

APPENDIX G

Letter Report Discussing Findings of Special-Status Plant Survey

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September 19, 2007

Rick Robinson
Natural Resources Program Manager
California Tahoe Conservancy
1061 Third Avenue
South Lake Tahoe, CA 96150

Subject: Results of Special-Status Plant Survey for the Upper Truckee River and Marsh Restoration Project

Dear Mr. Robinson:

This letter report provides the methods and results of a special-status plant survey of the Upper Truckee River and Marsh Restoration Project site. This survey was conducted in support of review of the project under the California Environmental Quality Act (CEQA) and to provide baseline information on the occurrence of special-status plants on the project site. The study area for this survey is approximately 592 acres in size, and includes parcels owned by the California Tahoe Conservancy (Conservancy), other public agencies, and private landowners (Exhibit 1). It includes the downstream reaches of Trout Creek and the Upper Truckee River, adjacent wetland and uplands habitats, and the Lower West Side (LWS) Wetlands Restoration Project site located in the northwest portion of the study area, just east of the Tahoe Keys Marina. The special-status plant survey excluded areas of Barton Beach and Cove East Beach where populations of Tahoe Yellow Cress (*Rorippa subumbellata*) are known to occur and are the subject of an ongoing adaptive management plan (EDAW 2006).

The purpose of this special-status plant survey was to identify occurrences of additional special-status plants that occur in the study area and could potentially be disturbed as a result of implementation of the proposed restoration activities. In summary, a single population of American mannagrass (*Glyceria grandis*), a CNPS List 2 was identified near the outlet of Trout Creek in the study area. The methods and results of the survey are discussed in detail below.

METHODS

Pre-field Investigation

Before conducting the field survey, EDAW botanists conducted database searches and research to compile a target list of plant species that are considered special-status species or are otherwise considered sensitive by local resource agencies with potential to occur in the study area. Special-status plants are defined as plants that are legally protected or that are otherwise considered sensitive by federal, state or local resource conservation agencies and organizations. Special-status plant taxa are species, subspecies or varieties that fall into one or more of the following categories:

- ▶ officially listed by the state of California or the federal government as Endangered, Threatened or Rare;
- ▶ a candidate for state or federal listing as Endangered, Threatened or Rare;

- ▶ taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines;
- ▶ designated as a sensitive, special interest, or threshold species by TRPA;
- ▶ designated as sensitive by the USFS Regional Forester in Region 5; and
- ▶ taxa considered by the CNPS to be “rare, threatened or endangered in California” (Lists 1B and 2).

The CNPS Inventory includes five lists for categorizing plant species of concern, which are summarized below. The plants listed on CNPS lists 1A, 1B, and 2 meet the definitions of Section 1901, Chapter 10 of the Native Plant Protection Act (NPPA) or Sections 2062 and 2067 (California Endangered Species Act [CESA]) of the California Department of Fish and Game Code and may qualify for state listing. Therefore, they are considered rare plants pursuant to Section 15380 of CEQA. DFG recommends and local government agencies may require that they be fully considered during preparation of environmental documents pursuant to CEQA. Some of the plants constituting CNPS Lists 3 and 4 meet the definitions of Section 1901, Chapter 10 or Sections 2062 and 2067 of the DFG Code and are eligible for state listing, and many are also listed as sensitive species by the USFS. The CNPS lists are categorized as follows:

- ▶ List 1A - Plants presumed extinct in California;
- ▶ List 1B - Plants rare, threatened, or endangered in California and elsewhere;
- ▶ List 2 - Plants rare, threatened, or endangered in California but more common elsewhere;
- ▶ List 3 - Plants about which we need more information - a review list
- ▶ List 4 - Plants of limited distribution - a watch list

The primary sources of information in generating the target list of special-status plant species included the California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Vascular Plants* (CNPS 2007), the California Department of Fish and Game (DFG) California Natural Diversity Database (CNDDDB 2007), the TRPA threshold list of sensitive species, and the U.S. Forest Service, Lake Tahoe Basin Management Unit's (LTBMU) list of sensitive species. The South Lake Tahoe, Meeks Bay, Emerald Bay, Echo Lake, Freel Peak, and Woodsford U.S. Geological Survey (USGS) 7.5-minute quadrangles were included in the CNPS and CNDDDB database searches. In addition to these sources, information was obtained by reviewing previously prepared environmental reports for the project including, *Upper Truckee River and Wetland Restoration Project: Processes and Functions of the Upper Truckee Marsh* (EDAW and ENTRIX 2003) and *Upper Truckee River and Wetland Restoration Final Concept Plan* (EDAW 2006), and by consulting with a US Forest Service botanist (Gross pers. comm.).

Table 1 contains information on all special-status plant species with potential to occur in the vicinity of the project site. Based on a review of existing documentation, habitat types present, and the elevation of the project site, twenty-four of these special-status plant species have potential to occur or are known from the study area. The other twenty species identified in Table 1 are unlikely to occur because suitable habitat for these species is not present in the study area. In preparation for the field surveys, a survey package including photographs or line drawings of each of the target special-status plant species was prepared to familiarize the field botanists conducting the surveys with the characteristics of these species.

Field Surveys

EDAW botanists scheduled surveys to coincide with the blooming periods of the target plant species. Field surveys on the project site were conducted by EDAW botanists Mark Bibbo and Richard

Dwerlkotte on July 24, 25, 26, and 27, 2007, for a total of 57 person-hours. Field surveys were conducted by walking meandering transects throughout the entire study area. The protocol for the special-status plant surveys followed DFG's "Guidelines for Assessing the Effects of Proposed Development on Rare, Threatened, and Endangered Plants and Plant Communities" (DFG 2000b) and U.S. Fish and Wildlife Service's (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000), which involve using systematic field techniques in all habitats in the study area to ensure thorough coverage of potential impact areas. All plants encountered during the surveys were identified to the highest taxonomic level necessary for a rare plant determination. Nomenclature used follows the Jepson Manual Higher Plants of California (Hickman 1993).

The locations of all special-status plants encountered were mapped by hand as either points or polygons onto aerial photographs of the study area (scale 1" = 400'). In addition, GIS coordinates were recorded for each location while in the field. These location points and polygons were later digitized onto a GIS overlay to produce a map of the distribution of special-status plants in the study area. Notes on habitat, topography, aspect, phenology, and associated species of the special-status plant species identified were recorded on California Native Species Field Survey Forms to be submitted to the CNDDDB upon completion of the plant survey.

