

# Rare Plant and Vegetation Survey of Pearrygin Lake State Park



*Pacific Biodiversity Institute*



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## Introduction

Under contract with the Washington State Parks and Recreation Commission Pearrygin Lake State Park, located in Okanogan County, was surveyed for rare plant occurrences and mapped according to vegetation communities by Pacific Biodiversity Institute (PBI). Vegetation data was collected for all the mapped vegetation types. This report summarizes the activities and findings of the contracted work.

This project was conducted as part of a work trade agreement with Lyra Biological, Olympia, Washington. Under this agreement Pacific Biodiversity Institute conducted the surveys of Pearrygin Lake State Park. This report fulfills Pacific Biodiversity Institute's obligations under the work trade agreement for Lyra Biological's contract with the Washington State Parks and Recreation Commission.

In addition to the established state park, we surveyed throughout the areas that have been recently acquired for state park expansion and on some adjacent properties under negotiation for purchase by the park (Figure 1). Under a separate contract, we also conducted similar surveys of parts of the Methow Wildlife Area that are adjacent to Pearrygin Lake State Park. This work is reported in a separate report (Visalli et al 2006).

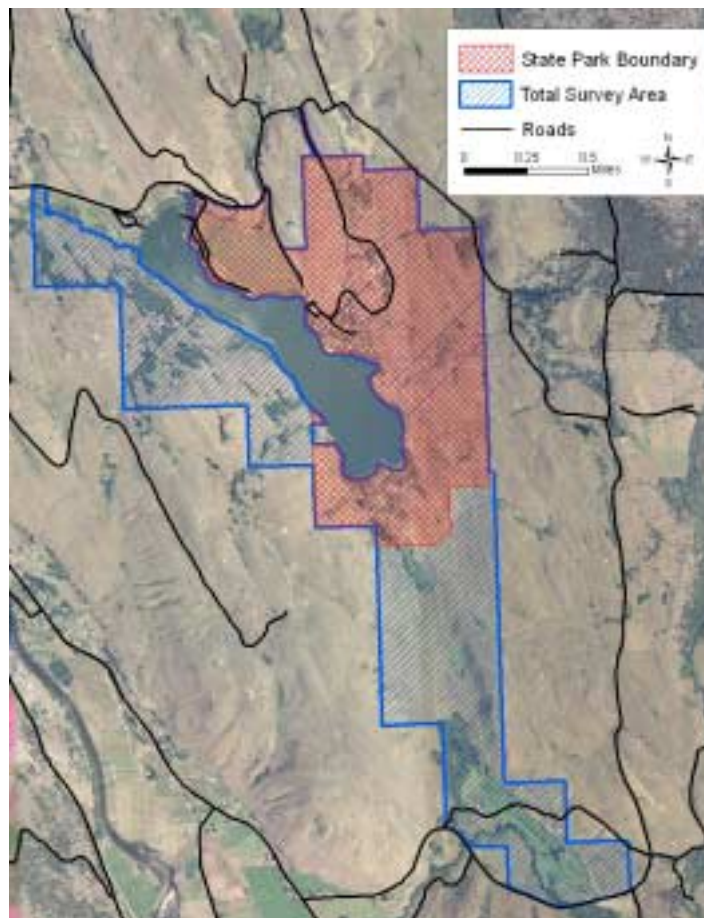


Figure 1. Current Pearrygin Lake State Park boundary and total survey area.

# Vegetation Communities

## **Methods**

Plant communities within the designated survey area were delineated and classified using a combination of field survey and remote sensing techniques. We relied on plant association keys and descriptions from several recognized sources to make vegetation community assignments, including the Field Guide for Forested Plant Associations of the Wenatchee National Forest (Lillybridge, 1995), Key to Sagebrush Alliances of the Western United States (Crawford, 1999), Classification and Management of Aquatic, Riparian and Wetland Sites on the National Forests of Eastern Washington (Kovalchik, 2004), Classification of Native Vegetation of Oregon (Kagan, 2000), and Washington Natural Heritage Program unpublished data files (WANHP). In some cases, the community descriptions in existing manuals were not adequate in describing distinctive vegetation associations in the project area. In these cases, new land cover type and plant association names and descriptions were created by PBI.

Remote sensing techniques consisted of manually delineating plant associations or mosaics of plant associations in a digital environment. We reviewed ortho-rectified aerial photography from the 1990s and recent ASTER and LANDSAT Thematic Mapper satellite images for discernable vegetation or landform patterns. We also used high resolution true color ortho-rectified aerial photography obtained from Washington Department of Natural Resources through Washington State Parks. Topographic maps, and digital elevation models (DEMs) were also employed to assist the process of vegetation community delineation. The final vegetation polygons were created by hand in a GIS by ocular assessment.

Field surveys consisted of visiting sites located within the vegetation polygons created during the remote sensing process. At representative sites within a polygon, vegetation data and site descriptions were recorded in a fashion consistent with the “plant community polygon” format provided by the Washington State Parks and Recreation Commission. Further refinements and editing of the drafted vegetation polygon layers were done by hand on hardcopy maps in the field, and later edited digitally in a GIS.

## **Results**

We surveyed and mapped a total of 77 vegetation community polygons, comprised of 25 vegetation community types, as well as 5 disturbance categories, within the designated survey area.

Vegetation community polygons are either stand-alone plant associations or mosaics of multiple plant associations. Table 1 lists the plant associations and/or cover types found in Pearrygin Lake State Park. Figure 2 shows the location of the vegetation community polygons mapped in the survey area, overlain on an aerial photograph of the area. Figure 3 indicates the primary plant association (PA1 in the database) of each polygon. Figures 4 and 5 are closer up images of the vegetation polygons in the northern (Figure 4) and southern (Figure 5) halves of the survey area, at a scale large enough to illustrate major vegetation types and boundaries.

**Table 1. Vegetation Community Types Encountered in Pearrygin Lake State Park**

| Association Name   | Abbreviation      | English Name   | Reference          | Primary PAs | Status |
|--|-------------------|--|--------------------|-------------|--------|
| <i>Artemisia tripartita</i> / <i>Festuca idahoensis</i>                                  | ARTR4/FEID        | Threetip sagebrush / Idaho fescue                          | Crawford (1999)    | 1           | G3     |
| <i>Carex douglasii</i> / <i>Leymus cinereus</i>  | CADO/LECI4        | Douglas sedge / Great Basin wildrye                        | PBI                | 0           | na     |
| <i>Cornus stolonifera</i> / <i>Mesic forb</i>  | COST4/mesic forb  | Red-osier dogwood / Mesic forb                             | Kovalchik (2004)   | 2           | na     |
| <i>Leymus cinereus</i> grassland   | LECI4             | Great Basin wildrye grassland                              | WANHP              | 1           | G2G3Q  |
| <i>Mahonia aquifolium</i> / <i>Helianthella uniflora</i>                                 | MAAQ2/HEUN        | Oregongrape / Little sunflower                             | PBI                | 0           | na     |
| <i>Pinus ponderosa</i> / <i>Calamagrostis rubescens</i> - <i>Pseudoroegneria spicata</i> | PIPO/CARU-PSSP6   | Ponderosa pine / Pinegrass - Bluebunch wheatgrass          | Lillybridge (1995) | 0           | na     |
| <i>Pinus ponderosa</i> / <i>Purshia tridentata</i> / <i>Pseudoroegneria spicata</i>      | PIPO/PUTR2/PSSP6  | Ponderosa pine / Bitterbrush / Bluebunch wheatgrass        | Lillybridge (1995) | 2           | G3     |
| <i>Pinus ponderosa</i> / <i>Symphoricarpos albus</i>                                     | PIPO/SYAL         | Ponderosa pine / Common snowberry                          | Kagan (2000)       | 6           | G4     |
| <i>Populus tremuloides</i> / <i>Cornus stolonifera</i>                                   | POTR5/COST4       | Ponderosa pine / red-osier dogwood                         | Kovalchik (2004)   | 0           | G4     |
| <i>Populus tremuloides</i> / <i>Smilacina stellata</i>                                   | POTR5/SMST        | Trembling aspen / Star-flowered solomons-seal              | PBI                | 0           | na     |
| <i>Populus tremuloides</i> / <i>Symphoricarpos albus</i>                                 | POTR5/SYAL        | Trembling aspen / Common snowberry                         | Kovalchik (2004)   | 17          | G3     |
| <i>Pseudoroegneria spicata</i> - <i>Balsamorhiza sagittata</i> - <i>Lupinus sericeus</i> | PSSP6-BASA3-LUSE4 | Bluebunch wheatgrass - Arrowleaf balsamroot - Silky lupine | PBI                | 0           | na     |
| <i>Purshia tridentata</i> / <i>Festuca idahoensis</i>                                    | PUTR2/FEID        | Bitterbrush / Idaho fescue                                 | Crawford (1999)    | 4           | G4     |
| <i>Purshia tridentata</i> / <i>Pseudoroegneria spicata</i>                               | PUTR2/PSSP6       | Bitterbrush / Bluebunch wheatgrass                         | Crawford (1999)    | 15          | G3     |
| <i>Purshia tridentata</i> / <i>Stipa occidentalis</i>                                    | PUTR2/STOC2       | Bitterbrush / Western needlegrass                          | Crawford (1999)    | 3           | G2     |
| <i>Salix sp.</i> / <i>Mesic forb</i>   | SALIX/mesic forb  | Willow / Mesic forb  | Kovalchik (2004)   | 1           | na     |
| <i>Scirpus validus</i>   | SCVA              | Softstem bulrush   | Kovalchik (2004)   | 0           | G5     |
| <i>Typha latifolia</i>   | TYLA              | Broadleaf cattail  | Kovalchik (2004)   | 2           | G5     |
| <b>Non-Vegetated Types:</b>  |                   |  |                    |             |        |
| Water  |                   |  |                    | 1           |        |
| Rock Cliffs and Talus  |                   |  |                    |             |        |
| <b>Disturbed Types:</b>  |                   |  |                    |             |        |
| Developed  |                   |  |                    | 6           |        |
| Disturbed meadow   |                   |  |                    | 2           |        |
| Disturbed wetland  |                   |  |                    | 8           |        |
| Former agricultural field  |                   |  |                    | 8           |        |
| Agricultural field   |                   |  |                    | 1           |        |

The conservation status of a species or community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment. In the chart above, G = Global. The numbers have the following meaning:

- 1 = critically imperiled
- 2 = imperiled
- 3 = vulnerable to extirpation or extinction
- 4 = apparently secure
- 5 = demonstrably widespread, abundant, and secure.

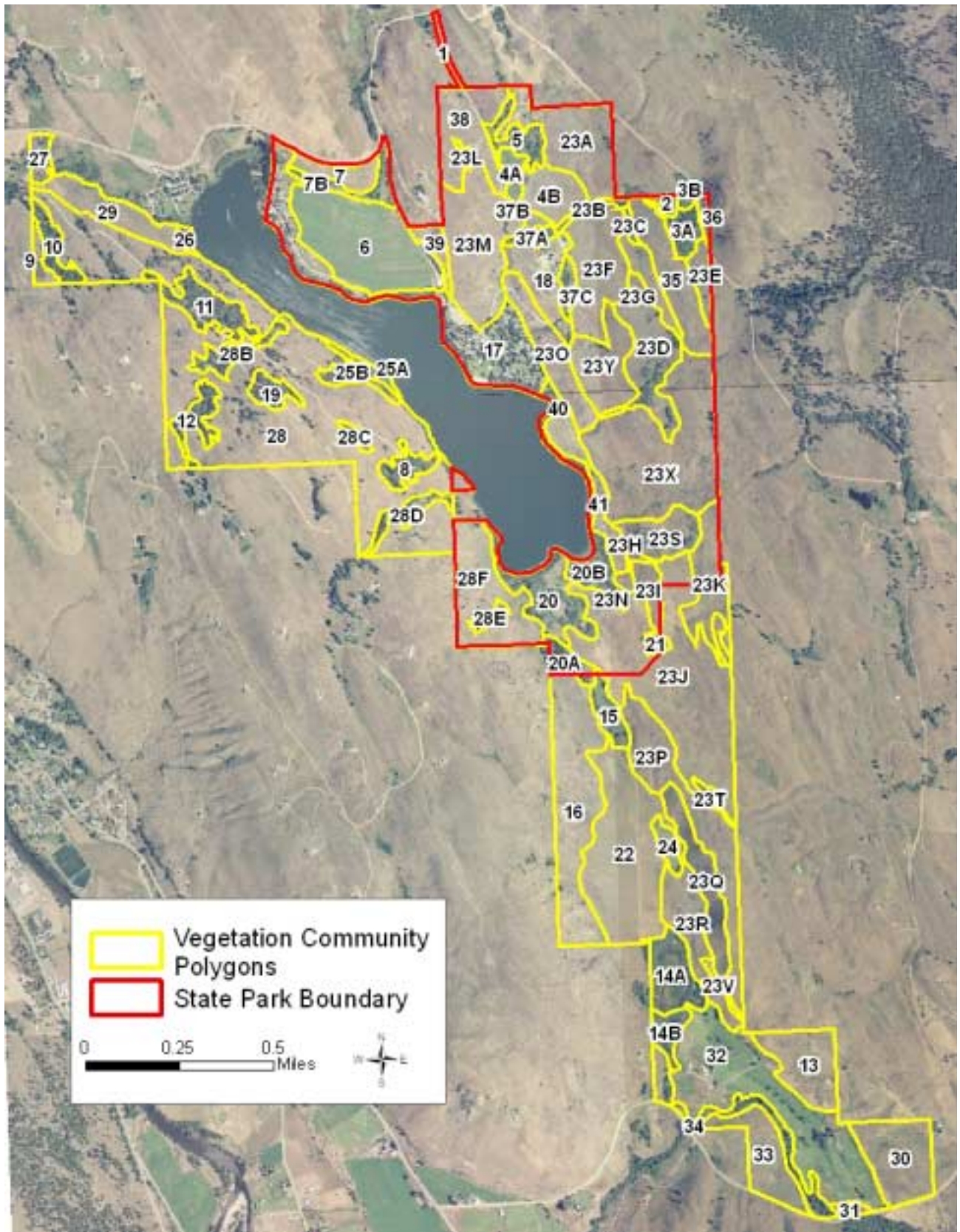


Figure 2. Vegetation community polygons in the survey area.



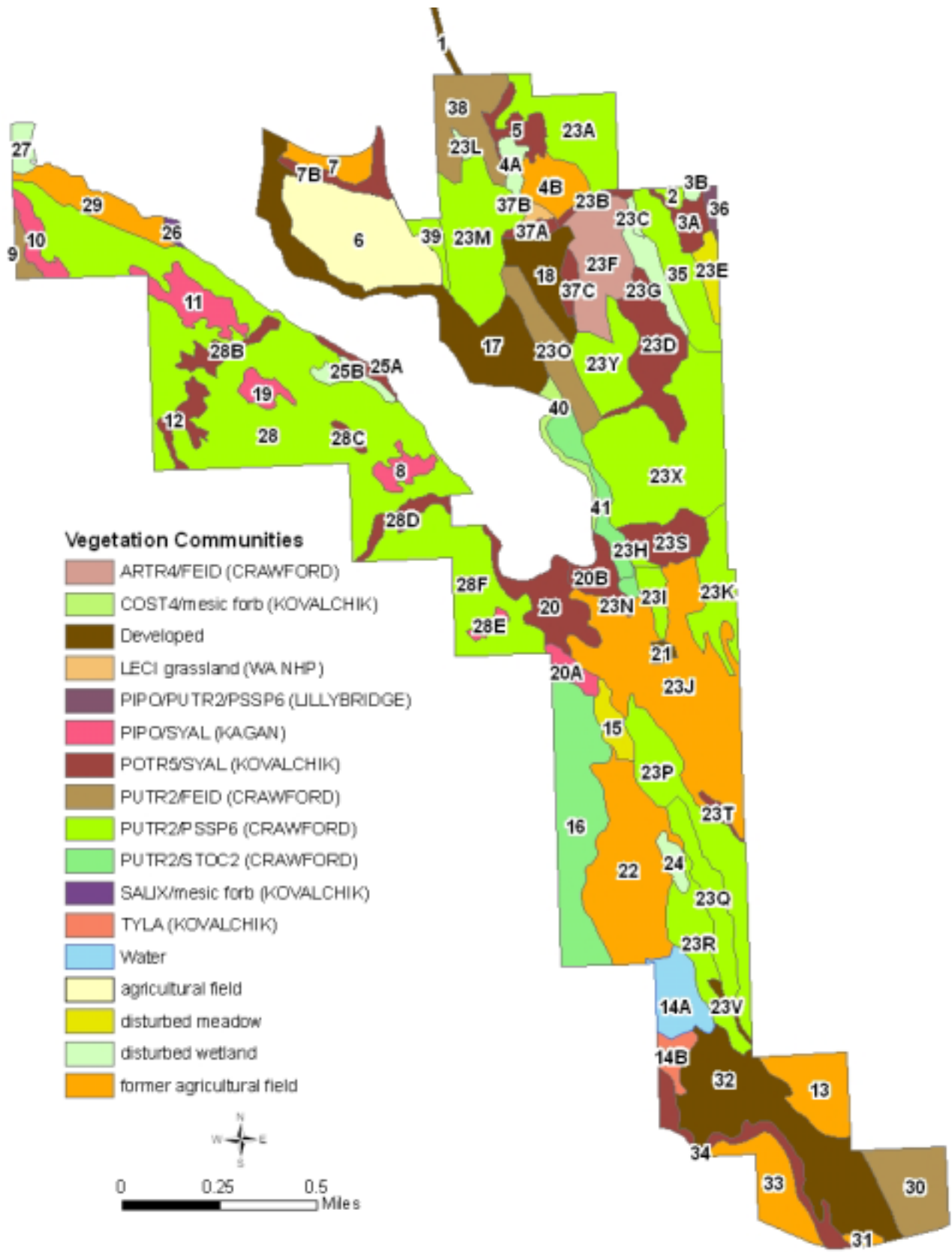


Figure 3. Primary plant associations in plant community polygons.

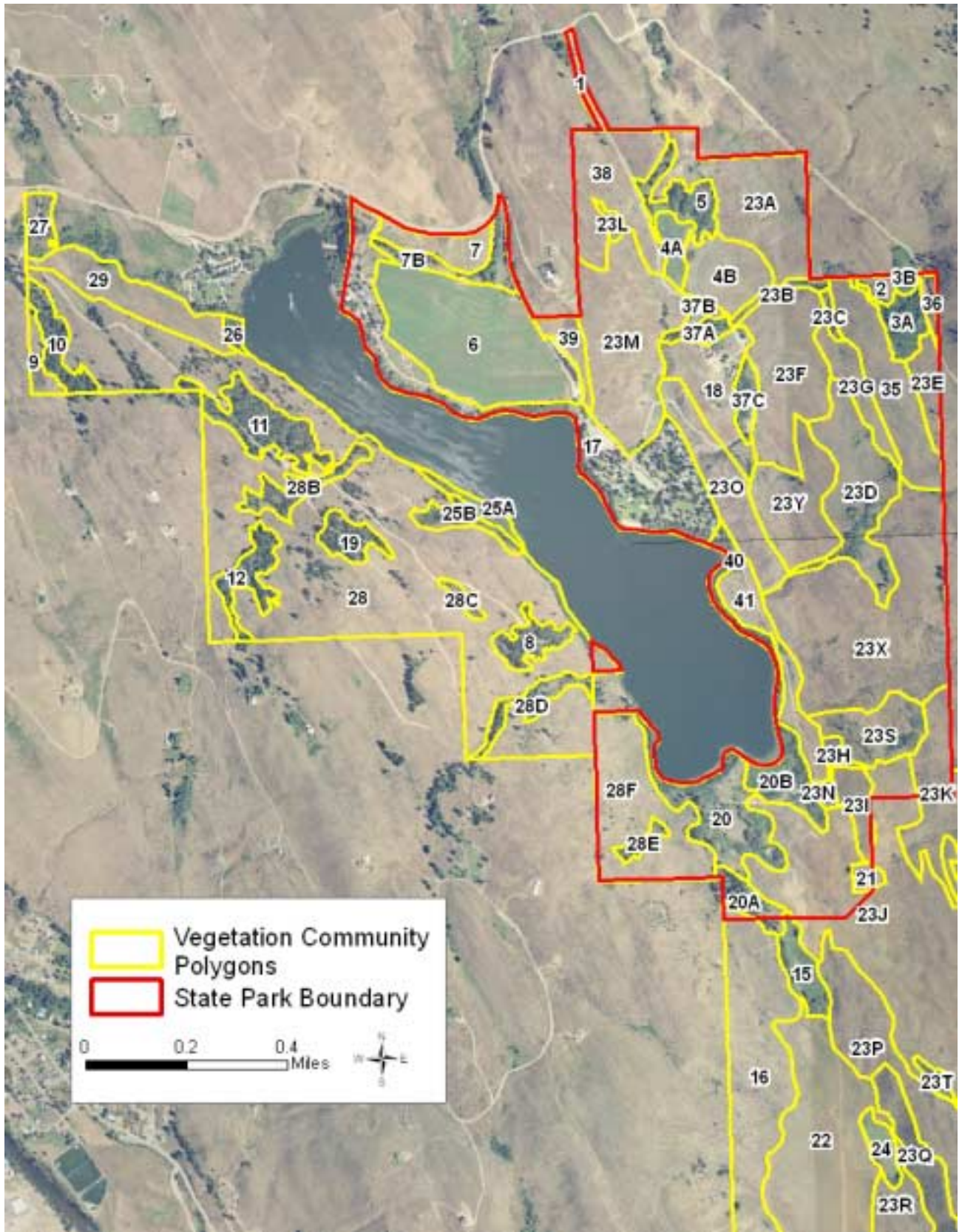


Figure 4. Vegetation polygons in northern Portion of survey area.

