

Young's Wetland Parcel Vegetation Survey Report

Columbia Land Trust
DRAFT



Prepared For:

**Columbia Land Trust
1351 Officers Row
Vancouver, WA 98661**

Prepared By:

**Kathryn Beck
Beck Botanical Services
1708 McKenzie Ave.
Bellingham, WA 98225
calypso@openaccess.org**

January 2011

Table of Contents

1.0 Introduction.....	1
2.0 Methods.....	1
2.1 Vegetation Community Mapping.....	1
2.2 Rare Plant Survey.....	1
2.3 Noxious Weed Survey.....	5
3.0 Vegetation Survey Results.....	6
3.1 Vegetation Community Mapping.....	6
3.2 Rare Plant Survey.....	11
3.3 Noxious Weed Survey.....	15
4.0 References.....	16

TABLES

Table 1. Target rare plant species List, Klickitat County, WA.....	3
--	---

FIGURES

Figure 1. Map of the Young's Wetland Parcel.....	2
Figure 2. Vegetation community map for the Young's Wetland Parcel.....	7
Figure 3. Mountain sedge–straightleaf rush meadow, Polygon 2.....	9
Figure 4. Great camas–short-beak sedge meadow, Polygon 3.....	10
Figure 5. Rare plant populations at the Young's Wetland Parcel.....	12
Figure 6. Long-bearded sego lily, Polygon 3.....	13
Figure 7. Close-up of lowland toothcup plants, Polygon 2.....	14

APPENDICES

Appendix 1. Vascular Plant Species List for the Young's Wetland Parcel.....	18
Appendix 2. Vegetation Polygon Data Forms for the Young's Wetland Parcel...	25
Appendix 3. Young's Wetland Parcel Rare Plant Sighting Forms.....	34

1.0 Introduction

The Columbia Land Trust contracted Kathryn Beck of Beck Botanical Services in 2010 to conduct vegetation surveys at its 80-acre Young's Wetland parcel. The parcel is near the town of Glenwood in Klickitat County, Washington. Vegetation surveys include: vegetation community mapping, a rare plant survey, a comprehensive plant species list, and a noxious weed survey. A map of the parcel is presented in Figure 1. This report documents the methods and results of vegetation surveys at the Young's Wetland parcel.

2.0 Methods

2.1 Vegetation Community Mapping

Areas that visually appeared to have uniform vegetation communities were mapped by hand onto an aerial photograph of the parcel. These polygons were intended to delineate areas with relatively homogeneous plant associations or mosaics of plant associations. The polygons were ground truthed in the field and if necessary, polygon boundaries were adjusted. Modified Washington State Parks and Recreation Commission vegetation community data sheets were used to collect general data on plant associations within polygons. Collected data included general vegetation information, environmental characteristics, land use, and disturbance history. In addition, an overall ecological rating was given for each polygon.

Regionally appropriate vegetation community classifications were used as references to assist in describing the vegetation present (Christy 2004, Crawford 1999, Crawford 2003, Daubenmire 1970, John et al. 1986, Johnson et al. 2005, Kovachic et al. 2004, Lillybridge et al. 1995, Topic et al. 1988). When published vegetation community types did not adequately describe vegetation communities observed within the parcel, either the vegetation association with the best fit was used, or new plant association names and descriptions were designated.

2.2 Rare Plant Survey

A rare plant survey is performed using commonly accepted botanical survey methods to ensure a high likelihood of locating and identifying rare plant populations. In this report, the term "rare plant" includes plant species proposed or listed by the U.S. Fish and Wildlife Service (USFWS) and those designated as Threatened, Endangered, Sensitive, or Review Group 1 in Washington State by the Washington Natural Heritage Program (WNHP 2010a). Rare plant survey methods involve visually searching an area for the target rare plant species in appropriate habitat. A list of potential rare plant species known to occur or have the potential to occur in Klickitat County in the vicinity of the Young's Wetland parcel is presented in Table 1. Timing for field surveys is based on the flowering times of target rare plant species. As part of the documentation of the survey, a comprehensive list of all vascular plant species observed in the parcel is compiled.



Table 1. Target Rare Plant Species, Klickitat County WA.
Youngs Wetland, Columbia Land Trust, 2010

Scientific Name	WNHP USFS	
	Status	Typical Habitat
<i>Agoseris elata</i>	S	meadows, open woods, rocky ridge tops
<i>Anagallis minima</i>	T	riparian, floodplains, vernal pools, mud, sand
<i>Astragalus arrectus</i>	S	grassy hillsides, sagebrush flats, river bluffs, forests
<i>Astragalus diaphanous</i>	Ex	sandy, gravelly soils, alluvial slopes
<i>Astragalus misellus</i> var. <i>pauper</i>	S	open ridgetops, upper slopes shrub-steppe
<i>Astragalus pulsiferae</i> var. <i>suksdorfii</i>	E SC	flat terrain, coarse soils, open forests
<i>Balsamorhiza deltoidea</i>	R2	open, thicker soiled places in Puget trough
<i>Bolandra oregana</i>	S	wooded cliffs near waterfalls, rocky areas
<i>Calochortus longebarbatus</i>	S SC	clay loams in vernal moist sites
<i>Collinsia sparsiflora</i> var. <i>bruceae</i>	S	thin soils, flat to steep slopes, with Garry oak
<i>Cryptantha rostellata</i>	S	shrub-steppe, dry microsites
<i>Cryptantha spiculifera</i>	S	dry, open shrub-steppe, low veg cover
<i>Cusickiella douglasii</i>	T	rocky areas, scree, serpentine ridges
<i>Cypripedium fasciculatum</i>	S SC	conifer forest, north aspects
<i>Damasonium californicum</i>	T	damp ground, vernal pools, mud flats
<i>Erigeron piperianus</i>	S	shrub-steppe slopes, often alkaline soils
<i>Eryngium petiolatum</i>	T	wet vernal moist prairies, low ground
<i>Githopsis specularioides</i>	S	forest openings with thin soils
<i>Hackelia diffusa</i> var. <i>diffusa</i>	T	shaded areas, cliffs, talus, wooded areas
<i>Heuchera grossulariifolia</i> var. <i>tenuifolia</i>	S	basalt cliffs and steep slopes where moist
<i>Hierochloa odorata</i>	R1	moist slopes, meadows, streambanks
<i>Isoetes nuttallii</i>	S	wet ground, seepages in mud, vernal pools
<i>Juncus hemiendytus</i>	T	mud flats, vernal pools, moist to wet meadows
<i>Juncus kelloggii</i>	E	vernal pools, meadows, fields
<i>Juncus uncialis</i>	S	swales, moist areas, vernal pools
<i>Lasthenia glaberrima</i>	E	wet stream banks, vernal pools, muddy ground
<i>Leymus flavescens</i>	R1	sand dunes, sandy flats, ditch and road banks
<i>Leymus triticoides</i>	R1	river flats, saline meadows, sand dunes
<i>Leptosiphon bolanderi</i>	S	dry rocky areas, open slopes
<i>Liparis loeselii</i>	E	springs, bogs, wet sunny places in forests
<i>Lomatium laevigatum</i>	S	basalt cliff crevices in shrub-steppe
<i>Lomatium suksdorfii</i>	S SC	forested or open dry rocky slopes
<i>Meconella oregana</i>	T SC	vernal moist areas in grassland and forest
<i>Mimulus cusickii</i>	T	streambanks, moist areas, scree, sand dunes
<i>Mimulus jungermannioides</i>	X SC	basalt crevices in seepage zones in vertical cliffs
<i>Mimulus pulsiferae</i>	S	seasonally moist open forest areas
<i>Mimulus suksdorfii</i>	S	open moist to dry places, vernal pools
<i>Mimulus washingtonensis</i>	X	wet open low elevation places
<i>Minuartia pusilla</i> var. <i>pusilla</i>	R1	plains, slopes, dry forest, cliffs
<i>Montia diffusa</i>	S	moist forests

Table 1 continued.

Scientific Name	WNHP USFS Status	Status	Typical Habitat
<i>Myosurus clavicaulis</i>	S		vernal pools, hard packed clay soils
<i>Navarretia tagetina</i>	T		open vernal moist rocky and forested places
<i>Nicotiana attenuata</i>	S		dry sandy bottom lands, washes
<i>Oenothera cespitosa</i> ssp. <i>marginata</i>	T		roadcuts, disturbed sites
<i>Ophioglossum pusillum</i>	T		pastures, fields, ditches, flood plain woods
<i>Orobanche californica</i> var. <i>grayana</i>	X		
<i>Orthocarpus bracteosus</i>	E		moist open meadow edges
<i>Oxalis suksdorfii</i>	T		meadows, moist woods, dry open slopes
<i>Penstemon barrettiae</i>	T	SC	basalt cliff crevices, talus, roadsides
<i>Penstemon deustus</i> var. <i>variabilis</i>	T		dry foothills, lowlands, open thin soils, basalt
<i>Penstemon eriantherus</i> var. <i>whitedii</i>	S		slopes, small canyons, dry, rocky habitats
<i>Platanthera sparsiflora</i>	T		open wet areas, seeps, bogs
<i>Potentilla newberryi</i>	X		river shorelines, lakeshores, vernal pools
<i>Polygonum parryi</i>	T		vernally moist open areas, volcanic soil
<i>Ranunculus hebecarpus</i>	R1		shaded areas, moist to dry hillsides, woodlands
<i>Ranunculus triternatus</i>	E	SC	north facing meadow steppe, forests, ridges
<i>Rotala ramosior</i>	T		wet swampy, ponds, lakes
<i>Scribneria bolanderi</i>	S		dry sandy, rocky soil, grass and forb meadows
<i>Scouleria marginata</i>	S		aquatic moss, creeks, streams
<i>Sericocarpus oregonensis</i>	R1		woodlands, dry open rocky coniferous forest
<i>Silene douglasii</i> var. <i>rupinae</i>	R1		
<i>Sisyrinchium sarmentosum</i>	T	SC	moist to wet meadows, openings
<i>Spiranthes porrifolia</i>	S		wet meadows, bogs, streams, seeps
<i>Trichostema oblongum</i>	R1		vernal pools, alkaline soils
<i>Uropappus lindleyi</i>	R1		dry open places, valleys, foothills, plains
<i>Utricularia intermedia</i>	S		shallow ponds, streams, wet grassy meadows
<i>Veratrum insolitum</i>	T		thicket openings, mixed forest, rocky slopes
<i>Zeltnera muhlenbergii</i>	R1		moist soil, eastern Washington

Description of Codes:

State Status is determined by the Washington Natural Heritage Program; Factors considered include abundance, occurrence patterns, vulnerability, threats, existing protection, and taxonomic distinctness.

