

**Biological Assessment
of Threatened and Endangered Plant Species**

for

The Fishlake OHV Route Designation Project

Fishlake National Forest

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Introduction

The purpose of this biological assessment is to analyze and evaluate the potential effects of proposed actions on the threatened, endangered or proposed (TEP) plant species that may occur within the proposed Fishlake OHV Route Designation project area.

Proposed Action

Full descriptions of the proposed actions are contained in Chapter 2 of the Fishlake OHV Route Designation Project Final Environmental Impact Statement. Tables 2-30 thru 2-36 contain a summary of the proposed alternatives. Alternative 1 is the No Action alternative, which would maintain the use and management associated with the existing motorized travel plan. Alternative 2 is the proposed action that was presented to the public on June 7, 2004 with the release of the Notice of Intent and was the first alternative to address the Purpose of and Need for Action. Alternative 3 is the modified proposed action which incorporates comments and concerns from public scoping and additional inventory and review from the 2004 field season. Alternative 4 provides additional protection of roadless areas and more emphasis on non-motorized recreation opportunities.

Final Preferred Alternative

Alternative 5 is the final preferred alternative and blends elements of the first three action alternatives. This alternative resembles Alternative 3 more than Alternatives 2 and 4. Additional route surveys were conducted in 2005 and 2006. Alternative 5 incorporates this recent route information and corrects numerous errors that were in the other three action alternatives. Actually, as a result of these more recent surveys, several adjustments and corrections were made to Alternatives 1, 2, 3 and 4 as well.

This is key to comparing the action alternatives. With respect to known populations of TEP plant species and their known potential habitats, all parameters of all of the route designations are the same for all of the action alternatives. Therefore, each species' effects determination will be the same for all four of the action alternatives. Areas where individuals of Last Chance townsendia are known to occur near motorized routes will be monitored by the forest and the results shared with the US Fish and Wildlife Service (Service) annually. If individual townsendia plants become adversely affected, the forest will coordinate with the Service and make appropriate adjustments.

It is important to understand that no new routes will be constructed as part of the Fishlake OHV Route Designation Project. Only existing routes are being designated as open or closed to motorized use. The impacts associated with existing routes and their use and from motorized cross-country travel are already occurring. The route designation project offers the prospect of reducing existing resource damage while preventing the potential for future impacts. The proposed actions are comprised of changes to type or season of motorized use, route classification changes, and changes to travel plan definitions and exemptions.

Biological Assessment

The table shows the status of those plant species that are federally listed along with identification of habitat suitability within the project boundaries for each species. These plant species are of interest to the Fishlake National Forest because of their rarity with respect to the numbers of individuals or the number of populations within the administrative boundary of the Forest. There are not any federally proposed plant species known to occur on the Fishlake National Forest. (Welsh *et al.* 2003; Rodriguez 2006)

Table 1. Plant species on the Fishlake NF

Common/ Scientific Name	Status	Suitability of Habitat for Threatened, Endangered, or Proposed Species		Determination
		Suitable	Rationale for the Determination	
San Rafael cactus <i>Pediocactus despainii</i>	Endangered	No	Lack of suitable habitat near motorized routes	No Effect
Maguire daisy <i>Erigeron maguirei</i>	Threatened	No	Lack of suitable habitat near motorized routes	No Effect
Last Chance townsendia <i>Townsendia aprica</i>	Threatened	Yes	Motorized trails and roads occur in occupied habitat	May Affect – Not Likely to Adversely Affect

Motorized routes do not go within 1.5 miles of known populations, or known potential habitat, of San Rafael cactus or within 0.5 mile of known populations, or known potential habitat, of Maguire daisy. Also, these populations for both species occur in remote areas that are protected by steep slopes and cliffs. It is unlikely that motorized traffic could ever get to these locations.

