

*Burke Creek Highway 50 Crossing & Realignment Project*

**WEED MANAGEMENT PLAN**

*USDA Forest Service, Lake Tahoe Basin Management Unit  
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**1 INTRODUCTION**

Forest Service management direction requires forests to conduct an invasive plant risk assessment to determine risks for weed spread associated with different types of proposed management activities and develop mitigation measures for high and moderate risk activities. The activities proposed as part of the Burke Creek Highway 50 Crossing and Realignment Project represent a high risk of invasive plant introduction and spread (reference project invasive plant risk assessment); as such the following management measures have been developed and will be implemented as part of the project.

The project area spans Burke Creek from Jennings Pond in Rabe Meadow to the eastern boundary of the Sierra Colina Development in Lake Village and flows through five property ownerships in the project area (National Forest System lands, private (Sierra Colina and 801 Apartments LLC), Douglas County and NDOT). The project proposes to reduce the size of the adjacent commercial parking lot; improve conveyance capacity at HWY 50; improve stream and riparian habitat; increase stream connectivity to the floodplain; and treat storm water runoff.

**2 INVASIVE SPECIES PRESENT IN PROJECT/PERMIT AREA**

Prior to implementation, updated infestation information and GIS should be obtained from Forest Botanist.

Species	Common Name	LTBMU Priority	NDA / CDFA rating <sup>1</sup>	Cal-IPC rating <sup>2</sup>	Number of sites	Acres
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Species	Common Name	LTBMU Priority	NDA / Cdfa rating <sup>1</sup>	Cal-IPC rating <sup>2</sup>	Number of sites	Acres
<i>Bromus tectorum</i>	cheatgrass	Low	none	High	2	0.60
<i>Cirsium vulgare</i>	bull thistle	Low	-- / C	Moderate	1	2.6
<i>Leucanthemum vulgare</i>	Oxeye daisy	Medium	none	Moderate	1	0.04
<i>Potentilla recta</i>	Sulphur cinquefoil	Medium	A / A		1	4.7

**LTBMU:** High—Species that have a large ecological impact or invasive potential; species that are easily controlled. Medium—Species that have a moderate ecological impact or invasive potential; species that may be difficult to control. Low—Species that have a low ecological impact or invasive potential; species that require substantial effort to control. N/A—species not evaluated.

**NDA:** Nevada Department of Agriculture Noxious Weed List ([http://agri.nv.gov/nwac/PLANT\\_NoXWeedList.htm](http://agri.nv.gov/nwac/PLANT_NoXWeedList.htm)) Category A—Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations. Category B—Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur. Category C—Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer.

**Cdfa:** California Department of Food and Agriculture Noxious Weed List (<http://www.cdfa.ca.gov/phpps/ipc/>). A—Eradication or containment is required at the state or county level. B—Eradication or containment is at the discretion of the County Agricultural Commissioner. C—Require eradication or containment only when found in a nursery or at the discretion of the County Agricultural Commissioner. Q—Require temporary "A" action pending determination of a permanent rating.

**Cal-IPC:** California Invasive Plant Council Online Invasive Plant Inventory (2006) (<http://www.cal-ipc.org/ip/inventory/weedlist.php>). High—Species having severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Moderate—Species having substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Limited—Species that are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Alert—Species with significant potential for invading new ecosystems.

### 3 PREVENTION AND MANAGEMENT MEASURES

The following measures are designed to minimize risk of new weed introductions, minimize the spread of weeds within units, and minimize the spread of weeds between units. These measures are consistent with Forest Service policy and manual direction (USDA 2000, USDA 2004, FSM 2900) and the LTBMU LRMP (1988) as amended by the SNFPA (USDA 2004).

#### 1. Inventory—

- a) *As part of site-specific planning, project areas and adjacent areas (particularly access roads) will be inventoried for invasive plants.*
- b) *Any additional infestation discovered prior to or during project implementation should be flagged and avoided, then reported to the Forest Botanist or their designated appointee for prioritization and assessment for treatment.*

#### 2. Equipment Cleaning—

- a) *All equipment and vehicles (Forest Service and contracted) used for project implementation must be free of invasive plant material before moving into the project area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris. Cleaning shall occur at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area.*
- b) *When working in known invasive plant infestations or designated weed units, equipment shall be cleaned before moving to other National Forest Service system lands. These areas will be identified on project maps.*

3. **Staging areas**—Do not stage equipment, materials, or crews in invasive plant-infested areas.