RESULTS

The Upper Truckee Marsh study area consists of a continuum of plant associations, ranging from predominantly forested areas on the highest elevations of the site to wet meadow and riparian areas to lagoon and sandy barrier beach at the northern end of the marsh near the shore of Lake Tahoe. The distribution and extent of these plant communities on the project site is shown in Exhibit 2. Detailed description of these plant communities can be found in the aforementioned report *Upper Truckee River and Wetland Restoration Project: Processes and Functions of the Upper Truckee Marsh* (EDAW and ENTRIX 2003).

A comprehensive list of all plant species observed during the survey is included in Table 2. One special-status plant species (American mannagrass, *Glyceria grandis*) was documented within the study area during the survey. A CNDDDB data form for this occurrence is provided in Appendix A and is cross-referenced to the location mapped in Exhibit 2. Representative photographs of American mannagrass are provided in Appendix B. A description of American mannagrass is provided below.

The known locations of Tahoe Yellow Cress within the study area were visited, however, further documentation of these populations is not provided as part of this report. The Barton Beach and Cove East populations have previously been well documented and will be assessed again this year as part of an annual multi-agency monitoring effort of known occurrences of Tahoe Yellow Cress around the lake (EDAW 2006).

RESULTS BY SPECIES

American mannagrass

American manna grass (*Glyceria grandis*), is a rhizomatous grass that is on the California Native Plant Society list 2.3 (rare, threatened, or endangered in California but common elsewhere). Outside of California the species is much more common and is found from Alaska to Newfoundland in the north (including all of the northwestern, midwestern, mid-Atlantic, and northeastern states), in the mountains of Arizona and New Mexico in the southwest, and north of North Carolina and Tennessee in the southeastern United States. In California it is known from Fresno, Humboldt, Mendocino, Mono, Placer,

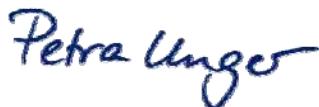
and Tuolumne counties. There are no previously documented occurrences of American manna grass in El Dorado County.

American manna grass grows in riparian habitats, on streambanks, lake-margins, meadows, and in bogs and fens. It grows to a height of 3 feet tall and has a 7 to 15 inch long ovoid inflorescence bearing small spikelets. The grass flowers between June and August. It is similar in overall appearance to fowl mannagrass (*Glyceria elata*), which is much more common in California. It differs from fowl mannagrass in having acute glumes with long veins, more evenly dark florets, flatter lemma apices, and paleal keel tips that do not point towards each other. It can also be confused with pale fake mannagrass (*Torreyochloa pallida*). It differs from this species in its closed leaf sheaths and 1-veined glumes (see photos in Appendix B).

In the study area, American mannagrass was found in only one location growing on a low mud bench within one of the active distributary channels of Trout Creek just above the surface water. Associated species on the mud bench were pale fake mannagrass (*Torreyochloa pallida*), beaked sedge (*Carex utriculata*), Baltic rush (*Juncus balticus*), fringed willow herb (*Epilobium ciliatum*), and wild mint (*Mentha arvensis*). Approximately 35 flowering stems were observed in a 10 square foot area. Nearby mannagrass species, thought to be fowl mannagrass (*Glyceria elata*), had a very different appearance characterized by much greener lemmas and inflorescence, a slightly smaller inflorescence, and smaller, more rounded glumes.

If you have any questions regarding the methods and results of this special-status plant survey or require additional information, please do not hesitate to call us at (916) 414-5800.

Sincerely,



Petra Unger
Senior Botanist



Mark Bibbo
Botanist

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Attachments:

Table 1: Special-status Plant Species with Potential to Occur on the Upper Truckee River and Marsh Restoration Project Site

Table 2: Plant Species Observed on the Upper Truckee River and Marsh Restoration Project Site

Exhibit 1: Survey Area Map

Exhibit 2: Extent of Plant Communities and Location of American Mannagrass on the Project Site

Appendix A: CNDDDB data form

Appendix B: Representative Photographs

REFERENCES

- California Department of Fish and Game (DFG). 2000. *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities*. (Revision of 1983 Guidelines) Sacramento, CA.
- California Natural Diversity Database (CNDDDB). 2007 [March]. *Rarefind: A Database Application for the Use of the California Department of Fish and Game's Natural Diversity Database*. California Natural Heritage Division, California Department of Fish and Game, Sacramento, CA.
- California Native Plant Society. 2006. *Electronic Inventory of Rare and Endangered Vascular Plants of California*. Available: <http://northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi>. Last updated June 01, 2007. Accessed June 13, 2007.
- EDAW and ENTRIX. 2003 (February). *Upper Truckee River and Wetland Restoration Project: Processes and Functions of the Upper Truckee Marsh*. Prepared for California Tahoe Conservancy, South Lake Tahoe, CA and Department of General Services, Sacramento, CA.
- EDAW and ENTRIX. 2006 (June). *Upper Truckee River and Wetland Restoration Project. Final Concept Plan Report*. Prepared for California Tahoe Conservancy, South Lake Tahoe, CA, and Department of General Services, Real Estate Services Division, West Sacramento, CA. Prepared by EDAW, South Lake Tahoe, CA, and ENTRIX, Sacramento, CA.
- EDAW. 2006 (August). *Upper Truckee Marsh Restoration Project: Tahoe Yellow Cress Management Plan*. Prepared for California Tahoe Conservancy, South Lake Tahoe, CA, and Department of General Services, Real Estate Services Division, West Sacramento, CA. Prepared by EDAW, South Lake Tahoe, CA.
- Hickman, J.C. (ed). 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley and Los Angeles California.
- U.S. Fish and Wildlife Service. 2000. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*. Sacramento, CA.

PERSONAL COMMUNICATIONS

- Gross, Shana. Rare plant coordinator. U.S. Forest Service Lake Tahoe Basin Management Unit, South Lake Tahoe, CA. July 11, 2007—telephone conversation with Mark Bibbo of EDAW regarding surveying for potential sensitive species in the Upper Truckee Marsh study area.