E = Endangered. In danger of becoming extinct or extirpated from Washington.

T = Threatened. Likely to become Endangered in Washington.

S = Sensitive. Vulnerable or declining and could become Endangered or Threatened in the state.

X = Possibly extinct or Extirpated from Washington.

R1 = Review group 1. Of potential concern but needs more field work to assign another rank.

R2 = Review group 2. Of potential concern but with unresolved taxonomic questions.

Federal Status under the U.S. Endangered Species Act as published in the Federal Register:

LE = Listed Endangered. In danger of extinction.

LT = Listed Threatened. Likely to become endangered.

PE = Proposed Endangered.

PT = Proposed Threatened.

C = Candidate species. Sufficient information exists to support listing as Endangered or Threatened.

SC = Species of Concern. An unofficial status, the species appears to be in jeopardy, but insufficient information to support listing.

TES plants are identified in the field using the Flora of the Pacific Northwest (Hitchcock & Cronquist 1973) and the Field Guide to Selected Rare Plants of Washington (WNHP 2010b). A variety of additional sources were utilized to verify tentative species identifications, including regional lichen keys, other floras, and published papers.

Depending on the habitat, survey intensities employed in the field while walking meander transects are moderate or complete, as defined below:

Moderate: moderate search intensity through an area, with higher intensity surveys in the portions of the areas which appear unique or which appear to have a high potential for rare plant populations.

Complete: close searching in areas with rare plant populations or with habitat with a higher potential of having rare plant populations.

In order to determine the survey intensity level that is appropriate for a particular area, the likelihood the area would serve as rare plant habitat, vegetation density, terrain and expected visibility of the target species are all taken into account. Complete surveys are conducted in areas of likely potential habitat as well as in areas where rare plants have been located.

When a rare plant population is located, it is mapped on aerial photographs, UTM coordinates are recorded with a GPS unit, and its population size is estimated. Additional information collected includes: associated plant species, slope, aspect, vegetation communities, plant phenology, management recommendations, and other pertinent observations. Photographs are taken of rare plants and their habitat, and WNHP Sighting Forms are completed.

There are no existing reports of rare plants in the WNHP database for this parcel or the Section it is in (WNHP 2010c).

2.3 Noxious Weed Survey

Noxious weeds are non-native plant species that are highly destructive, competitive, difficult to control, and/or cause ecological and economical damage. In this report, the term “noxious weed” refers to plants included on the Washington Noxious Weed List (WNWCB 2010). The mapping of Class A and B-designate weeds for Klickitat County are the focus of the survey, which is done concurrently with the rare plant survey (Klickitat County Noxious Weed Control Board 2010). Noxious weed infestations are mapped and forms are completed for Class A or Class B-designate noxious weed species located on the parcel. In addition, Class B non-designate weeds, Class C weeds, and widespread invasive weeds are discussed briefly. Noxious weed Class definitions for Washington are as follows (WNWCB 2010):

- Class A noxious weeds are limited in distribution in Washington. State law requires that these weeds be eradicated.

- Class B noxious weeds are either absent from or limited in distribution in some portions of the state but are very abundant in other areas. The goal is to contain the plants where they are already widespread and prevent their spread into new areas.
- Class B-designate noxious weeds are designated for control in state regions where they are not yet widespread. Prevention of new infestations in these areas is the primary goal.
- Class B (non-designate) noxious weeds are already abundant in a region. Containment is the primary goal so they do not spread into un-infested regions.
- Class C noxious weeds are defined as non-native plants that are already widespread in Washington State. Counties can choose to enforce control, or they can educate residents about controlling these noxious weeds.

3.0 Vegetation Survey Results

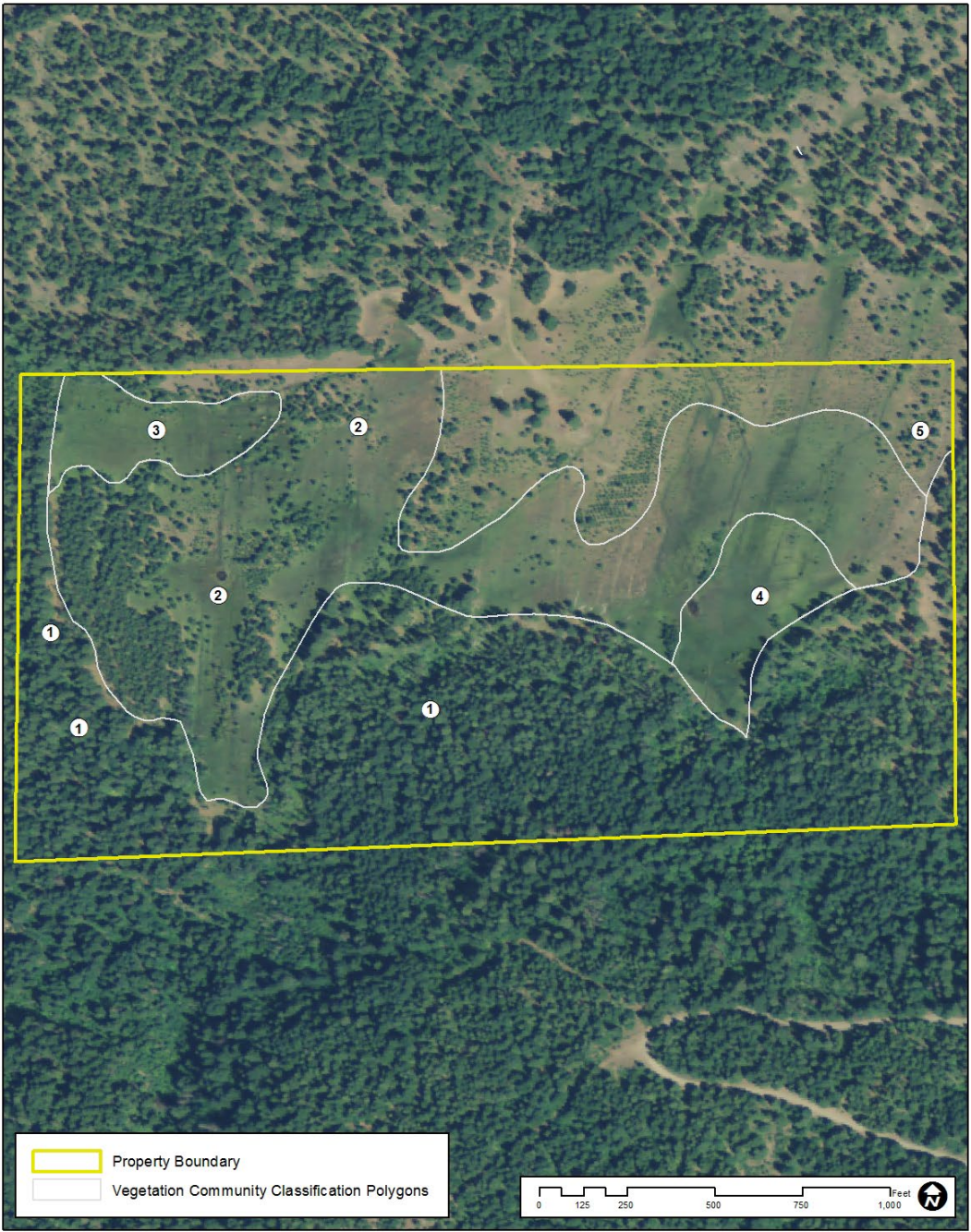
Vegetation surveys were conducted at the Young's Wetland Parcel on May 22, and July 18 and 19, 2010. The results of the vegetation community mapping effort, rare plant survey, and the noxious weed survey are given below. A comprehensive list of all plant species observed and identified during vegetation surveys is given in Appendix 1.

3.1 Vegetation Community Mapping

Historically, the general area around the town of Glenwood, including the Young's Wetland parcel has been highly disturbed by livestock grazing, forestry activities, road construction and maintenance, and homesteading activities. Located near the southern boundary, two large springs flow north and widen out, creating the wetlands on the parcel. These springs were historically used by Native Americans, settlers and railroad companies. An old railroad line ran close to the area. The general area was homesteaded starting in the early 1930's. The wetlands of the parcel have been extensively ditched and diked to channel water off of the property, thereby radically altering the historic hydrology. Livestock grazed the parcel until it was purchased in 2009. The northern portion of the parcel and the wetlands, in particular, were heavily grazed and trampled by cattle. Approximately 60 acres of the 80-acre parcel support wetlands.

Five vegetation polygons were delineated at the Young's Wetland parcel (Figure 2). Vegetation polygon data forms documenting plant associations present at Young's Wetland are given in Appendix 2. Published regional vegetation community types did not adequately describe vegetation communities observed within the parcel, either because they were written for another area, or because the plant associations at Young's Wetland have been so dramatically altered by disturbances including grazing, trampling, forestry practices, and noxious weed spread. At each of the five polygons, unpublished plant association names have been designated.

Figure 2. Vegetation community map for the Youngs Wetland Parcel



Polygon 1 Douglas fir-grand fir/snowberry coniferous forest (PSEMEN-ABIGRA/SYMALB)

The vegetation of the western fringe and the southern portion of the parcel is a coniferous forest with an open to closed canopy (Polygon 1). The forest is dominated by Douglas fir (*Pseudotsuga menziesii*) and Ponderosa pine (*Pinus ponderosa*). Lodgepole pine (*Pinus contorta*) and grand fir (*Abies grandis*) are codominants. Western red cedar (*Thuja plicata*) is present in the moister sites, especially near the springs. An estimated 5% of this polygon supports forested wetlands. Within the forest there are several small stands of large quaking aspen trees (*Populus tremuloides*). Douglas fir and grand fir seedlings and saplings are present in the understory. Scattered Oregon white oak seedlings (*Quercus garryana*) grow in open Douglas fir and Ponderosa pine forests along the western and southern edges of the parcel. In addition, a small stand of Oregon white oak trees grow near the northwest corner of the parcel on DNR land. Five codominant trees were cored and the average age of them was 85 years, suggesting that the forest in the parcel was clearcut in the early 1920's.

The shrub layer of Polygon 1 is sparse to moderately dense in upland areas and dense near the forest/meadow edge. Dominant shrub species include: common snowberry (*Symphoricarpos albus*), Wood's rose (*Rosa woodsii*), oceanspray (*Holodiscus discolor*), black hawthorne (*Crataegus douglasii*). The forb layer is diverse, with common species including: white brodiaea (*Triteleia hyacinthina*), woodland strawberry (*Fragaria vesca*), sweetcicely (*Osmorhiza berteroi*), Scouler's bellflower (*Campanula scouleri*) and the noxious weed yellow hawkweed (*Hieracium caespitosum*). Common graminoids include: blue wildrye (*Elymus glaucus*), western fescue (*Festuca occidentalis*), and Alaska oniongrass (*Melica subulata*). Overall, the forest polygon seems to be less disturbed by recent livestock grazing than other polygons, and the noxious weed cover is relatively low.

Polygon 2 Mountain sedge-straightleaf rush meadow (CARSCOB - JUNORT)

The largest wet meadow polygon in the parcel is in the middle and northern portions of the parcel (Polygon 2). Most of the water flowing through the wetlands originates at two large springs on the hillside near the southern edge of the parcel. This wet meadow has been highly disturbed, ditched, diked, channelized, grazed and trampled. The wetland is comprised of multiple wide, shallow channels and is dominated by rhizomatous graminoid species. Although some of the wetland is vernal moist, much of it is wet year round. There are two topographically low areas situated at the far eastern and western edges of the property which are permanently inundated by the natural outflows of the two springs and are hydrated by the placement of man-made drainages ditches and berms. Suppression of the natural fire regime, and hydrological manipulation (ditches and berms) of the wetland have allowed the encroachment of shrubs and trees, especially Ponderosa pines, onto the drier portions of the wetland and meadow/edge habitat, particularly along the western edge of the polygon.

Dominant graminoid species in this polygon include: straightleaf rush (*Juncus orthophyllus*), mountain sedge (*Carex scopulorum* var. *bracteosa*), California oatgrass (*Danthonia californica*), annual hairgrass (*Deschampsia danthonioides*), short-beak

sedge (*Carex simulata*), and bulbous bluegrass (*Poa bulbosa*). Christy (2004) describes herbaceous wetland plant associations dominated by mountain sedge and short-beak sedge, however the associated shrub and herb species of these plant associations are not similar due to the degradation of the wetland plant communities at the Youngs Wetland parcel. Common forbs include white brodiaea, camas (*Camassia quamash*), western buttercup (*Ranunculus occidentalis*), selfheal (*Prunella vulgaris*), and western mountain aster (*Symphyotrichum spathulatum*). Noxious weeds such as sulfur cinquefoil (*Potentilla recta*) and yellow hawkweed have proliferated in this wetland, especially in more mesic areas where there has been a lot of historic disturbance.

Crowe (1997) observed that with overuse by grazing animals, rhizomatous graminoids, including short-beak sedge, increase. This dynamic appears to have occurred at all of the wet meadows at the Young's Wetland parcel.

Figure 3. Mountain sedge – straightleaf rush meadow, Polygon 2.



Polygon 3 Great camas - short-beak sedge meadow (CAMQUA – CARSIM)

A great camas meadow is located in the northwest corner of the parcel (Polygon 3). It is surrounded by Ponderosa pine and lodgepole pine forest, with patches of quaking aspen trees (Figure 4). The great camas meadow does not appear to have had the same level of grazing pressure and hydrologic disturbance as the large wetland in Polygon 2. In addition, weed cover is relatively low. Dominant species in the great camas meadow include: great camas, straightleaf rush, short-beak sedge, California oatgrass, white

brodiaea, primrose monkeyflower (*Mimulus primuloides*), Douglas' grasswidow (*Olsynium douglasii*), and western buttercup. Christy (2004) describes a great camas plant association for western Oregon, however many of the associated plant species are different than those present at Young's wetland.

Figure 4. Great camas - short-beak sedge meadow, Polygon 3.



Polygon 4 Mountain sedge-short-beak sedge meadow (CARSCOB-CARSIM)

A wet meadow in the southeastern portion (Polygon 4) is adjoined to Polygon 2, but is wetter with standing water throughout the growing season, somewhat less weedy and less hydrologically disturbed. Polygon 4 is bordered by forest to the south. The vegetation of the meadow is relatively undiverse and is primarily comprised of rhizomatous graminoids. Dominant species include mountain sedge, short-beak sedge, straightleaf rush, and rush species (*Juncus* spp.). Common forb species include primrose monkeyflower, seep monkeyflower (*Mimulus guttatus*), and selfheal. The noxious weeds yellow hawkweed and common St. John's-wort (*Hypericum perforatum*) were observed in this wetland area, but have relatively low cover (estimated 2%).

Polygon 5 Ponderosa pine disturbance type forest (PINPON disturbance type)

The northeastern portion of the parcel has a Ponderosa pine forest disturbance type vegetation association and encompasses a Ponderosa pine plantation and an old homestead (Polygon 5). The area was historically a wetland, but has undergone extensive ditching and diking to drain the wetland and channel water away from the site.

Approximately ten years ago, bulldozers were used to dig nearly 250 furrows in the wet meadow in which the Ponderosa pine trees were planted. Furrows were dug in the homestead area, but were never planted with trees. This stand of trees does not appear to be thriving. No natural coniferous tree reproduction was observed in this stand. The dominant understory plant species in Polygon 5 include: Ponderosa pine, Gairdner's yampah (*Perideridia gairdneri*), bird's-foot trefoil (*Lotus purshianus*), straightleaf rush, and Californica oatgrass. This polygon encompasses the most highly disturbed area in the parcel and also has the highest cover of the noxious weed species yellow hawkweed and sulfur cinquefoil. Overall noxious weed species cover in this polygon is an estimated of 35%.

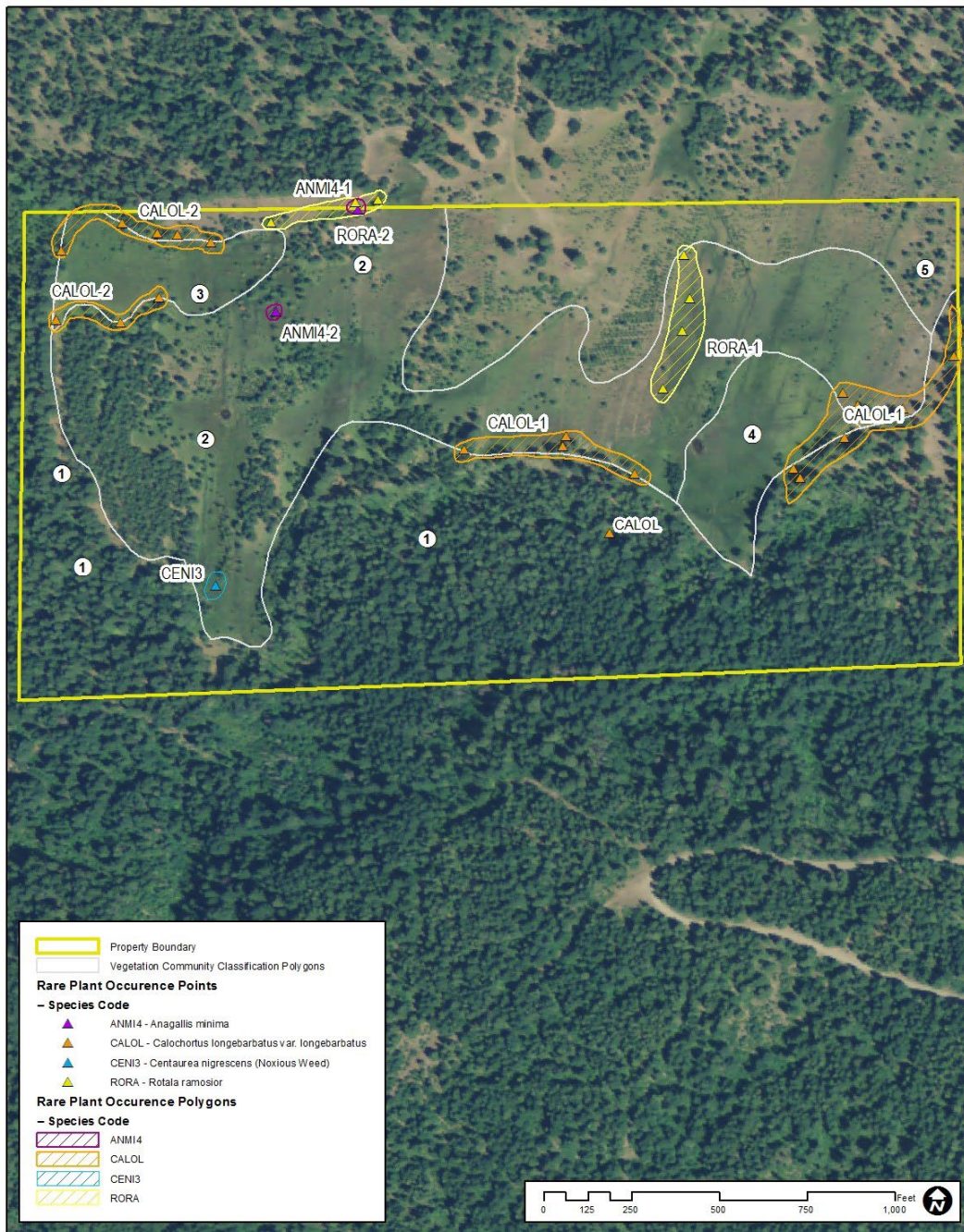
3.2 Rare Plant Survey

Populations of the Threatened species chaffweed and lowland toothcup, and of the Sensitive species long-bearded sego lily were located on the Young's Wetland parcel (Figure 3). A brief description of each rare plant species documented, its distribution within and outside of the parcel, associated plant species, and the habitat in which it was typically found, is provided below. WNHP sighting forms for each rare plant population are included in Appendix 3.

Chaffweed (*Anagallis minima*) is listed as Threatened in Washington. It is a small, annual forb ranging from 0.75 to 4 inches tall, with inconspicuous white flowers (WNHP 2010b). It is in the primrose family. Although chaffweed is widespread in North America, in Washington, it is peripheral and scattered, and is known from several populations in seven counties. Typical habitat for it includes freshwater riparian areas, seasonal wetlands, floodplains, and vernal pools, in muddy, silty and sandy soils. In Washington, it is identifiable from May through September.

At the Young's Wetland parcel, two populations of chaffweed were located growing in wetland habitats in July. One population was growing in a long, narrow, wet ditch 5 to 10 feet wide, which runs along the northern boundary of the parcel. The other population was growing in a small, isolated wet depression. Both populations are growing in open Ponderosa pine forests. Plant species associated with lowland toothcup include: straightleaf rush (*Juncus orthophyllus*), Canada bluegrass (*Poa compressa*), California oatgrass (*Danthonia californica*), seep monkeyflower (*Mimulus guttatus*), white brodiaea (*Triteleia hyacinthina*), selfheal (*Prunus vulgaris*), purslane speedwell (*Veronica peregrina*), and small-flowered forget-me-not (*Myosotis laxa*). The noxious weed species yellow hawkweed (*Hieracium caespitosum*) and sulfur cinquefoil (*Potentilla recta*) are common and widespread in and around the populations. There may be other scattered populations of chaffweed in the area. Because this species is an annual, the number and location of plants may vary from year to year.

In the northwest boundary population, chaffweed and lowland toothcup (*Rotala ramosior*) were located together. The old genus name for *Anagallis* is *Centunculus*.



Long-bearded sego lily (*Calochortus longebarbatus* var. *longebarbatus*) is a Washington Sensitive species and a federal Species of Concern (WHNP 2010b). It is a showy perennial forb in the lily family. Its lavender pink petals have long curly hairs near the purplish red band. It is a regional endemic known from Washington, Oregon

and California. In Washington, it is only known from Yakima and Klickitat Counties and is identifiable in June and July. Its typical habitat is clay loam soils in vernal moist meadows, forest meadow edges, and semi-open areas within coniferous woods. Most sites where it grows are quite moist in early spring and summer.

At the Young's Wetland parcel, long-bearded sego lily was observed in two populations (Figure 6). One population was growing in moist to dry soil in a long, discontinuous line along the drying edge of a wetland adjacent the edge of a forest. Although most plants were at the edge of the wetland, some were growing in the forest, away from the wetland edge. The other population was growing in moist soil along a forested edge around a camas meadow. Both populations were vigorous with thousands of plants. Although most plants were in fruit in mid-July, many were still in bloom. Plant species associated with long-bearded sego lily include: California oatgrass (*Danthonia californica*), annual hairgrass (*Deschampsia danthonioides*), poverty rush (*Juncus tenuis*), straightleaf rush (*Juncus orthophyllus*), Canada bluegrass (*Poa compressa*), camas (*Camassia* sp.), Gairdner's yampah (*Perideridia gairdneri*), western buttercup (*Ranunculus occidentalis*), and white brodiaea (*Triteleia hyacinthina*). The noxious weed species yellow hawkweed (*Hieracium caespitosum*) and sulfur cinquefoil (*Potentilla recta*) are common and widespread in and around the populations.

Figure 6. Long-bearded sego lily, Polygon 3.



Long-bearded sego lily is sensitive to spring/early summer burning, but tolerates low intensity fall burning (Croft et al. 1997). Changes to the historical fire regime that have allowed the encroachment of trees and shrubs onto meadow and meadow/edge habitat may have affected the habitat of this species (WNHP 2010b).

Lowland toothcup (*Rotala ramosior*) is a state Threatened species in the loosestrife family (WNHP 2010b). It is an annual, glabrous forb that grows to six inches tall. It has inconspicuous white flowers that are sessile in the axils of petioled, opposite leaves. Lowland toothcup is widespread in North America, however in Washington it is peripheral and scattered, and is currently only known from three counties. Typical habitat for it includes wet, swampy areas, lake and pond margins, and free flowing river reaches, in fine, damp silt and sand. It often grows below high water levels in communities of small emergent annual plant species.

Figure 7. Close-up of lowland toothcup plants, Polygon 2.



At the Young's Wetland parcel, two populations of lowland toothcup were located growing in wetland habitats in July (Figure 7). One population was growing in a long, narrow, wet ditch 5 to 10 feet wide, which runs along the northern boundary of the property in open Ponderosa pine forest. The other population was growing in a more or

less linear channel in a large vernal moist, graminoid-dominated wet meadow. In both populations, dense patches of small lowland toothcup plants grow in wet depressions. Both populations are comprised of many thousands of small plants. The elevation is 1,800 feet. Plant species associated with lowland toothcup include: straightleaf rush (*Juncus orthophyllus*), poverty rush (*Juncus tenuis*), California oatgrass (*Danthonia californica*), slenderbeak sedge (*Carex athrostachya*), Bebb's sedge (*Carex bebbii*), selfheal (*Prunella vulgaris*), western mountain aster (*Symphyotrichum spathulatum*) and needleleaf navarretia (*Navarretia intertexta*). The noxious weed species yellow hawkweed (*Hieracium caespitosum*) and sulfur cinquefoil (*Potentilla recta*) are common and widespread in and around the populations. There may be other scattered populations of lowland toothcup in the area. Because this species is an annual, the number and location plants may vary from year to year. Lowland toothcup was located with chaffweed in the northwest boundary population.

3.3 Noxious Weed Survey

A small population of the Class A noxious weed Vochin knapweed (*Centaurea nigrescens* or *C. pratensis*) was located near the spring, in the wet meadow near the tree fringe in the southwestern corner of the parcel. This infestation is currently small enough that it could probably be eradicated by hand pulling. Class A noxious weeds are non-native species that are limited in distribution in Washington. State law requires that Class A noxious weeds be eradicated. This Vochin knapweed infestation is mapped on Figure 5 (UTM is: Zone 10 easting 640048 northing 5096634, and the elevation is 1,760 feet).

At the Young's Wetland parcel, the Class B (non-designate) noxious weeds yellow hawkweed (*Hieracium caespitosum*) and sulfur cinquefoil (*Potentilla recta*) were common and widespread in moist to dry, typically open disturbed areas throughout the parcel. These two noxious weeds were codominant forbs in much of the meadow habitat, and the transition between meadow and forested habitat, and at some sites, they were the dominant plant species. Sulfur cinquefoil occasionally occurred with slender cinquefoil (*Potentilla gracilis*), a far less common native cinquefoil species similar in appearance to sulfur cinquefoil. Yellow hawkweed is an aggressive competitor and prolific seeder that also reproduces with stolons and rhizomes. Class B noxious weeds are not designated for control in a region if they are already abundant in that region. Containment of these species is the primary goal so they do not spread into un-infested regions. Prevention of seed production is not mandatory for these species, but reduction is recommended.

The Class C noxious weeds whitetop (*Cardaria chalapensis*) and common St. John's wort (*Hypericum perforatum*) were uncommon in the parcel. Class C noxious weeds are widespread in Washington State and not considered feasible to eradicate.

4.0 References

- Christy, J.A. 2004. Native Freshwater Wetland Plant Associations of the Northwestern Oregon. Oregon Natural Heritage Information Center, Oregon State University. 250 pp.
- Croft, L.K., W.R. Owen, and J.S. Shelly. 1997. Interior Columbia Basin Ecosystem Management Project Analysis of Vascular Plants.
- Crawford, R.C. 2003. A Riparian Classification of the Columbia Basin, Washington. Washington Natural Heritage Program, Washington Department of Natural Resources. 119 pp.
- Crawford, R.C. 1999. Preliminary Key to Shrub-steppe Plant Associations in Washington State. Washington Natural Heritage Program, Washington Department of Natural Resources, Olympia, WA.
- Crowe, E.A. and R.R. Clausnitzer. 1997. Mid-Montane Wetland Plant Associations of the Malheur, Umatilla and Wallow-Whitman National Forests. USDA For. Ser. PNW Tech. Paper R6-NR-ECOL-TP-22-97. 299 pp.
- Daubenmire, R.F. 1970. Steppe Vegetation of Washington. Washington State University Agricultural Experiment Station Technical Bulletin No. 62. 131 pp.
- Hickman, J.C. (Ed.). 1993. The Jepson Manual, Higher Plants of California. Berkeley, CA: University of California Press.
- Hitchcock, C.L. & A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle Washington.
- Johnson, Charles Grier, Jr.; Swanson, David K. 2005. Bunchgrass plant communities of the Blue and Ochoco Mountains: a guide for managers. Gen. Tech. Rep. PNW-GTR-641. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 119 p.
- John, T. and D. Tart. 1986. Forested Plant Associations of the Yakima Drainage within the Yakima Indian Reservation. 195 pp. Unpublished document. On file with: Yakama Indian Nation Tribal Office, Natural Resource Department, Fort Road, Toppenish, WA 98948.
- Kagan, J.S., J.A. Christy, M.P. Murray, and J.A. Titus. 2000. Classification of Native Vegetation of Oregon. Oregon Natural Heritage Program, Portland. 63 pp.
- Klickitat County Noxious Weed Control Board. 2010. Accessed online at: <http://www.klickitatcounty.org/WeedControl/>
- Lillybridge, T.R., B.L. Kovalchik, C.K. Williams, and B.G. Smith. 1995. Field Guide for Forested Plant Associations of the Wenatchee National Forest. USDA Forest Service General Technical Report PNW-GTR-359, Pacific Northwest Research Station, Portland. Portland, OR 335 pp.

- Topic, C., N.M. Halverson, and T. High. 1988. Plant Association and Management Guide for the Ponderosa Pine, Douglas-fir, and Grand Fir Zones. Mount Hood National Forest. USDA Forest Service, PNW, R6-ECOL-TP-004-88. 136 pp.
- Washington Natural Heritage Program. 2010a. Endangered, Threatened, and Sensitive Vascular Plants of Washington – with Working Lists of Rare Non-Vascular Species. Department of Natural Resources. Olympia. 62 p. Accessed online at: <http://www.wa.gov/dnr/htdocs/fr/nhp/refdesk/fsrefix.htm>
- Washington Natural Heritage Program. 2010b. Field Guide to Selected Rare Plants of Washington State. Washington Natural Heritage Program, Department of Natural Resources, Olympia, WA. <http://www1.dnr.wa.gov/nhp/refdesk/fguide/htm/fgmain.htm>
- Washington Natural Heritage Program. 2010c. WNHP Data System Search for Rare Plants in the Vicinity of Margerum Ranch, Klickitat County, WA.
- Washington State Noxious Weed Control Board. 2010. Accessed online at: http://www.nwcb.wa.gov/weed_list/weed_list.htm

Appendix A
Vascular Plant Species List
for the Young's Wetland Parcel

Appendix 1. Vascular plant species list for the Young's Wetland Parcel.

Youngs Wetland, Columbia Land Trust Klickitat County, WA May, July 2010		Noxious Weed Class/	WNHP	
Species name	Nonnative	State Status	Plant Family	
<i>Abies grandis</i>			Pinaceae	
<i>Acer circinatum</i>			Asteraceae	
<i>Achillea millefolium</i>			Asteraceae	
<i>Achnatherum lemmonii</i>			Poaceae	
<i>Actaea rubra</i>			Rosaceae	
<i>Adenocaulon bicolor</i>			Asteraceae	
<i>Adiantum pedatum</i>			Polypodiaceae	
<i>Agoseris heterophylla</i>			Asteraceae	
<i>Agropyron</i> sp.	x		Poaceae	
<i>Agrostis exarata</i>			Poaceae	
<i>Agrostis</i> sp.			Poaceae	
<i>Aira caryophyllea</i>	x		Poaceae	
<i>Allium</i> cf <i>acuminatum</i>			Lilaceae	
<i>Alopecurus</i> sp.			Poaceae	
<i>Amelanchier alnifolia</i>			Rosaceae	
<i>Anagallis minimus</i>		T	Primulaceae	
<i>Antennaria luzuloides</i>			Asteraceae	
<i>Antennaria microphylla</i>			Asteraceae	
<i>Antennaria neglecta</i>			Asteraceae	
<i>Antennaria</i> sp.			Asteraceae	
<i>Apocynum androsaemifolium</i>			Apocynaceae	
<i>Aquilegia formosa</i>			Ranunculaceae	
<i>Arctostaphylos urva-ursi</i>			Ericaceae	
<i>Arnica cordifolia</i> var. <i>cordifolia</i>			Asteraceae	
<i>Arnica sororia</i>			Asteraceae	
<i>Athyrium filix-femina</i>			Polypodiaceae	
<i>Berberis aquifolium</i>			Berberidaceae	
<i>Berberis nervosa</i>			Berberidaceae	
<i>Betula glandulosa</i>			Betulaceae	
<i>Betula occidentalis</i>			Betulaceae	
<i>Boisduvalia densiflora</i>			Onagraceae	
<i>Boisduvalia stricta</i>			Onagraceae	
<i>Bromus secalinus</i>	x		Poaceae	
<i>Bromus tectorum</i>	x		Poaceae	
<i>Calamagrostis rubescens</i>			Poaceae	
<i>Calochortus longebarbatus</i> var. <i>longebarbatus</i>		S	Liliaceae	
<i>Camassia quamash</i>			Liliaceae	
<i>Campanula rotundifolia</i>			Campanulaceae	
<i>Campanula scouleri</i>			Campanulaceae	
<i>Cardamine</i> cf <i>occidentalis/pensylvanica</i>			Brassicaceae	
<i>Cardaria chalapensis</i>	C		Brassicaceae	
<i>Carex aquatilis</i> var. <i>aquatilis</i>			Cyperaceae	
<i>Carex athrostachya</i>			Cyperaceae	

Appendix 1 cont.

Species name	Weed Class/ Nonnative	WNHP State Status	Plant Family
Carex aurea			Cyperaceae
Carex bebbii			Cyperaceae
Carex disperma			Cyperaceae
Carex geyeri			Cyperaceae
Carex scopulorum var. bracteosa			Cyperaceae
Carex simulata			Cyperaceae
Carex sp.			Cyperaceae
Castilleja miniata			Scrophulariaceae
Ceanothus prostratus			Rhamnaceae
Ceanothus sanguineus			Rhamnaceae
Centaurea nigrescens (pratensis)	A		Asteraceae
Centaurium erythraea	x		Gentianaceae
Chamaesyce serpyllifolia			Euphorbiaceae
Chimophila umbellata			Ericaceae
Cichorium intybus	x		Asteraceae
Circaea alpina			Onagraceae
Clarkia rhomboidea			Onagraceae
Collinsia parviflora			Scrophulariaceae
Collinsia rattanii			Scrophulariaceae
Collomia grandiflora			Polemoniaceae
Collomia linearis			Polemoniaceae
Convolvulus arvensis	x		Convolvulaceae
Cornus sericea			Cornaceae
Corylus cornuta			Betulaceae
Crataegus douglasii			Rosaceae
Cyperus aristitus			Cyperaceae
Danthonia californica			Poaceae
Delphinium nuttallianum			Ranunculaceae
Deschampsia cespitosa			Poaceae
Deschampsia danthonioides			Poaceae
Deschampsia elongata			Poaceae
Dianthus armeria	x		Caryophyllaceae
Dodecatheon sp.			Primulaceae
Draba verna			Brassicaceae
Eleocharis acicularis			Cyperaceae
Eleocharis ovatus			Cyperaceae
Eleocharis palustris			Cyperaceae
Elymus glaucus			Poaceae
Epilobium ciliatum (watsonii)			Onagraceae
Epilobium glaberrimum			Onagraceae
Epilobium minutum			Onagraceae
Erythronium grandiflorum			Liliaceae
Festuca occidentalis			Poaceae
Festuca subulata			Poaceae
Fragaria vesca			Rosaceae
Fragaria virginiana			Rosaceae

Appendix 1 cont.

Species name	Weed Class/ Nonnative	WNHP State Status	Plant Family
<i>Fritillaria lanceolata</i>			Liliaceae
<i>Galium aparine</i>			Rubiaceae
<i>Galium boreale</i>			Rubiaceae
<i>Galium sp.</i>			Rubiaceae
<i>Gayophytum decipiens</i>			Onagraceae
<i>Geum macrophyllum</i>			Rosaceae
<i>Geum triflorum</i>			Rosaceae
<i>Gnaphalium palustre</i>			Asteraceae
<i>Goodyera oblongifolia</i>			Orchidaceae
<i>Gratiola ebracteata</i>			Scrophulariaceae
<i>Hespirochiron pumilis</i>			Hydrophyllaceae
<i>Heterocodon rariflorum</i>			Campanulaceae
<i>Heuchera chlorantha</i>			Saxifragaceae
<i>Hieracium album</i>			Asteraceae
<i>Hieracium caespitosum</i>	B		Asteraceae
<i>Hieracium scouleri</i>			Asteraceae
<i>Holcus mollis</i>	x		Poaceae
<i>Holodiscus discolor</i>			Caprifoliaceae
<i>Hydrophyllum tenuipes</i>			Hydrophyllaceae
<i>Hypericum anagalloides</i>			Hypericaceae
<i>Hypericum formosum</i>			Hypericaceae
<i>Hypericum perforatum</i>	C		Hypericaceae
<i>Iris missouriensis</i>			Iridaceae
<i>Juncus acicularis</i>			Juncaceae
<i>Juncus arcticus var. balticus</i>			Juncaceae
<i>Juncus bufonius</i>			Juncaceae
<i>Juncus ensifolius</i>			Juncaceae
<i>Juncus nevadensis</i>			Juncaceae
<i>Juncus orthophyllus</i>			Juncaceae
<i>Juncus sp.</i>			Juncaceae
<i>Juncus tenuis</i>			Juncaceae
<i>Kellogia galioides</i>			Rubiaceae
<i>Lactuca muralis</i>	x		Asteraceae
<i>Lagophylla ramomsissima</i>			Asteraceae
<i>Lathyrus nevadensis</i>			Fabaceae
<i>Leptosiphon bicolor</i>			Polemoniaceae
<i>Ligusticum sp.</i>			Apiaceae
<i>Lilium columbianum</i>			Liliaceae
<i>Linnaea borealis</i>			Caprifoliaceae
<i>Listera sp.</i>			Orchidaceae
<i>Lomatium nudicaule</i>			Apiaceae
<i>Lomatium triternatum</i>			Apiaceae
<i>Lotus nevadensis</i>			Fabaceae
<i>Lotus purshianus</i>			Fabaceae
<i>Lupinus bicolor</i>			Fabaceae
<i>Lupinus cf latifolius</i>			Fabaceae

Appendix 1 cont.

Species name	Weed Class/ Nonnative	WNHP State Status	Plant Family
<i>Lupinus leucophyllus</i>			Fabaceae
<i>Luzula campestris</i>			Juncaceae
<i>Luzula</i> sp.			Juncaceae
<i>Lysichitum americanum</i>			Araceae
<i>Madia exigua</i>			Asteraceae
<i>Madia gracilis</i>			Asteraceae
<i>Madia</i> sp.			Asteraceae
<i>Maianthemum stellata</i>			Liliaceae
<i>Matricaria discoidea</i>	x		Asteraceae
<i>Melica subulata</i>			Poaceae
<i>Microseris nutans</i>			Asteraceae
<i>Microseris troximoides</i>			Asteraceae
<i>Mimulus guttatus</i>			Scrophulariaceae
<i>Mimulus primuloides</i>			Scrophulariaceae
<i>Mimulus</i> sp. (annual)			Scrophulariaceae
<i>Mitella trifida</i>			Saxifragaceae
<i>Moeringia laterifolia</i>			Caryophyllaceae
<i>Montia linearis</i>			Portulacaceae
<i>Montia perfoliata</i>			Portulacaceae
<i>Muhlenbergia filiformis</i>			Poaceae
<i>Myosotis laxa</i>			Boraginaceae
<i>Myosotis micrantha</i>			Boraginaceae
<i>Myosurus apetalus</i>			Ranunculaceae
<i>Navarretia intertexta</i>			Polemoniaceae
<i>Navarretia</i> sp.			Polemoniaceae
<i>Olsynium douglasii</i>			Iridaceae
<i>Orthocarpus hispidus</i>			Scrophulariaceae
<i>Orthocarpus</i> sp.			Scrophulariaceae
<i>Osmorhiza berteroi</i>			Apiaceae
<i>Pectocarya pusilla</i>			Boraginaceae
<i>Perideridia gairdneri</i>			Apiaceae
<i>Philadelphus lewisii</i>			Hydrangeaceae
<i>Phleum pratense</i>	x		Poaceae
<i>Phlox gracilis</i>			Polemoniaceae
<i>Phlox speciosa</i>			Polemoniaceae
<i>Pinus contorta</i>			Pinaceae
<i>Pinus ponderosa</i>			Pinaceae
<i>Piperia elegans</i> ssp. <i>elegans</i>			Orchidaceae
<i>Plagiobothrys</i> sp.			Boraginaceae
<i>Plagiobothrys tenellus</i>			Boraginaceae
<i>Poa bulbosa</i>	x		Poaceae
<i>Poa compressa</i>	x		Poaceae
<i>Poa pratensis</i>			Poaceae
<i>Poa secunda</i>			Poaceae
<i>Polygonum bistortoides</i>			Polygonaceae
<i>Polygonum polygaloides</i>			Polygonaceae

Appendix 1 cont.	Weed Class/	WNHP	
Species name	Nonnative	State Status	Plant Family
Polysichum munitum			Polypodiaceae
Populus tremuloides			Salicaceae
Potentilla glandulosa			Rosaceae
Potentilla gracilis var. brunnescens			Rosaceae
Potentilla recta	B		Rosaceae
Prunella vulgaris var. lanceolata			Lamiaceae
Pseudoroegneria spicata			Poaceae
Pseudotsuga menziesii			Pinaceae
Psilocarphus oregonus			Asteraceae
Pteridium aquilinum			Polypodiaceae
Pterospora andromedea			Ericaceae
Pyrola picta			Ericaceae
Quercus garryana			Fagaceae
Ranunculus flammula			Ranunculaceae
Ranunculus occidentalis var. occidentalis			Ranunculaceae
Rosa nutkana			Rosaceae
Rosa woodsii			Rosaceae
Rotala ramosior		T	Onagraceae
Rubus parviflorus			Rosaceae
Rubus ursinus			Rosaceae
Rumex acetocella	x		Polygonaceae
Rumex crispus	x		Polygonaceae
Salix bebbiana			Salicaceae
Salix sp.			Salicaceae
Sanguisorba annua (occidentalis)			Rosaceae
Sanguisorba minor	x		Rosaceae
Sanicula graveolens			Apiaceae
Saxifraga sp.			Saxifragaceae
Schoenoplectris acutus			Cyperaceae
Senecio integerrimus			Asteraceae
Sidalcea oregana var. procera			Malvaceae
Spergularia sp.			Caryophyllaceae
Spiraea douglasii			Rosaceae
Spiraea x pyramidata			Rosaceae
Spiranthes romanzoffiana			Orchidaceae
Stellaria cf longifolia			Caryophyllaceae
Stellaria longipes			Caryophyllaceae
Symphoricarpos albus			Caprifoliaceae
Symphoricarpos mollis			Caprifoliaceae
Symphyotrichum spathulatum			Asteraceae
Taraxacum officinale	x		Asteraceae
Thuja plicata			Cupressaceae
Tragopogon dubius	x		Asteraceae
Trientalis latifolia			Primulaceae
Trifolium repens	x		Fabaceae
Trifolium sp.	x		Fabaceae

Appendix 1 cont.

Species name

Trillium ovatum

Trisetum canescens

Tritieleia hyacinthina

Vaccinium sp.

Ventenata dubia

Veronica americana

Veronica peregrina var. xalapensis

Veronica scutellata

Veronica serpyllifolia

Vicia sp.

Vulpia microstachys

Zigadenus venenosus

Weed Class/ WNHP

Nonnative State Status Plant Family

Liliaceae

Poaceae

Liliaceae

Ericaceae

x

Poaceae

Scrophulariaceae

Scrophulariaceae

Scrophulariaceae

x

Scrophulariaceae

Fabaceae

Poaceae

Liliaceae

Appendix B

Vegetation Polygon Data Forms for the Young's Wetland Parcel

VEGETATION POLYGON DATA FORM KEY

Site = name of locality of map project

Polygon = number you put on map

Name/Date = your name / day-month-year completed polygon survey

Photo roll/number = number of roll (on canister) and number of shot

Survey intensity

1 = walked or could see most of polygon (high confidence in survey data)

2 = walked or could see part of polygon interior (moderate confidence)

3 = walked perimeter or could see part of polygon interior (low confidence)

4 = photo interpretation or other remote survey

CODE	COVER	MIDPT
0	0%	0%
1	<1	0.5
2	1 – 5	3
3	5-25	15
4	25-60	43
5	60-90	75
6	>90	95

This is canopy cover, i.e. the space between leaves/branches is included in “cover”. Each Life form category canopy cover must be 0-100%. Therefore, the sum of all life forms (layers) can exceed 100%. List most abundant species in each life form category; when trees are cored, note DBH, species, length of core, number of rings counted.

TOTAL VEGETATION COVER includes all vascular plants, mosses, lichens and foliose lichens (crustose lichens excluded they are considered rock) this never exceeds 100%.

SOIL SURFACE estimate to nearest % the following, the sum of the categories adds to 100%

Rock outcrop = exposed bedrock including detached boulders over 1m across

Gravel/cobble = large fragments between sand and boulder

Bareground = exposed mineral soil

Mosses/lichens = nonvascular plant cover on soil

Litter = includes logs, branches, and basal area of plants

Describe in comments if there is wide variation in any category; note % standing water if it is persistent or characteristic of site.

LAND USE - put 0 (zero) if not applicable to site.

Logging

1 = unlogged, no evidence of past logging or occasional cut stumps not part of systematic harvest of trees, no or very little impact on stand composition

2 = selectively logged: frequent cut stumps but origin of dominant or co-dominant cohort appears to be natural disturbance

3 = heavy logging disturbance with natural regeneration: many cut stumps that predate the dominant or co-dominant cohort with no tree planting

4 = tree plantation: dominant cohort appears to be planted after clearcutting

Stand Age

1 = very young 0-40 yr

2 = young 40-90 yr

3 = mature 90-200 yr

4 = old-growth 200+ yr

5 = young with scattered old trees (2-10 old trees per acre)

6 = mature with scattered old trees

Agriculture

1 = active annual cropping

2 = active perennial herbaceous cropping

3 = active woody plant cultivation

4 = fallow, plowed no crops this yr

5 = CRP

6 = other

VEGETATION POLYGON DATA FORM KEY continued

Livestock

- 1 = active heavy grazing (most forage used to ground soil compaction or churning)
- 2 = active moderate grazing (25-75% forage used)
- 3 = active light grazing (lots of last yr=s litter left)
- 4 = no current, heavy past grazing
- 5 = no current, light past grazing
- 6 = no obvious sign of grazing

Development

- 1 = actively used facilities
- 2 = roads
- 3 = established trails
- 4 = abandoned facilities
- 5 = none obvious
- 6 = multiple types (detail in comments)

Wildlife

- 1 = heavy ungulate use
- 2 = moderate ungulate use
- 3 = light to no ungulate use
- 4 = burrowing animals
- 5 = active beaver
- 6 = active porcupine
- 7 = other, list animal

Recreation Use Severity

- 1 = heavy use, abundant soil and vegetation displacement off trail/road
- 2 = moderate use, frequent soil and vegetation displacement off trail/road
- 3 = light use, little sign of activity off trail/road

Recreation Use Primary Type

- 1 = wheeled
- 2 = hooved
- 3 = boots
- 4 = combination of above
- 5 = other

Hydrology

- 1 = unaltered
- 2 = altered; dams, dikes, ditches, culverts, etc
- 3 = not assessed

Plant Association (PA) = list all PAs encountered in polygon survey, in comments list source of name if not on provided key.

Condition Rank of PA in key or estimate

Subjective ecological conditions were assigned to plant associations based on the following criteria:

- **A Excellent** - plant association is pristine, appears to have experienced little or no present or past disturbance by post-industrial humans, is a large stand or exhibits exceptional species diversity.
- **B Good** - plant association is in good to very good condition. Species composition and diversity are within the range expected for the type.
- **C Moderate** - plant association is somewhat degraded or recovering. While species diversity is typically low, environment and species composition are similar to published source.
- **D Poor** - plant association is degraded by logging, grazing, development, or by non-native species, although it is still recognizable as a described community.
- **F Extirpated** - plant association is completely altered and unrecognizable. Non-natives dominate.

% of Polygon = your estimate

VEGETATION POLYGON DATA FORM KEY *continued*

Pattern = how PA is distributed in polygon

1 = matrix (most of polygon)

2 = large patches

3 = small patches

4 = clumped, clustered, contagious

5 = scattered, more or less evenly repeating

6 = linear

7 = other

Appendix C

Young's Wetland Parcel Rare Plant Sighting Forms

List of Rare Plant Survey Forms:

Anagallis minima 1	ANMI 1
Anagallis minima 2	ANMI 2
Calochortus longebarbatus var. longebarbatus 1	CALO 1
Calochortus longebarbatus var. longebarbatus 2	CALO 2
Rotala ramosior 1	RORA 1
Rotala ramosior 2	RORA 2

Young's Wetland, 2010	UTM	Datum NAD 83	
Position	Altitude	Population Name	Notes Old Point Name
10 T 640346 5096765	1790 ft	CALO 1	YW001
10 T 640160 5096970	1770 ft	RORA 2	YW002
10 T 640546 5096751	1812 ft	CALO 1	Ywcaco1
10 T 640553 5096743	1808 ft	CALO 1	Ywcaco2
10 T 640590 5096779	1812 ft	CALO 1	ywcaco3
10 T 640640 5096806	1808 ft	CALO 1	Ywcaco4
10 T 640601 5096808	1810 ft	CALO 1	Ywcaco5
10 T 640587 5096819	1804 ft	CALO 1	Ywcaco6
10 T 640683 5096853	1842 ft	CALO 1	east end CALO 1 Ywcaco7
10 T 639993 5096883	1841 ft	CALO 2	southeast end CALO 2 Ywcalo 2I
10 T 640409 5096742	1806 ft	CALO 1	Ywcalo 10
10 T 640349 5096773	1786 ft	CALO 1	Ywcalo 11
10 T 640261 5096759	1812 ft	CALO 1	west end CALO 1 Ywcalo 12
10 T 640036 5096932	1768 ft	CALO 2	northeast end CALO 2 Ywcalo 2A
10 T 639959 5096946	1790 ft	CALO 2	Ywcalo 2C
10 T 640007 5096938	1803 ft	CALO 2	Ywcalo 2D
10 T 639990 5096938	1831 ft	CALO 2	Ywcalo 2E
10 T 639960 5096860	1809 ft	CALO 2	Ywcalo 2F
10 T 639904 5096860	1848 ft	CALO 2	southwest end CALO 2 Ywcalo 2G
10 T 639906 5096921	1839 ft	CALO 2	northwest end CALO 2 Ywcalo 2H
10 T 640389 5096690	1892 ft	CALO 1	Ywcalo 9
10 T 640161 5096962	1804 ft	ANMI 1	east end ANMI 1 Ywcemi 1
10 T 640180 5096973	1819 ft	ANMI 1	west end ANMI 1 Ywcemi 1C
10 T 640094 5096874	1824 ft	ANMI 2	ywcemi 2
10 T 640048 5096634	1757 ft	CEPR	Centaurea pratensis Ywcenac
10 T 640431 5096817	1815 ft	RORA 1	south end RORA 1 Ywrrora 1H
10 T 640161 5096964	1802 ft	RORA 2	east end RORA 2 Ywrrora B1
10 T 640088 5096951	1782 ft	RORA 2	west end RORA 2 Ywrrora B2
10 T 640452 5096896	1800 ft	RORA 1	Ywrrora1
10 T 640447 5096933	1961 ft	RORA 1	north end RORA 1 Ywrrora2
10 T 640447 5096868	1815 ft	RORA 1	Ywrrora3

Washington Natural Heritage Program

Rare Plant Survey Form

Taxon Name: Anagallis minima 1 EO #

Are you confident of the identification? ☒ x yes ☐ no Explain:

Survey Site Name: North Boundary Youngs Wetland

Surveyor's Name/phone/email: Kathryn Beck 360-671-6913 calypso@openaccess.org

Survey Date: 7/19/10

County: Klickitat

Quad Name: 7.5' Quad Code:

Township: 06N Range: 13E Section(s): 16 NW ¼

Directions to site: Drive East from Glenwood on Glenwood Highway approximately 4 miles to MP marker ?. Park and walk north approximately ? feet. Population located in east/west oriented ditch just inside the northern boundary of the property. Use UTM's to help locate population.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If you're using a map at a different scale (not recommended) please write the scale on the map. Please answer the following:

1. I used GPS to map the population: ☐ No (skip to #2) ☒ X Yes (complete #1 & #3)

☐ Coordinates are in electronic file on diskette (preferred) ☐ Coordinates below

Description of what coordinates represent:

GPS accuracy: ☐ Uncorrected ☐ Corrected to <5m

GPS datum:

GPS coordinates: Zone10 640161 E 5096962 N

2. I used a topographic map to map the population:

☐ yes (complete #2) ☐ no (provide detailed directions & description above, and skip to #3)

I am confident I have accurately located and mapped the population at map scale:

☐ yes (skip to #3)

☐ no, but I am confident the population is within the general area indicated on the map as follows:

3. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc.): wetlands, roads

To the best of my knowledge, I mapped the entire extent of this population

☒ X yes ☐ no ☐ unknown If no or unknown, explain:

Is a revisit needed? ☐ no ☐ yes - if yes, why?:

Ownership (if known): Columbia Land Trust

Taxon Name: *Anagallis minima* 1 EO #

Population Size (# of individuals or ramets) or estimate: 200 - 300 plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.):
Population moderately vigorous, most plants setting fruit, some are small and still vegetative depending on how deep the water they are growing in or near is. Plants are growing in dense patches in wet, linear ditch.

Plant Association (include author, citation, or classification, e.g. Daubenmire):

Associated Species (% cover by layer and species for dominants in each layer):

Bare: 5%

Lichen/moss layer: 70%

Graminoid: 65%; *Juncus orthophyllus*, *Bromus secalinus*, *Poa compressa*,
Danthonia californica

Herb layer: 45%; *Hieracium caespitosum*, *Potentilla recta*, *Mimulus guttatus*,
Sanguisorba annua, *Navarretia* sp., *Hypericum anagalloides*, *Triteleia hyacinthina*,
Prunus vulgaris, *Veronica peregrina*, *Myosotis laxa*, *Centaureum erythraea*, *Lotus purshiana*, *Rotala ramosior*

Shrub layer(s): 0%;

Tree layer: 10%; *Pinus ponderosa*

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Plants are growing in a wet ditch 5' to 10' wide. The ditch runs along the northern boundary of the CLT property in open Ponderosa pine forest. The larger wetland has had a history of disturbance.

Minimum elevation (ft.): 1,800' **Maximum elevation (ft.):** 1,800'

Size (acres): 10' x 5' est. **Aspect:** varies ° **Slope:** 0%

Photo taken? ☐ yes ☒ X no

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): Area has history of cattle grazing and timber plantation. Wetland has been manipulated by ditching and draining. Prevalent noxious weeds include: *Hieracium caespitosum* and *Potentilla recta*.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site):

Additional Comments (discrepancies, general observations, etc.): There may be other scattered (sub)populations of this species in the area.

Growing with a population of *Rotala ramosior*.

Because this species is an annual, the number and location plants will vary from year to year.

Washington Natural Heritage Program

Rare Plant Survey Form

Taxon Name: Anagallis minima 2 EO #

Are you confident of the identification? ☒ x yes ☐ no Explain:

Survey Site Name: Youngs Wetland

Surveyor's Name/phone/email: Kathryn Beck 360-671-6913 calypso@openaccess.org

Survey Date: 7/19/10

County: Klickitat

Quad Name: 7.5'

Quad Code:

Township: 06N Range: 13E Section(s): 16 NW ¼

Directions to site: Drive East from Glenwood on Glenwood Highway (Hwy ?)
approximately ? miles to MP marker ?. Park and walk north approximately ? feet.

Population located . Use UTM's to help locate population.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If you're using a map at a different scale (not recommended) please write the scale on the map. Please answer the following:

1. I used GPS to map the population: ☐ No (skip to #2) ☒ X Yes (complete #1 & #3)
☐ Coordinates are in electronic file on diskette (preferred) ☐ Coordinates below

Description of what coordinates represent:

GPS accuracy: ☐ Uncorrected ☐ Corrected to <5m

GPS datum:

GPS coordinates: Zone10 640094 E 5096874 N

2. I used a topographic map to map the population:

☐ yes (complete #2) ☐ no (provide detailed directions & description above, and skip to #3)

I am confident I have accurately located and mapped the population at map scale:

☐ yes (skip to #3)

☐ no, but I am confident the population is within the general area indicated on the map as follows:

4. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc.): wetlands, roads

To the best of my knowledge, I mapped the entire extent of this population

☒ X yes ☐ no ☐ unknown If no or unknown, explain:

Is a revisit needed? ☐ no ☐ yes - if yes, why?:

Ownership (if known): Columbia Land Trust

Taxon Name: *Anagallis minima* 2 EO #

Population Size (# of individuals or ramets) or estimate: 100 plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.):
Population marginally vigorous, most plants setting fruit, some are small and still vegetative. Plants are growing in a small isolated depression.

Plant Association (include author, citation, or classification, e.g. Daubenmire):

Associated Species (% cover by layer and species for dominants in each layer):

Bare: 5%

Lichen/moss layer: 50%

Graminoid: 65%; *Juncus orthophyllus*, *Bromus secalinus*, *Poa compressa*,
Danthonia californica

Herb layer: 45%; *Hieracium caespitosum*, *Potentilla recta*, *Mimulus guttatus*,
Sanguisorba annua, *Navarretia* sp., *Hypericum anagaloides*, *Triteleia hyacinthina*,
Prunus vulgaris, *Veronica peregrina*, *Myosotis laxa*, *Centaureum erythraea*, *Lotus*
purshiana, *Rotala ramosior*

Shrub layer(s): 0%;

Tree layer: 10%; *Pinus ponderosa*

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Plants are growing in a small isolated depression in open Ponderosa pine forest. The larger wetland this small depression is part of has had a history of disturbance.

Minimum elevation (ft.): 1,825'

Maximum elevation (ft.): 1,825'

Size (acres): 5' x 5' est.

Aspect: varies °

Slope: 0%

Photo taken? ☐ yes ☒ X no

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): Area has history of cattle grazing and timber plantation. Wetland has been manipulated by ditching and draining. Prevalent noxious weeds include: *Hieracium caespitosum* and *Potentilla recta*.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site):

Additional Comments (discrepancies, general observations, etc.): There may be other scattered (sub)populations of this species in the area.

Because this species is an annual, the number and location plants will vary from year to year.

Washington Natural Heritage Program

Rare Plant Survey Form

Taxon Name: Calochotus longebarbatus var. longebarbatus 1 EO #

Are you confident of the identification? ☐ x yes ☐ no Explain:

Survey Site Name: East Youngs Wetland

Surveyor's Name/phone/email: Kathryn Beck 360-671-6913 calypso@openaccess.org

Survey Date: 7/18/10

County: Klickitat

Quad Name: 7.5' Quad Code:

Township: 06N Range: 13E Section(s): 16 N ½

Directions to site: Drive east from Glenwood on Glenwood Highway (Hwy ?)

approximately ? miles to MP marker ?. Park and walk north approximately ? feet.

Population in discontinuous line, along drying edge of wetland at the forested edge.

Population extends from the eastern property boundary to the middle of the property.

Use UTM's to help locate population.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If you're using a map at a different scale (not recommended) please write the scale on the map. Please answer the following:

1. I used GPS to map the population: ☐ No (skip to #2) ☒ X Yes (complete #1 & #3)

☐ Coordinates are in electronic file on diskette (preferred) ☐ Coordinates below

Description of what coordinates represent:

GPS accuracy: ☐ Uncorrected ☐ Corrected to <5m

GPS datum:

GPS coordinates: Zone 10 640683 E 5096853 N East end

Zone 10 640261 E 5096759 N West end

2. I used a topographic map to map the population:

☐ yes (complete #2) ☐ no (provide detailed directions & description above, and skip to #3)

I am confident I have accurately located and mapped the population at map scale:

☐ yes (skip to #3)

☐ no, but I am confident the population is within the general area indicated on the map as follows:

5. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc.): wetlands, roads

To the best of my knowledge, I mapped the entire extent of this population

☒ X yes ☐ no ☐ unknown If no or unknown, explain:

Is a revisit needed? ☐ no ☐ yes - if yes, why?:

Ownership (if known): Columbia Land Trust

Taxon Name: Calochortus longebarbatus var. longebarbatus 1 EO #

Population Size (# of individuals or ramets) or estimate: 5,000+ plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.):

Population vigorous, most plants setting fruit, though some are still blooming.

Plant Association (include author, citation, or classification, e.g. Daubenmire):

Associated Species (% cover by layer and species for dominants in each layer):

Bare: 0%

Lichen/moss layer: 10%

Graminoid: 80%; Danthonia californica, Poa secunda, Deschampsia cespitosa,

Deschampsia danthonioides, Juncus tenuis, Juncus orthophyllus, Poa compressa

Herb layer: 35%; Hieracium caespitosum, Potentilla recta, Camassia sp.,

Perideridia gairdneri, Zigadenus paniculatus, Ranunculus occidentalis, Microseris

nutans, Triteleia hyacinthina, Galium boreale, Fragaria vesca, Potentilla recta,

Lotus purshianus, Navarretia sp., Phlox gracilis, Polygonum sp., Boisduvalia sp.

Shrub layer(s): 2%; Rosa sp., Amelanchier alnifolia

Tree layer: 15%; Pinus ponderosa

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Although most plants are at the edge of the forest, some are in the forest and some are in the wetland, away from the forest edge. Wetland has had a history of disturbance.

Minimum elevation (ft.): 1,810'

Maximum elevation (ft.): 1,840'

Size (acres): 350' x 1,350' est.

Aspect: generally north ° **Slope:** 1%

Photo taken? ☐ yes ☒ X no

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): Area has history of cattle grazing and timber plantation. Wetland has been manipulated by ditching and draining. Prevalent noxious weeds in wetland include Hieracium caespitosum and Potentilla recta.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site):

Additional Comments (discrepancies, general observations, etc.): There may be other scattered (sub)populations of this species in the area.

Washington Natural Heritage Program

Rare Plant Survey Form

Taxon Name: Calochortus longebarbatus var. longebarbatus 2 EO #

Are you confident of the identification? ☐ x yes ☐ no Explain:

Survey Site Name: Northwest Youngs Wetland

Surveyor's Name/phone/email: Kathryn Beck 360-671-6913 calypso@openaccess.org

Survey Date: 7/19/10

County: Klickitat

Quad Name: 7.5' Quad Code:

Township: 06N Range: 13E Section(s): 16 NW ¼

Directions to site: Drive East from Glenwood on Glenwood Highway (Hwy ?) approximately ? miles to MP marker ?. Park and walk north approximately ? feet.

