APPENDIX G

Noxious Weed Risk Assessment

Noxious Weed Risk Assessment for the Upper Truckee River Sunset Stables Restoration Project on the Lake Tahoe Basin Management Unit

Prepared by: **ENTRIX, Inc.** _____ Date: **September 2009**

Approved by: _____ Date: _____

NOXIOUS WEED RISK ASSESSMENT DIRECTION

The Sierra Nevada Forest Plan Amendment (SNFP) outlines the direction for completing a noxious weed risk assessment (SNFP Appendix L). In addition, the Forest Service Manual 2080 Noxious Weed Management (effective 11/29/1995) includes a policy statement calling for a risk assessment for noxious weeds to be completed for every project. Specifically, the manual states:

2081.03 Policy. When any ground disturbing action or activity is proposed, determine the risk of introducing or spreading noxious weeds associated with the proposed Project.

1. For projects having moderate to high risk of introducing or spreading noxious weeds, the project decision document must identify noxious weed control measures that must be undertaken during project implementation.

2. Make every effort to ensure that all seed, feed, hay, and straw used on National Forest System lands is free of noxious weed seeds (FSH 6309.12, sec. 42 and 42.1).

3. Where States have enacted legislation and have an active program to make weed-free forage available, Forest Officers shall issue orders restricting the transport of feed, hay, straw, or mulch which is not declared as weed-free, as provided in 36 CFR 261.50(a) and 261.58(t).

4. Use contract and permit clauses to prevent the introduction or spread of noxious weeds by contractors and permittees. For example, where determined to be appropriate, use clauses requiring contractors or permittees to clean their equipment prior to entering National Forest System lands.

2081.2 Prevention and Control Measures. Determine the factors which favor establishment and spread of noxious weeds and design management practices or prescriptions to reduce risk of infestation or spread of noxious weeds.

> Where funds and other resources do not permit undertaking all desired measures, address and schedule noxious weed prevention and control in the following order:
>
> 1. First Priority: Prevent the introduction of new invaders,
> 2. Second Priority: Conduct early treatment of new infestations, and
> 3. Third Priority: Contain and control established infestations.

PROJECT DESCRIPTION

The project description is provided in the Botanical Evaluation for this project, incorporated herein by reference.

PROJECT LOCATION

The Project is located along the Upper Truckee River, about 3 miles south of Lake Tahoe near the community of South Lake Tahoe, El Dorado County, California in the SW ¼ of section 12, T12N, R18E of the USGS South Lake Tahoe Quadrangle map (Figure 1). Elevation is approximately 6260 feet. The Project area is bounded by the Lake Tahoe Airport and Highway 50 to the west, and private property in the Tahoe Paradise residential neighborhood to the east and south. The proposed work will be implemented on the Conservancy's Sunset Stables property (189 acres) and the LTBMU property (68 acres) (Figure 2).

The Sunset Stables Reach (Sunset Reach) of the Upper Truckee River extends approximately 2.6 miles from the Hwy 50 river crossing near Elks Club Drive northward to approximately mid-way through the South Lake Tahoe Airport runway. The Sunset Reach includes two separate channel reaches of the Upper Truckee River (Reaches 5 and 6), distinct from one another because of differences in physical channel and floodplain characteristics.