The following section, quoted from Rodriguez (2006), provides background information for Last Chance townsendia (*Townsendia aprica*):

T. aprica was listed as a federally threatened species in September of 1985. Due to the vulnerability of this species, publication of critical habitat descriptions and maps would further endanger the species. Therefore, critical habitat has not been determined (USFWS 1985a). This species is endemic to central Utah in Emery, Wayne, and Sevier counties. It prefers salt desert shrub and pinyon-juniper communities on clay or clay-silt soils of the Mancos Shale formations between 6,100 and 8,000 feet (Welsh *et al.* 2003).

This member of the Sunflower family (Asteraceae) is a pulvinate caespitose perennial that is approximately 1.5-2.5 cm tall. *T. aprica* has 13-21 ray flowers that are golden yellow in color, and disk flowers of the same color. Involucres are 4-8 mm high (Welsh *et al.* 2003). Reproduction requires that bees native to North America carry pollen between flowers, or seeds will not be produced (Tepedino *et al.* 2004). Common associate plants include galleta grass (*Hilaria jamesii*), Utah juniper (*Juniperus*

osteosperma), blue gramma grass (*Bouteloua gracilis*), and shadscale (*Atriplex confertifolia*) (Clark 2002).

T. aprica flowers from late April to early June. The fruit is a compressed achene that is 2-2.5 mm long. Plants overwinter underground (Spahr et al. 1991).

Threats to *T. aprica* include mineral and energy development, road development, road building, and livestock trampling (USFWS 1993b).

T. aprica has been found at nine sites on the Fishlake National Forest (Clark 2002).

Also, the recovery plan for Last Chance townsendia does not designate any critical habitat for this species (U.S. Fish and Wildlife Service 1993).

Effects Analysis

The Regional Forester's Sensitive Plant List includes 18 species known to occur on the Fishlake National Forest. Three species are federally listed: one as endangered (San Rafael cactus) and two as threatened (Maguire daisy and Last Chance townsendia). There are not any plant species known to occur on the Fishlake NF that are proposed for federal listing or that are candidate species. All of the known occurrences and known potential habitat for these three species are in the southeastern corner of the Forest. The area of potential habitat for these three species was analyzed in greater detail as described in the next section below.

Rare Plant Emphasis Study Area

Thousand Lake Mountain Subsection, Solomon Basin, and the east portion of Last Chance (north to I-70) are of special interest because of occurrences and habitat for the three federally listed plant species mentioned above. Five of the 15 Forest Service sensitive species are also known to occur in this area. This study area for rare plant emphasis was surveyed and analyzed in greater detail than the forest as a whole.

The rare plant emphasis study area (see Figure 1) includes all of the lands administered by the Fishlake NF inside the following polygon. Begin at the extreme southeast corner of the Forest, near Torrey, and follow the forest boundary clockwise westerly to Bicknell and then northerly to Utah 72. Proceed northeast on highway 72 to Hogan Pass and then go due north to I-70. Follow I-70 east to the forest boundary; turn south and follow the boundary along the east side of the Forest back to the starting point. This study area has 122,447 acres (including inholdings) and has all of the known potential and occupied habitat for all the federally listed plant species known to occur on the Fishlake NF. Figure 2 shows the route designations for Alternative 5 in the rare plant emphasis study area for those routes without distance designation corridors for dispersed camping and also indicates which routes are proposed to be obliterated.

Open Use Areas

Four other specific locations merit consideration. These are the proposed open use areas where OHV and ATV riders will have unrestricted use of the areas.

Richfield Open Use Areas: The Richfield area is actually comprised of three subunits. One subunit, about 90 acres northwest of the main Richfield water tank, is included only in

Alternatives 2 and 3. The next subunit is small and on the north side of a parcel of non-forest land near the sawdust pit. The third unit is narrow, long and curved. It starts at the sawdust pit by the second unit and extends west to the summit with Flat Canyon and then proceeds south and southeast to where the mouth of Flat Canyon meets I-70. These three subunits have a combined area of about 780 acres. (These Richfield open use areas are more than 50 miles west of the range of any federally listed plant species that are known to occur on the forest.)