Table 1
Special-Status Plant Species Known from the Upper Truckee River and Wetlands Restoration Project
Study Area or with Potential to Occur

Scientific and Common Name	Listing Status ¹			Habitat and Flowering Period	Potential for Occurrence
	Federal	State	Local/CNPS		
<i>Arabis rectissima</i> var. <i>simulans</i> Washoe tall rockcress	I			Dry, sandy granitic or andesitic soils on gentle slopes within open mature Jeffery pine dominated forests, often on recovering lightly disturbed soils; 6,033 to 7,349 ft. Blooming period: May-July	Unlikely to occur. Suitable habitat is on the site is highly disturbed.
<i>Arabis rigidissima</i> var. <i>demota</i> Galena Creek rockcress	S		TRPA/1B	Fir- pine-quaking aspen associations, meadow edges, usually on north-facing slopes and rocky outcrops; 7,021–10,019 ft. Blooms August.	Unlikely to occur. Suitable habitat is on the site is highly disturbed. Closest occurrences are along the north shore of Lake Tahoe.
<i>Arabis tiehmii</i> Tiehm's rock cress	S		1B	Granitic alpine boulder and rock fields; 9,744 to 11,778 ft. Blooming period: July-August	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Botrychium ascendens</i> Upswept moonwort	S		2	Grows in mesic lower montane coniferous forest; 4,921 to 7,496 ft. Blooming period: July-August	Could occur. Suitable mesic habitat occurs in the study area.
<i>Botrychium crenulatum</i> Scalloped moonwort	S		2	Freshwater marshes and swamps, meadows and seeps, bogs and fens, and lower montane coniferous forest; 4,921 to 10,761 ft. Blooming period: June-September	Could occur. Suitable mesic habitat occurs in the study area.
<i>Botrychium lineare</i> Slender moonwort	S		1B	Often disturbed upper montane coniferous forest; 8,530 ft. Blooming period: unknown	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Botrychium lunaria</i> Common moonwort	S		2	Upper montane coniferous forest, subalpine coniferous forest, and meadows and seeps; 7,480 to 11,154 ft. Blooming period: August	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Botrychium minganense</i> Mingan moonwort	S		2	Lower and mesic upper montane coniferous forest and bogs and fens; 4,921 to 6,742 ft. Blooming period: July-September	Could occur. Suitable mesic habitat occurs in the study area.
<i>Botrychium montanum</i> Western goblin	S		2	Lower and mesic upper montane coniferous forest; 4,921 to 6,988 ft. Blooming period: July-September	Could occur. Suitable mesic habitat occurs in the study area.
<i>Carex limosa</i> Shore sedge			2	Grows in upper and lower montane coniferous forest, meadows and seeps, and bogs and fens; 3,937 to 8,858 ft. Blooming period: June-August	Could occur. Suitable mesic habitat occurs in the study area.
<i>Carex mariposana</i> Mariposa sedge (name changed from <i>C. paucifructus</i>)			TRPA	Red fir and subalpine coniferous fores, montane meadows; 3,960 to 10,560 ft. Blooming period unknown.	Unlikely to occur. Where it occurs in the Tahoe Basin it is typically found at higher elevations than the study area.
<i>Chaenactis douglasii</i> var. <i>alpine</i> Alpine dusty maidens			2	Granitic alpine boulder and rock fields; 9,842 to 11,154 ft. Blooming period: July-September	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Cryptantha crymophila</i> Subalpine cryptantha			1B	Volcanic and rocky subalpine coniferous forest; 8,530 to 10,498 ft. Blooming period: July-August	Unlikely to occur. Typically found at higher elevations than the study area.

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<i>Draba asterophora</i> var. <i>asterophora</i> Tahoe draba	S		TRPA/1B	Grows in subalpine coniferous forest and alpine boulder and rock fields; 8,250 to 11,499 ft. Blooming period: July-August(September)	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Draba asterophora</i> var. <i>macrocarpa</i> Cup Lake draba	S		TRPA/1B	Grows in rocky subalpine coniferous forest; 8,202 to 9,235 ft. Blooming period: July-August	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Epilobium howellii</i> Subalpine fireweed	S		1B	Mesic subalpine coniferous forest and meadows and seeps; 6,561 to 8,858 ft. Blooming period: July-August	Could occur. Suitable mesic habitat occurs in the study area.
<i>Epilobium oregonum</i> Oregon fireweed			1B	Mesic upper and lower montane coniferous forest and bogs and fens; 1,640 to 7,349 ft. Blooming period: June-September	Could occur. Suitable mesic habitat occurs in the study area.
<i>Epilobium palustre</i> Marsh willowherb			2	Meadows and seeps and bogs and fens; 7,217 ft. Blooming period: July-August	Could occur. Suitable mesic habitat occurs in the study area.
<i>Erigeron miser</i> Starved daisy	S		1B	Rocky upper montane coniferous forest; 6,036 to 8,595 ft. Blooming period: June-October	Unlikely to occur. Suitable habitat is on the site is highly disturbed and typically found at higher elevations in the Tahoe Basin
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i> Donner Pass buckwheat	S		1B	Volcanic, rocky upper montane coniferous forest and meadows and seeps; 6,085 to 8,595 ft. Blooming period: July-September	Unlikely to occur. Minimal suitable habitat in the study area.
<i>Glyceria grandis</i> American mannagrass			2	Bogs and fens, meadows and seeps, and streambanks and lake margins of marshes and swamps; 49 to 6,496 ft. Blooming period: June-August	Known to occur. Observed at Upper Truckee Marsh (EDAW and ENTRIX 2003).
<i>Hulsea brevifolia</i> Short-leaved hulsea	S		1B	Granitic or volcanic, gravelly or sandy upper montane coniferous forest and lower montane coniferous forest; 4,921 to 10,498 ft. Blooming period: May-August	Unlikely to occur. Suitable habitat is on the site is highly disturbed.
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> Hutchison's lewisia	S		3	Openings and slate in upper montane coniferous forest; 4,799 to 7,004 ft. Blooming period: (June)July-August	Unlikely to occur. Suitable habitat is on the site is highly disturbed.
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i> Kellogg's lewisia	S			Sandy or gravelly, usually granitic or volcanic substrates; 4,265 to 7,874 ft. Blooming period:	Unlikely to occur. Suitable habitat is on the site is highly disturbed.
<i>Lewisia longipetala</i> Long-petaled lewisia	S		TRPA/1B	Grows in granitic subalpine coniferous forest and alpine boulder and rock fields; 8,202 to 9,596 ft. Blooming period: July-August	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Polystichum lonchitis</i> Holly fern			3	Grows in granitic or carbonate upper montane coniferous forest and subalpine coniferous forest; 5,905 to 8,530 ft. Blooming period: June-September	Could occur. Suitable habitat occurs in the study area.
<i>Potamogeton filiformis</i> Slender-leaved pondweed			2	Grows in assorted shallow freshwater marshes and swamps; 984 to 7,053 ft. Blooming period: May-July	Could occur. Suitable mesic habitat occurs in the study area.