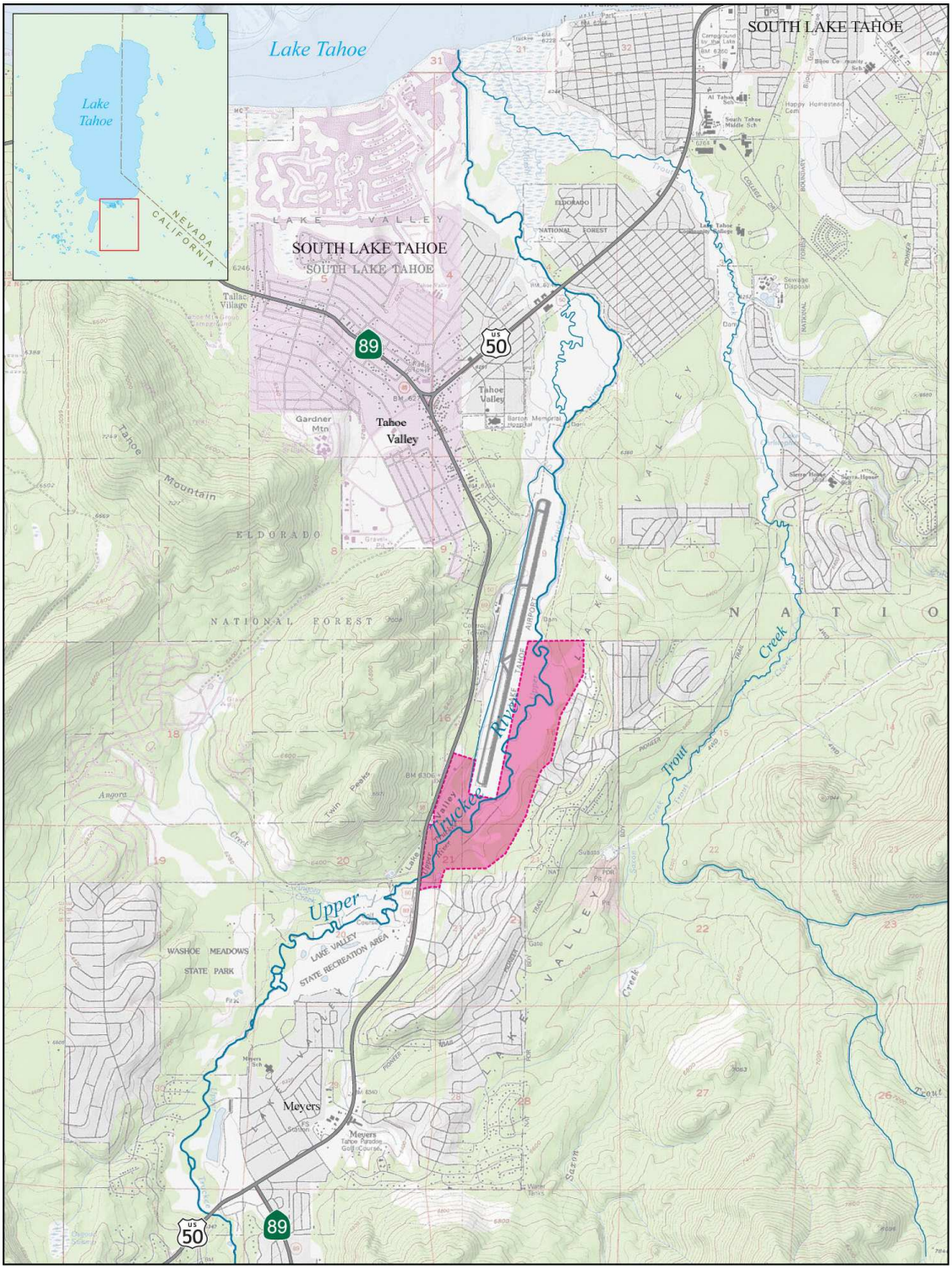

Figure 1. Project Location

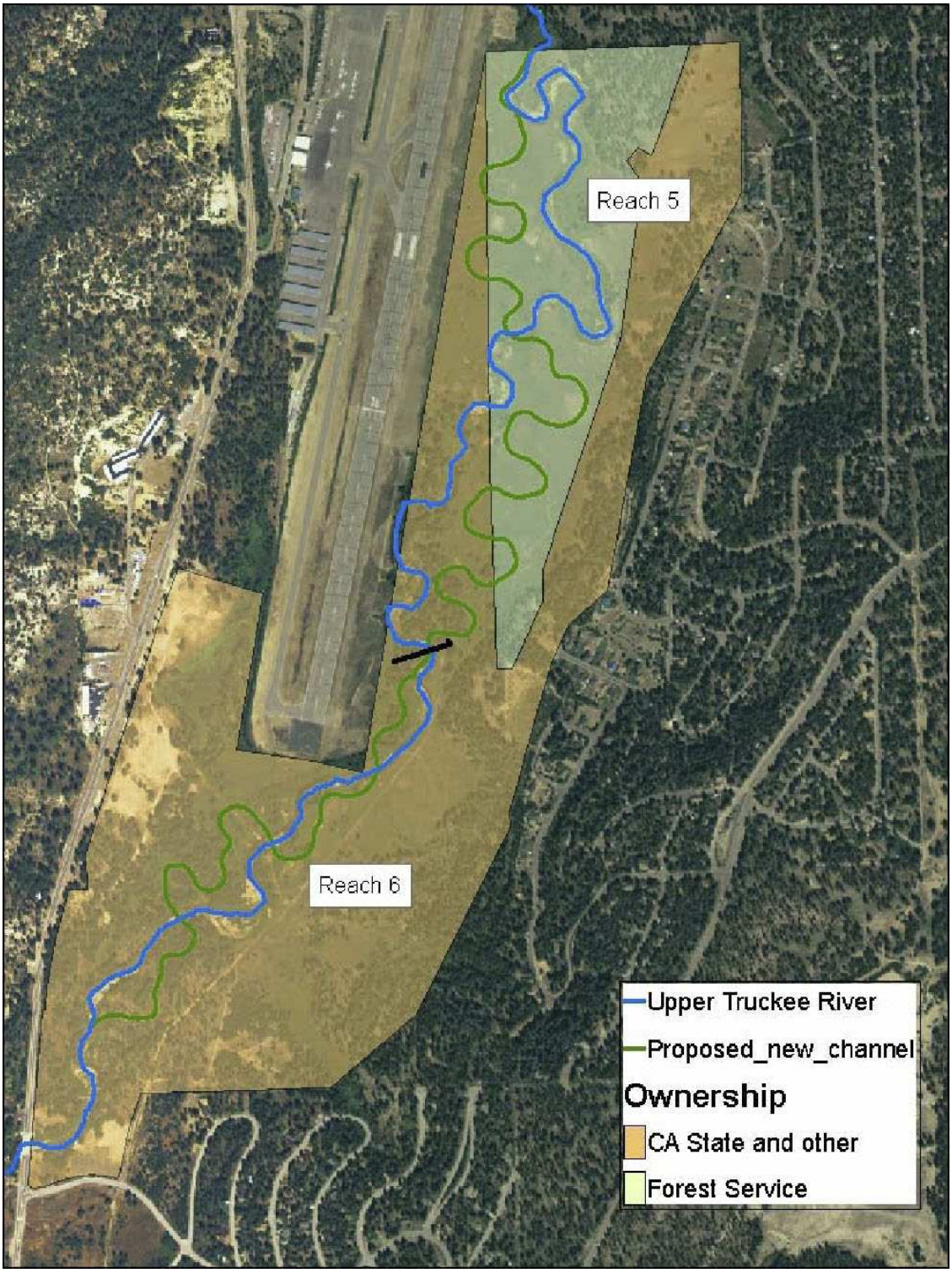

Figure 2. Project area (Source: USFS)

RISK ASSESSMENT

A. Inventory

Survey Methods

Plant community mapping and focused field surveys were conducted by ENTRIX in the Sunset Stables project area in summer of 2004 and summer of 2005. During these focused field surveys, all plants observed were identified and the occurrence of any special-status plants, invasive plant/noxious weed species, and Washoe cultural plants was recorded. Results of those surveys are reported in the *Amended Final Plant Communities and Special-Status Plant Species Report* (ENTRIX 2005).