4. **Control Areas**—Where feasible, invasive plant infestations will be designated as Control Areas—areas where equipment traffic and soil-disturbing project activities would be excluded. If Control Areas are designated, they will be identified on project maps and delineated in the field with flagging.

5. **Project-related disturbance**—Minimize the amount of ground and vegetation disturbance in staging and construction areas. Where feasible, reestablish vegetation on disturbed bare ground to reduce invasive species establishment; revegetation is especially important in staging areas.

6. **Early Detection**—Any additional infestation discovered prior to or during project implementation should be reported to the Forest Botanist or their designated appointee for prioritization and assessment for treatment.
7. **Post Project Monitoring**—After the project is completed the Forest Botanist should be notified so that (as funding allows) the project area can be monitored for invasive plants subsequent to project implementation.
8. **Gravel, fill, and other materials**—All gravel, fill, or other materials are required to be weed-free. Use onsite sand, gravel, rock, or organic matter when possible. Otherwise, obtain weed-free materials from sources that have been certified as weed-free. If an LTBMU inspector is not available to inspect material source, then the project proponent will provide a weed-free certificate for its material source.
9. **Mulch and topsoil**—Use weed-free mulches and topsoil. Salvage topsoil from project area for use in onsite revegetation, unless contaminated with invasive species. Do not use material (or soil) from areas contaminated by cheatgrass.
10. **Livestock**—If supplemental fodder (e.g. hay, silage) is required for livestock, including horses and other pack animals, it will be certified weed-free.
11. **Revegetation**—
  - a) Seed and plant mixes must be approved the Forest Botanist or their designated appointee who has knowledge of local flora.
  - b) Invasive species will not be intentionally used in revegetation. Seed lots will be tested for weed seed and test results will be provided to Forest Botanist or their designated appointee.
  - c) Persistent non-natives, such as such as timothy (*Phleum pretense*), orchardgrass (*Dactylis glomerata*), ryegrass (*Lolium spp.*), or crested wheatgrass (*Agropyron cristatum*) will not be used in revegetation.
  - d) Seed and plant material will be from native, high-elevation sources as much as possible. Plant and seed material should be collected from as close to the project area as possible, from within the same watershed, and at a similar elevation whenever possible.

To implement some of these management measures, the following infestations will be managed as described. Map of infestations and project area is provided as appendix.

**Infestations managed during implementation (not treated)**

Project Area	Species	Common Name	LTBMU Site ID	Project ID	Percent cover	Acres	Management measure	Notes
Existing Folsom Basin	<i>Bromus tectorum</i>	cheat-grass	n/a	BRTE-2	30	0.06	Flag and avoid during all proposed activities	
Proposed culvert; proposed alignment; dewatering pipe; access road	<i>Bromus tectorum</i>	cheat-grass	n/a	BRTE-1	30	0.54	1) do not stage equipment; 2) wash equipment after working in infestation; 3) do not salvage soil from infested area; 4) minimize disturbance in infested areas; 5) where possible, work should progress from infested area to uninfested area	This infestation parallels west side of Hwy 50 for 800 ft. & surrounds LamWatah public parking area

## 4 TREATMENT

To implement some of the management measures, the following infestations will be treated as described. These areas are also to be flagged and avoided during implementation. Map of infestations and project area is provided as appendix. Project leader will notify the Forest Botanist or their designated appointee at least four months prior to project initiation (for chemical treatment) to coordinate invasive plant treatment. Infestations prioritized for treatment will be treated in accordance with Forest Service management direction and the design features of the LTBMU 2010 Terrestrial Invasive Plant Species Treatment Project Environmental Assessment. LTBMU preferred treatment methods are included. The available treatment methods and required resource protection measures are included as an appendix.

