

**DECISION NOTICE**  
**and**  
**Finding of No Significant Impact**  
**Terrestrial Invasive Plant Species Treatment Project**

US Forest Service  
Lake Tahoe Basin Management Unit  
Alpine, El Dorado and Placer Counties, California  
Douglas and Washoe Counties and Carson City, Nevada

**BACKGROUND:**

This project proposes to treat Terrestrial Invasive Plant Species (TIPS) on National Forest System (NFS) lands managed by the LTBMU through manual, mechanical, thermal and chemical treatment. Currently, 34 TIPS are known on or near the LTBMU. There are 493 known locations on NFS lands, which contain approximately 8.9 infested acres (weeds only) spread throughout 309 gross acres (weeds intermixed with other plants and bare earth). Past treatments have relied on manual methods only. However, some species respond to mechanical injury from handtools by reproducing new plants at the site of the wound through crown buds and rhizome initiations. Thus, new plant development or regrowth of damaged plants can be facilitated by injury to the roots or root crown from shovels or pulaskis if all the plant parts are not completely removed from the site.

The species being considered in this EA are TIPS that possess one or more of the characteristics of an invasive species and are undesirable on the LTBMU (also referred to as the Forest). Based on Executive Order 13112, issued in 1999, a species is considered invasive if it: a) is non-native to the ecosystem under consideration, and b) its introduction causes or is likely to cause economic or environmental harm or harm to human health (USDA Forest Service 2004b).

As referenced in the Forest Service Manual (FSM 2080), the Federal Noxious Weed Act directs the Secretary of Agriculture to develop and coordinate a management program for control of undesirable plants that are noxious, harmful, injurious, poisonous, or toxic on Federal lands under the agency's jurisdiction. The state agriculture departments of Nevada (NDA) and California (CDFA) both maintain invasive plant lists that are mainly focused on agricultural 'weeds.' The California Invasive Plant Council (Cal-IPC) also maintains a list of exotic pest plants that include many wildland 'weeds' (<http://www.cal-ipc.org/ip/inventory/index.php>).

Some of these TIPS are aggressive invaders of native plant communities and are capable of dominating native habitat types, excluding native vegetation, and reducing site diversity and productivity. Riparian habitats in particular may be especially affected. It has been estimated that, on NFS lands nationwide, at least 6 to 7 million acres are infested with TIPS, and infested acres are increasing at a rate of 8 to 12 percent each year (USDA Forest Service 1999).

Smith, et al., (1999) examined the growth rates of a variety of different invasive weeds in diverse locations around the western United States. Their study found an average expansion rate of 23.7% per year, with relatively high rates in early years and lower growth rates as an infestation matures. Their projected expansion rates for the early years of small infestations are in the range

of 60%. Goodwin and Shelley suggested a more conservative annual rate of spread of 14% (2006).

On the LTBMU, infested acres of TIPS increased by 60% from 2007 to 2009, an average of 30 percent each year. Almost 20% of this increase occurred in the Angora Fire Burn Area. At roughly 2,600 acres, the Angora Fire Burn Area is less than one *fiftieth* (1/50th) of the more than 150,000 acres of NFS lands in the Basin. The weed increase in the Angora Fire Burn Area was more than 10 times as great, acre for acre, than everywhere else on the Forest. Similar trends have been observed throughout the Forest, as the number of locations and extent of existing populations of species such as Canada thistle, cheatgrass, perennial pepperweed/tall whitetop, yellow toadflax, oxeye daisy and others have increased over the past several years (Reed 2009), and will likely continue to do so without implementation of additional, more effective control measures.

The Pacific Southwest Region Noxious Weed Management Strategy (R5 Strategy) (USDA Forest Service 2001a) addresses an overall strategy for reducing impacts from TIPS on Forests within Region 5. The R5 Strategy includes: Coordination and Cooperation; Prevention and Education; Control; Inventory, Mapping and Monitoring; Research; and Administration and Planning. Only control and monitoring will be addressed in this project.

This project includes methods for evaluating new TIPS on the Forest, and criteria for prioritizing which populations require control (USDA Forest Service 2001a), and provides an assessment of the most appropriate eradication or control methods for different TIPS species. The goal of this project is eradication of the high priority sites of invasive weeds and high priority species, including those that currently have limited distributions on the Forest, e.g. perennial pepperweed/tall whitetop and knapweeds. Furthermore, the goal is also to control expansions of known TIPS sites, and control and prevent further spread of species with wider distribution on the Forest, e.g. cheatgrass, woolly mullein/common mullein.

#### **DECISION:**

Based on the Environmental Assessment (EA) and the Finding of No Significant Impact (FONSI) contained as part of this decision document, it is my decision to select Alternative 2, which will:

- 1) Treat TIPS sites in 493 known locations (351 General Forest and 142 Urban Lots) on the LTBMU, by manual, mechanical, chemical, thermal, or a combination of those means. Chemical treatment is approved for up to 100 infested or net acres annually<sup>1</sup>. Mechanical, manual, or thermal methods are to be used to treat as many acres as necessary and feasible annually. Field bindweed and woolly/common mullein will only be treated using non-herbicide methods.
- 2) Treat new infestations, expanded infestations, and new species of TIPS<sup>2</sup>. Methodology to determine new species of TIPS to be treated can be found in the EA, Appendix A. Treatment methods and Design Features for new infestations, expanded infestations, and

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<sup>1</sup> The estimated need to treat 100 acres of TIPS annually was arrived at by professional judgement, after considering an average annual rate-of-spread of 16 to 60 percent from the literature (Smith et al 1999), the 60 percent rate-of-spread that occurred on the LTBMU from 2007 to 2009, and the potential impacts of large soil-disturbing events and climate conditions favorable to weed propagation.

<sup>2</sup> There are 34 TIPS proposed, although not all of these species are currently found on LTBMU lands.

new species would be the same as those proposed in this project for known infestations (see table on page 4 and Design Features in Appendix A).

As a part of my decision I have incorporated into Design Feature number 8 (DN, Appendix A) language that would limit crossing of streams in Lahontan Cutthroat Trout habitat based on informal consultation with the United States Fish and Wildlife Service (USFWS).