ENTRIX biologists conducted additional surveys in 2008 (June 30/July 1 and August 28/29) to document new or expanded populations of noxious weeds. The most recent target list of invasive and noxious weeds was requested from the USFS LTBMU. All surveyors reviewed the target list, and became familiar with the appearance, growth form and general phenology of the listed weed species. Existing population data from 2004 and 2005 surveys was also reviewed prior to surveys. Surveys were performed by foot, walking and visually surveying the entire project area, paying particular attention to the current and proposed channel alignment, proposed staging areas, and access routes. Historical populations from 2004 and 2005 were revisited and notes on expansion or reduction of the population were made. Locations of new invasive plant/noxious weed populations recorded with a Garmin GPS unit and marked on aerial photos, which were later digitized and mapped according to the 2008 Lake Tahoe Basin Weed Coordinating Group Mapping Protocol (LTBWCG 2008).

For all surveys (2004, 2005 and 2008), the invasive plant/noxious weed levels of infestation were recorded as required under Section 2083, Information Collection and Reporting of the Forest Service Manual (USDA-FS 1995). This included recording the number of acres or square feet (sq. ft.) infested, or the number of individuals (when weed populations were small) of the noxious weed, by species and location. Levels of infestation were recorded as follows: low (<5 percent canopy cover), moderate (6 to 25 percent canopy cover), and high (>25 percent canopy cover). Percent cover values represent the percent area that was occupied by the noxious weed species in that area of infestation.

Survey Results

From a list of 40 target invasive plant/noxious weed species (Appendix A, Table A-1), five were identified during the three years of field surveys. No CDFA ‘A-rated’ species were discovered in the project area. One Cal-IPC “high” rated species, cheat grass (Bromus tectorum), was identified during surveys. A map depicting all noxious weed populations identified in 2004, 2005 and 2008 is provided in Appendix A, Figure A-1. A detailed tabular summary of each noxious weed population is provided in Appendix A, Table A-2. This table includes scientific and common name, map label, 2004-2005 population description, 2008 population description and presence on USFS property.

A detailed description of the life history characteristics of these species was provided in Appendix C-3 of the Existing Conditions Report (CTC 2004) for this project. A general description of the occurrence of each invasive plant/noxious weed species found in the project area is provided below.

Cheat grass (*Bromus tectorum*). Fifteen populations of this species were observed in the project area in 2004 and 2005. An additional 32 populations (including new populations and significant expansions of existing populations) were surveyed in 2008.

Bull thistle (*Cirsium vulgare*). Nine populations of this species were found in the project area in 2004 and 2005. An additional 13 populations were mapped in 2008.

Ox-Eye Daisy (*Leucanthemum vulgare*). In 2004 and 2005 at total of ten populations of this species were found in the project area. In 2008 an additional 12 populations were mapped.

Klamath weed (*Hypericum perforatum*). Two populations of this species were found in the project area in 2004 and 2005 with only one additional population identified in 2008.

Woolly mullein (*Verbascum thapsus*). Nineteen populations of this species were found in the project area in 2004-2005. In 2008, 11 more populations and/or significant expansions of existing populations were recorded.

B. Habitat Vulnerability (vegetative cover types, previous disturbance, soil cover, shade, soil type, aspect/slope):

As reported in the Existing Conditions Report (ECR) for the Sunset Stables Restoration and Resource Management Plan (CTC 2004), ten vegetation communities exist within the project area. These include montane wet and dry meadow (approximately 20% of the project area), montane coniferous forest which includes Jeffery pine and lodgepole pine forest (approximately 25% of project area), and riparian communities (approximately 5% of the project area) which include aspen riparian forest and montane riparian scrub. Other communities, including big sagebrush scrub, mixed montane chaparral, and montane freshwater marsh, occur as small patches within the project area. Approximately 50% of the project area is occupied by developed sub-urban parcels (which are relatively well forested). Unvegetated cover types include developed ground, ruderal and water. Following is a description of each vegetation community. A description of the habitat types in the project area can be found in the ECR (CTCD 2004), and is presented in the Botanical BE for this project (ENTRIX, Inc. 2008).

In general the project area is composed of relatively open, penetrable vegetation communities where vectors such as wind and water can easily transport weed seed. Likewise, use of the area by mountain bikers, hikers, dogs, and other water craft (kayak, canoe, float tubes, etc.) presents additional vectors and increased opportunities for disturbance. In addition, a portion of the project area was historically a horse stable and importation of weed seed in livestock feed, etc. is apparent in the middle-western part of the project area.

The majority of noxious weeds populations within the project area are associated with areas of disturbance and/or human activity including trails, roads, parking areas, stream banks. Any new disturbance (i.e., road building, excavation, etc.) will provide an opportunity for noxious weeds to spread.

C. Non-project Dependent Vectors (existing roads and trails, traffic use, livestock/wildlife migration, wind patterns, drainage flow direction):

Non-project vectors include natural elements such as wind and water (i.e., stream flow in the Truckee River) as well as wildlife movement. Anthropogenic vectors include people (runners, mountain bikers, hikers, etc.), dogs, water craft (rafts, canoes, and kayaks), vehicle traffic around the perimeter of the project area, residential development (i.e., planting of noxious species in gardens). Historical vectors in the project area include livestock and livestock feed in the area formerly used as a stable.

D. Habitat Alteration Expected as a Result of the Project:

Habitat alteration expected as a result of the project includes a short term reduction in quality and quantity of meadow and riparian willow scrub habitat during channel construction, due to disturbance on the meadow and cuttings from willows. However, the project is expected to have positive long-term effects on meadow and willow scrub habitat. Construction of a new channel is expected to increase the extent and duration of floodplain inundation and to increase meadow wetness through raised groundwater levels. The restored hydrologic processes combined with extensive riparian plantings that will be installed as part of the construction will increase the quality and quantity of riparian willow scrub habitat.