Velvet Ridge Open Use Area: This area is located three miles northwest of Torrey (see Figure 2) and is about 190 acres but varies in size by nearly four acres between Alternative 2 and Alternatives 3 and 5. This area occurs within the rare plant study area. At least nine person days were spent surveying this open use area and the surrounding vicinity because of this area's potential for rare plant habitat. Based on observations during the survey, the boundary of the open use area was adjusted to avoid potential rare plant habitat, and one route's distance designation for dispersed camping was removed.

Analysis Method

This analysis considered two major areas: 1) the entire Forest (total area within the forest boundary is 1,564,236 acres which includes inholdings), and 2) the rare plant emphasis study area (with 122,447 acres including inholdings).

I began with this basic assumption: rare plants do not grow on the tracks of the motorized trails nor are those tracks suitable habitat. Consider the premise that as long as the motorized vehicles stay on the existing tracks, rare plants and their habitats are not being affected.

There is a 300-ft wide exemption on both sides of the roads in Alternative 1 (existing condition) where open use with motorized vehicles is allowable. Excluding Alternative 1 there are only five situations where motorized vehicles might be authorized to leave the designated two tracks of a forest route. First, to ride anywhere one desires within the boundaries of the designated open use areas. Second, to leave a designated road or trail only on previously established tracks to travel directly to, and return directly from, a previously used dispersed camping site within the distance designation corridor. Third, to turn around or park safely along the side of a designated route in a manner that avoids wet meadows, stream corridors and undisturbed areas. Fourth, to drive in designated firewood areas. Designation of firewood areas is beyond the scope of the analysis. However, firewood gathering will be allowed only in officially designated areas and with the appropriate permit obtained from a Forest Service office. Fifth is administrative use (i.e., special use permits, contracts, some noxious weed treatments, military operations, fire fighting, and search and rescue).

Hence, the primary risk to rare plants and/or habitat is the potential for impact within the distance designation corridors for dispersed camping where approved along authorized routes. Certainly not all distance designation corridors will be suitable for dispersed camping use, and not all of the distance designations have potential habitat for rare plants. However, I chose to analyze the total number of acres of distance designation area because this is where the risks and potential threats to rare plants will most likely occur. I suggest that this approach is likely the most unbiased considering the lack of information available about the specific characteristics of

each distance designation corridor. Looking at the relative proportions for all distance designation corridors is the most objective approach.

In the analysis of distance designation corridors along the routes, the following general rules of thumb provide estimates of the area for each mile of route. For a 150-ft distance designation on each side of the route, the area is about 36.5 acres per mile of route. For a 300-ft distance designation, the area is roughly 73 acres per mile of route.

Description of Analysis and Tables

This analysis compared the amount of area where unrestricted and open use was allowable for each of the five alternatives. Next, the areas from distance designations for roads and trails were evaluated and compared for each alternative. The proportions of total areas were also analyzed. This analysis was completed for the entire forest (see Table 2) and for the rare plant study area (see Table 3).

Table 2. Acres of unrestricted/open use, roads and trails, and percent of the total area by alternative for the entire Fishlake NF. (1,564,236 acres for this analysis includes inholdings.)

	Total Acres by Alternative for the Entire Forest Area				
Designation	Alternative 1 (Unrestricted, A Areas, and 300' Exemption on Roads)	Alternative 2 (Open Areas, 300' Distance Designation for Dispersed Camping along Roads and Motorized Trails)	Alternative 3 (Open Areas, 150' Distance Designation for Dispersed Camping along Roads and Motorized Trails)	Alternative 4 (150' Distance Designation for Dispersed Camping along Roads and Motorized Trails)	Alternative 5 (Open Areas, 150' Distance Designation for Dispersed Camping along Roads and Motorized Trails)
Unrestricted/ Open Use	909,115	973	969	0	879
Roads and Trails	25,318	160,532	83,910	64,838	84,295
Total	934,433	161,505	84,879	64,838	85,174
Percent of Total Area (1,564,236)	60%	10%	5%	4%	5%

Alternative 1 has unrestricted/open use and road exemption areas that include 60% (934,433/1,564,236 acres) of the area of the entire Fishlake NF. Alternative 2 has six times less potential risk to the total area than the current condition. Alternatives 3, 4 and 5 have 12, 15 and 12 times less area of potential impact, respectively, than the current condition. Also, under the action alternatives, these four percentages should decline over the next five years as dispersed camping distance designations are either dropped or replaced by designated routes.