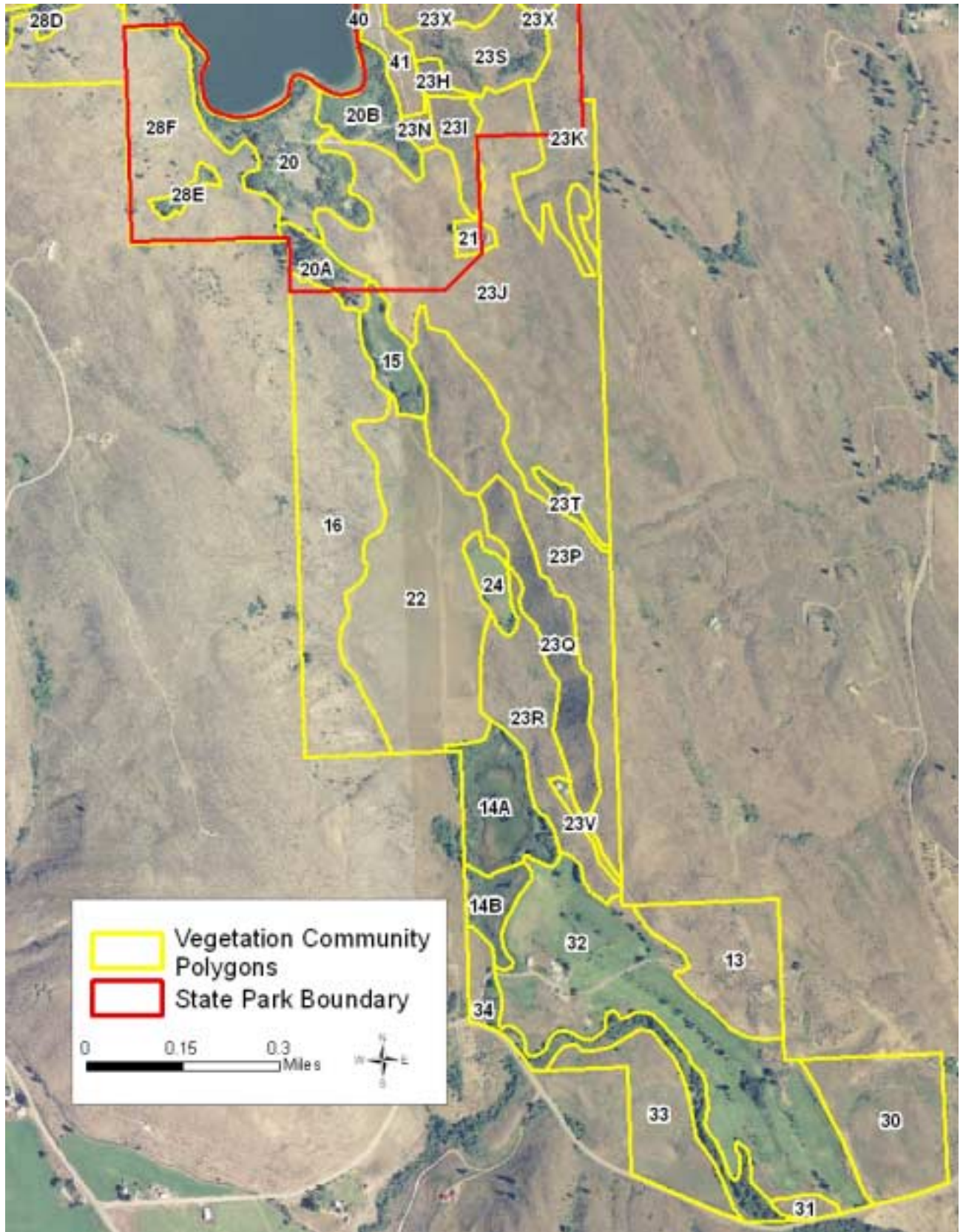


Figure 5. Vegetation polygons in southern portion of survey area.

## Examples of Vegetation Community Types

### *Cornus stolonifera* / mesic forb (COST4/mesic forb)



Purple loosestrife, *Lythrum salicornia*

This plant association was described by Kovalchik and Clausnitzer (2004). The two polygons at Pearrygin Lake SP are composed of narrow riparian strips of land along the shore of Pearrygin Lake. There is considerable human-caused disturbance of this plant community, because 1) the water level of the lake varies due to artificial hydrology, and 2) the lakeshore is regularly trod by fishermen and other recreationalists. While the overstory is dominated by the native western birch (*Betula occidentalis*), red-osier dogwood (*Cornus stolonifera*) and several willow species (*Salix*), non-native species are abundant in the understory, with an overall non-native abundance of 20% of ground cover. Prominent among the non-natives are canary reedgrass (*Phalaris arundinacea*), Canada thistle (*Cirsium arvense*) and purple loosestrife (*Lythrum salicornia*). Purple loosestrife is a state Class B noxious weed that displaces native vegetation and has a negative effect of wildlife. The only location in the Methow Watershed known for this species is the population at Pearrygin Lake.

## *Lymus cinereus* grassland (LECI4 grassland)



This plant association was described by the Washington Natural Heritage Program (WA NHP). On the semi-arid east slope of the Cascades, Great Basin wildrye typically grows in areas that are sub-irrigated by moisture moving downhill through the soil. This water movement results in 1) an increase in available moisture at the site beyond what falls as precipitation, and 2) saline/alkaline soils caused by soil salts that are transported with the soil moisture and then left behind when the water evaporates from the soil. Sites with vigorous stands of Great Basin wildrye often have moderately saturated soils in the spring and dry thoroughly by mid-summer. Plants commonly associated with this species are alkali saltgrass (*Distichlis stricta*), and more commonly in the Methow Watershed and at Pearygin Lake State Park, Douglas sedge (*Carex douglasii*). Great Basin wildrye readily resprouts after fire and inhibits growth of herbaceous perennials, and is there present in both early- and late-seral ecological stages. The two primary non-native species present in this polygon are Canada thistle (*Cirsium arvense*) and whitetop (*Cardaria draba*), which together comprise about 5% cover.

***Pinus ponderosa/Purshia tridentata/Pseudoroegneria spicata***  
**(PIPO/PUTR2/PSSP6)**



This plant association was described by Lillybridge et al (1995). This plant association appears in the ecotone between ponderosa pine forests and the treeless shrub-steppe. Ponderosa pine has a minimum moisture requirement of about 10” precipitation a year, but actual moisture availability is greatly affected by slope aspect, solar insolation, and the drainage characteristics of macro- and micro-sites. The canopy cover in this association is by definition sparse, bitterbrush requires full sun in which to grow. Thus as the canopy increases the plant association changes. Shrub step and ponderosa-dominated forests typically have a fire periodicity (fire return at any given site) of 8-10 years. Ponderosa pines and bluebunch wheatgrass are both highly resisted to ground fires, but bitterbrush is often killed by fire. Bitterbrush is fire dependent, but not fire resistant. Bitterbrush regenerates mostly from seed after fire; regeneration is often from caches of seeds made by rodents. Fire exclusion may reduce litter-free sites that are needed for seedling establishment. The three primary non-native species present in these polygons are cheatgrass (*Bromus tectorum*), bulbous bluegrass (*Poa bulbosa*), and Dalmation toadflax (*Linaria dalmatica*), together totaling less than 5% cover.

## ***Pinus ponderosa/Symphoricarpos albus (PIPO/SYAL)***

This plant association was described by Kagan (1999). There are a number of ponderosa pine stands in Pearrygin Lake State Park west of the lake itself, on the north-facing slope of Studhorse Mountain. Even in the shelter of the north slope, the pine stands are found on benches that accrue subsurface moisture from drainage, or along very temporal water channels that run in spring only. The pine canopy in these sites is rather dense for ponderosa, averaging 70% cover. Similarly, the shrub understory, which is dominated by common snowberry, is abundant with an average of 50% cover. This is a fire-evolved plant association, which in natural cycles would frequently experience ground fires. Ponderosa has evolved fire resistance by developing a thick and flaking bark, and by dropping lower branches as the tree grows. Common snowberry is classified as a "survivor" and has high resistance to fire. It is a rhizomatous species with rhizomes buried 2 to 5 inches (5-12.5 cm) deep in mineral soil. After fire has killed the top of the plant, new growth sprouts from these rhizomes. Non-native species abundance in this association is very, comprising less than 1% of the cover.



***Populus tremuloides* / *Symphoricarpos albus* (POTR5/SYAL)**



This plant association was described by Kovalchik and Clausnitzer (2004). With 17 polygons in the park, this trembling aspen/common snowberry association re-occurs frequently, although most of polygons are small compared those in the shrub-steppe. Both species require more moisture than is available from annual precipitation, and so are found in sites where subsoil moisture collects. Aspen can be an early seral species, as it responds to disturbance, especially fire, by resprouting from underground roots. In wetland depressions and along vernal stream channels it is often the climax tree species. Aspen canopy cover in these polygons averaged 50%. Non-native species average 1-5% cover in this association, comprised primarily of Canada thistle (*Cirsium arvense*) and whitetop (*Cardaria draba*).



***Purshia tridentata* / *Pseudoroegneria spicata* (PUTR2/PSSP6)**



This plant association was described by Crawford (1999). This is the dominant plant association in Pearrygin Lake State Park, with 15 polygons, some of them quite extensive. As the picture above illustrates, *Balsamorhiza sagittata* (arrowleaf balsamroot) is often present as an abundant herbaceous complement to the bitterbrush and bluebunch wheatgrass. As with most of the plant communities in the park, this one co-evolved with frequent fire, and most species present in the community have evolved the capacity to either survive or germinate quickly after fire. Bitterbrush typically burns to the ground, and is reestablished either by sprouting from the roots or from germinating seeds. For this reason, ecologically healthy bitterbrush shrub-steppe typically has a low proportion of woody shrub to other plant species, 10% or less. At Pearrygin Lake the metric used in the polygon inventories rates the woody shrub abundance at 5-20%, close to the optimum level. Non-native species are present in a total abundance of 5-10% cover. The three most abundant species are cheatgrass (*Bromus tectorum*), bulbous bluegrass (*Poa bulbosa*) and Dalmatian toadflax (*Linaria dalmatica*).

***Purshia tridentata*/*Stipa occidentalis* (PUTR2/STOC2)**



This plant association was described by Crawford (1999). Western needlegrass is considered an *increaser* in range manuals, that is, a species that increases with grazing pressure. This would appear to be confirmed at Pearrygin Lake, where the species is abundant in areas that have experienced either heavy grazing in the past, or were formerly plowed. It is a native species, and it is our observation that it often occurs with several other species, primarily silky lupine (*Lupinus sericeus*) and tall buckwheat (*Eriogonum heracleoides*) in areas that are beginning to recover from grazing or plowing. Because of past disturbance these polygons have a relatively high proportion of non-native species at 20-40% cover. The primary non-native species include cheatgrass (*Bromus tectorum*) and diffuse knapweed (*Centaurea diffusa*).

***Carex douglasii-Leymus cinereus (CADO/LECI4)***



This plant association was found on at Pearrygin Lake SP and has not been described before. Pacific Biodiversity Institute decided that it was a unique association that warranted a name and description. It occurs in vernal wetlands that have saturated soil in the spring but dry by mid-summer. Typically Douglas sedge forms a mat in the wetter central area and Great Basin wildrye outlines the wetland boundary, where evaporation leaves alkaline salts behind in the soil. Douglas sedge is unique in our area in that it is dioecious; that is, it has male and female flowers on separate plants. This is a reproductive strategy that evolved in some flowering plants to prevent self-pollination.

***Mahonia aquifolium/Helianthella uniflora* (MAAQ2/HEUN)**



This plant association was found on at Pearrygin Lake SP and has not been described before. Pacific Biodiversity Institute decided that it was a unique association that warranted a name and description. Little sunflower (*Helianthella uniflora*) is the dominant plant often with *Mahonia aquifolium* growing as a small shrub underneath the sunflower. Some fairly extensive patches of this plant association occur at Pearrygin Lake. It is quite unique, beautiful and represents part of the remarkable biodiversity encompassed in the park.

***Populus tremuloides/Smilacina stellata***  
**(POTR5/SMST)**



This plant association was found on at Pearrygin Lake SP and has not been described before. Pacific Biodiversity Institute decided that it was a unique association that warranted a name and description. It might be considered a variant of the *Populus tremuloides/Symphoricarpos albus* (POTR5/SYAL), trembling aspen/common snowberry community (Kovalchik and Clausnitzer 2004), but there is complete absence of *Symphoricarpos albus*, which normally is quite dense in the typical POTR5/SYAL community. This community occurs in as a small patch in isolated aspen groves in a few places in the park. It is a unique community that warrants careful management. Non-native plants are often absent from this community.

***Pseudoroegneria spicata*-*Balsamorhiza sagittata*-*Lupinus sericeus*  
(PSSP6-BASA3-LUSE4)**



This plant association was found on at Pearrygin Lake SP and has not been described before. Pacific Biodiversity Institute decided that it was a unique association that warranted a name and description. It is a variant of the *Purshia tridentata*/*Pseudoroegneria spicata* (PUTR2/PSSP6) (Crawford, 1999) plant association where *Purshia tridentata* is absent. *Balsamorhiza sagittata* and *Lupinus sericeus* are codominant with *Pseudoroegneria spicata*. This community may represent a seral stage that occurs after relatively intense wildfire in a *Purshia tridentata*/*Pseudoroegneria spicata* association where the bitterbrush is killed and does not regrow. It may also represent a unique association that occurs on certain soil types.

## Former agricultural field



All of the land area of Pearrygin Lake was at one time ranchland, with the hillsides grazed by cattle, and the flat and low-relief areas plowed and farmed for alfalfa and other crops. Many of the dryland (non-irrigated) fields have been abandoned for years, and are in transition back to wild—often native—vegetation. The most abundant native species is western needlegrass (*Stipa occidentalis*). The ratio of non-native species is high in these communities, typically between 20-50% cover. The primary non-native species are smooth brome (*Bromus inermis*) and cheatgrass (*Bromus tectorum*).

## Disturbed meadow



The term ‘meadow’ is used here to describe areas in the park that are on level or low-relief ground, and are sub-irrigated in the spring by water moving through the soil. Because of the additional moisture beyond annual precipitation, the native plant communities at these sites were markedly different from the surrounding shrub-steppe. These areas also stayed green longer into the summer than the shrub-steppe, and were therefore much more heavily grazed by cattle in the past, with a resultant loss of a native species. In the two polygons in this classification, 10-20% of the vegetation present is non-native, with cheatgrass (*Bromus tectorum*), Kentucky bluegrass (*Poa pratensis*), and Canada thistle (*Cirsium arvense*) being the most abundant non-native species.



## Disturbed wetland



As with the meadowlands, the wetlands in this semi-arid region contain a community of plants that is completely different from the surrounding shrub-steppe. Because of the water that accumulates at these sites, they were favored by grazing cattle in the summer, as the surrounding uplands dried out. Due to heavy grazing, most upland wetlands at Pearygin Lake State Park are dominated by non-native species, with some sites containing over 90% non-natives. Among these, the most abundant are canary reedgrass (*Phalaris arundinacea*), Canada thistle (*Cirsium arvense*), and whitetop (*Cardaria draba*). In the image above, the foreground is dominated by Canada thistle and the wetter background area is dominated by canary reedgrass.

# Rare Plant Surveys

## Methods

We visited Pearrygin Lake State Park multiple times during the 2006 field season to conduct a rare plant survey. We used the Washington Department of Natural Resources Natural Heritage Program's (DNR NHP) rare plant list to determine the conservation status of vascular plants encountered in the field. When a plant from the DNR NHP list was located, we used the standard DNR NHP rare plant sighting form to complete field descriptions for the observation. These forms are attached to the appendix of this report.

Field surveys were conducted on June 6, June 12, June 16, June 27, June 28, June 30, July 3, July 5, July 13, October 7, October 11, and November 8. During the field surveys, we were equipped with reference literature, rare plant lists for the area, maps showing rare plant locations from previous surveys, and a portable plant identification lab. We looked for rare plants in habitats previously identified as being likely occurrence sites. So as not to miss a rare plant, all vascular plant species encountered during the inventory were identified on site, at base camp in the portable laboratory, or back at our office.

Survey routes were determined based on the desire to efficiently cover a large proportion of the park's area throughout the field season. We surveyed habitats of the park where we felt rare plants were more likely to occur more intensively. Survey routes for the rare plant inventory and rare plant locations were recorded either by hand, on a hardcopy topographic map, or as GPS waypoints and trackpoints, all of which were later compiled into a single GIS data layer (Figure 1).

## Results

### Rare Plants

We located two vascular plants currently listed on the WA DNR NHP rare plant list and one species that has not previously been encountered in Washington:

| <u>Species</u>             | <u>Common Name</u>    | <u>Status</u>                                |
|----------------------------|-----------------------|--|
| <i>Hierochloe odorata</i>  | sweetgrass            | G5 SNR (not yet ranked)                      |
| <i>Utricularia minor</i>   | lesser bladderwort    | G5 S2 (state imperiled, 6 to 20 occurrences) |
| <i>Monolepis spatulata</i> | prostrate povertyweed | New to state                                 |



*Hierochloe odorata*, Sweet vernal grass, grows at the margins of this wetland / swale area.



*Monolepis spatulata*—prostrate povertyweed    *Utricularia minor*—lesser bladderwort

Rare plant info redacted. Contact Washington State Parks and Recreation Commission for further information.

*Monolepis* site marked with an X

*Monolepis spatulata* is a small annual species with a known range from central Oregon to Baja California. The population we found at Pearrygin Lake extends the range northward approximately 500 miles. The species will likely be listed as a Threatened, Endangered or Sensitive plant in Washington by the WANHP in the near future.

## **Vascular Plant List for Pearrygin Lake State Park**

A total of 260 vascular plant species were identified during the 2006 surveys at Pearrygin Lake State Park. Of these, 66 of the plant species are non-native, accounting for 25% of the total.

### **Key to Vascular Plant Species List**

Column 2: Abun=Abundance of each species: 1= abundant in multiple plant communities in the park, 2= abundant in a specific plant community, 3= common in a specific community, 4= uncommon (6-20 populations), 5= rare (1-5 populations).

Column 3: "Code": Four-letter plant code as shown on the USDA PLANTS database.

Column 5: "Synonym": The species list primarily uses Hitchcock and Cronquist's *Flora of the Pacific Northwest* as the taxonomic authority, as this is still the standard reference for our area.

Typically updated nomenclature when it exists is shown in column 5. When updated nomenclature is an integral part of a community plant association, then the updated scientific name appears in column 4 in place of the common name.

Column 7: "Alien": species that are not native to the park are indicated with an "a" in this column.

The list of species identified during this project is below. Note: An asterisk (\*) in the species code indicates that the species was not identified to variety and no official USDA 4-letter code exists for the species.

**Table 2. Vascular plant list**

| #  | Abun | Code   | Scientific Name  | Common Name/Accepted Synonym                                     | Family         | Alien |
|----|------|--------|--|--|----------------|-------|
| 1  | 4    | ACGL   | <i>Acer glabrum</i> Torr.  | Rocky Mountain maple   | Aceraceae      |       |
| 2  | 3    | ACMI2  | <i>Achillea millefolium</i> L.   | yarrow   | Asteraceae     |       |
| 3  | 3    | AGHE2  | <i>Agoseris heterophylla</i> (Nutt.) Greene  | annual agoseris  | Asteraceae     |       |
| 4  | 3    | AGCR   | <i>Agropyron cristatum</i> (L.) Gaertn.  | crested wheatgrass   | Poaceae        | a     |
| 5  | 3    | AGRE2  | <i>Agropyron repens</i> (L.) Beauv.  | >>Elymus repens  | Poaceae        | a     |
| 6  | 3    | AGSP   | <i>Agropyron spicatum</i> Pursh<br><i>Agrostis alba</i> L. var. <i>palustris</i> (Huds.)   | >>Pseudoroegneria spicata ssp. spicata                           | Poaceae        |       |
| 7  | 4    | AGALP  | Pers.  | >>Agrostis stolonifera   | Poaceae        | a     |
| 8  | 4    | ALAC4  | <i>Allium acuminatum</i> Hook.   | tapertip onion   | Liliaceae      |       |
| 9  | 3    | ALIN2  | <i>Alnus incana</i> (L.) Moench  | gray alder   | Betulaceae     |       |
| 10 | 5    | AMPO2  | <i>Amaranthus powellii</i> S. Wats.  | Powell's amaranth  | Amaranthaceae  | a     |
| 11 | 5    | AMPS   | <i>Ambrosia psilostachya</i> DC.   | Cuman ragweed  | Asteraceae     | a     |
| 12 | 3    | AMAL2  | <i>Amelanchier alnifolia</i> (Nutt.) Nutt. D47   | Saskatoon serviceberry   | Rosaceae       |       |
| 13 | 3    | AMME   | <i>Amsinckia menziesii</i> (Lehm.) A. Nels.  | Menzies' fiddleneck  | Boraginaceae   |       |
| 14 | 4    | AMRE2  | <i>Amsinckia retrorsa</i> Suksdorf   | >>Amsinckia menziesii var. menziesii                             | Boraginaceae   |       |
| 15 | 5    | ANAR3  | <i>Angelica arguta</i> Nutt.<br><i>Antennaria dimorpha</i> (Nutt.) Torr. & Gray            | Lyall's angelica   | Apiaceae       |       |
| 16 | 4    | ANDI2  |  | low pussytoes  | Asteraceae     |       |
| 17 | 4    | ANLU2  | <i>Antennaria luzuloides</i> Torr. & Gray  | rush pussytoes   | Asteraceae     |       |
| 18 | 4    | ANMI3  | <i>Antennaria microphylla</i> Rydb.  | littleleaf pussytoes   | Asteraceae     |       |
| 19 | 4    | ARHO2  | <i>Arabis holboellii</i> Hornem.   | Holboell's rockcress   | Brassicaceae   |       |
| 20 | 3    | ARMI2  | <i>Arctium minus</i> Bernh.  | lesser burdock   | Asteraceae     | a     |
| 21 | 4    | ARFU3  | <i>Arnica fulgens</i> Pursh  | foothill arnica  | Asteraceae     |       |
| 22 | 4    | ARPA13 | <i>Arnica parryi</i> Gray  | Parry's arnica   | Asteraceae     |       |
| 23 | 4    | ARDR4  | <i>Artemisia dracunculus</i> L.  | tarragon   | Asteraceae     | a     |
| 24 | 3    | ARTR2  | <i>Artemisia tridentata</i> Nutt.  | big sagebrush  | Asteraceae     |       |
| 25 | 3    | ARTR4  | <i>Artemisia tripartita</i> Rydb.  | threetip sagebrush   | Asteraceae     |       |
| 26 | 4    | ASSP   | <i>Asclepias speciosa</i> Torr.<br><i>Asparagus officinalis</i> L. ssp. <i>officinalis</i> | showy milkweed   | Asclepiadaceae |       |
| 27 | 4    | ASOFO2 | L.   | >>Asparagus officinalis  | Liliaceae      | a     |
| 28 | 4    | ASPR   | <i>Asperugo procumbens</i> L.  | German-madwort   | Boraginaceae   | a     |
| 29 | 3    | ASCA6  | <i>Aster campestris</i> Nutt.  | >>Symphyotrichum campestre var. campestre                        | Asteraceae     |       |
| 30 | 3    | ASCO3  | <i>Aster conspicuus</i> Lindl.   | >>Eurybia conspicua<br>>>Symphyotrichum foliaceum var. foliaceum | Asteraceae     |       |
| 31 | 4    | ASFO   | <i>Aster foliaceus</i> Lindl. ex DC.   |  | Asteraceae     |       |
| 32 | 4    | ASAG2  | <i>Astragalus agrestis</i> Dougl. ex G. Don  | purple milkvetch   | Fabaceae       |       |
| 33 | 4    | ASCA11 | <i>Astragalus canadensis</i> L.  | Canadian milkvetch   | Fabaceae       |       |
| 34 | 4    | ASMI9  | <i>Astragalus miser</i> Dougl.   | timber milkvetch   | Fabaceae       |       |
| 35 | 4    | ASPU9  | <i>Astragalus purshii</i> Dougl. ex Hook.  | woollypod milkvetch  | Fabaceae       |       |
| 36 | 3    | BASA3  | <i>Balsamorhiza sagittata</i> (Pursh) Nutt.  | arrowleaf balsamroot   | Asteraceae     |       |
| 37 | 3    | BEAQ   | <i>Berberis aquifolium</i> Pursh   | >>Mahonia aquifolium   | Berberidaceae  |       |
| 38 | 4    | BEER   | <i>Berula erecta</i> (Huds.) Coville   | cutleaf waterparsnip   | Apiaceae       |       |
| 39 | 3    | BEOC2  | <i>Betula occidentalis</i> Hook.<br><i>Bromus brizaeformis</i> Fischer & C. Meyer          | water birch  | Betulaceae     |       |
| 40 | 4    | BRBR7  |  | >>Bromus briziformis   | Poaceae        | a     |
| 41 | 3    | BRIN2  | <i>Bromus inermis</i> Leyss.   | smooth brome   | Poaceae        | a     |
| 42 | 3    | BRTE   | <i>Bromus tectorum</i> L.  | cheatgrass   | Poaceae        | a     |
| 43 | 3    | CARU   | <i>Calamagrostis rubescens</i> Buckl.  | pinegrass  | Poaceae        |       |
| 44 | 3    | CALY   | <i>Calochortus lyallii</i> Baker   | Lyall's mariposa lily  | Liliaceae      |       |
| 45 | 4    | CAMA5  | <i>Calochortus macrocarpus</i> Dougl.  | sagebrush mariposa lily  | Liliaceae      |       |
| 46 | 4    | CAMI2  | <i>Camelina microcarpa</i> Andr. ex DC.  | littlepod false flax   | Brassicaceae   | a     |
| 47 | 2    | CADR   | <i>Cardaria draba</i> (L.) Desv.   | whitetop   | Brassicaceae   | a     |
| 48 | 3    | CADO2  | <i>Carex douglasii</i> Boott   | Douglas' sedge   | Cyperaceae     |       |