The project is also expected to result in a short term reduction in conifer forest habitat quality (reduced structure and canopy cover) where large conifers must be removed to allow channel construction or to reduce conifer encroachment in meadow riparian habitat. Most of the trees that will be removed are along Reach 6 in the forested areas south of the airport. Efforts will be made to minimize tree removal where possible. Indirect effects include an increase in the quality and quantity of riparian forest. Mature riparian forest is anticipated due to the re-established channel-floodplain connectivity and active riparian and floodplain re-vegetation that will occur in areas where riparian vegetation is currently lacking.

Ongoing forest health and fuels management activities by LTBMU and the Conservancy on their lands have the potential to affect forest habitat in the area. However, in the long-term they will create healthy forests and improve forest habitat by increasing the distribution of forest age classes, opening the understory, and reducing tree stand density within the forest landscape.

E. Increased Vectors as a Result of project Implementation:

There will be a short-term increase in traffic due to construction, but restoration activities will not result in a long-term increase in vectors. One exception is an increase in over bank flood flows resulting in a potential increase in weed species spread by water.

Cheat grass. Project activity that disturbs soil containing cheat grass seed may further spread this noxious weed. All infestations of cheat grass within the project area (Figure 1 and Table 2) may be affected by installation of project improvements. The risk of spreading cheat grass will be mitigated by the measures described in "Mitigation Measures" below.

Bull thistle. Project activity that disturbs soil containing bull thistle seed may further spread this noxious weed. All infestations of bull thistle within the project area (Figure 1 and Table 2) may be affected by installation of project improvements. The risk of spreading bull thistle will be mitigated by the measures described in "Mitigation Measures" below.

Ox-eye daisy. Project activity that disturbs soil containing ox-eye daisy seed may further spread this noxious weed. All field bindweed infestations within the project area (Figure 1 and Table 2) may be affected by installation of project improvements. The risk of spreading field bindweed will be mitigated by the measures described in "Mitigation Measures" below.

Klamath weed. Project activity that disturbs soil containing Klamath weed seed may further spread this noxious weed. All field bindweed infestations within the project area (Figure 1 and Table 2) may be affected by installation of project improvements. The risk of spreading field bindweed will be mitigated by the measures described in "Mitigation Measures" below.

Woolly mullein. Project activity that disturbs soil containing woolly mullein seed may further spread this noxious weed. All infestations of woolly mullein within the project area (Figure 1 and Table 2) may be affected by installation of project improvements. The risk of spreading woolly mullein will be mitigated by the measures described in "Mitigation Measures" below.

F. Mitigation Measures (prevention and control):

WEED-1 On NFS lands, LTBMU staff would survey the Project Area as needed during project construction and following completion and treat any additional noxious weeds that are found.

WEED-2 On CTC lands, a botanist designated by the CTC (CTC botanist, LTBMU botanist, or an approved botanist) would survey the Proposed Project as needed during project construction and following completion and treat any additional noxious weeds that are found.

WEED-3 All off-road equipment used in the Project Area, and other vehicles that would travel on temporary access roads through the Project Area (i.e. not contained in the staging areas), shall 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" includes all tree removal and construction equipment and brushing equipment such as brush hogs, masticators, and chippers; it

does not include log trucks, chip vans, service vehicles, water trucks, pickup trucks, and similar vehicles not intended for off-road use. Equipment would be considered clean when visual inspection does not reveal soil, seeds, plant material, or other such debris. When working in known weed infested areas equipment shall then be cleaned at a washing station before moving to other areas that do not contain noxious weeds.

WEED-4 All earth-moving equipment, gravel, fill, or other materials are required to be weed-free. Use onsite sand, gravel, rock, or organic material when possible. Otherwise, obtain weed-free materials from fill sources that have been surveyed and certified weed-free.

WEED-5 Minimize the amount of ground and vegetation disturbance in the construction areas. Reestablish vegetation where feasible on disturbed bare ground at the end of project implementation to minimize weed establishment and infestation, especially in staging areas.

WEED-6 Use weed-free mulches and seed sources. Salvage topsoil from the Project Area for use in onsite revegetation, unless contaminated with noxious weeds. 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. Persistent non-natives such as *Phleum pratense* (cultivated timothy), *Dactylis glomerata* (orchard grass), or *Lolium* spp. (ryegrass) would not be used. Seed mixes must be approved by a Forest Service, TRPA or CTC botanist.

WEED-7 Where weed infestations within the Project Area or along travel routes near the Project Area exist in storage, staging or construction areas, before project implementation they will be treated, "flagged and avoided," or a physical barrier will be applied and maintained, depending on the risk presented by the species present.

WEED-8 Weed infestations along access roads would be addressed by constructing an encapsulated road in these locations to avoid tracking seeds from infested sites into other portions of the project area.

G. Anticipated Weed Response to Proposed Action (Risk Summary):

The overall risk of introducing or spreading noxious weed as a result of the project is considered to be Medium. This determination is based on the following:

1. Surveys identified five noxious weed species (cheat grass, bull thistle, ox-eye daisy, Klamath weed, and woolly mullein) in the project area.

2. There are established roads and trails in the project area, as well as bike, watercraft, foot and animal traffic (which serve as vectors), and construction will result in a short-term increase in traffic in the area.

3. The majority of disturbance will occur in previously undisturbed areas, although disturbance will be localized to specific areas within the project area.

4. A mitigation plan which includes revegetation has been adopted as a part of the proposed project. The mitigation plan is expected to decrease the risk of project-related weed spread to a level that is at or below pre-construction conditions.

