is generally in good working condition. As a part of the District's annual recreation program, approximately 20% of the items are carefully surveyed and the current condition documented.

The ever-increasing demand for recreation opportunities and escalating levels of use has been a common occurrence on the WCNF. Determining the demand for motorized recreation had been especially challenging because of the lack of use data. In the WCNF Roads Analysis for the Forest Plan revision, the lack of quantifiable use data was identified as a limiting factor (WCNF Road Analysis, October 2002).

Complete data to assess intensity of road use is not yet available. Currently, the Ogden RD is implementing a traffic count program, and as this data becomes available, it can be utilized to refine effects analysis on a number of resources (WCNF Road Analysis, October 2002).

NVUM Project - The WCNF participated in the National Visitor Use Monitoring (NVUM) project from October 2002 through September 2003. The results of this study estimated recreation use on the WCNF at 4,946,915 visits per year. The definition of a national forest visit is one person entering a national forest for purposes of recreation. The WCNF is the most heavily visited national forest in the Intermountain Region and ranked fifth as the most heavily visited national forest nationally.

The results of the NVUM study showed that popular recreation activities on the WCNF that visitors participated in include (USDA, Forest Service, Chapter 4 table 13, June 2004):

- Viewing natural features at 73.97% of the total or 3.7 million visits.
- Viewing wildlife at 49% of the total or 2.4 million visits.
- General (relaxing, hanging out, escaping noise and heat, etc.) at 65.6% or 3.2 million visits.
- Hiking or walking at 50.1% or 2.5 million visits.
- Downhill skiing and snowboarding at 28.5% or 1.4 million visits.
- Driving for pleasure at 16.76% or .83 million visits.
- ATV at 3.58% or 0.18 million visits.

Of the total forest visits, it is assumed that only a proportional share occurs on the Ogden RD. The study was not designed to be accurate at the district or site level. However, the basic information including participation in various recreation activities generally applies to the district.

3.7.4 Motorized Recreation

The types of motorized recreation vehicles used on the Ogden RD consist of passenger cars, light trucks, SUV's, ATV's and motorcycles. As indicated above, driving for pleasure, either on a paved road through the National Forest or on a

backcountry road, was one of the top ten (16.72% of users participating) activities identified in the recent National Visitor Use Monitoring (NVUM) report.

As described in the Forest Plan, recreation-related travel on the Wasatch-Cache National Forest has increased in volume and will continue to do so. The increase in travel is directly affected by population increases, technological advances, economic conditions including gasoline prices, changing demands for recreational experiences, and other social influences. Growth has increased the most in sections of the Forest located near urban populations. (USDA Forest Service 2003, p. 3-213)

The trends in demand for off-highway motorized recreation can only be estimated based on field observations and analysis of the existing local information. No actual use data exists for these activities.

Utah Department of Motor Vehicles data on the number of ATV registrations from 1998 to 2004 shows a statewide increase of 153 percent. Similarly, registrations for Weber, Box Elder, Davis, Cache and Rich Counties increased 231%. The same data also shows that the number of registered ATV's for the same five counties makes up approximately 28.5% of the total number of ATV's for the entire state. In other words, over a quarter of all the vehicles registered in the State of Utah are owned by citizens who live within a 15 to 30 minute drive from the Ogden RD (Utah Department of Motor Vehicles 2004).

Table 3.7.2 displays the results of the most recent inventory of trails and open roads on the Ogden District. This includes private, county, city, state, and Forest Service routes within the District boundary.

Table 3.7.2 Miles of Roads and Trails within the Boundary of the Ogden Ranger District (from GIS)

Analysis Area	Miles of Road	Miles of Non-motorized Trails	Miles of Motorized Trail
Willard - Public Grove	29	8	13
South Fork – Middle Fork	9	3	0
Monte-Wheatgrass	49	41	2
Pineview - Ogden Front	31	33	17
Curtis Creek	80	25	14
Totals	198	110	46

3.7.5 Non-Motorized Recreation

Non-motorized trails on the Ogden RD are an important component of the recreation program. In the past, the construction and improvements to non-motorized trails has been the primary focus of planning, analysis, and budgets of the trail program. The UDP&R Fiscal Non-Motorized Trail Grant program has funded one or more projects every year on the district. This funding coupled with appropriated dollars has provided for a steady expansion in the District's non-motorized trail system.

Over the past decade, the most noteworthy projects have been the implementation of portions of the Bonneville Shoreline trail along the Ogden Front and the extensive system of trails located on both private and NFS lands in the vicinity of the Snowbasin Ski Area.

With the exception of the South Fork Recommended Wilderness, mountain biking is permitted on all Ogden RD system roads and trails.

The recent trend on the Ogden RD when trails are maintained or reconstructed has been to increase the dimensions of the path. A wider path works better for higher levels of use and accommodates a broader range of types of use. For example, mixing hikers, horses, and mountain bikes on a traditional narrow trail can cause more user conflicts than on a wider path.

Mountain bike use of the trails, in particular those along the Wasatch Front, is dramatically increasing based on our field impressions. Snowbasin Ski Area began lift-served mountain biking summer of 2005 on the trails in and around the ski area, and the public response has been substantial.

Horse use on Ogden RD trails also appears to be on the rise. The surrounding communities in Davis, Morgan, Cache and Weber Counties have a large population of horse ownership. This amount of use is likely to continue or increase for the near future.

There are 110.4 miles of non-motorized trails on the Ogden RD (from GIS data). See also table 3.7.2 above for the relationship of motorized and non-motorized routes by analysis area.

3.7.6 Recreation Opportunity Spectrum (ROS)

General types of recreation or recreation activities are inventoried, categorized, and mapped by a system called the Recreation Opportunity Spectrum (ROS). The Forest Plan provides maps allocating the forest among the various ROS classes. The ROS setting classifications for the ORD are divided into 5 of the 7 classes defined in the revised Forest Plan. The ROS classes range along a scale from “Wilderness/Primitive”, which is the most remote, least developed, with the least evidence of human impact to “Urban”, which is the least remote, most highly developed and has the most evidence of human use. The six ROS classes in the Revised Forest Plan that are managed on the ORD are: Urban (76 acres), Rural 2056 acres), Roaded Natural (32445 acres), Semi-Primitive Motorized (55339 acres), and Semi-Primitive Non-Motorized (67976 acres). See the Revised Forest Plan for further descriptions of the ROS class settings and maps (USDA Forest Service 2003 pp. 4-79-88).

Table 3.7.3 displays the results of the Revised Forest Plan ROS settings for all of the analysis areas considered in this analysis.

Table 3.7.3 Revised Forest Plan Acres of ROS Settings on the Ogden Ranger District

W/P	W/SPNM	SPNM	SPM	RN	R	U
0	0	67,976	55,339	32,445	2,056	76

Legend: W/P = Wilderness/Primitive, W/SPNM = Wilderness/Semi-Primitive Non-Motorized, SPNM = Semi-Primitive Non-Motorized, SPM = Semi Primitive Motorized, RN = Roaded Natural, R = Rural, U = Urban (See the 2003 Forest Plan (p4-81 to 4-88) for detailed description of ROS).

3.8 Scenery Resources

3.8.1 Area of Influence

The analysis area for scenic resources is the visible landscape seen from travelways and use areas that are within 3 miles extending out from lands within the WCNF boundaries of the Ogden RD. The landscape character and scenic integrity analysis are limited to the lands stated above. These areas cover all scenic resources with regard to direct, indirect, and cumulative scenic effects.

3.8.2 Existing Conditions

The WCNF Plan provides guidelines and maps of desirable scenery types for managing the five Landscape Character Themes (LCT) within the Ogden RD. See the 2003 Revised Forest Plan Wasatch-Cache National Forest (Forest Plan) Chapter 4, Scenery Management System. The five LCTs are: Natural Evolving, Natural Appearing, Developed Natural Appearing, Resort Natural Setting, and Water Recreation Rural Appearing.

Landscape Visibility - The Wasatch-Cache analyzes landscape visibility from context of the viewer. Considerations include duration of view, degree of discernable detail, seasonal variations, and numbers of viewers. It was assumed that most users would be able to view proposed construction of travel alignments from adjacent travelways of roads and trails. Concern level 1 represents primary travelways that have a high degree of importance with the public; concern level 2 shows a moderate interest in scenery from travelways; and concern level 3 indicates low interest in scenery from travelways. The concern levels for the travelways were inventoried and mapped from comments from Ogden RD personnel and the public. See project record for travel way concern levels.

Existing Landscape Character - Landscape Character is an overall visual and cultural impression of landscape attributes – the physical appearance and the cultural context of a landscape that gives it an identity and “sense of place”. The Ogden RD is divided between Cache-Box Elder, Bear and North Wasatch-Ogden Valley management areas; within the boundaries of the district, there are two Ecological Sections M331D-Overthrust Mountains and M342E-Bear Lake (USDA Forest Service 1994) and four Subsections M331 D-7 Bear Lake Highlands, Cache Valley Front, Northern Wasatch and Monte Cristo Hinterlands (Neilson 1994). The revised WCNF Plan provides Desired Future Condition Management Area Setting Descriptions for the general description of the physical appearance and cultural context of the viewed landscape.

Scenic Integrity - Scenic Integrity Objectives (SIO) established in the Forest Plan define the acceptable degrees of deviation from a Landscape Character Theme (LCT). Often scenic integrity has to do with the size, scale, and location of past human activities such as road building, timber harvests, vegetation management and how these past activities relate to the inherent landscape character. The Ogden RD has a variety of Scenery Integrity Objectives (SIO) ranging from areas of Very High to Low scenic integrity within five LCTs on the District see RFP Cache – Box Elder and North Wasatch / Ogden Valley SMS maps for specific SIO managed areas.

3.9 Private Lands, Permitted Uses and Fire Management

The purpose of this section is to describe current motorized road and trail access to private lands, permitted uses, rangeland resources by cattle and sheep permittees, and for fire management operations on the Ogden RD.

3.9.1 Area of Influence

The area of influence is the Ogden Ranger District.

3.9.2 Existing Conditions

Private Lands – The Ogden RD is composed of several discontinuous parcels that are shown on the maps of the alternatives presented in this FEIS (Curtis Ridge, Monte Cristo and Upper South Fork, South Fork of the Ogden River, Public Grove, Willard and Ben Lomond area, Ogden Front and Pineview). Within and adjacent to these parcels are lands owned by private landowners, counties, the State of Utah, and other federal agencies. These landowners have the right of access to their private property (36CFR212.6 and 36CFR251.10(c)). These rights do not necessarily provide the most direct, economic, or convenient access to the landowner. The District works with landowners on a case-by-case basis to achieve solutions for access that are appropriate based on Forest Plan management prescriptions and a demonstration of individual needs.

Box Elder Access Management Team

The East Box Elder County Access Management Team was commissioned by the Box Elder County Commission in January 1999 (1/12/99 memo). The Commission appointed a Team, which included representatives from federal and state land management agencies, agricultural and sport interests and wildlife conservation organizations, was assembled for the purpose of reviewing and recommending motorized access routes for inclusion in the county road system. One of their principal objectives was to a system of motorized routes to access public lands located within Box Elder County.

The Team presented recommendations to the County Commission in 2000 and again in 2004. Resolution No. 04-13 which is titled “A Resolution of the Box Elder County Commission Amending the Access Management Plan” and its accompanying Box Elder County/Interagency Travel and Recreation Map (May 24, 2004) identify the routes that have been designated as County roads and that are open for motorized travel by the public within Box Elder County.

Of particular interest in this analysis are several routes the Commission reviewed and approved that access National Forest System lands near the town of Mantua. These routes include the:

- Rocky Dugway to Sink Hole Loop to Three Mile Road
- Devils Gate to Public Grove 4x4 Road
- Pete’s Hollow Trail

Both the Rocky Dugway-Three Mile Road and the Devils Gate-Public Grove 4x4 Road traverse sections of private land. The owners of these private lands have asked the Box Elder County Commission to vacate the decision in which these roads were added to the County road system. The County Commission has taken no action on the requests to vacate their decision.

The Pete’s Hollow road traverses land managed by the Utah Division of Wildlife Resources and the Forest Service. There has been no request made of the County to vacate the Pete’s Hollow decision.

The Forest Service assumes no liability for personal injury or damages to private property that might occur along or adjacent to county routes.

Cache County Attorney provided a letter on February 27, 2006 stating that the section of the Rocky Dugway-Three Mile Road within Cache County is considered to be a county road.

Permitted Uses – The USFS issues permits to use or occupy the NFS lands. Forest Plan Guideline 48 provides guidance on how motorized access to permitted uses should be planned (Forest Plan page 4-47). There are permits to occupy lands on the Ogden RD for recreation residences; water developments, irrigation and water transmission lines; power lines; military uses; microwave and communication sites; an apiary; weather stations; Forest Land Plan Management Act (FLPMA) permits for road use; social clubs; Snowbasin ski area; and for range allotment use. Not counting range allotment permits (see below), the District has 87 permits for other than temporary uses. Similarly, the District allows temporary uses of its roads, trails and facilities for special events and races. Each of these uses is the subject of a separate NEPA analysis and accompanying decision documents and public involvement processes as appropriate. Usually access to sites of these uses and use of roads or motorized trails is considered for each of these decisions.

Range Allotments – Permits to use cattle and sheep allotments are provided for all areas of the Ogden RD except along the Wasatch Front where cattle and sheep grazing are not allowed. There are 23 total allotments, 14 for sheep and 9 for cattle; use of these allotments is authorized to over 30 cattle and sheep permittees most of whose incomes depend largely on livestock grazing.

Livestock permittees use open system roads and motorized trails to access their allotments. There are about 183 miles of system roads and 7 miles of motorized trails on livestock allotments where decisions are being made in this analysis. There is currently some use of unclassified or unauthorized routes for this purpose (33 miles of unclassified routes on allotments). Several range improvement structures (fences, water developments, pipelines, cattle guards) occur on each of the allotments. As a result, grazing permittees also use roads within and near their allotments to transport maintenance materials and equipment to these structures. A few permittees also use roads to haul water for livestock. Herder camps are established at various locations each year on the sheep allotments and are frequently moved as the sheep trail across the grazing units. Sheep camp trailers are sometimes used for the herders and roads within the area are used for transporting the camps around the allotments.

Fire and Emergency Management Access – The Forest Service provides administrative access for fire suppression and other emergencies, prescribed burning, and mechanical fuels treatments. Some access needs occur during emergency situations, while others are planned projects. For emergency access the General Travel Plan Order printed in the current Logan and Ogden District Travel map states that the agency has the authority to use roads, trails or cross country access as needed for rescue or firefighting needs (26CFR251 and 36CFR261.50(d)).

3.10 Roadless Areas

3.10.1 Area of Influence

The area of influence is the Ogden Ranger District.

3.10.2 Background

The Wasatch-Cache Forest Plan revision process included a roadless area inventory which identified roadless areas and evaluated their attributes both for Wilderness recommendation and for the importance they hold for many people as undeveloped places. This roadless area inventory was a required part of the forest planning effort. Decisions regarding the programmatic management of these areas were made in the Revised WCNF Plan (USDA Forest Service, 2003).

Appropriate planning for and administration of roadless areas has been the subject of national regulatory efforts for several years. The Roadless Area Management Rule of 2005 did not affect the roadless situation at this time on the Ogden Ranger District.

The Forest Service Manual was updated in July 2004 to give National Forests direction on authority for building roads or harvesting timber in roadless areas (FSM 1925.04 Interim Directives for Timber Harvest and Road Construction in

Inventoried Roadless Areas -7/16/04). As a result of the FSM clarification, the WCNF, having completed a forest-wide roads analysis as part of the forest plan revision process, is authorized to make decisions to build roads or harvest timber in roadless areas given the appropriate NEPA process is followed and other forest plan direction is met.

The USFS Intermountain Region office has provided a template on how to consider effects to roadless areas in NEPA processes when doing project planning (Welsh, 2004). Essentially, the template suggests disclosing effects to values as potential Wilderness or inherent roadless area values. Analysis of effects to roadless areas in Chapter 4 of this document implements this template.

3.10.3 Existing Condition

3.10.3.1 Values of Roadless Areas as Wilderness or as Roadless

There are seven inventoried roadless areas on the Ogden RD. Each of these was given consideration as potential Wilderness or other during the Forest Plan revision process. Table 3.10.1 provides a summary and interpretation of those values that are from Appendices C-1 and C-2 of the Forest Plan FEIS.

Wilderness evaluation was based on consideration of capability, availability and need for the inventoried roadless area as wilderness and sub-categorical considerations within each of these three characteristics. Roadless area evaluation looked at values for undeveloped character for soils and water, public drinking water sources, plant and animal diversity, semi-primitive non-motorized (SPNM) and semi-primitive motorized (SPM) recreation opportunities, landscape and scenic integrity, heritage sites, locally defined unique characteristics, and size and context.

These roadless areas are quite variable in their size, although no very large roadless areas are present on the Ogden RD. They also possess different values that were considered in the context of the whole WCNF and in broader regional contexts when Wilderness recommendations and other forest management decisions were made during forest plan revision.

Table 3.10.1 Summary of Values for Roadless Areas on the Ogden RD*

Roadless Area Name	Location	Values for Wilderness	Values as Roadless	Acres
Mollens Hollow	Curtis Ridge (west)	Intact ecology, but generally moderate to low value	Managed as Research Natural Area for ecosystem values; area is lynx linkage and Bonneville cutthroat habitat; ATV trails present but no roads gives good value for SPM experience	17,700
Rock Creek – Green Fork	Curtis Ridge (east)	Low value due to small size, impacted environmental conditions, and current uses	Mostly low values except for high values for fish species at risk and moderate SPM experience.	5,600
Sugar Pine	Monte Cristo (north)	Low value due to small size, impacted environmental conditions, and current uses	Mostly low values except for higher values for fish species at risk and SPM and SPNM experiences.	5,600
Upper South Fork	Monte Cristo (south)	Recommended as Wilderness for: Higher wilderness values than other potential uses. No significant effect on current uses. Added new ecosystem to National	Values so high that recommendation as Wilderness was considered higher than as roadless area managed under another	

Roadless Area Name	Location	Values for Wilderness	Values as Roadless	Acres
		Wilderness System.	management prescription.	17,300
Willard	Ogden Front (north)	Moderate values for solitude, experiences, and wildlife habitat. Some conflicts with existing motorized use and difficult to manage as Wilderness. Areas like this already in the National Wilderness System. Possible conflicts with private land ownership inholdings. Values generally diminished by proximity of urban area.	Mostly high to medium values. High value for ecosystem functioning – some of which has been impacted by OHV use; high values for vegetation species at risk and bald eagles, portion of wild and scenic eligible stream. Both good SPM and SPNM opportunities.	19,100
Lewis Peak	Ogden Front (middle)	Moderate values for solitude, experiences, and wildlife habitat. Some conflicts with existing motorized use and difficult to manage as Wilderness. Areas like this already in the National Wilderness System. Possible conflicts with private mineral ownership. Values generally diminished by proximity of urban area.	Mostly low values except for ecosystem function, relatively high SPNM and SPM opportunities, and as a source for drinking water supplies.	12,100
Burch Creek	Ogden Front (south)	Low value for solitude; moderate for experiences, and wildlife habitat. Difficult to manage as Wilderness. Areas like this already in the National Wilderness System. Possible conflicts with private mineral ownership. Nearby Snowbasin ski area. Values generally diminished by proximity of urban area.	Mostly low values except for ecosystem function, vegetation species at risk and high SPNM experience opportunity, and as a source for drinking water supplies.	6,900
Total Acres				84,300

*During an early stage of the forest plan roadless inventory the Public Grove Hollow and Lamb Canyon areas were identified as roadless areas. Subsequent review in that planning process determined that these areas were too small to meet roadless areas criteria and they are not included in the final inventory of roadless areas about which Forest Plan decisions were made.

From a recreation value perspective, the areas are held by users to have high values for both semi-primitive motorized and non-motorized opportunity. The degree to which motorized recreation opportunities are emphasized is negatively correlated with non-motorized opportunities, and vice-versa – although neither relationship is probably linear. Table 3.10.2 below shows the presence (or absence) of both non-motorized and motorized system trails in roadless areas. It also shows the miles of unclassified routes that are sometimes used illegally by motorized users, and which will be closed to public motorized use in the future. It is clear that some recreation or administrative access is currently available in all areas, and that generally these routes sum to less than 1 mile of trail per square mile of roadless area.

Table 3.10.2 Current Roads and Trails as they relate to Roadless Areas on the Ogden RD

Roadless Area Name	Degree to which Road Cherry Stems negatively affect area integrity	Miles of Motorized Trails	Miles of Non-Motorized Trails	Miles of Unauthorized Routes	Miles of Trails and Routes per square mile	Total Miles of Trails and Routes
Mollens Hollow	Area is moderately affected by cherry stems	5.03	11.92	3.04	.75	19.99
Rock Creek – Green Fork	Small area is heavily affected by 2 long cherry stems	0.0	1.04	.36	.16	1.40
Sugar Pine	Small area is moderately to heavily affected by 3 cherry stems	0.0	4.69	1.35	.69	6.04
Upper South Fork	Area has very minor effects from 2 short cherry stems	0.0	23.14	4.07	1.01	27.21
Willard	Heavy affects by long cherry stem on north side	12.60	7.64	3.49	.80	23.73
Lewis Peak	Area has only very minor intrusion from 1 cherry stem	12.05	3.52	1.60	.91	17.17
Burch Creek	Area not affected by any cherry stems	0.0	9.32	.82	.94	10.14
Totals		29.68	61.27	14.73		105.68

* Cherry stems are defined in the Glossary.

3.11 Off Road Vehicle (ORV) Business Environment and Social Setting

3.11.1 Existing Conditions

ORV Business Environment

The general economic impact of National Forest management was analyzed in the Forest Plan (USDA Forest Service, 2003). The information provided in this section is limited to a description of particular selected segments of the economy related to ATV's. Refer to the FEIS for the Revised Forest Plan for a broader economic analysis of how decisions on the Wasatch-Cache National Forest relate to the local economy.

The Wasatch-Cache has done a survey questionnaire of the ATV sales and service industry along the Wasatch Front to determine its extent and how it related to its customers (USDA Forest Service 2004). The dealerships and service centers range from large businesses with several million dollars in sales volume to smaller shops owned by individuals. Similarly, these businesses vary considerably in the amount and quality of user awareness information they provide.

The Ogden RD occupies parts of five counties in northern Utah (Weber, Cache, Box Elder, Morgan, and Rich). The ATV sales and service industry in these five counties is a relatively small but an important contributor to the regional economy. There are at least 20 ATV dealers in this area and more than that number again if the full Wasatch Front, southeast Idaho and Uinta County, Wyoming are considered.

Motorcycles for backcountry trail use have existed since the late 1960s and early 1970s. Additional growth of sales and service through the improvement of ATV technology in the 1980s and 1990s has made the motorcycle, ATV, and snowmobile business increasingly important in the overall economy and to those individuals that are directly employed by it. The viability of this industry is not an issue in this analysis.

Social Setting

There has been a substantial population increase in Utah and on the Wasatch Front over the past three decades. This population increase is generally expected to continue (adding about ¾ million people by 2030 on the Wasatch Front to the 1.5 million present today). This is a product of high birth rates and low death rates as well as migration from other states and countries (Economic Report to the Governor (Utah), 2004, p. 23). The FEIS for the Wasatch-Cache Forest Plan revision assumed that there would also be growth in demand for outdoor recreation associated with this general population growth (USDA Forest Service, FEIS 2003 – p3-233-234). If past trends in sales for ATVs and overall interest in outdoor recreation is any predictor, continued strong and growing demand for non-motorized and motorized trail and road recreation on the Wasatch-Cache can be expected.

Informal observations indicates that the Off Road Vehicle (ORV) industry and its advocates and publications as well as environmental groups have education and public information efforts that either promote or discourage ORV use respectively. Those who favor ORV use and non-motorized advocates are at odds regarding how much motorized use is enough, where or when it should be allowed, and how much motorized use impacts wildlife and other forest resources. Since motorized recreation is an allowed activity on National Forests if practiced within the constraints of travel plans, local forest managers have attempted to provide some balance of motorized and non-motorized uses that looks out for the users as well as resources that can be impacted.

3.12 Air Quality

3.12.1 Existing Conditions

The 1990 Clean Air Act provides legal direction for air quality. States were given a key role in monitoring air quality so that it meets acceptable standards. National Forest lands in the State of Utah are classified as Class II attainment areas by the Clean Air Act. Activities allowed by the Forest Service associated with burning or vehicular use must comply with applicable federal, state and local standards for air quality, especially the standards of State of Utah, Division of Air Quality's Utah Smoke Management Plan. The Forest Service must coordinate its activities with the state and burn when atmospheric conditions reduce potential risks of air quality degradation.

Forest Service considerations for air quality usually relate to effects created by burning vegetative materials. Short-term negative effects to air quality can sometimes occur from prescribed burning projects, wildland fire use, or wildfires.

In the summer motorized vehicles use roads and trails for many activities including recreation, timber harvest, and range management. These vehicles produce exhaust emissions and dust along roads and trails; these emissions are normally dispersed within minutes after the vehicles pass.

The Ogden RD meets National Ambient Air Quality Standards (NAAQS).

The main regional sources of air pollution on the Ogden RD are from urban areas along the Wasatch Front that are caused by industrial manufacturing, vehicle traffic and burning (USDA Forest Service 2003, 3-59).

3.13 Heritage Resources

3.13.1 Background

Heritage resources include buildings, sites, areas, architecture, memorials, and objects having scientific, historic, or social values. These comprise an irreplaceable resource relating to past human life.

The purposes of the USFS program for these resources are:

1. Preventing their loss or damage until they can be evaluated for scientific study, interpretative services, or other appropriate uses.
2. Integrating this program into multiple use management of the National Forest System.
3. Scientific study to gain knowledge about past human behavior.
4. Interpretation so that the public may gain a better understanding and perspective of our heritage. (FS Manual 2361).

3.13.2 Area of Influence

The area of influence is the Ogden RD.

3.13.3 Existing Conditions

The land areas, now managed as the Ogden RD, were used seasonally by prehistoric and historic American Indians, beginning about 10,000 years ago. These people also spent a significant part of their year in the relatively resource-rich adjacent valleys. However, the mountains did contain additional plants, animals, and settings that the valley locations could not necessarily provide. Because much of this upland use was relatively short-term, the archaeological sites that record this use are not common, and tend to occur on relatively level areas near water and stone tool sources. The exceptions to this are some rock art sites, where locations are affected by the availability of sheltering rock outcrops. Historic period Ute, Goshutes and Shoshones also used the mountains. Common site types found across the forest include open campsites, quarry sites, hunting and game processing sites, burials and rock art sites.

Historic European American use of the project area includes water diversion, gravel, clay, and rock quarrying, logging, livestock grazing, hunting, recreation, and prospecting as well as many historic projects built by the Civilian Conservation Corp (CCC). The kinds of historic period sites which occur generally across the Ogden District include bridges, campgrounds, temporary campsites (marked by scatters of trash), trails and roads, mining adits, gravel pits, quarries, and small sawmill sites (marked by trash and some sawdust, slabs or cabins), kilns, cabins and homesteading sites.

Road and trail construction or the reclamation and naturalization of areas formerly used as roads or trails can have negative effects on heritage resources by disturbing, displacing and destroying their contents. As such, the effects on known heritage resources of the alternatives analyzed in this document are dependent on the intersection of the alternative proposals for construction or reclamation of roads or trails and the presence of sites.

Usually the values inherent in these sites can be captured through mitigation of adverse impacts from projects by recordation, preservation, excavation, analysis, and interpretation. Heritage sites are protected by federal laws and regulations in coordination with the Utah State Historic Preservation Office (SHPO) that reviews survey, evaluation and mitigation reports prepared by professional Forest Service preservation staffs.

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