

## 3.4 Transportation

### 3.4.1 Introduction

Regulations from the CEQ direct agencies to insure the professional and scientific integrity of environmental analyses in an EIS. This direction includes using the best available science to describe existing conditions in the Project Area; in this case, the UNF. Published, peer reviewed studies are used when applicable to conditions in the UNF; however, in most cases only those studies that are relevant to identifying potential impacts from the proposed action (in Chapter 4) are considered. These studies are cited in the text. The most relevant literature for most resources in Chapter 3 comes from internal Forest Service publications and reports, because this information is based on UNF-specific investigations and assessments. Throughout Chapter 3, the UNF Land and Resource Management Plan (USFS 2003) and associated EIS (USFS 2003a) are the most frequently cited documents. These documents were not peer reviewed within the scientific community, but were written using best available science, open to public comment as dictated by the NEPA process, and revised accordingly by resource specialists.

The UNF Road System is essential in providing access to and through NFS lands. It provides access for the public and administration of land management objectives (USFS 2002a). This section of the EIS addresses the existing road network which currently provides access to the UNF (figure 3.14: Forest-wide Transportation Map).

#### ***Transportation Terms***

The following terms will be used throughout this section. They are provided here so that readers may familiarize themselves with common Forest Service transportation terms and develop a better understanding of the information contained in this section.

- **Road:** “A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be authorized, unauthorized, or temporary” (36 CFR 212.1).
- **Authorized Roads:** “Roads wholly or partially within or adjacent to NFS lands that are determined to be needed for long-term motor vehicle access, including State roads, county roads, privately owned roads, NFS roads, and other roads authorized by the Forest Service” (36 CFR 212.1).
- **Temporary Roads:** “Roads authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be part of the forest transportation system and not necessary for long-term resource management” (36 CFR 212.1).
- **Unauthorized Roads:** “Roads on NFS lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization” (36 CFR 212.1).
- **Functional Class:** NFS Roads provide access in a branching system of arterial, collector, and local roads.

- **Arterials** provide access to large land areas, typically by linking to county roads, State highways, or communities. They have the highest standards for construction and maintenance, because of the larger volume of traffic they carry.
- **Collector** roads disperse traffic from arterials to large forest areas, such as watersheds.
- **Local** roads used to access specific project areas or sites are usually short roads of a lower standard of construction.

### 3.4.2 Affected Environment

Roads support a variety of activities including recreation, driving for pleasure, hunting and fishing, and commodity uses such as grazing, timber harvest, and mineral development. In addition, roads also allow administrative access to perform forest health and protection activities (even as watershed and vegetation improvement). Generally, the existence, operation, and maintenance of roads are required to carry out administrative duties and responsibilities of managing the UNF to meet its desire future conditions (USFS 2003).

The UNF is continuously updating its roads inventory of roads and miles of roads and trails are likely to change in the future. The 2005 State of the Forest Report indicated that there are currently 1,218 miles of authorized roads, of which 1,128 miles are open for public use. In 2005 453 miles of road were maintained (USFS 2006).

A full description of the status of the road system can be found in the 2002 Roads Analysis for the UNF, which was completed through an ID team process. The 2002 Roads Analysis is included in the project record and can be reviewed at the UNF Supervisors Office in Provo, Utah.

#### ***Federal, State, and County Roads***

Several Federal, State, and County roads provide access to the UNF (figure 3.14: Forest-wide Transportation Map). These roads are not part of the NFS and are not under the management directive of the Forest Service. These roads are under Federal and State management and include:

- U.S. Highway 6
- U.S. Highway 40
- U.S. Highway 189
- Utah 35, Wolf Creek
- Utah 92, Alpine Scenic Loop

Traffic count information is included to indicate the level of road use for different MAs and for non-Forest Service roads within the UNF. Traffic count information reported in this section is Annual Average Daily Traffic (AADT) on road sections of State and Federal roads located in the UNF. The AADT represents traffic in both directions of travel and is the average for that particular section of route (UDOT 2007). In general, traffic is highest on roads that are accessed by the urban areas of Utah County and the Wasatch Front. Less urban areas (e.g., West Fork

Duchesne MA) have lower levels of use. AADT is summarized for Federal and State routes in table 3.10.

**Table 3.10. Summary of 2005 traffic count data for Federal and State roads in UNF.**

Route Name	Location	MA Location	AADT	% Truck
US Highway 6	Sheep Creek Road	Upper Spanish Fork Canyon	6,565	22
US Highway 40	Daniels Summit (Pass)	Strawberry Reservoir	4,135	36
US Highway 40	Road Right to Strawberry Camp	Strawberry Reservoir	2,765	33
US Highway 189	Wasatch/Utah County Line	Lower Provo	9,230	19
Utah 35	Duchesne/Wasatch County Line	West Fork Duchesne	275	14
Utah 92	Aspen Grove-Junction with Highway 189	Lower Provo	385	15

Source: UDOT 2007.

### 3.4.3 RFOGDs

The following is a description of roads for each MA grouped by RFOGD. The description includes a general overview of roads in the MA, traffic count data if available, and a summary of miles of road by surface type, maintenance level, function class, and traffic service level.

Traffic count data is available for a limited number of UNF Roads. Data is reported for both weekday and weekend traffic. The numbers presented here represent the most recent traffic count data collected. If traffic count data is not summarized for a MA, then traffic count information was unavailable for roads within that MA.

Since 2003, numbers have been updated forest-wide and efforts have been made to more accurately identify road miles. Authorized road miles reported for each MA are approximate and reflect what is reported in the LRMP (USFS 2003a).

While other resources in this EIS have only summarized the affected environment for RFOGDs with oil and gas potential, this section includes all RFOGDs. All RFOGDs are included because access to areas with oil and gas potential may occur through adjacent MAs without oil and gas potential.

#### ***Currant Creek Group***

##### Currant Creek MA

This MA contains approximately 86 miles of authorized roads used to access the UNF for recreation and resource management purposes. The primary arterial routes include Tut Creek, Co-op Creek, and Currant Creek Roads. More than 50 percent of the Currant Creek Road (#083) segment from the Currant Creek Dam to Low Pass Road (#106) passes through landslide-prone areas. There is a high maintenance cost associated with maintaining this road segment.

West Fork Duchesne MA

There are approximately 79 miles of roads within this MA, the majority of which are maintained for high clearance vehicles. The primary arterial route is Lake Creek Road (#083). The West Fork Duchesne Road (#050) parallels the West Fork of the Duchesne River and continues onto the Ashley National Forest.

Traffic count information for this MA indicates that it gets a moderate amount of use compared to Strawberry and American Fork MAs. Typical of the UNF, use is highest during the weekends.

**Table 3.11. Traffic count data for West Fork Duchesne MA.**

Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
Lake Creek NFSR #70083 East Heber to Lake Creek Summit	6/12/2002 to 8/7/2002	6,335	211	43	83	284	38	157

Source: USFS 2006a.

**Deer Creek Group**

Deer Creek Reservoir MA

U.S. Highway 40 passes through the eastern end of this MA and is used by recreationists as a primary route to Strawberry Reservoir. This highway is also a main route to the Heber Valley. This MA contains 47 miles of authorized roads used to access the UNF for recreation and resource management purposes.

Hobble Creek MA

Access throughout this MA is provided on approximately 52 miles of authorized NFS roads used to access the UNF for recreation and resource management purposes. The majority of these miles are maintained for high clearance vehicle access. The primary arterial route includes the Right Fork of Hobble Creek Road (#058), and the primary collector route is the Left Fork of Hobble Creek (#132).