Next, compare the total unrestricted/open use acres in Alternative 5 to the total of unrestricted acres in Alternative 1 (909,115 vs. 879 acres). There is a difference of **3 orders of magnitude; 1,034 times (or 103,400%) less** area that might be exposed to unrestricted/open use motorized activity.

Table 3. Acres of unrestricted/open use, roads and trails, and percent of the total area by alternative for the rare plant emphasis study area. (The 122,447 acres for this analysis includes inholdings.)

Designation	Total Acres by Alternative for the Rare Plant Emphasis Study Area				
	Alternative 1 (Unrestricted, A Areas, and 300' Exemption on Roads)	Alternative 2 (Open Areas, 300' Distance Designation for Dispersed Camping along Roads and Motorized Trails)	Alternative 3 (Open Areas, 150' Distance Designation for Dispersed Camping along Roads and Motorized Trails)	Alternative 4 (150' Distance Designation for Dispersed Camping along Roads and Motorized Trails)	Alternative 5 (Open Areas, 150' Distance Designation for Dispersed Camping along Roads and Motorized Trails)
Unrestricted/ Open Use	31,488	193	189	0	189
Road and Trails	4,478	9,499	5,223	4,189	5,082
Total	35,966	9,692	5,412	4,189	5,271
Percent of Total Area (122,447 ac.)	29%	8%	4%	3%	4%

Alternative 1 has unrestricted/open use and road exemption areas in nearly 30% (35,966/122,447 acres) of the total study area. (This is better from the start; Alternative 1 has just half of the relative potential impact compared to the percentage of the entire forest shown in the first table.) Alternative 2 has 3.7 times less area of risk to the rare plant emphasis study area than does Alternative 1. Alternatives 3, 4 and 5 have 7, 10, and 7 times less area of potential impact, respectively than does the current situation.

When comparing the total unrestricted/open use acres in Alternatives 2, 3 and 5 to the total of unrestricted/open use acres in Alternative 1 (31,488/193 or 189 acres), the analysis shows about **165 times (16,500%) less** area that might be exposed to unrestricted/open use motorized activity. This is a huge benefit for rare plant habitat (see Figure 2).

Findings Common to All Alternatives

Occupied or known potential habitat for San Rafael cactus does not occur within 1.5 miles of authorized or potentially designated routes on the Fishlake NF. Occupied or known potential habitat for Maguire daisy does not occur within one half mile of authorized or potentially designated routes. The one federally listed plant species that requires greater analysis is Last Chance townsendia. Its occupied habitat occurs in several locations within the distance designation corridors and at times less than one foot from the routes' tracks.

The recovery plan for Last Chance townsendia does not designate any critical habitat; however, threats to this species include road development and road building (US Fish and Wildlife Service 1993). The plan states the following:

At present, off-road vehicle use on *T. aprica* habitat is light. However, with possible human population increases in the region in which *T. aprica* occurs, and with increasing popularity and availability of improved off-road vehicles, off-road vehicle use is expected to increase. This can be expected to result in an increase in damage to the habitat of *T. aprica*. The Bureau of Land Management, Forest Service, and National Park Service should develop off-road vehicle use plans that prohibit off-road vehicle use on *T. aprica* habitat.

Nearly 120 person days have been spent surveying in the rare plant emphasis study area in 2004, 2005, and 2006 (see Figure 1). At least seven locations exist where Last Chance townsendia plants are growing close to established routes. Individual townsendia plants appear to be colonizing disturbed substrates at 3 of the 7 sites.