Currently, there are no known TIPS within any RNA or Wilderness areas on the LTBMU. However, if TIPS are discovered in the 356-acre Grass Lake Research Natural Area (RNA), approval for treatment will be coordinated with the Pacific Southwest Research Station Director. If herbicide use (herbicides are plant-specific pesticides) is proposed to control any infestation of TIPS in any Wilderness Area, Regional Forester approval will be sought. Thermal and mechanical methods will not be used in wilderness.

This project will be limited to ground-based applications. Project operations will begin in 2010 and will continue into the future. The Forest Service proposes to use the following treatments for any known sites of the 34 TIPS listed, and for new sites and new TIPS that have not yet been discovered (for a full description of treatment methods see Table 1):

- **Manual treatment** – Treat as many acres as necessary and feasible. Manual treatments could include digging, hand pulling, pulling using tools, clipping, mulching, and tarping. Treatments for woolly/common mullein and current sites of bull thistle consist of non-chemically removing the plants, utilizing volunteer groups where possible. Crews will be instructed to minimize ground disturbance and trampling of native vegetation while working at these sites. TIPS will be disposed of as necessary, minimizing soil contact with potential TIPS propagules. In locations where potential for significant seed dispersal is high from removal operations, manual treatments will be timed to minimize this risk, e.g. pulling plants or cutting and bagging will be completed before seeds are ready for dispersal.
- **Mechanical treatment** – This type of treatment could include such methods as mowing, cutting, brushing, and trimming.
- **Chemical treatment** – Treat up to approximately 100 infested acres annually. Chemicals will be used where manual treatment is ineffective at control or eradication. No aerial application of herbicides is proposed in this project. Chemical treatment will include hand/selective, directed/spot spray, or limited broadcast, and could be used to control such species as Canada thistle, perennial pepperweed/tall whitetop, spotted knapweed, Russian knapweed, Dalmatian toadflax, oxeye daisy, hoary cress, Scotch broom, sulphur cinquefoil, and yellow toadflax.
- **Thermal treatment** - Will be used on small plants or emerging rosettes/seedlings. Growth stage, location of growing tips, amount of heat, and duration of exposure all affect the efficacy of thermal methods. The treated acreage would be very small, estimated at 1-5 gross acres annually (about 0.02 % of the current gross acres), but could be expanded depending on degree of success with this method.

**Table 1. Treatments Proposed**

Treatment Method	Description
<b>Manual Methods</b>	
Hand Pulling	<p>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.</p> <p>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.</p>
Pulling Using Tools	<p>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.</p>
Clipping	<p>“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.</p>
Digging	<p>Using hand tools such as shovels and sharp shooters (shovels with a narrow blade). This is the current method for TIPS treatment.</p>
Mulching	<p>Covering with certified “weed free and plastic free” mulch such as rice straw, grass clippings, wood chips, or newspaper.</p>
Tarping	<p>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).</p>
<b>Mechanical Methods</b>	
Mowing, cutting, brushing, trimming	<p>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.</p> <p>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.</p>
<b>Herbicide Methods</b>	
	<p>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</p>

Treatment Method	Description
	target species.
Hand/ Selective	<p>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:</p> <p><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</p> <p><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</p> <p><u>Wicking &amp; wiping</u> – herbicide is wiped onto the target TIPS with the wick of the applicator</p>
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	<p>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 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. Prescribed burning is not part of this project. Thermal will not be used within wilderness.</p>

### Herbicide Treatments

Herbicide treatment is being considered as an option for control of 31 of the 34 TIPS species in the LTBMU weeds database used in analysis for this project, and will occur at 198 sites or more on the Forest. Known occurrences of bull thistle will not be treated with herbicides. Future occurrences of bull thistle may be treated with herbicides. Two of the 34 species in the current database will not be treated with herbicides (field bindweed and woolly/common mullein).

Another 14 of the 34 TIPS in the database currently have no known sites on the Forest, because the plants have either been removed, and/or are found only on adjacent non-Forest lands; 10 of those 14 previously known species were completely removed in 2009, and four new species of TIPS (Rush skeletonweed, Poison hemlock, Dyer’s woad, and Himalayan blackberry) were found adjacent to or on the Forest in 2009 at only one location each and were manually removed. Of the remaining 17 TIPS in the LTBMU weeds database, some may be treated effectively by non-chemical methods (see Design Feature (DF)-36: manual treatment will be utilized in lieu of

chemical treatment where effective). However, where manual treatment is ineffective at control or eradication, herbicides will be used.

Eradication is the goal for those species identified as “high” priority - where feasible - such as when there are few sites of that species, or the sites are small. Control is the goal for the remaining species. For species with priority ratings of “low” or “very low”, and for some with priority ratings of “moderate”, the goal of control will be met by attempting to eradicate the smaller, isolated infestations while exerting the best control feasible over other infestations through containment, prevention and other integrated pest management measures. TIPS locations can be found in PRD<sup>3</sup> (L1-L8). Information on this project can be found at: <http://fs.usda.gov/goto/ltbmu/InvasivePlantTreatment>.

Table 2. Proposed Action TIPS Summary (continues on next page)

	Terrestrial Invasive Plant Species	Proposed Treatment Methods	Scope* (# locations, and net expanded acres <sup>2</sup> )	Priority/Goal
1	Russian knapweed ( <i>Acroptilon repens</i> )	All methods	0 locations/0 ac.	High/Eradicate
2	Tree of Heaven ( <i>Ailanthus altissima</i> )	All methods	0 locations/0 ac.	High/Eradicate
3	Cheatgrass ( <i>Bromus tectorum</i> )	All methods	39 locations (but also widespread)/1 ac.	Generally Low/Control
4	Heart-podded hoary cress ( <i>Cardaria draba</i> )	All methods	1 location/0.000689	High/Eradicate
5	Globe-podded hoary cress ( <i>Cardaria pubescens</i> )	All methods	1 location/0.0001	High/Eradicate
6	Musk thistle ( <i>Carduus nutans</i> )	All methods	3 locations/ 0.012626ac.	High/Eradicate
7	Purple starthistle/ <i>Centaurea calcitrapa</i>	All methods	0 locations/0 ac.	High/Eradicate
8	Diffuse knapweed ( <i>Centaurea diffusa</i> )	All methods	1 location/0.00002	High/Eradicate
9	Yellow starthistle ( <i>Centaurea solstitialis</i> )	All methods	0 locations/0 ac.	High/Eradicate
10	Spotted knapweed ( <i>Centaurea stoebe</i> ssp. <i>micranthos</i> (aka <i>Centaurea maculosa</i> )	All methods	1 location/0.000045 ac.	High/Eradicate
11	Squarrose knapweed ( <i>Centaurea virgata</i> ssp. <i>squarrosa</i> )	All methods	0 locations/0 ac.	High/Eradicate
12	Rush skeletonweed ( <i>Chondrilla juncea</i> )	All methods	0 locations/0 ac.	High/Eradicate
13	Canada thistle ( <i>Cirsium arvense</i> )	All methods	14 locations/0.080716 ac.	High/Eradicate
14	Bull thistle ( <i>Cirsium vulgare</i> )	Manual, mechanical, thermal for current locations. All methods for new and expanded infestations.	293 locations/2.352106 ac.	Moderate/Control
15	Poison hemlock ( <i>Conium maculatum</i> )	All methods	0 locations/0 ac.	Moderate/Control
16	Field bindweed ( <i>Convolvulus arvensis</i> )	Manual, mechanical, thermal	2 locations/0.001400 ac.	Low/Control
17	Scotch broom ( <i>Cytisus scoparius</i> )	All methods	3 locations/0.004591	High/Eradicate
18	Teasel ( <i>Dipsacus fullonum</i> )	All methods	0 locations/0 ac.	Moderate/Control

