Specialist Report

# Off Highway Vehicle (OHV)
# Access Management and Route Designation Project

## Fishlake National Forest

December 5, 2006

## Rare Plants

## Management Indicator Plant Species

## Invasive Species

(Also: Research Natural Areas, Other Vegetation, and Fire and Fuels)

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## Introduction

Forest Service Chief Dale Bosworth describes four major threats (issues) to National Forest System lands: 1) fire and fuels, 2) invasive species, 3) habitat fragmentation, and 4) unmanaged recreation.

Chief Bosworth said, "The fourth great issue is unmanaged outdoor recreation…. The issue is this. Back when we had light recreational use, we didn't need to manage it; but now that it's heavier, we do…. OHV's are a great way to experience the outdoors, and only a tiny fraction of the users leave lasting traces by going cross-country. But the number of people who own OHV's has just exploded in recent years. In 2000, it reached almost 36 million. Even a tiny percentage of impact from all those millions of users is still a lot of impact. Each year, we get hundreds of miles of what we euphemistically refer to as 'unplanned roads and trails.'"

The first Fishlake NF travel map was developed in 1976 and has been revised several times. In 1986, the OHV's considered were 4x4 trucks. Now the dominant threat to the landscapes from unmanaged OHV access is with all terrain vehicle (ATV) activities. Over the past decade, substantial changes occurred in the numbers, kinds and magnitude of disturbance from OHV's on the Fishlake NF.

This report has two major sections: rare plants and invasive species. Each section concludes with some mitigations and/or recommendations. This report analyzes the effects of the five alternatives in each of these two major sections. At the end of this report, summary comments are given for Research Natural Areas (RNA), other vegetation, and fire and fuels.

## Recommendations for Overall Implementation

All trails designated as foot and horse traffic only should be restored to a single track. Along some routes, OHV use has created a second track. Obliterate the second track and preclude the perceived "invitation" for additional motorized use.

Current management allows access to and egress from dispersed recreation sites within 100 yards of the designated route. This is 100 yards, 300 feet, not 300 yards or even 400 feet. Along some routes this standard has been exceeded, and the current

situation will need to be addressed. Either some existing, unimproved camping sites will need to be closed and restored with vegetation, or else access granted to existing, designated dispersed recreation sites that are more than 300 feet (or 150 feet for Alternatives 3, 4, and 5) from the mapped routes.

## Rare Plants

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.

The remaining 15 Forest Service sensitive plant species are often clustered in restricted locations but collectively distributed in all seven subsections on the Fishlake NF. USDA Forest Service Manual 2670 pertains to threatened, endangered, and sensitive plants and animals. Section 2670.22 is specific to sensitive species and states: "Develop and implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions."

### 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 rare plant emphasis study area: Bicknell milkvetch, Bicknell thelesperma, pinnate spring-parsley, Rabbit Valley gilia (or Wonderland alice-flower), and Ward beardtongue. Ward beardtongue is the only one of these five species that occurs on the forest outside of this rare plant emphasis study area. (Also, Ward beardtongue has the widest distribution of any sensitive species on the forest and occurs on all four districts.) 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 encompasses 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. More than two person days were spent surveying these three subunits for possible occurrences of sensitive species. One individual of Ward beardtongue was observed in the southern subunit. Ward beardtongue is widely distributed on the forest, the only sensitive species to occur on all four ranger districts, and is locally distributed in a large population that extends well beyond the perimeter of this subunit. (These Richfield open use areas are more that 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).

Basic Assumption and Analysis of Routes, Exemptions and Distance Designations

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 1) and for the rare plant emphasis study area (see Table 2).

**Table 1**. 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 ac.) of area within the administrative forest boundary. 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 ac.). 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 2**. Acres of unrestricted/open use, roads and trails, and percent of the total area by alternative for the rare plant emphasis study area. (The122,447 acres for this analysis includes inholdings.)

| | **Total Acres by Alternative for the Rare Plant Emphasis Study 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 | 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) | 29% | 8% | 4% | 3% | 4% |

Alternative 1 has unrestricted/open use and road exemption areas in nearly 30% (35,966/122,447 ac.) 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 ac.), 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.

## 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.

Last Chance townsendia (*Townsendia aprica*) is a member of the sunflower family and grows to be about 0.5 to 1 inch tall. This species is endemic; its worldwide distribution is limited to portions of Emery, Sevier and Wayne counties in south-central Utah. It is

found in pinyon/juniper and salt desert shrub communities on clay-silt soils of the Arapien and Mancos Shale formations in habitats that range in elevation from 6,000 to over 8,000 feet. April thru May is the blooming season. (Rodriguez 2006)

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 in the project area, there are not any routes that pass through occupied or known suitable habitat where the dispersed camping distance designation corridors are allowed.

For pinnate spring parsley and Wonderland alice-flower (also known as Rabbit Valley gilia), known occupied habitat does not occur within the 300-ft distance designation. However, Individual gilia were close to the route distance designation corridor at one location, and that route's distance designation was removed in each of the action alternatives.

**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.

In one area, two-wheeled motorized trail bikes were traveling through a population of Wonderland alice-flower. However, this was in a "C Area" on the current travel map that was officially closed to all motorized travel. Allowable cross-country travel away from designated routes is occurring in occupied habitat for both creeping draba and Beaver Mountain groundsel at a rate that causes concern currently.

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. Likewise, I feel that none of the populations of the Forest Service sensitive plant species have been impacted 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 the 18 plant species on the Regional Forester's Sensitive Species List that are known to occur, or have potential habitat, on the Fishlake NF.

**Table 3**. Alternative 1: Years estimated before substantial negative effects or impacts from OHV activity occur to a population for every plant species on the Regional Forester's sensitive species list that is known to occur on the Fishlake NF.

| **Common Name** | **Federal Status** | **Years Estimated *Before* Substantial Negative Effects or Impacts 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 |
| Arizona willow | Sensitive | 10 to 20 |
| Barneby woody aster | Sensitive | 10 to 20 |
| Beaver Mountain groundsel | Sensitive | 5 to 10 |
| Bicknell milkvetch | Sensitive | 10 to 20 |
| Bicknell thelesperma | Sensitive | 10 to 20 |
| creeping draba | Sensitive | 5 to 10 |
| Elsinore buckwheat | Sensitive | 10 to 20 |
| Fish Lake naiad | Sensitive | no impact anticipated |
| little penstemon | Sensitive | 10 to 20 |

| | | |
|---|---|---|
| Nevada willowherb | Sensitive | 10 to 20 |
| pinnate spring-parsley | Sensitive | 10 to 20 |
| Sevier townsendia | Sensitive | 10 to 20 |
| Tushar paintbrush | Sensitive | 10 to 20 |
| Ward beardtongue | Sensitive | 10 to 20 |
| Wonderland alice-flower or Rabbit Valley gilia | Sensitive | 10 to 20 |

**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 as a whole, 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. The forest will monitor areas where individuals of Last Chance townsendia are known to occur near motorized routes 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 project 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.

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.

The potential for suitable and occupied habitat of listed species was the major reason for this concentrated survey effort. However, the substantial number of routes without distance designation corridors in this rare plant emphasis study area provides much greater protection to the individuals and suitable habitats for the five sensitive species as well. Some routes through these areas have been changed to non-motorized; other routes will be obliterated. (Also forest-wide, the distance designation is removed from any route that is gated closed.) Within the rare plant emphasis study area for any of the four action alternatives, there is not any known occupied habitat in any distance designation corridor for either pinnate spring-parsley or Rabbit Valley gilia (also called Wonderland alice-flower). There is some occupied habitat within some of the distance designations for Bicknell milkvetch, Bicknell thelesperma, and Ward beardtongue. However, Bicknell milkvetch is the most abundant sensitive species in this emphasis area; Bicknell thelesperma is relatively abundant within portions of the emphasis area, and Ward beardtongue is widely distributed on the forest. In all cases for these three species, their populations within this rare plant emphasis study area extend well beyond any of the distance designation corridors and the viability of any single population will not be at risk with the implementation of Alternative 5 as modified.

Comparable field surveys specific to the OHV route project were not conducted on the forest for the area of the forest west of the rare plant emphasis area. The remaining sensitive species either have wider distributions, or if smaller distributions, then are not commonly found in the vicinity of motorize routes. The magnitudes of difference for the action alternatives displayed in Table 2 convey the tremendous benefits to the sensitive species on the forest. The integrity and quality of ecosystems on more that 900,000 acres of land administered by the Fishlake National Forest will improve over time when Alternative 5, as modified, is implemented, and allowable open use and cross-country travel are reduced to less than 900 acres.

OHV traffic moving along the trails stirs up dust. Some of the dust may become deposited on individuals of the sensitive species. This is considered a low risk to the populations of these 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 Plant Species: The introduction of invasive species has the potential to increase and may be an indirect effect. The Fishlake National Forest has a current GIS layer of the known locations of noxious weeds. The actual area of infestation is less than 20,000 acres. Thus, nearly 99% of the acres managed by the forest are noxious-weed-free.

The Fishlake National Forest has an award winning noxious weed management program. Because of the relatively low number of acres infested with noxious weeds, public awareness, education, and an aggressive early detection/rapid response program are key forest objectives. The Fishlake NF conducted a successful weed bounties program in 2005. Participants were paid a monetary bounty for location information about previously unmapped areas of noxious weeds. The Forest is a signatory on four cooperative weed management areas (CWMAs). One CWMA project was recently funded and completed. The Weed Warrior Program to "Wash Before You Ride" was introduced in September 2006 at the Rocky Mountain ATV Jamboree. These are example of the types of educational and public outreach opportunities that are actively being promoted by the forest.

From the weed inventory, it is obvious that many of the noxious weed species spread along travel corridors. The strength of this OHV travel management plan is to reduce by more than 99.9% the number of acres currently available for cross-country travel. (The reduction in cross-country travel is from more than 900,000 acres to less than 900 acres.) Therefore, the potential spread of invasive species in these areas will be substantially reduced through this new access management plan. The likelihood of invasive species establishing and spreading into potential habitats of these sensitive plant species as a result of OHV traffic is considered to be 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.

I determine that implementing Alternative 5, as modified, in the Fishlake OHV Route Designation project will have "**no impact**" on the individuals or habitat of Fishlake naiad (*Najas caespitosa*). This is based on the fact that Fishlake naiad in known on the forest only from Fish Lake where it was found growing in shallow water to about 12 inches deep.

In contrast, I determine that implementing Alternative 5, as modified, in the Fishlake OHV Route Designation Project "**may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species**" for the following species: Barneby woody aster (*Aster kingii* var. *barnebyana*), Bicknell milkvetch (*Astragalus consobrinus*), Tushar Mountain paintbrush (*Castilleja parvula* var. *parvula*), pinnate spring-parsley (*Cymopteris beckii*),

creeping draba (*Draba sobolifera*), Nevada willowherb (*Epilobium nevadense*), Elsinore buckwheat (*Eriogonum batemanii* var. *ostlundii*), Rabbit Valley gilia or Wonderland alice-flower (*Gilia caespitosa* or *Alicellia caespitosa*), little penstemon (*Penstemon parvus*), Ward beardtongue (*Penstemon wardii*), Arizona willow (*Salix arizonica*), Beaver Mountain groundsel (*Senecio castoreus*), Bicknell thelesperma (*Thelesperma subnudum* var. *alpinum*), and Sevier townsendia (*Townsendia jonesii* var. *lutea*). This determination is based on field surveys, life histories and habitat assessments for the sensitive plant species, or their habitat, known to occur on the Fishlake National Forest and as displayed in Table 1 with the accompanying biological evaluation. Although some impacts to individuals or habitat may occur with the project implementation, I determine that full implementation of Alternative 5 will provide an enormous benefit to these species over time as allowable cross-country travel on the forest is reduced from more than 900,000 acres to less than 900 acres and the type of allowable use is restricted within the distance designation corridors. Also, this benefit will increase and as distance designations continue to be removed from motorized routes over the next several years.

**Management Indicator Plant Species (MIS)**

The Forest Plan (1986) shows Rydberg's milkvetch (*Astragalus perianus*) as a Management Indicator Species (MIS), the only plant MIS, because it was federally listed as threatened when the Forest Plan was signed. However, the Fish and Wildlife Service officially delisted Rydberg milkvetch in 1989 following extensive field surveys and interagency collaboration in the 1980's. In April 1994 the species was dropped from the Regional Forester's Sensitive Species list.

Habitat for this species is tertiary igneous gravels, often on barrens in alpine or montane sites in tundra and spruce-fir communities at 2135 to 3480 m (Welsh *et al*. 2003). Occupied habitat for this species occurs within the proposed action area for the Fishlake OHV Route Designation Project.

Rodriguez (2006) describes several monitoring surveys that were completed for Rydberg's milkvetch in 2002 and concludes with this statement. "There are 31 known locations on the Beaver, Loa, and Richfield Ranger Districts, which contain approximately 95,000+ individuals. Based on the data discussed above, Rydberg's milkvetch is stable and viable across the Forest."

<u>Determinations</u>
Over time Alternative 1 might adversely impact some populations of this species. I determined that none of the action alternatives (Alternatives 2, 3, 4 and 5) will substantially impact this MIS species. I determine that the implementation of Alternative 5, as modified, will not have adverse effects on the populations, or the viability as a species, of Rydberg's milkvetch.

**Mitigations and Recommendations for Rare Plants**

Fortunately, this proposed action is timely for rare plants. Within another five years, serious threats would likely begin to be manifest; risks to many populations of rare plants might be evident in 10 years. The important thing is to take action now. The action alternatives would all benefit rare plants on the Fishlake with Alternatives 3, 4 and 5 to a much greater degree than Alternative 2.

Mitigations

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 Last Chance townsendia plants become adversely affected, the forest will coordinate with the Service and make appropriate adjustments.

Relocate routes that have individuals of Last Chance townsendia growing within close proximity of the routes' tracks.

Do not permit fuel wood gathering in areas of occupied or potential habitat for Last Chance townsendia in accordance with recovery plan (US Fish and Wildlife Service 1993).

Designate distinct boundaries for the open use areas that are clearly discernable on the ground for all users of the areas. This is particularly important for the southern subunit of the open use area near Richfield.

Mitigate possible affects in the future to listed plant species or their habitats for populations that are discovered after this plan is approved and implemented in accordance with the Last Chance townsendia recovery plan (US Fish and Wildlife Service 1993) or other recovery plans that may be written.

Recommendations

Do not designate firewood areas where a population of any Forest Service sensitive species is known to occur.

With case-by-case evaluation, consider restricting motorized access to dispersed camping areas where known occupied or potential habitat for the 15 non-federally listed sensitive plant species occur.

Update the GIS layer of the known locations for dispersed use sites that have allowable motorized access. This will be the baseline for dispersed use sites, and thus the basis to preclude the continual addition of new dispersed use sites in areas of potential rare plant habitat.

## Invasive Species

Chief Bosworth stated that invasive species are the greatest threat for the potential loss of biodiversity on National Forest System lands. The focus used to be on noxious weeds, but now the issue is much broader and extends to other invasive plants and animals, a portion of which are diseases and insects.

The kinds of insects, diseases, and parasites common to this forest-wide analysis area do not necessarily use roads and motorized trails as collectors or corridors for the spread of these organisms. These issues are more area specific, often confined to a watershed or district, and thus are not appropriate to consider at this forest-wide scale. In any case, this proposed action only deals with existing routes.

This report addresses the major concerns for invasive plant species on the Fishlake with specific attention to the officially listed state and county noxious weeds and five other weedy species. These five, have sufficiently low enough acreages on the Forest that prevention, combined with early detection and rapid response, is still the best management strategy.

Belliston *et al*. (2004) describes the spread of invasive noxious weeds as a biological wildfire that is uncontrolled and spreading rapidly with resultant huge economic losses. Transportation rights-of-way, waterways, recreation sites, and disturbed rangelands are all prone to increase the spread of invasive weedy species. This booklet indicates that nationally the rate of spread of noxious weeds exceeds 4,600 acres per day on federal lands alone. "Weeds not only reduce crop yield, but can damage watersheds, increase soil erosion, negatively impact wildland plant and animal communities, and adversely affect outdoor recreation. Ecological damage from uncontrolled noxious weed infestations can be permanent, leaving lands unable to return naturally to their pre-invasion condition."

Portions of this forest-wide analysis area occur in nine counties in southwestern Utah including: Beaver, Garfield, Iron, Juab, Millard, Piute, Sanpete, Sevier, and Wayne. However, Iron and Sanpete counties have less than 2,500 acres each on the Fishlake NF. *The Noxious Weed Field Guide for Utah* contains information about the distribution of these species by county (Belliston *et al.* 2004). The guide divides information into sections for state noxious weeds and county noxious weeds. Species of concern for this analysis on the state list include bermudagrass, field bindweed, hoary cress (whitetop), diffuse knapweed, Russian knapweed, spotted knapweed, squarrose knapweed, purple loosestrife, perennial pepperweed (tall whitetop), quackgrass, leafy spurge, Canada thistle, musk thistle, Scotch thistle, and dyer's woad. Species of concern for this analysis on the county list are blue lettuce, buffalobur, bull thistle, and Russian olive. All of these species may occur in proximity to roads and trails and, given the right conditions, are capable of migrating into the disturbed areas along these corridors and/or hitchhiking on animals, people, and vehicles that move along road, trail,

and stream corridors. The risk and speed of noxious weed migration increases dramatically in the stream corridors. Consider this analogy of a weed infestation: it's like a bomb going off in slow motion!