Noxious Weed Risk Assessment Summary Table

Weed spread factors not connected to proposed project (pre-existing circumstances)		
Factors	**Condition**	**Risk and Rationale**
A. Inventory	cheat grass,bull thistle, ox-eye daisy, Klamath weed, woolly mullein	MEDIUM-These species are either LTBWCG Group 2, or CDFA Group C, and are therefore not high priority species.
B. Habitat vulnerability	Open vegetation communities, trails, roads, disturbed areas	HIGH-Open areas and disturbed ground have little vegetation cover and provide opportunity for noxious weed colonization.
C. Non-project dependent vectors	Wind, water, wildlife, people, dogs, vehicle traffic, residential development, livestock and livestock feed	HIGH-Use of the area for recreation is relatively intensive which increases the opportunity for disturbance and importation of weed seed. The property is bordered by residential development and roads on 3 sides which also increases the risk of weed spread from adjacent areas. Historical use of the area by livestock has introduced a wide variety of weed species (some not listed by the USFS) and has increased disturbed ground in some areas of the project area.
Weed spread factors connected to proposed project (post-construction circumstances)		
Factors	**Condition**	**Risk and Rationale**
D. Habitat alteration expected as a result of the project	Soil disturbance from construction activities; shade removal.	MEDIUM-Minimal shade removal, but soil disturbance will occur. Disturbance localized to specific project improvements; majority of disturbance will occur in previously disturbed areas.
E. Increased vectors as a result of project implementation	Short-term increase in traffic during construction.	MEDIUM-Long-term use of area will not increase because of project
F. Mitigation measures	If no mitigation measures implemented	Higher risk
	If some mitigation measures implemented	Moderately reduced risk
	If all mitigation measures implemented	Greatly reduced risk
G. Risk Summary	Moderate potential for weed spread.	Some high risk factors, mitigation plan reduces risk to MEDIUM.
Overall assessment of Risk for Project Numerous High risk factors = High overall risk Few High risk factors = Moderate overall risk No High risk factors = Low overall risk		

REFERENCES

Personal Communication

Beyer Pers. Comm. 2008. Personal Communication with USFS LTBMU Forest Botanist Cheryl Beyer re: current noxious weed and special-status plant lists, special communities and contact information for David Toren, USFS approved bryologist. June 2008. Contact information: Cheryl Beyer, Forest Botanist, Lake Tahoe Basin Management Unit, 35 College Drive, South Lake Tahoe, CA 96150, (530) 543-2842, (530) 543-2693 fax

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APPENDIX A

Table A-1. Target weed species
Table A-2. Detailed inventory of weed infestations in the project area
Figure A-1a. Invasive Plant/Noxious Weed Occurrences in the Project Area (North Area)
Figure A-1b. Invasive Plant/Noxious Weed Occurrences in the Project Area (South Area)

Table A-1. Target weed species (bold indicates occurrence in project area)

Common Name	Scientific Name	LTBWCG	CDFA	NDA	SNFPA	Cal-IPC
Cheat grass	***Bromus tectorum***				**NW**	**High**
Heart-prodded hoarycress	*Cardaria draba*	Group 1	B	C	NW	Moderate
Globe-prodded hoarycress	*Cardaria pubescens*	Group 1	B		NW	Limited
plumeless thistle	*Carduus acanthoides*		A			Limited
Musk thistle	*Carduus nutans*	Group 1	A	B	NW	Moderate
Purple starthistle	*Centaurea calcitrapa*		B	A	NW	Moderate
Diffuse knapweed	*Centaurea diffusa*	Group 1	A	B	NW	Moderate
Spotted knapweed	*Centaurea maculosa*	Group 2	A	A	NW	High
Russian knapweed	*Centaurea repens*	Group 1	B	B		Moderate
Yellow starthistle	*Centaurea solstitialis*	Group 1	C	A	NW	High
Squarrose knapweed	*Centaurea squarrosa*	Group 1	A	A	NW	Moderate
Rush skeletonweed	*Chondrilla juncea*	Group 1	A	A	NW	Moderate
Canada thistle	*Cirsium arvense*	Group 1	B	C	NW	Moderate
Bull thistle	***Cirsium vulgare***	**Group 2**	**C**		**NW**	**Moderate**
Poison hemlock	*Conium maculatum*			C		Moderate
Field bindweed	*Convolvulus arvensis*		C		NW	
bearded creeper	*Crupina vulgaris*		A			Limited
Scotchbroom	*Cytisus scoparius*	Group 2	C		NW	High
Teasel	*Dipsacus fullonum*	Group 1				Moderate
Quackgrass	*Elytrigia repense*		B		NW	
French broom	*Genista mospessulana*		C			High
hydrilla	*Hydrilla verticillata***		A			High
St. John's wort / Klamath weed	***Hypericum perforatum***	**Group 2**	**C**	**A**	**NW**	**Moderate**
Tall whitetop / Perennial pepperweed	*Lepidium latifolium*	Group 2	B	C	NW	High
Ox eye daisy	***Leucanthemum vulgare***	**Group 2**			**NW**	**Moderate**
Dalmatian toadflax	*Linaria genistifolia spp. dalmatica*	Group 2	A	A	NW	Moderate
Yellow toadflax	*Linaria vulgaris*	Group 2		A		Moderate
Purple loosestrife	*Lythrum salicaria*				NW	High
Eurasian watermilfoil	*Myriophyllum spicatum*	Group 2	C	A	NW	High
Scotch thistle	*Onorpordum acanthium*	Group 1	A	B	NW	High
Curlyleaf pondweed	*Potamogeton crispus*	Group 2				Moderate
Sulfur cinquefoil	*Potentilla recta*	Group 1	Q	A		
Russian thistle	*Salsola tragus*		C		NW	Limited
Perennial Sowthistle	*Sonchus arvensis l.*		A	A		
Spanish broom	*Spartium junceum*					High
Medusa-head,	*Taeniatherum caput-medusae*				NW	High
Tamarisk	*Tamarix chinensis*				NW	
Woolly mullein	***Verbascum thapsus***				**NW**	**Limited**

Sources: USFS 2008, Cal-IPC 2007, Hickman 1998, CalFlora 2008

Lake Tahoe Basin Weed Coordinating Group (LTBWCG) prioritizes invasive weeds of concern by management group. Group 1: watch for, report, and eradicate immediately. Group 2: manage infestations with the goal of eradication.