<sup>3</sup> PRD = Project Record Documents

	Terrestrial Invasive Plant Species	Proposed Treatment Methods	Scope* (# locations, and net expanded acres <sup>2</sup> )	Priority/Goal
19	Stinkwort ( <i>Dittrichia graveolens</i> )	All methods	0 locations/0 ac.	High/Eradicate
20	Quackgrass ( <i>Elytrigia repens</i> )	All methods	Unknown number of locations/0 ac.	Generally Low/Control
21	St. Johnswort/Klamathweed ( <i>Hypericum perforatum</i> )	All methods	51 locations/0.710093 ac.	Generally Low/Control
22	Dyer's woad ( <i>Isatis tinctoria</i> )	All methods	0 locations/0 ac.	High/Eradicate
23	Perennial pepperweed/Tall Whitetop ( <i>Lepidium latifolium</i> )	All methods	18 locations/1.084238 ac.	High/Eradicate
24	Oxeye daisy ( <i>Leucanthemum vulgare</i> )	All methods	31 locations/3.539962 ac.	Generally Low/Control
25	Dalmatian toadflax ( <i>Linaria dalmatica</i> )	All methods	14 locations/0.005850 ac.	High/Eradicate
26	Yellow toadflax ( <i>Linaria vulgaris</i> )	All methods	13 locations/0.99725 ac.	High/Eradicate
27	Purple loosestrife ( <i>Lythrum salicaria</i> )	All methods	0 locations/0 ac.	High/Eradicate
28	Scotch thistle ( <i>Onopordum acanthium</i> )	All methods	1 location/0.000115 ac.	High/Eradicate
29	Reed canary grass ( <i>Phalaris arundinacea</i> )	All methods	2 locations/0.001905	Generally low/Control
30	Sulfur cinquefoil ( <i>Potentilla recta</i> )	All methods	5 locations/0.008019 ac.	High/Eradicate
31	Himalayan blackberry/ <i>Rubus armeniacus</i>	All methods	0 locations/0 ac.	High/Eradicate
32	Medusahead ( <i>Taeniatherum caput-medusae</i> )	All methods	0 locations/0 ac.	Generally Low/Control
33	Tamarisk/Salt cedar ( <i>Tamarix</i> sp.)	All methods	0 locations/0 ac.	High/Eradicate
34	Woolly mullein/Common mullein ( <i>Verbascum thapsus</i> )	Manual, mechanical, thermal	Wide-spread	Generally Low/Control

**TOTALS = 34 TIPS; 493 locations; 8.9 acres      GOAL: 24 species (2.2 ac) eradicated and 10 species controlled<sup>4</sup>**

\*TIPS with zero acres have either been treated with no plants remaining, or are found within the Basin but not on NFS lands, or have been found very close to the Basin but have not yet been found within the Basin.

The Forest is proposing to use the following herbicides to treat invasive plant species: Aminopyralid, Chlorsulfuron, Glyphosate, and Triclopyr. Triclopyr triethylamine salt (TEA) is the formulation of Triclopyr proposed. For ease of application, aquatic formulations of herbicides will be used, when available; currently, only Glyphosate and Triclopyr have aquatic formulations available. These will be used, if possible and effective, not just near sensitive aquatic environments, but also for weed treatments in drier, non-riparian land. In this way, workers will not have to carry simultaneously two separate formulations (aquatic and non-aquatic) in the field. Maximum allowable application rates are found in the table below.

<sup>4</sup> Up to 24 species would be eradicated under the Proposed Action; not all of the known species were found in the LTBMU in recent surveys, due to prior eradications. Up to 10 species would be controlled under the Proposed Action, including teasel, poison hemlock, and medusahead, which also were not found in LTBMU in recent surveys, due to prior eradications.

Table 3. **Maximum** Herbicide Application Rates

<b>Herbicide Formulation</b>	<b>Maximum Application Rate (pounds/acre)</b>
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

The U.S. Environmental Protection Agency (EPA) must register all herbicides prior to their sale, distribution, or use in the United States. In order to register herbicides for outdoor use, the EPA requires the manufacturers to conduct toxicity testing on representative species of birds, mammals, freshwater fish, aquatic invertebrates, and terrestrial and aquatic plants. An ecological risk assessment uses the data collected to evaluate the likelihood that adverse ecological effects may occur as a result of herbicide use. The LTBMU will only use those herbicides registered by the EPA.

The Forest Service conducts its own risk assessments, focusing specifically on the type of herbicide uses in forestry applications. The FS contracts with Syracuse Environmental Research Associates, Inc. (SERA) to conduct human health and ecological risk assessments for herbicides that may be proposed for use on NFS lands.

The SERA risk assessments represent the best science available, using peer-reviewed articles from the scientific literature and current US EPA documents, such as Confidential Business Information, to estimate the risk of adverse effects to non-target organisms. The risk assessments consider worst-case scenarios including accidental exposures and application at maximum label rates. Only herbicides that have SERA risk assessments are proposed in this action.