Noxious weeds and other weedy species are opportunistic and establish quickly in disturbed areas that lack robust competition from established native vegetation. Roads generally have a band of disturbed area on each side of the hardened surface. These disturbed road edges include both cut banks and fill slopes and generally provide continuous areas that become migration routes for weedy species. Additional information about noxious weeds on the Fishlake NF may be found in the Environmental Assessment for Noxious Weed Management (Fishlake National Forest 2003).

Travel routes are often invasion corridors for the spread of noxious weeds and other invasive species. At least three noxious weed species (i.e., dyer's woad, leafy spurge, and spotted knapweed) have the potential to dominate our landscapes nearly to the tops of the mountains if they get started in an area. Vivid examples from the Wasatch-Cache National Forest where dyer's woad spread rapidly along travel routes all the way up the mountains underscore the reality of this threat.

In this OHV analysis area the spread of invasive species is greatly controlled by the combination of precipitation and elevation. For example, cheatgrass is prone to spread in disturbed areas with less than 8 inches of precipitation and below 7,000 feet elevation. Fortunately, only a small portion of the Fishlake NF has this combination of conditions. This example illustrates another important distinction. Cheatgrass is an invasive species and undesirable on the landscape; however, cheatgrass is not listed as a noxious species.

Some other undesirable species including black henbane, dalmation toad flax, houndstongue, poison ivy, saltcedar (tamarisk), water hemlock, and yellow toad flax are not officially listed as noxious for this area. However, these species are truly obnoxious, and prudence would suggest vigilance for these as well. This would be especially important for areas where these species are just beginning to establish. Again, early detection and rapid response will be key to success in our war on invasive plant species.

Consistent monitoring along the Forest's roads and trails for the presence of noxious weeds and other undesirable weedy species will be essential to early detection. This monitoring data will enhance the opportunity to prevent, or proactively mitigate, the spread of undesirable weedy species.

Gelbard and Belnap (2003) conducted a study of roads as conduits for exotic plant invasions in southern Utah's semiarid landscapes. Roads appear to be a substantial contributing factor in the continuing spread of exotic plants. They found that plant invasions move from roadsides to adjacent ecosystems of natural habitats; however, disturbed habitats are most vulnerable to invasion. The following three points are taken

from their conclusions. "Prevention of invasion in this semiarid landscape (is) still the best tool for effective weed management." "Clearly, roads should be considered important targets of both local and regional efforts to prevent and control exotic plant invasions." They concluded that monitoring could then allow for the use of adaptive management to decrease "the likelihood that roadside invasions will spread into adjacent ecosystems."

A study in Wisconsin found that roads seemed to provide a disturbance corridor (Watkins *et al*. 2003). The presence of roads can alter plant species composition and abundance of interior forest conditions beyond the road corridor. In a study on plant invasion on the Colorado Front Range, Fornwalt *et al*. (2003) stated "both protected and managed areas can be invaded by non-native plant species, and at similar intensities."

The risks from invasive plant species establishing along the designated motorized route corridors and in distance designation corridors are substantially higher than the risks or threats from motorized activities to rare plants or their habitats. The reason is that invasive plants can establish quickly and spread rapidly, particularly in disturbed areas. Travel routes, by their very nature, are disturbed areas. Nearly all of the area of the Fishlake NF is at risk for the introduction and spread of noxious and other invasive weeds. The greatest threat is where the active spread is already occurring on the Pahvant Range and Canyon Mountains of the Fillmore Ranger District and in the entire Salina Creek drainage on the Richfield Ranger District.

**Comparison of Alternatives**

This comparison of alternatives looks at the entire area inside the forest boundary, which has 1,564,236 acres including inholdings (see Table 1).

Alternative 1 has unrestricted areas and roads and trails with exemptions in 60% of the total area administrative boundary of the Forest. Alternative 2 has six times less area of risk to the establishment of weedy species. Alternatives 3, 4 and 5 have 12, 15 and 12 times less area of potential impact, respectively.

Next, compare the total open use and distance designation acres in Alternative 5 to the total of unrestricted acres in Alternative 1 in the same table. There is a difference of **3 orders of magnitude; 1,034 times less** area that might be exposed to unrestricted/open use motorized activity.

**Effects Analysis for Alternative 1**

Direct Effects and Indirect Effects

The spread of weed seed along motorized routes and in unrestricted areas probably would continue to increase in proportion to the increase in motorized activity. Some of these alien species will be aggressive invaders and listed as noxious weeds.

Over time the integrity of the forest's ecosystems probably would be compromised as the vigor of native vegetation is strained by competition from and increasing number of non-native species.

Cumulative Effects

Because of their disturbed character, roads and trails would increasingly be corridors for the spread of weedy species to the extent that the roads and trails are in close proximity to populations of undesirable plant species. Also, new routes would continue to develop in unrestricted areas thus increasing the amount of disturbed area for potential investation. In addition, vehicles often transport weed seed in the undercarriage and mixed with mud on tire treads and in wheel wells. The risk of weed migration would increase as more of the factors for the spread of weedy species occur in close proximity (e.g., roads, campgrounds, streams, trailheads and trails). To the extent that the other projects in Appendix C in this EIS add additional roads and disturbed areas, the threat of invasive plant species establishing in this area will increase the risk to plant communities across the forest.

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

Direct Effects and Indirect Effects

Although the amount of area for allowable motorized activity is reduced substantially with these alternatives, the amount of activity on designated routes will likely increase. The risk of weed seed being spread would continue to remain high since this risk is a function of the amount of use, or the number of visits, of motorized activity. In addition, these aggressive plant species can spread into landscapes beyond the travel corridors and distance designation corridors along the roads and trails. Thus on balance with these four alternatives, noxious weeds and other invasive species would continue to spread on the forest.

Clearly, implementation of alternative 2, 3, 4 or 5 would reduce the amount of area that typically would be monitored for early detection and rapid response activities in noxious weed management. However, over time the vigor of some of the forest's ecosystems probably would be compromised by competition from an increasing number of noxious weeds and other non-native, invasive plant species.

Cumulative Effects

To the extent that the projects in Appendix C in this EIS add additional roads and disturbed areas, the threat of invasive plant species establishing in this area would increase the risk to plant communities across the forest. There could be a real potential with cumulative interactions for off-route activies.

**Recommendations and Mitigations for Invasive Species**

As we move forward with access management, positive attitudes, education, and public awareness will be critical to success with invasive species management. Recognition and acceptance of the fact that invasive species are a great threat to sustaining biodiversity on the Forest's landscapes is essential.

The threat of noxious weeds is recognized with the requirement that only weed-free hay and feed be used for horses and other animals when they are fed on the Forest. With respect to this access management discussion, this becomes a direct and powerful intersection of the Chief Bosworth's 2nd and 4th threats: invasive species and unmanaged recreation. The issue of invasive species is critical to sustainable ecosystems.

Mitigations
Strongly recommend (almost require) that all OHV's from outside the seven-county area surrounding the forest be washed and free of any weed seed before coming onto the forest and being used on any systems routes. (The seven counties are Beaver, Garfield, Juab, Millard, Piute, Sevier, and Wayne.)

Monitor roads and trails systematically with the focus of early detection and rapid response. Increase the level of monitoring for invasive plants that may become established at dispersed use sites. Use the highest level of monitoring for invasive plants at high-use campsites and trailheads.

Increase the level of monitoring in the open use areas and the major routes leading to these areas. It is anticipated that these areas will have proportionately more visitors. Increased use translates to increased risk for the introduction of seeds from invasive plant species.

Recommendations
Recommend that all vehicles be washed and free of weed seed before traveling on the Forest's designated motorized roads or trails.

Proactively use posters and public service announcements for this education campaign. Feature a poster campaign and share a message of responsible recreation. Continue to use themes like: 'Be a Weed Warrior' and 'Wash before you Ride!'

Develop a program to provide mud flaps imprinted with "weed warrior" or "wash and ride" themes to people who purchase ATV's or other OHV equipment.

Continue involvement in the new cooperative weed management areas in the counties and use those networks to provide information and education. Such activities would help create a sense of awareness with the public.

### Summary for Invasive Species

The Fishlake National Forest has a current GIS layer of the known locations of noxious weeds. The actual area of infestation is less than 20,000 acres. Thus, nearly 99% of the acres managed by the forest are noxious-weed-free.

From the weed inventory, it is obvious that many of the noxious weed species spread along travel corridors. These corridors are also some of the easiest places to look for invasive species. The strength of this OHV travel management plan is to reduce by more than 99.9% the number of acres currently available for cross-country travel. (The reduction in cross-country travel is from more than 900,000 acres to less than 900 acres.) Therefore, the potential spread of invasive species in these areas will be substantially reduced through this new access management plan.

The Fishlake National Forest has an award winning noxious weed management program. Because of the relatively low number of acres infested with noxious weeds, public awareness, education, and an aggressive early detection/rapid response program are key forest objectives. The Fishlake NF conducted a successful weed bounties program in 2005. Participants were paid a monetary bounty for location information about previously unmapped areas of noxious weeds. The Forest is a signatory on four cooperative weed management areas (CWMAs). One CWMA project was recently funded and completed. The Weed Warrior Program to "Wash Before You Ride" was introduced in September 2006 at the Rocky Mountain ATV Jamboree. These are example of the types of educational and public outreach opportunities that are actively being promoted by the forest.

## Other Assessment Considerations for Rare Plants and Invasive Species

Three other topics are considered jointly for the rare plants and invasive species sections discussed above: short-term uses and long-term productivity, unavoidable adverse effects, and irreversible and irretrievable commitments of resources. Each of these topics is considered in the context of Alternative 1 (no action—exiting condition) and Alternatives 2, 3, 4 and 5 (the action alternatives).

### Short-term Uses and Long-term Productivity

The no action alternative does allow the most short-term use; however, this would cause the most impact to rare plants and their habitats and the greatest likelihood of a more rapid increase of invasive species, thus resulting in loss productivity in the long-term.

The four action alternatives greatly reduce the short-term use for a substantial area of the forest. Long-term productivity would be enhanced for rare plants and their habitats.

Also, decreased cross-country travel over much of the forest would reduce the risk of the rapid spread of invasive species.

### Unavoidable Adverse Effects

It is inevitable that some violations, intentional or unintentional, of the motorized travel plan will occur. It is anticipated that implementation of this project would reduce resource damage from unavoidable effects because the travel rules would be simpler, more consistent, and explained better to the public. Also, appropriate law enforcement may reduce trespass activity.

### Irreversible and Irretrievable Commitments of Resources

The no action alternative has the greatest potential to cause irreversible and irretrievable commitments of rare plants and their habitat and to increase the number of acres invested with, and compromised by, invasive species. All action alternatives would reduce commitments of resources due to these causes; Alternatives 3, 4, and 5 would reduce these commitments substantially more than would Alternative 2.

## Research Naturals Areas (RNA)

Four established RNAs occur on the Fishlake NF: Bullion Canyon, Old Woman Cove, Partridge Mountain, and Upper Fish Creek. With one exception, all designated routes in all of the alternatives are at least a half-mile from the boundaries of the RNAs. Partridge Mountain RNA is the exception. There the routes are closer than a half-mile on the north and south. The designated motorized trail is about 500 feet from the RNA boundary at one point on the east side. However, this RNA has steep terrain where its boundary is well above the motorized trails, generally 300 to 1,000 feet in elevation. Therefore, it is held that none of the OHV route alternatives, including the distance designation corridors for dispersed camping, would have either a direct, indirect, or cumulative effect on resource characteristics of any of the four RNAs on the Fishlake NF. These areas are also closed to winter motorized use on the current travel plan and in the proposed actions.

## Other Vegetation

The Fishlake NF roads analysis (USDA Forest Service 2003) and the roads supplement for this OHV route designation project address relationships of motorized access and vegetation management. Other issues related to vegetation are beyond the scope of this analysis and EIS.

## Fire and Fuels

Clearly, routes may need to be used for administrative purposes in connection with fire suppression activities. The motorized routes may provide quicker access but not necessarily an adequate firebreak. Gucinski *et al*. (2001) and USDA Forest Service (2003) suggest one of the long-held tenets of fire fighting is that improved road access improves the efficiency and effectiveness of fire suppression activities. In contrast, both of these references also state that increased access probably results in more human-caused ignitions, although the ramifications of this increase differ from location to location. In balance, none of the alternatives in this EIS would appreciably alter our ability to suppress fire. Other issues of fire and fuels are beyond the scope of this analysis and EIS.