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<i>Rorippa subumbellata</i> Tahoe yellow cress	C/S	E	TRPA/1B	Grows in decomposed granitic beaches of meadows and seeps and in lower montane coniferous forests; 6,217 to 6,233 ft. Blooming period: May-September	Known to occur. Suitable habitat present. Observed at the Upper Truckee Marsh (EDAW 2003) Barton Beach and Cove East populations are monitored annually.
<i>Scirpus subterminalis</i> Water bulrush			2	Grows in montane lake margins of marshes and swamps and in bogs and fens; 2,460 to 7,381 ft. Blooming period: July- August	Could occur. Suitable mesic habitat occurs in the study area.
<i>Scutellaria galericulata</i> Marsh skullcap			2	Lower montane coniferous forest, meadows and seeps, and marshes and swamps; 0 to 6,889 ft. Blooming period: June-September	Could occur. Suitable mesic habitat occurs in the study area.
<i>Utricularia ochroleuca</i> Cream-flowered bladderwort			2	Lake margins of marshes and swamps and mesic meadows and seeps; 4,708 to 4,724 ft. Blooming period: June-July	Could occur. Suitable mesic habitat occurs in the study area.
Moss					
<i>Bruchia bolanderi</i> Bolander's candle moss	S		2	Damp soil in upper montane coniferous forest, meadows and seeps, and lower montane coniferous forest; 5,577 to 9,186 ft.	Could occur. Suitable habitat occurs in the study area.
<i>Helodium blandowii</i> Blandow's bog moss	S		2	Meadows and seeps and damp soil in subalpine coniferous forests; 6,108 to 8,858 ft.	Could occur. Suitable habitat occurs in the study area.
<i>Meesia longiseta</i> Long-stalked hump-moss	I			Usually in fens, but sometimes along freshwater streams at high elevations.	Could occur. Suitable mesic habitat occurs in the study area.
<i>Meesia triquetra</i> Three-ranked hump-moss	S		4	Grows in mesic and soil upper montane coniferous forest, subalpine coniferous forest, meadows and seeps, and bogs and fens; 4,265 to 9,688 ft.	Could occur. Suitable mesic habitat occurs in the study area.
<i>Meesia uliginosa</i> Broad-nerved hump-moss	S		2	Grows in damp soil of upper montane coniferous forest, subalpine coniferous forest, meadows and seeps, and bogs and fens; 4,265 to 9,199 ft.	Could occur. Suitable mesic habitat occurs in the study area.
<i>Myurella julacea</i> Myurella moss	I		2	Alpine boulder and rock fields and damp rock and soil of subalpine coniferous forest; 8,858 to 9,842 ft.	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Orthotrichum praemorsum</i> Orthotrichum moss	I			Shaded, moist habitats of Eastern Sierra Nevada rock outcrops; up to 8,202 ft.	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Orthotrichum shevockii</i> Shevock's moss	I		1B	Lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and granitic and rock of upper montane coniferous forest; 6,889 to 7,874 ft.	Unlikely to occur. Typically found at higher elevations than the study area.

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<i>Orthotrichum spjutii</i> Spjut's bristle moss	I		1B	Lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and granitic and rock of upper montane coniferous forest; 6,889 to 7,874 ft..	Unlikely to occur. Typically found at higher elevations than the study area.
<i>Pohlia tundrae</i> Tundrae pohlia moss	I		2	Gravelly, damp soil of alpine boulder and rock fields; 8,858 to 9,842 ft.	Could occur. Precise microhabitat required are unknown (Gross pers. comm.) Suitable habitat unlikely.
<i>Sphagnum</i> spp. Sphagnum mosses	I			Usually in fens and bogs; sometimes very wet, nonacidic habitats that remain saturated.	Could occur. Suitable mesic habitat occurs in the study area.
Lichen					
Veined water lichen <i>Peltigera hydrothyria</i>	S			Lower to mid-montane elevations in small, fresh water, perennial streams with little fluctuation in water level and scouring.	Could occur; suitable habitat occurs in the study area.
Fungi					
Branched collybia <i>Dendrocollybia racemosa</i>	S			Older mixed coniferous forest.	Could occur; suitable habitat present in the study area.
¹ Legal Status Definitions U.S. Fish and Wildlife Service (USFWS): T Federal Threatened E Federal Endangered C Candidate California Department of Fish and Game (DFG): R Rare T Threatened E Endangered				California Native Plant Society (CNPS) Listing Categories: 1B Plants rare, threatened, or endangered in California and elsewhere 2 Plants rare, threatened, or endangered in California but more common elsewhere 3 Plants for which more information is needed – a review list 4 Plants of limited distribution – a watch list Lake Tahoe Basin Management Unit S Sensitive Species I Species of Interest	

Table 2
Plant Species Observed on the Upper Truckee River and Marsh Restoration Project Site