Based on risk assessments and taking into account the small size of current infestations there will be no adverse effects from implementation of Alternative 2 (EA, Chapter 4).

Table 4. Herbicides proposed for invasive plant control

Common Name	Example Trade names	Mode of Action	Weed Spectrum	Soil residual	Registered in California & Nevada	Effective timing
Aminopyralid	Milestone®, Milestone Plus®,	Growth regulator	Broadleaf species	Less than 2 weeks	Yes	Post-emergence only, from seedling to bolting
Chlorsulfuron	Telar®	Amino acid synthesis inhibitor	Mainly broadleaf species	At least 2 months	Yes	Pre- or post-emergence
Glyphosate	Rodeo® and others	Amino acid synthesis inhibitor	Non-selective	None	Yes	Post-emergence only, from seedling to early flowering
Aminopyralid and Triclopyr premix	Milestone VM Plus	Growth regulator	Broadleaf species and woody plants	Up to 6 months	Yes	Post-emergence when plants are actively growing

In 2003, the Lahontan Regional Water Quality Control Board (LRWQCB) approved Chlorsulfuron and Glyphosate for use in the Tahoe Basin, and, in 2009, the LRWQCB approved the use of Aminopyralid and Triclopyr on the LTBMU. Aminopyralid and Triclopyr offer many advantages over Chlorsulfuron and Glyphosate, including greater selectivity for invasive plants, less harm to desired vegetation, reduced application rates, and lower toxicity to wildlife and people. The LTBMU will use only those herbicides approved for use by the LRWQCB<sup>5</sup>.

All herbicides would be applied with a hand held applicator using one of several methods: “wipe & wick” applied directly to foliage and/or cut stumps, the “hack and squirt” method into tree trunks, “clip & dip”, directed/spot spray, or limited broadcast spray. The herbicide application rates are the recommended maximum rates for spraying; actual application rates using dip & clip and a wipe & wick applicator will be lower.

The use of an approved marker dye will visually confirm the location of the herbicide application, in order to ensure that the application is limited to the targeted TIPS and to reduce the risk of exposure to non-target organisms. Signs will be posted to alert the public as to the location and types of treatments being done (DF-27). Subsequently, signs will be removed no sooner than 48 hours after application, but as soon as possible after that period. Herbicide treatments at administrative sites or trailheads will not be conducted during periods of high public use, e.g. high use summer weekends or holidays.

The total amount of herbicide (active ingredient) that will potentially be used on the Forest is estimated at less than 10 pounds annually. This is 0.002% of the amount used by other agencies in 2007 in Alpine, El Dorado, and Placer counties alone (California Department of Pesticide Regulation (CDPR) <http://www.cdpr.ca.gov>). Proposed herbicide treatments would be implemented during the time of the year when chemical application would be most effective for a particular TIPS and its phenology. Appendix B contains a monitoring strategy for this project. Monitoring would be accomplished as funding and personnel are available.

<sup>5</sup> Many herbicides can be used legally within the state of Nevada, but the Lahontan Regional Water Quality Control Board has only approved a limited number of herbicides for use on the CA side of the Lake Tahoe Basin. Therefore, the most restrictive regulation is used as a baseline for this project.

At any site on which herbicides are used, any recurrence of the TIPS infestation will be promptly re-treated to ensure successful eradication. Reseeding with native species may be implemented at some sites to aid the re-establishment of native vegetation (see DF-13). Herbicides will be applied according to label directions and applied and monitored in accordance with Best Management Practices for water quality and with direction in the Forest Service Manual (FSM 2080, 2150 and 2200) and Handbook (FSH 2109.14). A Pesticide Use Proposal (PUP) (FS-2100-2) and safety plan (FS-6700-7) will be completed by the project lead prior to any herbicide use. The current Pesticide Use Spill Plan can be found in the project file (Document L12). This plan is updated annually.

#### Future treatments

As part of Alternative 2, this project will treat new infestations, expanded infestations, and new species of TIPS. Methodology to determine new species of TIPS to be treated can be found in Appendix C of this Decision Notice. Two methods are currently being considered by the LTBWCG. In one method new species recommended for treatment are given a “0” or “1” after each question. A higher score in the final tally would result in a higher priority rating for inclusion in the LTBMU TIPS treatment program. In the second method being considered, 10 key statements are each given a “10” if the statement is “yes,” and a zero (0) if the statement is false. A higher overall score means a higher priority for treatment for that species.