Population located just south of the northwest property boundary. Plants growing adjacent the forested edge, in a circle around a medium sized camas meadow. Use UTM's to help locate population.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If you're using a map at a different scale (not recommended) please write the scale on the map. Please answer the following:

1. I used GPS to map the population: ☐ No (skip to #2) ☒ X Yes (complete #1 & #3)
☐ Coordinates are in electronic file on diskette (preferred) ☐ Coordinates below

Description of what coordinates represent:

GPS accuracy: ☐ Uncorrected ☐ Corrected to <5m

GPS datum:

GPS coordinates: Zone 10 640036 E 50969932 N Northeast end of population

10 639904 E 5096860 N Southwest end of population

2. I used a topographic map to map the population:

☐ yes (complete #2) ☐ no (provide detailed directions & description above, and skip to #3)

I am confident I have accurately located and mapped the population at map scale:

☐ yes (skip to #3)

☐ no, but I am confident the population is within the general area indicated on the map as follows:

6. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc.): wetlands, roads

To the best of my knowledge, I mapped the entire extent of this population

☒ X yes ☐ no ☐ unknown If no or unknown, explain:

Is a revisit needed? ☐ no ☐ yes - if yes, why?:

Ownership (if known): Columbia Land Trust

Taxon Name: Calochortus longebarbatus var. longebarbatus 2 EO #

Population Size (# of individuals or ramets) or estimate: 600 to 700 plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.):

Population is vigorous, growing around the forested edge of a medium sized camas meadow. Soil moist in mid-July. Most plants in fruit, though many are still blooming.

Plant Association (include author, citation, or classification, e.g. Daubenmire):

Associated Species (% cover by layer and species for dominants in each layer):

Bare: 0%

Lichen/moss layer: 30%

Graminoid: 80%; Juncus orthophyllus, Agrostis sp., Danthonia californica

Bromus secalinus, Poa compressa,

Herb layer: 40%; Hieracium caespitosum, Potentilla recta, Triteleia hyacinthina,

Centaureum erythraea, Mimulus guttatus, Sanguisorba annua, Navarretia sp.,

Hypericum anagalloides, Prunus vulgaris, Veronica peregrina, Myosotis laxa,

Lotus purshiana

Shrub layer(s): 3%; Rosa sp.

Tree layer: 10%; Pinus ponderosa, Populus tremuloides

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Plants growing in moist soil along the forested edge of a camas meadow. The larger wetland has had a history of disturbance.

Minimum elevation (ft.): 1,800'

Maximum elevation (ft.): 1,800'

Size (acres): 250' x 425' est.

Aspect: varies °

Slope: 0%

Photo taken? ☐ yes ☒ X no

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): Area has history of cattle grazing and timber plantation. Wetland has been manipulated by ditching and draining. Prevalent noxious weeds in wetland include: Hieracium caespitosum and Potentilla recta.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site):

Additional Comments (discrepancies, general observations, etc.):

Washington Natural Heritage Program

Rare Plant Survey Form

Taxon Name: *Rotala ramosior* A EO #

Are you confident of the identification? ☒ x yes ☐ no Explain:

Survey Site Name: Youngs Wetland

Surveyor's Name/phone/email: Kathryn Beck 360-671-6913 calypso@openaccess.org

Survey Date: 7/18/10

County: Klickitat

Quad Name: 7.5' Quad Code:

Township: 06N Range: 13E Section(s): 16 N ½

Directions to site: Drive east from Glenwood on Glenwood Highway (Hwy ?) approximately ? miles to MP marker ?. Park and walk north approximately ? feet.

Population located in east/west oriented ditch just inside the northern boundary of the property. Use UTM's to help locate population.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If you're using a map at a different scale (not recommended) please write the scale on the map. Please answer the following:

1. I used GPS to map the population: ☐ No (skip to #2) ☒ X Yes (complete #1 & #3)
☐ Coordinates are in electronic file on diskette (preferred) ☐ Coordinates below
Description of what coordinates represent:
GPS accuracy: ☐ Uncorrected ☐ Corrected to <5m
GPS datum:

GPS coordinates: Zone 10 640447 E 5096933 N North end
South end: Zone 10 640431 E 5096817 N

2. I used a topographic map to map the population:
☐ yes (complete #2) ☐ no (provide detailed directions & description above, and skip to #3)
I am confident I have accurately located and mapped the population at map scale:
☐ yes (skip to #3)
☐ no, but I am confident the population is within the general area indicated on the map as follows:

7. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc.): wetlands, roads

To the best of my knowledge, I mapped the entire extent of this population

☒ X yes ☐ no ☐ unknown If no or unknown, explain:

Is a revisit needed? ☐ no ☐ yes - if yes, why?:

Ownership (if known): Columbia Land Trust

Taxon Name: *Rotala ramosior* A EO #

Population Size (# of individuals or ramets) or estimate: 10,000+ plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.):
Population vigorous, most plants setting fruit, some are small and still vegetative depending on how deep the water they are growing in or near is.

Growing in a linear series of small, vernal moist to wet depressions, each with 100's to 1,000's of plants.

more or less linear channel in a vernal moist, graminoid dominated wet meadow.
within a series of meandering shallow channels

Plant Association (include author, citation, or classification, e.g. Daubenmire):

Associated Species (% cover by layer and species for dominants in each layer):

Bare: 0%

Lichen/moss layer: 10%

Graminoid: 80%; *Juncus tenuis*, *Danthonia californica*, *Deschampsia danthonioides*, *Bromus* sp., *Poa compressa*, *Juncus orthophyllus*, *Eleocharis acicularis*, *Juncus bufonius*, *Carex athrostachya*, *Carex bebbii*

Herb layer: 35%; *Hieracium caespitosum*, *Potentilla recta*, *Sanguisorba annua*, *Prunella vulgaris*, *Navarretia intertexta*, *Lotus* sp., *Veronica peregrina*, *Boisduvalia* sp., *Symphyotrichum spathulatum*, *Mimulus guttatus*, *Mimulus primuloides*

Shrub layer(s): 0%;

Tree layer: 5%; *Pinus ponderosa*

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Plants are growing in a linear series of small, vernal moist to wet depressions in larger wetland. Wetland has had a history of disturbance.

Minimum elevation (ft.): 1,800'

Maximum elevation (ft.): 1,800'

Size (acres): 450' x 25' est.

Aspect: varies °

Slope: 0%

Photo taken? ☐ yes ☒ X no

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): Area has history of cattle grazing and timber plantation. Wetland has been manipulated by ditching and draining. Prevalent noxious weeds include: *Hieracium caespitosum* and *Potentilla recta*.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site):

Additional Comments (discrepancies, general observations, etc.): There may be other scattered (sub)populations of this species in the area.

Growing with populations of *Anagallis minima* and *Calochortus longebarbatus*.

Because this species is an annual, the number and location plants will vary from year to year.

Washington Natural Heritage Program

Rare Plant Survey Form

Taxon Name: *Rotala ramosior* 2 EO #

Are you confident of the identification? ☒ x yes ☐ no Explain:

Survey Site Name: North Boundary Youngs Wetland

Surveyor's Name/phone/email: Kathryn Beck 360-671-6913 calypso@openaccess.org

Survey Date: 7/19/10

County: Klickitat

Quad Name: 7.5' Quad Code:

Township: 06N Range: 13E Section(s): 16 NW ¼

Directions to site: Drive East from Glenwood on Glenwood Highway (Hwy ?)
approximately ? miles to MP marker ?. Park and walk north approximately ? feet.

Population located in east/west oriented ditch just inside the northern boundary of the property. Use UTM's to help locate population.

Mapping (see instructions): Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout of the map. If you're using a map at a different scale (not recommended) please write the scale on the map. Please answer the following:

1. I used GPS to map the population: ☐ No (skip to #2) ☒ X Yes (complete #1 & #3)
☐ Coordinates are in electronic file on diskette (preferred) ☐ Coordinates below

Description of what coordinates represent:

GPS accuracy: ☐ Uncorrected ☐ Corrected to <5m

GPS datum:

GPS coordinates: Zone 10 640161 E 5096964 N East end of population

10 640088 E 5096951 N West end of population

2. I used a topographic map to map the population:

☐ yes (complete #2) ☐ no (provide detailed directions & description above, and skip to #3)

I am confident I have accurately located and mapped the population at map scale:

☐ yes (skip to #3)

☐ no, but I am confident the population is within the general area indicated on the map as follows:

8. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, etc.): wetlands, roads

To the best of my knowledge, I mapped the entire extent of this population

☒ X yes ☐ no ☐ unknown If no or unknown, explain:

Is a revisit needed? ☐ no ☐ yes - if yes, why?:

Ownership (if known): Columbia Land Trust

Taxon Name: *Rotala ramosior* 2

EO #

Population Size (# of individuals or ramets) or estimate: 10,000+ plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.):

Population vigorous, most plants setting fruit, some are small and still vegetative depending on how deep the water they are growing in or near is. Plants are growing in dense patches in wet ditch.

Plant Association (include author, citation, or classification, e.g. Daubenmire):

Associated Species (% cover by layer and species for dominants in each layer):

Bare: 5%

Lichen/moss layer: 70%

Graminoid: 65%; *Juncus orthophyllus*, *Bromus secalinus*, *Poa compressa*,
Danthonia californica

Herb layer: 45%; *Hieracium caespitosum*, *Potentilla recta*, *Mimulus guttatus*,
Sanguisorba annua, *Navarretia* sp., *Hypericum anagaloides*, *Triteleia hyacinthina*,
Prunus vulgaris, *Veronica peregrina*, *Myosotis laxa*, *Centaureum erythraea*, *Lotus*
purshiana, *Anagallis minima*, *Calochortus longebarbatus*,

Shrub layer(s): 0%;

Tree layer: 10%; *Pinus ponderosa*

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Plants are growing in a wet ditch 5 to 10' wide. The ditch runs along the northern boundary of the CLT property in open Ponderosa pine forest. The larger wetland has had a history of disturbance.

Minimum elevation (ft.): 1,800'

Maximum elevation (ft.): 1,800'

Size (acres): 225' x 10' est.

Aspect: varies °

Slope: 0%

Photo taken? ☐ yes ☒ X no

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): Area has history of cattle grazing and timber plantation. Wetland has been manipulated by ditching and draining. Prevalent noxious weeds include: *Hieracium caespitosum* and *Potentilla recta*.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site):

Additional Comments (discrepancies, general observations, etc.): There may be other scattered (sub)populations of this species in the area.

Growing with a population of *Anagallis minima*.

Because this species is an annual, the number and location plants will vary from year to year.