The California Department of Food and Agriculture's (CDFA) noxious weed list (http://www.cdfa.ca.gov/phpps/ipc/) divides noxious weeds into categories A, B, and C. A-listed weeds are those for which eradication or containment is required at the state or county level. With B-listed weeds, eradication or containment is at the discretion of the County Agricultural Commissioner. C-listed weeds require eradication or containment only when found in a nursery or at the discretion of the County Agricultural Commissioner. Q-listed weeds require temporary "A" action pending determination of a permanent rating.

Nevada Department of Agriculture (NDA) (http://agri.nv.gov/nwac/PLANT_NoxWeedList.htm divides) divides noxious weeds into categories A, B, and C. 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.

Sierra Nevada Forest Plan Amendment (SNFPA) part 3.6 defines noxious weeds as: those plant species designated as noxious weeds by Federal or State law. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and generally non-native. Species reported as present in the Lake Tahoe Basin Management Unit in the Sierra Nevada Forest Plan Amendment are indicated with “NW”.
http://www.fs.fed.us/r5/ltbmu/documents/invasive-species/noxious-weeds/contractor_forms/Noxious_Weed_Risk_Assessment_2008.doc

Cal-IPC categories: High = Species have severe ecological impacts on physical processes, plant and amimal communities, and vegetation structure. Moderate to high rate of dispersal. Establishment generally dependent on exological disturbance. Limited to widespread distribution. Widely distributed. Moderate = Species have substantial ecological impacts on physical processes, plant and amimal communities, and vegetation structure. Moderate to high rate of dispersal. Establishment generally dependent on exological disturbance. Limited to widespread distribution. Limited = Species are invasive but their ecological impacts are minor on a statewide level. Low to moderate rate of invasiveness. Limited distribution, but may be locally persisent and problematic.

Table A-2. Detailed inventory of weed infestations in the project area

Species	Map Label	2004-2005 Inventories	2008 Inventory	FS Property (Y/N)
bullthistle *(Cirsium vulgare)*				
CIVU	P1-01	Moderate (15-20 plants in approximately a 225 square-foot area)	Population not confirmed, but viability is still likely	N
CIVU	P1-02	High (About 3000 plants in approximately a 3,000 square-foot area)	Population not confirmed, but viability is still likely	N
CIVU	P1-03	Low (5% cover; 20 plants in a 2,500 square-foot area)	Population not confirmed, but viability is still likely	N
CIVU	1-04	Moderate (15% coverage in an approximately 100 square-foot area; 15 plants)	Population not confirmed, but viability is still likely	Y
CIVU	1-05	Low (<1% coverage in an approximately 20 square-foot area; 4 plants)	Population not confirmed, but viability is still likely	Y
CIVU	P1-06	Low (1% coverage in an approximately 3,000 square-foot area)	Population confirmed	N
CIVU	1-07	Low (<1%; 1 plant)	Population not confirmed, but viability is still likely	N
CIVU	1-08	Low (10 plants in an approximately 25 square-foot area)	Population not confirmed, but viability is still likely	N
CIVU	1-09	Low (6 plants in an approximately 25 square-foot area)	Population not confirmed, but viability is still likely	N
CIVU	1-10	New 2008 population	Moderate (75 plants, approximately 600 square-foot area)	N
CIVU	1-11	New 2008 population	Moderate (15 plants, approximately 400 square-foot area)	N
CIVU	1-12	New 2008 population	High (1 plant, approximately 4 square-foot area)	N
CIVU	1-13	New 2008 population	Low (10 plants, 400 square-foot area)	N
CIVU	1-14	New 2008 population	High (1 plant, approximately 4 square-foot area)	Y
CIVU	1-15	New 2008 population	High (1 plant, approximately 4 square-foot area)	N
CIVU	P1-16	New 2008 population	Moderate (<25% cover, approximately 1,500 square-foot area)	N
CIVU	P1-17	New 2008 population	Moderate (<25% cover, approximately 1,000 square-foot area)	N
CIVU	P1-18	New 2008 population	Moderate (<25% cover, approximately 150,000 square-foot area)	N
CIVU	1-19	New 2008 population	High (1 plant, approximately 4 square-foot area)	Y
CIVU	P1-20	New 2008 population	Moderate (<25% cover, approximately 2,800 square-foot area)	N
CIVU	P1-21	New 2008 population	Low (<5%, approximately 3,000 square-foot area)	N
CIVU	P1-22	New 2008 population	Moderate (<25% cover, approximately 5,000 square-foot area)	N
TOTAL SF OF AREA FOR CIVU			**173613 square-feet**	

