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# **BIOLOGICAL EVALUATION FOR THE TOOLBOX FIRE RECOVERY PROJECT**

## **ENDANGERED, THREATENED, PROPOSED, OR SENSITIVE PLANTS**

**28 April 2003**

### **Introduction and Regulatory Framework**

The purpose of this biological evaluation is to comply with requirements of the Endangered Species Act of 1973, as amended. The Forest Service Manual (USDA Forest Service, 1995b) and the Land and Resource Management Plan for the Fremont National Forest (LMRP) (USDA Forest Service, 1989, 109) both state habitat for sensitive plant and animal species shall be Managed or Protected to ensure that the species do not become threatened or endangered due to Forest Service actions. To ensure sensitive species do not become threatened or endangered, the LMRP states management guides (referred to as conservation strategies) are to be developed and used. A conservation strategy is the Forest Service's documentation for the management actions necessary to conserve a species, species group or ecosystem. A conservation strategy uses information in the Conservation Assessment to establish conservation objectives and develop the management actions needed to accomplish those objectives. Conservation strategies help recommend management strategies which when applied, ensure long-term species viability. The Forest Service Manual (FSM) states habitats for all existing native and desired nonnative plants, fish, and wildlife should be managed to maintain at least viable populations for each species (USDA Forest Service, 1995a). A viable population consists of a number of individuals adequately distributed throughout their range necessary to perpetuate the existence of the species in natural, genetically stable, self-sustaining populations (Phillips and Wooley, 1994).

This biological evaluation is being written for the Toolbox Fire Recovery Project (referred to as the Toolbox project). On July 12, 2002, a lightning storm ignited numerous fires on the Fremont National Forest. Two of those fires, the Toolbox and Silver, continued to grow, creating the Toolbox Complex Fire. Within the Toolbox project area, the Forest Service manages the National Forest Systems lands and the Bureau of Land Management (BLM) manages the remainder of the federal lands. Privately owned industrial and non-industrial forestlands are also present. Within the Toolbox project boundaries, two separate fires burned. The west section of the Toolbox project is the Silver fire portion and the east section is the Toolbox fire portion.

### **Prefield Review**

As of December 1, 2002, the Fremont and the Winema National Forests were combined creating the Fremont-Winema National Forests. However, the Region 6 Sensitive Species Plant List currently in effect recognizes each forest individually. Therefore, any sensitive plant species Documented or Suspected to occur on the Winema side of the Forest that is not Documented or Suspected to occur on the Fremont side will not be addressed in this report.

Documented or suspected habitat for threatened or endangered plant species does not occur on the Fremont portion of the Fremont-Winema National Forests. However, there is habitat that is required to meet Forest Service objectives for sensitive plant species. The April 1999 version of the Region 6 Sensitive Species Plant List was reviewed and any species with suspected or documented occurrences within the Fremont side of the Fremont-Winema National Forests are shown in Table 1 (located at the end of the BE) (USDA Forest Service, Region 6, 1999).

To determine known locations of sensitive plant species, the GIS Sensitive Plant Species Layer (TESPHAB) for the Fremont portion of the Fremont-Winema National Forests was consulted. This layer was updated in 2000, using information from past surveys and the Oregon Natural Heritage Database, to include all known occurrences for sensitive plant species on the Fremont National Forest. Field surveys conducted in 2001 revealed new sightings for sensitive species on the Bly, Paisley, and Silver Lake Ranger Districts. However, none of these sightings were discovered within the Toolbox project boundaries. Field surveys conducted in 2002 did not reveal additional sightings for sensitive plants on the Silver Lake Ranger District.

Fourteen sensitive plant species are documented or suspected to occur on the Fremont portion of the Fremont-Winema National Forests. Only one sensitive plant species, *Castilleja chlorotica*, (green-tinged paintbrush), has a known occurrence within the Toolbox fire portion of the Toolbox project (Table 1). *Castilleja chlorotica* is managed under a Conservation Strategy that was signed by the Forest Supervisor, Charles R. Graham, on April 19, 1994. The conservation strategy's objective is to, "...protect, enhance or restore green-tinged paintbrush habitat to ensure long-term species viability" (Phillips and Wooley, 1994). To meet the objectives of the conservation strategy, sites of *Castilleja chlorotica* were designated as either Protected or Managed. Protected sites were designated, "...to achieve long term species viability by maintaining existing genetic variance and promoting reproductive success (by protecting healthy core populations throughout the species range)" (Phillips and Wooley, 1994). Once a site has been selected as Protected, any habitat manipulation will be designated to maintain, enhance, or restore the site. Within Managed sites, experimentation in management activities is allowed to develop a set of maintenance, enhancement, and restoration methodologies (Phillips and Wooley, 1994). The goal of the Managed sites is to determine the impact various management practices will have on the species.

*Castilleja chlorotica* is a perennial forb found at mid to high elevation. Within this elevation range, it occurs in two broad habitat settings based on environmental conditions (Phillips and Wooley, 1994). The following information is taken from the Conservation Strategy for *Castilleja chlorotica* written by Sarah J. Phillips and Robert L. Wooley in 1994. The first habitat is found on exposed summits, ridgelines, cliff bases, and convex slopes in shrub-graminoid communities and forest openings. The soils are usually poor, shallow, well-drained, and gravelly or rocky. For this habitat, sites range from openings and forest edges in *Pinus contorta* (Lodgepole pine) or *Pinus contorta* – *Pinus albicaulis* (Lodgepole pine – White bark pine) forests to harsh, wind-swept bluffs above the surrounding forest communities. The second habitat tends to be on sites that are less exposed, more tolerable sites. *Castilleja chlorotica* plants are found in shrub-graminoid forest openings and will commonly creep into forest edges. However, this species is rarely found where canopy cover is over 50 percent. Vegetation communities range from *Pinus contorta* – *Pinus albicaulis* (Lodgepole pine – White bark pine) forests with moderate canopy cover to pure *Pinus contorta* (Lodgepole pine) stands. *Castilleja chlorotica* plants can also be found in *Pinus* sp. – *Abies* sp. (Pine sp. – Fir sp.) forests to open, park-like *Pinus ponderosa* (Ponderosa pine) expanses. *Castilleja chlorotica* plants also exist in non-forested, sagebrush – bunchgrass communities. Most of the sites within these vegetation communities have poor, shallow, well-drained, gravelly or rocky soils.

On the Fremont portion of the Fremont-Winema National Forests, about 6,000 acres of occupied *Castilleja chlorotica* habitat exists. The global core population of *Castilleja chlorotica* exists on the fault-block formation known as Winter Rim. Winter Rim is within the Silver Lake and Paisley Ranger District boundaries. Approximately 2,000 acres of *Castilleja chlorotica* plants can be found on Winter Rim within the Silver Lake Ranger District boundary. Of the 2,000 acres, approximately 1,000 acres have been designated as Protected, and the remaining 1,000 acres as Managed. Within the Winter Rim population, an estimated 500,000 individuals of *Castilleja chlorotica* exist. *Castilleja chlorotica* is found in Ponderosa pine/mountain big sagebrush/bluegrass plant associations. This plant association is a higher elevation, higher moisture regime association. There is only one place within the Toolbox project boundaries where this plant association occurs. It is on Winter Rim within the Toolbox fire portion.

Another sensitive species, *Iliamna bakeri*, has a documented occurrence on the Fremont portion of the Fremont-Winema National Forests. *Iliamna bakeri* can be found on hot, exposed sites like lava flows, barren south-facing slopes, or along dried creeks or harsh road beds (Meinke, 2001). However, they are primarily reported in areas that have recently experienced a burn (Meinke, 2001). Preferred habitat for *Iliamna bakeri* seems to be a dry hilltop with sandy soil that has little or no overtopping canopy (Wooley, 2000). On the Fremont, one population on the Lakeview Ranger District occurred within a large burned area with plant associations of Ponderosa pine (*Pinus ponderosa*), green leaf manzanita (*Arctostaphylos patula*), and rabbitbrush (*Chrysothamnus nauseosus*) (Wooley, 2000). *Iliamna bakeri* has also been found on the Bly Ranger District. On the Fremont portion of the Fremont-Winema National Forests, *Iliamna bakeri* sites appeared 6 to 8 years post-burn. Historically, *Iliamna bakeri* has not been found in past wildfires or prescribed burns on

the Silver Lake Ranger District. However, since *Iliamna bakeri* appears after fires, there is a minute possibility for this species to appear post-burn.

The Region 6 Sensitive Species Plant List is going through a revision. The revisions are expected to be finalized in January 2004. One possible addition to the sensitive list is *Eriogonum umbellatum* var *glaberrimum*. Historically, this species is found on the Fremont portion of the Fremont-Winema National Forests on the Lakeview Ranger District in the Steens Mountains and in the Warner Mountains in northern California (Zamudio, 2001). *Eriogonum umbellatum* var *glaberrimum* seems to occur on open, gravelly loam soils with scattered basalt rocks (Vrilakas, 2003). This species can be found on a 0 to 60 degree slope (Vrilakas, 2003). Plant associations are *Artemisia tridentata*, *Gilia aggregata*, *Castilleja miniata*, *Eriogonum umbellatum*, and *Linanthus* sp. (Vrilakas, 2003). If this species is added to the R6 Sensitive Species Plant List, then two sightings will need to be documented for the Silver Lake Ranger District. One of the two sightings is located inside the Toolbox fire portion.

To verify additional occupied or suitable habitat for sensitive plant species was not present within the Toolbox project boundaries, past field survey documentation was consulted. For the Toolbox fire portion, surveys for the Triad and Windmill Restoration Projects were checked. Occupied or suitable sensitive plant habitat was not present within the Windmill Restoration Project. *Castilleja chlorotica* was present within one of three separate areas for the Triad Restoration Project. It was also determined occupied or suitable sensitive plant habitat does not occur within the Silver fire portion. Records for the West Fork Silver Creek Restoration Project, 517 East, and Triad Restoration Project were consulted.

## Field Reconnaissance

On August 27, 2002, a field examination was conducted on Winter Rim in occupied *Castilleja chlorotica* habitat. On Winter Rim, the principle core population on the Silver Lake Ranger District did not burn. However, the field examination revealed that the mountain big sagebrush communities experienced a mosaic burn with 40 percent black and 60 percent unburned. On this field examination trip, though all populations of *Castilleja chlorotica* were not visited, it appeared the fires damaged only a small portion of the existing mountain big sagebrush/*Castilleja chlorotica* habitat.