Scientific Name	Common Name	Plant Community ¹
Apiaceae		
<i>Heracleum lanatum</i>	cow parsnip	LP, WS, MM
<i>Osmorhiza chilensis</i>	mountain sweet-cicely	JP
<i>Perideridia parishii</i>	Parish's yampah	JP,MM
<i>Sphenosciadium capitellatum</i>	ranger's buttons	JP,LP
Asteraceae		
<i>Achillea millefolium</i>	yarrow	JP, LP,WS, MM, DS, RU
<i>Agoseris glauca</i> var. <i>monticola</i>	pale dandelion	MM
<i>Agoseris heterophylla</i>	annual mountain dandelion	MM
<i>Anaphalis margaritacea</i>	pearly everlasting	JP, BD, RU
<i>Antennaria corymbosa</i>	meadow pussy-toes	JP, MM
<i>Arnica chamissonis</i> var. <i>foliosa</i>	arnica	JP, LP, WS, MM
<i>Artemisia ludoviciana</i> var. <i>ludoviciana</i>	silver wormwood	LP,WS, MM
<i>Artemisia tridentata</i> var. <i>vaseyana</i>	mountain sagebrush	JP, RU
<i>Aster occidentalis</i>	western mountain aster	LP, WS, MM, BD
<i>Bidens laevis</i>	bur-marigold	BD
<i>Chamomilla suaveolens</i> *	pineapple weed	MM,DS,RU
<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush	DS,RU
<i>Cirsium arvense</i> *	Canada thistle	JP, LP, WS, MM, DS
<i>Cirsium vulgare</i> *	bull thistle	JP, LP, WS, MM, DS
<i>Conyza canadensis</i>	horseweed	MM, DS, RU
<i>Erigeron divergens</i>	spreading fleabane	MM
<i>Erigeron pumilus</i> var. <i>intermedius</i>	fleabane daisy	MM, BD
<i>Gnaphalium palustre</i>	cudweed	WS, MM, BD
<i>Lactuca serriola</i> *	prickly lettuce	DS, RU
<i>Madia glomerata</i>	mountain tarweed	DS, RU
<i>Picris echioides</i> *	bristly ox-tongue	MM, RU
<i>Senecio integerrimus</i>	forest groundsel	JP, LP, MM
<i>Senecio hydrophilus</i>	water groundsel	WS,MM
<i>Senecio vulgaris</i> *	common groundsel	RU
<i>Solidago canadensis</i> ssp. <i>elongata</i>	Canada golden rod	JP,LP,MM
<i>Tanacetum vulgare</i> *	tansy	DS,RU
<i>Taraxacum officinale</i> *	common dandelion	JP,LP,WS,MM,DS
<i>Tragopogon dubius</i> *	goat's beard	JP,MM,DS
Berberidaceae		
<i>Berberis aquifolium</i> var. <i>repens</i>	Oregon grape	JP
Betulaceae		
<i>Alnus incana</i> ssp. <i>tenuifolia</i>	mountain alder	LP,WS
<i>Betula occidentalis</i>	water birch	LP,WS
Boraginaceae		
<i>Amsinckia tessellata</i>	checker fiddleneck	RU
<i>Cryptantha affinis</i>	cryptantha	MM
<i>Plagiobothrys leptocladus</i>	alkali plagiobothrys	MM, RU
<i>Plagiobothrys cognatus</i>	cognate popcornflower	MM
Brassicaceae		
<i>Capsella bursa-pastoris</i> *	shepherd's purse	MM,DS
<i>Descurainia pinnata</i> var. <i>halictorum</i>	tansy mustard	JP,DS,RU

Table 2
Plant Species Observed on the Upper Truckee River and Marsh Restoration Project Site

Scientific Name	Common Name	Plant Community ¹
<i>Lepidium densiflorum</i>	peppergrass	JP, LP
<i>Lepidium latifolium</i> *	perennial pepperweed	MM,DS,RU
<i>Lepidium virginicum</i> var. <i>pubescens</i>	hairy pepperweed	RU
<i>Rorippa curvisiliqua</i>	yellow cress	MM
<i>Rorippa nasturtium-aquaticum</i>	water cress	MM, LG
<i>Rorippa subumbellata</i> ²	Tahoe water cress	BD
<i>Sisymbrium altissimum</i> *	tumble mustard	JP, DS, RU
Callitrichaceae		
<i>Callitriche heterophylla</i> var. <i>bolanderi</i>	water-starwort	MM
<i>Callitriche verna</i>	water-starwort	WS, MM, LG
Campanulaceae		
<i>Downingia montana</i>	Sierra downingia	MM
Caprifoliaceae		
<i>Lonicera conjugialis</i>	double honeysuckle	JP
Caryophyllaceae		
<i>Cerastium fontanum</i> ssp. <i>vulgare</i> *	mouse-ear chickweed	RU
<i>Stellaria longipes</i> var. <i>longipes</i>	starwort chickweed	JP, LP, WS, MM
<i>Spergularia rubra</i> *	purple sand spurry	RU
Chenopodiaceae		
<i>Chenopodium album</i> *	lamb's quarters pigweed	JP, DS, RU
Convolvulaceae		
<i>Convolvulus arvensis</i> *	bindweed	MM, DS, RU
Cyperaceae		
<i>Carex aquatilis</i>	water sedge	LP, WS, MM, LG, BD
<i>Carex athrostachya</i>	slender-beak sedge	MM
<i>Carex douglasii</i>	Douglas' sedge	JP, MM, DS
<i>Carex fracta</i>	fragile sheath sedge	LP, MM
<i>Carex lanuginosa</i>	woolly sedge	LP, MM
<i>Carex lenticularis</i>	lakeshore sedge	LP, MM
<i>Carex nebrascensis</i>	Nebraska sedge	LP, WS, MM, LG, BD
<i>Carex praegracilis</i>	field sedge	JP, LP, WS, MM, BD
<i>Carex simulata</i>	short beaked sedge	WS, MM
<i>Carex utriculata</i>	beaked sedge	WS, MM, LG
<i>Carex vesicaria</i>	blister sedge	WS, MM
<i>Eleocharis acicularis</i> var. <i>bella</i>	beautiful spikerush	WS, MM, LG
<i>Eleocharis macrostachya</i>	common spikerush	WS, MM, LG
<i>Eleocharis pauciflora</i>	few-flowered spikerush	WS, MM, LG
<i>Scirpus acutus</i>	tule	MM
<i>Scirpus microcarpus</i>	Small-head bulrush	LG, MM
<i>Scirpus validus</i>	soft-stemmed bulrush	LG
Equisetaceae		
<i>Equisetum arvense</i>	scouring rush horsetail	
Ericaceae		
<i>Arctostaphylos patula</i>	green leaf manzanita	
Fabaceae		
<i>Astragalus ciser</i>	milk-vetch	DS, RU
<i>Lathyrus lanszwertii</i> var. <i>lanszwertii</i>	wild pea	JP, LP, MM