|    |   |        |   |   |                  |   |
|----|---|--------|---|---|------------------|---|
| 49 | 4 | CAHO5  | <i>Carex hoodii</i> Boott   | Hood's sedge  | Cyperaceae       |   |
| 50 | 3 | CALA30 | <i>Carex lanuginosa</i> auct. non Michx.  | >> <i>Carex pellita</i>                                     | Cyperaceae       |   |
| 51 | 3 | CAPA*  | <i>Carex pachystachya</i> Cham. Ex Steud.   | thick-headed sedge  | Cyperaceae       |   |
| 52 | 3 | CARO5  | <i>Carex rossii</i> Boott   | Ross' sedge   | Cyperaceae       |   |
| 53 | 3 | CAUT   | <i>Carex utriculata</i> Boott   | Northwest Territory sedge                                   | Cyperaceae       |   |
| 54 | 4 | CAMI12 | <i>Castilleja miniata</i> Dougl. ex Hook.   | giant red Indian paintbrush                                 | Scrophulariaceae |   |
| 55 | 3 | CEDI3  | <i>Centaurea diffusa</i> Lam.   | diffuse knapweed  | Asteraceae       | a |
| 56 | 3 | CERE6  | <i>Centaurea repens</i> L.  | >> <i>Acroptilon repens</i>                                 | Asteraceae       | a |
| 57 | 4 | CEEX   | <i>Centaureum exaltatum</i> (Griseb.) W. Wight+D91  | desert centauray  | Gentianaceae     |   |
| 58 | 4 | CENU2  | <i>Cerastium nutans</i> Raf.<br><i>Chaenactis douglasii</i> (Hook.) Hook. & Arn.              | nodding chickweed   | Caryophyllaceae  |   |
| 59 | 5 | CHDO   |   | Douglas' dustymaiden  | Asteraceae       |   |
| 60 | 4 | CHAL7  | <i>Chenopodium album</i> L.   | lambsquarters   | Chenopodiaceae   | a |
| 61 | 4 | CHBO2  | <i>Chenopodium botrys</i> L.  | Jerusalem oak goosefoot                                     | Chenopodiaceae   | a |
| 62 | 4 | CHFR3  | <i>Chenopodium fremontii</i> S. Wats.   | Fremont's goosefoot   | Chenopodiaceae   | a |
| 63 | 4 | CHHY   | <i>Chenopodium hybridum</i> auct. non L   | >> <i>Chenopodium simplex</i>                               | Chenopodiaceae   | a |
| 64 | 4 | CHTE2  | <i>Chorispora tenella</i> (Pallas) DC.  | crossflower   | Brassicaceae     | a |
| 65 | 3 | CIAR4  | <i>Cirsium arvense</i> (L.) Scop.   | Canada thistle  | Asteraceae       | a |
| 66 | 4 | CIVU   | <i>Cirsium vulgare</i> (Savi) Ten.  | bull thistle  | Asteraceae       | a |
| 67 | 4 | CIUN   | <i>Cirsium undulatum</i> (Nutt.) Spreng.  | wavyleaf thistle  | Asteraceae       |   |
| 68 | 3 | CLLA2  | <i>Claytonia lanceolata</i> Pall. ex Pursh  | lanceleaf springbeauty                                      | Portulacaceae    |   |
| 69 | 4 | LLI2   | <i>Clematis ligusticifolia</i> Nutt.  | western white clematis                                      | Ranunculaceae    |   |
| 70 | 3 | COPA3  | <i>Collinsia parviflora</i> Lindl.  | maiden blue eyed Mary                                       | Scrophulariaceae |   |
| 71 | 3 | COGR4  | <i>Collomia grandiflora</i> Dougl. ex Lindl.  | grand collomia  | Polemoniaceae    |   |
| 72 | 3 | COLI2  | <i>Collomia linearis</i> Nutt.  | tiny trumpet  | Polemoniaceae    |   |
| 73 | 3 | COUM   | <i>Comandra umbellata</i> (L.) Nutt.  | bastard toadflax  | Santalaceae      |   |
| 74 | 4 | COCA5  | <i>Conyza canadensis</i> (L.) Cronq.  | Canadian horseweed  | Asteraceae       | a |
| 75 | 5 | COMA25 | <i>Corallorhiza maculata</i> (Raf.) Raf.  | summer coralroot  | Orchidaceae      |   |
| 76 | 5 | COST19 | <i>Corallorhiza striata</i> Lindl.  | hooded coralroot  | Orchidaceae      |   |
| 77 | 3 | COST4  | <i>Cornus stolonifera</i> Michx.  | >> <i>Cornus sericea</i> ssp. <i>sericea</i>                | Cornaceae        |   |
| 78 | 3 | CRCO39 | <i>Crataegus columbiana</i> T.J. Howell   | >> <i>Crataegus chrysoarpa</i> var. <i>piperi</i>           | Rosaceae         |   |
| 79 | 4 | CRAT   | <i>Crepis atriobarba</i> Heller   | slender hawksbeard  | Asteraceae       |   |
| 80 | 3 | CRT04  | <i>Cryptantha torreyana</i> (Gray) Greene   | Torrey's cryptantha   | Boraginaceae     |   |
| 81 | 4 | CUAP2  | <i>Cuscuta approximata</i> Bab.   | alfalfa dodder  | Cuscutaceae      | a |
| 82 | 5 | CYAR3  | <i>Cyperus aristatus</i> Rottb.   | >> <i>Cyperus squarrosus</i>                                | Cyperaceae       |   |
| 83 | 4 | CYFR2  | <i>Cystopteris fragilis</i> (L.) Bernh.   | brittle bladderfern   | Dryopteridaceae  |   |
| 84 | 4 | DAGL   | <i>Dactylis glomerata</i> L.  | orchardgrass  | Poaceae          |   |
| 85 | 5 | DEBU*  | <i>Delphinium burkei</i>  | meadow lupine   | Ranunculaceae    |   |
| 86 | 3 | DENU2  | <i>Delphinium nuttallianum</i> Pritz. ex Walp.  | twolobe larkspur  | Ranunculaceae    |   |
| 87 | 4 | DERIV2 | <i>Descurainia richardsonii</i> O.E. Schulz<br><i>Disporum trachycarpum</i> (S. Wats.) Benth. | >> <i>Descurainia incana</i> ssp. <i>viscosa</i>            | Brassicaceae     | a |
| 88 | 3 | DITR2  |   | >> <i>Prosartes trachycarpa</i>                             | Liliaceae        |   |
| 89 | 3 | DOPU   | <i>Dodecatheon pulchellum</i> (Raf.) Merr.  | darkthroat shootingstar                                     | Primulaceae      |   |
| 90 | 4 | ELAN   | <i>Elaeagnus angustifolia</i> L.  | Russian olive   | Elaeagnaceae     | a |
| 91 | 3 | ELPA3  | <i>Eleocharis palustris</i> (L.) Roemer+D123  | common spikerush  | Cyperaceae       |   |
| 92 | 3 | LECI4  | <i>Leymus cinereus</i>  | Great Basin wild rye  | Poaceae          |   |
| 93 | 3 | ELGL   | <i>Elymus glaucus</i> Buckl.  | blue wildrye  | Poaceae          |   |
| 94 | 4 | EPAN2  | <i>Epilobium angustifolium</i> L.   | >> <i>Chamerion angustifolium</i> ssp. <i>angustifolium</i> | Onagraceae       |   |
| 95 | 4 | EPCI   | <i>Epilobium ciliatum</i> Raf.  | fringed willowherb  | Onagraceae       |   |
| 96 | 3 | EPGL   | <i>Epilobium glaberrimum</i> Barbey   | glaucus willowherb  | Onagraceae       |   |
| 97 | 3 | EQAR   | <i>Equisetum arvense</i> L.   | field horsetail   | Equisetaceae     |   |
| 98 | 4 | EQHY   | <i>Equisetum hyemale</i> L.   | scouringrush horsetail                                      | Equisetaceae     |   |

|     |   |        |   |  |                 |   |
|-----|---|--------|---|--|-----------------|---|
| 99  | 4 | EQLA   | <i>Equisetum laevigatum</i> A. Braun  | smooth horsetail   | Equisetaceae    |   |
| 100 | 4 | ERCO4  | <i>Erigeron compositus</i> Pursh  | cutleaf daisy  | Asteraceae      |   |
| 101 | 3 | ERCO5  | <i>Erigeron corymbosus</i> Nutt.  | longleaf fleabane  | Asteraceae      |   |
| 102 | 4 | ERFI2  | <i>Erigeron filifolius</i> (Hook.) Nutt.  | threadleaf fleabane  | Asteraceae      |   |
| 103 | 3 | ERLI   | <i>Erigeron linearis</i> (Hook.) Piper  | desert yellow fleabane                                       | Asteraceae      |   |
| 104 | 3 | ERPU2  | <i>Erigeron pumilus</i> Nutt.   | shaggy fleabane  | Asteraceae      |   |
| 105 | 3 | EREL5  | <i>Eriogonum elatum</i> Dougl. ex Benth.  | tall woolly buckwheat  | Polygonaceae    |   |
| 106 | 3 | ERHE2  | <i>Eriogonum heracleoides</i> Nutt.   | parsnipflower buckwheat                                      | Polygonaceae    |   |
| 107 | 3 | ERNI2  | <i>Eriogonum niveum</i> Dougl. ex Benth.  | snow buckwheat   | Polygonaceae    |   |
| 108 | 5 | ERUM   | <i>Eriogonum umbellatum</i> Torr.   | sulphur-flower buckwheat                                     | Polygonaceae    |   |
| 109 | 3 | ERCIC  | <i>Erodium cicutarium</i> (L.) L'Hér. ssp. <i>cuticularium</i>                      | redstem stork's bill   | Geraniaceae     | a |
| 110 | 4 | EUSE5  | <i>Euphorbia serpyllifolia</i> Pers.  | >> <i>Chamaesyce serpyllifolia</i> ssp. <i>serpyllifolia</i> | Euphorbiaceae   | a |
| 111 | 3 | FEID   | <i>Festuca idahoensis</i> Elmer   | Idaho fescue   | Poaceae         |   |
| 112 | 3 | FEOV2  | <i>Festuca ovina</i> auct. non L.   | >> <i>Festuca brachyphylla</i> ssp. <i>brachyphylla</i>      | Poaceae         |   |
| 113 | 4 | FIAR2  | <i>Filago arvensis</i> L.   | >> <i>Logfia arvensis</i>                                    | Asteraceae      | a |
| 114 | 5 | FRPU2  | <i>Fritillaria pudica</i> (Pursh) Spreng.   | yellow fritillary  | Liliaceae       |   |
| 115 | 4 | GAAR   | <i>Gaillardia aristata</i> Pursh  | common gaillardia  | Asteraceae      |   |
| 116 | 3 | GABO2  | <i>Galium boreale</i> L.  | northern bedstraw  | Rubiaceae       |   |
| 117 | 4 | GADI2  | <i>Gayophytum diffusum</i> Torr. & Gray   | spreading groundsmoke  | Onagraceae      |   |
| 118 | 4 | GEVI2  | <i>Geranium viscosissimum</i> Fisch.  | sticky purple geranium                                       | Geraniaceae     |   |
| 119 | 3 | GEMA4  | <i>Geum macrophyllum</i> Willd.<br><i>Geum triflorum</i> Pursh var. <i>ciliatum</i> | largeleaf avens  | Rosaceae        |   |
| 120 | 3 | GETRC2 | Fassett   | old man's whiskers   | Rosaceae        |   |
| 121 | 4 | GIAG   | <i>Gilia aggregata</i> (Pursh) Spreng.  | >> <i>Ipomopsis aggregata</i> ssp. <i>aggregata</i>          | Polemoniaceae   |   |
| 122 | 3 | GLST   | <i>Glyceria striata</i> (Lam.) A.S. Hitchc.   | fowl mannagrass  | Poaceae         |   |
| 123 | 4 | GNPA   | <i>Gnaphalium palustre</i> Nutt.  | western marsh cudweed  | Asteraceae      |   |
| 124 | 3 | GYPA   | <i>Gypsophila paniculata</i> L.   | baby's breath  | Caryophyllaceae | a |
| 125 | 4 | HAAR3  | <i>Hackelia arida</i> (Piper) I.M. Johnston   | >> <i>Hackelia diffusa</i> var. <i>arida</i>                 | Boraginaceae    |   |
| 126 | 4 | HAWH   | <i>Halimolobos whitedii</i> (Piper) Rollins   | Whited's fissurewort   | Brassicaceae    |   |
| 127 | 4 | HABL3  | <i>Haplopappus bloomeri</i> Gray  | >> <i>Ericameria bloomeri</i>                                | Asteraceae      |   |
| 128 | 5 | HAGR6  | <i>Haplopappus greenei</i> Gray   | >> <i>Ericameria greenei</i>                                 | Asteraceae      |   |
| 129 | 3 | HEUND  | <i>Helianthella uniflora</i> (Nutt.) var. <i>douglasii</i> Weber                    | little sunflower   | Asteraceae      |   |
| 130 | 3 | HECY2  | <i>Heuchera cylindrica</i> Dougl. ex Hook.  | roundleaf alumroot   | Saxifragaceae   |   |
| 131 | 5 | HIODA  | <i>Hierochloe odorata</i> (L.) ssp. <i>arctica</i> Tzvelev                          | >> <i>Hierochloe hirta</i> ssp. <i>arctica</i>               | Poaceae         |   |
| 132 | 4 | HOJU   | <i>Hordeum jubatum</i> L.<br><i>Hydrophyllum capitatum</i> Dougl. ex Benth.         | foxtail barley   | Poaceae         |   |
| 133 | 3 | HYCA4  |   | ballhead waterleaf   | Hydrophyllaceae |   |
| 134 | 4 | IVXA   | <i>Iva xanthifolia</i> Nutt.  | >> <i>Cyclachaena xanthifolia</i>                            | Asteraceae      | a |
| 135 | 3 | JUBA   | <i>Juncus balticus</i> Willd.   | Baltic rush  | Juncaceae       |   |
| 136 | 4 | JUBU   | <i>Juncus bufonius</i> L.   | toad rush  | Juncaceae       |   |
| 137 | 4 | JUTE   | <i>Juncus tenuis</i> Willd.   | poverty rush   | Juncaceae       |   |
| 138 | 4 | KOSC   | <i>Kochia scoparia</i> (L.) Schrad.   | >> <i>Bassia scoparia</i>                                    | Chenopodiaceae  | a |
| 139 | 3 | KOCR   | <i>Koeleria cristata</i> auct. p.p., non Pers.                                      | >> <i>Koeleria macrantha</i>                                 | Poaceae         |   |
| 140 | 3 | LABI   | <i>Lactuca biennis</i> (Moench) Fern.   | tall blue lettuce  | Asteraceae      | a |
| 141 | 4 | LAPU   | <i>Lactuca pulchella</i> (Pursh) DC.  | >> <i>Lactuca tatarica</i> var. <i>pulchella</i>             | Asteraceae      | a |
| 142 | 3 | LASE   | <i>Lactuca serriola</i> L.  | prickly lettuce  | Asteraceae      | a |
| 143 | 3 | LEVIP  | <i>Lepidium virginicum</i> L. var. <i>pubescens</i> Thellung                        | hairy pepperweed   | Brassicaceae    |   |
| 144 | 4 | LEPU   | <i>Leptodactylon pungens</i> (Torr.) Torr. ex Nutt.                                 | >> <i>Linanthus pungens</i>                                  | Polemoniaceae   |   |
| 145 | 5 | LERE7  | <i>Lewisia rediviva</i> Pursh   | bitter root  | Portulacaceae   |   |

|     |   |        |   |   |                  |   |
|-----|---|--------|---|---|------------------|---|
| 146 | 3 | LIDA   | <i>Linaria dalmatica</i> (L.) P. Mill.  | Dalmatian toadflax                                    | Scrophulariaceae | a |
| 147 | 4 | LIBU2  | <i>Lithophragma bulbiferum</i> Rydb.  | >> <i>Lithophragma glabrum</i>                        | Saxifragaceae    |   |
| 148 | 3 | LIGL2  | <i>Lithophragma glabrum</i> Nutt.   | bulbous woodland-star                                 | Saxifragaceae    |   |
| 149 | 3 | LIAR4  | <i>Lithospermum arvense</i> L.  | >> <i>Buglossoides arvensis</i>                       | Boraginaceae     |   |
| 150 | 3 | LIRU4  | <i>Lithospermum ruderales</i> Dougl. ex Lehm.<br><i>Lomatium ambiguum</i> (Nutt.) Coult. & Rose | western stone seed                                    | Boraginaceae     |   |
| 151 | 3 | LOAM   |   | Wyeth biscuitroot                                     | Apiaceae         |   |
| 152 | 3 | LODI   | <i>Lomatium dissectum</i> (Nutt.) Mathias   | fernleaf biscuitroot                                  | Apiaceae         |   |
| 153 | 3 | LOMA3  | <i>Lomatium macrocarpum</i> Coult. & Rose<br><i>Lomatium nudicaule</i> (Pursh) Coult. & Rose    | bigseed biscuitroot                                   | Apiaceae         |   |
| 154 | 4 | LONU2  |   | barestem biscuitroot                                  | Apiaceae         |   |
| 155 | 3 | LOIN5  | <i>Lonicera involucrata</i> (Richards.) Banks   | twinberry honeysuckle                                 | Caprifoliaceae   |   |
| 156 | 4 | LODE   | <i>Lotus denticulatus</i> (E. Drew) Greene  | riverbar bird's-foot trefoil                          | Fabaceae         | a |
| 157 | 3 | LUSE4  | <i>Lupinus sericeus</i> Pursh   | silky lupine  | Fabaceae         |   |
| 158 | 4 | LYAL   | <i>Lychnis alba</i> P. Mill.  | >> <i>Silene latifolia</i> ssp. <i>alba</i>           | Caryophyllaceae  | a |
| 159 | 4 | LYAS   | <i>Lycopus asper</i> Greene   | rough bugleweed                                       | Lamiaceae        |   |
| 160 | 3 | LYSA2  | <i>Lythrum salicaria</i> L.   | purple loosestrife                                    | Lythraceae       | a |
| 161 | 4 | MANE   | <i>Malva neglecta</i> Wallr.  | common mallow   | Malvaceae        | a |
| 162 | 4 | MAMA11 | <i>Matricaria matricarioides</i> (Less.) Porter   | >> <i>Matricaria discoidea</i>                        | Asteraceae       | a |
| 163 | 4 | MELU   | <i>Medicago lupulina</i> L.   | black medick  | Fabaceae         | a |
| 164 | 3 | MESA   | <i>Medicago sativa</i> L.   | alfalfa   | Fabaceae         | a |
| 165 | 3 | MEBU   | <i>Melica bulbosa</i> Geyer ex Porter & Coult.  | oniongrass  | Poaceae          |   |
| 166 | 4 | MEOF   | <i>Melilotus officinalis</i> (L.) Lam.  | yellow sweetclover                                    | Fabaceae         | a |
| 167 | 3 | MEAR4  | <i>Mentha arvensis</i> L.   | wild mint   | Lamiaceae        |   |
| 168 | 4 | MEAL6  | <i>Mentzelia albicaulis</i> D200Dougl. ex Torr. & Gray  | whitestem blazingstar                                 | Loasaceae        |   |
| 169 | 3 | MEDI   | <i>Mentzelia dispersa</i> S. Wats.  | bushy blazingstar                                     | Loasaceae        |   |
| 170 | 4 | MELO4  | <i>Mertensia longiflora</i> Greene  | small bluebells                                       | Boraginaceae     |   |
| 171 | 4 | MINU   | <i>Microseris nutans</i> (Hook.) Schultz-Bip.   | nodding microceris                                    | Asteraceae       |   |
| 172 | 3 | MIGR   | <i>Microsteris gracilis</i> (Hook.) Greene  | slender phlox   | Polemoniaceae    |   |
| 173 | 5 | MOSP   | <i>Monolepis spathulata</i>   | povertyweed   | Chenopodiaceae   |   |
| 174 | 4 | MOPE3  | <i>Montia perfoliata</i> (Donn ex Willd.) T.J. Howell   | >> <i>Claytonia perfoliata</i> ssp. <i>perfoliata</i> | Caryophyllaceae  |   |
| 175 | 4 | MYLA   | <i>Myosotis laxa</i> Lehm.  | bay forget-me-not                                     | Boraginaceae     |   |
| 176 | 3 | NEBR   | <i>Nemophila breviflora</i> Gray  | basin nemophila                                       | Hydrophyllaceae  |   |
| 177 | 4 | NECA2  | <i>Nepeta cataria</i> L.  | catnip  | Lamiaceae        | a |
| 178 | 3 | OSCH   | <i>Osmorhiza chilensis</i> Hook. & Arn.   | >> <i>Osmorhiza berteroi</i>                          | Apiaceae         |   |
| 179 | 4 | PECO6  | <i>Penstemon confertus</i> Dougl. ex Lindl.   | yellow penstemon                                      | Scrophulariaceae |   |
| 180 | 3 | PEPR3  | <i>Penstemon pruinosis</i> Dougl. ex Lindl.   | Chelan beardtongue                                    | Scrophulariaceae |   |
| 181 | 4 | PHHA   | <i>Phacelia hastata</i> Dougl. ex Lehm.   | silverleaf phacelia                                   | Hydrophyllaceae  |   |
| 182 | 3 | PHLI   | <i>Phacelia linearis</i> (Pursh) Holz.  | threadleaf phacelia                                   | Hydrophyllaceae  |   |
| 183 | 3 | PHAR3  | <i>Phalaris arundinacea</i> L.  | reed canarygrass                                      | Poaceae          | a |
| 184 | 3 | PIPO   | <i>Pinus ponderosa</i> P.& C. Lawson  | ponderosa pine  | Pinaceae         |   |
| 185 | 4 | PLMA2  | <i>Plantago major</i> L.  | common plantain                                       | Plantaginaceae   | a |
| 186 | 3 | POAN   | <i>Poa annua</i> L.   | annual bluegrass                                      | Poaceae          | a |
| 187 | 3 | POBU   | <i>Poa bulbosa</i> L.   | bulbous bluegrass                                     | Poaceae          | a |
| 188 | 3 | POPR   | <i>Poa pratensis</i> L.   | Kentucky bluegrass                                    | Poaceae          | a |
| 189 | 4 | POAV   | <i>Polygonum aviculare</i> L.   | prostrate knotweed                                    | Polygonaceae     |   |
| 190 | 4 | POCO10 | <i>Polygonum convolvulus</i> L.   | black bindweed  | Polygonaceae     | a |
| 191 | 3 | POMA9  | <i>Polygonum majus</i> (Meisn.) Piper   | >> <i>Polygonum douglasii</i> ssp. <i>majus</i>       | Polygonaceae     |   |
| 192 | 5 | POPE3  | <i>Polygonum persicaria</i> L.  | spotted ladysthumb                                    | Polygonaceae     |   |
| 193 | 4 | POMO5  | <i>Polypogon monspeliensis</i> (L.) Desf.   | annual rabbitsfoot grass                              | Poaceae          | a |
| 194 | 3 | POTR5  | <i>Populus tremuloides</i> Michx.   | quaking aspen   | Salicaceae       |   |
| 195 | 4 | POTAM  | <i>Potamogeton</i> L.   | pondweed  | Potamogetonaceae |   |