**Infestations to be treated prior to implementation**

Project Unit / Area	Species	Common Name	LTBMU Site ID	Plant Cnt	Acres	Preferred treatment method	Notes
Dewatering pipe; proposed alignment	<i>Cirsium vulgare</i>	bull thistle	223	275	2.6	Manual	Chemical treatment of known bull thistle infestations is not approved.
Proposed alignment	<i>Leucanthemum vulgare</i>	Oxeye daisy	461	0	0.04	Manual	No plants at last survey in 2014
Dewatering pipe; proposed alignment; access road	<i>Potentilla recta</i>	Sulphur cinquefoil	338	1000	4.7	Chemical —aminopyralid preferred	Because infestation crosses Burke Creek, some handheld application may be required (no sprayers within 10 ft. of perennial water)

Biennial thistles: bull thistle (*Cirsium vulgare*)(CIVU); musk thistle (*Carduus nutans*)(CANU4); scotch thistle (*Onoropordum acanthium*)(ONAC). These thistles are tap-rooted biennials and they can be controlled manually, if enough root is removed and no seed is produced. Preferred treatment is manual. Chemical treatment of large infestations can be assessed in consultation with the Forest Botanist.

Manual (rosette or bolt stage): dig out getting as much of the root as possible and either bag it up or lay it on a rock or log where the roots will not be in contact with the ground.

Manual (bud or flower stage): clip all buds and flowers, bag, and dispose properly. Pull or dig roots out and lay to dry out or bag. Leave as much of the plant behind to minimize landfill space (i.e. stems and leaves).

Chemical: Aminopyralid is preferred for musk and scotch thistle. Chemical treatment of known bull thistle infestations is not approved.

Ox-eye Daisy (*Leucanthemum vulgare*)(LEVU): Preferred treatment method depends on infestation size. Manual treatment is preferred for small infestations. Large infestations require consultation with the Forest Botanist to develop a treatment plan.

Manual: Hand pull, bag and dispose properly. Manual control is most effective when done before oxeye daisy flowers and seed is dispersed.

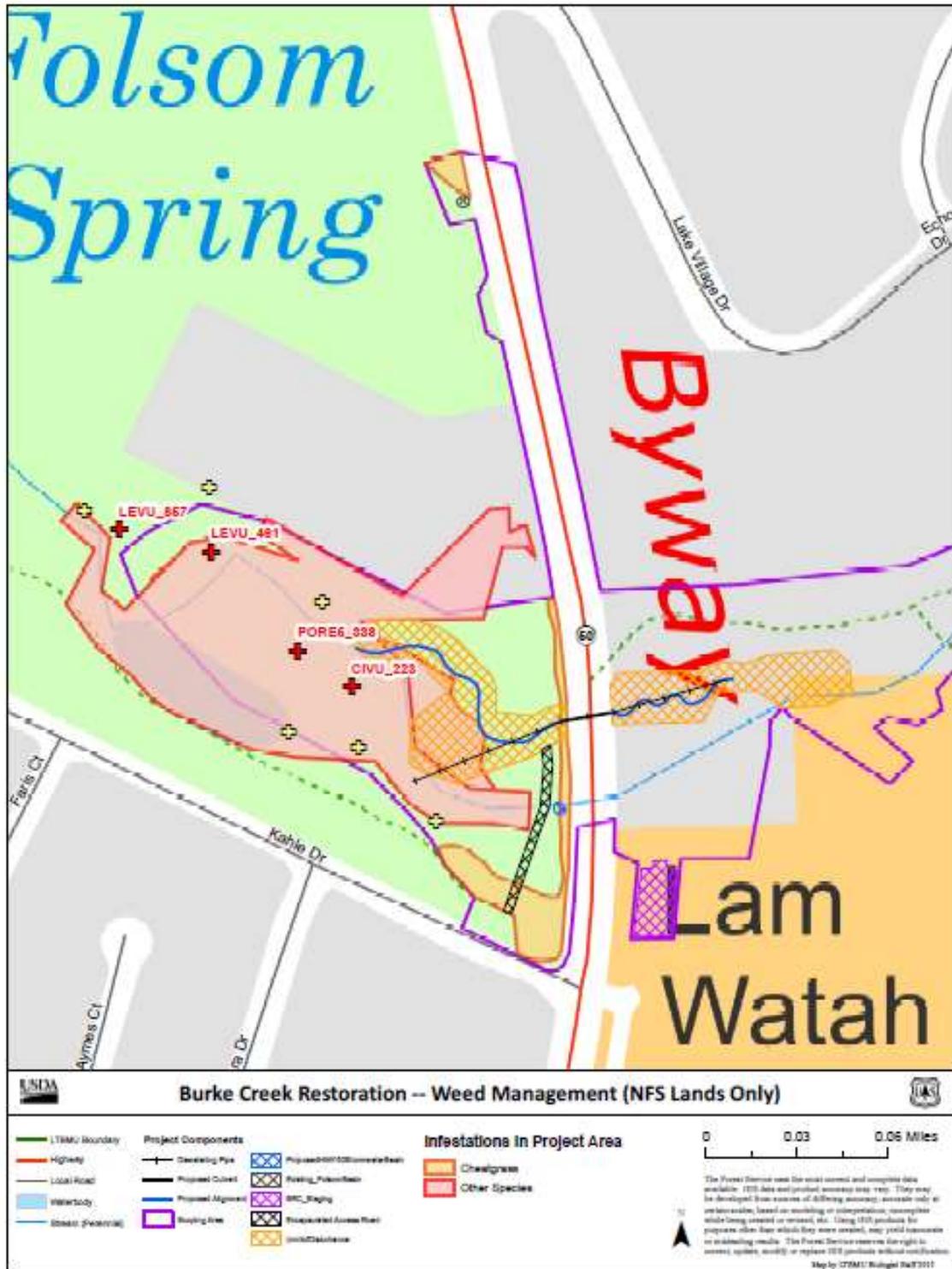
Chemical: Aminopyralid is preferred. For large infestations, mowing or cutting weeks before chemical treatment to stimulate greater leaf area to absorb herbicide products is recommended.