### Recommendation for Fire and Fuels

Equip OHV's and ATV's with spark arrestors when these machines are used in areas of highly flammable fuels.

Wash all equipment and vehicles used for fire suppression before going on to the forest and after leaving the forest to help reduce the spread of seeds from invasive plant species.

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**Figure 1**. The rare plant emphasis study area (122,447 acres including inholdings).

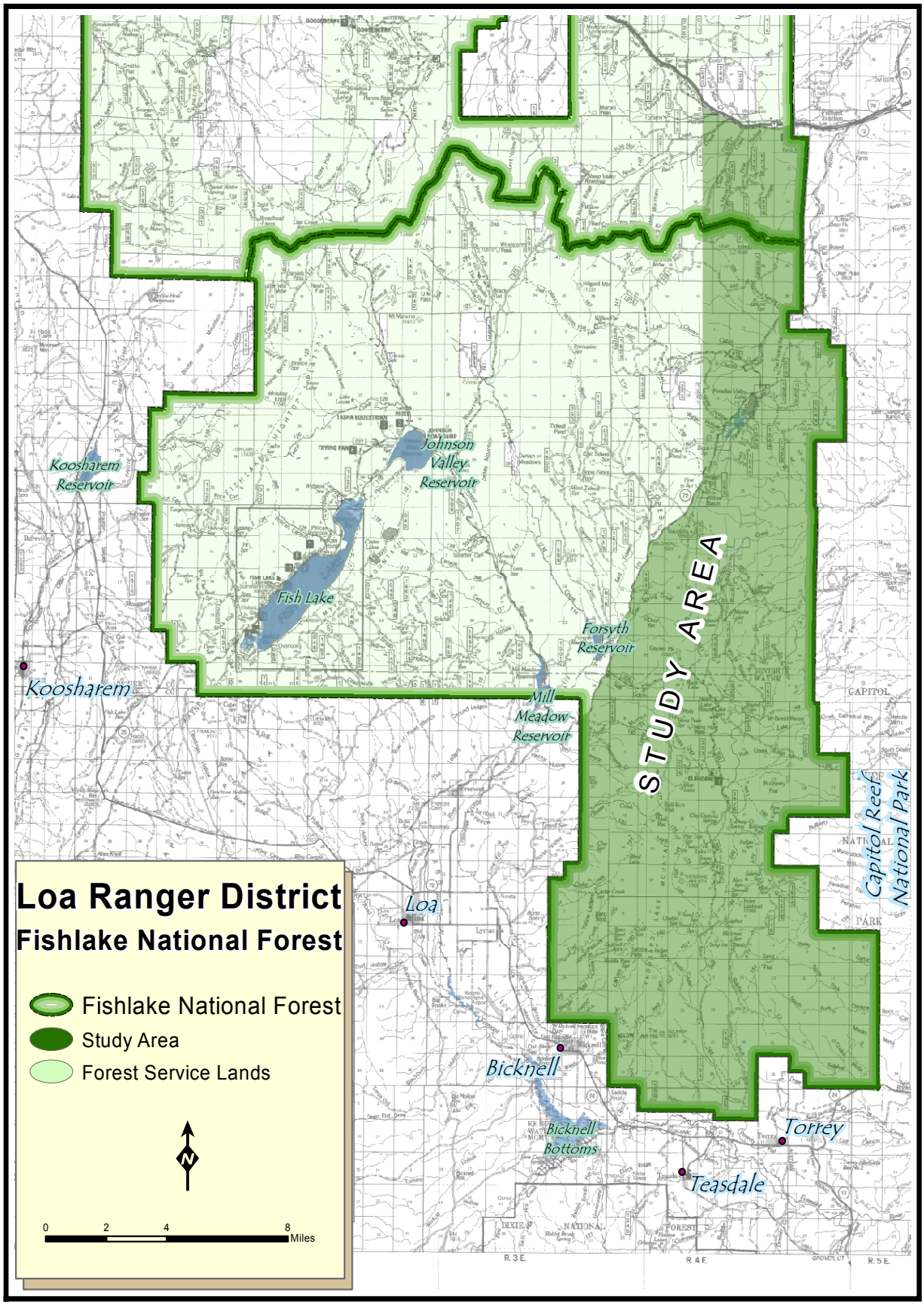

**Figure 2**. Alternative 5: Rare Plant Emphasis Study Area that shows routes without distance designation corridors for dispersed camping including obliterated routes.