|     |   |       |   |   |                 |   |
|-----|---|-------|---|---|-----------------|---|
| 196 | 3 | POAN5 | Potentilla anserina L.                              | >>Argentina anserina                      | Rosaceae        |   |
| 197 | 3 | POGL9 | Potentilla glandulosa Lindl.                        | sticky cinquefoil                         | Rosaceae        |   |
| 198 | 3 | POGR9 | Potentilla gracilis Dougl. ex Hook.                 | slender cinquefoil                        | Rosaceae        |   |
| 199 | 3 | PRV1  | Prunus virginiana L.                                | chokecherry                               | Rosaceae        |   |
| 200 | 4 | PSME  | Pseudotsuga menziesii (Mirbel) Franco               | Douglas-fir                               | Pinaceae        |   |
| 201 | 3 | PUTR2 | Purshia tridentata (Pursh) DC.                      | antelope bitterbrush                      | Rosaceae        |   |
| 202 | 4 | RAFL2 | Ranunculus flammula L.                              | greater creeping spearwort                | Ranunculaceae   |   |
| 203 | 3 | RAGL  | Ranunculus glaberrimus Hook.                        | sagebrush buttercup                       | Ranunculaceae   |   |
| 204 | 3 | RASCM | Ranunculus sceleratus L. var. multifidus Nutt.      | cursed buttercup                          | Ranunculaceae   |   |
| 205 | 4 | RHRAR | Rhus radicans L. var. rydbergii D237Rehd.           | >>Toxicodendron rydbergii                 | Anacardiaceae   |   |
| 206 | 4 | RICE  | Ribes cereum Dougl.                                 | wax currant                               | Grossulariaceae |   |
| 207 | 4 | RIHU  | Ribes hudsonianum Richards.                         | stinking current                          | Grossulariaceae |   |
| 208 | 4 | RILA  | Ribes lacustre (Pers.) Poir.                        | prickly currant                           | Grossulariaceae |   |
| 209 | 3 | RONU  | Rosa nutkana K. Presl                               | Nootka rose                               | Asteraceae      |   |
| 210 | 3 | ROWO  | Rosa woodsii Lindl.                                 | Woods' rose                               | Rosaceae        |   |
| 211 | 4 | RUID  | Rubus idaeus L.                                     | American red raspberry                    | Rosaceae        |   |
| 212 | 4 | RUCR  | Rumex crispus L.                                    | curly dock                                | Polygonaceae    | a |
| 213 | 4 | RUMA4 | Rumex maritimus L.                                  | golden dock                               | Polygonaceae    | a |
| 214 | 3 | SABE2 | Salix bebbiana Sarg.                                | Bebb willow                               | Salicaceae      |   |
| 215 | 4 | SAEX  | Salix exigua Nutt.                                  | narrowleaf willow                         | Salicaceae      |   |
| 216 | 5 | SALA* | Salix lasiandra Benth.                              | whiplash willow                           | Salicaceae      |   |
| 217 | 4 | SARI* | Salix rigida Muhl.                                  | >>Salix prolixa                           | Salicaceae      |   |
| 218 | 4 | SASC  | Salix scouleriana Barratt ex Hook.                  | Scouler's willow                          | Salicaceae      |   |
| 219 | 4 | SAKA  | Salsola kali L.                                     | Russian thistle                           | Chenopodiaceae  | a |
| 220 | 4 | SACE3 | Sambucus cerulea Raf.                               | >>Sambucus nigra ssp. caerulea            | Caprifoliaceae  |   |
| 221 | 3 | SCAM2 | Scirpus americanus Pers.                            | >>Schoenoplectus americanus               | Equisetaceae    |   |
| 222 | 4 | SCGA  | Scutellaria galericulata L.                         | marsh skullcap                            | Lamiaceae       |   |
| 223 | 4 | SELA  | Sedum lanceolatum Torr.                             | spearleaf stonecrop                       | Crassulaceae    |   |
| 224 | 4 | SEDE2 | Selaginella densa Rydb.                             | lesser spikemoss                          | Selaginellaceae |   |
| 225 | 4 | SEIN  | Senecio indecorus Greene                            | >>Packera indecora                        | Asteraceae      |   |
| 226 | 3 | SEIN2 | Senecio integerrimus Nutt.                          | lambstongue ragwort                       | Asteraceae      |   |
| 227 | 4 | SELU4 | Setaria lutescens (Weigel) F.T. Hubbard             | >>Setaria pumila ssp. pumila              | Poaceae         | a |
| 228 | 4 | SHCA  | Shepherdia canadensis (L.) Nutt.                    | russet buffaloberry                       | Elaeagnaceae    |   |
| 229 | 4 | SIDO  | Silene douglasii Hook.                              | Douglas' silene                           | Caryophyllaceae |   |
| 230 | 3 | SIMEM | Silene menziesii Hook. ssp. menziesii               | Menzies' campion                          | Caryophyllaceae |   |
| 231 | 3 | SIAL2 | Sisymbrium altissimum L.                            | tall tumbled mustard                      | Brassicaceae    | a |
| 232 | 5 | SMRAA | Smilacina racemosa (L.) var. amplexicaulis S. Wats. | >>Maianthemum racemosum ssp. amplexicaule | Liliaceae       |   |
| 233 | 3 | SMST  | Smilacina stellata (L.) Desf.                       | >>Maianthemum stellatum                   | Liliaceae       |   |
| 234 | 4 | SODU  | Solanum dulcamara L.                                | climbing nightshade                       | Solanaceae      | a |
| 235 | 3 | SOCA6 | Solidago canadensis L.                              | Canada goldenrod                          | Asteraceae      |   |
| 236 | 4 | SPAN2 | Sparganium angustifolium Michx.                     | narrowleaf bur-reed                       | Sparganiaceae   |   |
| 237 | 3 | SPBE2 | Spiraea betulifolia Pallas                          | shinyleaf spirea                          | Rosaceae        |   |
| 238 | 4 | STTE2 | Stephanomeria tenuifolia (Raf.) Hall                | >>Stephanomeria minor var. minor          | Asteraceae      |   |
| 239 | 3 | STCO4 | Stipa comata Trin. & Rupr.                          | >>Hesperostipa comata ssp. comata         | Poaceae         |   |
| 240 | 3 | STOC2 | Stipa occidentalis Thurb. Ex s. Wats.               | >>Achnatherum occidentale                 | Poaceae         |   |
| 241 | 3 | SYAL  | Symphoricarpos albus (L.) Blake                     | common snowberry                          | Caprifoliaceae  |   |
| 242 | 3 | SYOR2 | Symphoricarpos oreophilus Gray                      | mountain snowberry                        | Caprifoliaceae  |   |
| 243 | 3 | TAOF  | Taraxacum officinale G.H. Weber D273                | dandelion                                 | Asteraceae      | a |
| 244 | 4 | TRDU  | Tragopogon dubius Scop.                             | yellow salsify                            | Asteraceae      | a |
| 245 | 4 | TRRE3 | Trifolium repens L.                                 | white clover                              | Fabaceae        | a |
| 246 | 3 | TYLA  | Typha latifolia L.                                  | broadleaf cattail                         | Typhaceae       |   |

|     |   |       |   |   |                  |   |
|-----|---|-------|---|---|------------------|---|
| 247 | 3 | ULPU  | <i>Ulmus pumila</i> L.  | Siberian elm                                    | Ulmaceae         | a |
| 248 | 3 | URDI  | <i>Urtica dioica</i> L.   | nettle  | Urticaceae       |   |
| 249 | 5 | UTMI  | <i>Utricularia minor</i> L.   | lesser bladderwort                              | Lentibulariaceae |   |
| 250 | 3 | UTVU  | <i>Utricularia vulgaris</i> L. p.p.   | >> <i>Utricularia macrorhiza</i>                | Lentibulariaceae |   |
| 251 | 3 | VETH  | <i>Verbascum thapsus</i> L.   | common mullein                                  | Scrophulariaceae | a |
| 252 | 3 | VEAM2 | <i>Veronica americana</i> Schwein. ex Benth.  | American speedwell                              | Scrophulariaceae |   |
| 253 | 3 | VEBI2 | <i>Veronica biloba</i> L.   | twolobe speedwell                               | Scrophulariaceae | a |
| 254 | 4 | VEPE2 | <i>Veronica peregrina</i> L.  | neckweed  | Scrophulariaceae |   |
| 255 | 3 | VIAD  | <i>Viola adunca</i> Sm.   | hookedspur violet                               | Violaceae        |   |
| 256 | 3 | VIGL  | <i>Viola glabella</i> Nutt.<br><i>Viola nuttallii</i> Pursh var. <i>vallicola</i> St. | pioneer violet                                  | Violaceae        |   |
| 257 | 3 | VINUV | John  | >> <i>Viola vallicola</i> var. <i>vallicola</i> | Violaceae        |   |
| 258 | 3 | VIPA4 | <i>Viola palustris</i> L.   | marsh violet                                    | Violaceae        |   |
| 259 | 5 | VIVI5 | <i>Vitis vinifera</i> L.  | wine grape                                      | Vitaceae         | a |
| 260 | 3 | ZIVE  | <i>Zigadenus venenosus</i> S. Wats.   | meadow deathcamas                               | Liliaceae        |   |

## Ecological Condition of Pearrygin Lake State Park

Most of the plant communities in the park fall into one of two distinctly different ecological condition rankings. Some areas of the park are in surprisingly good condition given the history of grazing and farming in the area, while other portions of the park are considerably altered from their natural condition due to their land use history. Appendix C contains information about the ecological condition rankings we used in this project.

Fully half the park is contained in the 32 polygons in either *Purshia tridentata/Pseudoroegneria spicata* or *Populus tremuloides/Symphoricarpos albus* plant associations. In both of these, there is a very low percentage of non-native species, typically well below 5% cover. In the shrub-steppe the ratio of woody shrub to herbaceous growth is low, as would be expected in shrub-steppe communities that have a high fire periodicity. In the aspen communities, there is relatively little evidence of negative grazing impact, and a diverse understory of shrubs and herbaceous perennials is in place. There are few roads traversing these plant communities, and little evidence of current human use or disturbance.

On the other hand, the potentially most diverse plant communities in the park—those having access to additional moisture beyond what falls as precipitation—are heavily impacted by the past utilization of the area for farming, cattle grazing and park facilities. Wetlands, mesic meadows and riparian areas around the lake typically have a non-native plant population of 20-50% of the total cover, with many of the alien species being persistent perennials. Low gradient slopes in the park were often plowed and planted into alfalfa and other crops in the early 1900s. While most of these fields have been abandoned, they contain a high proportion of non-native species that are specifically adapted to disturbed soil. In many of the former agricultural fields there is a trend towards the reappearance of native vegetation, while in some wetland areas non-native, rhizomatous perennials continue to dominate despite the cessation of grazing.

The vernal wetlands and moist swales in the uplands above the lake contain unique plant associations, rare plants and other plants that are uncommon in the Methow Valley. Despite the presence of some non-native plants, these wetlands and moist swales have considerable ecological importance and warrant continued protection from human-induced disturbances. Carefully planned and implemented restoration projects might further enhance the ecological value of these areas.

As the tables (Tables 3 and 4) on the follow pages illustrate, 66 non-native plant species were encountered during the plant surveys, which is 25% of the total number of vascular plant species in the park. The average abundance rating for the 66 species is 3.5, which indicates an overall cover for non-natives of 10-15% of the landscape. 12 of the alien species are listed as noxious by the state and/or county weed boards. Non-native plants are considered undesirable because they are typically early-seral species that displace late-seral native plant species and reduce the diversity and complexity of the plant community. This in turn can reduce the diversity of the fauna of the area.

Because Pearrygin Lake State Park has a high diversity of habitats, and because some of these are still in good ecological condition, there is still a healthy diversity of wildlife in the park. Nesting songbirds, woodpeckers and raptors were all observed in the park during the surveys, including a nesting pair of bald eagles with at least one large juvenile in the nest. This is only the second

successful bald eagle nest in the entire Methow watershed in recent history known to area biologists. Osprey, until recently rare in the watershed, are also now common at Pearrygin Lake.

In spite of some degradation of natural habitat over the past century, Pearrygin Lake State Park still contains a biologically diverse and ecologically healthy flora and fauna. Some parts of the park represent some of the best ecological conditions found today in the Methow.

**Table 3. Non-native Plant Species of Pearrygin Lake State Park (in alphabetical order by scientific name)**

See Appendix B for the implications of the noxious “class” rating.

| #  | Abun | Noxious? | Code   | Scientific Name  | Common Name/Accepted Synonym |
|----|------|----------|--------|--|------------------------------|
| 1  | 3    |          | AGCR   | <i>Agropyron cristatum</i> (L.) Gaertn.                      | crested wheatgrass           |
| 2  | 3    |          | AGRE2  | <i>Agropyron repens</i> (L.) Beauv.                          | quackgrass                   |
| 3  | 4    |          | AGALP  | <i>Agrostis alba</i> L. var. <i>palustris</i> (Huds.) Pers.  | redtop                       |
| 4  | 5    |          | AMPO2  | <i>Amaranthus powellii</i> S. Wats.                          | Powell's amaranth            |
| 5  | 5    |          | AMPS   | <i>Ambrosia psilostachya</i> DC.                             | Cuman ragweed                |
| 6  | 3    |          | ARMI2  | <i>Arctium minus</i> Bernh.                                  | lesser burdock               |
| 7  | 4    |          | ARDR4  | <i>Artemisia dracunculus</i> L.                              | tarragon                     |
| 8  | 4    |          | ASOFO2 | <i>Asparagus officinalis</i> L. ssp. <i>officinalis</i> L.   | asparagus                    |
| 9  | 4    |          | ASPR   | <i>Asperugo procumbens</i> L.                                | German-madwort               |
| 10 | 4    |          | BRBR7  | <i>Bromus brizaeformis</i> Fischer & C. Meyer                | rattlesnake grass            |
| 11 | 3    |          | BRIN2  | <i>Bromus inermis</i> Leyss.                                 | smooth brome                 |
| 12 | 3    |          | BRTE   | <i>Bromus tectorum</i> L.                                    | cheatgrass                   |
| 13 | 4    |          | CAMI2  | <i>Camelina microcarpa</i> Andrzej. ex DC.                   | littlepod false flax         |
| 14 | 2    | Class B  | CADR   | <i>Cardaria draba</i> (L.) Desv.                             | whitetop                     |
| 15 | 3    | Class B  | CEDI3  | <i>Centaurea diffusa</i> Lam.                                | diffuse knapweed             |
| 16 | 3    | Class B  | CERE6  | <i>Centaurea repens</i> L.                                   | Russian knapweed             |
| 17 | 4    |          | CHAL7  | <i>Chenopodium album</i> L.                                  | lambsquarters                |
| 18 | 4    |          | CHBO2  | <i>Chenopodium botrys</i> L.                                 | Jerusalem oak goosefoot      |
| 19 | 4    |          | CHFR3  | <i>Chenopodium fremontii</i> S. Wats.                        | Fremont's goosefoot          |
| 20 | 4    |          | CHHY   | <i>Chenopodium hybridum</i> auct. non L.                     | maple-leaved goosefoot       |
| 21 | 4    |          | CHTE2  | <i>Chorispora tenella</i> (Pallas) DC.                       | purple crossflower           |
| 22 | 3    | Class B  | CIAR4  | <i>Cirsium arvense</i> (L.) Scop.                            | Canada thistle               |
| 23 | 4    | Class C  | CIVU   | <i>Cirsium vulgare</i> (Savi) Ten.                           | bull thistle                 |
| 24 | 4    |          | COCA5  | <i>Conyza canadensis</i> (L.) Cronq.                         | Canadian horseweed           |
| 25 | 4    |          | CUAP2  | <i>Cuscuta approximata</i> Bab.                              | alfalfa dodder               |
| 26 | 4    |          | DERIV2 | <i>Descurainia richardsonii</i> O.E. Schulz                  | mountain tansymustard        |
| 27 | 4    |          | ELAN   | <i>Elaeagnus angustifolia</i> L.                             | Russian olive                |
| 28 | 3    |          | ERCIC  | <i>Erodium cicutarium</i> (L.) L'Hér. ssp. <i>cuticarium</i> | redstem stork's bill         |
| 29 | 4    |          | EUSE5  | <i>Euphorbia serpyllifolia</i> Pers.                         | tyme-leaved spurge           |
| 30 | 4    |          | FIAR2  | <i>Filago arvensis</i> L.                                    | field filago                 |
| 31 | 3    | Class C  | GYPA   | <i>Gypsophila paniculata</i> L.                              | baby's breath                |
| 32 | 4    |          | IVXA   | <i>Iva xanthifolia</i> Nutt.                                 | tall marsh-elder             |
| 33 | 4    | Class C  | KOSC   | <i>Kochia scoparia</i> (L.) Schrad.                          | red belvedere                |
| 34 | 3    |          | LABI   | <i>Lactuca biennis</i> (Moench) Fern.                        | tall blue lettuce            |
| 35 | 4    |          | LAPU   | <i>Lactuca pulchella</i> (Pursh) DC.                         | blue lettuce                 |
| 36 | 3    |          | LASE   | <i>Lactuca serriola</i> L.                                   | prickly lettuce              |
| 37 | 3    | Class B  | LIDA   | <i>Linaria dalmatica</i> (L.) P. Mill.                       | Dalmatian toadflax           |
| 38 | 4    |          | LODE   | <i>Lotus denticulatus</i> (E. Drew) Greene                   | riverbar bird's-foot trefoil |
| 39 | 4    |          | LYAL   | <i>Lychnis alba</i> P. Mill.                                 | white catchfly               |
| 40 | 3    | Class B  | LYSA2  | <i>Lythrum salicaria</i> L.                                  | purple loosestrife           |
| 41 | 4    |          | MANE   | <i>Malva neglecta</i> Wallr.                                 | common mallow                |
| 42 | 4    |          | MAMA11 | <i>Matricaria matricarioides</i> (Less.) Porter              | pineappleweed                |
| 43 | 4    |          | MELU   | <i>Medicago lupulina</i> L.                                  | black medick                 |
| 44 | 3    |          | MESA   | <i>Medicago sativa</i> L.                                    | alfalfa                      |

|    |   |         |        |   |                          |
|----|---|---------|--------|---|--------------------------|
| 45 | 4 |         | MEOF   | Melilotus officinalis (L.) Lam.         | yellow sweetclover       |
| 46 | 4 |         | NECA2  | Nepeta cataria L.                       | catnip                   |
| 47 | 3 | Class C | PHAR3  | Phalaris arundinacea L.                 | reed canarygrass         |
| 48 | 4 |         | PLMA2  | Plantago major L.                       | common plantain          |
| 49 | 3 |         | POAN   | Poa annua L.                            | annual bluegrass         |
| 50 | 3 |         | POBU   | Poa bulbosa L.                          | bulbous bluegrass        |
| 51 | 3 |         | POPR   | Poa pratensis L.                        | Kentucky bluegrass       |
| 52 | 4 |         | POCO10 | Polygonum convolvulus L.                | black bindweed           |
| 53 | 4 |         | POMO5  | Polypogon monspeliensis (L.) Desf.      | annual rabbitsfoot grass |
| 54 | 4 |         | RUCR   | Rumex crispus L.                        | curly dock               |
| 55 | 4 |         | RUMA4  | Rumex maritimus L.                      | golden dock              |
| 56 | 4 | Class C | SAKA   | Salsola kali L.                         | Russian thistle          |
| 57 | 4 |         | SELU4  | Setaria lutescens (Weigel) F.T. Hubbard | yellow bristlegrass      |
| 58 | 3 |         | SIAL2  | Sisymbrium altissimum L.                | tall tumbledustard       |
| 59 | 4 |         | SODU   | Solanum dulcamara L.                    | climbing nightshade      |
| 60 | 3 |         | TAOF   | Taraxacum officinale G.H. Weber         | dandelion                |
| 61 | 4 |         | TRDU   | Tragopogon dubius Scop.                 | yellow salsify           |
| 62 | 4 |         | TRRE3  | Trifolium repens L.                     | white clover             |
| 63 | 3 |         | ULPU   | Ulmus pumila L.                         | Siberian elm             |
| 64 | 3 | Class C | VETH   | Verbascum thapsus L.                    | common mullein           |
| 65 | 3 |         | VEBI2  | Veronica biloba L.                      | two-lobed speedwell      |
| 66 | 5 |         | VIVI5  | Vitis vinifera L.                       | wine grape               |