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Scientific Name	Common Name	Plant Community ¹
<i>Lotus corniculatus</i> *	bird's foot trefoil	RU
<i>Lotus purshianus</i> var. <i>purshianus</i>	Spanish clover	MM, DS, RU
<i>Lupinus breweri</i>	Brewer's lupine	JP, DS, RU
<i>Lupinus latifolius</i>	broadleaf lupine	LP, WS, MM
<i>Lupinus lepidus</i> var. <i>confertus</i>	clustered tidy lupine	JP, DS, RU
<i>Lupinus polyphyllus</i>	lupine	LP, WS, MM
<i>Melilotus alba</i> *	white sweetclover	DS, RU
<i>Trifolium cyathiferum</i>	bowl clover	MM, WS
<i>Trifolium longipes</i>	long stalked clover	MM, WS
<i>Trifolium pratense</i> *	red clover	MM, WS, RU
Gentianaceae		
<i>Gentiana newberryi</i> var. <i>tiogana</i>	gentian	MM
Geraniaceae		
<i>Erodium cicutarium</i> *	redstem filaree	DS, RU
Grossulariaceae		
<i>Ribes cereum</i>	wax currant	JP
<i>Ribes inerme</i>	white-stemmed gooseberry	
<i>Ribes lacustre</i>	swamp currant	JP, LP, WS
<i>Ribes roezlii</i> var. <i>roezlii</i>	Sierra gooseberry	JP
<i>Ribes viscosissimum</i>	sticky currant	JP, LP
Halogoraceae		
<i>Myriophyllum sibiricum</i>	myriophyllum	LG
Hippuridaceae		
<i>Hippuris vulgaris</i>	mare's tail	LG
Hydrocharitaceae		
<i>Elodea canadensis</i>	common waterweed	LG
Hydrophyllaceae		
<i>Hesperochiron pumilus</i>	dwarf hesperochiron	MM
<i>Phacelia hastata</i>	silverleaf phacelia	JP, BD, DS, RU
Hypericaceae		
<i>Hypericum anagalloides</i>	tinker's penny	MM
<i>Hypericum formosum</i> var. <i>scouleri</i>	Scouler's St. John's wort	MM, BD, DS
<i>Hypericum perforatum</i> *	Klamath weed	MM, BD, DS, RU
Juncaceae		
<i>Juncus balticus</i>	wiregrass, Baltic rush	LP, WS, MM, LG, BD, DS, RU
<i>Juncus effusus</i>	common rush	MM, LG, WS
<i>Juncus ensifolius</i>	sword-leaved rush	WS, MM
<i>Juncus nevadensis</i>	Nevada rush	WS, MM, LG
<i>Juncus orthophyllus</i>	straight-leaved rush	WS, MM, LG
Lamiaceae		
<i>Mentha arvensis</i>	field mint	LP, WS, MM
<i>Prunella vulgaris</i>	self-heal	WS, MM
<i>Pycnanthemum californicum</i>	Sierra mint	MM
<i>Stachys ajugoides</i> var. <i>rigida</i>	hedge nettle	LP, WS, MM
Lentibulariaceae		
<i>Utricularia vulgaris</i>	common bladderwort	MM, LG

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Scientific Name	Common Name	Plant Community ¹
Liliaceae		
<i>Smilacina stellata</i>	false Solomon's seal	LP, WS, MM
<i>Triteleia hyacinthina</i>	white brodiaea	LP, MM
Linaceae		
<i>Linum lewisii</i>	flax	MM, RU
Malvaceae		
<i>Sidalcea oregana ssp. spicata</i>	checker mallow	JP, LP, WS, MM
Nymphaeaceae		
<i>Nuphar luteum var. polysepalum</i>	yellow pond-lily	LG
Onagraceae		
<i>Epilobium angustifolium var. circumvagum</i>	fireweed	JP, LP, MM
<i>Epilobium brachycarpum</i>	willow-herb	RU
<i>Epilobium ciliatum var. ciliatum</i>	slender willow-herb	LP, WS, MM, DS, RU
<i>Epilobium densiflorum</i>	dense flowered boisduvalia	MM, RU
<i>Gayophytum diffusum var. parviflorum</i>	ground smoke	JP, BD, DS, RU
<i>Oenothera elata var. hookeri</i>	evening primrose	DS, RU
Orchidaceae		
<i>Spiranthes romanzoffiana</i>	ladies' tresses	MM
<i>Platanthera leucostachys</i>	white-flowered bog-orchid	MM
Paeoniaceae		
<i>Paeonia brownii</i>	western peony	JP
Pinaceae		
<i>Abies concolor</i>	white fir	JP
<i>Pinus contorta var. murrayana</i>	lodgepole pine	JP, LP
<i>Pinus jeffreyi</i>	Jeffrey pine	JP
Plantaginaceae		
<i>Plantago lanceolata*</i>	English plantain	JP, LP, MM, DS, RU
<i>Plantago major</i>	common plantain	JP, LP, MM, DS, RU
Poaceae		
<i>Achnatherum lemmonii</i>	Lemmon's needlegrass	JP, LP, MM
<i>Achnatherum lettermanii</i>	Letterman's needlegrass	JP, LP, MM
<i>Achnatherum occidentale</i>	western needlegrass	JP, LP, MM
<i>Agrostis exarata</i>	spike bent grass	WS, MM
<i>Agrostis scabra</i>	rough bent grass	LP, WS, MM
<i>Agrostis stolonifera*</i>	creeping bent grass	LP, WS, MM
<i>Alopecurus aequalis</i>	short-awn foxtail	LP, WS, MM
<i>Alopecurus pratensis</i>	meadow foxtail	MM
<i>Bromus carinatus</i>	California brome	RU
<i>Bromus inermis var. inermis*</i>	smooth brome	DS, RU
<i>Bromus tectorum*</i>	cheatgrass	BD, DS, RU
<i>Calamagrostis rubescens</i>	pine grass	MM
<i>Calamagrostis strict var. inexpansa</i>	strict reedgrass	MM
<i>Dactylis glomerata*</i>	orchard grass	MM, DS, RU
<i>Deschampsia cespitosa var. cespitosa</i>	tufted hairgrass	LP, WS, MM
<i>Deschampsia danthonioides</i>	annual hairgrass	LP, WS, MM, RU
<i>Elymus elymoides var. elymoides</i>	squirreltail	JP, MM, DS, RU