Sulfur Cinquefoil (*Potentilla recta*)(PORE5): Sulfur cinquefoil is often confused with many North American native cinquefoils. Confirm identification with trained botanist prior to treatment. Preferred treatment method depends on infestation size. Manual treatment is preferred for small infestations. Large infestations require consultation with the Forest Botanist to develop a treatment plan. Clipping, mowing, and prescribed burning alone are not recommended as they can stimulate regrowth. Manual: Pull or dig, bag and dispose properly. Chemical: Aminopyralid is preferred as a spring application (rosette to pre-bud stage). Apply in pre-bud stage. Leaf and stem hairiness requires use of a surfactant.

## 5 MONITORING

The entire project area will be monitored / systematically surveyed for invasive plant introduction at least once at two years post-implementation. All invasive plant treatments will be monitored for effectiveness for at least three years after treatment and retreated as necessary.

# APPENDIX A. INFESTATION MAP



# APPENDIX B. TREATMENT REQUIREMENTS

*For all treatment under the 2010 Terrestrial Invasive Plant Species Treatment Project*

## Summary of All Approved Treatment Methods

Treatment Method	Description
<b>Manual Methods</b>	
Hand Pulling	Pulling or uprooting plants can be effective against some shrubs, tree saplings, and herbaceous invasive plants. Annuals and tap-rooted plants are particularly susceptible to control by hand-pulling. It is not as effective against many perennial invasive plants with deep underground stems and roots that are often left behind to re-sprout. The advantages of pulling include its small ecological impact, minimal damage to neighboring plants, and low (or no) cost for equipment or supplies. The key to effective hand-pulling is to remove as much of the root as possible while minimizing soil disturbance. For many species, any root fragments left behind have the potential to re-sprout, and pulling is not effective on plants with deep and/or easily broken roots.
Pulling Using Tools	Most plant-pulling tools are designed to grip the plant stem and provide the leverage necessary to pull its roots out. Tools vary in their size, weight, and the size of the invasive plant they can extract. Some examples include The Root Talon, which is inexpensive and lightweight, and the Weed Wrench, which is available in a variety of sizes. Both tools can be cumbersome and difficult to carry to remote sites. Both work best on firm ground as opposed to soft, sandy, or muddy substrates.
Clipping	"Clipping" means to cut or remove seed heads and/or fruiting bodies to prevent germination. This method is labor-intensive and effective for small and spotty infestations.
Digging	Using hand tools such as shovels and sharp shooters (shovels with a narrow blade). This is the current method for TIPS treatment.
Mulching	Covering with certified "weed free and plastic free" mulch such as rice straw, grass clippings, wood chips, or newspaper.
Tarping	Placing tarps (visqueen, geocloth or similar material) to shade out weeds or solarize (to injure by long exposure to heat of the sun) them. Tarping is most effective when the soil is damp (Harris 2009).
<b>Mechanical Methods</b>	
Mowing, cutting, brushing, trimming	Mowing and cutting can reduce seed production and restrict invasive plant growth, especially in annuals cut before they flower and set seed. Some species, however, re-sprout vigorously when cut, replacing one or a few stems with many that can quickly flower and set seed. These treatments are used as primary treatments to remove above-ground vegetation in combination with herbicide treatments to prevent re-sprouting, or as follow-up treatments to treat target plants missed by initial herbicide use. Also, mowing and cutting can be used, in conjunction with herbicide treatments, to reduce vegetative materials and to promote vigorous growth in order to decrease the amount of herbicide application needed, and to increase herbicide effectiveness.