Field examinations after the burn were only conducted in *Castilleja chlorotica* habitat due to the lack of occupied or suitable habitat present for other sensitive plant species. Surveys were not conducted for *Iliamna bakeri* because this species does not usually appear until 5 to 10 years post-burn.

## Toolbox Fire Portion

### Area of Analysis

The Toolbox fire portion lies within the Lower, East, and Upper Duncan Creek, Benny Creek, Middle Silver Creek, and a small portion of Thompson Reservoir and Upper Silver Creek subwatersheds. Within the Toolbox fire portion, the Forest Service manages the National Forest Systems lands and the Bureau of Land Management (BLM) manages the remainder of the federal land. All industrial forestland is owned by U.S. Timberlands, Co., L.P. (UST). There is a small portion of non-industrial forestlands within the Toolbox fire portion as well.

### Existing Conditions

After reviewing the GIS layer for sensitive plant species occurring within the Toolbox fire portion, one sensitive plant species *Castilleja chlorotica*, was found to occur. *Castilleja chlorotica* is only present on National Forest Systems lands within the Toolbox fire portion.

## Sensitive Plants

1. *Castilleja chlorotica* Piper green-tinged paintbrush  
 Status: USF&WS: SoC (Species of Concern)  
 Natural Heritage: G3/S3  
 Region 6: Sensitive Species List

*Castilleja chlorotica* (green-tinged paintbrush) is endemic to Oregon. Occupied habitat for *Castilleja chlorotica* exists on the Fremont portion of the Fremont-Winema National Forests, Deschutes National Forest, and the Prineville District of the BLM (Phillips and Wooley, 1994). About 95 percent of the known sites of *Castilleja chlorotica* occur on the Fremont portion of the Fremont-Winema National Forests. The core population of approximately 500,000 individuals occurs on Winter Rim. Winter Rim is located on the Silver Lake and Paisley Ranger Districts on the Fremont-Winema National Forests. Disjunct populations occur in a northward extending arc from the Silver Lake Ranger District to the Fort Rock Ranger District and BLM Prineville District. Several populations exist in the Gearheart Wilderness Area and on the summit of several mountains including Bald Mountain and Hagar Mountain.

*Castilleja chlorotica* is a perennial forb generally growing in shrub-graminoid openings on exposed, well-drained slopes and summits between mid to high elevation (Phillips and Wooley, 1994). It can also inhabit surrounding forest edges, forest openings, and sometimes grown under light to moderate canopy of mixed conifer (Phillips and Wooley, 1994). *Castilleja chlorotica* is hemiparasitic on other plants, primarily mountain big sagebrush (*Artemisia tridentata*) and bitterbrush (*Purshia tridentata*) (Phillips and Wooley, 1994). Being hemiparasitic, it derives some of its nutrition from other plants through shared root connections (Phillips and Wooley, 1994). Due to this hemiparasitic relationship, providing for *Castilleja chlorotica* means managing for both bitterbrush and mountain big sagebrush habitat.

Table 2 analyzes Protected and Managed *Castilleja chlorotica* habitat within the Toolbox fire portion. The analysis breaks down the habitats into the number of sites and acres that occur within the Toolbox fire portion, the Silver Lake Ranger District, and the Fremont portion of the Fremont-Winema National Forests. The information used for Table 2 was gathered and calculated using the GIS TESPAB layer for the Fremont National Forest.

**Table 2: Distribution of Occupied *Castilleja chlorotica* Habitat**

Analysis Area	Site Description	Number of Sites	Acres
Toolbox Project Boundaries: Toolbox fire portion	Protected	2	49
	Managed	6	34
Silver Lake Ranger District	Protected	11	959
	Managed	32	1,015
Fremont-Winema National Forests	Protected	29	1,360
	Managed	131	4,824

Table 2 shows approximately 49 acres of Protected *Castilleja chlorotica* habitat, and 34 acres of Managed habitat occurs within the Toolbox fire portion. Approximately 5.1 percent of the Protected *Castilleja chlorotica* habitat and 3.3 percent of Managed habitat on the Silver Lake Ranger District are located within the Toolbox fire portion. When looking at these numbers for the Fremont-Winema National Forests as a whole, 3.6 percent of Protected and 0.7 percent of Managed habitats are located within the Toolbox fire portion.

2. *Iliamna bakeri* (Jepson) Wiggins Baker’s globe mallow  
 Status: Natural Heritage: G3  
 Region 6: S2

Presently, 35-40 populations of this species are known to occur (Meinke, 2001). The majority of these populations are found in the Great Basin area of northeastern California (Meinke, 2001). However, it has been known to occur sporadically on the Fremont, Winema and Rogue River National Forests (Meinke, 2001). There have been documented occurrences on the Lakeview and Bly Ranger Districts on the Fremont portion of the Fremont-Winema National Forests.

When this species occurs in Oregon, it may persist for only a short time (Meinke, 2001). *Iliamna bakeri* can be found on hot, exposed sites like lava flows, barren south-facing slopes, or along dried creeks or harsh road beds (Meinke, 2001).

However, they are primarily reported in areas that have recently experienced a burn (Meinke, 2001). The majority of the populations in Klamath County, Oregon occurred at elevations of 4,500-6,000 feet. Common plant associations for Klamath County are Western Juniper (*Juniperus occidentalis*), curleaf mountain mahogany (*Cercocarpus ledifolius*), rabbitbrush (*Chrysothamnus nauseosus*), squawcarpet (*Ceanothus prostrates*), and sagebrush (*Artemisia tridentata*) (Wooley, 2000). Some populations were found in scattered or open Ponderosa pine (*Pinus ponderosa*) habitat (Wooley, 2000). On the Fremont, one population on the Lakeview Ranger District occurred within a large burned area with plant associations of Ponderosa pine (*Pinus ponderosa*), green leaf manzanita (*Arctostaphylos patula*), and rabbitbrush (*Chrysothamnus nauseosus*) (Wooley, 2000). Preferred habitat for *Iliamna bakeri* seems to be a dry hilltop with sandy soil that has little or no overtopping canopy (Wooley, 2000).

Even though Silver Lake Ranger District is on the northern edge of *Iliamna bakeri* range, there is a minute possibility this species may show up within the Toolbox project boundaries. This species is often undiscovered until it reaches maturity and produces large flowers (Wooley, 2003). This could be 5 to 10 years after the burn (Wooley, 2000). On the Fremont portion of the Fremont-Winema National Forests, *Iliamna bakeri* populations appeared 6 to 8 years post burn. Since fire salvage activities are time sensitive due to the deterioration of the timber, harvest activities are proposed to occur for a limited period soon after the burn. Currently, recommended monitoring of the burned area annually for a period of 5 to 7 years at the field check level by a botanist/ecologist is recommended (Wooley, 2003).

- 3. *Eriogonum umbellatum* var *glaberrimum*** (Gandg.) Reveal green buckwheat  
 Status: Natural Heritage: G5?/S1?  
 Region 6: Proposed revision to Region 6 Sensitive Species Plant List

*Eriogonum umbellatum* var *glaberrimum* is a potential addition to the Region 6 Sensitive Species Plant List. This list is expected to be finalized in January 2004. This species is found on the Fremont portion of the Fremont-Winema National Forests on the Bly Ranger District and in the Steens Mountains on the Lakeview Ranger District. It is also present in the Warner Mountains in northern California (Zamudio, 2001). This species seems to occur on open, gravelly loam soil with scattered basalt rocks (Vrilakas, 2003). *Eriogonum umbellatum* var *glaberrimum* can be found on a 0 to 60 degree slope (Vrilakas, 2003). Plant associations are *Artemisia tridentata*, *Gilia aggregata*, *Castilleja miniata*, *Eriogonum umbellatum*, and *Linanthus* sp. (Vrilakas, 2003). Two sites of the species have been found on the Silver Lake Ranger District. One of the two sites is located inside the Toolbox fire portion.

### Cultural and Medicinal Plants:

Table 3 displays some of the cultural and medicinal plants that may be found on the Fremont portion of the Fremont-Winema National Forests. These species have the potential to exist within the Toolbox project boundaries, however, the distribution and abundance of these species within the project area is unknown. Other cultural and medicinal plants may be present as well. These species tend to occur in riparian areas, wet to dry meadows, or open pine and sagebrush shrublands. Many of the species are adapted to periodic fire and will likely respond favorably to the Toolbox fire.

**Table 3: Cultural, Food and Medicinal Plants**

<i>Scientific Name</i>	<i>Common Name</i>	<i>Scientific Name</i>	<i>Common Name</i>
<i>Arnica cordifolia</i>	Heartleaf Arnica	<i>Lomatium nudicaule</i>	Pestle Lomatium
<i>Arnica mollis</i>		<i>Pedicularis atollens</i>	Baby Elephant Head
<i>Calochortus macrocarpus</i>	Sagebrush Mariposa Lily	<i>Perideridia gairdneri</i>	
<i>Cammassia quamash</i>	Blue Camas, Quamash	<i>Pedicularis groenlandica</i>	Bull Elephant Heads
<i>Lewisia rediviva</i>	Bitterroot	<i>Perideridia oregana</i>	Oregon Yampah
<i>Lomatium dissectum</i>	Desert Parsley	<i>Pedicularis racemosa</i>	Parrots Beak
<i>Lomatium macrocarpum</i>	Large Fruited Lomatium	<i>Triteleia hyacinthine</i>	

## Environmental Consequences

Within Appendix A, the past, present, and reasonably foreseeable future activities are provided in a table format. All the activities listed in Appendix A tables were considered when compiling this report. However, only some of the activities

mentioned in Appendix A have the potential to produce a cumulative effect on native and sensitive plant species. These activities will be disclosed and discussed below. Emphasis will be placed on activities within Benny Creek, East Duncan Creek, and Upper Duncan Creek subwatersheds, where *Castilleja chlorotica* habitat is present. Activities in the Silver fire portion are not considered here, because the Silver fire lies outside of these subwatersheds and does not contain *Castilleja chlorotica* habitat.

### **Past Activities Leading to Existing Conditions:**

The National Forest System lands within the Toolbox fire portion have experienced many changes during the 1900s. Exact figures on timber harvest acres are not available, but it can be presumed that essentially all of National Forest Systems lands have had some level of harvest during the past 100 years (Appendix A, Table A-2). Timber harvest removed the larger diameter trees, providing sunlight and additional nutrients for the regrowth of smaller diameter trees. The smaller diameter trees grew, and as a result, created denser stands than what is presumed to be the historic condition for the stands. Fire suppression during the past 100 years has also played a major role in the current vegetative conditions. Without periodic, low intensity fires, trees were allowed to grow as dense as the conditions allowed. Between harvest activities and fire suppression, open, park-like stands are not as apparent as they once have been. One sensitive plant species, *Castilleja chlorotica*, is found within the Toolbox fire portion on National Forest Systems lands. *Castilleja chlorotica* prefers areas with less than 40 percent canopy cover. It can be hypothesized that as smaller diameter trees grew, canopy openings were reduced, and therefore, occupied or suitable habitat for *Castilleja chlorotica* were probably reduced as well.

On industrial forestlands within the Toolbox fire portion, extensive logging has occurred throughout the twentieth century (Appendix A, Table A-13). Logging operations began in the 1940s, and by 2000, almost all commercial forest stands were logged at least once. Minimal precommercial thinning operations were conducted during this period of time.

Fire suppression activities have been occurring since the mid-1910s. From 1948-2001, Table A-1 (Appendix A) shows acres burned by wildfire for the eight subwatersheds pertinent to the Toolbox Fire Recovery Project. For this fifty-year period, a relatively small amount of acres experienced a wildfire. Approximately 530 acres burned in the Benny Creek subwatershed, 9 acres in the East Duncan Creek subwatershed, and 130 acres in the Upper Duncan Creek subwatershed. Due to past fire suppression on Winter Rim, mountain big sagebrush was allowed to dominate the grass plant community and reach a mature age. Some of the mature mountain big sagebrush on Winter Rim is estimated to be approximately 40 years old (Phillips and Wooley, 1994). It is believed these extensive older mountain big sagebrush stands may be key in facilitating the full development of the *Castilleja chlorotica*/mountain big sagebrush hemiparasitic relationship (Phillips and Wooley, 1994).

Even though past fire suppression has allowed mountain big sagebrush to reach maturity, it has also allowed ground fuels to accumulate. Table A-3 (Appendix A) displays past fuels reduction activities by subwatershed. Approximately 4,260 acres in the Benny Creek and 250 acres in the Upper Duncan Creek subwatersheds have been underburned. Additionally, 360 acres in the Been Creek subwatershed were mowed. East Duncan Creek has not had under burning projects conducted within it. Burning of landings and slash piles after harvest activities occurred in all three of the subwatersheds mentioned above. Under burning, mowing, and burning of landings and slash piles have reduced the ground fuel accumulation, leading to a reduction in the fire hazard in treated areas. Fuels reduction activities were not found to have occurred on BLM lands, industrial forestlands, or non-industrial forestlands (Appendix A, Table A-3).

Another activity that has influenced the current vegetative condition on Winter Rim is livestock grazing. Sheep were grazed between 1900-1960s, with the heaviest grazing believed to have occurred between 1900-1922 (Phillips and Wooley, 1994). The end of common grazing allotments occurred in the early 1960s when defined allotments and pastures were created through the construction of fences (Appendix A, Table A-8). Two of the allotments, Winter Rim and Foster Butte, contain *Castilleja chlorotica* habitat.

Accurate data on the grazing situation on Winter Rim Allotment began in the mid-1960s (Appendix A, Table A-8). From 1966-1980, 1,500-2,000 sheep grazed July through August/September, with no use occurring in 1978. In 1981, the Winter Rim Allotment was converted from sheep to cattle. At this time, 300 head were permitted to graze open season (July 1 through September 30). In 1990, the use was reduced to 282 head of cattle using the two-pasture rotation system. In 2001 and 2002, 660 cattle used the Winter Rim Allotment June 15 through July 25, early season.

Foster Butte Allotment was grazed primarily by sheep until converted to cattle in the late 1940s. From 1966-1979, 1,602 head of cattle grazed from May 21 through September 20. During this period, a rest rotation grazing system was in place. In 1980, a 6-pasture rotation system with rest, deferment, and early season use was introduced. Between 1980 and 1993, 6,807 AMUs (Animal Use Months) were permitted. In 1993, an early season grazing system began continues today between late May through late July, early August. In 1993 through 2002, 6,297 AMUs were permitted in the Foster Butte Allotment. The two pastures within the Foster Butte Allotment of importance to *Castilleja chlorotica* habitat are Sycan and Foster.

During the time when the Toolbox Complex Fires were burning, a third fire, the Winter fire, was burning just southeast of the Toolbox fire. The Winter fire burned approximately 34,000 acres (USDA Forest Service, 2003, Chapter 1). This fire burned on the east side of Winter Rim near *Castilleja chlorotica* habitat. The threat of particular concern is the spread of noxious weeds due to the amount of bulldozer lines and the influx of equipment, personnel, and vehicles during the fire suppression effort. The disturbance created by the construction of fire line during the suppression process created prime habitat for noxious weeds. Due to the proximity of *Castilleja* plants to the Winter fire, the activities occurring on the Winter fire could have a cumulative effect on the *Castilleja chlorotica* habitat.

Suppression activities used during the Toolbox fire complex include some of the most noticeable past effects in the project area. Within the Toolbox portion, retardant, and firing/burnout operations, in conjunction with bulldozer line, were used (Appendix A, Table A-1). The retardant drops and the firing/burnout operations occurred in the Lower Duncan subwatershed. This subwatershed is far enough away from the *Castilleja chlorotica* habitat that these activities are unlikely to have affected the plants. Approximately 236 miles of bulldozer line were constructed for suppression reasons (140 miles constructed in the Toolbox fire portion and 96 miles in the Silver fire portion). Some of the bulldozer lines are located outside the Toolbox project boundaries; however, all the bulldozer lines will be included within the cumulative effects analysis. The bulldozer line constructed within Benny Creek (31 miles), East Duncan Creek (9 miles), and Upper Duncan Creek (29 miles) subwatersheds have the potential to produce cumulative effects on *Castilleja chlorotica* habitat (Appendix A, Table A-1). Approximately 2 acres (1.4 miles) of bulldozer line were constructed through Protected *Castilleja chlorotica* habitat, and 1.9 acres (1.3 miles) through Managed habitat. All of the bulldozer line constructed within Protected *Castilleja chlorotica* habitat occurred within the Toolbox fire portion perimeter. For the Managed *Castilleja chlorotica* habitat, approximately 0.6 acres (0.4 miles) of bulldozer line were constructed within the Toolbox fire portion perimeter, while 1.3 acres (0.9 miles) were constructed outside.

Overall, bulldozer lines affected 0.2 percent of Protected habitat within the Silver Lake Ranger District and 0.15 percent within the Fremont portion of the Fremont-Winema National Forests. The bulldozer lines affected 0.2 percent of Managed habitat within the Silver Lake Ranger District and 0.04 percent within the Fremont portion of the Fremont-Winema National Forests. These figures are approximate, because the location of the constructed bulldozer lines in the GIS layers may not be completely accurate.

The bulldozer line also created prime habitat for noxious weeds. With the magnitude of the Toolbox Complex Fire, additional resources were brought in from places that are outside Lake County and from other states. This influx of equipment, personnel, and vehicles may have brought noxious weed seeds with them. There is a probability that the amount of noxious weed sites will increase, especially in the rehabilitated bulldozer lines. There is also a possibility that different noxious weed species will appear due to the broad geographical range the equipment, personnel, and vehicles came from. The increased risk of noxious weeds establishing on bulldozer lines, increases the risk of noxious weeds invading *Castilleja chlorotica* habitat. In an attempt to keep noxious weeds out of the bulldozer lines in and adjacent to *Castilleja chlorotica* habitat, the bulldozer lines will be monitored minimally once a year for three to five years.

The treatment of noxious weeds has been occurring on the National Forest Systems lands as well as BLM lands in past years. In 2002, the Forest Service and BLM began separate three-year contracts for the treatment of noxious weeds with a private entity. Past treatment of noxious weeds has not only reduced the number of existing sites, but within the noxious weed sites still remaining, the density of plants has been reduced considerably for both National Forest Systems and BLM lands (Appendix A, Table A-4). Noxious weed control in the project area is ongoing for National Forest Systems lands, as described in the 1998 Environmental Assessment for the Management of Noxious Weeds for the Fremont National Forest. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. For further information on the noxious weed condition for the Silver Lake Ranger District, see the Noxious Weed section in Chapter 3.

## **Direct and Indirect Effects**

### **Common to All Alternatives**

There is insufficient information on the location and abundance of cultural and medicinal plants within the Toolbox project boundaries to compare the effects of the action alternatives on these species. Cultural and medicinal species tend to occur in riparian, meadow, and shrubland habitats. These areas are likely to be minimally impacted by the Toolbox fire and proposed activities. Salvage and fuels treatment activities will be concentrated in more heavily timbered areas outside of riparian zones. As a result, these plants are likely to persist after the project, regardless of which alternative is selected.

Implementation of all alternatives will be done in compliance with the existing Conservation Strategy for *Castilleja chlorotica*, which identifies Protected and Managed habitat.

For this analysis, the effects of the alternatives were assessed under the assumption that all *Castilleja chlorotica* sites survived the fire. Surveying will be done during the summer of 2003 to determine burn intensity and the probability of *Castilleja chlorotica* survival within Managed sites. If habitat does not have sagebrush remaining, then it can be assumed *Castilleja chlorotica* will vanish from the area, due to loss of the host plants. If some sagebrush habitat survived the fire, then *Castilleja chlorotica* plants can be expected to remain on the site. Mitigations described under Alternatives C, D, E, G, and H below will be applied to occupied habitat only.

Noxious weed control in the project area is ongoing, as described in the 1998 Environmental Assessment for the Management of Noxious Weeds for the Fremont National Forest. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. For further information on noxious weeds, see the Noxious Weed section in Chapter 3.

### **Alternative A**

The No Action Alternative would leave the proposed activity areas in their post-fire condition. Additional fire recovery activities would not occur on National Forest Systems lands, other than completion of activities proposed by the Burned Area Emergency Recovery (BAER) plan (Appendix A, Table A-7). No additional ground disturbance would occur in the project area.

If harvest activities do not occur, then there is a predicted increase in ground fuel accumulation due to the fire-killed trees falling down in 15 to 20 years. With this predicted increase in ground fuel accumulation comes a predicted increase in the probability of future high severity fires, especially in areas predicted to have an accumulation greater than 20 tons per acre (TPA) (Shelmerdine, 2003). Increasing the probability for future high severity fires increases the risk of sensitive plant habitat burning. For some sensitive species, this would be beneficial, however, for *Castilleja chlorotica*, this would mean eliminating the mountain big sagebrush, its' hemiparasitic host. Alternative A would result in a higher risk of losing *Castilleja chlorotica* habitat than would be present under the action Alternatives C, D, E, G, and H.

With no additional ground disturbance occurring, noxious weed habitat would not be increased above the existing condition. Noxious weed invasion has the potential to create an adverse environment for sensitive plants and other native species. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. The risk of noxious weed invasion in the project area is discussed in the Noxious Weed section of Chapter 3.

### **Alternatives C, G, and H**

Alternatives C, G, and H are being grouped together due to their levels of proposed activities. Alternatives C, G, and H propose a range of approximately 6,700-7,800 acres of commercial salvage for the Toolbox fire portion. The difference in commercial salvage acres between Alternatives C, G, and H is not a factor for the effects on native and sensitive plant habitat.

Ground-disturbing activities such as machine piling and burning of slash, site preparation, machine skidding, and pulling line for large diameter trees during timber harvest can uproot adult *Castilleja chlorotica* plants (Phillips and Wooley, 1994). This could reduce the population's ability to resprout and reseed after the disturbance (Phillips and Wooley, 1994). These activities can also remove *Castilleja chlorotica*'s host plants (mountain big sagebrush and bitterbrush). Construction of landings, skid trails, roads or trails in existing *Castilleja chlorotica* populations could permanently eliminate habitat for this species (Phillips and Wooley, 1994). *Castilleja chlorotica* is a perennial, resprouting each year from a rhizome (Phillips and Wooley, 1994). This species would appear to benefit from light to moderate periodic fires (Phillips and Wooley, 1994). However, the host species (sagebrush and bitterbrush) would probably be destroyed by fire since these species are susceptible to moderate or light burning (Phillips and Wooley, 1994).

During implementation of Alternatives C, G, and H, Protected *Castilleja chlorotica* habitat will be excluded from treatment units. Harvest activities and construction of landings, skid trails, temporary roads, activities fuels treatment, prescribed burning, site prep and reforestation, along with other ground disturbing activities will be prohibited in Protected *Castilleja chlorotica* habitat. Proposed Harvest Units #166, #173, and #174 border Protected *Castilleja chlorotica* habitat. Within these harvest units, a mitigation is in effect requiring trees, which could potentially reach the Protected habitat, be directionally felled to avoid *Castilleja chlorotica*. Trained botanical personnel will monitor the unit boundaries to ensure *Castilleja chlorotica* is excluded. Chapter 2 contains a list of mitigations for each resource, including the ones mentioned above and below.

Mitigation will be used to protect *Castilleja chlorotica* plants in Managed habitat. Harvesting will occur within Managed *Castilleja chlorotica* habitat in Units #131, #134, #172, and #173. To minimize damage to existing plants, a mitigation requires that trained botanical personnel monitor unit layout to ensure skid trails and landings avoid plants, to the extent possible. In addition, trees within these units that could potentially reach the Managed habitat boundaries when cut, will be directionally felled to avoid the Managed habitat areas.

Harvest Units #131 and #134 have greater than 20 TPA predicted fuel loading and are therefore subject to activities fuels treatments in Alternatives C, G, and H. A mitigation requires that trained botanical personnel will mark the boundaries of the Managed *Castilleja chlorotica* habitat within Harvest Units #131 and #134 to ensure these areas are excluded from activities fuel treatments.

Additional fuels treatments outside of harvest units are proposed for Alternative G. Alternative G is proposing to conduct activities fuels treatment on National Forest Systems lands that are within a quarter mile of private lands. This would mean fuels treatments outside harvest units and additional activities fuels treatments within Harvest Units #131 and #134. A mitigation requires that the *Castilleja chlorotica* habitat within these harvest units be marked by trained botanical personnel to ensure the plants are not included within the burn boundary.

Proposed harvest activities in Alternatives C, G, and H would reduce ground fuels accumulation. Reducing the future ground fuels accumulations would decrease the potential for future high severity fires. In the long-term, this would reduce the risk of losing *Castilleja chlorotica* habitat to wildfire. With the additional fuels treatment occurring in Alternative G, the potential for future high severity fires is even lower than for the other alternatives.

Following harvest, reforestation will occur in Units #131, #134, #172, and #173. With the current stocking standards, no more than 40 percent canopy closure is expected to occur. Therefore, habitat for *Castilleja chlorotica* would continue to exist in these units. The fall before planting is scheduled to occur, trained botanical personnel will place pin flags at each clump of *Castilleja chlorotica* in Harvest Units #131, #134, #172, and #173. This will allow the planters to avoid planting the trees directly on *Castilleja chlorotica* plants.

Alternatives C, G, and H propose a range of 2,400–3,500 acres for prescribed burning. Prescribed burning would not occur in Managed *Castilleja chlorotica* habitat in Alternative C and H. However, Alternative G proposes to prescribe burn a quarter mile buffers between private property and National Forest Systems lands. This would affect Harvest Unit #131 and #134. A mitigation requires that the Managed *Castilleja chlorotica* habitat within these harvest units be excluded from the burn boundary. Trained botanical personnel are required to verify the burn boundary to ensure the Managed habitats are excluded.

For Alternatives C, G, and H, a temporary road is proposed to border the edge of the Managed *Castilleja chlorotica* habitat in Harvest Unit #134. To ensure all *Castilleja chlorotica* plants are excluded from the proposed roadbed, trained botanical

personnel will verify the temporary road location. In Harvest Units #172 and #173, there is a proposed temporary road going into the Managed *Castilleja chlorotica* habitat. Trained botanical personnel will verify the road layout to ensure a minimal number of plants are affected.

In summary, all Protected *Castilleja chlorotica* habitat would be excluded from treatment units. Approximately 25 acres of Managed *Castilleja chlorotica* habitat out of the 34 acres within the Toolbox fire portion fall within treatment units, which corresponds to 2.5 percent of the Managed habitat on Silver Lake Ranger District and approximately 0.5 percent of the Managed *Castilleja chlorotica* habitat on the Fremont portion of the Fremont-Winema National Forests. With the mitigations mentioned above and in Chapter 2, it is expected that many of the plants within the Managed habitat sites would be protected during treatment activities, and the percent of Managed habitat impacted would be even less. Even though Silver Lake Ranger District is on the northern edge of *Iliamna bakeri* range, there is a minute possibility this species may show up within the Toolbox fire portion. The project area will be monitored for appearance of this species and sites will be protected if they are discovered. If *Iliamna bakeri* shows up in the burned areas, it is likely to appear 5 to 10 years post burn. The sites on the Fremont portion of the Fremont-Winema National Forests have been discovered 6 to 8 years post burn. This would mean *Iliamna bakeri* might appear in 2007, but probably more like 2008 and beyond. Timber harvest should be completed in 2004 and 2005. For Alternative C, site preparation and planting are the only activities proposed to occur in 2007 and beyond (Chapter 2). In Alternatives G and H, site preparation, planting, and some fuels treatments are proposed activities to occur in 2007 and beyond (Chapter 2). For the sites found on the Fremont portion of the Fremont-Winema National Forests on Bly and Lakeview Ranger Districts, *Iliamna bakeri* appeared after harvest activities were completed. Therefore, it is apparent harvest activities do not eliminate habitat for *Iliamna bakeri*.

*Eriogonum umbellatum* var *glaberrimum* is a candidate for addition to the Region 6 Sensitive Species Plant List. One of the two sightings on the Silver Lake Ranger District occurs within the Toolbox fire portion. This site is not located within a proposed Harvest Unit. Therefore, Alternatives C, G, and H will have No Impact on this species. However, additional field surveys may reveal new sites within the Toolbox fire boundary. While it cannot be determined at this time what the impact of treatment activities would be on additional sites for this species, it is expected to be low. *Eriogonum umbellatum* var *glaberrimum* seems to prefer habitat having an open canopy, and is unlikely to be discovered in areas where harvest activities are proposed.

Noxious weed invasion has the potential to create an adverse environment for sensitive plants and other native species. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. The risk of noxious weed invasion in the project area is discussed in the Noxious Weed section of Chapter 3.

## Alternative D

In Alternative D, approximately 3,400 acres of land is proposed for commercial salvage within the Toolbox fire portion. Harvest activities, construction of landings, skid trails, temporary roads, activities fuel treatment, prescribed burning, site prep and reforestation, along with any other ground disturbing activities, will be prohibited in Protected habitat. Proposed Harvest Unit #166 borders a Protected *Castilleja chlorotica* habitat. A mitigation is in effect that requires trees in Harvest Unit #166, which could potentially reach the Protected habitat would be directionally felled to avoid *Castilleja chlorotica*. Trained botanical personnel will monitor the unit boundary to ensure *Castilleja chlorotica* is excluded.

In Alternative D, all Managed *Castilleja chlorotica* habitat is located outside proposed harvest and prescribed burn Units. Therefore, harvest activities, construction of landings, skid trails, temporary roads, activities fuel treatment, prescribed burning, site prep and reforestation, along with any other ground disturbing activities, would not occur in Managed habitat.

Of all the action alternatives, Alternative D proposes the least amount of harvest activities, meaning future ground fuel accumulation would be higher than for the other action alternatives. Increasing the potential for future ground fuel to accumulate might lead to future high severity fires. This would not be beneficial to *Castilleja chlorotica* habitat, and would provide new habitat for noxious weeds. In Alternative D, the risk of losing *Castilleja chlorotica* habitat in the long-term is less than for Alternative A, but higher than for Alternatives C, E, G, or H.

In Alternative D, construction of new temporary roads would not occur. However, 5.7 miles of unclassified roads would be re-opened. The unclassified roads proposed for re-opening do not occur within or adjacent to *Castilleja chlorotica* habitat. Therefore, the 5.7 miles of unclassified roads proposed for re-opening would not affect the *Castilleja chlorotica* habitat.

Even though Silver Lake Ranger District is on the northern edge of *Iliamna bakeri* range, there is a minute possibility this species may show up within the Toolbox fire portion. The project area will be monitored for appearance of this species and sites will be protected if they are discovered. If *Iliamna bakeri* shows up in the burned areas, it is likely to appear 5 to 10 years post burn. The sites on the Fremont portion of the Fremont-Winema National Forests have been discovered 6 to 8 years post burn. This would mean *Iliamna bakeri* might appear in 2007, but probably more like 2008 and beyond. Timber harvest should be completed in 2004 and 2005. For Alternative D, site preparation, planting, and some fuels treatments are proposed activities to occur in 2007 and beyond (Chapter 2). For the sites found on the Fremont portion of the Fremont-Winema National Forests on the Bly and Lakeview Ranger Districts, *Iliamna bakeri* appeared after harvest activities were completed. Therefore, it is apparent harvest activities do not eliminate habitat for *Iliamna bakeri*.

*Eriogonum umbellatum* var *glaberrimum* is a candidate for addition to the Region 6 Sensitive Species Plant List. One of the two sightings on the Silver Lake Ranger District occurs within the Toolbox fire portion. This site is not located within a proposed Harvest Unit. Therefore, Alternative D will have No Impact on this species. However, additional field surveys may reveal new sites within the Toolbox fire boundary. While it cannot be determined at this time what the impact of treatment activities would be on additional sites for this species, it is expected to be low. *Eriogonum umbellatum* var *glaberrimum* seems to prefer habitat having an open canopy, and is unlikely to be discovered in areas where harvest activities are proposed.

Noxious weed invasion has the potential create an adverse environment for sensitive plants and other native species. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. The risk of noxious weed invasion in the project area is discussed in the Noxious Weed section of Chapter 3.

## Alternative E

In Alternative E, approximately 6,000 acres of land is proposed for commercial salvage within the Toolbox fire portion. As stated under Alternatives C, G, and H, ground-disturbing activities, such as machine piling and burning of slash, site preparation, machine skidding, and pulling line for large diameter trees during timber harvest, can impact *Castilleja chlorotica* plants. Additionally, underburning can cause mortality of mountain big sagebrush and bitterbrush, the host species for *Castilleja chlorotica*.

For Alternative E, harvest activities and construction of landings, skid trails, temporary roads, activities fuels treatment, prescribed burning, site prep and reforestation, along with any other ground disturbing activities, will be prohibited in Protected *Castilleja chlorotica* habitat. Harvest Units #166, #173, and #174 border Protected *Castilleja chlorotica* habitat. Within these harvest units, a mitigation requires that trees, which could potentially reach the Protected habitat, be directionally felled to avoid *Castilleja chlorotica*. Trained botanical personnel will monitor the unit boundaries to ensure *Castilleja chlorotica* is excluded.

Mitigations will be used to protect *Castilleja chlorotica* in Managed habitats. Harvesting is proposed to occur within Managed *Castilleja chlorotica* habitat in Harvest Units #131, #134, and #173. To minimize damage to existing plants, a mitigation requires that trained botanical personnel monitor unit layout to ensure skid trails and landings have minimal impacts on the plants. In addition, trees within these units that could potentially reach the Managed habitat boundaries when cut, will be directionally felled to avoid the Managed habitat areas.

Harvest Unit #131 has greater than 30 TPA predicted fuel loading and is therefore subject to activities fuels treatments. A mitigation requires that trained botanical personnel mark the boundary of the Managed *Castilleja chlorotica* habitat within Harvest Unit #131 to ensure this area is excluded from activities fuel treatments.

Since proposed activities fuels treatments would only occur in units that have greater than 30 TPA predicted fuel loading, instead of 20 TPA as in Alternatives C, G, and H, less area would receive fuels treatments. Therefore, the potential for future ground fuels accumulation would be lower for Alternative E than for Alternative D, but Alternative E would have a higher potential for future ground fuels accumulation than Alternatives C, G, and H.

Following harvest, reforestation will occur in Units #131, #134, and #173. With the current stocking standards, no more than 40 percent canopy closure is expected to occur. Therefore, habitat for *Castilleja chlorotica* would continue to exist in

these units. The fall before planting is scheduled to occur, trained botanical personnel will place pin flags at each clump of *Castilleja chlorotica* in Harvest Units #131, #134, and #173. This will allow the planters to avoid planting the trees directly on *Castilleja chlorotica* plants.

Alternative E does not propose prescribed burning beyond what is proposed for activities fuels treatments. Therefore, mitigations will not be needed for prescribed burning within *Castilleja chlorotica* habitat.

For Alternative E, a temporary road is proposed to border the edge of the Managed *Castilleja chlorotica* habitat in Harvest Unit #134. To ensure all *Castilleja chlorotica* plants are excluded from the proposed roadbed, trained botanical personnel will verify the temporary road location. In Harvest Unit #173, there is a proposed temporary road going into the Managed *Castilleja chlorotica* habitat. Trained botanical personnel will verify the road layout to ensure a minimal number of plants are affected.

In summary, all Protected *Castilleja chlorotica* habitat would be excluded from treatment units. Approximately 18 acres of Managed *Castilleja chlorotica* habitat out of the 34 acres within the Toolbox fire portion fall within treatment units, which corresponds to 1.7 percent of the Managed habitat on Silver Lake Ranger District and approximately 0.3 percent of the Managed *Castilleja chlorotica* habitat on the Fremont portion of the Fremont-Winema National Forests. With the mitigations mentioned above and in Chapter 2, it is expected that many of plants within the Managed habitat sites would be protected during treatment activities, and the percent of Managed habitat impacted would be even less.

Even though Silver Lake Ranger District is on the northern edge of *Iliamna bakeri* range, there is a minute possibility this species may show up within the Toolbox fire portion. The project area will be monitored for appearance of this species and sites will be protected if they are discovered. If *Iliamna bakeri* shows up in the burned areas, it is likely to appear 5 to 10 years post burn. The sites on the Fremont portion of the Fremont-Winema National Forests have been discovered 6 to 8 years post burn. This would mean *Iliamna bakeri* might appear in 2007, but probably more like 2008 and beyond. Timber harvest should be completed in 2004 and 2005. For Alternative E, site preparation and planting are the only activities proposed to occur in 2007 and beyond (Chapter 2). For the sites found on the Fremont portion of the Fremont-Winema National Forests on the Bly and Lakeview Ranger Districts, *Iliamna bakeri* appeared after harvest activities were completed. Therefore, it is apparent harvest activities do not eliminate habitat for *Iliamna bakeri*.

*Eriogonum umbellatum* var *glaberrimum* is a candidate for addition to the Region 6 Sensitive Species Plant List. One of the two sightings on the Silver Lake Ranger District occurs within the Toolbox fire portion. This site is not located within a proposed Harvest Unit. Therefore, Alternative E will have No Impact on this species. However, additional field surveys may reveal new sights within the Toolbox fire boundary. While it cannot be determined at this time what the impact of treatment activities would be on additional sites for this species, it is expected to be low. *Eriogonum umbellatum* var *glaberrimum* seems to prefer habitat having an open canopy, and is unlikely to be discovered in areas where harvest activities are proposed.

Noxious weed invasion has the potential create an adverse environment for sensitive plants and other native species. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. The risk of noxious weed invasion in the project area is discussed in the Noxious Weed section of Chapter 3.

## **Cumulative Effects**

### **Common to All Alternatives**

Within Appendix A, the past, present, and reasonably foreseeable future activities are provided in a table format. All the activities listed in Appendix A tables were considered when compiling this report. However, only some of the activities mentioned in Appendix A have the potential to produce a cumulative effect on native and sensitive plant species. These activities will be disclosed and discussed below. Emphasis will be placed on activities within Benny Creek, East Duncan Creek, and Upper Duncan Creek subwatersheds, where *Castilleja chlorotica* habitat is present, since other sensitive species are not known to occur. Activities in the Silver fire portion are not considered here, because the Silver fire lies outside of these subwatersheds and does not contain *Castilleja chlorotica* habitat.

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## Present and Future Foreseeable Activities:

Noxious weed invasion has the potential create an adverse environment for sensitive plants and other native species. Currently, occupied *Castilleja chlorotica* habitat and the surrounding areas do not have noxious weeds present. Activities on adjacent lands will affect the potential for weed invasion on National Forest System lands within the Toolbox portion of the project area.

The Winter Fire Salvage and Restoration Environmental Assessment (USDA Forest Service, 2003) proposes activities on National Forest System lands in the adjacent Winter Fire. Approximately 69 acres within the Winter project area are currently infested with noxious weeds (USDA Forest Service, 2003, Chapter 3, p. 56). With the proposed harvest activities, there is a potential for spreading noxious weeds into uninfested areas. However, the Winter Environmental Assessment proposes to conduct the majority of harvest operations using helicopters instead of ground based tractors and equipment which will help reduce the amount of ground disturbance, and noxious weed habitat created. With the mitigations stated in the Winter Environmental Assessment and the current Forest Service contract for the treatment of noxious weeds in effect, the number of new infestations within the Winter fire boundary should be greatly reduced.

As a response to the Toolbox Complex Fire, the Bureau of Land Management (BLM) wrote a Burned Area Emergency Stabilization and Rehabilitation (ESR) Plan Environmental Assessment. A summary of the activities proposed by the BLM can be found in Appendix A, Table A-15. The BLM lands have noxious weeds and nonnative species present. The BLM is planning on seeding and planting tree seedlings in an attempt to provide competition for the noxious weeds and nonnative species in the Lower Duncan Creek subwatershed (USDI Bureau of Land Management, 2003). The distance between the Lower Duncan Creek subwatershed and the *Castilleja chlorotica* habitat is far enough that the possibility of noxious weeds spreading from BLM lands into *Castilleja chlorotica* is minimal. For additional information on the measures the BLM is taking to reduce noxious weed and nonnative species spread and establishment, see the Noxious Weed section in Chapter 3.