Lower Provo MA

U.S. Highway 189 passes through Provo Canyon along the Provo River within this MA from Orem, northeast to Deer Creek Reservoir. This stretch of road is managed by the State as the Provo Canyon Scenic Byway. The Alpine Loop Scenic Backway begins in the American Fork MA and proceeds to the east, then south over the divide into the North Fork of the Provo River drainage. The MA contains approximately 58 miles of authorized roads used to access the UNF for recreation and resource management purposes. The primary collector route is Squaw Peak Road (#027), which starts from U.S. Highway 189 in Provo Canyon then heads south to Hobble Creek Canyon. The majority of roads in this MA are maintained for high clearance vehicles.

**Diamond Fork Group**

Diamond Fork MA

There are approximately 110 miles of authorized roads providing access for recreational and management activities. The primary roads accessing the area are the Diamond Fork Road (#029)

and the Rays Valley-Sheep Creek Road (#051). These roads connect within the northern portion of the MA.

**Payson Group**

Mona MA

This MA contains 13 miles of authorized roads used to access the UNF for recreation and resource management purposes. The Mona Pole Road (#160) bisects the Mount Nebo Wilderness Area.

Traffic count information indicates that road use is low in this MA compared to other MAs with traffic count information. This is most likely because of the rural location of this MA. Traffic is typically higher during the weekends.

**Table 3.12. Traffic count data for Mona MA.**

Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
Mona Pole Rd NFSR #70600 East of Mona leading to Nebo	7/21/2005 to 9/18/2005	1,162	82	0	13	111	5	28

Source: USFS 2006a.

Nephi MA

This area is accessible by 32 miles of authorized roads. The primary arterial route is the Mount Nebo National Scenic Byway (#015), which starts in the Payson MA, heads south through the Nephi MA, and continues to State Route 132.

Traffic count data for this MA is moderate during the summer months, while in the winter it receives the lowest amount of traffic of any of the MAs. Typical of the rest of the UNF, in general traffic is highest during the weekend.

**Table 3.13. Traffic count data for Nephi MA.**

Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
Salt Creek NFSR #70048 Nephi Canyon, to Ponderosa C.G.	5/16/2002 to 8/7/2002	7,578	170	30	63	253	68	27
	5/27/2004 to 7/20/2004	6,918	338	0	128	657	35	235
	5/24/2005 to 8/17/2005	12,169	936	0	113	554	0	189
	11/24/2005 to 3/2/2006	508	64	0	5	71	0	6

Source: USFS 2006a.

Payson MA

This MA is accessible by 45 miles of authorized roads. The primary arterial route is the Mount Nebo National Scenic Byway (#015), which starts in the eastern portion of the area, heads south through the Nephi MA, and continues to State Route 132.

Thistle MA

This MA contains 18 miles of authorized roads used to access the UNF for recreation and resource management purposes. The majority of roads in the area are managed for passage by high clearance vehicles.

**Spanish Fork Canyon Group**

Upper Spanish Fork MA

State Highway 6, in Spanish Fork Canyon, borders the southern portion of this MA. There are approximately 46 miles of authorized roads within the MA providing access for recreational and management activities. The Sheep Creek/Rays Valley Road (#051) and the Indian Creek Road (#042) are heavily used arterials providing access to the UNF.

**Strawberry Group**

Strawberry Reservoir MA

U.S. Highway 40 passes through this MA and is used by recreationists as the primary access to Strawberry Reservoir. This highway is the only highway access from Heber Valley to Duchesne. This MA is accessible by 207 miles of authorized roads. The primary arterial routes are the West Side Strawberry Road (#131), Indian Creek Road (#042), and Co-op Creek Road (#082). Portions of the Devils Notch Road (#090) from U.S. Highway 189 to the Soldier Creek Dam are under jurisdiction of Wasatch County.

Traffic count data indicates that roads within this MA receive the highest amount of use compared to other MAs with traffic count data. Traffic counts are typically higher in the summer months and during the weekends.

**Table 3.14. Traffic count data for Strawberry MA.**

Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
COOP Creek NFSR #70082 North Strawberry Reservoir	5/12/2002 to 8/7/2002	7,250	217	3	48	291	11	123
	5/21/2004 to 6/20/2004	1,563	113	4	23	163	18	69
	7/22/2005 to 11/25/2005	10,037	116	22	48	200	73	126
	11/26/2005 to 5/21/2006	918	133	0	3	345	0	8
West Side Strawberry Rd NFSR # 70131 Strawberry Res. North of Marina Jct. Southbound Traffic	5/26/2004 to 8/11/2004	29,942	1,017	112	242	897	159	586
	6/10/2005 to 7/22/2005	24,232	1,225	195	382	1,612	310	858
	7/22/2005 to 11/20/2005	59,851	1,135	24	309	1,544	111	730

Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
West Side Strawberry Rd NFSR # 70131 Strawberry Res. North of Marina Jct. Northbound Traffic	5/26/2004 to 8/11/2004	27,503	514	132	225	749	319	534
	6/10/2005 to 7/22/2005	10,810	258	24	157	690	54	400
	7/22/2005 to 11/20/2005	15,589	342	15	47	688	11	188
	11/23/2005 to 1/6/2006	3,308	247	3	61	1,711	16	90
West Side Strawberry Rd NFSR # 70131 Strawberry Res. South of Marina Jct. Southbound Traffic	6/28/2002 to 8/7/2004	22,094	879	179	327	1,436	445	831
	5/19/2004 to 8/11/2004	16,355	550	45	115	540	92	299
	8/19/2005 to 11/20/2005	13,354	457	7	85	591	24	212
	11/23/2005 to 3/1/2006	786	85			149	0	10
West Side Strawberry Rd NFSR # 70131 Strawberry Res. South of Marina Jct. Northbound Traffic	5/19/2004 to 8/11/2004	17,697	377	45	123	519	164	325
	8/19/2005 to 11/20/2005	14,913	264	11	95	591	24	212
	11/23/2005 to 3/1/2006	1,056	74	0	8	185	0	24

Source: USFS 2006a.

White River MA

This MA contains 36 miles of authorized roads used to access the UNF for recreation and resource management purposes. The majority of roads are maintained for high clearance vehicles. The Right Fork of White River Road (#081) and Left Fork of White River Road (#079) provide the primary access across the area. Both roads access and cross private lands.

Willow Creek MA

This MA contains 37 miles of authorized roads used to access the UNF for recreation and resource management purposes. The majority of roads are maintained for high clearance vehicles.

**American Fork Group**

American Fork MA

The Alpine Loop Scenic Backway (State Route 92) begins in this MA and proceeds to the east, then south over the divide into the North Fork of the Provo River drainage. This road is heavily used by recreationists to access and pass through the area. The MA contains approximately 53 miles of authorized roads used to access the UNF for recreation and resource management purposes.

Traffic count information for this MA is available for summer and fall months. After Strawberry MA, roads within this MA receive the highest amount of use. Use is highest during the weekend.

Table 3.15. Traffic count data for American Fork MA.

Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
Silver Lake Flat NFSR #70008 North of Tibble Fk. Res.	08/18/2006 to 10/23/2006	14,985	1,102	20	131	890	197	443
American Fork- Snake Creek NFSR #70085 Van Dugway Brdg	08/18/2006 to 10/23/2006	17,498	868	26	161	1,044	219	497

Source: USFS 2006a.

**Upper Provo Group**

Upper Provo MA

State Highway 35, the Wolf Creek Highway, traverses this MA. This MA contains 126 miles of authorized roads used to access the UNF for recreation and resource management purposes. The primary arterial route in this area is the Mill Hollow-Duchesne Ridge Road (#054); from the Wolf Creek Highway to Mill Hollow Reservoir this road is narrow and encroaches upon the stream. The majority of roads in this area are managed for passage by high clearance vehicles.