<b>Herbicide Methods</b>	
	Herbicides will be applied according to label directions. Herbicide treatments would include use of adjuvants such as surfactants and dyes. Adjuvants are materials that facilitate the activity of herbicides, such as the emulsifying, dispersing, spreading, wetting, or other surface modifying properties of liquids; and dyes assist the applicator in efficiently treating target TIPS and also avoiding contact with herbicide-treated plants by showing which plants have been treated already. Herbicide use must be timed to the growth stage and physiology of the target species.
Hand/ Selective	Treatment of individual plants using land-based equipment to avoid other non-target plants. There is a low likelihood of drift or delivery of herbicides away from treatment sites, because with these methods there should be no drift. These methods are used in sensitive areas, such as near water, to avoid getting any herbicide on the soil or in the water. Hand/Selective methods could be done under more variable conditions than spot spraying or broadcast spraying (Tu et al., 2001). Specific methods include: <u>Dip &amp; clip</u> – similar to cut stump, where cutting tool is first dipped in concentrated herbicide, then used to cut target TIPS to be treated <u>Hack &amp; Squirt, Cut &amp; Squirt, Cut stump</u> – herbicide is applied to cut surfaces to eliminate or greatly reduce re-sprouts; this is an individual target TIPS treatment <u>Wicking &amp; wiping</u> – herbicide is wiped onto the target TIPS with the wick of the applicator
Directed/ spot spray	Accomplished by land-based backpack sprayer with wand with regulated nozzle so that spray is concentrated at the target TIPS
Limited broadcast spray	Hand application with land-based backpack sprayer while wetting more than one target TIPS plant at a time; used for dense occurrences of target TIPS where individual plant application would not be effective.
<b>Other Methods</b>	
Thermal	Thermal methods are based on the systematic increase of plant temperature, reaching diverse thermal death points to eliminate the vegetation. Steaming, flaming, torching, infrared, microwave, and similar methods to be done only when weather conditions permit, such as in a wet season (spring). Equipment for these methods is produced by various companies and may include an open flame. However, flame/fire is not the prerequisite for this method, since temperatures to accomplish cell death are generally 50-70 degrees C (122-158° F), significantly below the temperatures attained by some propane burners (e.g. 1,900 C - 3452° F). Bladders and hand tools such as shovel

Treatment Method	Description
	and Pulaski are required when using this method (see Design Features). This method is especially useful for small plants, plants in the rosette stage, or seedlings. Larger weeds that are removed using other methods often release the seeds in the seed bank to germinate, which results in a flush of seedlings at that location. Thermal treatment would be a possible choice in treating these seedlings. Fuels burning is not part of this project. Thermal would not be used within wilderness.

### Herbicides Analyzed for Use on LTBMU

Herbicide use on LTBMU requires a project-specific Pesticide Use Proposal (PUP) (FS-2100-2) and safety plan (FS-6700-7). Herbicides will be applied and monitored in accordance with: a) product label directions; b) Best Management Practices for water quality (USDA Forest Service 2000), c) Forest Service Manual (FSM 2080, 2150 and 2200) and Handbook (FSH 2109.14) direction; and d) design features contained within the 2010 Terrestrial Invasive Plant Species (TIPS) Treatment Environmental Assessment (listed below).