Species	Map Label	2004-2005 Inventories	2008 Inventory	FS Property (Y/N)
common/woolly mullein (*Verbascum Thapsus)*				
VETH	P2-01	Moderate (10 plants in approximately 225 square feet)	Population not confirmed, but viability is still likely	N
VETH	P2-02	Low (5% cover; 10 plants in a 2,500 square-foot area)	Population not confirmed, but viability is still likely	N
VETH	P2-03	Low (5% coverage in approximately 12,000 square-foot area; 15 plants)	Population not confirmed, but viability is still likely	N
VETH	P2-04	Moderate (30% coverage in approximately a 2,000 square-foot area; about 50 plants)	Population not confirmed, but viability is still likely	N
VETH	P2-05	Low (2% coverage; interspersed throughout the area)	Population not confirmed, but viability is still likely	N
VETH	P2-06	Low (<1% cover; 3 plants)	Population expanded, see poly P2-25	N
VETH	P2-07	Moderate (20% coverage in approximately a 10,000 square-foot area)	Population confirmed	Y
VETH	P2-08	Low (2% coverage; about 45 plants in an approximately 20,000 square-foot area)	Population confirmed	Y
VETH	P2-09	Low (<1% cover; 10 plants)	Population confirmed	Y
VETH	P2-10	Moderate (20% coverage in an approximately 2,500 square-foot area; 20 plants)	Population confirmed	Y
VETH	P2-11	Low (1% cover; 16 plants)	Population confirmed	Y
VETH	2-12	Moderate (12 plants in an approximately 100 square-foot area)	Population not confirmed, but viability is still likely	Y
VETH	2-13	(<1% coverage in a 20 square-foot area; 5 plants)	Population confirmed	Y
VETH	P2-14	(<1% coverage in an approximately 5,000 square-foot area.)	Population increased by 80+ individuals	N
VETH	P2-15	Low (1% coverage in an approximately 200 square-foot area)	Population confirmed	N
VETH	P2-16	Low (1% coverage in an approximately 15,000 square-foot area; 27 plants)	Population confirmed	N
VETH	P2-17	Low (3% coverage in an approximately 3,000 square-foot area; 22 plants)	Population increased by 20+ individuals	N
VETH	2-18	Low (10 plants in an approximately 100 square-foot area)	Population not confirmed, but viability is still likely	N
VETH	P2-19	Low (50 plants in an approximately 750 square-foot area)	Population not confirmed, but viability is still likely	N
VETH	2-20	New 2008 population	Moderate (1 plant, approximately 1 square-foot area)	N
VETH	2-21	New 2008 population	Moderate (1 plant, approximately 1 square-foot area)	N
VETH	2-22	Expansion of population P2-14	Moderate (1 plant, approximately 1 square-foot area)	N
VETH	2-23	New 2008 population	High (1 plant, approximately 4 square-foot area)	N
VETH	2-24	New 2008 population	Low (1 plant, approximately 400 square-foot area)	N
VETH	P2-25	Expansion of population P2-06	Low (5 plants, approximately 1500 square-foot area)	N
VETH	2-26	New 2008 population	Low (6 plants, approximately 200 square-foot area)	Y
VETH	2-27	New 2008 population	High (1 plant, approximately 2 square-foot area)	N
VETH	2-28	New 2008 population	High (1 plant, approximately 2 square-foot area)	N
VETH	2-29	New 2008 population	High (>25%, approximately 100 square-foot area)	N
VETH	P2-30	New 2008 population	Moderate (<25% cover, approximately 800 square-foot area)	N
TOTAL SF OF AREA FOR VETH			**546406 square-feet**	

Species	Map Label	2004-2005 Inventories	2008 Inventory	FS Property (Y/N)
cheat grass *(Bromus tectorum*				
BRTE	P3-01	High (70%-80% coverage in approximately 300,000 square feet)	Population confirmed	N
BRTE	P3-02	Moderate (20% coverage in approximately a 100,000 square-foot area)	Population expanded, see poly P3-43	N
BRTE	3-03	High (80% coverage in an approximately 50 square-foot area)	Population expanded, see poly P3-20	N
BRTE	P3-04	Moderate (10% coverage in an approximately 1,500 square-foot area.	Population expanded, see poly P3-31	N
BRTE	P3-05	Moderate (30% coverage in an approximately 40 square-foot area	Population not confirmed, but viability is still likely	N
BRTE	P3-06	High (80% coverage in an approximately 20 square-foot area)	Population expanded, see poly P3-35	N
BRTE	3-07	High (90% coverage in an approximately 40 square-foot area)	Population expanded, see poly P3-24	Y
BRTE	P3-08	Moderate (15% coverage in an approximately 3,000 square-foot area)	Population confirmed	N
BRTE	P3-09	Moderate (20% coverage in an approximately 2,500 square-foot area	Population confirmed	N
BRTE	P3-10	High (50% coverage in an approximately 1,000 square-foot area)	Population confirmed	N
BRTE	P3-11	Moderate (15% coverage in an approximately 300 square-foot area)	Population confirmed	N
BRTE	P3-12	Moderate (Approximately 10 square meters)	Population not confirmed, but viability is still likely	N
BRTE	P3-13	Moderate (Approximately 125 square meters)	Population not confirmed, but viability is still likely	N
BRTE	P3-14	Moderate (Approximately 50 square meters)	Population not confirmed, but viability is still likely	N
BRTE	P3-15	High (Approximately 25 square meters)	Population not confirmed, but viability is still likely	N
BRTE	3-16	New 2008 population	Moderate (<25% cover, approximately 400 square-foot area)	Y
BRTE	P3-17	New 2008 population	Moderate (60 plants, approximately 900 square-foot area)	Y
BRTE	P3-18	New 2008 population	Moderate (<25% cover, approximately 2000 square-foot area)	Y
BRTE	P3-19	New 2008 population	Moderate (<25% cover, approximately 1200 square-foot area)	Y
BRTE	P3-20	New 2008 population	Moderate (<25% cover, approximately 10,500 square-foot area)	N
BRTE	P3-21	New 2008 population	High (>25% cover, 6300 square-foot area)	Y
BRTE	P3-22	New 2008 population	Moderate (6-25% cover) with height (>25% cover) patches throughout 61,600 square-foot area	N
BRTE	P3-23	New 2008 population	Low (<6% cover, approximately 7500 square-foot area)	N
BRTE	P3-24	Expansion of population 3-07	High (30% cover, approximately 5000 square-foot area)	Y
BRTE	P3-25	New 2008 population	High (50% cover, approximately 1,800 square-foot area)	Y
BRTE	3-26	New 2008 population	High (70% cover, approximately 200 square-foot area)	N
BRTE	P3-27	New 2008 population	High (>25% cover, approximately 1800 square-foot area)	N
BRTE	P3-28	New 2008 population	High (~75% cover, approximately 3000 square-foot area), moderate (<25% cover) for the remaining 900 square-foot area	N
BRTE	3-29	New 2008 population	High (90% cover, approximately 100 square-foot area)	Y
BRTE	P3-30	New 2008 population	High (>25% cover, approximately 9,700 square-foot area)	Y
BRTE	P3-31	Expansion of population P3-04	High (>25% cover, approximately 34,300 square-foot area)	N
BRTE	P3-32	New 2008 population	Moderate (<25% cover, approximately 2,700 square-foot area)	N
BRTE	P3-33	New 2008 population	High (80% cover, approximately 900 square-foot area)	N
BRTE	P3-34	Expansion of population P3-08	High (>25% cover in unpaved areas, approximately 41,500 square-foot area)	N