Industrial forestlands within the Toolbox fire portion are owned by U.S. Timberlands Co., L. P. (UST). UST owns industrial forestlands within the Silver fire portion as well. UST is planning on planting tree seedlings after salvage logging, which will provide competition against noxious weeds and nonnative species. It is unknown if noxious weeds are present on UST lands and if other weed management actions will be taken. For additional information, see the Noxious Weed section of Chapter 3.

For the non-industrial forestlands within the Toolbox fire portion, some owners are planning to harvest both dead and green timber to make the harvest activities profitable. They also plan to plant the lands that do not reach State density requirements. It is unknown if noxious weed sites exist and if they do, by what means non-industrial forestland owners plan to treat noxious weeds. However, non-industrial forestlands owners are aware of problems noxious weeds create and are trying to eliminate noxious weeds on their lands.

Two Forest Service restoration projects previously approved through NEPA decisions have treatment units located within the Benny Creek, East Duncan Creek, and Upper Duncan Creek subwatersheds (see Elston, R., 2003, "Toolbox Fire Recovery Project – Future Activity Already Covered with NEPA Decisions" in the Toolbox Fire Recovery Project analysis file. A summary of this report can be found in Table A-16 of Appendix A). Activities pertaining to the these restoration projects may be ongoing or are scheduled to occur.

The Windmill Restoration Project is located on the northern end of the Toolbox fire portion within the Upper and East Duncan Creek subwatershed. The activities occurring within the Windmill Restoration Project will not affect *Castilleja chlorotica* habitat due to the distance between the two areas. Part of the Triad Restoration Project is within the Toolbox fire portion and lies within *Castilleja chlorotica* habitat in the Benny Creek subwatershed. The selected alternative for Triad will commercially and precommercially thin the dense pine stands where canopy closure has shaded out sites such that the mountain big sagebrush communities have been eliminated from the understory. In the long-term, these activities are likely to create open areas that will allow mountain big sagebrush to become established once again, and improve habitat for *Castilleja chlorotica*. Within the Triad project boundary located within the Benny Creek subwatershed, there is approximately 145 acres of Managed *Castilleja chlorotica* habitat. Approximately 4.5 of the 145 acres (3 percent) of Managed habitat will be affected by the activities proposed within the Toolbox fire portion. The Biological Evaluation for the Triad project concluded the proposed activities were likely to affect individuals or habitat, but would not result in a trend toward federal listing or reduced viability for *Castilleja chlorotica* (USDA Forest Service, 2001). With the proposed

activities within the Toolbox fire portion impacting only 4.5 acres of Managed habitat within the Triad Restoration Project, the determination already issued for Triad will remain unchanged. Since the Triad restoration project will improve *Castilleja chlorotica* habitat in the long-term and will affect only 145 acres of Managed habitat, it is highly unlikely that the combined activities of Triad and Toolbox would adversely affect *Castilleja chlorotica*.

Cattle grazing will continue in the Benny Creek, East Duncan Creek, and Upper Duncan Creek subwatersheds and adjacent areas (Table A-8, Appendix A). In 2003, the grazing system on the Winter Rim Allotment will be reduced to 282 head, down from 660 head grazed in 2001 and 2002, and a two-pasture rotation system will be implemented instead of early season use. The land within the Winter Rim Allotment contains a large portion of the Winter Rim's *Castilleja chlorotica* habitat. The Winter Rim Allotment consists of two pastures, Bagley and Fremont. Within the Bagley pasture, approximately 400 acres of *Castilleja chlorotica* habitat exists (300 acres of Managed and 100 acres of Protected). Within the Toolbox fire portion boundary, approximately 4 acres of Protected and 15 acres of Managed *Castilleja chlorotica* habitat exists inside the Bagley pasture. In the Fremont pasture, approximately 1,335 acres of *Castilleja chlorotica* habitat is present (525 acres of Managed and 810 acres of Protected). Within the Toolbox fire portion boundary, approximately 44 acres of Protected *Castilleja chlorotica* habitat exists within the Fremont pasture.

In the Foster Butte Allotment, the Hagar, Foster, and Dead Indian pastures will also have reduced numbers/AMUs and a shorter season in 2003 than in previous years (Table A-17, Appendix A). The remaining pastures will not experience changes to the number of cattle or grazing system. Within the Foster Butte Allotment, Sycan and Foster pastures contain Managed *Castilleja chlorotica* habitat. The Sycan pasture has approximately 170 acres Managed *Castilleja chlorotica* habitat, of which 3 acres are within the Toolbox fire portion. The Foster pasture contains 13 acres of Managed *Castilleja chlorotica* habitat, all of which are within the Toolbox fire portion.

In the Winter Rim and Foster Butte Allotments, *Castilleja chlorotica* will be monitored to ensure the cattle are not overgrazing the plants. Past monitoring within the *Castilleja chlorotica* habitat has shown grazing to occur on some plants. Prior to 2001, browsing or trampling was not noted within the monitoring plot in the Winter Rim Allotment (Wooley, 2001). However, in 2001, cattle were turned out into the Winter Rim Allotment earlier than in past years. In addition, more cattle were turned out than in the previous five years. During the 2001 grazing season, it was noted that *Castilleja chlorotica* plants outside the monitoring site had been grazed (Wooley, 2001). In 2001, there was an extreme drought in the area. Therefore, it is unknown what factors lead to browsing of the *Castilleja chlorotica* plants in 2001 (Wooley, 2001). Additional monitoring will need to be conducted before any determination can be made on the impacts cattle have on *Castilleja chlorotica*. For 2003 grazing season in the Winter Rim Allotment, AMU's will be reduced in most pastures during 2003, compared to previous years. All post-2003 grazing within the Winter Rim and Foster Butte Allotments will be determined based on upcoming NEPA Decision based on the 2003 monitoring information (Keil, 2003).

Salvage activities on BLM, and private lands as well as proposed salvage activities in the Winter Fire would reduce future ground fuel accumulation and the potential for future high severity fires in the project area. This would reduce the risk of loss of *Castilleja chlorotica* habitat to wildfire over time. If salvage activities do not occur within the Winter fire boundary, then there would be a large ground fuel accumulation in that area within the next 15 to 20 years. This would increase the potential for a future high severity fire. Due to the location and topography, a high severity fire inside the Winter fire boundary would jeopardize *Castilleja chlorotica* habitat on Winter Rim.

## Alternative A

As described above under Direct and Indirect Effects, Alternative A would not contribute to cumulative direct effects on *Castilleja chlorotica* habitat, or potential *Iliamna bakeri*, and *Eriogonum umbellatum* var *glaberrimum* habitat.

Alternative A would not contribute to cumulative fuel reduction in or near the Toolbox Fire portion, and therefore would result in a higher risk of future loss of *Castilleja chlorotica* habitat to wildfire than the action alternatives.

Alternative A would not contribute to cumulative ground disturbing activities in the Toolbox Fire portion, and therefore would not contribute to increased noxious weed habitat or increased risk of weed introductions which could potentially impact *Castilleja chlorotica* and other native species in the area.

## Alternatives C, G, and H

As described under Direct and Indirect Effects, Alternatives C, G, and H would contribute to direct effects on 25 acres of Managed *Castilleja chlorotica* habitat. Cumulatively, effects from fire suppression, on-going projects, and proposed treatments would occur on 2 acres of Protected habitat (0.2 percent of Protected habitat on the District/ 0.15 percent of Protected habitat on the Forest) and 167.4 acres of Managed habitat (16.5 percent of Managed habitat on the District/ 3.5 percent of Managed habitat on the Forest). Most of the cumulative effects result from the Triad restoration project, which may impact individual plants, but is expected to improve habitat for the species over the long term. Although cattle grazing is on-going, it is not expected to contribute to direct effects on *Castilleja chlorotica*, based on the results of past monitoring and reduced numbers for 2003.

As described under Direct and Indirect Effects, Alternatives C, G, and H may contribute to cumulative ground disturbing effects on *Iliamna bakeri*, if the species does occur in the area post fire, but is unlikely to impact *Eriogonum umbellatum* var *glaberrimum*.

As described under Direct and Indirect Effects, Alternatives C, G, and H would contribute to cumulative fuel reduction activities in or near the Toolbox Fire portion, and would result in a lower risk of future loss of *Castilleja chlorotica* habitat to wildfire than Alternatives A and D.

Alternatives C, G, and H would contribute to cumulative ground disturbing activities in the Toolbox Fire portion. Cumulative ground disturbing activities, such as salvage logging, fuels treatments, and associated activities, on all land ownerships in and near the Toolbox fire portion would result in a substantial increase in suitable weed habitat and risk of noxious weed introduction in the area. This would increase the potential for noxious weed invasion to impact *Castilleja chlorotica* and other native species in the area.

## Alternative D

As described under Direct and Indirect Effects, Alternative D would not contribute to cumulative direct effects on *Castilleja chlorotica* habitat.

As described under Direct and Indirect Effects, Alternative D may contribute to cumulative ground disturbing effects on *Iliamna bakeri*, if the species does occur in the area post fire, but is unlikely to impact *Eriogonum umbellatum* var *glaberrimum*.

As described under Direct and Indirect Effects, Alternative D would contribute to cumulative fuel reduction activities in or near the Toolbox Fire portion, and would result in a lower risk of future loss of *Castilleja chlorotica* habitat to wildfire than Alternative A, but a higher risk than Alternatives C, E, G, and H.

Alternative D would contribute to cumulative ground disturbing activities in the Toolbox Fire portion. Cumulative ground disturbing activities, such as salvage logging, fuels treatments, and associated activities, on all land ownerships in and near the Toolbox fire portion would result in a substantial increase in suitable weed habitat and risk of noxious weed introduction in the area. This would increase the potential for noxious weed invasion to impact *Castilleja chlorotica* and other native species in the area.

## Alternative E

As described under Direct and Indirect Effects, Alternative E would contribute to direct effects on 18 acres of Managed *Castilleja chlorotica* habitat. Cumulatively, effects from fire suppression, on-going projects, and proposed treatments would occur on 2 acres of Protected habitat (0.2 percent of Protected habitat on the District/ 0.15 percent of Protected habitat on the Forest) and 160.4 acres of Managed habitat (15.8 percent of Managed habitat on the District/ 3.3 percent of Managed habitat on the Forest). Most of the cumulative effects result from the Triad restoration project, which may impact individual plants, but is expected to improve habitat for the species over the long term. Although cattle grazing is on-going, it is not expected to contribute to direct effects on *Castilleja chlorotica*, based on the results of past monitoring and reduced numbers for 2003.

As described under Direct and Indirect Effects, Alternative E may contribute to cumulative ground disturbing effects on *Iliamna bakeri*, if the species does occur in the area post fire, but is unlikely to impact *Eriogonum umbellatum* var *glaberrimum*.

As described under Direct and Indirect Effects, Alternative E would contribute to cumulative fuel reduction activities in or near the Toolbox Fire portion, and would result in a lower risk of future loss of *Castilleja chlorotica* habitat to wildfire than Alternatives A and D.

Alternative E would contribute to cumulative ground disturbing activities in the Toolbox Fire portion. Cumulative ground disturbing activities, such as salvage logging, fuels treatments, and associated activities, on all land ownerships in and near the Toolbox fire portion would result in a substantial increase in suitable weed habitat and risk of noxious weed introduction in the area. This would increase the potential for noxious weed invasion to impact *Castilleja chlorotica* and other native species in the area.

### **Determination of Effects - Toolbox Fire Portion**

*Fremont National Forest Sensitive plant species that are not discussed in the sections below are listed in Table 4. These species have a "NO IMPACT" determination of effects since they are not located within the Toolbox fire portion and therefore their habitat will not be impacted by any of the alternatives.*

#### **Castilleja chlorotica**

The only sensitive plant species known to occur within the Toolbox fire portion is *Castilleja chlorotica*. The Conservation Strategy for this species identified Protected and Managed habitat necessary for the long-term viability of this species.

Alternatives A and D would not result in additional ground disturbing activities in *Castilleja chlorotica* habitat and would have No Impact on the species.

Alternatives C, E, G, and H would result in ground disturbing activities in *Castilleja chlorotica* habitat. All Protected *Castilleja chlorotica* habitat would be excluded from treatment units; a small amount of Protected habitat (2 acres, 0.04 percent) was impacted during fire suppression activities. Proposed activities in Alternatives C, G, and H would affect 25 acres of Managed habitat. Proposed activities in Alternative E would affect 18 acres of Managed habitat. Cumulatively, 167.4 acres of Managed habitat (16.5 percent of Managed habitat on the District/ 3.5 percent of Managed habitat on the Forest) would be effected if Alternative C, G, or H is implemented, and 160.4 acres of Managed habitat (15.8 percent of Managed habitat on the District/ 3.3 percent of Managed habitat on the Forest) would be effected if Alternative E is implemented. The majority of the cumulative effects result from the Triad restoration project, which is expected to improve habitat for the species over the long term.

Alternatives C, E, G, and H, will maintain the viability of *Castilleja chlorotica* on the Silver Lake District, and Forest as a whole, for the following reasons: the Winter Rim population is large, (approximately 500,000 individuals); Protected habitat will remain intact; only a small amount of Managed habitat will be effected by the Alternatives; and mitigations listed in Chapter 2 will be used to avoid impacts to plants in Managed habitat during project implementation. Therefore, for Alternatives C, E, G, and H, the proposed activities may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species.

#### **Iliamna bakeri**

Potential habitat exists in the Toolbox fire portion for *Iliamna bakeri*. This species is not known to occur in the area, but could appear in response to the fire.

Alternative A would not implement additional ground disturbing activities in the project area and would have No Impact on the species.

If *Iliamna bakeri* appears within the burned areas, the cumulative effects of the proposed ground disturbing activities in Alternatives C, D, E, G, and H may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species. This determination is based on the fact that the species was first noted in other fires after salvage operations had already been completed, and therefore was not eliminated by salvage activities, and the fact that the project area will be monitored for the species and sites protected if they are found.

***Eriogonum umbellatum* var *glaberrimum***

This species may be added to the R6 Sensitive Plant List in 2004. All of the Alternatives will have No Impact on this species. Known sites are located outside of treatment units. If new sites are discovered, they are most likely to occur in open canopy habitats outside of treatment units.

**FREMONT PORTION OF THE FREMONT-WINEMA NATIONAL FORESTS**

**SENSITIVE PLANT SPECIES BIOLOGICAL EVALUATION**

**TABLE 4: SUMMARY OF CONCLUSION OF EFFECTS FOR  
TOOLBOX FIRE RECOVERY PROJECT  
TOOLBOX FIRE PORTION**

<b>SPECIES</b>	<b>ALT A</b>	<b>ALT C</b>	<b>ALT D</b>	<b>ALT E</b>	<b>ALT G</b>	<b>ALT H</b>
pumice grape fern <i>Botrychium pumicola</i>	NI	NI	NI	NI	NI	NI
long-bearded mariposa lily <i>Calochortus longebarbatus</i> var <i>longebarbatus</i>	NI	NI	NI	NI	NI	NI
green-tinged paintbrush <i>Castilleja chlorotica</i>	NI	MIH	NI	MIH	MIH	MIH
prostrate buckwheat <i>Eriogonum prociduum</i>	NI	NI	NI	NI	NI	NI
Warner Mountain bedstraw <i>Galium serpticum</i> var <i>warnerense</i>	NI	NI	NI	NI	NI	NI
Baker's globe mallow <i>Iliamna bakeri</i>	NI	MIH	MIH	MIH	MIH	MIH
Shockley's ivesia <i>Ivesia shockleyi</i>	NI	NI	NI	NI	NI	NI
ephemeral or disappearing monkeyflower <i>Mimulus evenescens</i>	NI	NI	NI	NI	NI	NI
tricolored monkeyflower <i>Mimulus tricolor</i>	NI	NI	NI	NI	NI	NI
Blue-leaved penstemon <i>Penstemon glaucinus</i>	NI	NI	NI	NI	NI	NI
least phacelia <i>Phacelia minutissima</i>	NI	NI	NI	NI	NI	NI
Oregon semaphore grass <i>Pleuropogon oregonus</i>	NI	NI	NI	NI	NI	NI
Columbia crest <i>Rorippa columbiae</i>	NI	NI	NI	NI	NI	NI

Sensitive Plants

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short fruited thelypody <i>Thelypodium brachycarpum</i>	NI	NI	NI	NI	NI	NI
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Prepared by: /s/ Jeannette Wilson  
JEANNETTE WILSON  
Silver Lake District Botanist

Date: April 28, 2003

Reviewed by: /s/ Sarah Malaby  
SARAH MALABY  
Forest Botanist for the Fremont-Winema National Forests

Date: May 22, 2003

**NI** = No Impact

**MIH** = May Impact Individuals or Habitat, but Will Not Likely Result in a Trend Toward Federal Listing or Reduced Viability for the Population or Species

**LIFV\*** = Likely to Impact Individuals or Habitat with a Consequence that the Action may Contribute Towards Federal Listing or Result in Reduced Viability for the Population or Species

**BI** = Beneficial Impact

\* Trigger for a Significant Action

Form 2 (R-1-2670-95)

## Silver Fire Portion:

### Area of Analysis

The Silver fire portion lies within the Middle, Upper, and West Fork Silver Creek, and the Thompson Reservoir subwatersheds. Within the Silver fire portion, the Forest Service manages the National Forest Systems lands and the Bureau of Land Management (BLM) manages the remainder of the federal lands. Private industrial and non-industrial forestlands also occur.

### Existing Conditions

After reviewing the GIS layer and past survey information, sensitive plant species were not found to occur within the Silver fire portion.

### Sensitive Plants

Historically, *Iliamna bakeri* has not been found in past wildfires or prescribed burns on the Silver Lake Ranger District. However, since *Iliamna bakeri* appears after fires, there is a minute possibility for this species to appear post-burn. (For additional information on *Iliamna bakeri*, please refer to the Toolbox Fire Portion).

During the prefield review, it was determined occupied or suitable habitat for other sensitive plant species does not occur within the Silver fire portion. Records for the West Fork Silver Creek Restoration Project, 517 East, and Triad Restoration Project were consulted to verify that sensitive plant species were not found within the Silver fire portion.

### Cultural and Medicinal Plants:

The cultural and medicinal plants mentioned in the Toolbox fire portion may occur in the Silver fire portion as well. The distribution and abundance of these species within the project area is unknown. These species tend to occur in riparian areas, wet to dry meadows, or open pine and sagebrush shrublands. Many of the species are adapted to periodic fire and will likely respond favorably to the Silver fire.

### Environmental Consequences

#### Common to All Alternatives

There is insufficient information on the location and abundance of cultural and medicinal plants within the Silver fire portion to compare the effects of the action alternatives on these species. Cultural and medicinal species tend to occur in riparian, meadow, and shrubland habitats. These areas are likely to be minimally impacted by the Silver fire and proposed activities. Salvage and fuels treatment activities will be concentrated in more heavily timbered areas outside of riparian zones. As a result, these plants are likely to persist after the project, regardless of which alternative is selected.

#### Direct and Indirect Effects

##### Alternative A

The No Action Alternative would leave the proposed activity areas in their post-fire condition. Additional fire recovery activities would not occur on National Forest Systems lands, other than completion of activities proposed by the Burned Area Emergency Recovery (BAER) plan (Appendix A, Table A-7).

Alternative A will have No Impact on *Iliamna bakeri* since additional ground-disturbing activities would not occur.

### **Alternatives C, D, E, G, and H**

Even though Silver Lake Ranger District is on the northern edge of *Iliamna bakeri* range, there is a minute possibility this species may show up within the Silver fire portion. The project area will be monitored for appearance of this species and sites will be protected if they are discovered. If *Iliamna bakeri* shows up in the burned areas, it is likely to appear 5 to 10 years post burn. The sites on the Fremont portion of the Fremont-Winema National Forests have been discovered 6 to 8 years post burn. This would mean *Iliamna bakeri* might appear in 2007, but probably more like 2008 and beyond. Timber harvest should be completed in 2004 and 2005. For Alternative C, site preparation and planting are the only activities proposed to occur in 2007 and beyond (Chapter 2). In Alternatives G and H, site preparation, planting, and some fuels treatments are proposed activities to occur in 2007 and beyond (Chapter 2). For the sites found on the Fremont portion of the Fremont-Winema National Forests on Bly and Lakeview Ranger Districts, *Iliamna bakeri* appeared after harvest activities were completed. Therefore, it is apparent harvest activities do not eliminate habitat for *Iliamna bakeri*.

### **Cumulative Effects:**

#### **Common to All Alternatives**

No cumulative effects were identified, since no sensitive plant sites are present in the Silver fire portion.

### **Determination of Effects - Silver Fire Portion**

Fremont National Forest Sensitive plant species that are not discussed in the sections below are listed in Table 5. These species have a "NO IMPACT" determination of effects since they are not located within the Silver fire portion and therefore their habitat will not be impacted by any of the alternatives.

#### ***Iliamna bakeri***

Potential habitat exists in the Silver fire portion for *Iliamna bakeri*. This species is not known to occur in the area, but could appear in response to the fire.

Alternative A would not implement additional ground disturbing activities in the project area and would have No Impact on the species.

If *Iliamna bakeri* appears within the burned areas, the cumulative effects of the proposed ground disturbing activities in Alternatives C, D, E, G, and H may impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species. This determination is based on the fact that the species was first noted in other fires after salvage operations had already been completed, and therefore was not eliminated by salvage activities, and the fact that the project area will be monitored for the species and sites protected if they are found.

## **FREMONT PORTION OF THE FREMONT-WINEMA NATIONAL FORESTS**

## SENSITIVE PLANT SPECIES BIOLOGICAL EVALUATION

**TABLE 5: SUMMARY OF CONCLUSION OF EFFECTS FOR  
TOOLBOX FIRE RECOVERY PROJECT  
SILVER FIRE PORTION**

SPECIES	ALT A	ALT C	ALT D	ALT E	ALT G	ALT H
pumice grape fern <i>Botrychium pumicola</i>	NI	NI	NI	NI	NI	NI
long-bearded mariposa lily <i>Calochortus longebarbatus</i> var <i>longebarbatus</i>	NI	NI	NI	NI	NI	NI
green-tinged paintbrush <i>Castilleja chlorotica</i>	NI	NI	NI	NI	NI	NI
prostrate buckwheat <i>Eriogonum prociduum</i>	NI	NI	NI	NI	NI	NI
Warner Mountain bedstraw <i>Galium serpticum</i> var <i>warnerense</i>	NI	NI	NI	NI	NI	NI
Baker's globe mallow <i>Iliamna bakeri</i>	NI	MIH	MIH	MIH	MIH	MIH
Shockley's ivesia <i>Ivesia shockleyi</i>	NI	NI	NI	NI	NI	NI
ephemeral or disappearing monkeyflower <i>Mimulus evenescens</i>	NI	NI	NI	NI	NI	NI
tricolored monkeyflower <i>Mimulus tricolor</i>	NI	NI	NI	NI	NI	NI
blue-leaved penstemon <i>Penstemon glaucinus</i>	NI	NI	NI	NI	NI	NI
least phacelia <i>Phacelia minutissima</i>	NI	NI	NI	NI	NI	NI
Oregon semaphore grass <i>Pleuropogon oregonus</i>	NI	NI	NI	NI	NI	NI
Columbia crest <i>Rorippa columbiae</i>	NI	NI	NI	NI	NI	NI
short fruited thelypody <i>Thelypodium brachycarpum</i>	NI	NI	NI	NI	NI	NI

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Date: April 28, 2003

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Date: May 22, 2003

**NI** = No Impact

**MIH** = May Impact Individuals or Habitat, but Will Not Likely Result in a Trend Toward Federal Listing or Reduced Viability for the Population or Species

**LIFV\*** = Likely to Impact Individuals or Habitat with a Consequence that the Action may Contribute Towards Federal Listing or Result in Reduced Viability for the Population or Species

**BI** = Beneficial Impact

\* Trigger for a Significant Action

Form 2 (R-1-2670-95)

This Toolbox Fire Recovery Project specialist report was prepared during March, April and May of 2003. It will be used, along with specialist reports from multiple resource areas, to prepare a Draft Environmental Impact Statement (DEIS) for the Toolbox Fire Recovery project. This specialist report will become a part of the planning record for the project, filed under:

“Toolbx/ Planning Record/ E\_Specialists\_reports\_data\_inventory\_and\_collection”

This report will be filed both in the ‘hard-copy’ planning record binders, on file at the Silver Lake Ranger District, and on the Fremont National Forest “K-Drive”. In the interest of planning process efficiency, particularly in light of time and budget constraints, editing that occurs to the content of this report during the preparation of the DEIS will be reflected in the DEIS and will not necessarily be entered back into the content of this report. To insure the accuracy of such edits, I will review the content of both the DEIS and the (Final) FEIS and certify that their content is consistent with the analytical conclusions in this report. If during DEIS or FEIS editing, substantially different conclusions or interpretations are reached or substantial additional analysis is prepared from that displayed in this report, an addendum to this report will be prepared.

Specialist: */s/ Jeannette Wilson*

Discipline: Silver Lake District Botanist

Date: 5/27/03

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**Appendix 1: Summary of Biological Evaluation****Table 1: Sensitive Plant Biological Evaluation Prefield Review**

R6 Sensitive Plant Species Documented or Suspected on the Fremont National Forest	Status*	Range	Local Habitat	Occupied Habitat in Planning Area	Suitable Habitat in Planning Area
<i>Botrychium pumicola</i>	G3/S3	South-Central Oregon. Deschutes, Fremont, Winema NF and Crater Lake NP. On Fremont NF, found on northern third of Silver Lake RD.	Alpine peaks and lodgepole basins in pumice zones	No	No
<i>Calochortus longebarbatus</i> var <i>longebarbatus</i>	G3/S2	South-Central Oregon and adjacent Northern California, South-Central Washington and adjacent north-central Oregon. Includes Fremont, Winema, and Modoc NF. On Fremont, it occurs primarily on the Bly RD, with a few populations on the Paisley and Lakeview RD.	<i>Poa/Danthonia/Deschampsia</i> associations occurring in drier areas of moist meadows located in pine habitat	No	No
<i>Castilleja chlorotica</i>	G3/S3	Endemic to Deschutes, Klamath and Lake Co, OR. On Fremont NF, found on Bly, Paisley, and Silver Lake RD primarily on the Winter Rim north to Summer Lake, and Gearheart Mountain Wilderness Area.	Shrub openings on exposed, well-drained slopes and summits in sagebrush, bitterbrush, or pine communities	Yes	Yes
<i>Eriogonum prociduum</i>	G3/S2	Endemic to Klamath and Lake Co, OR; northeast CA; and NW Nevada. On Fremont NF, found on Lakeview RD in Dry Valley	Areas of barren rocky, or gravelly volcanic soils with juniper or sagebrush habitat	No	No
<i>Galium serpenticum</i> var <i>warnerense</i>	G4/S2	South-Central Oregon into NE California; Populations also in Eastern Oregon, Washington, Nevada and Idaho; On the Fremont NF, found on Lakeview RD in the Warner Mountains	Rocky scree areas and talus slopes at elevations ranging from 5,000 to 8,400 feet	No	No
<i>Iliamna bakeri</i>	G3/S2	Southern OR and Northern CA. Fremont, Winema, and Rogue River NF. On Fremont, found in Lakeview and Bly RD	Hot, exposed sites like lava flows, barren south-facing slopes, or along dried creeks or harsh road beds, or burned areas	No	Yes, but outside known range
<i>Ivesia shockleyi</i>	G3/S1	East-Central CA in the Sierra Nevada and White Mountains (Placer and Inyo Co), South-Central OR on the Fremont NF on the Lakeview RD along the NE slope of Drake Peak	Rocky and gravelly areas with an elevation of 8,000 to 13,000 feet	No	No

Sensitive Plants

<i>Mimulus evenescens</i>	G3/S2	SW Idaho west through eastern Oregon, and south into NE California. Only two extant populations: Lake Co, OR and Lassen Co, CA. Suspected to occur on the Fremont NF.	Sagebrush/juniper vegetation zones scattered among rock fragments and along side small boulders. Plants were found in moist, heavy gravel	No	No
<i>Mimulus tricolor</i>	G4/S2	California, Willamette Valley and south Central Oregon; Fremont and Winema NF in OR; On Fremont NF, found on Silver Lake RD	Seasonally flooded depressions, channels, and streambanks located in openings in pine and sagebrush habitats. Relatively heavy soils.	No	No
<i>Penstemon glaucinus</i>	G3/S3	Endemic to Klamath and Lake Co, OR. On Fremont NF, located on Lakeview, Bly, Paisley, and Silver Lake RD. On the Silver Lake RD, found in the West-Central part of the district.	Openings in mid to high elevation pine, fir, and mountain hemlock communities. Well-drained volcanic soils along rocky points and ridges.	No	No
<i>Phacelia minutissima</i>	G3/S1	Occurrences are known for WA, ID, OR, and NV. In OR, extant population known by Buckhorn Springs. Suspected to occur on the Fremont NF	Ephemerally moist, bare-soil areas of riparian zones and meadows in sagebrush-steppe and lower montane forests.	No	No
<i>Pleuropogon oregonus</i>	G1/S1	Endemic to OR, located in Union and Lake Co. On the Fremont NF, found on private land within the Lakeview RD boundaries.	Wet meadows, marshlands, and streambanks.	No	No
<i>Rorippa columbiae</i>	G3/S3	Columbia River Region; Klamath, Lake, and Harney Co. OR; Modoc Co, CA. Winema NF, Lakeview, Klamath and Burns BLM. Suspected on Silver Lake RD	Along intermittent and perennial streams and lakeshores: banks, sandbars, vernal pools, lakebeds, ditches	No	No
<i>Thelypodium brachycarpum</i>	G3/S2	Southern OR and northern CA. Historic site on Klamath RD, near Upper Klamath Lake. Suspected to occur on Fremont NF.	Alkaline flats, lake margins in shrub steppe and at edge of pine forest	No	No

\* Status of sensitive plant species:

G = Global rank indicator, based on worldwide distribution at the species level

S = State rank indicator, based on distribution within the states at the lowest taxonomic level

1 = Critically imperiled due to extreme rarity, imminent threats, or and/or biological factors

2 = Imperiled due to rarity and/or other demonstrable factors

3 = Rare and local throughout its range, or with very restricted range, or otherwise vulnerable to extinction

4 = Apparently secure, though frequently quite rare in parts of its range, especially at its periphery

5 = Demonstrably secure, though frequently quite rare in parts of its range, especially at its periphery