Herbicide Active Ingredient	Maximum Application Rate (pounds/acre)
Aminopyralid	0.25 lbs (ae)
Chlorsulfuron	0.14 lbs/acre (ai)
Glyphosate	2.7 lbs/acre (ae)
Aminopyralid and Triclopyr premix	0.11 lbs (ae) Aminopyralid + 1.12 lbs (ae) Triclopyr acid

### Resource Protection Measures for All Treatment Methods

#### ***SPECIAL STATUS (THREATENED, ENDANGERED, CANDIDATE, FOREST SENSITIVE, TRPA<sup>1</sup> SPECIAL INTEREST, MANAGEMENT INDICATOR, AND MIGRATORY BIRD SPECIES) WILDLIFE AND FISHERIES***

- Where possible, manual weed treatment methods will be utilized within 50 feet of perennial rivers, streams, lakes and other water bodies, including seasonally flooded Stream Environment Zones (SEZs)<sup>2</sup>.
- Chlorsulfuron and Triclopyr will not be applied within 50 feet of perennial rivers, streams, lakes, and other water bodies, including seasonally flooded SEZs.
- Only dip & clip, wicking & wiping, or spot applications of Glyphosate or Aminopyralid will be used within a zone between 10 to 50 feet from perennial rivers, streams, lakes, seasonally flooded SEZs, and meadows, including adjacent to occupied Lahontan cutthroat trout and Sierra Nevada yellow-legged frog habitats (consistent with Sierra Nevada Forest Plan Amendment (SNFPA) Standard and Guideline #98).
- Only dip & clip and wicking & wiping applications of Aminopyralid or the aquatic formulation of Glyphosate will be used within 10 feet of perennial rivers, streams, lakes, seasonally flooded SEZs, and meadows.
- When applying aquatic formulations of herbicides within 50 feet of perennial rivers, streams, lakes and other water bodies, including seasonally flooded SEZs, a surfactant registered by the California Department of Pesticide Regulation for aquatic use will be utilized. Prior to application, the noxious weed coordinator will consult with an aquatic biologist to select a surfactant.
- Herbicide applications will not take place within six hours of predicted rainfall that has a high probability of producing measurable runoff, or as requested by the Aquatics Biologist, and as found in the label directions. Daily spot weather forecasts will be made available to the applicator.
- Streams or other surface waters must not be used for washing herbicide application equipment or personnel, unless required in an emergency situation. However, Pesticide Worker Safety Regulations require that water, soap and a towel be available within ¼ mile of field workers and at mixing sites (PRD L30).
- Treatment crews will use system road or trail stream crossings when wearing contaminated clothing or carrying herbicide mix, within or upstream of LCT occupied habitat. Mixing of herbicides for application will take place more than 100 feet from perennial rivers, streams, lakes and other water bodies, and outside of SEZs.

<sup>1</sup> Tahoe Regional Planning Agency

<sup>2</sup> Unless otherwise noted, SEZs will be based on the riparian vegetation layer for the Forest, and field checked prior to implementation.

9. The noxious weed coordinator will inform the project or staff biologists for fisheries and wildlife of new infestations before each treatment season, to verify that treatments would not disturb nesting or denning activity of any special status wildlife species. This information will be used to verify that treatments will not impact Lahontan cutthroat trout, yellow-legged frog, or other species habitat or populations. Limited operating periods for all special status wildlife species will be implemented as necessary, based on the most current wildlife data from pre-project field surveys, or habitat suitability as determined by the project biologist. Most vegetation management activities are prohibited during limited operating periods (LOP), unless surveys confirm that nests are uninhabited (SNFPA 2004).
10. Any incidental sightings of special status fish and wildlife species will be reported to the project or staff biologists. Active nests or dens will be protected according to management direction found in the LTBMU Forest Plan and Sierra Nevada Forest Plan Amendment. Species identification, known locations, and protection procedures will be discussed during a pre-treatment meeting.
11. TIPS occur within 0.25 mile of osprey nests designated as Fallen Leaf Lake 04 and South Lake Tahoe 06. Both nests were active in 2008. A limited operating period of March 1 through August 15 applies, unless surveys confirm that osprey are not nesting.