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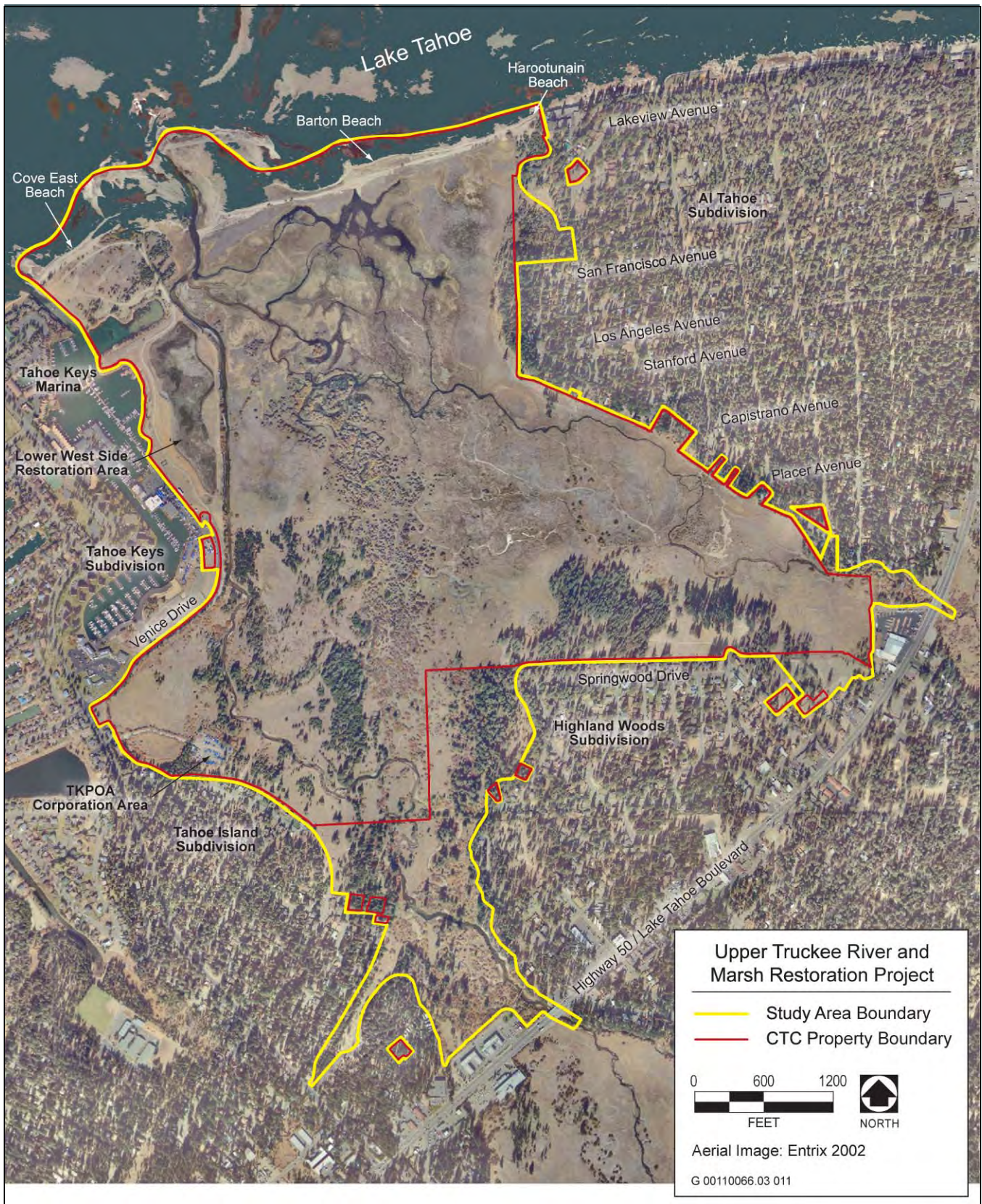
Scientific Name	Common Name	Plant Community ¹
<i>Elymus glaucus</i>	blue wildrye	LP, WS, MM, RU
<i>Elymus trachycaulus</i> var. <i>trachycaulus</i>	slender wheatgrass	MM, DS
<i>Elytrigia intermedia</i> var. <i>intermedia</i> *	intermediate wheatgrass	MM
<i>Festuca arundinacea</i> *	tall fescue	MM
<i>Festuca rubra</i>	red fescue	MM, DS
<i>Festuca idahoensis</i>	Idaho fescue	LP, MM
<i>Glyceria borealis</i>	northern mannagrass	WS, MM, LG
<i>Glyceria elata</i>	fowl mannagrass	WS, MM, LG
<i>Glyceria grandis</i> ³	American mannagrass	MM, LG
<i>Holcus lanatus</i> *	velvet grass	MM
<i>Hordeum brachyantherum</i>	meadow barley	MM, BD
<i>Hordeum jubatum</i>	foxtail barley	MM, BD, DS
<i>Leymus triticoides</i>	creeping wildrye	JP, LP, WS, MM, BD
<i>Lolium multiflorum</i> *	italian ryegrass	MM, DS
<i>Melica aristata</i>	awned melic	MM, DS
<i>Muhlenbergia filiformis</i>	slender muhly	MM
<i>Muhlenbergia richardsonis</i>	mat muhly	MM
<i>Phalaris arundinacea</i>	reed canary grass	MM
<i>Phleum alpinum</i>	mountain timothy	MM
<i>Phleum pratense</i> *	domestic timothy	MM
<i>Poa bulbosa</i> *	bulbous bluegrass	DS, RU
<i>Poa compressa</i> *	Canadian bluegrass	MM
<i>Poa palustris</i> *	fowl bluegrass	LP, MM
<i>Poa pratensis</i> var. <i>pratensis</i> *	Kentucky bluegrass	JP, LP, WS, MM
<i>Poa secunda</i> var. <i>nevadensis</i>	bluegrass	JP, MM
<i>Torreyochloa pallida</i>	pale false mannagrass	MM, LG, WS
<i>Ventenata dubia</i>	ventenata	MM
<i>Vulpia octoflora</i>	six weeks fescue	RU
Polemoniaceae		
<i>Allophyllum gilioides</i> var. <i>violaceum</i>	dense false gilia	MM, RU
<i>Collomia grandiflora</i>	mountain collomia	JP, LP, MM, RU
<i>Collomia linearis</i>	slenderleaf collomia	JP, MM
<i>Gilia leptalea</i>	blue gilia	LP, MM
<i>Ipomopsis aggregata</i>	scarlet gilia	LP, MM, RU
<i>Navarretia intertexta</i> ssp. <i>propinqua</i>	needleleaf navarretia	MM, RU
<i>Navarretia leucocephala</i> ssp. <i>minima</i>	white-headed navarretia	LP, MM
<i>Phlox gracilis</i>	slender phlox	LP, MM, RU
Polygonaceae		
<i>Eriogonum umbellatum</i>	sulphur flower	JP, MM, RU
<i>Polygonum amphibium</i>	water smartweed	LP, WS, MM, LG
<i>Polygonum arenastrum</i> *	common knotweed	MM, DS, RU
<i>Polygonum bistortoides</i>	Western bistort	WS, MM, LG
<i>Polygonum douglasii</i> var. <i>douglasii</i>	Douglas' knotweed	LP, MM, BD, DS
<i>Polygonum hydropiperoides</i>	waterpepper	LP, WS, MM, LG
<i>Polygonum polygaloides</i> ssp. <i>kelloggii</i>	Kellogg's knotweed	MM, RU
<i>Rumex acetosella</i> *	sheep sorrel	LP, MM, RU
<i>Rumex crispus</i> *	curly dock	LP, WS, MM

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Scientific Name	Common Name	Plant Community ¹
<i>Rumex salicifolius</i>	willow-leaved dock	MM
Portulacaceae		
<i>Calyptidium umbellatum</i>	pussy paws	MM
<i>Claytonia perfoliata</i>	miner's lettuce	LP, MM, RU
<i>Lewisia nevadensis</i>	Nevada bitterroot	MM
<i>Montia chamissoi</i>	toad lily	MM
<i>Montia linearis</i>	narrowleaf miner's lettuce	MM
Potamogetonaceae		
<i>Potamogeton amphibium</i>	marsh pondweed	
<i>Potamogeton foliosus</i>	leafy pondweed	LG
<i>Potamogeton gramineus</i>	various-leaved pondweed	LG
<i>Potamogeton natans</i>	jointed pondweed	LG
<i>Potamogeton pusillus</i>	pondweed	LG
Ranunculaceae		
<i>Ranunculus aquatilis</i> var. <i>capillaceus</i>	threadleaf crowfoot	LG, WA
<i>Ranunculus aquatilis</i> var. <i>hispidulus</i>	white water-buttercup	LG, WA
<i>Ranunculus flabellaris</i>	yellow water-buttercup	LG
<i>Ranunculus flammula</i>	buttercup	LG
<i>Ranunculus occidentalis</i>	western buttercup	LP, MM
<i>Thalictrum fendleri</i>	meadowrue	JP, LP, MM
Rhamnaceae		
<i>Ceanothus cordulatus</i>	white thorn	JP
<i>Ceanothus prostratus</i>	Squaw carpet	JP
<i>Ceanothus velutinus</i>	California-lilac	JP
Rosaceae		
<i>Amelanchier alnifolia</i>	serviceberry	LP
<i>Fragaria virginiana</i>	mountain strawberry	LP, MM
<i>Geum macrophyllum</i>	bigleaf avens	LP, WS, MM
<i>Potentilla biennis</i>	cinquefoil	LP, MM
<i>Potentilla drummondii</i> var. <i>bruceae</i>	Bruce's cinquefoil	MM
<i>Potentilla glandulosa</i>	cinquefoil	LP, MM
<i>Potentilla gracilis</i>	cinquefoil	LP, MM
<i>Potentilla norvegica</i> *	Norwegian cinquefoil	MM, BD
<i>Rosa woodsii</i> var. <i>ultramontana</i>	wood rose, interior rose	JP, LP
<i>Sorbus californica</i>	mountain ash	LP
Rubiaceae		
<i>Galium trifidum</i> var. <i>pusillum</i>	bedstraw, cleavers	LP, WS, MM
Salicaceae		
<i>Populus balsamifera</i> spp. <i>trichocarpa</i>	black cottonwood	WS
<i>Salix exigua</i>	narrow-leaved willow	WS, MM, BD, RU
<i>Salix geyeriana</i>	Geyer's willow	LP, WS, MM, LG
<i>Salix lemmonii</i>	Lemmon's willow	LP, WS, MM, LG, BD
<i>Salix lucida</i> var. <i>lasiandra</i>	shining willow	LP, WS, MM, LG, BD
<i>Salix scouleriana</i>	Scouler's willow	LP, WS, MM
Scrophulariaceae		
<i>Castilleja applegatei</i>	Indian paintbrush	LP, MM
<i>Collinsia parviflora</i>	blue-eyed Mary	MM, RU

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Scientific Name	Common Name	Plant Community ¹
<i>Gratiola ebracteata</i>	bractless hedge-hyssop	MM
<i>Gratiola neglecta</i>	American hedge-hyssop	MM
<i>Limosella acaulis</i>	broad leaved mudwort	MM, LG
<i>Linaria vulgaris</i> *	butter-and-eggs	MM
<i>Mimulus guttatus</i>	yellow monkeyflower	LP, MM
<i>Mimulus lewisii</i>	Lewis monkeyflower	MM, WS
<i>Mimulus primuloides</i> var. <i>primuloides</i>	monkeyflower	LP, WS, MM
<i>Penstemon rydbergii</i> var. <i>oreocharis</i>	meadow beardtongue	JP, LP, MM
<i>Penstemon speciosus</i>	showy penstemon	MM, DS, RU
<i>Verbascum thapsus</i> *	woolly mullein	MM, DS, RU
<i>Veronica americana</i>	American speedwell	WS, MM
<i>Veronica peregrina</i> var. <i>xalapensis</i>	purselane speedwell	LP, MM
<i>Veronica scutellata</i>	marsh speedwell	WS, MM
Typhaceae		
<i>Sparganium emersum</i> ssp. <i>emersum</i>	emersed bur-reed	MM
<i>Typha angustifolium</i>	cattail	LG
Urticaceae		
<i>Urtica dioica</i>	stinging nettle	LP, WS, MM
Violaceae		
<i>Viola purpurea</i>	mountain violet	JP, LP



Study Area Map

Exhibit 1