Based on survey information and field observations the following conditions were applied uniformly in each of the four action alternatives where occupied habitat and/or habitat known to be suitable for Last Chance townsendia is involved. Some routes through these areas have been changed to non-motorized (including one of the seven sites just mentioned); other routes will be obliterated. All other routes are restricted to the route prism only, without any distance designation for dispersed camping. (Also forest-wide, the distance designation is removed from any route that is gated closed.) Thus, for all federally listed plant species that are known to occur on the forest, there are not any routes that pass through occupied, or known suitable habitat, where the dispersed camping distance designation corridors are allowed.

Effects Analysis for Alternative 1 (no action—existing condition)

Direct Effects and Indirect Effects

Motorized activity probably will increase and disturbance to populations of Last Chance townsendia will become increasingly more apparent. Examples were documented from one trail where allowable motorized activity was moving into areas occupied by the threatened, Last Chance townsendia.

Over time the habitat for Last Chance townsendia probably will begin to erode and compromise the unique nature of these ecosystems.

Cumulative Effects

The “no action” or “no change” alternative is the existing condition and would be the continuation of current management. With respect to Last Chance townsendia and occupied habitat, the fabric of the landscape is just beginning to fray. Based on numerous field observations, I feel that none of the **populations** of Last Chance townsendia have been affected substantially, yet. Nonetheless, individuals and occupied habitat have begun to be disturbed by motorized vehicles in just the past few years. This is not surprising given the marked increase in OHV activity during this period. If the existing condition were to continue, clearly the frayed portions of these habitats would begin to unravel and some populations would be affected substantially and thus are at risk.

Determinations

I estimated the number of years before substantial negative effects would occur to a population. These estimates are subjective. The estimates are also relative and could be considered as an ordinal ranking; nevertheless, I chose to use a range of years. Table 4 shows all of the listed plant species that are known to occur, or have potential habitat, on the Fishlake NF.

Table 4. Alternative 1: Years estimated before substantial negative effects from OHV activity might occur to a population for every listed plant species that is known to occur on the Fishlake NF.

Common Name	Federal Status	Years Estimated Before Substantial Negative Effects from OHV Activity Occur to a Population
San Rafael cactus	Endangered	no effect anticipated
Last Chance townsendia	Threatened	5 to 10
Maguire daisy	Threatened	no effect anticipated

Effects Analysis for Alternatives 2, 3, 4, and 5

Direct Effects and Indirect Effects

There will be no direct effects to any threatened or endangered plant species, or to any critical habitat. The tracks of the motorized routes in the project area are not suitable habitat for the threatened or endangered species known to occur on the Fishlake National Forest. The improvements result from specific route designations and closing the forest to unrestricted motorized cross-country travel.

One route was converted to non-motorized use in the four action alternatives because current use has OHV's running cross-country over individual plants. The distance designation is removed from all other routes where routes go through known occupied habitat. This action removes the threat of direct impact with OHV traffic on individuals of Last Chance townsendia, or its potential habitat, on thousands of acres.

There are at least six situations where individual plants occur in close proximity to the wheel tracks of the established route. Although the distance designation is removed and motorized travel to dispersed campsites will be illegal, there remains a slight potential for damage to suitable habitat and individual plants where machines may be allowed to park at the edge of the established route. In any of these cases, the proposed actions are more restrictive than the current allowable use. Areas where individuals of Last Chance townsendia are known to occur near motorized routes will be monitored by the forest and the results shared with the Service annually. If individual townsendia plants become adversely affected, the forest will coordinate with the Service and make appropriate adjustments. The route designation management plan recommends that routes may need to be realigned in some cases where individuals of listed species are at risk. There is one segment of the Great Western trail that will be realigned because Last Chance townsendia was discovered growing adjacent to the established route.

The integrity and quality of ecosystems on more than 900,000 acres of land administered by the Fishlake National Forest probably will improve over time.

OHV traffic moving along the trails stirs up dust. Some of the dust may become deposited on individuals of Last Chance townsendia. This is considered a low risk to the population of the species overall.

There is the possibility of additional visitor foot traffic in some areas when riders might park along the route and walk to some vista or point of interest. This is considered to be a very low probability event.

Invasive species were considered and then dropped as an indirect effect because only a few noxious weeds are known to occur in the eastern portion of the forest. The likelihood of invasive species spreading into potential habitats of these threatened and endangered species as a result of OHV traffic is extremely low.

Cumulative Effects

Appendix C of this EIS contains a list of projects on the Fishlake National Forest for the present or foreseeable future. These other projects will require analysis and would not proceed if significant effects and/or incremental impacts were to occur to these rare plant species. Also, those future activities that occur off-route will not interact with unrestricted OHV cross-country travel. Therefore, the cumulative effects of this project with the other foreseeable projects will not cause significant adverse resource impacts to rare plant species or their habitats. The following two paragraphs are in the final EIS.

The Forest Supervisor may continue to issue travel management orders pursuant to part 261, subpart B, and impose temporary, emergency closures based on a determination of considerable adverse effects pursuant to §212.52(b)(2). This includes considerable adverse impacts to soil, vegetation, wildlife, wildlife habitat, cultural resources, Threatened or Endangered species, other authorized uses, or other resources, until the effects are mitigated or eliminated and measures are implemented to prevent future recurrence. The proposed actions do not in any way limit this existing authority.

We will consult the U.S. Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act. The act requires consultation to ensure that any site-specific plan (1) is not likely to jeopardize continued existence of any species listed or proposed to be listed, or (2) does not destroy or adversely modify critical habitat. Access standards in effect for existing recovery plans will be followed. In addition, the authorized officer retains authority to immediately close areas, roads, or trails if motorized use is causing or will cause considerable adverse environmental effects to species listed or proposed to be listed.

Also, monitoring protocols are being developed for Last Chance townsendia that are intended to be used consistently by all agencies throughout the species' range. Prototypes were field tested at two of the populations on the Fishlake NF. (personal communication with Dr. Walter Fertig; April 21, 2005 and February 7, 2006)

Determinations

I determine that the routes analyzed in each of the alternatives in the off highway vehicle route designation project will have “**no effect**” on any populations of the following federally listed plant species: the threatened Maguire daisy (*Erigeron maguirei*) or the endangered San Rafael cactus (*Pediocactus despainii*). This is based on life histories, field surveys and habitat assessments for the threatened and endangered plant species on the Fishlake National Forest and as indicated in Table 1. This is also based on the fact that motorized routes do not go within 1.5 miles of known populations, or known potential habitat, of San Rafael cactus or within one half mile of known populations, or known potential habitat, of Maguire daisy. In addition, the populations for both of these species occur in remote areas that are protected by steep slopes and cliffs. It is unlikely that motorized traffic could ever get to these locations.

In contrast, my determination is that Alternative 5, as modified and proposed in this access management plan, “**may affect – not likely to adversely affect**” populations of the federally listed threatened species Last Chance townsendia (*Townsendia aprica*). This determination is based on the fact that suitable habitat and a few individuals in some populations may continue to be affected, while other populations will not be affected. In all cases, where suitable habitat and a few individual plants of Last Chance townsendia may be affected, my determination is that the population as a whole will not be at risk. In any case, the chosen alternative is more restrictive than the current allowable use. Populations of Last Chance townsendia will be benefited over time due to the substantial reduction of the area where motorized activity will be allowed.

References

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U.S. Fish and Wildlife Service. 1993. Last Chance townsendia recovery plan. Region 6, U.S. Fish and Wildlife Service, Lakewood, Colorado. 18 pp.

Welsh, Stanley L., N. Duane Atwood, Sherel Goodrich, and Larry Higgins, editors. 2003. A Utah flora, third edition, revised. Print Services, Brigham Young University, Provo, Utah. pp 77, 185, 237.

Figure 1. The rare plant emphasis study area has 122,447 acres including inholdings.