#### **HYDROLOGY/WATER QUALITY/SOILS**

12. State and Regional Water Quality Control Board certified Best Management Practices will be implemented. BMPs applied to all Forest projects are outlined in the Water Quality Management for Forest System Lands in California, BMP handbook. See Appendix E for BMPs appropriate for this project and references to the associated design features outlined in section 3.2. Referenced design features provide additional information as to how these BMPs will be applied on this project. Weed infestation size and density criteria will be used to delineate degree of LRWQCB notification and involvement, as below (PRD 15).
  - Where infestations are less than one acre in size and rapid action is required to prevent impending seed production, notify LRWQCB with request for "return in 48-hour" response. The LRWQCB will notify the Forest within two days if anything more is needed prior to treatment. If the LRWQCB does not respond, it can be interpreted that the agency does not need anything additional (Bruce Warden, personal communication 3/18/2010).
  - Where infestation areas are greater than one acre, or are within 25 feet of a water surface, or infestation areas are from ¼ to 1 acre and so do not require rapid consultation for seed production control, full consultation with LRWQCB is required prior to treatment.

Additional specifications regarding buffer zones for herbicide applications adjacent to water are given in the preceding section (Design Features 1 through 8).

13. Rehabilitation of disturbed sites will be accomplished using local native plant species. Areas with greater than 0.1 acre of bare soil created by the treatment of TIPS would be evaluated for rehabilitation and revegetation. Temporary Best Management Practices, such as use of rice grass mulch, will be implemented as needed.

#### **HERITAGE RESOURCES**

14. Weed treatments will be coordinated with the Forest Heritage Resource specialist to protect resources such as traditional plant gathering areas, rock art, and historic structures in both Nevada and California. In California, soil disturbance will be limited to one cubic meter per acre, without prior authorization from the heritage resources specialist. (R5 Programmatic Agreement for minimum disturbance activities with State Historic Preservation Officer)
15. Herbicides will not be used to treat TIPS in any Area of Concern or gathering site for the Washoe Tribe without consultation with the Tribe. If weeds become established in the future, the LTBMU will consult with the Tribe on suitable treatment methods.
16. Cultural surveys will be conducted as needed and evaluation will occur on a case by case basis. Existing properties will be considered with each treatment of weeds.

#### **FOREST SERVICE SENSITIVE AND SPECIAL INTEREST PLANT SPECIES**

17. The project or staff botanist will be consulted prior to chemical treatment of new TIPS occurrences or expanding occurrences, to ensure that Threatened, Endangered, Proposed, Candidate, and Sensitive (TEPCS) plant species are not affected.
18. Only wicking & wiping, dip & clip, and non-chemical treatments may take place within 100 feet of Sensitive Plants.

#### **MANAGEMENT AREAS AND ADJACENT NON-FOREST AREAS**

19. If TIPS are discovered in the Grass Lake RNA, approval for treatment will be coordinated with the Pacific Southwest Research Station Director. Refer to FSM 4060.

20. If herbicide use is proposed to control an infestation of TIPS in any Wilderness Area (Desolation, Granite Chief, Mt. Rose), Regional Forester approval will be sought. Refer to FSM 2320.
21. If National Forest property boundary is unclear, then Forest Service personnel will identify property boundary locations before treatment occurs.

#### **RECREATION, SPECIAL USES AND RECREATION RESIDENCES**

22. The Recreation Department will be consulted prior to treatment near public developed recreation sites, areas of concentrated public use such as trailheads, and publicly and privately operated water systems and facilities, to reduce conflicts with operational needs. Application of herbicides in recreation areas would ideally occur during the week, and on weekends before Memorial Day or after Labor Day.
23. For domestic water system sources, chemical applications shall be avoided within areas where movement into drinking water is possible. For surface water and groundwater sources, a buffer of 50 feet is required from the point of diversion.
24. Prior to herbicide applications within Special Use Permitted areas, LTBMU Special Uses will be contacted for any necessary coordination with permit holders.

#### **HEALTH AND SAFETY**

25. Chemicals will be stored in designated storage facilities according to the manufacturer's labels and consistent with SNFPA Standard and Guideline #99.
26. All Personal Protective Equipment (PPE) will be used in accordance with the Material Safety Data Sheet (MSDS) and product label for the specific type of chemical being applied during field operations.
27. Cautionary notice signs regarding herbicide use will be placed at access points to treatment areas prior to initiating treatment. These signs will identify the herbicide(s) to be used, the date of application and date of expiration of the cautionary notice (at least 48 hours after application), name and phone number of Forest contact, and phone number for the County Health Department. They will be removed as soon as possible after the expiration date of the cautionary notice.
28. Herbicides will only be applied by trained and/or certified applicators in accordance with label instructions and applicable Federal and state pesticide laws. Label instructions include constraints on application under certain wind, temperature, precipitation and other weather conditions to eliminate drift, volatilization, leaching, or runoff.
29. Any hazardous materials spills will be reported to the LTBMU Forest Spill Coordinator and treated in accordance with the LTBMU Hazardous Materials Response and Spill Safety Plan (PRD L10). If a spill is threatening or has occurred, and requires emergency containment, staff will call 911, and radio or call Camino Dispatch. Dispatch will notify the appropriate agencies according to the Lake Tahoe Geographic Response Plan (September 2007). If material is determined to be of the type that may be handled by local refuse companies (such as oil and gas), staff will call refuse companies first to see if they are capable of retrieving and disposing. If material is beyond the capability of local refuse companies, staff will call a hazardous waste contractor to arrange retrieval and disposal.
30. Unused herbicides will be disposed of in accordance with the manufacturer's label.
31. Bladder bag and hand tools such as shovel and Pulaski shall be on site when using an open flame to thermally treat TIPS. Although this method does not utilize *burning per se*, but rather heats to boiling the cells of plants (and not necessarily with an open flame), if any fires result from this treatment, they will be put dead-out before personnel leave the area. Fire-trained personnel will be on site as required.

#### **HERBICIDES**

32. All appropriate laws and regulations governing the use of pesticides, as required by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, and Nevada Division of Environmental Protection, and Forest Service policy pertaining to pesticide use, will be followed.
33. Coordination with the appropriate County Agricultural Commissioners will occur, and all required licenses and permits will be obtained prior to any pesticide application.
34. All herbicide spray tanks will be equipped with a pressure gauge to ensure that herbicides are applied with low pressure.
35. For control of drift, all herbicide application will follow EPA approved *label directions* to control the drift of herbicides during spraying. These directions have specific wind speeds and air temperatures for application of each herbicide. In addition, applicators will utilize droplet size and spray pressure to ensure droplets do not travel outside of the targeted zone.

#### **TIPS**

36. Manual, mechanical, or thermal treatment will be utilized in lieu of chemical treatment where effective.
37. Any cut TIPS will be disposed of in a manner to preclude spread of propagative parts or contact with soils likely to encourage re-sprouting. Disposal will be as follows: If no flowers or seeds are present, pull the weed and place it on the ground to dry out if species is not rhizomatous or if there is no potential for re-sprouting. If flowers or seeds are present or there is resprouting potential, pull the weed carefully to prevent seeds from falling and to prevent roots from breaking and leaving segments in the ground, and place in an appropriate container for disposal; or separate the flowers and seedheads from the plant if vegetative reproduction is not a concern and dispose of separately as above.
38. The Forest will continue to inventory and monitor current TIPS populations and use this information to direct activities to reduce the spread and establishment of TIPS.
39. All off-road equipment used for weed control efforts will be washed before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds. "Off-road equipment" – in this case, potentially ATVs - does not include vehicles not intended for off-road use. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material, or other such debris.
40. When working in known weed-infested areas, the equipment will be cleaned before leaving.
41. Use weed-free mulches and seed sources for revegetation efforts. All activities that require seeding or planting must utilize locally collected native seed sources when possible. Plant and seed material should be collected from or near the project area, from within the same watershed, and at a similar elevation when possible. Seed mixes must be approved by a LTBMU botanist, noxious weed coordinator, or ecologist.
42. Staging areas for equipment, materials, or crews will be prohibited within the actual area of TIPS infestations.