**Table 4. Non-native Plant Species of Pearrygin Lake State Park, (arranged by abundance, with state and local county ratings)**

Abundance ratings: 1= abundant in multiple habitats, 2= common in multiple habitats, 3= common in specific habitats, 4= uncommon in specific habitats (6-20 populations), 5= rare in specific habitats (1-5 populations)

| #  | Abun | Noxious? | Code  | Scientific Name                                | Common Name/Accepted Synonym |
|----|------|----------|-------|--|------------------------------|
| 1  | 2    | Class B  | CADR  | Cardaria draba (L.) Desv.                      | whitetop                     |
| 2  | 3    |          | AGCR  | Agropyron cristatum (L.) Gaertn.               | crested wheatgrass           |
| 3  | 3    |          | AGRE2 | Agropyron repens (L.) Beauv.                   | quackgrass                   |
| 4  | 3    |          | ARM12 | Arctium minus Bernh.                           | lesser burdock               |
| 5  | 3    |          | BRIN2 | Bromus inermis Leyss.                          | smooth brome                 |
| 6  | 3    |          | BRTE  | Bromus tectorum L.                             | cheatgrass                   |
| 7  | 3    | Class B  | CEDI3 | Centaurea diffusa Lam.                         | diffuse knapweed             |
| 8  | 3    | Class B  | CERE6 | Centaurea repens L.                            | Russian knapweed             |
| 9  | 3    | Class B  | CIAR4 | Cirsium arvense (L.) Scop.                     | Canada thistle               |
| 10 | 3    |          | ERCIC | Erodium cicutarium (L.) L'Hér. ssp. cicutarium | redstem stork's bill         |
| 11 | 3    | Class C  | GYPA  | Gypsophila paniculata L.                       | baby's breath                |
| 12 | 3    |          | LABI  | Lactuca biennis (Moench) Fern.                 | tall blue lettuce            |
| 13 | 3    |          | LASE  | Lactuca serriola L.                            | prickly lettuce              |
| 14 | 3    | Class B  | LYSA2 | Lythrum salicaria L.                           | purple loosestrife           |
| 15 | 3    |          | MESA  | Medicago sativa L.                             | alfalfa                      |
| 16 | 3    | Class C  | PHAR3 | Phalaris arundinacea L.                        | reed canarygrass             |
| 17 | 3    |          | POAN  | Poa annua L.                                   | annual bluegrass             |
| 18 | 3    |          | POBU  | Poa bulbosa L.                                 | bulbous bluegrass            |
| 19 | 3    |          | POPR  | Poa pratensis L.                               | Kentucky bluegrass           |
| 20 | 3    |          | SIAL2 | Sisymbrium altissimum L.                       | tall tumbledustard           |
| 21 | 3    |          | TAOF  | Taraxacum officinale G.H. Weber                | dandelion                    |
| 22 | 3    |          | ULPU  | Ulmus pumila L.                                | Siberian elm                 |
| 23 | 3    | Class C  | VETH  | Verbascum thapsus L.                           | common mullein               |
| 24 | 3    |          | VEBI2 | Veronica biloba L.                             | two-lobed speedwell          |
| 25 | 4    |          | AGALP | Agrostis alba L. var. palustris (Huds.) Pers.  | redtop                       |

|    |   |         |        |  |                              |
|----|---|---------|--------|--|------------------------------|
| 26 | 4 |         | ARDR4  | <i>Artemisia dracunculus</i> L.                            | tarragon                     |
| 27 | 4 |         | ASOFO2 | <i>Asparagus officinalis</i> L. ssp. <i>officinalis</i> L. | asparagus                    |
| 28 | 4 |         | ASPR   | <i>Asperugo procumbens</i> L.                              | German-madwort               |
| 29 | 4 |         | BRBR7  | <i>Bromus brizaeformis</i> Fischer & C. Meyer              | rattlesnake grass            |
| 30 | 4 |         | CAMI2  | <i>Camelina microcarpa</i> Andrzej. ex DC.                 | littlepod false flax         |
| 31 | 4 |         | CHAL7  | <i>Chenopodium album</i> L.                                | lambsquarters                |
| 32 | 4 |         | CHBO2  | <i>Chenopodium botrys</i> L.                               | Jerusalem oak goosefoot      |
| 33 | 4 |         | CHFR3  | <i>Chenopodium fremontii</i> S. Wats.                      | Fremont's goosefoot          |
| 34 | 4 |         | CHHY   | <i>Chenopodium hybridum</i> auct. non L.                   | maple-leaved goosefoot       |
| 35 | 4 |         | CHTE2  | <i>Chorispura tenella</i> (Pallas) DC.                     | purple crossflower           |
| 36 | 4 | Class C | CIVU   | <i>Cirsium vulgare</i> (Savi) Ten.                         | bull thistle                 |
| 37 | 4 |         | COCA5  | <i>Conyza canadensis</i> (L.) Cronq.                       | Canadian horseweed           |
| 38 | 4 |         | CUAP2  | <i>Cuscuta approximata</i> Bab.                            | alfalfa dodder               |
| 39 | 4 |         | DERIV2 | <i>Descurainia richardsonii</i> O.E. Schulz                | mountain tansymustard        |
| 40 | 4 |         | ELAN   | <i>Elaeagnus angustifolia</i> L.                           | Russian olive                |
| 41 | 4 |         | EUSE5  | <i>Euphorbia serpyllifolia</i> Pers.                       | tyme-leaved spurge           |
| 42 | 4 |         | FIAR2  | <i>Filago arvensis</i> L.                                  | field filago                 |
| 43 | 4 |         | IVXA   | <i>Iva xanthifolia</i> Nutt.                               | tall marsh-elder             |
| 44 | 4 | Class C | KOSC   | <i>Kochia scoparia</i> (L.) Schrad.                        | red belvedere                |
| 45 | 4 |         | LAPU   | <i>Lactuca pulchella</i> (Pursh) DC.                       | blue lettuce                 |
| 46 | 4 | Class B | LIDA   | <i>Linaria dalmatica</i> (L.) P. Mill.                     | Dalmatian toadflax           |
| 47 | 4 |         | LODE   | <i>Lotus denticulatus</i> (E. Drew) Greene                 | riverbar bird's-foot trefoil |
| 48 | 4 |         | LYAL   | <i>Lychnis alba</i> P. Mill.                               | white catchfly               |
| 49 | 4 |         | MANE   | <i>Malva neglecta</i> Wallr.                               | common mallow                |
| 50 | 4 |         | MAMA11 | <i>Matricaria matricarioides</i> (Less.) Porter            | pineappleweed                |
| 51 | 4 |         | MELU   | <i>Medicago lupulina</i> L.                                | black medick                 |
| 52 | 4 |         | MEOF   | <i>Melilotus officinalis</i> (L.) Lam.                     | yellow sweetclover           |
| 53 | 4 |         | NECA2  | <i>Nepeta cataria</i> L.                                   | catnip                       |
| 54 | 4 |         | PLMA2  | <i>Plantago major</i> L.                                   | common plantain              |
| 55 | 4 |         | POCO10 | <i>Polygonum convolvulus</i> L.                            | black bindweed               |
| 56 | 4 |         | POMO5  | <i>Polypogon monspeliensis</i> (L.) Desf.                  | annual rabbitsfoot grass     |
| 57 | 4 |         | RUCR   | <i>Rumex crispus</i> L.                                    | curly dock                   |
| 58 | 4 |         | RUMA4  | <i>Rumex maritimus</i> L.                                  | golden dock                  |
| 59 | 4 | Class C | SAKA   | <i>Salsola kali</i> L.                                     | Russian thistle              |
| 60 | 4 |         | SELU4  | <i>Setaria lutescens</i> (Weigel) F.T. Hubbard             | yellow bristlegrass          |
| 61 | 4 |         | SODU   | <i>Solanum dulcamara</i> L.                                | climbing nightshade          |
| 62 | 4 |         | TRDU   | <i>Tragopogon dubius</i> Scop.                             | yellow salsify               |
| 63 | 4 |         | TRRE3  | <i>Trifolium repens</i> L.                                 | white clover                 |
| 64 | 5 |         | AMPS   | <i>Ambrosia psilostachya</i> DC.                           | Cuman ragweed                |
| 65 | 5 |         | AMPO2  | <i>Amaranthus powellii</i> S. Wats.                        | Powell's amaranth            |
| 66 | 5 |         | VIVI5  | <i>Vitis vinifera</i> L.                                   | wine grape                   |

## GIS Products Produced

Associated with this report is a polygon layer created by PBI depicting the vegetation community types mapped in Pearrygin Lake State Park. The dataset has been converted into ESRI shapefile format and provided to the Washington State Parks and Recreation Commission. Shapefiles depicting rare plant locations have been provided as well. The spatial datasets are complete with metadata meeting FGDC standards. Refer to the associated metadata for descriptions and attribute definitions for each spatial dataset.

## References

Crawford, R., 1999. *Key to Alliances with Sagebrush Species in Washington State*.

Hitchcock, C.L., Cronquist, A. 1973. *Flora of the Pacific Northwest: An Illustrated Manual* University of Washington Press, Seattle.

Hitchcock, C.L., Cronquist, A., Ownbey, M., Thompson, J.W., 1955. *Vascular Plants of the Pacific Northwest* University of Washington Press, Seattle.

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.

Kovalchik, B.L, Clausnitzer, R.R. 2004. *Classification and Management of Aquatic, Riparian, and Wetland Sites on the National Forests of Eastern Washington* USDA Forest Service GTR-593.

Lillybridge, T.R, Kovalchik, B.L., Williams, C.K., Smith, B.G. 1995. *Field Guide for Forested Plant Associations of the Wenatchee National Forest* USDA Forest Service GTR-359.

Visalli, J.D., Smith, H.M. IV, P.H. Morrison, 2006. *Rare plant and vegetation survey of a portion of the Methow Wildlife Area adjacent to Pearrygin Lake State Park*. Pacific Biodiversity Institute, Winthrop, Washington.

WANHP [Washington Natural Heritage Program]. No date. Unpublished data files. Washington Natural Heritage Program, Department of Natural Resources, Olympia, WA.

Western Ecology Working Group of NatureServe. No date. *International Ecological Classification Standard: International Vegetation Classification -Terrestrial Vegetation*. NatureServe, Boulder, CO.

# Appendix A – Rare Plant Sighting Forms

## Washington Natural Heritage Program Rare Plant Sighting Form:

Taxon Name: *Monolepis spatulata*

EO #:

Are you confident of the identification? Yes No Explain: Verified by Peter Zika

Survey Site Name: Pearrygin Lake State Park

Surveyor's Name/Phone/Email: Dana Visalli, (509) 997-9011

Survey Date: June 28, 2006

County: Okanogan

Quad Name: Winthrop

Township: 35N Range: 22E Section(s): 31 NW 1/4 of NW 1/4:

Directions to site:

Take the Pearrygin Lake road off of the East Chewuch Road to the east entrance to Pearrygin Lake State Park; turn right into this entrance. Drive ¼ mile on entrance road to a pond (in wet years)/wetland depression on the left (north) side of the road; there is a grove of aspens at the north end of the wetland. Park and walk across or around the wetland to the southern tip of the aspen grove; from there hike 200 yards northeast (75 degrees) to a glacial erratic (boulder) at the edge of a very shallow swale. The *Monolepis* is above and below the boulder. In season, *Delphinium burkei* is a good marker, the only place we saw this species in the park was at this same spot.

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.

Please answer the following:

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

Coordinates are in electronic file on diskette (preferred) or Coordinates written below or attached.

Description of what coordinates represent:

GPS accuracy: Uncorrected Corrected to <5m

GPS datum: NAD 27 Zone 10

GPS coordinates: XXXXXXXXXX

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:

On the same map, use a highlighter to identify the outer boundary of the area where the population could be, given the uncertainties about your exact location.

3. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, swale..

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

Yes No Unknown If no or unknown, explain:

Is a revisit needed? No Yes - if yes, why?:



Ownership (if known): Washington State Parks Department

Population Size (# of individuals or ramets) or estimate: Approximately 1000 plants

Population (EO) Data (include population vigor, microhabitat, phenology, etc.): Population is vigorous, if one can use such an adverb with plants that only grow 2" tall. The microhabitat is critical; it is a very shallow swale that does accrue additional moisture in the spring from runoff from the hill above beyond just precipitation (which totals about 16" yearly at the site, mostly as snow). The water seeps through the site, which means it also evaporates and probably creates somewhat alkaline soil (*Lymus cinereus* grows adjacent, an indicator of alkaline soil).

Plant Association: *Elymus cinereus* (PBI)

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

Lichen/moss layer: None

Herb layer: DEBU 5%, BRBR7 5%, ELCI2 15% BRTE 5% LUSE4 5%

Shrub layer(s): None

Tree layer: None

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): The site is in a shallow swale on the side of a xeric PUTR/AGSP hillside. The entire hillside has experienced considerable disturbance in the past through grazing as it was part of a ranch.

Minimum elevation (ft.): 2150 Maximum elevation (ft.): 2180

Size (acres): ¼ acre Aspect: 200 degrees SW Slope: 10%

Photo taken? Yes No

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): There is currently almost no human disturbance at this site.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site): This population of *Monolepis spatulata* is the first found in Washington State; previously it was only known as far north as central Oregon. It will almost certainly be listed as an endangered, threatened or sensitive plant in the state. No additional protection of the site is needed, but no development should be allowed on the hill where the species is located.

Please mail completed form with map:

WASHINGTON NATURAL HERITAGE PROGRAM  
DEPARTMENT OF NATURAL RESOURCES  
PO BOX 47014, OLYMPIA WA 98504-7014

Site of *Monolepis spatulata* at Pearrygin Lake State Park (red triangle):

Rare plant info redacted. Contact Washington State Parks and Recreation Commission for further information.

## Washington Natural Heritage Program Rare Plant Sighting Form:

Taxon Name: *Utricularia minor*

Are you confident of the identification? Yes No Explain:

Survey Site Name: Pearrygin Lake State Park

Surveyor's Name/Phone/Email: Dana Visalli, (509) 997-9011, dana@methow.com

Survey Date: June 28, 2006

County: Okanogan

Quad Name: Winthrop

Township: 35N Range: 21E Section(s): 36 NW1/4 of NW1/4:

Directions to site: Take the Pearrygin Lake road off of the East Chewuch Road to the east entrance to Pearrygin Lake State Park; turn right into this entrance. Drive ¼ mile on entrance road to a pond (in wet years)/wetland depression on the left (north) side of the road; there is a grove of aspens at the north end of the wetland. Park and walk to the southwest boundary of the aspens, then east along the edge of the wetland 150 feet to a slightly deeper depression in the wetland area near the aspen/wetland boundary. This depression is small, about 10 feet square, and holds the target species UTMI.

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

Please answer the following:

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

Coordinates are in electronic file on diskette (preferred) o Coordinates written below or attached.

Description of what coordinates represent:

GPS accuracy: Uncorrected Corrected to <5m

GPS datum: NAD 27 Zone 10

GPS coordinates: [REDACTED]

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:

On the same map, use a highlighter to identify the outer boundary of the area where the population could be, given the uncertainties about your exact location.

3. I used the following features on the map to identify my location (stream, shoreline, bridge, road, cliff, aspen grove.

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

Yes No Unknown If no or unknown, explain:

Is a revisit needed? No Yes - if yes, why?:

Ownership (if known): Washington State Parks Department

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

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

Plant Association (include author: Disturbed wetland

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

Lichen/moss layer: none

Herb layer: PHAR3 20%, CIAR4 10%, RASC 5%, TYLA 10%

Shrub layer(s): BEOC2 2%, COST4 3%

Tree layer: none

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): A shallow depression set on a wide, flat bench. There is a POTR5/SYAL aspen forest adjacent; the larger surrounding community is PUTR/AGSP shrub-steppe.

Minimum elevation (ft.): 2130 Maximum elevation (ft.): 2130

Size (acres): 10 foot diameter pool Aspect: Flat Slope Flat

Photo taken? Yes No

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): The wetland in which the UTMI is embedded is highly disturbed from years of grazing (now protected). During wet cycles the entire wetland is a pond; in the current dry cycle there is no standing water by late summer.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site): The site is adequately protected as part of Pearrygin Lake State Park, with grazing excluded.

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

Please mail completed form with map:  
WASHINGTON NATURAL HERITAGE PROGRAM  
DEPARTMENT OF NATURAL RESOURCES  
PO BOX 47014, OLYMPIA WA 98504-7014

Site of *Utricularia minor* at Pearrygin Lake State Park (red triangle):

Rare plant info redacted. Contact Washington State Parks and Recreation Commission for further information.

**Washington Natural Heritage Program Rare Plant Sighting Form:**

Taxon Name: *Hierochloe odorata*

Are you confident of the identification? Yes

Survey Site Name: Pearrygin Lake State Park

Surveyor's Name/Phone/Email: Peter Morrison, (509) 996-2490 [peter@pacificbio.org](mailto:peter@pacificbio.org)

Survey Date: June 12, 2006

County: Okanogan

Quad Name: Winthrop

Township: 35N Range: 22E Section(s): 31 SW1/4 of NW1/4:

Directions to site: Walk 1000 feet directly east from the entrance station at Pearrygin Lake State Park to a shallow depression, seasonal wetland surrounded by aspens. HIOR is found around the edges of the depression.

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

Please answer the following:

1. I used GPS to map the population: Yes (complete #1 & #3)

Coordinates are in electronic file on diskette (preferred) o Coordinates written below or attached.

Description of what coordinates represent:

GPS accuracy: Uncorrected

GPS datum: NAD 27 Zone 10

GPS coordinates: [REDACTED]

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

Yes (complete #2)

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

Yes

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

Yes

Is a revisit needed? No

Ownership (if known): Washington State Parks Department

Population Size (# of individuals or ramets) or estimate: 50 individuals

Population (EO) Data (include population vigor, microhabitat, phenology, etc.): Population was reproducing at time of visit. Strong competition from other plants exists in the area it is growing.

Plant Association (include author: *Carex douglasii* / *Leymus cinereus* (Pacific Biodiversity Institute, Visalli 2006).

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

Lichen/moss layer: none

Herb layer (80% cover): *Carex douglasii*, *Leymus cinereus*, *Poa pretense*, *Juncus balticus*, *Helianthella uniflora*

Shrub layer (5% cover): *Ribes cereum*, *Purshia tridentata*

Tree layer (1% cover): *Populus tremuloides*

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc.): Hierochloe odorata was found growing at the northern edge of a shallow depression in an open area. Aspens surround the eastern edge of this depression and a wetland with standing water exists in the center of the depression. HIOR was only growing in a narrow band, that is moist, but not wet in the spring and early summer.

Minimum elevation (ft.): 2180 Maximum elevation (ft.): 2190

Size (acres): Aspect: flat Slope: flat to very gently sloping

Photo taken? Yes

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc.): There is heavy competition from other plants, including several exotic plants in the neighborhood of the sighting location. The population is quite small and could easily be wiped out by many kinds of disturbances.

Protection Comments (legal actions/steps/strategies needed to secure protection for the site): State Park management should be aware of the site and avoid any development activities in the vicinity.

Additional Comments (discrepancies, general observations, etc.): There are several other potential sites where HIOR could become established. This plant might be propagated in other areas of the park with careful collection and planting of seeds in other suitable locations.

Please mail completed form with map:  
WASHINGTON NATURAL HERITAGE PROGRAM  
DEPARTMENT OF NATURAL RESOURCES  
PO BOX 47014, OLYMPIA WA 98504-7014

Site of Hierochloe odorata at Pearrygin Lake State Park

Rare plant info redacted. Contact Washington State Parks and Recreation Commission for further information.





## Appendix B – Noxious Weeds

Class A noxious weeds are non-native species whose distribution in Washington State is still limited.

- Eradicating existing infestations and preventing new infestations are the highest priorities.
- Eradication of all Class A plants is required by law.

Class B noxious weeds are non-native species whose distribution is limited to portions of Washington State.

- Species are designated for control in state regions where they are not yet widespread. Prevention of new infestations in these areas is the primary goal.
- In regions where a Class B species is already abundant, control is decided at the local level. Containment of these weeds is the primary goal so that they do not spread into uninfested regions.

Class C noxious weeds are either already widespread in Washington or are of special interest to the agricultural industry.

- The Class C status allows a county to enforce control if it beneficial to that county (for example, to protect crops).
- Other counties may choose to provide education or technical support for the removal or control of these weeds.

## Appendix C: Ecological Condition Ranking System

### Ecological Condition Ranks

When assessing conservation priorities and management decisions, it can be useful to rank natural communities into levels of ecological condition. For example, an unfragmented area with high native species diversity, absence of non-native species and little soil erosion often has greater conservation value than another area in the same habitat type that is fragmented, infested with weeds or has erosion problems. Likewise, areas with a lower ecological condition rank may be targets for restoration activities.

The following ecological condition ranks were applied to vegetation polygons that were surveyed in this project:

**Condition Rank 1.** This condition class represents areas that have been altered to the point where the ecological condition often deviates dramatically from baseline conditions found in areas where stressors are much less prevalent. Areas characterized by Condition Class 1 often have high amounts of bare ground and/or non-native plant cover. The structure is often significantly altered from baseline conditions. Often one or more of the structural layers (trees, shrubs, herbs, grasses, mosses & lichens, biotic crust) may be significantly altered or even missing from the community. The composition of native vegetation is skewed toward species that can survive despite regular disturbance. Species diversity of native plants is usually low and native grass species are usually absent or in very low abundance (for a given community type). Evidence of accelerated erosion and soil compaction may be present. Hydrologic alteration may also be present. Significant direct evidence of various stress factors is usually abundant. Rare plant and animal species generally do not occur in this condition class.

**Condition Rank 2.** This condition class represents areas that show a fairly broad range of stress ranging from high to moderately low impact from a variety of stressors. Areas characterized by Condition Class 2 usually have moderate levels of non-native plant cover. The structure of the natural community present in Condition Class 2 areas is often relatively intact when compared to baseline conditions. Usually all structural layers are present, but form and stature may be altered from baseline conditions. Soil surface conditions are often intermediate between those in Condition Class 1 and Condition Class 3. Species diversity of native plants is often moderate for that community. Non-native species are usually present, but not as common or abundant as in Condition Class 1. Native grass species are often present, but usually in low abundance for that community type. Diversity of native grass species is relatively low when compared to baseline conditions. Evidence of accelerated erosion and soil compaction may be present in isolated areas, but is not dramatic or widespread. Hydrologic alteration is absent. Direct signs of stressors may be present, but not widespread or abundant. Rare plant and animal species may be found in this condition class, but are not common. Rare species that are found in this condition class are relatively tolerant of the stressors that are present.