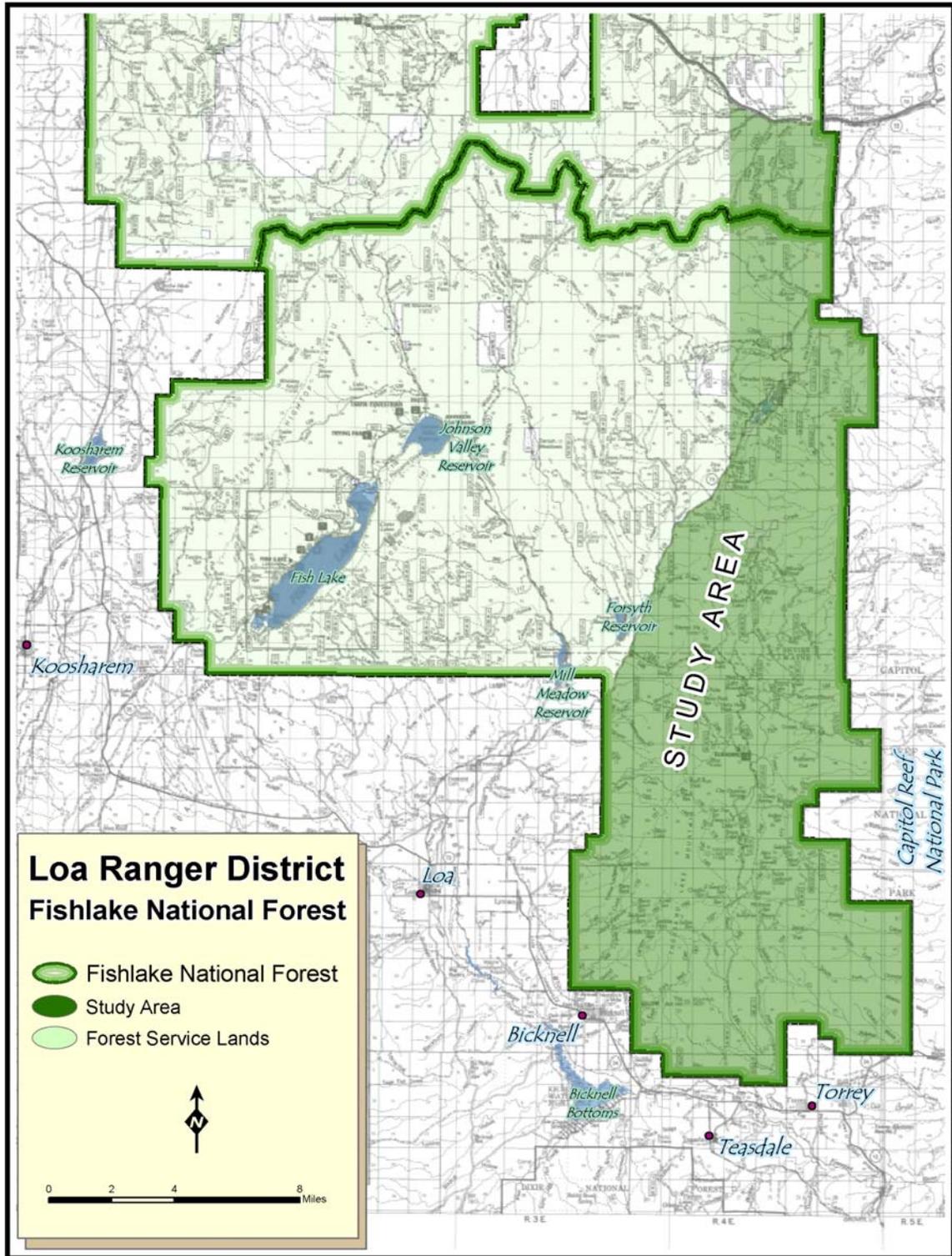


Figure 2. Alternative 5: Rare Plant Emphasis Study Area that shows routes without distance designation corridors for dispersed camping including obliterated routes.