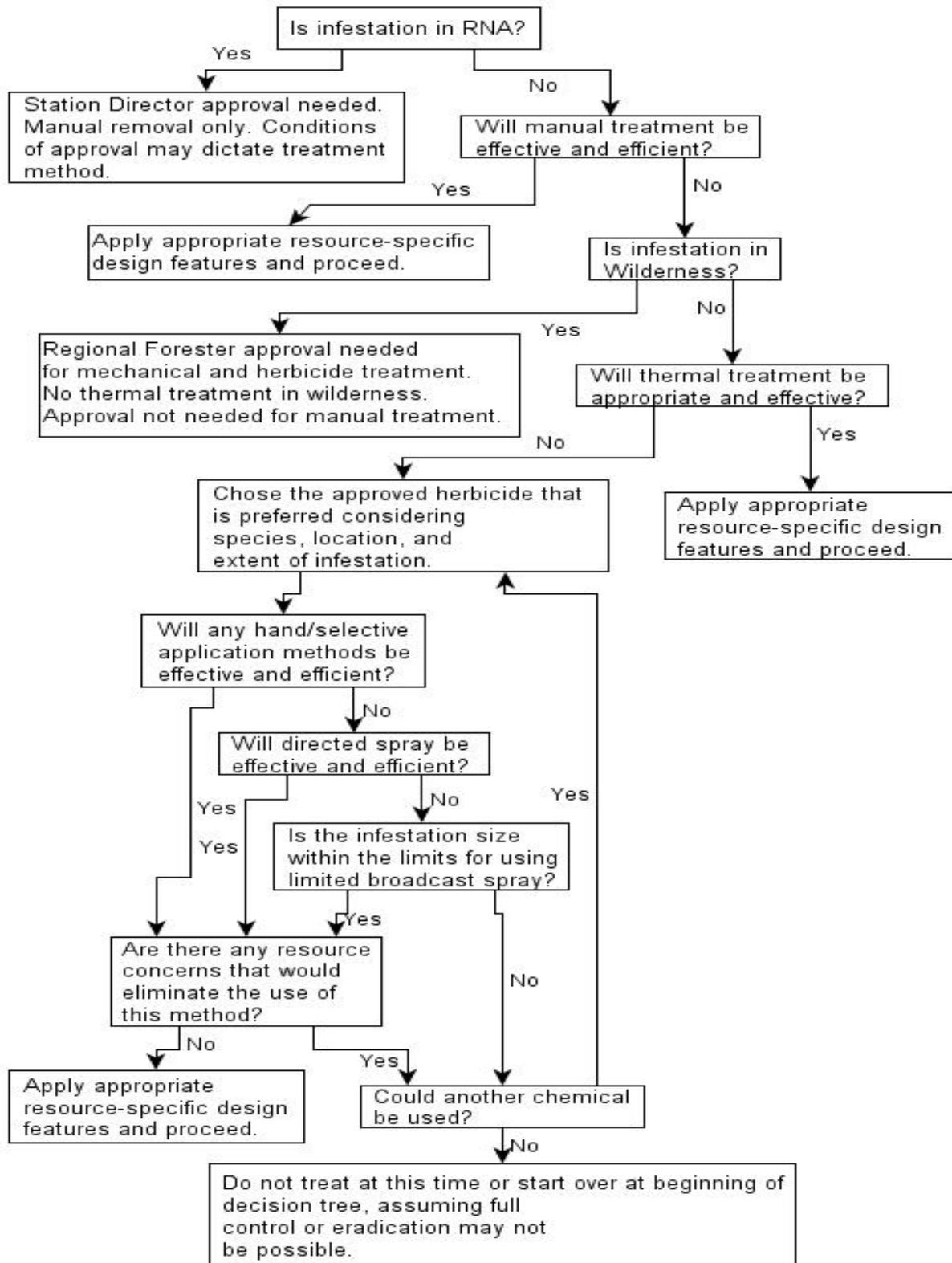
Treatment methods and Design Features for new infestations, expanded infestations, and new species would be the same as those proposed in this project for known infestations except for bull thistle. A TIPS Treatment Flow Chart (see below) explains the decision process for prioritizing future treatments.

Future treatments are a critical component of any effective invasive species management program. A prompt and coordinated containment and eradication response can reduce environmental and economic impacts. This action results in lower cost and less resource damage than implementing a long-term control program after the species is established, and requires vigilance and monitoring of the managed area and surrounding ecosystem.<sup>6</sup> Each state’s laws for pesticide use (Department of Pesticide Regulation for California, and Department of Agriculture for Nevada) will be followed.

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<sup>6</sup> The Forest Service is well suited to improve its early detection capabilities through the collaborative and coordinated efforts of the LTBWCG. For more information on this topic, refer to <http://www.fs.fed.us/foresthealth/management/fhm-invasives.shtml>.

Tips Flowchart



My decision is based on and supported by the analysis presented in the EA and the supporting documents contained in the Project Record<sup>7</sup>. The EA fulfills the requirements of the National Environmental Policy Act (NEPA) at the site specific level. This project is consistent with the LTBMU Land and Resource Management Plan (LRMP) including applicable amendments. My conclusion is based on the relevant scientific information which is cited in the EA and contained in the Project Record. During the comment period there were no opposing responsible scientific views expressed by commenter's. As detailed in the EA, the environmental effects are well known and there is little uncertainty or risk associated with this decision.

I selected Alternative 2 because:

1. The proposed action will be the most effective in responding to priorities and standards outlined in the Forest Plan and other regional and national direction to help move the area towards the desired conditions described therein, and in contributing to meeting Forest-wide objectives (EA pg 20-22)
2. It ensures that invasive weeds are treated with minimal risks to human health, native plant communities, and wildlife. It prescribes the use of herbicides, and only in accordance with label directions. The types of herbicides to be used, timing of application, and methods of application are designed to minimize risk to the human environment. Twenty-four of the 42 Design Features incorporate these restrictions.
3. Provides a broader range of treatment methods in order to control or eradicate TIPS. Treatments are provided that can treat difficult to control species which do not respond to mechanical or manual control methods (such as perennial pepperweed/tall whitetop, Russian knapweed, the toadflaxes, and others). In addition, treatment methods that are currently effective will be continued, such as manual treatment of field bindweed and woolly/common mullein.
4. It provides for the early treatment of new species of weeds currently not found on the LTBMU, with expected savings in economic and environmental costs. The Early Detection – Rapid Response (EDRR) strategy provides for treatment of new TIPS, using the treatment methods specified for existing TIPS. Treatment will be capped at 100 infested acres annually by chemical methods, with as many acres as feasible for manual treatment.
5. It minimizes disturbance to the soil and native and desirable non-native plants, to maintain habitat and prevent erosion and damage to the soil profile. For example, using an aquatic formulation of glyphosate within riparian areas would control weeds along creeks, rivers, and lakes, while minimizing the risk of impacts to aquatic species.
6. It reduces overall costs of control and eradication associated with large infestations, by preventing small weed infestations found throughout the forest from spreading. EDRR incorporates a strategy allowing for treatment of small infestations before they become large. The array of available physical and mechanical methods, plus herbicides, provides a complete toolbox to use in order to respond rapidly to new infestations, and apply the best treatment methods

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<sup>7</sup> Project Record is on file at the Lake Tahoe Basin Management Unit Supervisor's Office.

7. Alternative 2 aligns with and complements efforts by other agencies and private individuals to eradicate and control invasive species in the Lake Tahoe Basin (EA pp 8-9).

## **Permitting**

This project will not require permits from the TRPA. Consistent with the MOU between TRPA and the LTBMU, I have incorporated comments from TRPA into Alternative 2 (PRD I3).

This project will not require permits from the LRWQCB. Coordination will occur between the LTBMU and LRWQCB as described in Design Feature 12 (Appendix A).

## **OTHER ALTERNATIVES CONSIDERED:**

Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the need for the proposal, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. For various reasons I considered five alternatives, but eliminated them from detailed study (See EA, section 3.1.1).

In addition to the selected alternative, I considered Alternative 1 (Manual treatment only – current management plans would continue to guide management of the project area) Alternative 1 would result in:

- Continued expansion of difficult-to-treat TIPS, including such species as tall whitetop/perennial pepperweed, oxeye daisy, Dalmatian toadflax, yellow toadflax, spotted knapweed; for certain species, mechanical or manual treatments do not control, and may even, in some cases, accelerate the spread of these weeds. Chemical treatments are more effective in controlling species such as perennial pepperweed/tall whitetop, Russian knapweed, the toadflaxes, and others.
- The potential for difficult-to-treat TIPS to spread onto adjacent land is increased.
- Continued treatment of all occurrences of field bindweed and woolly/common mullein using only non-chemical methods. The leaves of woolly/common mullein are covered in hairs that make it difficult for herbicide formulations to penetrate, and field bindweed is mainly a ‘weed’ of agricultural areas.

## **PUBLIC INVOLVEMENT:**

The LTBMU conducted pre-NEPA coordination with TRPA and the LRWQCB; and consultation with the Washoe Tribe of California and Nevada.

The LTBMU listed the proposal in the Schedule of Proposed Actions on April 1, 2009. The Proposed Action was sent out for public comment via a scoping letter on October 16, 2009 (via email and hard copy mailing for a total of 173 notices). The proposed action was also posted on the LTBMU website (<http://www.fs.fed.us/r5/lbmu/projects>). Eleven responses were received.

The LTBMU posted a legal notice in the Tahoe Daily Tribune (July 14, 2010) announcing the start of the 30-day public comment period for the EA, issued a press release July 15, 2010, and posted the EA on the LTBMU website.

At least 18 state and Federal agencies (including USEPA, USFWS, Nevada Department of Agriculture, Nevada Natural Heritage Program, Nevada Department of Transportation, Nevada Department of Wildlife, California State Parks, Nevada State Parks, California Department of Food and Agriculture, Nevada State Lands, Nevada Department of Environmental Protection, LRWQCB, California Integrated Pesticide Council, Nevada Division of Forestry, California Department of Fish and Game, California Department of Transportation), along with six NGOs (The League to Save Lake Tahoe, the Lake Tahoe Chapter of the Sierra Club, Sierra Nevada Alliance, Californians Against Toxic Substances, Keep Tahoe Blue, Alternatives To Toxics, and Sierra Forest Legacy), the Washoe Tribe, twelve recreational homeowners associations, and private members of the public were notified by email or mail of the opportunity to comment on the EA.

The LTBMU received supportive comments on the EA from three individuals and organizations (including the Lake Tahoe Basin Weed Coordinating Group and the University of Nevada Cooperative Extension) while one commenter questioned the need for the project. All supportive comments expressed support for Alternative 2. One change was made to the EA based on these comments – a reference to the Lake Tahoe Basin Weed Coordinating Group website, at <http://www.tahoeinvasiveweeds.org/>, for reporting weeds found within the Basin. All comments are on file in the Project Record (PRD G1-4).

#### **FINDING OF NO SIGNIFICANT IMPACT:**

After reviewing the EA, I have determined that implementation of Alternative 1 will not, individually or cumulatively, significantly affect the quality of the human environment. The provisions of 40 CFR 1508.27 indicate that project significance must be judged in terms of both *context* and *intensity*. Based on a review of these provisions, I have determined that an Environmental Impact Statement (EIS) is not required. I base my findings on the following definitions of *context* and *intensity* as provided in 40 CFR 1508.27:

*Context* means that the significance of an action must be analyzed in several ways such as society as a whole (human, national), in the affected region, the affected interests, and the locality. The effects of implementing Alternative 1 are localized, with implications only for the Lake Tahoe Basin. In that context, this decision will allow the LTBMU the tools to eradicate or control invasive weeds, complementing the efforts of other agencies and individuals.

*Intensity* refers to the severity of the anticipated impact. The following ten intensity factors are used to evaluate intensity:

- 1. Beneficial and adverse impacts.** Beneficial effects from this decision include the new treatment methods that I approve to eradicate or control hard to control species. Eradication of 24 species and control of 10 species of TIPS would occur through the use of all treatment methods (manual, mechanical, thermal, chemical) (EA, Section 3.3). 25% of the 8.9 acres of TIPS would be eradicated. This decision also authorizes the treatment of new infestations and new species as they are discovered through the EDRR

strategy (EA, Section 2.5). No adverse effects have been identified in the EA (EA, Chapter 4).

2. **The degree to which the proposed action affects public health or safety.** There are no effects to public health or safety from manual, mechanical or thermal methods (EA, pg 99). Chemicals would be applied according to label directions and Federal and state (CA and NV) laws. In addition, only a registered applicator would apply chemicals (DN, Appendix A, DF # 28). Chemical treatments also include design features that protect public health and safety (DF's # 22-24; 27). Considering that there is 6.5 acres of proposed chemical treatments and that the locations are small (average 0.1 acres) and scattered and application will only be by a registered applicator in accordance with Federal and state laws, there will not be a significant effect on public health or safety (EA, Section 4.7).
3. **Unique characteristics of the geographic area.** The project area is within the Lake Tahoe Basin (watershed). To avoid potential impacts to Lake Tahoe, the Proposed Action incorporates project design features (DN, Appendix A).
4. **The degree of controversy over environmental effects.** Public involvement efforts, with interested and affected individuals and agencies throughout the environmental analysis, have not revealed any controversies over the project effects (EA, Section 2.8 and throughout Chapter 4).
5. **The degree to which the possible effects on the human environment is highly uncertain or involves unique or unknown risks.** The analysis in the EA indicates affects from the Proposed Action are not uncertain and do not involve unique or unknown risk. Treatments in Alternative 2 (specifically herbicide treatments) are similar to what the Lake Tahoe Basin Weed Coordinating Group has been using on non-NFS lands for the past 5 years. Because the actions described in Alternative 2 are similar to past actions that have occurred in the Tahoe Basin, the environmental effects of implementing Alternative 2 are well known.
6. **The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** This decision does not establish a precedent for future actions with significant effects. No significant effects are identified (EA, Chapter 4). Treatment methods and Design Features for new infestations, expanded infestations, and new species would be the same as those proposed in this project for known infestations (EA, see Table 2a and section 3.2 Design Features). A TIPS Treatment Flow Chart (EA, Fig. 2, pg 18) explains the decision process for prioritizing future treatments.
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** The proposed action when considered along with any past, present or actions in the foreseeable future does not result in cumulatively significant impacts (EA pg 19). Cumulative Effects are disclosed by resource throughout Chapter 4 of the EA.
8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources.** The Heritage Resource Evaluation prepared for this project

determined that the project will result in no effects, loss or destruction of significant scientific, cultural, or historical resources (PRD K13).

**9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** There will be no effect on critical habitat because there is none located on the LTBMU (PRD I6). The potential affects of this decision on listed wildlife, fish, and plant species have been analyzed and documented in a Biological Evaluation / Biological Assessment (BE/BA) (PRDs K1 and K2). This decision is “Not Likely to Adversely Affect” the Lahontan Cutthroat Trout (EA pg. 69) and may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for Tahoe yellow cress (*Rorippa subumbellata*) or any other plant species listed as threatened, endangered, proposed for listing, or listed as candidate species under the ESA (EA, pg. 118). There will be “no effect” on any other endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973 because they are not known to occur in the project area and/or do not have suitable habitat within the project area (PRDs K1 and K2). As a part of my decision I have incorporated into Design Feature number 8 (DN, Appendix A) language that would limit crossing of streams in Lahontan Cutthroat Trout habitat based on informal consultation with the USFWS (PRD I7).

**10. Whether the action threatens a violation of Federal, State, or local law or other requirements imposed for the protection of the environment.** I have reviewed the EA and the project file, and have determined that implementation of the Proposed Action will not violate Federal, State, or local law or requirements imposed for the protection of the environment.

#### **FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS:**

As Forest Supervisor for the Lake Tahoe Basin Management Unit, I am required to manage the Forest in accordance with applicable laws and regulations. In reviewing the EA, I have concluded that my decision is consistent with the following key laws, regulations, and requirements:

**National Environmental Policy Act (NEPA) of 1969** - The effects of the Proposed Action and alternatives have been analyzed and are disclosed in the EA, which was available for public review.

**National Forest Management Act of 1976** - Review of the Forest Plan indicated that the Proposed Action is consistent with its management direction. This decision is consistent with the intent of the Forest Plan's long-term goals and objectives for noxious weeds (Forest Plan, pg. IV-44, and SNFPA 2004 pp. 54-55; PRD M74).

**Clean Water Act as amended in 1977** - The US Army Corps of Engineers is charged with the responsibility of ensuring compliance with Section 404 of the Clean Water Act and has permit authority over the discharge of dredged and fill material into jurisdictional waters and wetlands. Section 404 permits will not be required for this project.

**National Historic Preservation Act of 1966, as amended (NHPA)** – This project has been reviewed by the cultural resources department and determined to have no effect on cultural properties and values (PRD K13).

**Endangered Species Act of 1973** - I find that this decision is consistent with Section 7(c) of the Endangered Species Act. The USFWS list of “endangered and threatened species that may be affected by Projects in the Lake Tahoe Basin Management Area” (updated on April 29, 2010) has been reviewed (PRD I6). Informal consultation with the USFWS has been completed (PRD I7). As a part of my decision I have incorporated into Design Feature number 8 (DN, Appendix A) language that would limit crossing of streams in Lahontan Cutthroat Trout habitat based on informal consultation with the USFWS.

My decision only applies to National Forest System lands as analyzed within the EA. The project is scheduled to begin implementation fiscal year 2011.

**IMPLEMENTATION DATE:**

If an appeal is filed, implementation may occur on, but not before fifteen business days from the date of appeal resolution. If no appeal is filed, implementation may begin five business days from the close of the appeal period.

**ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITY:**

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. Individuals or organizations who provided comments or otherwise expressed interest in the proposal by the close of the comment period are eligible to appeal the decision pursuant to 36 CFR part 215 regulations. The notice of appeal must meet the appeal content requirements at 36 CFR 215.14.

The appeal must be filed (regular mail, fax, email, hand-delivery, or express delivery) with the Appeal Deciding Officer at:

Randy Moore, Regional Forester  
USDA Forest Service  
Pacific Southwest Region  
1323 Club Drive  
Vallejo, CA 94592  
Email: [appeals-pacificsouthwest-regional-office@fs.fed.us](mailto:appeals-pacificsouthwest-regional-office@fs.fed.us)  
Phone: (707) 562-8737  
Fax: (707) 562-9091

The office business hours for those submitting hand-delivered appeals are: 7:30 AM to 4:00 PM Monday through Friday, excluding holidays. Electronic appeals must be submitted in a format such as an email message, plain text (.txt), rich text format (.rtf), or Word (.doc) to the email address listed above. In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification. Appeals, including attachments, must be filed within 45 days from the publication date of the legal notice in the Tahoe Daily Tribune, the newspaper of record. Attachments received after the 45 day appeal period will not be considered. The publication date in the Tahoe Daily Tribune, newspaper of record, is the exclusive means for calculating the time to file an appeal. Those

wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source.

**Contact:**

For additional information concerning this decision or the Forest Service appeal process, contact:

Cheryl Beyer  
Lake Tahoe Basin Management Unit  
35 College Drive  
South Lake Tahoe, CA 96150  
Phone (530)543-2842, Fax (530)543-2693

  
\_\_\_\_\_  
TERRI MARCERON  
Forest Supervisor  
Lake Tahoe Basin Management Unit

10/14/10  
DATE

**Attachments:**

- Appendix A – Project Design Features
- Appendix B – Monitoring Strategy
- Appendix C – Methodology to determine new species of TIPS to be treated
- Appendix D – References
- Appendix E – BMPs
- Appendix F – Response to Comments

## Appendix A

### Design Features for the Terrestrial Invasive Plant Species Treatment Project:

#### Special Status (Threatened, Endangered, Candidate, Forest Sensitive, TRPA<sup>8</sup> Special Interest, Management Indicator, and Migratory Bird Species) Wildlife and Fisheries

1. 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>9</sup>.
2. Chlorsulfuron and Triclopyr will not be applied within 50 feet of perennial rivers, streams, lakes, and other water bodies, including seasonally flooded SEZs.
3. 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).
4. 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.
5. 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.
6. 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.
7. 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).
8. 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.
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

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<sup>8</sup> Tahoe Regional Planning Agency

<sup>9</sup> Unless otherwise noted, SEZs will be based on the riparian vegetation layer for the Forest, and field checked prior to implementation.

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 I5).
  - 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.

## **Appendix B**

### **Monitoring Strategy:**

An essential element of invasive plant management is observing changes in their populations over time, monitoring. This helps to determine the effectiveness of the treatments. Through the Forest Service Natural Resource Manager Natural Resource Inventory System (NRM NRIS) Invasives program (<http://fsweb.nris.fs.fed.us/>), the nationally accepted protocol that provides a consistent system for managing invasives information within the Forest Service, TIPS would be treated and monitored every year until eradicated.

Thereafter, as funding and personnel are available, the sites would be monitored for an additional 3 years. This follow-up monitoring is important because of the viability of seeds in the soil, known as the seedbank. Seeds can remain viable for many years, leaving past sites vulnerable to reinfestation and subsequent spread until rediscovery at some future date, if not monitored. Herbicide treatments kill plants, but the seed bank will require repeat treatments and long-term monitoring.

NRM NRIS Invasives monitoring is not a mitigation measure: it is an important element of an adaptive management process designed to allow us to respond to changing conditions and new information.

### ***Implementation Monitoring***

Implementation monitoring asks the question: Has the project been implemented as designed? The project manager will select random sites to visit to accomplish this monitoring and a record will be kept in a daily diary.

**Appendix C**  
**Method for Adding New TIPS<sup>10</sup>:**

**Method 1:**

<b>Plant Species Being Considered</b>	<b>Yes = 1, No = 0</b>
<b>Factor*</b>	
<b>Mode of Reproduction</b>	
Reproduces vegetatively	
Produces large number of seeds per plant	
Seeds are long-lived	
Plants are long-lived	
<b>Spread</b>	
Likely to disperse great distances	
Spread is highly associated with human activities	
Sold in nurseries	
Likely to hybridize	
Grows across a variety of ecosystems	
Has allelopathic properties	
Invades intact plant communities	
Invades riparian areas, streams and meadows	
High rate of spread	
<b>Control</b>	
Difficult to control	
<b>Geographic distribution and priority</b>	
Listed as noxious in adjacent states	
Present in adjacent states	
Populations located within 50 miles of Basin	
Already present in target area	
Existing populations are small in size and distribution	
<b>Impacts<sup>11</sup></b>	
Injurious to humans, livestock, or wildlife	
Damages stream environment zones or water quality	
Impacts abiotic ecosystem process (e.g. fire, erosion, salinity)	
Reduces water availability	
Greatly reduces habitat for native species (e.g. wildlife, fisheries, plants)	
<b>TOTAL SCORE</b>	

\* A high score would result in a high priority rating.

<sup>10</sup> These two draft methods were developed by the Lake Tahoe Basin Weed Coordinating Group. They are presented here as the best potential methods for quantifying this qualitative process. The LTBWCG will decide on the final method at their December 2010 meeting.

<sup>11</sup> Scoring for 'Impacts' would be obtained from scientific literature and the Cal-IPC website for wildlands.

**Method 2:**

	Yes	No
1. Rated as noxious in California or Nevada		
2. Perennial		
3. Can produce multiple generations in one year		
4. Reproduces vegetatively		
5. Most seeds are fertile		
6. Invades intact habitats		
7. Invades riparian habitats		
8. Populations located within 50 miles of the Tahoe Basin OR first sighting verified within the Tahoe Basin		
9. Difficult to control (generally requires use of herbicides)		
10. Effective control methods are available but cannot be used on USFS land		
TOTAL		

*\* Give each category 10 points. Answer the questions. The higher the total, the greater the priority.*

## **Appendix D**

### **References**

- Goodwin, K. and R. Sheley. 2006. Protecting Prioritized Rangelands from Invasive Weed Spread. Montana State U.
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**Appendix E  
Regional BMP Handbook\***

BMP#	Description	Applicable Design Feature (section3.2)
5-7	Pesticide Use Planning Process Incorporation of BMPs # 5-8 through 5-13 into project design and management.	All
5-8	Pesticide Application According to Label Directions and Applicable Legal Requirements Constraints identified on the label and other legal requirements of application must be incorporated into the project plans and contracts.	7, 25, 26, 28, 32
5-9	Pesticide Application Monitoring and Evaluation The need for a monitoring plan will be identified during the pesticide use planning process as part of the project environmental evaluation and documentation.	27
5-10	Pesticide Spill Contingency Planning Pesticide spill contingency plan consists of predetermined actions to be implemented in the event of a pesticide spill.	29, 30, 31
5-11	Cleaning and Disposal of Pesticide Containers and Equipment The cleaning and disposal of pesticide containers must be done in accordance with Federal, State, and local laws, regulations and directives.	7, 30
5-12	Streamside Wet Area Protection During Pesticide Spraying (spraying is not proposed in SEZs for this project) To minimize the risk of pesticide inadvertently entering waters or altering the riparian area, SMZ or wetland.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
5-13	Controlling Pesticide Drift During Spray Application Spraying according to prescription which accounts for all site specific factors and pesticide application methods.	1, 2, 3, 4, 34, 35,

\*Design Features presented in Appendix A provide specificity to BMPs.

Reference: Water Quality Management for Forest System Lands in California, Best Management Practices

**Appendix F**  
**Terrestrial Invasive Plant Species Treatment EA**  
**Response to Comments from the 30 Day Comment Period (July/August 2010)**

In response to the legal notice for the 30 day comment period for the Environmental Assessment (EA), four (4) comment letters were received. The LTBMU received supportive comments on the EA from 3 individuals and organizations. All comments submitted by these three individuals expressed support for Alternative 2. One change was made to the EA based on these comments – a reference to the Lake Tahoe Basin Weed Coordinating Group website, at <http://www.tahoeinvasiveweeds.org/>, for reporting weeds found within the Basin. All comments are on file in the Project Record (Project Record Documents G1-G4). Non-supportive comments and the Forest Service (FS) responses are as follows:

**Comment Letter A – John Mitchell**

**Comment #1:** What if nothing were done to fight the “invasives”?

**Forest Service Response:** In answer to your question #1 (the other questions were beyond the scope of the TIPS project), noxious weeds displace native plants, reduce biodiversity, affect threatened and endangered species, alter normal ecological processes (e.g. nutrient cycling, water cycling), decrease wildlife habitat, reduce recreational value, and increase soil erosion and stream sedimentation. If we can control the spread of these invasive species while their populations are still small we can avoid costly, less effective treatments.