Species	Map Label	2004-2005 Inventories	2008 Inventory	FS Property (Y/N)
BRTE	P3-35	New 2008 population	High (70% cover, approximately 2,500 square-foot area)	N
BRTE	P3-36	New 2008 population	High (>25% cover, approximately 2,500 square-foot area)	N
BRTE	P3-37	New 2008 population	High (30% cover, approximately 1,600 square-foot area)	N
BRTE	P3-38	New 2008 population	High (75% cover, approximately 1,500 square-foot area)	N
BRTE	3-39	New 2008 population	Moderate (<25% cover, approximately 25 square-foot area)	N
BRTE	3-40	New 2008 population	High (1 plant, approximately 4 square-foot area)	N
BRTE	P3-41	New 2008 population	High (60% cover, approximately 2,500 square-foot area)	N
BRTE	3-42	New 2008 population	High (>25% cover, 150 square-foot area)	Y
BRTE	P3-43	Expansion of population P3-02	Moderate (20% cover, approximately a 34,000 square-foot area)	N
BRTE	3-44	New 2008 population	Moderate (<25% cover, approximately 100 square-foot area)	N
BRTE	3-45	New 2008 population	High (>25% cover, approximately 25 square-foot area)	N
BRTE	P3-46	New 2008 population	Low (<5%, approximately 2,400 square-foot area)	N
BRTE	P3-47	New 2008 population	Moderate (<25% cover, approximately 6,000 square-foot area)	N
		TOTAL SF OF AREA FOR BRTE	**663735 square-feet**	
		Klamathweed *(Hypericum perforatum)*		
HYPE	P5-01	High (50% coverage in an approximately 1,200 square-foot area; 100 plants)	Population not confirmed, but viability is still likely	N
HYPE	5-02	Low (3 plants in an approximately 25 square-foot area)	Population not confirmed, but viability is still likely	N
HYPE	5-03	New 2008 population	High (>25% cover, approximately 6 square-foot area)	N
		TOTAL SF OF AREA FOR KLAMATHWEED	**1231 square-feet**	

Species	Map Label	2004-2005 Inventories	2008 Inventory	FS Property (Y/N)
oxe-eye daisy *(Leucanthemum vulgare)*				
LEVU	4-01	Low (1 plant)	Population confirmed	N
LEVU	4-02	Low (1 plant)	Population not confirmed, but viability is still likely	Y
LEVU	P4-03	High (80% coverage in an approximately 4 square-foot area; 10 plants)	Population confirmed	Y
LEVU	4-04	Low (<1% coverage in an approximately 20 square-foot area; 2 plants)	Population confirmed	Y
LEVU	4-05	Low (1% coverage in an approximately 20 square-foot area; 5 plants)	Population confirmed	N
LEVU	P4-06	Low (5% coverage in an approximately 600 square-foot area)	Population confirmed	N
LEVU	P4-07	Low (5% coverage in an approximately 750 square-foot area)	Population not confirmed, but viability is still likely	N
LEVU	4-08	Low (1% coverage in an approximately 100 square-foot area; 6 plants)	Population not confirmed, but viability is still likely	N
LEVU	4-09	Low (2 plants in an approximately 100 square-foot area)	Population not confirmed, but viability is still likely	N
LEVU	4-10	Low (2 plants in an approximately 25 square-foot area)	Population not confirmed, but viability is still likely	N
LEVU	4-11	New 2008 population	Moderate (1 plant, approximately 2 square-foot area)	N
LEVU	4-12	New 2008 population	Moderate (1 plant, approximately 16 square-foot area)	N
LEVU	4-13	New 2008 population	1 plant, approximately 2 square-foot area	N
LEVU	4-14	New 2008 population	High (2 plants, approximately 25 square-foot area)	N
LEVU	4-15	New 2008 population	Moderate (2 plants, approximately 25 square-foot area)	N
LEVU	4-16	New 2008 population	High (4 plants, approximately 4 square-foot area)	N
LEVU	4-17	New 2008 population	High (2 plants, approximately 25 square-foot area)	N
LEVU	4-18	New 2008 population	High (I plant, approximately 4 square-foot area)	N
LEVU	4-19	New 2008 population	Moderate (3 plants, approximately 200 square-foot area)	N
LEVU	4-20	New 2008 population	Moderate (1 plant, approximately 4 square-foot area)	N
LEVU	4-21	New 2008 population	High (1 plant, approximately 4 square-foot area)	N
LEVU	4-22	New 2008 population	High (1 plant, approximately 4 square-foot area)	Y
TOTAL SF OF AREA FOR LEVU			**1936 square-feet**	

[INSERT PDFs CREATED BY ERIC LEE - TWO 11i17i MAPS
\\sacramento-nas\Data\PROJECTS\3089102 RESD - Sunset Stables\Phase 2 Task 10 Draft Environmental Docs\USFS Docs\Veg BE and Noxious Weeds Risk Assessment\
SS_InvasivePlantSurveys_11i17i_03_North Area_optimized.pdf
and
SS_InvasivePlantSurveys_11i17i_03_South Area_optimized.pdf

Figure A-1a. Invasive Plant/Noxious Weed Occurrences in the Project Area (North Area)

Figure A-1b. Invasive Plant/Noxious Weed Occurrences in the Project Area (South Area)