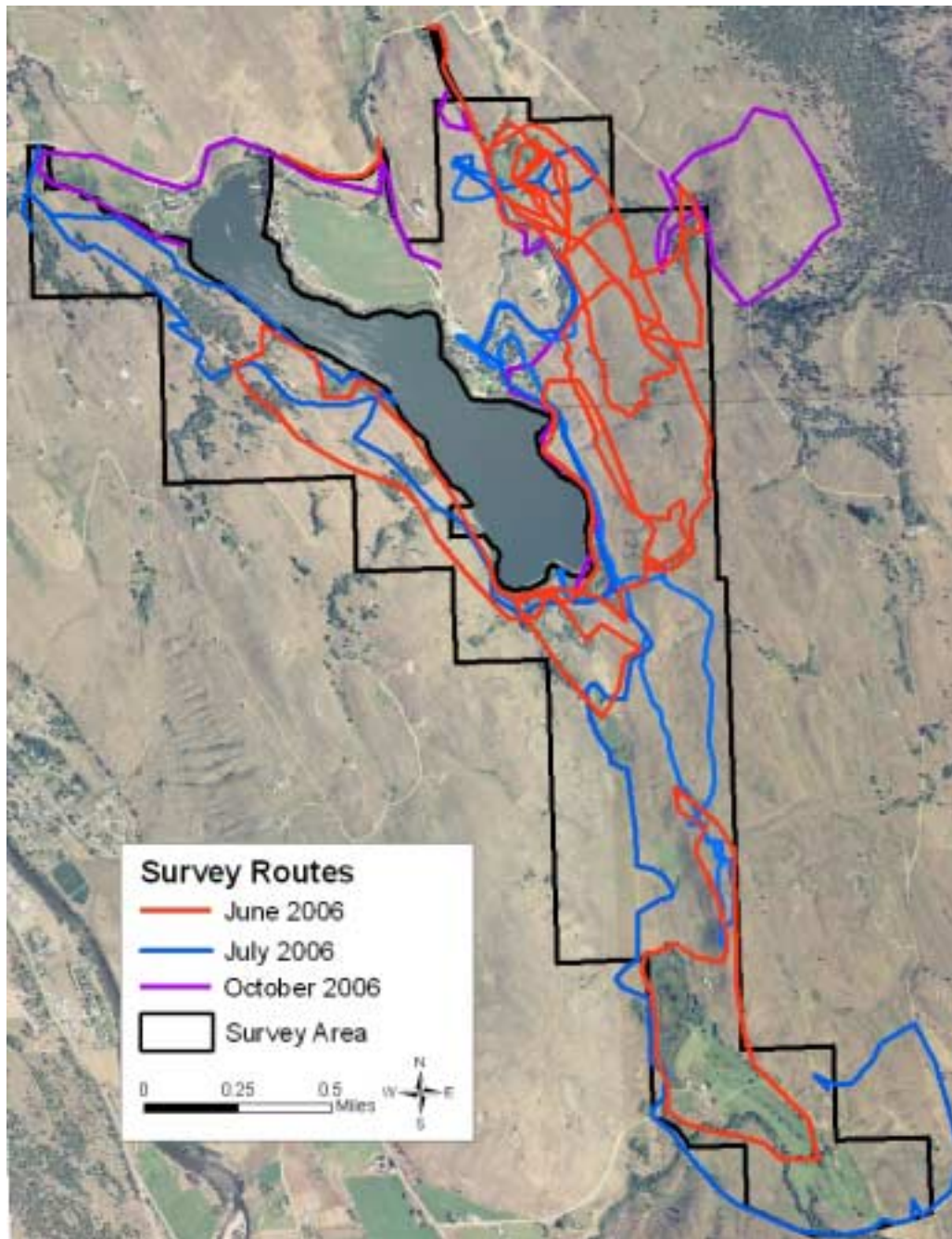
**Condition Rank 3.** This condition class represents areas that show the least stress in the project area and are the closest to representing baseline conditions. Areas characterized by Condition Class 3 have little evidence of non-native plant invasion. The composition and

structure of native vegetation in this condition class correspond to the natural ranges of variation characteristic to this habitat type. Old-growth conditions may exist. Species diversity of native plants is often high relative to the community under consideration. Native grass species are usually present and often fairly abundant for the community type. Species diversity of native grass species is also often high. Soil compaction, accelerated erosion and hydrologic alteration are absent. Direct signs of stressors are usually absent. Certain rare species may only exist within this condition class and rare species are generally more common than in the lower condition classes.

## Appendix D: Survey Routes

### Survey Dates and Routes

Field Survey Dates: June 6, June 12, June 16, June 27, June 28, June 30, July 3, July 5, July 13, October 7, October 11, and November 8.



Survey routes for the vegetation community mapping and rare and endangered plant surveys conducted by PBI in 2006.

## Appendix E: Vegetation Survey Data

Legend:

**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

### VEGETATION COVER

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 = Federal CRP
- 6 = other

**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 = hoofed
- 3 = pedestrian
- 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

**% of Polygon** = your estimate

**Pattern** = how PA is distributed in polygon

- 1 = matrix (most of polygon)
- 2 = large patches
- 3 = small patches
- 4 = clumped, clustered, contiguous
- 5 = scattered, more or less evenly repeating
- 6 = linear
- 7 = other

**Exotic** = primary species observed; secondary species observed.

**Plot Number** = number of any plots established for EO (element occurrence), or other more detail sheets within polygon.

## Vegetation Polygon Data

Polygon Number 1  
 Survey Intensity 2  
 Observer PM  
 Date 6/27/06  
 Specific Location entrance road  
 Total Vegetation 0  
 Trees Total 0  
 Dominant Trees  
 emergent 0  
 maincanopy 0  
 subcanopy 0  
 Shrubs Total 0  
 Dominant Shrubs  
 > 1.5' tall 0  
 < 1.5' tall 0  
 Graminoids Total 0  
 Dominant Graminoids  
 Graminoids Perennial 0  
 Graminoids Annual 0  
 Forbs Total 0  
 Dominant Forbs  
 Forbs Perennial 0  
 Forbs Annual 0  
 Ferns Total 0  
 Ferns Evergreen 0  
 Ferns Deciduous 0  
 ExoticsTotal 0  
 Exotics Perennial 0  
 Exotics Annual 0  
 Water  
 Rock Outcrop 0  
 Gravel 0  
 Bare Ground 0  
 Moss Lichen 0  
 Litter 0  
 Logging  
 Stand Age  
 Agriculture  
 Livestock  
 Development  
 Wildlife  
 Recreation Severity  
 Recreation Type  
 Hydrology

## Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

## Plant Associations

|              | Percent | Pattern | Rank |
|--------------|---------|---------|------|
| 1. Developed | 100     | Matrix  | 1    |
| 2.           | 0       |         | 0    |
| 3            | 0       |         | 0    |

Notes:



**Polygon Number** 10  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** NW  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** PIPO, PSME  
**emergent** 1  
**maincanopy** 5  
**subcanopy** 1  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL, AMAL2, RONU  
**> 1.5' tall** 5  
**< 1.5' tall** 3  
**Graminoids Total** 2  
**Dominant Graminoids**  
**Graminoids Perennial** 2  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** GABO2  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**ExoticsTotal** 1  
**Exotics Perennial** 0  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 1

## Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

## Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. PIPO/SYAL (KAGAN) | 100     | Matrix  | 2    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

Notes:

**Polygon Number** 11  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** NW  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** PIPO, PSME, POTR5  
**emergent** 1  
**maincanopy** 5  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL, RICE, AMAL2, RONU  
**> 1.5' tall** 5  
**< 1.5' tall** 2  
**Graminoids Total** 5  
**Dominant Graminoids** FEID, PSSP6, CARU  
**Graminoids Perennial** 5  
**Graminoids Annual** 1  
**Forbs Total** 4  
**Dominant Forbs** BASA3, HEUN, GAAR  
**Forbs Perennial** 4  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 0  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 1  
**Litter** 99  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                                  | Percent | Pattern | Rank |
|----------------------------------|---------|---------|------|
| 1. PIPO/SYAL (KAGAN)             | 80      | Matrix  | 2    |
| 2. PIPO/CARU-PSSP6 (LILLYBRIDGE) | 20      | Large   | 2    |
| 3                                |         |         |      |

Notes:

**Polygon Number** 12  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** NW  
**Total Vegetation** 6  
**Trees Total** 6  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 6  
**subcanopy** 2  
**Shrubs Total** 6  
**Dominant Shrubs** SYAL, AMAL2, PRVI  
**> 1.5' tall** 6  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** FEID, CARU, PSSP6  
**Graminoids Perennial** 4  
**Graminoids Annual** 0  
**Forbs Total** 4  
**Dominant Forbs** BASA3, HEUN, ACMI2  
**Forbs Perennial** 4  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**ExoticsTotal** 1  
**Exotics Perennial** 0  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 1  
**Litter** 99  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 7, deer trails  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 2    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 13  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 2  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 2  
**< 1.5' tall** 1  
**Graminoids Total** 5  
**Dominant Graminoids** AGCR, BRIN2, POBU, BRTE  
**Graminoids Perennial** 5  
**Graminoids Annual** 2  
**Forbs Total** 2  
**Dominant Forbs** LUSE4, BASA3, PHLI, LABI, DERI  
**Forbs Perennial** 2  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 4  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 1  
**Gravel** 0  
**Bare Ground** 14  
**Moss Lichen** 0  
**Litter** 85  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRIN2  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 BRTE

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 90      | Matrix  | 1    |
| 2. PUTR2/PSSP6 (CRAWFORD)    | 10      | Small   | 2    |
| 3                            | 0       |         | 0    |

**Notes:** former ag field

**Polygon Number** 14A  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 3  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** BEOC2, SARI  
**> 1.5' tall** 3  
**< 1.5' tall** 0  
**Graminoids Total** 3  
**Dominant Graminoids** TYLA, SCAC  
**Graminoids Perennial** 3  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 0  
**Water** 97  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 3  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 1  
**Wildlife** 7, birds  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 2

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. Water                  | 80      | Matrix  | 3    |
| 2. TYLA (KOVALCHIK)       | 10      | Large   | 3    |
| 3. POTR5/SYAL (KOVALCHIK) | 10      | Small   | 2    |

**Notes:** pond

**Polygon Number** 14B  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 6  
**Trees Total** 2  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 2  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** SARI  
**> 1.5' tall** 3  
**< 1.5' tall** 0  
**Graminoids Total** 6  
**Dominant Graminoids** TYLA, SCAC  
**Graminoids Perennial** 6  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**ExoticsTotal** 2  
**Exotics Perennial** 2  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 10  
**Moss Lichen** 0  
**Litter** 90  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 7, birds  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 2

## Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic  
CIAR4

## Plant Associations

|                     | Percent | Pattern | Rank |
|---------------------|---------|---------|------|
| 1. TYLA (KOVALCHIK) | 100     | Matrix  | 2    |
| 2.                  | 0       |         | 0    |
| 3                   | 0       |         | 0    |

Notes:

**Polygon Number** 15  
**Survey Intensity** 1  
**Observer** SH  
**Date** 7/3/06  
**Specific Location** center  
**Total Vegetation** 6  
**Trees Total** 6  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 6  
**subcanopy** 1  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL, PRVI, RONU  
**> 1.5' tall** 5  
**< 1.5' tall** 2  
**Graminoids Total** 2  
**Dominant Graminoids**  
**Graminoids Perennial** 2  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** ACMI2, HEUN, LIRU4  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 5  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 POPR  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. disturbed meadow       | 90      | Matrix  | 1    |
| 2. POTR5/SYAL (KOVALCHIK) | 10      | linear  | 2    |
| 3                         | 0       |         | 0    |

**Notes:** Wet swale to the east of polygon 15 - was not checked.

**Polygon Number** 16  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** SW  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 5  
**Dominant Shrubs** SYOR2, PUTR2, ERHE2, AMAL2  
> 1.5' tall 5  
< 1.5' tall 2  
**Graminoids Total** 4  
**Dominant Graminoids** STOC2  
**Graminoids Perennial** 3  
**Graminoids Annual** 4  
**Forbs Total** 4  
**Dominant Forbs** LUSE4, ACMI2, BASA3, LIRU4, PHLI, HEUN  
**Forbs Perennial** 4  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 0  
**Exotics Annual** 4  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 7 (cattle trails)  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
BRTE  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/STOC2 (CRAWFORD) | 100     | Matrix  | 1    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:



Polygon Number 17  
 Survey Intensity 2  
 Observer PM  
 Date 6/27/06  
 Specific Location campground  
 Total Vegetation 6  
 Trees Total 0  
 Dominant Trees  
 emergent 0  
 maincanopy 0  
 subcanopy 0  
 Shrubs Total 0  
 Dominant Shrubs  
 > 1.5' tall 0  
 < 1.5' tall 0  
 Graminoids Total 0  
 Dominant Graminoids  
 Graminoids Perennial 0  
 Graminoids Annual 0  
 Forbs Total 0  
 Dominant Forbs  
 Forbs Perennial 0  
 Forbs Annual 0  
 Ferns Total 0  
 Ferns Evergreen 0  
 Ferns Deciduous 0  
 Exotics Total 6  
 Exotics Perennial 0  
 Exotics Annual 0  
 Water  
 Rock Outcrop 0  
 Gravel 0  
 Bare Ground 0  
 Moss Lichen 0  
 Litter 0  
 Logging  
 Stand Age  
 Agriculture  
 Livestock  
 Development  
 Wildlife  
 Recreation Severity  
 Recreation Type  
 Hydrology

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|              | Percent | Pattern | Rank |
|--------------|---------|---------|------|
| 1. Developed | 100     | Matrix  | 1    |
| 2.           | 0       |         | 0    |
| 3            | 0       |         | 0    |

Notes:

**Polygon Number** 18  
**Survey Intensity** 2  
**Observer** PM  
**Date** 6/27/06  
**Specific Location** entrance station and house  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 0  
**Dominant Shrubs**  
> 1.5' tall 0  
< 1.5' tall 0  
**Graminoids Total** 0  
**Dominant Graminoids**  
Graminoids Perennial 0  
Graminoids Annual 0  
**Forbs Total** 0  
**Dominant Forbs**  
Forbs Perennial 0  
Forbs Annual 0  
**Ferns Total** 0  
Ferns Evergreen 0  
Ferns Deciduous 0  
**Exotics Total** 6  
**Exotics Perennial** 0  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 0  
**Logging**  
**Stand Age**  
**Agriculture**  
**Livestock**  
**Development**  
**Wildlife**  
**Recreation Severity**  
**Recreation Type**  
**Hydrology**

**Exotic Species**

Primary Exotic

Secondary Exotic

Noxious Exotic

**Plant Associations**

|              | Percent | Pattern | Rank |
|--------------|---------|---------|------|
| 1. Developed | 100     | Matrix  | 1    |
| 2.           | 0       |         | 0    |
| 3            | 0       |         | 0    |

Notes:

**Polygon Number** 19  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** NW  
**Total Vegetation** 6  
**Trees Total** 6  
**Dominant Trees** PIPO  
**emergent** 2  
**maincanopy** 6  
**subcanopy** 1  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL, AMAL2, PRVI  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 5  
**Dominant Graminoids** CARU, FEID  
**Graminoids Perennial** 5  
**Graminoids Annual** 0  
**Forbs Total** 4  
**Dominant Forbs** BASA3, HEUN, ACMI2  
**Forbs Perennial** 4  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**ExoticsTotal** 1  
**Exotics Perennial** 0  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 2  
**Litter** 98  
**Logging** 3  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 7, deer trails  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. PIPO/SYAL (KAGAN) | 100     | Matrix  | 2    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

**Notes:** Some doghair PIPO. Good CARU cover.

Polygon Number 2  
 Survey Intensity 2  
 Observer DV  
 Date 10/11/06  
 Specific Location  
 Total Vegetation 5  
 Trees Total 0  
 Dominant Trees  
 emergent 0  
 maincanopy 0  
 subcanopy 0  
 Shrubs Total 4  
 Dominant Shrubs PUTR2  
 > 1.5' tall 4  
 < 1.5' tall 1  
 Graminoids Total 4  
 Dominant Graminoids PSSP6, BRTE  
 Graminoids Perennial 4  
 Graminoids Annual 1  
 Forbs Total 3  
 Dominant Forbs BASA3  
 Forbs Perennial 3  
 Forbs Annual 1  
 Ferns Total 0  
 Ferns Evergreen 0  
 Ferns Deciduous 0  
 Exotics Total 1  
 Exotics Perennial 0  
 Exotics Annual 1  
 Water  
 Rock Outcrop 0  
 Gravel 0  
 Bare Ground 15  
 Moss Lichen 0  
 Litter 85  
 Logging 0  
 Stand Age 0  
 Agriculture 0  
 Livestock 4  
 Development 5  
 Wildlife 3  
 Recreation Severity 3  
 Recreation Type 3  
 Hydrology 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 20  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** Center, S of lake  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** POTR5, BEOC2  
**emergent** 1  
**maincanopy** 5  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL, AMAL2, RONU, COST4  
**> 1.5' tall** 5  
**< 1.5' tall** 3  
**Graminoids Total** 3  
**Dominant Graminoids**  
**Graminoids Perennial** 3  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** SMST, ACMI2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 CEDI3  
**Secondary Exotic**  
 POPR  
**Noxious Exotic**  
 CIAR4

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 98      | Matrix  | 2    |
| 2. disturbed wetland      | 2       | Small   | 1    |
| 3                         | 0       |         | 0    |

**Notes:** This is the group campground area

**Polygon Number** 20A  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** Center, S of lake (southern finger of 20)  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 5  
**subcanopy** 1  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL, AMAL2  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 2  
**Dominant Graminoids** CARU, PSSP6, CADO2  
**Graminoids Perennial** 2  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** BASA3, ACMI2, Galium  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 2  
**Litter** 98  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**  
 CADR

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. PIPO/SYAL (KAGAN) | 100     | Matrix  | 2    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

Notes:

**Polygon Number** 20B  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** POTR5, BEOC2  
**emergent** 2  
**maincanopy** 4  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 0  
**Graminoids Total** 3  
**Dominant Graminoids** PHAR3, BRIN2  
**Graminoids Perennial** 3  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 1  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 ARMI2  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 80      | Large   | 2    |
| 2. disturbed meadow       | 20      | Large   | 2    |
| 3                         | 0       |         | 0    |

**Notes:** COMBINE 23N WITH 20B=POTR/SYAL

Polygon Number 21  
 Survey Intensity 2  
 Observer PM  
 Date 6/27/06  
 Specific Location Old farm  
 Total Vegetation 6  
 Trees Total 0  
 Dominant Trees  
 emergent 0  
 maincanopy 0  
 subcanopy 0  
 Shrubs Total 0  
 Dominant Shrubs  
 > 1.5' tall 0  
 < 1.5' tall 0  
 Graminoids Total 0  
 Dominant Graminoids  
 Graminoids Perennial 0  
 Graminoids Annual 0  
 Forbs Total 0  
 Dominant Forbs  
 Forbs Perennial 0  
 Forbs Annual 0  
 Ferns Total 0  
 Ferns Evergreen 0  
 Ferns Deciduous 0  
 Exotics Total 6  
 Exotics Perennial 0  
 Exotics Annual 0  
 Water  
 Rock Outcrop 0  
 Gravel 0  
 Bare Ground 0  
 Moss Lichen 0  
 Litter 0  
 Logging  
 Stand Age  
 Agriculture  
 Livestock  
 Development  
 Wildlife  
 Recreation Severity  
 Recreation Type  
 Hydrology

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|              | Percent | Pattern | Rank |
|--------------|---------|---------|------|
| 1. Developed | 100     | Matrix  | 1    |
| 2.           | 0       |         | 0    |
| 3            | 0       |         | 0    |

Notes:



**Polygon Number** 22  
**Survey Intensity** 1  
**Observer** SH  
**Date** 7/3/06  
**Specific Location** S central  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 0  
**Dominant Shrubs**  
> 1.5' tall 0  
< 1.5' tall 0  
**Graminoids Total** 3  
**Dominant Graminoids**  
Graminoids Perennial 0  
Graminoids Annual 3  
**Forbs Total** 6  
**Dominant Forbs** MESA, SIAL2  
Forbs Perennial 6  
Forbs Annual 0  
**Ferns Total** 0  
Ferns Evergreen 0  
Ferns Deciduous 0  
**Exotics Total** 5  
Exotics Perennial 5  
Exotics Annual 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock**  
Development 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
MESA  
**Secondary Exotic**  
SIAL2  
**Noxious Exotic**

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 100     | Matrix  | 1    |
| 2.                           | 0       |         | 0    |
| 3                            | 0       |         | 0    |

**Notes:** Bromus, mustard (2 diff ssp), Medicago, Sativa, Centaurea, Inermis. Alfalfa most abundant.

**Polygon Number** 23A  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 1  
**Shrubs Total** 1  
**Dominant Shrubs** PUTR2  
**> 1.5' tall** 1  
**< 1.5' tall** 0  
**Graminoids Total** 5  
**Dominant Graminoids** PSSP6, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 3  
**Forbs Total** 2  
**Dominant Forbs** LUSE4, LABI  
**Forbs Perennial** 2  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 2  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 1  
**Gravel** 0  
**Bare Ground** 25  
**Moss Lichen** 0  
**Litter** 74  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 LIDA

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD)  | 95      | Matrix  | 2    |
| 2. LECI grassland (WA NHP) | 5       | linear  | 2    |
| 3                          | 0       |         | 0    |

**Notes:**

**Polygon Number** 23B  
**Survey Intensity** 1  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 5  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SARI, AMAL2, PRVI, RONU, SYAL  
**> 1.5' tall** 3  
**< 1.5' tall** 5  
**Graminoids Total** 2  
**Dominant Graminoids** CARU, ELCI2, BRTE  
**Graminoids Perennial** 2  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** SMST, ASCO3, HEUN, BASA3  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 1  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 1  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 0  
**Litter** 97  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 3  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CEDI3  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:** Aspen/SYAL forest in draw

**Polygon Number** 23C  
**Survey Intensity** 1  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 3  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 3  
**subcanopy** 3  
**Shrubs Total** 3  
**Dominant Shrubs** AMAL2, SYAL  
**> 1.5' tall** 2  
**< 1.5' tall** 3  
**Graminoids Total** 5  
**Dominant Graminoids** PHAR3, BRTE  
**Graminoids Perennial** 5  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 5  
**Exotics Perennial** 5  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 PHAR3  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**  
 CIAR4