**Vernon Group**

Vernon MA

There are approximately 165 miles of authorized roads within this MA providing access for recreational and management activities.

Traffic count data for this MA indicates that its use is highest during the weekends and during the summer months. In comparison to roads in other MAs, it receives a moderate amount of use.

Table 3.16. Traffic count data for Vernon MA.

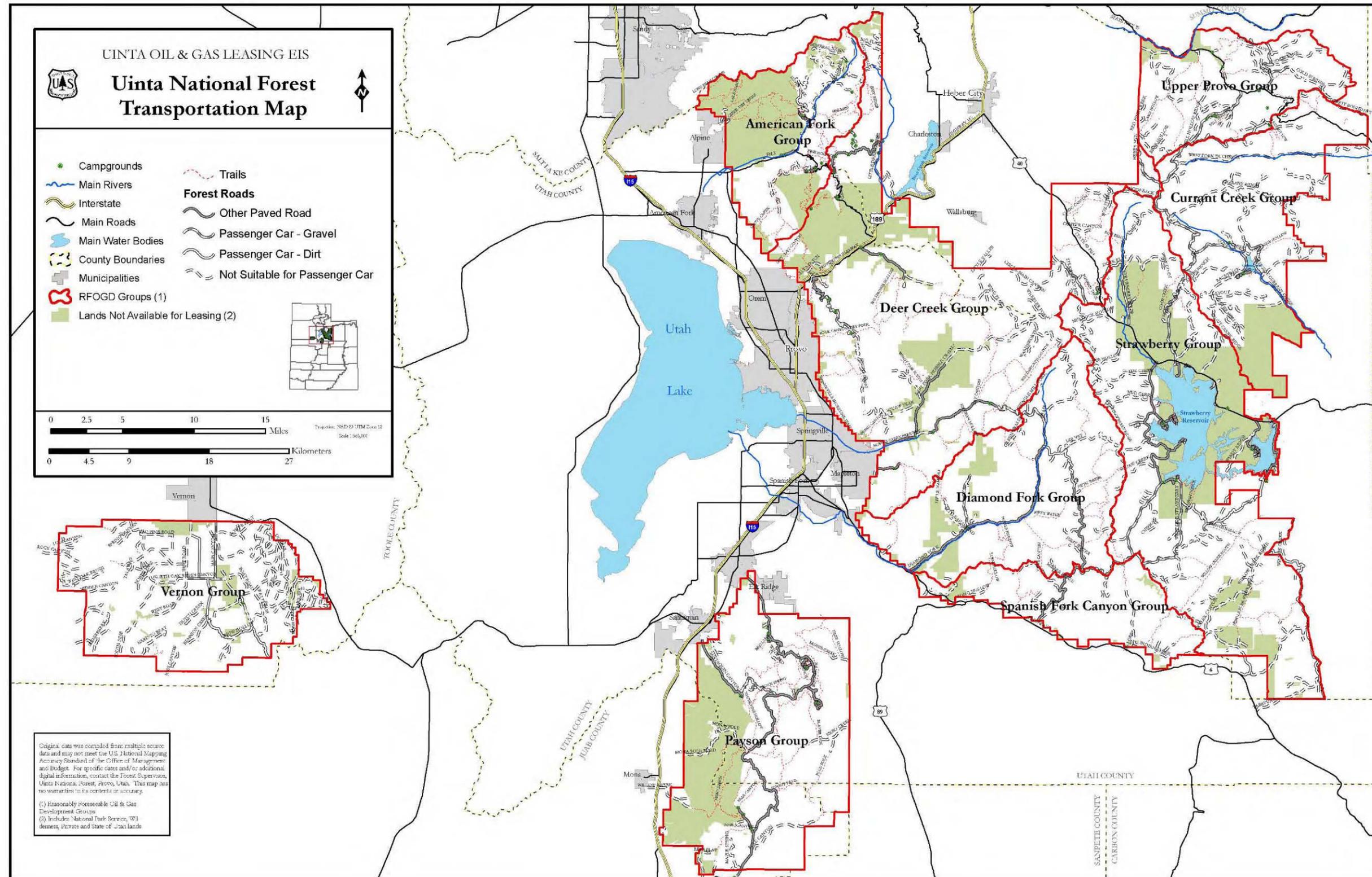
Route Name: Number: Location:	Time Period	Total Counts	Weekday Daily			Weekend Daily		
			Max	Min	Avg	Max	Min	Avg
Main Canyon NFSR #80005 South of Vernon to Benmore Guard Sta.	7/11/2004 to 8/11/2004	1,045	39	10	22	86	25	50
	7/22/2005 to 11/21/2005	8,267	193	17	47	202	29	94
	11/24/2005 to 4/2/2006	4,500	96	7	23	120	13	50

Source: USFS 2006a.

West Sheeprock MA

There are approximately 37 miles of roads within this MA which are used to access the area for recreational and management activities. All authorized roads are maintained for high clearance vehicles.

Figure 3.14. Forest-wide transportation map.



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## 3.5 Inventoried Roadless Areas

### 3.5.1 Introduction

Regulations from the CEQ direct agencies to insure the professional and scientific integrity of environmental analyses in an EIS. This direction includes using the best available science to describe existing conditions in the Project Area; in this case, the UNF. Published, peer reviewed studies are used when applicable to conditions in the UNF; however, in most cases only those studies that are relevant to identifying potential impacts from the proposed action (in Chapter 4) are considered. These studies are cited in the text. The most relevant literature for most resources in Chapter 3 comes from internal Forest Service publications and reports, because this information is based on UNF-specific investigations and assessments. Throughout Chapter 3, the UNF Land and Resource Management Plan (USFS 2003) and associated EIS (USFS 2003a) are the most frequently cited documents. These documents were not peer reviewed within the scientific community, but were written using best available science, open to public comment as dictated by the NEPA process, and revised accordingly by resource specialists.

Inventoried roadless areas (IRAs) are identified as areas of National Forest System land currently inventoried for planning purposes as roadless (see inset for IRA characteristics). This inventory is based on existing forest plans, forest plan revisions in progress where the agency has established a roadless inventory, or other assessments that are completed and adopted by the agency. If more recent inventories do not exist, then the inventory information from the second Roadless Area Review and Evaluation (RARE II) process was used (USFS 2000).

Roadless areas provide opportunities to manage dispersed recreation, sources of public drinking water, and undisturbed landscapes that provide privacy and seclusion. In addition, these areas serve as safeguards against the spread of invasive plant species and often provide important habitat for rare plant and animal species. They support a diversity of native plant species and provide opportunities for monitoring and research (USFS 2003a).

As directed in the Wilderness Act of 1964, the Forest Service began the process of identifying and evaluating the suitability of NFS lands as roadless, initiated by the efforts to study primitive areas for inclusion in the National Wilderness Preservation System. In 1971 the Forest Service

#### Roadless Area Characteristics

Resources or features that are often present in and characterize inventoried roadless areas include:

- (1) High quality or undisturbed soil, water, and air;
- (2) Sources of public drinking water;
- (3) Diversity of plant and animal communities;
- (4) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
- (5) Primitive, semi-primitive non-motorized and semi-primitive motorized classes of dispersed recreation;
- (6) Reference landscapes;
- (7) Natural appearing landscapes with high scenic quality;
- (8) Traditional cultural properties and sacred sites; and
- (9) Other locally identified unique characteristics.

expanded the scope of the review to include all roadless areas in the inventory and evaluation. This process was known as the Roadless Area Review and Evaluation (RARE).

In response to concerns that the initial survey overlooked certain areas, or that the planning process was too slow, the Secretary of Agriculture initiated a nationwide study of roadless areas known as RARE II, released in 1979. The UNF conducted their own review of roadless areas in 1999, following procedures set by the Forest Service. This review was revisited following public comment in 2000, and again in 2002 based on new information gathered from GIS, field review, and specialist input (USFS 2003).

### 3.5.2 Roadless Area Conservation Rule

As urban areas expand and private lands fragment natural areas, large continuous tracts of undisturbed land are becoming scarce. To conserve such roadless areas, Congress adopted the Roadless Area Conservation Rule (RACR) January 12, 2001 and the RACR was scheduled to go in effect March 2001. Under the RACR, new road construction and reconstruction is prohibited within IRAs on National Forest System lands, except:

- To protect health and safety threatened by a catastrophic event,
- To conduct environmental cleanup,
- To allow for reserved or outstanding rights provided by statute or treaty,
- To prevent irreparable resource damage by an existing road,
- To rectify existing hazardous road conditions,
- When a road is part of a Federal Aid Highway project, and
- In conjunction with the continuation, extension, or renewal of a mineral lease on lands that are under lease or for new leases issued immediately upon expiration of an existing lease.

Also under the RACR, the cutting, sale, and removal of timber are prohibited in IRAs, except:

- The cutting, sale, or removal of generally small diameter trees which maintains or improves the roadless characteristics,
- To improve threatened, endangered, proposed, or sensitive species habitat,
- To maintain or restore ecosystem composition and structure, such as reducing the risk of uncharacteristic wildfire effects,
- When incidental to the accomplishment of a management activity not otherwise prohibited by this rule,
- For personal or administrative use, and
- Where roadless characteristics have been substantially altered in a portion of an IRA due to the construction of an authorized road and subsequent timber harvest occurring after the area was designated an inventoried roadless area and prior to the rule.

**RACR History**

Since 2001 the RACR has been the subject of numerous lawsuits in Federal district courts in Idaho, Utah, North Dakota, Wyoming, Alaska, District of Columbia, and California. Because of these lawsuits and the considerable controversy surrounding the RACR, the status of the implementation of the RACR has changed considerably over the last six years. Table 3.17 presents a brief timeline and history of the RACR, including its present status.

**Table 3.17. Summary timeline for the RACR.**

<b>Date</b>	<b>Action</b>
Prior to 2001	Individual Forest Plans governed the use of roadless areas.
November 2000	Forest Service RACR Final Environmental Impact Statement is released.
January 12, 2001	Final Rule adopting the RACR is published in the Federal Register.
March 13, 2001	RACR scheduled to take effect. Incoming President Bush issued a moratorium on all regulations from the prior administration that had not yet been implemented. Implementation is delayed until May 2001.
May 2001	Just prior to the moratorium expiring, Idaho District Court preliminary enjoins (prohibits) implementation of the RACR.
December 2002	Ninth Circuit Court reverses Idaho District Court's injunction.
April 2003	Ninth Circuit Court issues mandate ordering Idaho District Court to dissolve injunction. RACR goes into effect for the first time.
June 2003	Litigation with the State of Alaska is settled. It results in a December 2003 amendment to the RACR that temporarily exempts the Tongass National Forest from the RACR's prohibitions.
July 2003	Wyoming District Court issues nationwide permanent injunction against the RACR. RACR no longer in effect.
May 2005	Forest Service adopts the State Petitions Rule. The State Petitions Rule replaces the RACR with a petitioning process that would provide Governors an opportunity to seek establishment of management requirements for NFS IRAs within their States.  The State petitions under this proposed rule would have to include specific information and recommendations for the management requirements for individual IRAs within a particular State. States have until November 2006 to submit petitions.  For States that do not petition, individual Forest Plans will govern the management of IRAs. State of Utah does not petition, the 2003 LRMP governs management of IRAs
September 20, 2006	California District Court sets aside the State Petitions Rule and reinstates the RACR, including the Tongass amendment. RACR is in effect and governs the management of IRAs in NFS lands.
February 2007	California District Court issues final injunction order. The final injunction order provides injunctive relief for oil and gas leases (see RACR relationship to oil and gas leases below for more information). RACR remains in effect.
April 2007	Appeal filed in Ninth District Court. Pending outcome of appeal, RACR remains in effect.

Source: USFS 2007a and USFS 2007b.

***UNF Management Direction for IRAs***

Because of the uncertainty surrounding the management of IRAs, the UNF addressed this issue in the ROD for the 2003 LRMP. The ROD that was issued for the 2003 LRMP states the following:

Since this direction is subject to change, the Uinta NF will follow the most current direction for management of IRAs. If the RACR does become effective it will supersede this plan, but only in those areas inside the boundaries of the 1999 Roadless Area Inventory (USFS 2003, ROD, p.20).

As of September 20, 2006, the RACR became effective and governs the management of IRAs in the UNF. However due to the uncertainty surrounding the long-term status of management of IRAs, should the RACR become ineffective in the future, management of IRAs would be dictated by the current Forest Plan for UNF.

If the RACR were to become ineffective, the 2003 LRMP would manage 118,420 acres (21 percent) of IRAs as semi-primitive non-motorized, which prohibits new authorized road construction and temporary road construction activities. An additional 315,960 acres (57 percent) would be managed as semi-primitive motorized, which prohibits the construction of new authorized roads, but would allow the construction of temporary roads. Authorized and temporary road construction may occur within the remaining 120,440 acres of IRAs (22 percent) (USFS 2003, ROD p. 20).

***Relationship of the RACR to Oil and Gas Leasing***

The RACR applies to all activities and any step of the leasing process commenced after May 13, 2005, and all mineral leases of National Forest lands that were issued after January 12, 2001. The Forest Service has been prohibited from approving any surface use of a mineral lease that was issued after January 12, 2001 that would violate the RACR if such approval occurs after May 13, 2005 (Judge LaPorte Order February 6, 2007).

Analysis of the impacts of connected actions associated with the exercising of rights granted by oil and gas leases issued prior to January 12, 2001 is not within scope of this EIS. This EIS will only analyze the impacts that future oil and gas leasing may have on IRA. No surface use of mineral lease has been approved by UNF on leases issued after January 12, 2001.

**3.5.3 Affected Environment**

There are currently 35 IRAs on the UNF totaling approximately 554,850 acres, (which could have a variance of +/- 50 acres due to GIS rounding), or about 62 percent of the UNF (Figure 3.15: Forest-wide Map of Roadless Areas). Table 3.18 presents total roadless acres within each IRA in the UNF (USFS 2003). A full description of each IRA can be found in Appendix C of the LRMP FEIS.

Table 3.18. Roadless acres by IRA in the UNF.

ID Number	Name	Acres
0418001	Nobletts	5,710
0418002	Little South Fork	18,720
0418003	West Fork	10,840
0418004	Vat Creek	16,650
0418006	Box Spring	15,230
0418007	Daniels Canyon	6,360
0418008	Chipman Creek	9,330
0418009	Willow Creek	17,920
0418011	Rock Canyon/Buckley Mountain	16,480
0418012	Pump Ridge	25,700
0418013	Two Tom Hill	14,570
0418014	Red Mountain	9,950
0418015	Strawberry Ridge	17,230
0418016	Diamond Fork	35,230
0418017	Tie Fork	19,650
0418018	White River	11,230
0418019	Soldier Summit	6,850
0418021	Hop Creek Ridge	6,380
0418022	Vernon	17,320
0418024	South Fork of Provo River	53,130
0418025	Mapleton	32,840
0418026	Birdseye	14,000
0418027	Payson	13,970
0418028	Golden Ridge	34,010
0418029	Nephi	15,940
0418031	Red Pine Mountain	19,470
0418032	Mount Timpanogos	16,250
0418034	White Ledge	9,420
0418037	Wallsburg	9,670
0418040	Twin Peaks	1,700
0418041	Mill Canyon Peak	17,040
0418042	Coyote Ridge	9,200
0418043	Co-op Creek	13,250
0418044	Chicken Creek	7,990
0418045	Currant Creek Peak	5,650
<b>Total Acres</b>		<b>554,880</b>

Source: USFS 2003: Appendix C.

### 3.5.4 RFOGDs

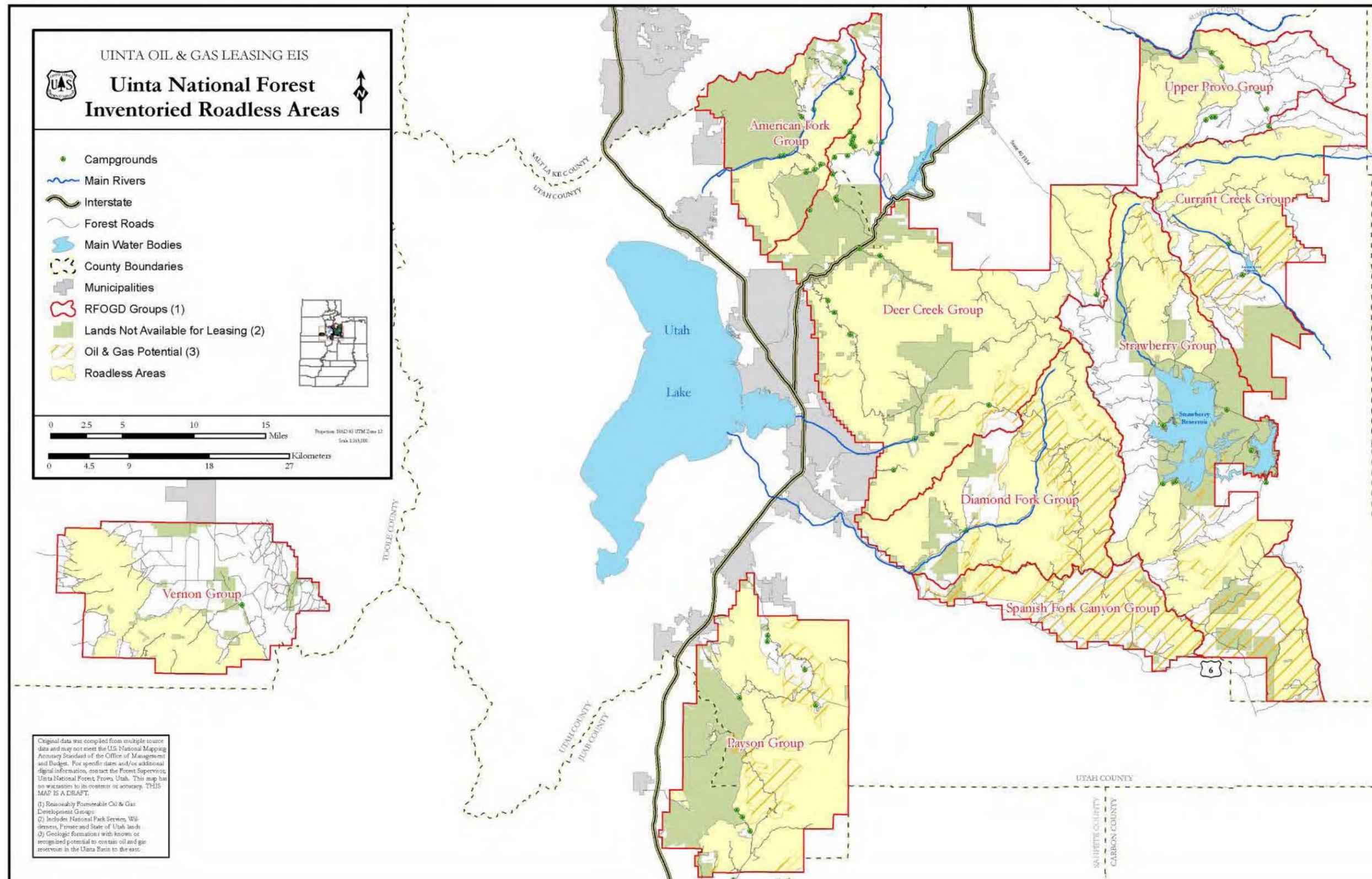
Table 3.19 summarizes IRAs by MA for each RFOGD.

Table 3.19. Summary of approximate IRA acres by MA for RFOGDs.

RFOGD	MA	Acres of IRA	% of MA
<b>Currant Creek</b>	Currant Creek	21,960	51
	West Fork Duchesne	27,462	53
	<b>Currant Creek RFOGD Subtotal</b>	<b>49,423</b>	<b>59</b>
<b>Deer Creek</b>	Deer Creek Reservoir	30,423	78
	Hobble Creek	67,824	95
	Lower Provo	48,172	76
	<b>Deer Creek RFOGD Subtotal</b>	<b>146,419</b>	<b>84</b>
<b>Diamond Fork</b>	Diamond Fork	84,639	87
	<b>Diamond Fork RFOGD Subtotal</b>	<b>84,639</b>	<b>87</b>
<b>Payson</b>	Mona	869	5
	Nephi	23,919	73
	Payson	23,646	69
	Thistle	35,869	98
	<b>Payson RFOGD Subtotal</b>	<b>84,303</b>	<b>70</b>
<b>Spanish Fork Canyon</b>	Upper Spanish Fork RFOGD Subtotal	28,448	64
	<b>Spanish Fork Canyon RFOGD Subtotal</b>	<b>28,448</b>	<b>64</b>
<b>Strawberry</b>	Strawberry Reservoir	38,755	31
	Willow Creek	18,424	77
	White River	18,673	72
	<b>Strawberry RFOGD Subtotal</b>	<b>75,852</b>	<b>43</b>
<b>American Fork</b>	American Fork	25,055	43
	<b>American Fork RFOGD Subtotal</b>	<b>25,055</b>	<b>43</b>
<b>Upper Provo</b>	Upper Provo	26,868	50
	<b>Upper Provo RFOGD Subtotal</b>	<b>26,868</b>	<b>50</b>
<b>Vernon</b>	Vernon	17,528	27
	West Sheeprock	19,551	77
	<b>Vernon RFOGD Subtotal</b>	<b>37,079</b>	<b>41</b>
<b>Forest-wide Total</b>		<b>558,086*</b>	<b>62</b>

\* Total does not add up to the acres reported in section 3.5.3 due to rounding and errors introduced when two GIS layers are overlapped, (e.g., MA layer and IRA layer).

Figure 3.15. Forest-wide map of roadless areas.



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## 3.6 Watershed Resources, Including Wetlands, Floodplains, and Riparian Areas

### 3.6.1 Introduction

Federal agencies are obligated to protect wetlands and floodplains under EO 11990 (to minimize the destruction, loss, or degradation of wetlands; to preserve and enhance the natural beneficial values of wetlands; and to avoid adverse impacts to wetlands where practicable) and EO 11988 (to avoid adverse impacts associated with the occupancy and modification of floodplains; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural values served by floodplains). The LRMP provides direction for the protection of riparian areas through the designation of RHCAs.

Wetlands protected under Section 404 of the Clean Water Act (CWA) must meet the legal definition of a jurisdictional wetland, defined by the presence of three conditions: (1) permanent or seasonal water, (2) hydrophytic (water-loving) vegetation, and (3) soil characteristics influenced by saturated conditions (USACE 1987). Floodplains (lowland areas adjacent to streams or other inland waterways that may be submerged by floodwaters) as well as riparian areas frequently meet these criteria. Wetlands and floodplains occur on the UNF; however, the jurisdictional status of these areas across the UNF has not been determined.

### 3.6.2 Affected Environment

#### *Wetlands*

Wetlands are integral parts of aquatic and terrestrial habitats that provide diverse ecosystem functions. Wetlands are sources of primary productivity, organic deposition and flux, and nutrient cycling; and provide unique wildlife, fish, and plant habitats (Brinson 1993, USFS 2003). Activities such as timber harvest, mining, and grazing have resulted in damage to aquatic resources on the UNF, with long-term implications to aquatic habitat and water quality (USFS 2003), thus increasing the value of wetlands on the UNF to naturally restore ecosystem function.

On the UNF, wetlands are associated with perennial or intermittent water bodies, or other water sources (e.g., springs). There are approximately 10,186 acres of wetlands on the UNF that have been delineated by the USFWS and approximately 800 miles of perennial streams, 2,030 miles of intermittent streams, and 17,770 acres of lakes and reservoirs (USFS 2003) with which they are associated. The number of springs on the UNF is unknown.

There has not been a formal, Forest-wide wetland delineation on the UNF; thus jurisdictional status of the reported wetlands on the UNF is unknown. In order for a wetland to be jurisdictional, it must meet the vegetation, soils, and hydrology criteria outlined above. Data on wetlands for this section was taken from the National Wetlands Inventory (NWI); wetlands were delineated by the USFWS. Delineated wetlands were identified by type (i.e., lacustrine, palustrine, or riverine); streams (riverine wetlands) were further classified as perennial or intermittent (see figure 3.16).

NWI digital data files are records of wetlands location and classification as developed by the USFWS. The NWI maps do not show all wetlands since the maps are derived from aerial photointerpretation with varying limitations due to scale, photo quality, inventory techniques, and other factors. Consequently, the maps tend to show wetlands that are readily photointerpreted given consideration of photo and map scale. The maps do not show exact wetland boundaries, rather boundaries are generalized (USFWS 2007). Additionally only a portion of the UNF (approximately 476,000 acres) has been mapped for the NWI.

The LRMP and LRMP FEIS do not specifically describe wetland resources on the UNF; however, these documents do discuss wet meadows on the UNF, a specific type of wetland, and RHCAs, areas of conservation emphasis that include wetlands. Information on wet meadows is summarized below and information on RHCAs is summarized under the section titled Riparian Areas.

**Wet Meadows**

Wet meadows or bogs/fens are a type of wetland that is present on the UNF at high elevations. In the mountainous areas of Utah, wet meadows are typically associated with springs, lakes, beaver ponds, or snowmelt-fed depressions; are scattered across the landscape; and vary in size from a few square feet to tens of acres (USFS 2003). There are 583 acres of wet meadows and bogs/fens across the UNF, predominantly in the Vernon, Strawberry, and Currant Creek RFOGDs (figure 3.16). Wet meadow areas on the UNF are small and scattered, but are species-rich, containing a variety of sedges, rushes, grasses, and forbs (USFS 2003) (see discussion of riparian vegetation in Section 3.8: Vegetative Resources, Including Upland Vegetation, Noxious Weeds, and Invasive Species). Special status species that occur only on wet meadows in the UNF include dainty moonwort (*Botrychium crenulatum*) and Ute ladies’ tresses (*Spiranthes diluvialis*) (see Section 3.9.2: Introduction to Special Status Species).

**Floodplains**

Floodplains are defined as lowlands or relatively flat areas bordering streams or rivers that are formed by water that overflows the active stream channel during periods of high flow (Dunne and Leopold 1978). Large, lowland rivers unconstrained by geology have the most extensive floodplains, while smaller mountain streams are often constrained by geology and have narrow floodplains that may be contained entirely within the riparian area (Gregory et al. 1991). The Federal Emergency Management Agency (FEMA) maps 100-year floodplains, defined as the area subject to a one percent chance of flooding in any given year, for its National Flood Insurance Program. However, as the areas mapped are for insurance purposes, they primarily include urbanized and residential areas and not undeveloped areas such as those administered by the UNF. As a result, there are only 275 acres of 100-year floodplains on the UNF that have been mapped by FEMA as depicted in figure 3.17. In addition, the UNF has not historically collected data on channel conditions outside of project-specific investigations (USFS 2003), thus floodplain data is not updated regularly and is not delineated in the LRMP. As a result, as shown in table 3.20, the absence of floodplain acreage for any specific MA represents the data and not the lack of floodplains.

The last major flood events on the UNF occurred during the 1983-1984 season and caused widespread impacts to UNF watersheds. In the 10-year period following 1984, over 9,340 acres of watershed improvements were completed on the UNF (USFS 2003). In general, flooding is relatively infrequent along small, spring-fed streams above 7,000 feet in the UNF, where flows

are fairly constant and gradients are less than three percent. Stable banks are maintained by the vegetation communities on these streams (USFS 2003).

### ***Riparian Areas***

RHCAs on the UNF are associated with traditional riparian corridors, perennial and intermittent streams, and other areas that help maintain the integrity of aquatic ecosystems. In these areas, riparian-dependent resources receive primary emphasis and management activities are subject to specific standards and guidelines (see LRMP: Appendix D). There are three RHCA classes of varying widths offering varying levels of protection: class I, affording the highest level of protection (widths extending 300 feet from each edge of the waterbody; 600 feet total); class II (widths extending 200 feet from each edge of the waterbody; 400 feet total); and class III (widths extending 100 feet from each edge of the waterbody; 200 feet total). The distribution of RHCAs on the UNF is shown in figure 3.18.

Riparian vegetation is discussed further under Section 3.8: Vegetative Resources, Including Upland Vegetation, Noxious Weeds, and Invasive Species.

### **3.6.3 RFOGDs**

RHCAs (mapped by UNF), wetlands (mapped by NWI/USFWS), wet meadows (mapped by UNF), and floodplains (mapped by FEMA) are broken down by RFOGD in this section to illustrate the relative value of each in terms of wetland, floodplain, and riparian resources on the UNF (summarized in table 3.20).

Table 3.20. Stream miles of RHCAs and acres of NWI wetlands, wet meadows, and 100-year floodplain area by MA, grouped by RFOGD.

MA/RFOGD	Class I (miles)	Class II (miles)	Class III (miles)	RHCA Total (miles)	NWI Wetlands (acres)*	Wet Meadows (acres)	Floodplain (acres)
Currant Creek	32	<1	99	131	210	30	NA
West Fork Duchesne	26	0	93	119	290	NA	NA
<b>Currant Creek RFOGD subtotal</b>	<b>58</b>	<b>&lt;1</b>	<b>192</b>	<b>250</b>	<b>500</b>	<b>30</b>	<b>NA</b>
Deer Creek Reservoir	13	0	94	107	108	NA	NA
Hobble Creek	29	<1	203	232	107	NA	113
Lower Provo	21	4	178	203	152	NA	155
<b>Deer Creek RFOGD subtotal</b>	<b>63</b>	<b>4</b>	<b>475</b>	<b>542</b>	<b>367</b>	<b>NA</b>	<b>268</b>
Diamond Fork	70	0	253	323	103	NA	NA
<b>Diamond Fork RFOGD subtotal</b>	<b>70</b>	<b>0</b>	<b>253</b>	<b>323</b>	<b>103</b>	<b>NA</b>	<b>NA</b>
Mona	11	0	34	45	NA	NA	NA
Nephi	19	3	104	126	NA	NA	NA
Payson	7	0	93	100	<1	NA	NA
Thistle	12	2	99	113	NA	NA	NA
<b>Payson RFOGD subtotal</b>	<b>49</b>	<b>5</b>	<b>330</b>	<b>384</b>	<b>&lt;1</b>	<b>NA</b>	<b>NA</b>
Upper Spanish Fork	8	0	147	155	NA	NA	NA
<b>Spanish Fork Canyon RFOGD subtotal</b>	<b>8</b>	<b>0</b>	<b>147</b>	<b>155</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
Strawberry Reservoir	83	3	281	367	8,530	159	NA
White River	13	3	62	78	NA	NA	NA
Willow Creek	12	3	51	66	NA	NA	NA
<b>Strawberry RFOGD subtotal</b>	<b>108</b>	<b>9</b>	<b>394</b>	<b>511</b>	<b>8,530</b>	<b>159</b>	<b>NA</b>
American Fork	55	8	121	184	207	NA	7
<b>American Fork RFOGD subtotal</b>	<b>55</b>	<b>8</b>	<b>121</b>	<b>184</b>	<b>207</b>	<b>NA</b>	<b>7</b>
Upper Provo	26	4	105	135	479	82	NA
<b>Upper Provo RFOGD subtotal</b>	<b>26</b>	<b>4</b>	<b>105</b>	<b>135</b>	<b>479</b>	<b>82</b>	<b>NA</b>
Vernon	4	3	251	258	NA	312	NA
West Sheeprack	0	0	91	91	NA	0	NA
<b>Vernon RFOGD subtotal</b>	<b>4</b>	<b>3</b>	<b>342</b>	<b>349</b>	<b>NA</b>	<b>312</b>	<b>NA</b>
<b>Total</b>	<b>441</b>	<b>33</b>	<b>2,359</b>	<b>2,833</b>	<b>10,186</b>	<b>583</b>	<b>275</b>

\* Only part of the UNF was surveyed for wetlands. NA = Not applicable, resource is not present or mapped in the case of wetlands.

***Currant Creek Group***

There are approximately 250 miles of streams within this RFOGD; 156 are perennial, 94 are intermittent, and all are in RHCAs. Class I RHCAs and almost all 500 acres of NWI mapped wetlands occur along the West Fork Duchesne River and Currant Creek system of tributaries (figures 3.16 and 3.18). Wetland coverage was mapped by NWI in most but not all of this RFOGD. Most of the identified wet meadows in the Currant Creek RFOGD are sub-alpine, where cool soil temperatures and relatively high moisture levels create environments with high plant production that are less vulnerable to the water fluctuations that characterize lower elevation meadows (USFS 1999). Wet meadows are located just north of Wolf Creek (directly south of Silver Meadow) and near Currant Creek Peak. The Currant Creek RFOGD does not contain any mapped 100-year floodplains.

***Deer Creek Group***

There are approximately 542 miles of streams within this RFOGD; 94 are perennial, 448 are intermittent, and all are in RHCAs. Class I RHCAs occur along Rock Canyon and lower tributaries of the Provo River in the western portion of the RFOGD (figure 3.18); the 367 acres of NWI-mapped wetlands are scattered along the Provo River and Hobble Creek systems of tributaries and in the central-eastern portion of the RFOGD (figure 3.16). Wetland coverage was mapped by NWI in most but not all of this RFOGD. There are no identified wet meadows in the Deer Creek RFOGD. This RFOGD contains 268 acres that lie within the 100-year floodplain, mainly along the left fork of Hobble Creek (figure 3.17).

***Diamond Fork Group***

There are approximately 323 miles of streams within this RFOGD; 98 miles are perennial, 225 miles are intermittent, and all are in RHCAs. All Class I RHCAs and 103 acres of NWI-mapped wetlands occur along the Diamond Fork system of tributaries or in the northern portion of the RFOGD (figures 3.16 and 3.18). Wetland coverage was mapped by NWI in only the northern portion of this RFOGD. There are no identified wet meadows in the Diamond Fork RFOGD, nor any mapped areas within the 100-year floodplain. Diamond Fork floodplains are not extensive along Diamond Fork Creek because of the constricted canyon landforms (CUWCD 1999).

***Payson Group***

There are approximately 384 miles of streams within this RFOGD; 109 miles are perennial, 275 miles are intermittent, and all are in RHCAs. Most Class I RHCAs occur along Nebo Creek (figure 3.18). This RFOGD contains less than one acre of NWI wetlands (although wetland coverage was only mapped on a very small area of this RFOGD; see figure 3.16), no identified wet meadows, and no mapped 100-year floodplains.

***Spanish Fork Group***

There are approximately 155 miles of streams within this RFOGD; 25 are perennial, 130 are intermittent, and all are in RHCAs. Class I RHCAs occur along Tie Fork in the eastern section of the RFOGD (figure 3.18). The Spanish Fork RFOGD does not contain any identified wet meadows or areas within the 100-year floodplain. Wetland coverage was not mapped by NWI within this RFOGD.

***Strawberry Group***

There are approximately 511 miles of streams within this RFOGD; 164 miles are perennial, 346 miles are intermittent, and all are in RHCAs. Most Class I RHCAs and the majority of the 8,530 acres of NWI-mapped wetlands occur along the Strawberry Reservoir system of tributaries (figures 3.16 and 3.18).

Identified wet meadows occur in this RFOGD along the Strawberry River, an upper elevation stream, just past its confluence with Willow Creek. This area maintained perennial flow while the Strawberry River diversion operated, and was described in the Strawberry Watershed Restoration Report as the stream reach having the highest potential for expanded riparian restoration in the Strawberry watershed (USFS 2004). Relative to adjacent reaches, this wet meadow area is a narrow channel with abundant riparian vegetation.

The Strawberry RFOGD does not contain any mapped 100-year floodplains.

***American Fork Group***

There are approximately 184 miles of streams within this RFOGD; 69 are perennial, 115 are intermittent, and all are in RHCAs. Class I RHCAs and almost all 207 acres of NWI-mapped wetlands in this RFOGD occur along the American Fork and Dry Creek systems of tributaries. There are no identified wet meadows in the American Fork RFOGD. This RFOGD contains seven acres along the northern boundary of the UNF that lie within the 100-year floodplain (figure 3.17).

***Upper Provo Group***

There are approximately 135 miles of streams within this RFOGD; 66 are perennial, 69 are intermittent, and all are in RHCAs. Class I RHCAs occur along tributaries of the Little South Fork of the Provo River (Camp Hollow, Buck Hollow, Dip Vat Hollow; see figure 3.18). The majority of the 479 acres of NWI-mapped wetlands occur along the tributaries of the South Fork and Little South Fork of the Provo River. Wetland coverage was mapped by NWI in most but not all of this RFOGD. Identified wet meadows are located in Pine Valley along the northern boundary of the UNF, in Soapstone Basin in the central part of the RFOGD, and at Silver Meadow, north of Wolf Creek. The Upper Provo RFOGD does not contain any mapped 100-year floodplains.

***Vernon Group***

There are approximately 349 miles of streams within this RFOGD; 29 are perennial, 321 are intermittent, and all are in RHCAs. Class I RHCAs occur along parts of Vernon Creek and Little Valley Creek. Identified wet meadows occur southwest of Vernon (north of Red Pine Road) and near Sabie Mountain. The Vernon RFOGD does not contain any mapped 100-year floodplain. Wetland coverage was not mapped by NWI within this RFOGD.

Figure 3.16. Wetlands and wet meadows.

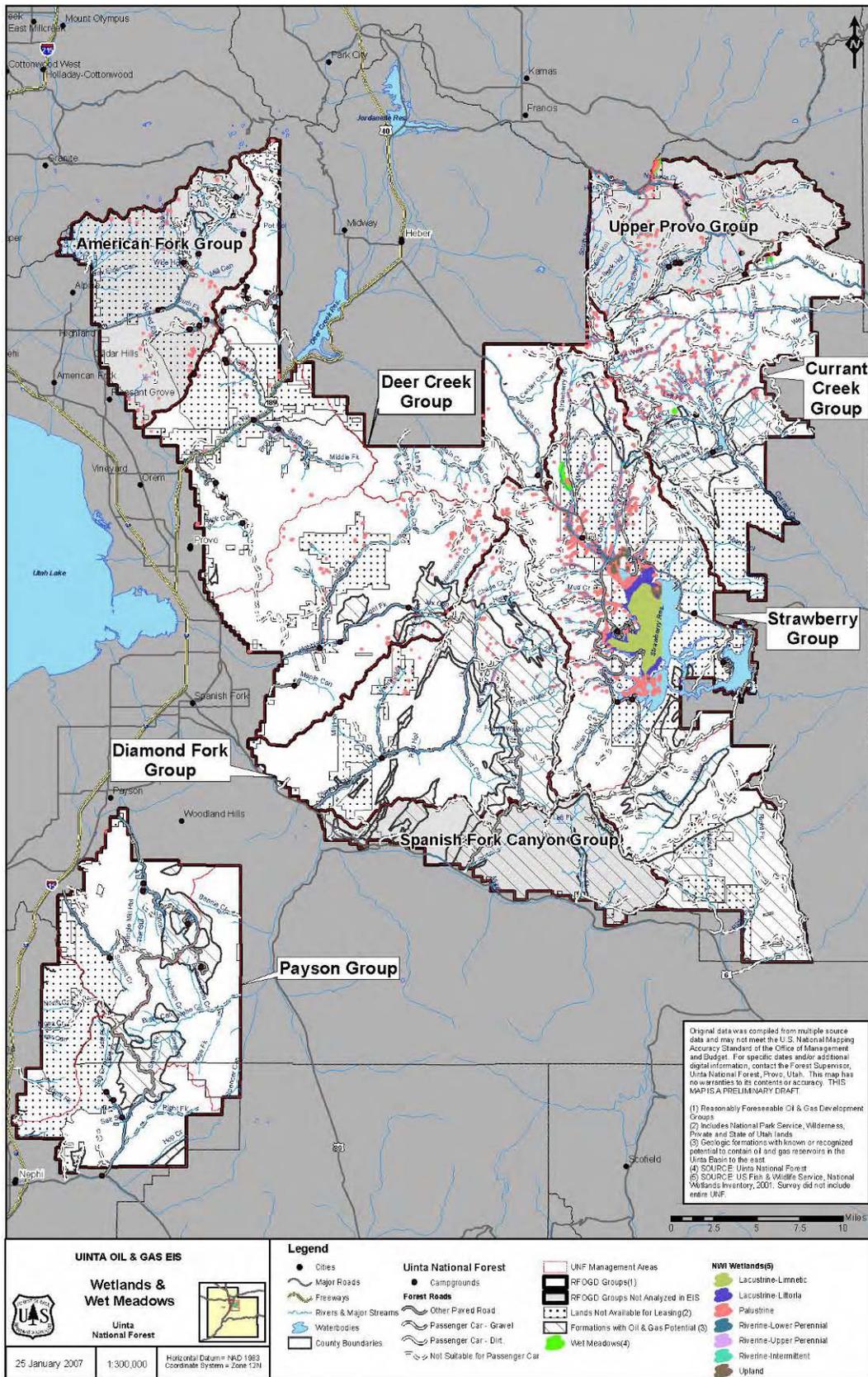


Figure 3.17. Floodplains.

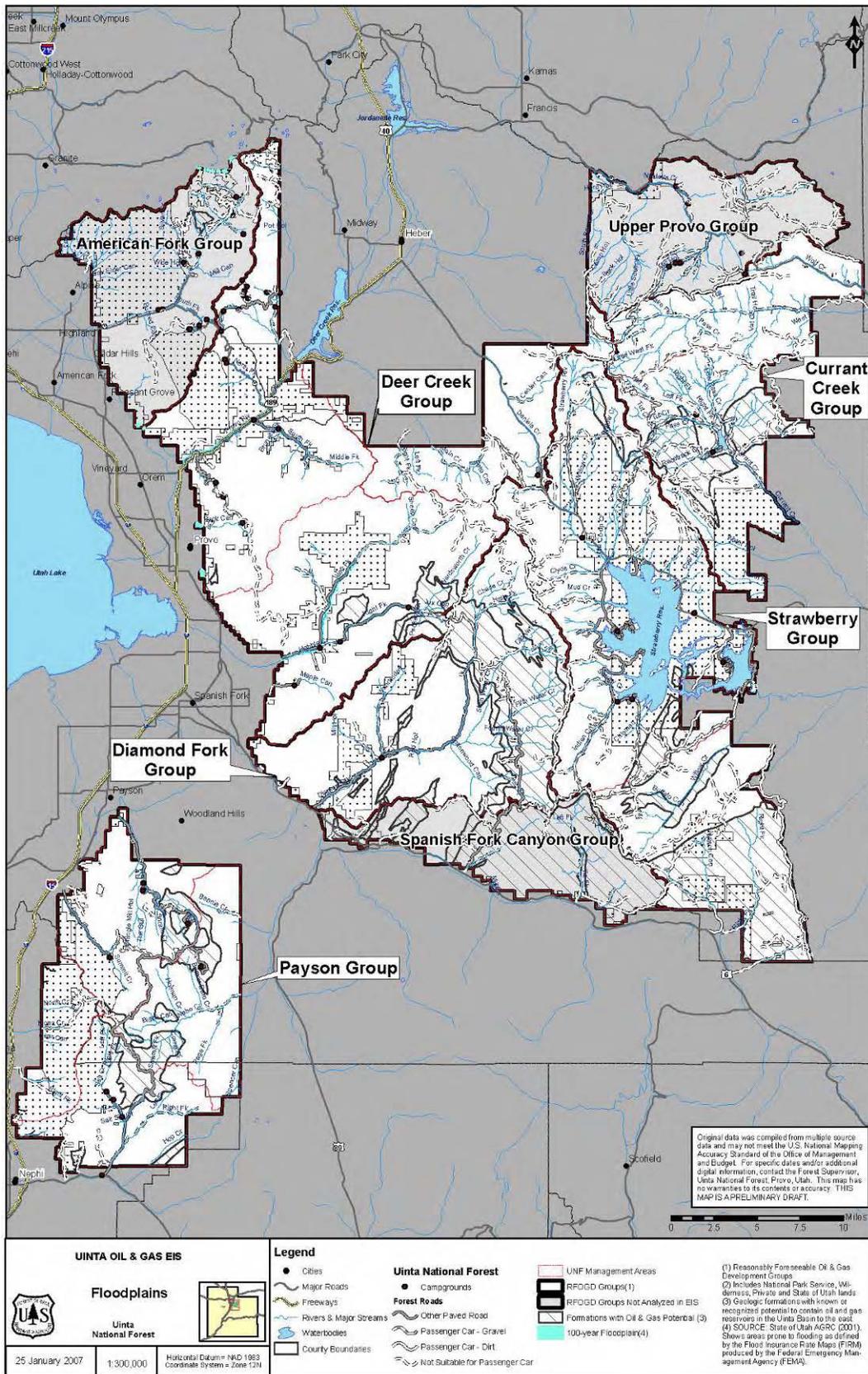


Figure 3.18. Riparian habitat conservation areas.