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. disturbed wetland      | 90      | Matrix  | 1    |
| 2. POTR5/SYAL (KOVALCHIK) | 10      | linear  | 2    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 23D  
**Survey Intensity** 1  
**Observer** PM  
**Date** 6/12/06  
**Specific Location** aspen stands, birch  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** POTR5  
**emergent** 2  
**maincanopy** 4  
**subcanopy** 3  
**Shrubs Total** 3  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 2  
**< 1.5' tall** 3  
**Graminoids Total** 3  
**Dominant Graminoids** CARU, BRTE, PSSP6  
**Graminoids Perennial** 3  
**Graminoids Annual** 1  
**Forbs Total** 4  
**Dominant Forbs** SMST, BASA3  
**Forbs Perennial** 4  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 1  
**Moss Lichen** 0  
**Litter** 99  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 VIVI5  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**  
 CADR

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 60      | Matrix  | 3    |
| 2. POTR5/SMST (PBI)       | 40      | Large   | 3    |
| 3                         | 0       |         | 0    |

**Notes:** see photos

**Polygon Number** 23E  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 1  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, RICE, ERHE2  
**> 1.5' tall** 2  
**< 1.5' tall** 3  
**Graminoids Total** 4  
**Dominant Graminoids** BRCA5, STOC2, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 3  
**Forbs Total** 3  
**Dominant Forbs** LUSE4, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 3  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 0  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 5  
**Moss Lichen** 0  
**Litter** 95  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**

### Plant Associations

|                     | Percent | Pattern | Rank |
|---------------------|---------|---------|------|
| 1. disturbed meadow | 100     | Matrix  | 1    |
| 2.                  | 0       |         | 0    |
| 3                   | 0       |         | 0    |

**Notes:**

**Polygon Number** 23F  
**Survey Intensity** 1  
**Observer** PM  
**Date** 6/12/06  
**Specific Location** NE of entrance station  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** ARTR4, PUTR2, ARTR2  
**> 1.5' tall** 3  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, FEID, BRTE, POBU, ELCI2  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 4  
**Dominant Forbs** BASA34, LUSE4, LIRU4, PHLI, HEUN  
**Forbs Perennial** 4  
**Forbs Annual** 3  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 1  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 1  
**Gravel** 1  
**Bare Ground** 5  
**Moss Lichen** 1  
**Litter** 92  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 0  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 4  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 CEDI3  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**

### Plant Associations

|                          | Percent | Pattern | Rank |
|--------------------------|---------|---------|------|
| 1. ARTR4/FEID (CRAWFORD) | 100     | Matrix  | 3    |
| 2.                       | 0       |         | 0    |
| 3                        | 0       |         | 0    |

**Notes:** Flat meadow, diverse native veg.; good ecological condition except for BRTE.

**Polygon Number** 23G  
**Survey Intensity** 1  
**Observer** PM  
**Date** 6/12/06  
**Specific Location** flat, swale area of 23  
**Total Vegetation** 6  
**Trees Total** 2  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 2  
**subcanopy** 2  
**Shrubs Total** 2  
**Dominant Shrubs** RICE, PUTR2, ARTR4  
**> 1.5' tall** 2  
**< 1.5' tall** 2  
**Graminoids Total** 5  
**Dominant Graminoids** ELCI2, JUBA., POPR, BRTE  
**Graminoids Perennial** 5  
**Graminoids Annual** 2  
**Forbs Total** 4  
**Dominant Forbs** HEUN, Astragalus, ASSP, ZIVE, ACMI2, ATDR, BASA3  
**Forbs Perennial** 4  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 1  
**Litter** 97  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 CADR  
**Secondary Exotic**  
 VETH  
**Noxious Exotic**  
 CERE6

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. disturbed wetland       | 60      | Matrix  | 2    |
| 2. MAAQ2/HEUN (PBI)        | 15      | Large   | 3    |
| 3. LECl grassland (WA NHP) | 25      | Small   | 2    |

**Notes:** [LUSE4 in forb list - didn't fit in space given.] very diverse, interesting habitat, vernal wet, many depressions, flat



**Polygon Number** 23H  
**Survey Intensity** 1  
**Observer** PM  
**Date** 7/3/06  
**Specific Location** north of boundary line with court property & above lake  
**Total Vegetation** 4  
**Trees Total** 1  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2  
**> 1.5' tall** 3  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, POBU, BRTE  
**Graminoids Perennial** 3  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, PHLI, LUSE4, DERI  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 1  
**Ferns Evergreen** 0  
**Ferns Deciduous** 1  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 5  
**Bare Ground** 0  
**Moss Lichen** 1  
**Litter** 94  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 0  
**Development** 2 (road at bottom)  
**Wildlife** 0  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 GYPA

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 2    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:** GYPA starting to encroach here along fence line with Court property. Lots of GYPA to south on Court property. Most of SP land still in good shape.

**Polygon Number** 231  
**Survey Intensity** 2  
**Observer** PM  
**Date** 7/3/06  
**Specific Location** court property on hill SE of lake, south of boundary fence  
**Total Vegetation** 4  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2  
> 1.5' tall 3  
< 1.5' tall 2  
**Graminoids Total** 3  
**Dominant Graminoids** PSSP6, BRTE, POBU  
**Graminoids Perennial** 3  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, GYPA  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 4  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 0  
**Gravel** 5  
**Bare Ground** 20  
**Moss Lichen** 0  
**Litter** 75  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 5  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
GYPA  
**Secondary Exotic**  
POBU  
**Noxious Exotic**  
BRTE

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 1    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:** Heavy infestation of baby's breath in parts of this polygon. Spreading to the north into park property.

**Polygon Number** 23J  
**Survey Intensity** 1  
**Observer** PM  
**Date** 7/3/06  
**Specific Location** abandoned field on court property south of SP fence  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 1  
**Dominant Shrubs**  
> 1.5' tall 1  
< 1.5' tall 0  
**Graminoids Total** 4  
**Dominant Graminoids** BRTE, BRIN2, wheat, POBU  
**Graminoids Perennial** 3  
**Graminoids Annual** 4  
**Forbs Total** 4  
**Dominant Forbs** CADR, DERI, TRDU, GYPA  
**Forbs Perennial** 2  
**Forbs Annual** 4  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 4  
**Exotics Annual** 4  
**Water**  
**Rock Outcrop** 0  
**Gravel** 1  
**Bare Ground** 20  
**Moss Lichen** 0  
**Litter** 79  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
BRTE  
**Secondary Exotic**  
CADR  
**Noxious Exotic**  
GYPA

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 100     | Matrix  | 1    |
| 2.                           | 0       |         | 0    |
| 3                            | 0       |         | 0    |

**Notes:** abandoned field, mostly exotics

**Polygon Number** 23K  
**Survey Intensity** 1  
**Observer** PM  
**Date** 7/3/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, RICE  
**> 1.5' tall** 3  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, BRTE, POBU, ELCI2  
**Graminoids Perennial** 3  
**Graminoids Annual** 3  
**Forbs Total** 3  
**Dominant Forbs** GYPA, BASA3, CADR, HEUN, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 3  
**Ferns Total** 1  
**Ferns Evergreen** 1  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 4  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 0  
**Gravel** 2  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 83  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 5  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 GYPA  
**Secondary Exotic**  
 CADR  
**Noxious Exotic**  
 CEDI3

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD)    | 60      | Matrix  | 1    |
| 2. former agricultural field | 40      | Large   | 1    |
| 3                            | 0       |         | 0    |

**Notes:** Lots of baby's breath, heavy infestation, also lots of CADR, some CEDI3, lots of BRTE.

**Polygon Number** 23L  
**Survey Intensity** 1  
**Observer** DV  
**Date** 7/5/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 0  
**Dominant Shrubs**  
**> 1.5' tall** 0  
**< 1.5' tall** 0  
**Graminoids Total** 6  
**Dominant Graminoids** POPR, BRTE  
**Graminoids Perennial** 6  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** GAAR, ACMI2, ASCA6, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 3  
**Moss Lichen** 0  
**Litter** 97  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 CERE6  
**Noxious Exotic**  
 CADR

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. disturbed wetland | 100     | Matrix  | 1    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

Notes:

**Polygon Number** 23M  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/5/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 3  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** ERCO5, BASA3, HEUN, PHLI, MAGR3, DERI  
**Forbs Perennial** 3  
**Forbs Annual** 3  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 85  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 CADR

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD)    | 70      | Matrix  | 2    |
| 2. former agricultural field | 30      | Large   | 1    |
| 3                            | 0       |         | 0    |

**Notes:**

**Polygon Number** 23N  
**Survey Intensity** 1  
**Observer** DV  
**Date** 11/8/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, ARTR4, ERNI2  
**> 1.5' tall** 3  
**< 1.5' tall** 1  
**Graminoids Total** 3  
**Dominant Graminoids** STCO2, BRTE  
**Graminoids Perennial** 3  
**Graminoids Annual** 2  
**Forbs Total** 4  
**Dominant Forbs** HEUN, ACMI2, GYPA, CEDI3  
**Forbs Perennial** 2  
**Forbs Annual** 4  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 0  
**Exotics Annual** 4  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 40  
**Moss Lichen** 0  
**Litter** 60  
**Logging** 0  
**Stand Age** 1  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CEDI3, GYPA, BRTE, SIAL2  
**Secondary Exotic**

**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/STOC2 (CRAWFORD) | 100     | Matrix  | 1    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:** High % of alien spp. from heavy overgrazing.

**Polygon Number** 230  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, FEID, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 3  
**Gravel** 2  
**Bare Ground** 40  
**Moss Lichen** 0  
**Litter** 55  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 LIDA  
**Secondary Exotic**  
 CEDI3  
**Noxious Exotic**  
 BRTE

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/FEID (CRAWFORD)  | 95      | Matrix  | 2    |
| 2. POTR5/SYAL (KOVALCHIK) | 5       | linear  | 2    |
| 3                         | 0       |         | 0    |

Notes:



**Polygon Number** 23P  
**Survey Intensity** 1  
**Observer** PM  
**Date** 7/3/06  
**Specific Location**  
**Total Vegetation** 4  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, LEPU, AMAL2, ERHE2  
**> 1.5' tall** 3  
**< 1.5' tall** 3  
**Graminoids Total** 3  
**Dominant Graminoids** PSSP6, BRTE, POBU  
**Graminoids Perennial** 3  
**Graminoids Annual** 3  
**Forbs Total** 3  
**Dominant Forbs** BASA3, ERNI2, ERLI, ERFI2, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 1  
**Ferns Evergreen** 0  
**Ferns Deciduous** 1  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 5  
**Gravel** 8  
**Bare Ground** 25  
**Moss Lichen** 0  
**Litter** 62  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 5  
**Development** 6, transmission  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 GYPA  
**Noxious Exotic**  
 CADR, LIDA

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 95      | Matrix  | 2    |
| 2. Rock cliffs and talus  | 5       | Small   | 2    |
| 3                         | 0       |         | 0    |

**Notes:** LIDA patch in southern part of polygon.

**Polygon Number** 23Q  
**Survey Intensity** 2  
**Observer** PM  
**Date** 7/3/06  
**Specific Location**  
**Total Vegetation** 4  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, AMAL2  
**> 1.5' tall** 3  
**< 1.5' tall** 2  
**Graminoids Total** 3  
**Dominant Graminoids** PSSP6, BRTE  
**Graminoids Perennial** 3  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** ERNI2, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 1  
**Ferns Evergreen** 1  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 1  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 20  
**Gravel** 20  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 45  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 3  
**Development** 6, transmission  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 LIDA  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 2    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:** Steep slope with lots of rock & gravel.

**Polygon Number** 23R  
**Survey Intensity** 2  
**Observer** PM  
**Date** 7/3/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, AMAL2, ERHE2  
**> 1.5' tall** 3  
**< 1.5' tall** 3  
**Graminoids Total** 3  
**Dominant Graminoids** PSSP6, POBU, BRTE  
**Graminoids Perennial** 3  
**Graminoids Annual** 2  
**Forbs Total** 4  
**Dominant Forbs** BASA3, PHLI, GYPA, HEUN  
**Forbs Perennial** 3  
**Forbs Annual** 3  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 5  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 80  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 3  
**Development** 5  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

**Exotic Species**

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 GYPA

**Plant Associations**

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 1    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 23S  
**Survey Intensity** 1  
**Observer** PM  
**Date** 6/16/06  
**Specific Location** south of 23D & north of poly 21, SE of lake  
**Total Vegetation** 5  
**Trees Total** 4  
**Dominant Trees** POTR5, BEOC2  
**emergent** 1  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL, AMAL2, COST4, PRVI, PUTR2, MAAQ2  
**> 1.5' tall** 3  
**< 1.5' tall** 3  
**Graminoids Total** 4  
**Dominant Graminoids** Juncus, ELCI2, Poa sp., MEBU, PSSP6  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 4  
**Dominant Forbs** SMST, ZIVE, HEUN, BASA3, PHLI  
**Forbs Perennial** 4  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 1  
**Bare Ground** 3  
**Moss Lichen** 1  
**Litter** 95  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 CADR  
**Secondary Exotic**  
 VETH  
**Noxious Exotic**  
 POBU, BRTE

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. LECI grassland (WA NHP) | 55      | Matrix  | 3    |
| 2. POTR5/SYAL (KOVALCHIK)  | 40      | Large   | 3    |
| 3. PUTR2/PSSP6 (CRAWFORD)  | 5       | Small   | 2    |

**Notes:** Gently rolling to that swale area with Aspen stands & draws. Fairly moist.

**Polygon Number** 23T  
**Survey Intensity** 1  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** POTR5  
**emergent** 4  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** CADO2, ELCI2, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 1  
**Forbs Total** 3  
**Dominant Forbs** SMST, ZIVE  
**Forbs Perennial** 3  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 0  
**Logging**  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 BRTE

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 60      | Matrix  | 3    |
| 2. disturbed wetland      | 40      | large   | 2    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 23V  
**Survey Intensity** 2  
**Observer** PM  
**Date** 10/7/06  
**Specific Location** road and house at Cort's Place  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 0  
**Dominant Shrubs**  
**> 1.5' tall** 0  
**< 1.5' tall** 0  
**Graminoids Total** 0  
**Dominant Graminoids**  
**Graminoids Perennial** 0  
**Graminoids Annual** 0  
**Forbs Total** 0  
**Dominant Forbs**  
**Forbs Perennial** 0  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 5  
**Exotics Perennial** 0  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 0  
**Logging**  
**Stand Age**  
**Agriculture**  
**Livestock**  
**Development**  
**Wildlife**  
**Recreation Severity**  
**Recreation Type**  
**Hydrology**

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|              | Percent | Pattern | Rank |
|--------------|---------|---------|------|
| 1. Developed | 100     | Matrix  | 1    |
| 2.           | 0       |         | 0    |
| 3            | 0       |         | 0    |

Notes:

**Polygon Number** 23X  
**Survey Intensity** 1  
**Observer** PM  
**Date** 6/16/06  
**Specific Location** east of south part of lake, split from 23  
**Total Vegetation** 4  
**Trees Total** 2  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 2  
**subcanopy** 1  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, AMAL2, PRVI  
**> 1.5' tall** 3  
**< 1.5' tall** 3  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, MEBU, POBU, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, LUSE4, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 3  
**Gravel** 12  
**Bare Ground** 20  
**Moss Lichen** 1  
**Litter** 64  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 0  
**Development** 2  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 POBU  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**  
 VETH

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD)  | 50      | Matrix  | 2    |
| 2. PSSP6-BASA3-LUSE4 (PBI) | 48      | Large   | 3    |
| 3. POTR5/SYAL (KOVALCHIK)  | 2       | Small   | 2    |

**Notes:** Steep slopes above lake & below upper benches. Small rock outcrops also. PUTR2/PSSP6 on steeper, PSSP6-BASA3-LUSE4 on gentler slopes

**Polygon Number** 23Y  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 2  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 2  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, POBU, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, HEUN  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 2  
**Gravel** 0  
**Bare Ground** 28  
**Moss Lichen** 0  
**Litter** 70  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 LIDA

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 1    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:



|                             |                                  |
|-----------------------------|----------------------------------|
| <b>Polygon Number</b>       | <b>24</b>                        |
| <b>Survey Intensity</b>     | 1                                |
| <b>Observer</b>             | SH                               |
| <b>Date</b>                 | 7/13/06                          |
| <b>Specific Location</b>    | SE                               |
| <b>Total Vegetation</b>     | 5                                |
| <b>Trees Total</b>          | 2                                |
| <b>Dominant Trees</b>       | POTR5                            |
| <b>emergent</b>             | 1                                |
| <b>maincanopy</b>           | 2                                |
| <b>subcanopy</b>            | 1                                |
| <b>Shrubs Total</b>         | 2                                |
| <b>Dominant Shrubs</b>      | SYAL, RONU                       |
| <b>&gt; 1.5' tall</b>       | 2                                |
| <b>&lt; 1.5' tall</b>       | 1                                |
| <b>Graminoids Total</b>     | 5                                |
| <b>Dominant Graminoids</b>  | ELCI2, CADO2, JUBA, POPR, BRTE   |
| <b>Graminoids Perennial</b> | 5                                |
| <b>Graminoids Annual</b>    | 2                                |
| <b>Forbs Total</b>          | 3                                |
| <b>Dominant Forbs</b>       | VETH, POAN5, LUSE4, LIRU4, CIAR4 |
| <b>Forbs Perennial</b>      | 3                                |
| <b>Forbs Annual</b>         | 0                                |
| <b>Ferns Total</b>          | 0                                |
| <b>Ferns Evergreen</b>      | 0                                |
| <b>Ferns Deciduous</b>      | 0                                |
| <b>Exotics Total</b>        | 3                                |
| <b>Exotics Perennial</b>    | 3                                |
| <b>Exotics Annual</b>       | 2                                |
| <b>Water</b>                |                                  |
| <b>Rock Outcrop</b>         | 0                                |
| <b>Gravel</b>               | 0                                |
| <b>Bare Ground</b>          | 0                                |
| <b>Moss Lichen</b>          | 0                                |
| <b>Litter</b>               | 100                              |
| <b>Logging</b>              | 0                                |
| <b>Stand Age</b>            | 0                                |
| <b>Agriculture</b>          | 0                                |
| <b>Livestock</b>            | 5                                |
| <b>Development</b>          | 0                                |
| <b>Wildlife</b>             | 0                                |
| <b>Recreation Severity</b>  | 0                                |
| <b>Recreation Type</b>      | 0                                |
| <b>Hydrology</b>            | 0                                |

### Exotic Species

**Primary Exotic**  
CIAR4  
**Secondary Exotic**  
VETH  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. disturbed wetland      | 90      | Matrix  | 1    |
| 2. POTR5/SYAL (KOVALCHIK) | 10      | Small   | 1    |
| 3                         | 0       |         | 0    |

**Notes:** Polygon contains 2 small patches 50m apart.

**Polygon Number** 25A  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 5  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 5  
**< 1.5' tall** 0  
**Graminoids Total** 1  
**Dominant Graminoids** POPR  
**Graminoids Perennial** 1  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** GABO2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 3  
**Development** 5  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 POPR  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 25B  
**Survey Intensity** 1  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 1  
**Dominant Shrubs**  
**> 1.5' tall** 1  
**< 1.5' tall** 0  
**Graminoids Total** 5  
**Dominant Graminoids** CAUT, SCAC, PHAR3  
**Graminoids Perennial** 5  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 4  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 10  
**Moss Lichen** 0  
**Litter** 90  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 3  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 PHAR3  
**Noxious Exotic**

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. disturbed wetland | 65      | Matrix  | 1    |
| 2. SCVA (KOVALCHIK)  | 20      | Large   | 1    |
| 3 TYLA (KOVALCHIK)   | 15      | linear  | 1    |

**Notes:**

**Polygon Number** 26  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** BEOC2  
**emergent** 0  
**maincanopy** 4  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** SARI  
**> 1.5' tall** 4  
**< 1.5' tall** 3  
**Graminoids Total** 3  
**Dominant Graminoids** PHAR3  
**Graminoids Perennial** 3  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** CIAR4, SODU  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 4  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 2

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 SODU  
**Noxious Exotic**  
 PHAR3

### Plant Associations

|                                 | Percent | Pattern | Rank |
|---------------------------------|---------|---------|------|
| 1. SALIX/mesic forb (KOVALCHIK) | 100     | Matrix  | 2    |
| 2.                              | 0       |         | 0    |
| 3                               | 0       |         | 0    |

Notes:

**Polygon Number** 27  
**Survey Intensity** 1  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 2  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 2  
**subcanopy** 2  
**Shrubs Total** 3  
**Dominant Shrubs** BEOC2, ALIN2, SYAL  
**> 1.5' tall** 3  
**< 1.5' tall** 0  
**Graminoids Total** 4  
**Dominant Graminoids** BRIN2, AGRE, PHAR3, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 5  
**Exotics Perennial** 5  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 4  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 1  
**Recreation Type** 1  
**Hydrology** 2

### Exotic Species

**Primary Exotic**  
 PHAR3  
**Secondary Exotic**  
 BRIN2  
**Noxious Exotic**  
 CIAR4

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. disturbed wetland      | 95      | Matrix  | 1    |
| 2. POTR5/SYAL (KOVALCHIK) | 5       | Small   | 1    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 28  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** PIPO, POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 4  
**< 1.5' tall** 3  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, COLI2  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 1  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 3  
**Gravel** 4  
**Bare Ground** 38  
**Moss Lichen** 0  
**Litter** 55  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 LIDA

### Plant Associations

|                           | Percent | Pattern   | Rank |
|---------------------------|---------|-----------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 85      | Matrix    | 2    |
| 2. PUTR2/FEID (CRAWFORD)  | 10      | Scattered | 2    |
| 3. PIPO/SYAL (KAGAN)      | 5       | Small     | 2    |

Notes:

**Polygon Number** 28B  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** PIPO, POTR5  
**emergent** 2  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 5  
**< 1.5' tall** 2  
**Graminoids Total** 2  
**Dominant Graminoids** CARU, BRIN2  
**Graminoids Perennial** 2  
**Graminoids Annual** 1  
**Forbs Total** 2  
**Dominant Forbs** SMST, ASMI9, BASA3, HEUN  
**Forbs Perennial** 2  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRIN2  
**Secondary Exotic**  
 POPR  
**Noxious Exotic**  
 CIAR4

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 2    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 28C  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 3  
**Dominant Graminoids** POPR, POBU  
**Graminoids Perennial** 3  
**Graminoids Annual** 1  
**Forbs Total** 2  
**Dominant Forbs** GABO2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 0  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 5  
**Moss Lichen** 0  
**Litter** 95  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 5  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 POBU  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:



**Polygon Number** 28D  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** PIPO, POTR5  
**emergent** 2  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 2  
**Dominant Graminoids** CARU, POPR, POBU, BRTE  
**Graminoids Perennial** 2  
**Graminoids Annual** 1  
**Forbs Total** 2  
**Dominant Forbs** SMST  
**Forbs Perennial** 2  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 0  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 0  
**Litter** 98  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 28E  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** PIPO, POTR5  
**emergent** 2  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 3  
**Dominant Graminoids** CARU, POBU  
**Graminoids Perennial** 3  
**Graminoids Annual** 1  
**Forbs Total** 3  
**Dominant Forbs** BASA3, ASCO3, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 0  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 20  
**Moss Lichen** 0  
**Litter** 80  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 5  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 POBU  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. PIPO/SYAL (KAGAN) | 100     | Matrix  | 2    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

Notes:

**Polygon Number** 28F  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 4  
**< 1.5' tall** 3  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, COLI2  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 1  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 3  
**Gravel** 4  
**Bare Ground** 38  
**Moss Lichen** 0  
**Litter** 55  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 LIDA

### Plant Associations

|                           | Percent | Pattern   | Rank |
|---------------------------|---------|-----------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 89      | Matrix    | 2    |
| 2. PUTR2/FEID (CRAWFORD)  | 10      | Scattered | 2    |
| 3. PIPO/SYAL (KAGAN)      | 1       | 3         | 2    |

Notes:

**Polygon Number** 29  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 2  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 2  
**< 1.5' tall** 1  
**Graminoids Total** 4  
**Dominant Graminoids** STOC2, AGRE, AGCR, POPR, POBU, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 4  
**Forbs Total** 4  
**Dominant Forbs** ACMI2, LIDA, CADR, CRTO, DERI, COLI2, POMA9, CEDI3  
**Forbs Perennial** 4  
**Forbs Annual** 4  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 4  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 20  
**Moss Lichen** 0  
**Litter** 80  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 LIDA, CEDI3

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 100     | Matrix  | 1    |
| 2.                           | 0       |         | 0    |
| 3                            | 0       |         | 0    |

Notes:

**Polygon Number** 30  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, ERHE2  
**> 1.5' tall** 3  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 3  
**Forbs Total** 4  
**Dominant Forbs** CADR, BASA3  
**Forbs Perennial** 4  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 85  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**  
 CADR

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. PUTR2/FEID (CRAWFORD)   | 90      | Matrix  | 1    |
| 2. LECl grassland (WA NHP) | 10      | linear  | 1    |
| 3                          | 0       |         | 0    |

**Notes:** former ag field

**Polygon Number** 31  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 2  
**Dominant Shrubs** SYAL, PUTR2  
> 1.5' tall 2  
< 1.5' tall 0  
**Graminoids Total** 4  
**Dominant Graminoids** BRIN2, BRTE, POBU  
**Graminoids Perennial** 3  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** LUSE4, CERE6, DERI, CEDI3  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 4  
**Exotics Perennial** 2  
**Exotics Annual** 4  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 25  
**Moss Lichen** 0  
**Litter** 75  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
BRTE  
**Secondary Exotic**  
POBU  
**Noxious Exotic**  
CERE6

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 100     | Matrix  | 1    |
| 2.                           | 0       |         | 0    |
| 3                            | 0       |         | 0    |

Notes:

Polygon Number 32  
 Survey Intensity 2  
 Observer PM  
 Date 6/27/06  
 Specific Location golf course  
 Total Vegetation 6  
 Trees Total 0  
 Dominant Trees  
 emergent 0  
 maincanopy 0  
 subcanopy 0  
 Shrubs Total 0  
 Dominant Shrubs  
 > 1.5' tall 0  
 < 1.5' tall 0  
 Graminoids Total 0  
 Dominant Graminoids  
 Graminoids Perennial 0  
 Graminoids Annual 0  
 Forbs Total 0  
 Dominant Forbs  
 Forbs Perennial 0  
 Forbs Annual 0  
 Ferns Total 0  
 Ferns Evergreen 0  
 Ferns Deciduous 0  
 ExoticsTotal 6  
 Exotics Perennial 0  
 Exotics Annual 0  
 Water  
 Rock Outcrop 0  
 Gravel 0  
 Bare Ground 0  
 Moss Lichen 0  
 Litter 0  
 Logging  
 Stand Age  
 Agriculture  
 Livestock  
 Development  
 Wildlife  
 Recreation Severity  
 Recreation Type  
 Hydrology

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|              | Percent | Pattern | Rank |
|--------------|---------|---------|------|
| 1. Developed | 100     | Matrix  | 1    |
| 2.           | 0       |         | 0    |
| 3            | 0       |         | 0    |

Notes:

**Polygon Number** 33  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 2  
**Dominant Shrubs** Salix, AMAL2  
**> 1.5' tall** 2  
**< 1.5' tall** 0  
**Graminoids Total** 5  
**Dominant Graminoids** BRIN2, POBU  
**Graminoids Perennial** 5  
**Graminoids Annual** 1  
**Forbs Total** 2  
**Dominant Forbs** LUSE4, ACMI2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 5  
**Exotics Perennial** 5  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 20  
**Moss Lichen** 0  
**Litter** 80  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 1  
**Wildlife** 3  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 BRIN2  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                              | Percent          | Pattern | Rank |
|------------------------------|------------------|---------|------|
| 1. former agricultural field | 100              | Matrix  | 1    |
| 2.                           | 0                |         | 0    |
| 3                            | 0                |         | 0    |
| <b>Notes:</b>                | Former ag field. |         |      |



**Polygon Number** 34  
**Survey Intensity** 2  
**Observer** DV  
**Date** 7/3/06  
**Specific Location** court  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** POTR5  
**emergent** 1  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 5  
**< 1.5' tall** 0  
**Graminoids Total** 2  
**Dominant Graminoids** PHAR3  
**Graminoids Perennial** 2  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** SMST  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 1  
**Ferns Evergreen** 1  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 0  
**Litter** 98  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 1  
**Wildlife** 3  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 PHAR3  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 1    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:** Adjacent to golf course. Fern sp = ATFL.

**Polygon Number** 35  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2  
**> 1.5' tall** 4  
**< 1.5' tall** 1  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, FEID, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 1  
**Forbs Total** 2  
**Dominant Forbs** BASA3  
**Forbs Perennial** 2  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 2  
**Gravel** 0  
**Bare Ground** 38  
**Moss Lichen** 0  
**Litter** 60  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 5  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 LIDA  
**Secondary Exotic**  
 BRTE  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 36  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location** gravel pit  
**Total Vegetation** 3  
**Trees Total** 2  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 2  
**subcanopy** 2  
**Shrubs Total** 2  
**Dominant Shrubs** PUTR2  
**> 1.5' tall** 2  
**< 1.5' tall** 1  
**Graminoids Total** 2  
**Dominant Graminoids** PSSP6, AGRE2, BRTE  
**Graminoids Perennial** 2  
**Graminoids Annual** 1  
**Forbs Total** 1  
**Dominant Forbs** LIDA  
**Forbs Perennial** 1  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 5  
**Gravel** 55  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 25  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 6  
**Development** 4 (gravel taken)  
**Wildlife** 3  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 2

### Exotic Species

**Primary Exotic**

LIDA, CIAR4

**Secondary Exotic**

AGRE2, BRTE, POBU, CED13, SIAL2,

**Noxious Exotic**

### Plant Associations

|                                   | Percent | Pattern | Rank |
|-----------------------------------|---------|---------|------|
| 1. PIPO/PUTR2/PSSP6 (LILLYBRIDGE) | 100     | Matrix  | 1    |
| 2.                                | 0       |         | 0    |
| 3                                 | 0       |         | 0    |

**Notes:** Gravel pit above road.

**Polygon Number** 37A  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** POTR5, BEOC2  
**emergent** 0  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 3  
**Dominant Shrubs** SYAL, COST4  
**> 1.5' tall** 3  
**< 1.5' tall** 1  
**Graminoids Total** 4  
**Dominant Graminoids** CADO2, LECI  
**Graminoids Perennial** 4  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** SMST, ACMI2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 0  
**Litter** 98  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4, CADR  
**Secondary Exotic**

**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 60      | Matrix  | 2    |
| 2. CADO/LECI (PBI)        | 40      | Large   | 2    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 37B  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 1  
**Dominant Shrubs** PUTR2, SYAL  
**> 1.5' tall** 1  
**< 1.5' tall** 0  
**Graminoids Total** 5  
**Dominant Graminoids** CADO2, ELCI2, PSSP6  
**Graminoids Perennial** 5  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** CIAR4, ACMI2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 0  
**Litter** 98  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 CADR  
**Noxious Exotic**  
 SAKA

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. LECI grassland (WA NHP) | 100     | Matrix  | 2    |
| 2.                         | 0       |         | 0    |
| 3                          | 0       |         | 0    |

Notes:

**Polygon Number** 37C  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** POTR5, BEOC2  
**emergent** 0  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 3  
**Dominant Shrubs** SYAL, COST4  
**> 1.5' tall** 3  
**< 1.5' tall** 1  
**Graminoids Total** 4  
**Dominant Graminoids** CADO2, LECI  
**Graminoids Perennial** 4  
**Graminoids Annual** 0  
**Forbs Total** 2  
**Dominant Forbs** SMST, ACMI2  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 2  
**Moss Lichen** 0  
**Litter** 98  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4, CADR  
**Secondary Exotic**

**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 60      | Matrix  | 2    |
| 2. CADO/LECI (PBI)        | 40      | Large   | 2    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 38  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 1  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, ARTR2  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, FEID, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 3  
**Dominant Forbs** BASA3, HEUN  
**Forbs Perennial** 3  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 2  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 1  
**Gravel** 4  
**Bare Ground** 35  
**Moss Lichen** 0  
**Litter** 60  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 5  
**Development** 2  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 LIDA  
**Secondary Exotic**  
 CADR  
**Noxious Exotic**

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. PUTR2/FEID (CRAWFORD)   | 97      | Matrix  | 3    |
| 2. LECI grassland (WA NHP) | 3       | Small   | 2    |
| 3                          | 0       |         | 0    |

**Notes:**

**Polygon Number** 39  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 4  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2  
**> 1.5' tall** 3  
**< 1.5' tall** 0  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 1  
**Forbs Total** 3  
**Dominant Forbs** BASA3, SIAL2  
**Forbs Perennial** 2  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 0  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 5  
**Bare Ground** 45  
**Moss Lichen** 0  
**Litter** 50  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 5  
**Development** 1  
**Wildlife** 3  
**Recreation Severity** 2  
**Recreation Type** 1  
**Hydrology** 2

### Exotic Species

**Primary Exotic**  
 SIAL2  
**Secondary Exotic**  
 CEDI3  
**Noxious Exotic**  
 SAKI

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. PUTR2/PSSP6 (CRAWFORD)    | 80      | Matrix  | 2    |
| 2. former agricultural field | 20      | linear  | 3    |
| 3                            | 0       |         | 0    |

**Notes:**



**Polygon Number** 3A  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 5  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 5  
**subcanopy** 2  
**Shrubs Total** 5  
**Dominant Shrubs** SYAL, COST4  
**> 1.5' tall** 5  
**< 1.5' tall** 2  
**Graminoids Total** 0  
**Dominant Graminoids**  
**Graminoids Perennial** 0  
**Graminoids Annual** 0  
**Forbs Total** 1  
**Dominant Forbs**  
**Forbs Perennial** 1  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 0  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 3  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                            | Percent | Pattern | Rank |
|----------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK)  | 90      | Matrix  | 3    |
| 2. POTR5/COST4 (KOVALCHIK) | 10      | Clumped | 3    |
| 3                          | 0       |         | 0    |

**Notes:**

**Polygon Number** 3B  
**Survey Intensity** 1  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** BEOC2, COST4  
**> 1.5' tall** 3  
**< 1.5' tall** 0  
**Graminoids Total** 6  
**Dominant Graminoids** PHAR3  
**Graminoids Perennial** 6  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** CIAR4, RASC  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 6  
**Exotics Perennial** 6  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 3  
**Moss Lichen** 0  
**Litter** 97  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 PHAR3  
**Secondary Exotic**  
  
**Noxious Exotic**  
 CIAR4

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. disturbed wetland | 100     | Matrix  | 1    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

**Notes:**

**Polygon Number** 40  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 3  
**Dominant Trees** BEOC2  
**emergent** 0  
**maincanopy** 3  
**subcanopy** 3  
**Shrubs Total** 4  
**Dominant Shrubs** COST4, ELAN  
**> 1.5' tall** 4  
**< 1.5' tall** 0  
**Graminoids Total** 4  
**Dominant Graminoids** PHAR3, SCAC, POPR, TYLA  
**Graminoids Perennial** 4  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** CIAR4, LYSA2  
**Forbs Perennial** 3  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 5  
**Wildlife** 3  
**Recreation Severity** 2  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 ELAN  
**Noxious Exotic**  
 LYSA2

### Plant Associations

|                                 | Percent | Pattern | Rank |
|---------------------------------|---------|---------|------|
| 1. COST4/mesic forb (KOVALCHIK) | 70      | linear  | 2    |
| 2. SCVA (KOVALCHIK)             | 30      | linear  | 2    |
| 3                               | 0       |         | 0    |

Notes:

**Polygon Number** 41  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 2  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 2  
**subcanopy** 0  
**Shrubs Total** 3  
**Dominant Shrubs** PUTR2, AMAL2  
**> 1.5' tall** 3  
**< 1.5' tall** 0  
**Graminoids Total** 4  
**Dominant Graminoids** STOC2  
**Graminoids Perennial** 4  
**Graminoids Annual** 1  
**Forbs Total** 3  
**Dominant Forbs** HEUN, ACMI2, BASA3  
**Forbs Perennial** 3  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 0  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 15  
**Moss Lichen** 0  
**Litter** 85  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 1  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CEDI3  
**Secondary Exotic**  
 SIAL2  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. PUTR2/STOC2 (CRAWFORD) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 4A  
**Survey Intensity** 1  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 2  
**Dominant Shrubs** ELAN, Salix sp.  
**> 1.5' tall** 2  
**< 1.5' tall** 1  
**Graminoids Total** 4  
**Dominant Graminoids** PHAR3, BRTE, POBU  
**Graminoids Perennial** 4  
**Graminoids Annual** 1  
**Forbs Total** 4  
**Dominant Forbs** CIAR4  
**Forbs Perennial** 4  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 6  
**Exotics Perennial** 5  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CIAR4  
**Secondary Exotic**  
 PHAR3  
**Noxious Exotic**  
 LIDA, CERE6

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. disturbed wetland | 100     | Matrix  | 1    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

Notes:

**Polygon Number** 4B  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 1  
**Dominant Trees** POTR5  
**emergent** 0  
**maincanopy** 1  
**subcanopy** 0  
**Shrubs Total** 1  
**Dominant Shrubs** AMAL2  
**> 1.5' tall** 1  
**< 1.5' tall** 0  
**Graminoids Total** 6  
**Dominant Graminoids** STOC2, CAD02, STCO4, POBU  
**Graminoids Perennial** 6  
**Graminoids Annual** 2  
**Forbs Total** 2  
**Dominant Forbs** LUSE4, PHLI  
**Forbs Perennial** 2  
**Forbs Annual** 2  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 2  
**Exotics Perennial** 0  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 5  
**Moss Lichen** 0  
**Litter** 95  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 4  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 LABI  
**Secondary Exotic**  
 POBU  
**Noxious Exotic**

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 100     | Matrix  | 1    |
| 2.                           | 0       |         | 0    |
| 3                            | 0       |         | 0    |

**Notes:**

**Polygon Number** 5  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/28/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** PIPO, POTR5  
**emergent** 1  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** BEOC2, SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 2  
**Dominant Graminoids** POPR  
**Graminoids Perennial** 2  
**Graminoids Annual** 1  
**Forbs Total** 4  
**Dominant Forbs** SMST, HEUN  
**Forbs Perennial** 4  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 5  
**Moss Lichen** 0  
**Litter** 95  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 0  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 CADR  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 95      | Matrix  | 3    |
| 2. TYLA (KOVALCHIK)       | 5       | Small   | 2    |
| 3                         | 0       |         | 0    |

**Notes:**

**Polygon Number** 6  
**Survey Intensity** 2  
**Observer** PM  
**Date** 10/7/06  
**Specific Location** alfalfa field below road  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
emergent 0  
maincanopy 0  
subcanopy 0  
**Shrubs Total** 0  
**Dominant Shrubs**  
> 1.5' tall 0  
< 1.5' tall 0  
**Graminoids Total** 0  
**Dominant Graminoids**  
Graminoids Perennial 0  
Graminoids Annual 0  
**Forbs Total** 0  
**Dominant Forbs**  
Forbs Perennial 0  
Forbs Annual 0  
**Ferns Total** 0  
Ferns Evergreen 0  
Ferns Deciduous 0  
**Exotics Total** 6  
Exotics Perennial 6  
Exotics Annual 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 0  
**Logging**  
**Stand Age**  
**Agriculture**  
**Livestock**  
**Development**  
**Wildlife**  
**Recreation Severity**  
**Recreation Type**  
**Hydrology**

### Exotic Species

**Primary Exotic**  
MESA  
**Secondary Exotic**  
  
**Noxious Exotic**

### Plant Associations

|                       | Percent | Pattern | Rank |
|-----------------------|---------|---------|------|
| 1. agricultural field | 100     | Matrix  | 1    |
| 2.                    | 0       |         | 0    |
| 3                     | 0       |         | 0    |

Notes:



**Polygon Number** 7  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 5  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 0  
**Dominant Shrubs**  
**> 1.5' tall** 0  
**< 1.5' tall** 0  
**Graminoids Total** 4  
**Dominant Graminoids** AGRE, BRTE  
**Graminoids Perennial** 4  
**Graminoids Annual** 3  
**Forbs Total** 3  
**Dominant Forbs** CEDI3, SIAL2, SAKA  
**Forbs Perennial** 0  
**Forbs Annual** 3  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 5  
**Exotics Perennial** 3  
**Exotics Annual** 3  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 50  
**Moss Lichen** 0  
**Litter** 50  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 6  
**Livestock** 5  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 AGRE  
**Secondary Exotic**  
 CEDI3  
**Noxious Exotic**  
 SIAL2

### Plant Associations

|                              | Percent | Pattern | Rank |
|------------------------------|---------|---------|------|
| 1. former agricultural field | 100     | Matrix  | 1    |
| 2.                           | 0       |         | 0    |
| 3                            | 0       |         | 0    |

Notes:

**Polygon Number** 7B  
**Survey Intensity** 2  
**Observer** DV  
**Date** 10/11/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** POTR5, ULPU  
**emergent** 0  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL, COST4, RONU  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 2  
**Dominant Graminoids** PHAR3, BRTE  
**Graminoids Perennial** 1  
**Graminoids Annual** 1  
**Forbs Total** 2  
**Dominant Forbs** ARMI2, URDI  
**Forbs Perennial** 2  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 0  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 3  
**Moss Lichen** 0  
**Litter** 97  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 4  
**Development** 5  
**Wildlife** 2  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

Primary Exotic

Secondary Exotic

Noxious Exotic

### Plant Associations

|                           | Percent | Pattern | Rank |
|---------------------------|---------|---------|------|
| 1. POTR5/SYAL (KOVALCHIK) | 100     | Matrix  | 3    |
| 2.                        | 0       |         | 0    |
| 3                         | 0       |         | 0    |

Notes:

**Polygon Number** 8  
**Survey Intensity** 2  
**Observer** DV  
**Date** 6/30/06  
**Specific Location**  
**Total Vegetation** 6  
**Trees Total** 4  
**Dominant Trees** PIPO  
**emergent** 0  
**maincanopy** 4  
**subcanopy** 2  
**Shrubs Total** 4  
**Dominant Shrubs** SYAL  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 3  
**Dominant Graminoids** CARU  
**Graminoids Perennial** 3  
**Graminoids Annual** 0  
**Forbs Total** 3  
**Dominant Forbs** BASA3, GABO2, PHLI  
**Forbs Perennial** 3  
**Forbs Annual** 1  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 1  
**Exotics Perennial** 1  
**Exotics Annual** 1  
**Water**  
**Rock Outcrop** 0  
**Gravel** 2  
**Bare Ground** 3  
**Moss Lichen** 0  
**Litter** 95  
**Logging** 2  
**Stand Age** 2  
**Agriculture** 0  
**Livestock** 4  
**Development** 2  
**Wildlife** 3  
**Recreation Severity** 3  
**Recreation Type** 3  
**Hydrology** 1

### Exotic Species

**Primary Exotic**  
 AGRE  
**Secondary Exotic**  
 AGCR  
**Noxious Exotic**  
 BRTE

### Plant Associations

|                      | Percent | Pattern | Rank |
|----------------------|---------|---------|------|
| 1. PIPO/SYAL (KAGAN) | 100     | Matrix  | 2    |
| 2.                   | 0       |         | 0    |
| 3                    | 0       |         | 0    |

Notes:

**Polygon Number** 9  
**Survey Intensity** 1  
**Observer** SH  
**Date** 6/30/06  
**Specific Location** NW  
**Total Vegetation** 6  
**Trees Total** 0  
**Dominant Trees**  
**emergent** 0  
**maincanopy** 0  
**subcanopy** 0  
**Shrubs Total** 4  
**Dominant Shrubs** PUTR2, ERHE2, SYAL, AMAL2  
**> 1.5' tall** 4  
**< 1.5' tall** 2  
**Graminoids Total** 4  
**Dominant Graminoids** PSSP6, FEID  
**Graminoids Perennial** 4  
**Graminoids Annual** 2  
**Forbs Total** 4  
**Dominant Forbs** BASA3  
**Forbs Perennial** 4  
**Forbs Annual** 0  
**Ferns Total** 0  
**Ferns Evergreen** 0  
**Ferns Deciduous** 0  
**Exotics Total** 3  
**Exotics Perennial** 3  
**Exotics Annual** 2  
**Water**  
**Rock Outcrop** 0  
**Gravel** 0  
**Bare Ground** 0  
**Moss Lichen** 0  
**Litter** 100  
**Logging** 0  
**Stand Age** 0  
**Agriculture** 0  
**Livestock** 0  
**Development** 0  
**Wildlife** 0  
**Recreation Severity** 0  
**Recreation Type** 0  
**Hydrology** 0

### Exotic Species

**Primary Exotic**  
 BRTE  
**Secondary Exotic**  
 LIDA  
**Noxious Exotic**

### Plant Associations

|                          | Percent | Pattern | Rank |
|--------------------------|---------|---------|------|
| 1. PUTR2/FEID (CRAWFORD) | 100     | Matrix  | 2    |
| 2.                       | 0       |         | 0    |
| 3                        | 0       |         | 0    |

Notes: