Rare Plant and Vegetation Survey of Wenatchee Confluence State Park

Pacific Biodiversity Institute
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December 2008

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Recommended Citation

Acknowledgements
Juliet Rhodes, Diana Hackenburg, and Alexis Monetta entered the data we collected into databases. Juliet Rhodes checked the data to ensure data integrity. The photographs in this report were taken during this project by George Wooten and Peter Morrison.

Project Funding
This project was funded by the Washington State Parks and Recreation Commission.
Executive Summary

Pacific Biodiversity Institute (PBI) conducted a rare plant and vegetation survey of Wenatchee Confluence State Park for the Washington State Parks and Recreation Commission (WSPRC). Wenatchee Confluence State Park covers 231.08 acres in Chelan County. The park is situated within the northern city limits of Wenatchee along the Columbia River, where it is impounded by the Rock Island Dam. Wenatchee Confluence State Park is a popular camping area and has heavy use by bicyclists and walkers. Trails are both paved and gravel.

Wenatchee Confluence State Park was mapped into 22 polygons covered by eight primary plant communities or mapped as developed, disturbed or water. Existing plant communities were characterized within each polygon. Several of the primary plant communities are globally rare, however restoration opportunities are limited in a practical sense to the existing natural area where there is already a wetland and a wildlife restoration project underway.

There were no occurrences of rare plants listed by the State of Washington found in Wenatchee Confluence State Park.

We found 13 species of noxious weeds at Wenatchee Confluence State Park. Five of these were Class B noxious weeds and eight were Class C weeds. The most widespread noxious weed found in wet areas was reed canary grass (*Phalaris arundinacea*). The most widespread noxious weed found in dry areas was diffuse knapweed (*Centaurea diffusa*). Two aquatic noxious weeds were found including pale yellow iris (*Iris pseudacorus*) and Eurasian watermilfoil (*Myriophyllum spicatum*). The latter species and reed canary grass are becoming established in a habitat restoration area. If this continues it will seriously diminish the value of these wetlands to wildlife.

About 40% of Wenatchee Confluence State Park is developed. The ecological condition of non-developed plant communities in the park varied from poor to good. We made recommendations for restoration within the area where a wetland creation and wildlife habitat enhancement project is already underway. The recommendations focused on creation or maintenance of a beneficial hydrologic regime.
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Introduction

Wenatchee Confluence State Park occupies 231 acres in Chelan County within the northern part of the city of Wenatchee. The park is bordered by the Columbia River above its impoundment by Rock Island Dam. The Wenatchee River goes through the center of the park under a footbridge to join the Columbia River system. Wenatchee Confluence State Park lies in the rain shadow of the North Cascades. The area receives about 9 inches of precipitation annually. Soils are an alluvial mixture of sand and rocks from upstream sources.

The park has a long paved trail system that is used extensively by bicyclists, walkers and joggers. A wetland complex south of the Wenatchee River is restricted to pedestrian travel. This area provides a natural area for waterfowl and other wildlife. Most of the wetlands in this complex have been created by excavation, rather than by natural processes. There are also extensive wetlands created by the inundation of the confluence area by reservoir created by Rock Island Dam. These are also artificial wetlands, but offer habitat to a diversity of wildlife.

Survey Conditions and Survey Routes

Wenatchee Confluence State Park was initially visited by one botanist/ecologist on April 28. A follow-up visit was conducted by two botanist/ecologists on September 19. The survey routes are shown in Figure 1. The park was easily accessible on foot, except for the wetland areas, which were generally inaccessible due to flooding and dense vegetation. They were sampled from the edges and viewed from nearby locations.
Figure 1. Field Survey Schedule and Routes.
Vegetation Communities

Methods

Pre-field reviews of literature, GIS data, and remote sensing data were conducted early in the season. Maps, GIS data, and remotely sensed data were assembled together into an ArcMap GIS project covering the project area. Topographic maps and digital elevation models (DEMs) were also assembled. Using the gathered spatial data resources, discrete vegetation polygons meant to represent specific plant communities or mosaics of plant communities were manually delineated by staff ecologists as polygon features in an ESRI shapefile format.

The park was then more than once during the field season to assure observation of both early and late-blooming plant species. The first visit was primarily a reconnaissance of the project area, meant to create a basic plant list for the park and to conduct initial rare plant surveys for early bloomers. The latter visit focused on collecting field data for the vegetation polygon map and adding more species to the plant list during different times of the season. Before the field season was complete, all vegetation polygons that could be accessed safely were visited and field data was collected.

Plant community data was recorded on a form initially developed by WSPRC (Appendix A). Recorded data included a wide variety of information about the vegetation composition, environmental characteristics, disturbance history and other notes for each polygon. Each polygon was rated for its overall ecological condition. Vegetation community and land cover classifications were assigned using information and keys from standard literature sources cited in the Reference section of this document (Bourgeron and Engelking 1994, Clausnitzer and Zamora 1987, Crawford 1999, Crawford 2003, Daubenmire 1970, Kagan et al 2000, Kovalchik and Clausnitzer 2004, Lillybridge et al 1995, NatureServe 2008).

During field visits survey personnel had printed and digital maps available that included high resolution aerial imagery. Digital maps were accessed in the field using ArcPad software (ESRI 2007) running on pocket PC, GPS enabled devices. Use of ArcPad allowed all survey routes to be mapped on a GPS recorder in real time, and allowed for viewing and editing data directly from field locations, resulting in field-verified attributes for the vegetation polygons.

Once gathered, the field data was edited and entered into a Microsoft Access database and linked to the vegetation polygon geodatabase. Further refinements and editing of the vegetation data stored in the personal geodatabase was made based on information collected in the field with ArcPad.

Historical Vegetation

The historical vegetation at Wenatchee Confluence State Park has been modified by development, by plant invasion and by the damming of the Columbia River. Today, the Wenatchee-Columbia confluence is elevated to its present location within the park, it is also displaced several hundred feet from its former location, which is now underwater. Parts of this riverine community remain functionally similar; however, most of the vegetation along the river and lake is now dominated by non-native species.

The uplands at Wenatchee Confluence State Park historically received about nine inches per year of precipitation. This amount of rainfall is only enough to support shrub-steppe communities and a few scattered ponderosa pines. The shrub-steppe communities were probably dominated by big sagebrush (Artemisia tridentata; ARTR2) and rubber rabbitbrush (Ericameria nauseosa; ERNA10). Today these areas are primarily lawns, roads and buildings, with few native species remaining.
The lower elevation wetland and riparian communities at Wenatchee Confluence State Park would have been dominated by cottonwood (*Populus balsamifera* ssp. *trichocarpa*; POBAT) and narrowleaf willow (*Salix exigua*; SAEX). Both of these species are still represented in these communities, but their former dominance has been lessened by the invasion of non-native trees and shrubs, notably mulberry (*Morus albus*; MOAL) and Himalayan blackberry (*Rubus armeniacus*; RUAR9). Historically, the Columbia River would have provided a disturbance regime to maintain these communities. Disturbances would have included browsing by beavers, however these were trapped out in the early 1800s. Both willows and cottonwood tolerate moderate flooding and readily sprout when pruned.

Today there is a complex of created wetlands just south of the Wenatchee River at Wenatchee Confluence State Park. These wetlands lack many of the historic hydrologic processes that formerly maintained a functional ecological system; hence their presence is largely aesthetic. Historically, ecological processes would have been dependent on seasonal flooding; braiding of the water channels, presence of large woody debris, silt and cobble deposition, physical soil properties, chemical soil properties, and the activities of key species such as beavers and waterfowl.

Uplands may have been maintained by periodic low-severity wildfires. Fire was started both by lightning and by the native Indians, who used fire to improve forage for wildlife and cultural plants (Boyd, 1999). Under historic fire regimes, annual species and grasslands would have been more predominant than they are today. Due to the urban nature of this park, restoration of fire to this area was not considered practical.

**Results**

**Vegetation Community Mapping**

A total of 22 vegetation community polygons were mapped and surveyed in Wenatchee Confluence State Park (Figure 2). These polygons were categorized into 8 plant associations along with cover types for disturbed areas, developed areas and water (Table 1). Table 2 gives additional reference information about the plant associations. The communities were assigned to either a primary, secondary or tertiary community. Primary community types are the dominant or matrix vegetation community within a polygon, whereas secondary and tertiary community types are less abundant vegetation community types that occur within the same polygon and were not conducive to being mapped as a separate polygon due to the size, shape, or pattern of the community patches within the polygon.
Figure 2. Map of Wenatchee Confluence State Park showing vegetation community polygons overlaid onto an aerial photo of the park.
### Table 1. Plant communities observed in Wenatchee Confluence State Park.

<table>
<thead>
<tr>
<th>Plant Association, Vegetation Community or Land Cover (Codes)</th>
<th>Plant Communities and Land Cover Observed (Codes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cottonwood / red-osier dogwood (POBAT / COSE16)</td>
<td>POBAT/COSE16; POBAT/COSE16-SAEX/PHAR3; POBAT-MOAL/SAEX-COSE16/PHAR3; ULP/SAEX-PRVI-COSE16</td>
</tr>
<tr>
<td>Cottonwood / narrowleaf willow (POBAT / SAEX)</td>
<td>POBAT/ROWO/PHAR3; POBAT/SAEX; POBAT/SAEX/PHAR3; ROWO/PHAR3-ELRE4; ROWO-SAEX/PHAR3-ACRE3</td>
</tr>
<tr>
<td>Cottonwood / Juncus arcticus ssp. littoralis (POBAT / JUARL)</td>
<td>POBAT/POPR</td>
</tr>
<tr>
<td>Narrowleaf willow (SAEX)</td>
<td>ACRE3-CIAR4 (impoundment); Cobble bar; SAEX; SAEX/PHAR3; SAEX/TYLA-PHAR3</td>
</tr>
<tr>
<td>Black hawthorn – Wood’s rose (CRDO2-ROWO)</td>
<td>MOAL/PHAR3</td>
</tr>
<tr>
<td>Basin wildrye (LECI4)</td>
<td>ULP/LECI4-PHAR3-ACRE3</td>
</tr>
<tr>
<td>Reed canary grass (PHAR3) (secondary plant association)</td>
<td>PHAR3</td>
</tr>
<tr>
<td>Cattail (TYLA)</td>
<td>TYLA</td>
</tr>
<tr>
<td>Developed</td>
<td>Developed campground areas</td>
</tr>
<tr>
<td>Disturbed</td>
<td>SECE-BASC5; ULP/POBU; ULP/POBU-ELIN3-CEDI3</td>
</tr>
<tr>
<td>Water (secondary community)</td>
<td>Water</td>
</tr>
</tbody>
</table>

### Table 2. Plant association reference table for Wenatchee Confluence State Park. Global status is defined in Appendix C.

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Names</th>
<th>Authority</th>
<th>Global Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>POBAT / COSE16</td>
<td><em>Populus trichocarpa</em> / <em>Cornus sericea</em></td>
<td>Kovalchik and Clausnitzer 2004</td>
<td>G3 (vulnerable)</td>
</tr>
<tr>
<td>SAEX</td>
<td><em>Salix exigua</em></td>
<td>Bourgeron and Engelking 1994</td>
<td>G5 (secure)</td>
</tr>
<tr>
<td>CRDO2-ROWO</td>
<td><em>Crataegus douglasii</em> - <em>Rosa woodsii</em></td>
<td>Crawford 2003</td>
<td>G2 (globally imperiled)</td>
</tr>
<tr>
<td>LECI4</td>
<td><em>Leymus cinereus</em></td>
<td>Crawford 2003; Evans 1999</td>
<td>G1 (critically imperiled)</td>
</tr>
<tr>
<td>PHAR3</td>
<td><em>Phalaris arundinacea</em></td>
<td>Crawford 2003</td>
<td>G5 (secure)</td>
</tr>
<tr>
<td>TYLA</td>
<td><em>Typha latifolia</em></td>
<td>Crawford 2003</td>
<td>G5 (secure)</td>
</tr>
</tbody>
</table>
Each vegetation community polygon has at least one primary vegetation community/land cover class assigned to it, and up to 2 additional classes. Figure 3 shows a map depicting the primary vegetation community/land cover class for each polygon within the park. Appendix D describes the attributes described for each polygon mapped within the project area.

Figure 3. Map of primary plant communities attributed to each vegetation polygon.
Vegetation Community and Land Cover Types

Cottonwood / red-osier dogwood (POBAT / COSE16) G3

Figure 4. An example of the cottonwood / red-osier dogwood plant association at Wenatchee Confluence State Park.

At Wenatchee Confluence State Park, the cottonwood / red-osier dogwood plant association occurs in seasonally flooded sloughs along the Wenatchee River (Figure 4). This plant association is a wetland/riparian community with an overstory of cottonwood (*Populus balsamifera* ssp. *trichocarpa*; POBAT) and with an understory dominated by red-osier dogwood (*Cornus sericea*; COSE16). This plant association was described by Kovalchik and Clausnitzer (2004). It has a rank of G3, implying that it is vulnerable globally.

The cottonwood / red-osier dogwood plant association is similar to the cottonwood / narrowleaf willow (*Salix exigua*; SAEX) plant association, but it tends to have a higher diversity in the understory. These communities have been seriously compromised by non-native tree and shrub invasion. Other commonly observed species in this plant association include mulberry (*Morus albus*; MOAL), Canada thistle (*Cirsium arvense*; CIAR4) and reed canary grass (*Phalaris arundinacea*; PHAR3), none of which are native.
Cottonwood / narrowleaf willow (POBAT / SAEX) G1

Figure 5. An example of the cottonwood / narrowleaf willow plant association at Wenatchee Confluence State Park.

In Wenatchee Confluence State Park the cottonwood / narrowleaf willow plant association occurs near the confluence of the Wenatchee River and the Columbia River reservoir (Figure 5). This plant association was described by Crawford (2003) as a vegetative type and by Kagan (2000). It is ranked G1, critically imperiled. Only a few examples of this type of association are known, and those that are known are mostly overrun with invasive species.

The cottonwood / narrowleaf willow plant association occurs in seasonally flooded and scoured sandy alluvial areas. Narrowleaf willow forms a continuous shrub canopy, while cottonwoods and other deciduous overstory trees make up an open upper canopy. At Wenatchee Confluence Lake State Park this community is being invaded by reed canary grass (*Phalaris arundinacea*; PHAR3), but narrowleaf willow appears capable of maintaining its presence along the water’s edge where there is enough sunlight.

The cottonwood / narrowleaf willow plant association is adjacent to a number of other cottonwood plant communities that appear to differ in soil moisture and age of the stand. The cottonwood / narrowleaf willow plant association has the wettest soil of all of these, and usually borders open water. There were two polygons identified with this plant association as the primary type. One of these occurs in a narrow strip in the north part of the park; the other occurs south of the mouth of the Wenatchee River. Only the latter polygon is large enough to maintain a functional ecosystem. In this polygon, the cottonwoods have matured to form a dense overstory. This is probably a natural successional process that will increase the ecological value of the stand over time. However, this may benefit late seral species such as redosier dogwood (*Cornus sericea*) and western poison ivy (*Toxicodendron rydbergii*) at the expense of the narrowleaf willow.
Cottonwood / Baltic rush (POBAT/JUARL) (G5)

Figure 6 (left). An example of the cottonwood / Baltic rush plant association at Wenatchee Confluence State Park. The understory of Baltic rush has been converted to a lawn dominated by Kentucky bluegrass. Figure 7 (right). An example of the cottonwood / Baltic rush plant association being invaded by bulbous bluegrass.

The cottonwood / Baltic rush plant association occurs adjacent to wetlands in areas above the high water mark. Figure 6 shows a lawn and picnic area that may have once been a cottonwood / Baltic rush community. Normally, this plant community has an open overstory of cottonwood and an understory of Baltic rush and other graminoids. This plant association was described as a vegetative type by Crawford (2003). It is ranked G5 (secure).

The cottonwood / Baltic rush community is often adjacent to the cottonwood / red-osier plant community (POBAT / COSE16), which prefers moister soils. The red-osier dogwoods are growing at the edge of the picnic area along the shore of the Columbia River reservoir.

The cottonwood / Baltic rush plant association can tolerate drying out of the upper soil profile in the summer. However, Baltic rush is a heliophile that will not persist under a closed canopy. These conditions make this community susceptible to invasion. Figure 7 shows the condition of the same community photographed in the opposite direction from that of Figure 6, where there is no mowing or irrigation. Although cottonwood and Baltic rush can persist in this stand, the invasive species bulbous bluegrass (*Poa bulbosa*; POBU) is able to gain a foothold.

For the cottonwood / Baltic rush community to remain healthy would require cyclic changes in the water table and occasional flooding or beaver activity to bring in silt and thin out cottonwoods.
Narrowleaf willow (SAEX) G5

Figure 8. An example of the narrowleaf willow community at Wenatchee Confluence State Park.

At Wenatchee Confluence State Park, the narrowleaf willow community occurs along shorelines of the Wenatchee River and the Columbia River reservoir, as well as around created wetlands (Figure 8). This community was described by Bourgeron and Engelking (1994). It is ranked G5, secure.

The narrowleaf willow community occurs in seasonally flooded areas, adjacent to the lower limit of woody vegetation. This community is similar to the cottonwood / narrowleaf willow plant association except that it lacks a significant overstory of cottonwood. This community often has an understory of reed canary grass, (*Phalaris arundinacea*; PHAR3).

At Lake Wenatchee Confluence State Park, the narrowleaf willow community is recolonizing an area of created wetlands just south of the Wenatchee River, as shown in Figure 8. Despite having an inordinate number of invasive species, the narrowleaf willow has a competitive advantage in its colonial root system and dense canopy able to shade out competitors.
Black hawthorn / Woods’ rose (CRDO2-ROWO) (G2)

At Wenatchee Confluence State Park, the black hawthorn / Woods’ rose community occurs on mesic sites with higher water tables such as the trail system. This vegetation community is characterized by a understory of Wood’s rose (Rosa woodsii; ROWO) and an overstory of black hawthorn (Crataegus douglasii; CRDO2). It was described by Crawford (2003) and it is ranked G2, globally imperiled. Crawford (2003) classified this as a vegetation community that may not represent the climax community rather than a plant association.

Unfortunately, the black hawthorn / Wood’s rose community has been lost to invasive species at Wenatchee Confluence State Park. The polygon where this plant association was identified is now dominated by a monoclone of mulberry (Morus albus; MOAL), which is sterile underneath except where reed canary grass (Phalaris arundinacea; PHAR3) has invaded the edges.

It may be possible to restore this vegetation community since Wood’s rose can become dominant if allowed to get sunlight and black hawthorn can increase if sufficient water is available.
Basin wildrye bottomland herbaceous vegetation (LECI4) (G1)

Figure 9. An example of the basin wildrye community (behind fence).

At Wenatchee Confluence State Park, the basin wildrye bottomland herbaceous community occurs in a meadow area at the entrance of a wildlife viewing area (Figure 9). It is characterized by mesic meadows dominated by basin wildrye (*Leymus cinereus*; LECI4). Basin wildrye has a strong preference for calcareous soils. This community was described by Crawford (2003) and by Evans (1989). It is ranked G1, critically imperiled.

The basin wildrye bottomland herbaceous community is not well understood. Therefore, it is difficult to tell how this community will change over time. It is possible that the basin wildrye vegetation was formerly more prevalent. The example of this vegetation community at Wenatchee Confluence State Park is in fair ecological condition. The area shown in Figure 10 also includes an area of created wetlands to the right of the photo that was heavily impacted by excavating equipment during construction. Earlier construction activities also included dropping riprap in the channel to the left of the photo. Following construction, the area may have been seeded to prevent erosion, judging from the abundance of intermediate wheatgrass (*Thinopyrum intermedium*; THIN6) which is frequently prescribed for restoration of bare soils. A number of noxious weeds and other invaders have also become established in this community, including Russian knapweed (*Acroptilon repens*; ACRE3), cheatgrass (*Bromus tectorum*; BRTE) and burningbush or Kochia (*Bassia scoparia*; BASC5). Wetter areas are being invaded by reed canary grass (*Phalaris arundinacea*; PHAR3).
Reed canary grass (PHAR3) G5

At Wenatchee Confluence State Park, reed canary grass (*Phalaris arundinacea*; PHAR3) occurs in monoclonal patches in areas with high water tables (Figure 10). This community was only found as a secondary plant association. Reed canary grass establishment is favored by the presence of deep, silty soils. This community is ranked G5, globally secure, but this is misleading, as reed canary grass is not considered a native to this area. There is some debate on the natural range of this species, but it is safe to say that its range is expanding. The distribution of reed canary grass as a natural community is complicated because of range expansion into wetlands and riparian areas, where it is displacing the local flora.
Cattails (TYLA) G5

At Wenatchee Confluence State Park, patches of cattails (*Typha latifolia*; TYLA) occur in areas with perennially wet soils with seasonal inundation (Figure 11). Crawford (2003) described a cattail community that is ranked G5, secure.

Cattails were observed at Wenatchee Confluence State Park near the confluence of the Wenatchee River and the Columbia River reservoir, and in the area of created wetlands south of the Wenatchee River. Cattails are a beneficial native community that should be encouraged to form more colonies within the park.

**Other Land Cover Types**

Wenatchee Confluence State Park has these other land cover types:

- Disturbed areas where human activities have greatly altered and disturbed the native vegetation. These areas are now often dominated by weeds.
- Developed areas with roads and campgrounds
- Water
Rare Plant Surveys

Methods
Wenatchee Confluence State Park was searched for rare plants two times by two people during the 2008 field season. 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. We collected plant specimens for later identification when needed. We used a wide range of floras and other plant identification references (e.g. Boersma et al 2006, Flora of North America 1993+, Jolley 1988, Hitchcock and Cronquist 1973, Hitchcock et al 1955, Hickman 1993, University of Washington Burke Museum Herbarium Vascular Plant Collection, USDA 2008, Washington Natural Heritage Program 2008, Washington Natural Heritage Program. no date, Whitson et al 2000, Wilson 2006).

There are no historic sightings of threatened, endangered or sensitive plants reported for the area. Field surveys were conducted on April 28 and September 19. We looked for rare plants in habitats previously identified as being likely occurrence sites based on DNR NHP rare plant lists and maps of previous sightings in the surrounding area. So as not to miss any rare plants, 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 need to cover efficiently a large proportion of the park’s area throughout the field season. We surveyed areas of the park more intensively where rare plants were felt more likely to occur. This method is referred to as the intuitive-controlled method of rare plant surveys (Whiteaker 1998). These areas were the lakeshore, wetlands, and the stream at the west end of the park. Survey routes for the rare plant inventory and rare plant locations were recorded as GPS waypoints and trackpoints, all of which were later compiled into a single GIS data layer, depicted in Figure 1.

Results
Surveys confirmed that there were no threatened, endangered or sensitive plants in Wenatchee Confluence State Park.
Vascular Plant List for the 2008 Project Area

There were 127 vascular taxa identified to species during surveys of Wenatchee Confluence State Park (Table 3). An additional 5 species could only be identified to the rank of genus, bringing the total number of taxa in the park to 132. Another 6 specimens that could only be identified to the rank of genus were not counted as taxa. Table 3 also identifies 66 non-native species identified within the park, or approximately 50% of the total number of species observed.

Table 3. Vascular Plant Species of Wenatchee Confluence State Park. The column “Symbol” represents the plant code used on the USDA PLANTS database.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Scientific Name with Author</th>
<th>National Common Name</th>
<th>Family</th>
<th>Exotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPL</td>
<td>Acer platanoides L.</td>
<td>Norway maple</td>
<td>Aceraceae</td>
<td>yes</td>
</tr>
<tr>
<td>ACRE3</td>
<td>Acreptilion repens (L.) DC.</td>
<td>hardheads</td>
<td>Asteraceae</td>
<td>yes</td>
</tr>
<tr>
<td>ACSA2</td>
<td>Acer saccharinum L.</td>
<td>silver maple</td>
<td>Aceraceae</td>
<td>yes</td>
</tr>
<tr>
<td>AGCR</td>
<td>Agropyron cristatum (L.) Gaerth.</td>
<td>crested wheatgrass</td>
<td>Poaceae</td>
<td>yes</td>
</tr>
<tr>
<td>AIAL</td>
<td>Ailanthus altissima (Mill.) Swingle</td>
<td>tree of heaven</td>
<td>Simaroubaceae</td>
<td>yes</td>
</tr>
<tr>
<td>AMAL2</td>
<td>Amelanchier alnifolia (Nutt.) Nutt. ex M. Roem.</td>
<td>Saskatoon serviceberry</td>
<td>Rosaceae</td>
<td></td>
</tr>
<tr>
<td>AMAR2</td>
<td>Ambrosia artemisiifolia L.</td>
<td>annual ragweed</td>
<td>Asteraceae</td>
<td>yes</td>
</tr>
<tr>
<td>APCA</td>
<td>Apocynum cannabinum L.</td>
<td>Indianhemp</td>
<td>Apocynaceae</td>
<td></td>
</tr>
<tr>
<td>ARDR4</td>
<td>Artemisia dracunculus L.</td>
<td>tarragon</td>
<td>Asteraceae</td>
<td></td>
</tr>
<tr>
<td>ARLU</td>
<td>Artemisia ludoviciana Nutt.</td>
<td>white sagebrush</td>
<td>Asteraceae</td>
<td></td>
</tr>
<tr>
<td>ARMI2</td>
<td>Arctium minus Bernh.</td>
<td>lesser burdock</td>
<td>Asteraceae</td>
<td>yes</td>
</tr>
<tr>
<td>ARMI4</td>
<td>Artemisia michauxiana Beisser</td>
<td>Michaux's wormwood</td>
<td>Asteraceae</td>
<td></td>
</tr>
<tr>
<td>ARTR2</td>
<td>Artemisia tridentata Nutt.</td>
<td>big sagebrush</td>
<td>Asteraceae</td>
<td></td>
</tr>
<tr>
<td>ARTR4</td>
<td>Artemisia tripartita Rydb.</td>
<td>threetip sagebrush</td>
<td>Asteraceae</td>
<td></td>
</tr>
<tr>
<td>ASCLE</td>
<td>Asclepias L.</td>
<td>milkweed</td>
<td>Asclepiadaceae</td>
<td></td>
</tr>
<tr>
<td>ASFA</td>
<td>Asclepias fascicularis Decne.</td>
<td>Mexican whorled milkweed</td>
<td>Asclepiadaceae</td>
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<td>garden asparagus</td>
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<td>Athyrium filix-femina (L.) Roth</td>
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<td>Betula pendula Roth</td>
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<td>Bromus inermis Leyss.</td>
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<td>Capsella bursa-pastoris (L.) Medik.</td>
<td>shepherd's purse</td>
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<td>Cardaria draba (L.) Desv.</td>
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<td>crossflower</td>
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<td>Cornus sericea L.</td>
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<td>Coreopsis tinctoria Nutt. var. atkinsoniana (Douglas ex Lindl.) H.M. Parker ex E.B. Sm.</td>
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<td>Elymus L.</td>
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<td>Epilobium minutum Lindl. ex Lehm.</td>
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<td>Equisetum arvense L.</td>
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<td>EQLA</td>
<td>Equisetum laevigatum A. Braun</td>
<td>smooth horsetail</td>
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<td>Erodium cicutarium (L.) L'Hér. ex Aiton</td>
<td>redstem stork's bill</td>
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<td>Eriogonum compositum Douglas ex Benth.</td>
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<td>Ericameria nauseosa (Pall. ex Pursh) G.L. Nesom &amp; Baird</td>
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<td>Hordeum jubatum L.</td>
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<td>Hypericum perforatum L.</td>
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<td>Juncus arcticus Willd. ssp. littoralis (Engelm.) Hultén</td>
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<td>Lomatium grayi (J.M. Coult. &amp; Rose) J.M. Coult. &amp; Rose</td>
<td>Gray's biscuitroot</td>
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<td>Malus pumila Mill.</td>
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<td>Medicago sativa L.</td>
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<td>Morus alba L.</td>
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<td>Opuntia fragilis (Nutt.) Haw.</td>
<td>brittle pricklypear</td>
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<td>Oxalis corniculata L.</td>
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<td>Sambucus nigra L. ssp. cerulea (Raf.) R. Bolli</td>
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<td>SYFO2</td>
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<td>Symphyotrichum lanceolatum (Willd.) G.L. Nesom ssp. hesperium (A. Gray) G.L. Nesom</td>
<td>white panicle aster</td>
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<tr>
<td>TYLA</td>
<td>Typha latifolia L.</td>
<td>broadleaf cattail</td>
<td>Typhaceae</td>
<td></td>
</tr>
<tr>
<td>ULPF</td>
<td>Ulmus pumila L.</td>
<td>Siberian elm</td>
<td>Ulmaceae</td>
<td>yes</td>
</tr>
<tr>
<td>URDI</td>
<td>Urtica dioica L.</td>
<td>stinging nettle</td>
<td>Urticaceae</td>
<td></td>
</tr>
</tbody>
</table>
**Discussion and Recommendations**

**Noxious Weeds**

A list 13 species of noxious weeds found at Wenatchee Confluence State Park is presented in Table 4. The noxious weeds that were observed within each polygon are recorded in the corresponding record in the vegetation database for the park, which is included in this report as Appendix D.

During our surveys of Wenatchee Confluence State Park, we found 13 species of noxious weeds. We found five Class B noxious weeds and eight Class C weeds. The most widespread noxious weed found in wet areas was reed canary grass (*Phalaris arundinacea*). The most widespread noxious weed found in dry areas was diffuse knapweed (*Centaurea diffusa*). Two aquatic noxious weeds were found including pale yellow iris (*Iris pseudacorus*) and Eurasian watermilfoil (*Myriophyllum spicatum*). The latter species and reed canary grass are becoming established in a habitat restoration area. If this continues it will seriously diminish the value of these wetlands to wildlife.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Scientific Name with Author</th>
<th>National Common Name</th>
<th>State Weed Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACRE3</td>
<td><em>Acroptilon repens</em> (L.) DC.</td>
<td>hardheads</td>
<td>B</td>
</tr>
<tr>
<td>BASC5</td>
<td><em>Bassia scoparia</em> (L.) A.J. Scott</td>
<td>burningbush</td>
<td>B</td>
</tr>
<tr>
<td>CADR</td>
<td><em>Cardaria draba</em> (L.) Desv.</td>
<td>whitetop</td>
<td>C</td>
</tr>
<tr>
<td>CEDI3</td>
<td><em>Centaurea diffusa</em> Lam.</td>
<td>diffuse knapweed</td>
<td>B</td>
</tr>
<tr>
<td>CIAR4</td>
<td><em>Cirsium arvense</em> (L.) Scop.</td>
<td>Canada thistle</td>
<td>C</td>
</tr>
<tr>
<td>COAR4</td>
<td><em>Convolvulus arvensis</em> L.</td>
<td>field bindweed</td>
<td>C</td>
</tr>
<tr>
<td>HYPE</td>
<td><em>Hypericum perforatum</em> L.</td>
<td>common St. Johnswort</td>
<td>C</td>
</tr>
<tr>
<td>IRPS</td>
<td><em>Iris pseudacorus</em> L.</td>
<td>paleyellow iris</td>
<td>C</td>
</tr>
<tr>
<td>LELA2</td>
<td><em>Lepidium latifolium</em> L.</td>
<td>broadleaved pepperweed</td>
<td>B</td>
</tr>
<tr>
<td>MYSP2</td>
<td><em>Myriophyllum spicatum</em> L.</td>
<td>Eurasian watermilfoil</td>
<td>B</td>
</tr>
<tr>
<td>PHAR3</td>
<td><em>Phalaris arundinacea</em> L.</td>
<td>reed canarygrass</td>
<td>C</td>
</tr>
<tr>
<td>SECE</td>
<td><em>Secale cereale</em> L.</td>
<td>cereal rye</td>
<td>C</td>
</tr>
<tr>
<td>TAVU</td>
<td><em>Tanacetum vulgare</em> L.</td>
<td>common tansy</td>
<td>C</td>
</tr>
</tbody>
</table>

**Ecological Condition**

The ecological condition of Wenatchee Confluence State Park was based on the rating descriptions (see Appendix B for definitions). A map of the overall ecological condition is presented in Figure 12.
Figure 12. Ecological condition assessed for vegetation polygons at Wenatchee Confluence State Park.
The ecological condition of undeveloped lands at Wenatchee Confluence State Park was primarily in fair condition. A few areas were ranked as Poor or Good, but none was marked as Excellent. About 40% of the park was ranked as Developed. The polygons that were rated in Poor ecological condition were weed-invested dry trails or wet shorelines. The areas ranked in Good condition were primarily wetland complexes (sloughs, sand bars and shrubby deciduous vegetation) or in one case (polygon 12), a narrow cottonwood / red-osier dogwood stand at the base of a slope.

The percentage of non-native taxa was approximately 50% of 132 taxa. Non-native taxa contribute a large part to the low ecological condition rankings.

**Restoration Opportunities**

There are restoration opportunities at Wenatchee Confluence State Park. The park has already created an area for wildlife viewing that includes a set of created wetlands. There are also a large number of potential supporters for restoration activities amongst the park’s visitors. This was evident from seeing numerous smiling hikers and bikers using the created wetlands area. This park lies within an urban environment. This is also a challenging area to undertake restoration in because of its high number of noxious weeds (13 species) and high percentage of non-native species (50%).

The basin wildrye bottomland herbaceous community is a potential target for restoration activities. This community, when it is in good ecological condition is very rare and given a G1 global conservation rank. The community that exists in the park is only rated as Fair ecological condition because of many past disturbances at the site, extensive exotic plant presence and current human activity. Restoration of this community could be accomplished primarily be elimination of exotics and control of off-trail human travel. Return of a natural fire regime would also be beneficial for this community, by maintaining early seral species that maintain stand vigor. If fire cannot be returned, perhaps a surrogate such as wildlife grazing or even beaver reintroduction could be considered as a potential tool.

If any other restoration efforts are undertaken at Wenatchee Confluence State Park, they should focus on wetlands, which make up a large area of the park. As described in the section on historic ecological conditions, the hydrologic regime must be considered in designing a restoration program.

Historically, hydrologic processes maintained ecological functions. These processes include seasonal flooding; braiding of the water channels, presence of large woody debris, silt and cobble deposition, physical soil properties, chemical soil properties, and the activities of key species such as beavers and waterfowl. A plan for beaver reintroduction would help insure that if beaver do return here, they develop their dams in a manner compatible with the park’s objectives, and in a way that is likely to lead to a successful colony. New information about successful beaver reintroduction methodology is available through biologists John Rohrer and Kent Woodruff with the Methow Ranger District of the Okanogan National Forest.

Figure 13 and Figure 14 illustrate the different way these processes are operating. The wetlands in Figure 13 are in good ecological condition, whereas the one in Figure 14 is not, and is trending toward becoming a monoclone of noxious weeds.
In the functional wetland community of Figure 13, seasonal flooding brings in silt and woody debris every year to renew the soil texture and chemistry, whereas the created wetland relies solely on groundwater for recharge, and thus it is essentially stagnant and devoid of woody debris. The wetland in Figure 13 is part of an active channel that can be used by wildlife, whereas the sloughs in Figure 14 cannot be reached by aquatic species such as fish. Flooding disturbance helps suppress dominants in Figure 13, but in Figure 14, dominant species have taken over and prevent further development of the community. For park visitors to continue to enjoy wildlife viewing, the created wetlands need to accommodate beneficial hydrologic functions in an improved design. Restoration could include addition of woody debris and connecting channels with seasonal flooding sources that will increase oxygen levels and allow movement of silt and woody debris through the system.

Restoration activities could include planting or increasing beneficial species that are already present in the park. Desirable species include cottonwood (*Populus balsamifera* ssp. *trichocarpa*; POBAT), black hawthorn (*Crataegus douglasii*; CRDO2), Wood’s rose (*Rosa woodsii*; ROWO), and basin wildrye (*Leymus cinereus*; LECI4). Along with planting activities, specific undesirable noxious weeds can be targeted for a long-term control program. Two of the worst invasive species in the park are reed canarygrass (*Phalaris arundinacea*; PHAR3) and mulberry (*Morus albus*; MOAL). The latter is not classified as a noxious weed, but it behaves as if it were. The latter could be controlled by cutting down large stands and replanting sites with desirable species such as cottonwood. Reed canarygrass may eventually respond to creation of an overstory canopy such as cottonwood, and it can be targeted for competition by encouraging resilient native species such as cattails.

**Other Recommendations**

The ownership of the southern tip of the park should be investigated and the GIS boundary layer corrected if needed. While the GIS boundary shows a narrow extension of the park along the Wenatchee River as it meets the Columbia on the southeastern corner of the park, signs in the park indicate that one is leaving state park property before one enters this area (Figure 15).
Figure 15. Sign at the southeastern corner of the park that contradicts the GIS boundary file.

**GIS Products Produced**

Associated with this report are polygon layers created by PBI depicting the vegetation community types and associated data mapped within Wenatchee Confluence State Park. The datasets have been converted into ESRI shapefile formats and provided to WSPRC. 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


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


Appendix A – Vegetation Survey Codes and Instructions

Site = name of locality of map project
Name/Date = your name / day-month-year completed polygon survey
Polygon # = number you put on map
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

TOTAL VEGETATION COVER includes all vascular plants, mosses, lichens and foliose lichens (crustose lichens excluded they are considered rock); this never exceeds 100%. Space between leaves/branches is included in “cover”.

<table>
<thead>
<tr>
<th>Code</th>
<th>Cover (%)</th>
<th>Cover mid-pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>&lt;1</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>1-5</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>5-25</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>25-60</td>
<td>43</td>
</tr>
<tr>
<td>5</td>
<td>60-90</td>
<td>75</td>
</tr>
<tr>
<td>6</td>
<td>&gt;90</td>
<td>95</td>
</tr>
</tbody>
</table>

TREES, SHRUBS, GRAMINOIDS, FORBS, EXOTICS cover includes the space between leaves/branches. 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.

EXOTICS = primary species observed; secondary species observed (please pay special attention to noxious weeds). Also, note the relative abundance of exotics in each polygon, using the 1-6 cover codes noted above.

SOIL SURFACE estimate to nearest % the following, the sum of the categories adds to 100%. Describe in comments if there is wide variation in any category; note % standing water if it is persistent or characteristic of site.

Water = exposed standing or flowing water
Rock Outcrop = exposed bedrock including detached boulders over 1m across
Talus = exposed large, loose rocks
Gravel/Cobble = large fragments between sand and boulder
Bare Ground = exposed mineral soil
Mosses/Lichens = nonvascular plant cover on soil
Litter = includes logs, branches, and basal area of plants
Caves = area covered by caves
Mines = area covered by mines

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

Fire
Note presence of fire (i.e. charcoal, fire scars, etc.) and, if present, estimate time of fire.

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, 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 4 = abandoned facilities
2 = roads 5 = none obvious
3 = established trails 6 = multiple types (detail in comments)
Wildlife
1 = heavy ungulate use 5 = active beaver
2 = moderate ungulate use 6 = active porcupine
3 = light to no ungulate use 7 = other, list animal
4 = burrowing animals
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 4 = combination of above
2 = hoofed 5 = other
3 = pedestrian
Hydrology
1 = unaltered 2 = altered; dams, dikes, ditches, culverts, etc 3 = not assessed

Descriptions of Plant Communities
PLANT ASSOCIATION (PA) = list all PAs encountered in polygon survey, in comments list source of name if not on provided key. NOTE: Contractor is required to consult with the WNHP to obtain the most current classification and condition ranking information available.
Existing Vegetation Community – Write down the major tree/shrub/grass-forb-fern community type. Pay attention to indicator species. Alien species may be included in community description.
Condition Rank of PA in key or estimate. (The condition of each plant vegetation community polygon shall be rated using the codes listed in Appendix B.)
% of Polygon = your estimate of % of polygon covered by this plant community
Pattern = how PA is distributed in stand

<table>
<thead>
<tr>
<th>Pattern</th>
<th>1 = matrix (most of polygon)</th>
<th>2 = large patches</th>
<th>3 = small patches</th>
<th>4 = clumped, clustered, contiguous</th>
<th>5 = scattered, more or less evenly repeating</th>
<th>6 = linear</th>
<th>7 = other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = matrix (most of polygon)</td>
<td>1 = matrix (most of polygon)</td>
<td>2 = large patches</td>
<td>3 = small patches</td>
<td>4 = clumped, clustered, contiguous</td>
<td>5 = scattered, more or less evenly repeating</td>
<td>6 = linear</td>
<td>7 = other</td>
</tr>
</tbody>
</table>
Appendix B – 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:

- **Excellent Ecological Condition**
  Areas in this class have very few non-native plants. The composition and structure of native vegetation in this condition class correspond to the natural range of variation characteristic to this habitat type. Old-growth conditions often exist. Species diversity of native plants and animals is often high relative to the natural community under consideration. Wildlife habitat conditions are optimal for species of conservation concern. Soil compaction, accelerated erosion and hydrologic alteration are absent. Direct signs of human-induced ecological stress are absent. Many rare plant and animal species may only exist within this condition class.

- **Good Ecological Condition**
  Areas in this class have few non-native plants. The composition and structure of native vegetation in this condition class correspond to the natural range of variation characteristic to this habitat type. Old-growth conditions may exist, but have been subject to some human-induced stress. Species diversity of native plants and animals is moderately high relative to the natural community under consideration. Wildlife habitat conditions are adequate for species of conservation concern. Soil compaction, accelerated erosion and hydrologic alteration do not significantly influence the area. Direct signs of human-induced ecological stress are infrequent. Some rare plant and animal species may exist within this condition class.

- **Fair Ecological Condition**
  Areas in this class often have both native and non-native plants. The composition and structure of native vegetation in this condition class is altered from the natural range of variation characteristic to this habitat type. Old-growth conditions are absent. Species diversity of native plants and animals is lower than the two higher condition classes. Wildlife habitat conditions may be adequate for some species of conservation concern, but not adequate for many. Soil compaction, accelerated erosion and hydrologic alteration may influence the area. Direct signs of human-induced ecological stress are frequent. Most rare plant and animal species are only infrequently encountered within this condition class.

- **Poor Ecological Condition**
  Areas in this class are often dominated by non-native plants. The composition and structure of native vegetation in this condition class is often dramatically altered from the natural range of variation characteristic to this habitat type. Old-growth conditions are absent. Species diversity of native plants and animals is often low. Wildlife habitat conditions are not adequate for most species of conservation concern. Soil compaction, accelerated erosion and hydrologic alteration often influence the area. Direct signs of human-induced ecological stress are frequent. Rare plant and animal species are seldom encountered within this condition class.
- **Developed**
  Developed portions of the park property: campgrounds, offices, facilities, infrastructure, etc.

- **Ownership Issue**
  Areas within the GIS boundary of the park that appear to be owned or controlled by another entity other than WSPRC.
Appendix C – Definitions of Vegetation Community Conservation Status

The following table defines the ranking system for plants and plant communities used by the Washington State Natural Heritage Program.

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Critically imperiled throughout its range; extremely rare with five or fewer occurrences or very few remaining acres.</td>
</tr>
<tr>
<td>G2</td>
<td>Imperiled throughout its range; rare with six to 20 occurrences or few remaining acres.</td>
</tr>
<tr>
<td>G3</td>
<td>Either very rare and local throughout its range or found locally in a restricted range; uncommon with 21 to 100 occurrences.</td>
</tr>
<tr>
<td>G4</td>
<td>Apparently secure throughout its range, though it may be quite rare in some parts of its range, especially at the periphery; many occurrences.</td>
</tr>
<tr>
<td>G5</td>
<td>Demonstrably secure in its range, though it may be quite rare in some parts of its range, especially at the periphery; ineradicable under present conditions.</td>
</tr>
<tr>
<td>S1</td>
<td>Critically imperiled in Oregon; extremely rare with five or fewer occurrences or very few remaining acres.</td>
</tr>
<tr>
<td>S2</td>
<td>Imperiled in Oregon; rare with six to 20 occurrences or few remaining acres.</td>
</tr>
<tr>
<td>S3</td>
<td>Either very rare and local in Oregon or found locally in a restricted range; uncommon with 21 to 100 occurrences.</td>
</tr>
<tr>
<td>S4</td>
<td>Apparently secure in Oregon, though it may be quite rare in some parts; many occurrences.</td>
</tr>
<tr>
<td>S5</td>
<td>Demonstrably secure in Oregon, though it may be quite rare in some parts; ineradicable under present conditions.</td>
</tr>
<tr>
<td>U</td>
<td>Unknown</td>
</tr>
<tr>
<td>NA</td>
<td>Natural Heritage Rank not available</td>
</tr>
<tr>
<td>NR</td>
<td>Not Ranked</td>
</tr>
</tbody>
</table>
## Appendix D – Vegetation Survey Data

### Polygon Number 10

<table>
<thead>
<tr>
<th>Survey Intensity</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observer</td>
<td>PM</td>
</tr>
<tr>
<td>Date</td>
<td>9/15/2008</td>
</tr>
<tr>
<td>Total Vegetation</td>
<td>6</td>
</tr>
<tr>
<td>Trees Total</td>
<td>4</td>
</tr>
<tr>
<td>Dominant Trees</td>
<td>POBAT</td>
</tr>
<tr>
<td>emergent</td>
<td>1</td>
</tr>
<tr>
<td>main canopy</td>
<td>4</td>
</tr>
<tr>
<td>sub canopy</td>
<td>2</td>
</tr>
<tr>
<td>Shrubs Total</td>
<td>5</td>
</tr>
<tr>
<td>Dominant Shrubs</td>
<td>ROWO, RIAU, SAEX, COSE16, TORY</td>
</tr>
<tr>
<td>&gt; 1.5' tall</td>
<td>5</td>
</tr>
<tr>
<td>&lt; 1.5' tall</td>
<td>2</td>
</tr>
<tr>
<td>Graminoids Total</td>
<td>3</td>
</tr>
<tr>
<td>Dominant Graminoids</td>
<td>PHAR3</td>
</tr>
<tr>
<td>Graminoids Perennial</td>
<td>3</td>
</tr>
<tr>
<td>Graminoids Annual</td>
<td>0</td>
</tr>
<tr>
<td>Forbs Total</td>
<td>2</td>
</tr>
<tr>
<td>Dominant Forbs</td>
<td>LASE, ASCLE, VETH</td>
</tr>
<tr>
<td>Forbs Perennial</td>
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</tr>
<tr>
<td>Forbs Annual</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Total</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Evergreen</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Deciduous</td>
<td>0</td>
</tr>
<tr>
<td>Exotics Total</td>
<td>2</td>
</tr>
<tr>
<td>Exotics Perennial</td>
<td>2</td>
</tr>
<tr>
<td>Exotics Annual</td>
<td>0</td>
</tr>
<tr>
<td>Water</td>
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</tr>
<tr>
<td>Rock Outcrop</td>
<td>0</td>
</tr>
<tr>
<td>Gravel</td>
<td>3</td>
</tr>
<tr>
<td>Logging</td>
<td>0</td>
</tr>
<tr>
<td>Fire</td>
<td>0</td>
</tr>
<tr>
<td>Stand Age</td>
<td>2</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
</tr>
<tr>
<td>Livestock</td>
<td>0</td>
</tr>
<tr>
<td>Development</td>
<td>3</td>
</tr>
<tr>
<td>Wildlife</td>
<td>0</td>
</tr>
<tr>
<td>Recreation Severity</td>
<td>3</td>
</tr>
<tr>
<td>Recreation Type</td>
<td>4</td>
</tr>
<tr>
<td>Hydrology</td>
<td>2 (water table)</td>
</tr>
</tbody>
</table>

**Vegetation Types**

| Existing Veg1: POBAT/ROWO/PHAR3 | 100 | Matrix | GOOD |
| Veg Community1: POBAT/SAEX | |
| Existing Veg2: | 0 |
| Veg Community3: | |
| Existing Veg3: | 0 |
| Veg Community3: | |

**Notes:** Mature cottonwood forest with ROWO/PHAR3 understory.
Polygon Number 11

Survey Intensity 1
Observer GW
Date 9/15/2008

Total Vegetation 5
Trees Total 3
Dominant Trees POBAT, MOAL, ULPU emergent 0
maincanopy 2
subcanopy 2
Shrubs Total 3
Dominant Shrubs SAEX, COSE16, RIAU, ELAN
> 1.5' tall 3
< 1.5' tall 0

Graminoids Total 4
Dominant Graminoids PHAR3, THIN6
Graminoids Perennial 4
Graminoids Annual 1
Forbs Total 4
Dominant Forbs ASSP, APCA, CIAR4, VEAM2, Tyla, ACRE3, ASOF, CADR;
Forbs Perennial 4
Forbs Annual 1
Ferns Total 0
Ferns Evergreen 0
Ferns Deciduous 0
Exotics Total 5
Exotics Perennial 5
Exotics Annual 1
Water 10
Rock Outcrop 0
Gravel 0

Logging 0
Fire: 0
Stand Age 0
Agriculture 0
Livestock 0
Development 6 (created
Wildlife 2
Recreation Severity 3
Recreation Type 3
Hydrology 2

Vegetation Types

| Existing Veg1: | SAEX|TYLA-PHAR3 | 60 | Matrix | FAIR |
| Veg Community1: | SAEX |
| Existing Veg2: | ACRE3-CIAR4 (impoundment) | 40 | Large patch | POOR |
| Veg Community3: | SAEX |

Notes: Weedy sets of dry wet ponds.
Polygon Number: 12

Survey Intensity: 1
Observer: GW
Date: 9/15/2008
Total Vegetation: 6
Trees Total: 3
Dominant Trees: PRUNU, ULPU
emergent:
maincanopy:
subcanopy:
Shrubs Total: 5
Dominant Shrubs: SAEX, ROWO, COSE16, PRVI, RUAR9, RIAU
> 1.5' tall:
< 1.5' tall:
Graminoids Total: 1
Dominant Graminoids:
Graminoids Perennial:
Graminoids Annual:
Forbs Total:
Dominant Forbs:
Forbs Perennial:
Forbs Annual:
Ferns Total:
Ferns Evergreen:
Ferns Deciduous:
ExoticsTotal: 3
Exotics Perennial:
Exotics Annual:
Water:
Rock Outcrop:
Gravel:
Logging:
Fire:
Stand Age:
Agriculture:
Livestock:
Development:
Wildlife:
Recreation Severity:
Recreation Type:
Hydrology:
Vegetation Types:

Existing Veg1: ULPU/SAEX-PRVI-COSE16 100
Veg Community1: POBAT/COSE16

Existing Veg2:
Veg Community3:

Existing Veg3:
Veg Community3:

Notes: Shrub field along bank.

ParkName: Wenatchee Confluence

Exotic Species

Noxious Exotic Plants

Other Exotic Plants

ULPU, RUAR9

Water:

Rock:

Talus:

Gravel:

Bare Ground:

Moss Lichen:

Litter:

96
Polygon Number 13

ParkName: Wenatchee Confluence

Survey Intensity 1
Observer GW
Date 9/15/2008

Total Vegetation 6
Trees Total 5
Dominant Trees MOAL, POBAT
  emergent 0
  maincanopy 4
  subcanopy 3
Shrubs Total 3
Dominant Shrubs RIAU, ELAN, CLLI2, ROWO, PRVI, PHLE4, CRDO2
  > 1.5' tall 3
  < 1.5' tall 0

Graminoids Total 5
Dominant Graminoids PHAR3, THIN6
Graminoids Perennial 5
Graminoids Annual 2
Forbs Total 1
Dominant Forbs BASC5, LASE,
Forbs Perennial 1
Forbs Annual 1

Ferns Total 0
Ferns Evergreen 0
Ferns Deciduous 0
ExoticsTotal 6
Exotics Perennial 6
Exotics Annual 0
Water 0
Rock Outcrop 0

Gravel 0
Logging 0
Fire: 0
Stand Age 0
Agriculture 0
Livestock 0
Development 6 (heavily used)
Wildlife 3
Recreation Severity 3
Recreation Type 3
Hydrology 1

Vegetation Types

<table>
<thead>
<tr>
<th>Vegetation Types</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Existing Veg1:</td>
<td>MOAL/PHAR3</td>
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<td>Matrix</td>
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<td>CRDO2-ROWO</td>
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<td>Existing Veg3:</td>
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</tr>
<tr>
<td>Veg Community3:</td>
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Notes: Stand on bank of old RR tracks.
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<th>Wenatchee Confluence</th>
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<tr>
<td>Trees Total</td>
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<td>emergent 0</td>
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<td>main canopy</td>
<td>0</td>
<td>sub canopy</td>
<td>0</td>
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<tr>
<td>Shrub Total</td>
<td>3</td>
<td>Dominant Shrubs</td>
<td>SAEX, ELAN, COSE16</td>
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<td>&gt; 1.5' tall</td>
<td>3</td>
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<tr>
<td>Graminoids Total</td>
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<td>Dominant Graminoids</td>
<td>PHAR3</td>
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<td>3</td>
<td>Graminoids Annual</td>
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<tr>
<td>Forb Total</td>
<td>5</td>
<td>Dominant Forbs</td>
<td>TYLA</td>
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<tr>
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<td>Forbs Annual</td>
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<td>Forbs Total</td>
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<td>Ferns Total</td>
<td>0</td>
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<tr>
<td>Ferns Perennial</td>
<td>0</td>
<td>Ferns Deciduous</td>
<td>0</td>
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<tr>
<td>Exotic Total</td>
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<td>Exotic Evergreen</td>
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<tr>
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<td>3</td>
<td>Exotic Annual</td>
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<td>Water</td>
<td>2</td>
<td>Water:</td>
<td>2</td>
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<tr>
<td>Rock Outcrop</td>
<td>0</td>
<td>Rock:</td>
<td>0</td>
</tr>
<tr>
<td>Logging</td>
<td>0</td>
<td>Talus:</td>
<td>0</td>
</tr>
<tr>
<td>Fire</td>
<td>0</td>
<td>Gravel:</td>
<td>0</td>
</tr>
<tr>
<td>Stand Age</td>
<td>0</td>
<td>Bare Ground:</td>
<td>0</td>
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<tr>
<td>Agriculture</td>
<td>0</td>
<td>Moss Lichen:</td>
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<td>Livestock</td>
<td>0</td>
<td>Litter:</td>
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<td>Rock:</td>
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<td>Recreation Severity</td>
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<td>Talus:</td>
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<td>Recreation Type</td>
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**Vegetation Types**

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<tr>
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<th>Percent</th>
<th>Pattern</th>
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<tr>
<td>Veg Community1:</td>
<td>SAEX</td>
<td>00</td>
<td>Matrix</td>
<td>FAIR</td>
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<tr>
<td>Existing Veg2:</td>
<td>0</td>
<td></td>
<td></td>
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</table>

| Veg Community3: | 0 | | |
| Veg Community3: | 0 | | |

**Notes:** Wetland; inaccessible - too dense from above.
Polygon Number  15  
Survey Intensity  1  
Observer  PM  
Date  9/15/2008  

Total Vegetation  0  
Trees Total  0  
Dominant Trees  
Emergent  0  
Main Canopy  0  
Sub Canopy  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  

Exotic Species  
Exotics Total  0  
Exotics Perennial  0  
Exotics Annual  0  

Water:  100  
Rock Outcrop:  0  

Logging:  0  
Fire:  0  
Stand Age:  0  
Agriculture:  0  
Livestock:  0  
Development:  6 (bridge, dam)  
Wildlife:  0  
Recreation Severity:  3  
Recreation Type:  5 (boating)  
Hydrology:  2  

Vegetation Types  
Existing Veg1:  developed  
Percent:  100  
Pattern:  Matrix  
Rank:  DEVELO  

Veg Community1:  developed  
Existing Veg2:  0  

Veg Community3:  
Existing Veg3:  0  

Veg Community3:  
Notes:  
### Polygon Number 1A

**Park Name:** Wenatchee Confluence

- **Survey Intensity:** 1
- **Observer:** PM
- **Date:** 9/15/2008

#### Vegetation

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<th>Total</th>
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<td>EXOTIC TREES</td>
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<td>Trees Total</td>
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</tr>
<tr>
<td>Dominant Trees</td>
<td></td>
<td>EXOTIC TREES</td>
</tr>
<tr>
<td>emergent</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maincanopy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>subcanopy</td>
<td>0</td>
<td></td>
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<tr>
<td>Shrubs Total</td>
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<td></td>
</tr>
<tr>
<td>Dominant Shrubs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 1.5' tall</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>&lt; 1.5' tall</td>
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<tr>
<td>Graminoids Total</td>
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<tr>
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<td>Ferns Total</td>
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<tr>
<td>Ferns Evergreen</td>
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<td></td>
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<td>Ferns Deciduous</td>
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<td>Exotics Annual</td>
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<tr>
<td>Water</td>
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<tr>
<td>Rock Outcrop</td>
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<td>Gravel</td>
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<tr>
<td>Logging</td>
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<tr>
<td>Fire</td>
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<tr>
<td>Stand Age</td>
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<tr>
<td>Agriculture</td>
<td>0</td>
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<tr>
<td>Livestock</td>
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<td>Development</td>
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<tr>
<td>Wildlife</td>
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<tr>
<td>Recreation Severity</td>
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<td>Recreation Type</td>
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<tr>
<td>Hydrology</td>
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#### Exotic Species

- **Noxious Exotic Plants:** ACRE3, COAR4
- **Other Exotic Plants:** POPR, BASC5, LASE, TRDU

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<th>Total</th>
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<tbody>
<tr>
<td>Water</td>
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<tr>
<td>Rock</td>
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<td>Talus</td>
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<tr>
<td>Gravel</td>
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</tr>
<tr>
<td>Bare Ground</td>
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<tr>
<td>Moss Lichen</td>
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<tr>
<td>Litter</td>
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#### Vegetation Types

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<tr>
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<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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<tr>
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<td>Matrix</td>
<td>DEVELO</td>
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<table>
<thead>
<tr>
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<table>
<thead>
<tr>
<th>Existing Veg2:</th>
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<table>
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<tr>
<th>Existing Veg3:</th>
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</table>

<table>
<thead>
<tr>
<th>Veg Community3:</th>
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</table>

#### Notes:

- 15% ROCK=15% ASPHALT; Developed campground, picnic, sports fields, parking, facilities.

---

43
**Polygon Number** 1B  
**ParkName:** Wenatchee Confluence

<table>
<thead>
<tr>
<th>Survey Intensity</th>
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<tr>
<td>Observer</td>
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<tr>
<td>Total Vegetation</td>
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<tr>
<td>Trees Total</td>
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<tr>
<td>Dominant Trees</td>
<td>POBAT</td>
</tr>
<tr>
<td>emergent</td>
<td>2</td>
</tr>
<tr>
<td>maincanopy</td>
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<tr>
<td>subcanopy</td>
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<tr>
<td>Shrub Total</td>
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<tr>
<td>Dominant Shrubs</td>
<td>ROWO, SAEX, RUAR9</td>
</tr>
<tr>
<td>&gt; 1.5' tall</td>
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<td>&lt; 1.5' tall</td>
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<tr>
<td>Forbs Total</td>
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<tr>
<td>Dominant Forbs</td>
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<td>Ferns Deciduous</td>
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<td>Stand Age</td>
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<td>Agriculture</td>
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<td>Recreation Type</td>
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<td>Hydrology</td>
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**Exotic Species**

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<th>Exotics Total</th>
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<tr>
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<td>ACRE3, CADR</td>
</tr>
<tr>
<td>Other Exotic Plants</td>
<td>POPR, PHAR3, RUAR9</td>
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**Vegetation Types**

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<thead>
<tr>
<th>Existing Veg1: ROWO-SAEX/PHAR3-ACRE3</th>
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<tr>
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<tr>
<td>Existing Veg2: water</td>
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<td>Large patch</td>
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<tr>
<td>Veg Community3: water</td>
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<tr>
<td>Existing Veg3:</td>
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</tr>
<tr>
<td>Veg Community3:</td>
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</table>

**Notes:** Narrow strip along river with dense shrub fields and little POBAT.
Polygon Number 2A

Survey Intensity 2
Observer GW
Date 9/15/2008
Total Vegetation 6
Trees Total 2
Dominant Trees MAPU, ULPU, MOAL, GLTR
  emergent 0
  maincanopy 0
  subcanopy 2
Shrubs Total 2
Dominant Shrubs ELAN, ROWO
  > 1.5' tall 2
  < 1.5' tall 0
Graminoids Total 5
  Dominant Graminoids ELYMU, LECI4, AGROP, BRTE
  Graminoids Perennial 5
  Graminoids Annual 2
Forbs Total 3
  Dominant Forbs ERNA10, LASE, ASOF, BASC5, ASSP, APCA
  Forbs Perennial 3
  Forbs Annual 2
  Ferns Total 0
  Ferns Evergreen 0
  Ferns Deciduous 0
Exotics Total 5
  Exotics Perennial 5
  Other Exotic Plants LASE, ULPU, MAPU, BASC5
  Exotics Annual 2
Water 0
Rock Outcrop 0
  Water: 0
  Rock: 0
  Talus: 0
  Gravel: 0
  Bare Ground: 0
  Moss Lichen: 0
  Litter: 95
Logging 0
Fire: 0
Stand Age 0
Agriculture 0
Livestock 0
Development 3
Wildlife 3
Recreation Severity 3
Recreation Type 3
Hydrology 2

Vegetation Types

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<tr>
<th>Existing Veg1:</th>
<th>Percent</th>
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<th>Rank</th>
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<table>
<thead>
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<th>Existing Veg2:</th>
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<tbody>
<tr>
<td>Veg Community3:</td>
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</table>

<table>
<thead>
<tr>
<th>Existing Veg3:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Veg Community3:</td>
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</tr>
</tbody>
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Notes: Wildlife viewing trail - no bikes
<table>
<thead>
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<th>Polygon Number</th>
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<tr>
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<td></td>
</tr>
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<td>Total Vegetation</td>
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<tr>
<td>subcanopy</td>
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<td></td>
</tr>
<tr>
<td>Shrubs Total</td>
<td>4</td>
<td></td>
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<tr>
<td>Dominant Shrubs</td>
<td>SAEX, ELAN, SALIX (introduced)</td>
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</tr>
<tr>
<td>&gt; 1.5' tall</td>
<td>4</td>
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<td>&lt; 1.5' tall</td>
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<tr>
<td>Graminoids Total</td>
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<tr>
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<td>PHAR3</td>
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<td></td>
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<tr>
<td>Graminoids Annual</td>
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<tr>
<td>Forbs Total</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dominant Forbs</td>
<td>UTMA, ASSP, CIAR4, LASE, TYLA, CEDE4, MYSP2, ELODE, EQUIS</td>
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</tr>
<tr>
<td>Forbs Perennial</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Forbs Annual</td>
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<td></td>
</tr>
<tr>
<td>Ferns Total</td>
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<td></td>
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<tr>
<td>Ferns Evergreen</td>
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<tr>
<td>Ferns Deciduous</td>
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<td></td>
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<tr>
<td>ExoticsTotal</td>
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<td></td>
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<tr>
<td>Exotics Perennial</td>
<td>4</td>
<td></td>
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<tr>
<td>Exotics Annual</td>
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<tr>
<td>Water</td>
<td>15</td>
<td></td>
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<tr>
<td>Rock Outcrop</td>
<td>0</td>
<td></td>
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<tr>
<td>Gravel</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Logging</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Fire:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Stand Age</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
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<tr>
<td>Livestock</td>
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<tr>
<td>Development</td>
<td>6 (impoundments)</td>
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<td>3</td>
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<td>Recreation Severity</td>
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<td>Recreation Type</td>
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<td></td>
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<tr>
<td>Hydrology</td>
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### Vegetation Types

<table>
<thead>
<tr>
<th>Existing Veg1:</th>
<th>SAEX/PHAR3</th>
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<tbody>
<tr>
<td>Veg Community1:</td>
<td>SAEX</td>
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<td>Existing Veg2:</td>
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<tr>
<td>Veg Community3:</td>
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<tr>
<td>Existing Veg3:</td>
<td>0</td>
</tr>
<tr>
<td>Veg Community3:</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Forbs are mostly aquatic. Center of south part or the park; created wetlands; no ULMU, MOAL, POBAT, ACRE; more SAEX, frogs (walk on water) - maybe introduced?
Polygon Number 2C

ParkName: Wenatchee Confluence

Survey Intensity 2
Observer PM
Date 9/15/2008
Total Vegetation 5
Trees Total 2
Dominant Trees POBAT, SALU, ULPU
  emergent 0
  maincanopy 2
  subcanopy 2
Shrubs Total 3
Dominant Shrubs SAEX, ROWO
  > 1.5' tall 3
  < 1.5' tall 0
Graminoids Total 4
Dominant Graminoids PHAR3, LECI4
Graminoids Perennial 4
Graminoids Annual 0
Forbs Total 4
Dominant Forbs TYLA, CIAR4, ASCLE, LEMI3, ASOF, ASSP
Forbs Perennial 4
Forbs Annual 0
Ferns Total 0
Ferns Evergreen 0
Ferns Deciduous 0
ExoticsTotal 4
Exotics Perennial 4
Exotics Annual 0
Water 35
Rock Outcrop 0
Gravel 1
Logging 0
Fire 0
Stand Age 1
Agriculture 0
Livestock 0
Development 6 (trails, area)
Wildlife 6 (beaver)
Recreation Severity 2
Recreation Type 4
Hydrology 2 (dredged, water)

Vegetation Types

<table>
<thead>
<tr>
<th>Existing Veg1:</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>TYLA - water wetland</td>
<td>45</td>
<td>Matrix</td>
<td>GOOD</td>
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<table>
<thead>
<tr>
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<table>
<thead>
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<th>Existing Veg2:</th>
<th>Percent</th>
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<tr>
<td>PHAR3</td>
<td>40</td>
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<td>POOR</td>
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<tr>
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<table>
<thead>
<tr>
<th>Existing Veg3:</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>SAEX</td>
<td>15</td>
<td>Small patch</td>
<td>GOOD</td>
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<table>
<thead>
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<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>SAEX</td>
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Notes: Dredged, created wetlands and intervening land. Mostly TYLA and open water, but also lots of PHAR3.
<table>
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<th>2D</th>
<th>ParkName:</th>
<th>Wenatchee Confluence</th>
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<td>Observer</td>
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</tr>
<tr>
<td>Date</td>
<td>9/15/2008</td>
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<tr>
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<tr>
<td>Trees Total</td>
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<td></td>
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</tr>
<tr>
<td>Dominant Trees</td>
<td>POBAT, PYCO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergent</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maincanopy</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>subcanopy</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shrubs Total</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominant Shrubs</td>
<td>SAEX, ROWO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 1.5' tall</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1.5' tall</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graminoids Total</td>
<td>5</td>
<td></td>
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</tr>
<tr>
<td>Dominant Graminoids</td>
<td>PHAR3, ELRE4</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Graminoids Annual</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Forbs Total</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td>Dominant Forbs</td>
<td>BASC5, CIAR4, VETH, LASE</td>
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</tr>
<tr>
<td>Forbs Perennial</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Forbs Annual</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ferns Total</td>
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<td></td>
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</tr>
<tr>
<td>Ferns Evergreen</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ferns Deciduous</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Exotics Total</td>
<td>5</td>
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</tr>
<tr>
<td>Exotics Perennial</td>
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<td></td>
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</tr>
<tr>
<td>Exotics Annual</td>
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</tr>
<tr>
<td>Water</td>
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</tr>
<tr>
<td>Rock Outcrop</td>
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</tr>
<tr>
<td>Gravel</td>
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<tr>
<td>Logging</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand Age</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>6 (old orchard,</td>
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<tr>
<td>Livestock</td>
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</tr>
<tr>
<td>Development</td>
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<td></td>
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</tr>
<tr>
<td>Wildlife</td>
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<tr>
<td>Recreation Severity</td>
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<tr>
<td>Recreation Type</td>
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</tr>
<tr>
<td>Hydrology</td>
<td>2</td>
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</tr>
</tbody>
</table>

### Exotic Species

- **Noxious Exotic Plants**
  - CIAR4, VETH
- **Other Exotic Plants**
  - PHAR3, ELRE4, BASC5, LASE

| Water | 0 | | |
| Rock | 0 | | |
| Talus | 0 | | |
| Gravel | 2 | | |
| Bare Ground | 3 | | |
| Moss Lichen | 0 | | |
| Litter | 95 | | |

### Vegetation Types

| Existing Veg1: ROWOPHAR3-ELRE4 | 80 | Matrix | POOR |
| Veg Community1: SAEX | | | |
| Existing Veg2: POBAT/SAEXPHAR3 | 20 | Small patch | FAIR |
| Veg Community3: POBAT/SAEX | | | |
| Existing Veg3: | 0 | | |
| Veg Community3: | | | |

**Notes:** Open, disturbed
### Polygon Number 2E

**ParkName:** Wenatchee Confluence

<table>
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<tr>
<th>Survey Intensity</th>
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<tbody>
<tr>
<td>Observer</td>
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<tr>
<td>Date</td>
<td>9/15/2008</td>
</tr>
<tr>
<td>Total Vegetation</td>
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</tr>
<tr>
<td>Trees Total</td>
<td>2</td>
</tr>
<tr>
<td>Dominant Trees</td>
<td>POBAT, ACER, ULPU</td>
</tr>
<tr>
<td>emergent</td>
<td>0</td>
</tr>
<tr>
<td>maincanopy</td>
<td>2</td>
</tr>
<tr>
<td>subcanopy</td>
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</tr>
<tr>
<td>Shrubs Total</td>
<td>3</td>
</tr>
<tr>
<td>Dominant Shubs</td>
<td>SAEX, ROWO, PARTH3, RUAR9</td>
</tr>
<tr>
<td>&gt; 1.5' tall</td>
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</tr>
<tr>
<td>&lt; 1.5' tall</td>
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</tr>
<tr>
<td>Graminoids Total</td>
<td>5</td>
</tr>
<tr>
<td>Dominant Graminoids</td>
<td>PHAR3, BRTE, ELRE4, THIN6, POBU</td>
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<tr>
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<tr>
<td>Graminoids Annual</td>
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<tr>
<td>Forbs Total</td>
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<tr>
<td>Dominant Forbs</td>
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<tr>
<td>Forbs Perennial</td>
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<tr>
<td>Forbs Annual</td>
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<tr>
<td>Ferns Total</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Evergreen</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Deciduous</td>
<td>0</td>
</tr>
<tr>
<td>Exotics Total</td>
<td>5</td>
</tr>
<tr>
<td>Exotics Perennial</td>
<td>ACRE3, COAR4, CEDI3</td>
</tr>
<tr>
<td>Exotics Annual</td>
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<tr>
<td>Water</td>
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<tr>
<td>Rock Outcrop</td>
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<tr>
<td>Gravel</td>
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<td>Logging</td>
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<td>Fire</td>
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</tr>
<tr>
<td>Stand Age</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
</tr>
<tr>
<td>Livestock</td>
<td>0</td>
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<tr>
<td>Development</td>
<td>4 (trails, facilities)</td>
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<tr>
<td>Wildlife</td>
<td>0</td>
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<tr>
<td>Recreation Severity</td>
<td>2</td>
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<tr>
<td>Recreation Type</td>
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<tr>
<td>Hydrology</td>
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### Vegetation Types

<table>
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<th>Existing Veg1: developed</th>
<th>100</th>
<th>Matrix</th>
<th>DEvelo</th>
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<tbody>
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<td>Veg Community1: developed</td>
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<tr>
<td>Existing Veg2:</td>
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<tr>
<td>Veg Community3:</td>
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<td>Existing Veg3:</td>
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</tr>
<tr>
<td>Veg Community3:</td>
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</table>

**Notes:** 2% ROCK=2% ASPHALT; Trails, mowed field, disturbed area.
Polygon Number 2F

Survey Intensity 1
Observer GW
Date 9/15/2008
Total Vegetation 5
Trees Total 1
Dominant Trees MOAL, ULPU
  emergent 0
  maincanopy 0
  subcanopy 1
Shrubs Total 1
Dominant Shrubs PREM, ERNA10, ARTR4, CLL12
  > 1.5' tall 0
  < 1.5' tall 1
Graminoids Total 5
Dominant Graminoids AGCR, LEC14, POBU, SPCR, SEPU8, SECE, BRTE, HOJU
  Graminoids Perennial 4
  Graminoids Annual 1
Forbs Total 3
Dominant Forbs BASC5, LASE, POAV, VETH, SAKA
Forbs Perennial 1
Forbs Annual 3
Ferns Total 0
Ferns Evergreen 0
Ferns Deciduous 0
ExoticsTotal 5
  Exotics Perennial 4
  Exotics Annual 4
Water: 0
Rock Outcrop 15
Gravel 10
Logging 0
Fire: 0
Stand Age 0
Agriculture 0
Livestock 0
Development 6 (paved trail, RR,
  Wildlife 3
  Recreation Severity 2
  Recreation Type 4
Hydrology 1

Vegetation Types

<table>
<thead>
<tr>
<th>Existing Veg1</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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<tbody>
<tr>
<td>SECE-BASC5</td>
<td>100</td>
<td>Matrix</td>
<td>POOR</td>
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<tr>
<td>Veg Community1: disturbed</td>
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<tr>
<td>Existing Veg2:</td>
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<tr>
<td>Veg Community3:</td>
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<tr>
<td>Existing Veg3:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
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</tbody>
</table>

Notes: Heavily used trail complex. Paved counted as rock.
**Polygon Number** 2G  
**ParkName:** Wenatchee Confluence

<table>
<thead>
<tr>
<th>Survey Intensity</th>
<th>Observer</th>
<th>Date</th>
<th>Total Vegetation</th>
<th>Trees Total</th>
<th>Dominant Trees</th>
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<tbody>
<tr>
<td>1</td>
<td>GW</td>
<td>9/15/2008</td>
<td>4</td>
<td>3</td>
<td>POBAT</td>
</tr>
</tbody>
</table>

**Total Vegetation**

- **Emergent**
  - Total: 0
- **Subcanopy**
  - Total: 3
- **Dominant Shrubs**
  - Total: 4
  - SAEX, ELAN, ROWO, COSE16
- **Dominant Forbs**
  - Total: 3
  - VETH, CADR, CIAR4, VICIA, TAVU

**Graminoids**

- **Perennial**
  - Total: 3
  - THIN6, PHAR3
- **Annual**
  - Total: 1

**Forbs**

- **Total**
  - 3
- **Perennial**
  - 3
- **Annual**
  - 1

**Ferns**

- **Total**
  - 0

**Exotics**

- **Total**
  - 4
- **Perennial**
  - 4
  - CADR, PHAR3, CIAR4
- **Annual**
  - 1

**Water**

- Total: 40

**Logging**

- Total: 0

**Fire**

- Total: 0

**Stand Age**

- Total: 0

**Agriculture**

- Total: 0

**Livestock**

- Total: 0

**Development**

- Total: 6 (riprap)

**Wildlife**

- Total: 3

**Recreation Severity**

- Total: 3

**Recreation Type**

- Total: 3

**Hydrology**

- Total: 2

**Vegetation Types**

<table>
<thead>
<tr>
<th>Existing Veg1:</th>
<th>POBAT/SAEX-COSE16/PHAR3</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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<tr>
<td>Veg Community1:</td>
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<tr>
<td>Existing Veg2:</td>
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**Notes:**  
Riprap = Talus
Polygon Number 3

Survey Intensity 1
Observer GW
Date 9/15/2008

Total Vegetation 6
Trees Total 4
Dominant Trees POBAT, ULPU, BEPE3, MOAL
  emergent 2
  maincanopy 3
  subcanopy 2
Shrubs Total 3
Dominant Shrubs ROWO, COSE16
> 1.5' tall 3
< 1.5' tall 1

Graminoids Total 5
Dominant Graminoids POPR, BRIN2, JUARL
Graminoids Perennial 5
Graminoids Annual 1
Forbs Total 2
Dominant Forbs TAOF, PLMA2, EQLA, APCA, MEAR4, EUOC4
Forbs Perennial 2
Forbs Annual 1

Ferns Total 0
Ferns Evergreen 0
Ferns Deciduous 0

Exotics Total 5
Exotics Perennial 5
Exotics Annual 1
Water 0
Rock Outcrop 0

Gravel 0
Logging 0
Fire: 0
Stand Age 2
Agriculture 0
Livestock 0

Development 6 (trail, picnicking)
Wildlife 3
Recreation Severity 3
Recreation Type 5 (hiking, biking)

Vegetation Types

<table>
<thead>
<tr>
<th>Existing Veg1:</th>
<th>POBAT/POPR</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veg Community1:</td>
<td>POBAT/JUARL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg2:</td>
<td>POBAT/COSE16</td>
<td>20</td>
<td>linear</td>
<td>GOOD</td>
</tr>
<tr>
<td>Veg Community3:</td>
<td></td>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>Notes:</td>
<td></td>
<td></td>
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</tbody>
</table>

Exotics Perennia
Noxious Exotic Plants

Other Exotic Plants

Water: 0

Wildlife 3

Recreation Severity 3

Recreation Type 5 (hiking, biking)

Hydrology 2

Notes: Cottonwood picnic area alongside mostly native shoreline
Polygon Number 4

Survey Intensity 1
Observer GW
Date 9/15/2008

Total Vegetation 2
Trees Total 2

Dominant Emergent 0
Main Canopy 1
Subcanopy 1

Shrubs Total 1
Dominant Shrubs COSE16, TORY, SAEX, CRDO2

> 1.5' Tall 0
< 1.5' Tall 1

Graminoids Total 1
Dominant Graminoids BRIN2, Unk
Graminoids Perennial 1
Graminoids Annual 0

Forbs Total 1
Dominant Forbs IRPS, OXCO, COTIA, APCA, PLMA2, MEAR4, GAAR, VEHA2, MEOF
Forbs Perennial 1
Forbs Annual 1
Ferns Total 0
Ferns Evergreen 0
Ferns Deciduous 0

Exotics Total 1
Exotics Perennial 1
Exotics Annual 0

Water 70

Gravel 5
Logging 0
Fire 0
Stand Age 0
Agriculture 0
Livestock 0
Development 6 (dam, reservoir)
Wildlife 3
Recreation Severity 3
Recreation Type 5 (boating)
Hydrology 2

Vegetation Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Veg1:</td>
<td>100</td>
<td>Matrix</td>
<td>FAIR</td>
</tr>
<tr>
<td>Veg Community1:</td>
<td>SAEX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg2:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg3:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Mostly under water. Big 12" cobbles; flooded by reservoir
<table>
<thead>
<tr>
<th>Survey Intensity</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Observer</td>
<td>GW</td>
</tr>
<tr>
<td>Date</td>
<td>9/15/2008</td>
</tr>
<tr>
<td>Total Vegetation</td>
<td>5</td>
</tr>
<tr>
<td>Trees Total</td>
<td>4</td>
</tr>
<tr>
<td>Dominant Trees</td>
<td>ULPU, Ukn</td>
</tr>
<tr>
<td>emergent</td>
<td>0</td>
</tr>
<tr>
<td>maincanopy</td>
<td>4</td>
</tr>
<tr>
<td>subcanopy</td>
<td>3</td>
</tr>
<tr>
<td>Shrubs Total</td>
<td>2</td>
</tr>
<tr>
<td>Dominant Shrubs</td>
<td>ERNA10, RUAR9</td>
</tr>
<tr>
<td>&gt; 1.5' tall</td>
<td>2</td>
</tr>
<tr>
<td>&lt; 1.5' tall</td>
<td>0</td>
</tr>
<tr>
<td>Graminoids Total</td>
<td>4</td>
</tr>
<tr>
<td>Dominant Graminoids</td>
<td>POBU, SPCR, BRTE, POPR</td>
</tr>
<tr>
<td>Graminoids Perennial</td>
<td>3</td>
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<tr>
<td>Graminoids Annual</td>
<td>3</td>
</tr>
<tr>
<td>Forbs Total</td>
<td>2</td>
</tr>
<tr>
<td>Dominant Forbs</td>
<td>SAKA, SILO3, TRDU, VETH</td>
</tr>
<tr>
<td>Forbs Perennial</td>
<td>1</td>
</tr>
<tr>
<td>Forbs Annual</td>
<td>2</td>
</tr>
<tr>
<td>Ferns Total</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Evergreen</td>
<td>0</td>
</tr>
<tr>
<td>Ferns Deciduous</td>
<td>0</td>
</tr>
<tr>
<td>ExoticsTotal</td>
<td>5</td>
</tr>
<tr>
<td>Exotics Perennial</td>
<td>5</td>
</tr>
<tr>
<td>Exotics Annual</td>
<td>3</td>
</tr>
<tr>
<td>Water</td>
<td>0</td>
</tr>
<tr>
<td>Rock Outcrop</td>
<td>0</td>
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<tr>
<td>Logging</td>
<td>0</td>
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<tr>
<td>Fire</td>
<td>0</td>
</tr>
<tr>
<td>Stand Age</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
</tr>
<tr>
<td>Livestock</td>
<td>0</td>
</tr>
<tr>
<td>Development</td>
<td>6 (paved trail,</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>3</td>
</tr>
<tr>
<td>Recreation Severity</td>
<td>2</td>
</tr>
<tr>
<td>Recreation Type</td>
<td>1 (bicycle)</td>
</tr>
<tr>
<td>Hydrology</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vegetation Types</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Veg1:</td>
<td>ULPU/POBU</td>
<td>100</td>
<td>Matrix</td>
</tr>
<tr>
<td>Veg Community1:</td>
<td>disturbed</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Existing Veg2:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg3:</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
<td>0</td>
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</tr>
</tbody>
</table>

Notes: Bench above river
Polygon Number 6

Survey Intensity 1
Observer GW
Date 9/15/2008
Total Vegetation 5
Trees Total 3
Dominant Trees PIPO, ULPU, THPL
Dominant Shrubs ERNA10, PRVI, ARTR4, ROWO

<table>
<thead>
<tr>
<th>Vegetation Types</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Veg1:</td>
<td>ULPU/POBU-ELIN3-CEDI3</td>
<td>100</td>
<td>Matrix</td>
</tr>
<tr>
<td>Veg Community1:</td>
<td>disturbed</td>
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<td></td>
</tr>
<tr>
<td>Existing Veg2:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg3:</td>
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<td></td>
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</tr>
</tbody>
</table>

Notes: Interstate, RR, trail, industry, weeds, powerlines, chain link fence; shrubs recently cleared; kestrel

Wenatchee Confluence

Exotic Species

<table>
<thead>
<tr>
<th>Exotics Total</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exotics Perennial</td>
<td>5</td>
</tr>
<tr>
<td>Exotics Annual</td>
<td>2</td>
</tr>
<tr>
<td>Water</td>
<td>0</td>
</tr>
<tr>
<td>Rock Outcrop</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vegetation Types</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Veg1:</td>
<td>ULPU/POBU-ELIN3-CEDI3</td>
<td>100</td>
<td>Matrix</td>
</tr>
<tr>
<td>Veg Community1:</td>
<td>disturbed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg2:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veg Community3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg3:</td>
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</table>

Notes: Interstate, RR, trail, industry, weeds, powerlines, chain link fence; shrubs recently cleared; kestrel
Polygon Number: 7
ParkName: Wenatchee Confluence

Survey Intensity: 2
Observer: GW
Date: 9/15/2008

Total Vegetation: 5
Trees Total: 4
Dominant Trees: MOAL, POBAT, ULPU, MAPU, FRAXI, ACPL, ACSA2, GLTR
  emergent: 1
  maincanopy: 4
  subcanopy: 3

Shrubs Total: 4
Dominant Shrubs: ROWO, SAEX, RUAR9, RIAU, COSE16, PARTH3, CLLI2
  > 1.5' tall: 4
  < 1.5' tall: 1

Graminoids Total: 4
Dominant Graminoids: PHAR3
Graminoids Perennial: 4
Graminoids Annual: 1
Forbs Total: 4
Dominant Forbs: PHAR3, APCA, LASE, EUOC4, CIAR4, EQUIS, SODU, URDI,
Forbs Perennial: 4
Forbs Annual: 1
Ferns Total: 1
Ferns Evergreen: 0
Ferns Deciduous: 1
Exotics Total: 4
Exotics Perennial: 4
Exotics Annual: 1
Water: 30
Rock Outcrop: 0
Gravel: 4
Logging: 0
Fire: 0
Stand Age: 0
Agriculture: 0
Livestock: 0
Development: 0
Wildlife: 2
Recreation Severity: 3
Recreation Type: 3
Hydrology: 2

Exotic Species
Noxious Exotic Plants
  ACRE3, CADR, CIAR4, PHAR3
Other Exotic Plants
  LASE, MOAL, ARMI4

Vegetation Types

<table>
<thead>
<tr>
<th>Existing Veg1:</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>POBAT-MOAL/COSE16-SAEX/PHAR3</td>
<td>80</td>
<td>Matrix</td>
<td>FAIR</td>
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</table>

<table>
<thead>
<tr>
<th>Veg Community1:</th>
<th>Percent</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>POBAT/COSE16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Veg2:</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>15</td>
<td>Small patch</td>
<td>GOOD</td>
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</table>

<table>
<thead>
<tr>
<th>Veg Community3:</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>water</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>POBAT/SAEX</td>
<td>5</td>
<td>linear</td>
<td>EXCELLE</td>
</tr>
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</table>

Notes: Islands and channels of open water.
### Polygon Number 8

**Survey Intensity:** 3  
**ParkName:** Wenatchee Confluence  
**Observer:** PM  
**Date:** 9/15/2008  
**Total Vegetation:** 5  
**Trees Total:** 3  
**Dominant Trees:** POBAT, FRAXI, MOAL, ROPS, ACSA2  
**Emergent:** 2  
**Maincanopy:** 3  
**Subcanopy:** 2  
**Shrubs Total:** 5  
**Dominant Shrubs:** SAEX, ROWO, COSE16, CLLI2, RUAR9  
**> 1.5' tall:** 5  
**< 1.5' tall:** 2  
**Graminoids Total:** 4  
**Dominant Graminoids:** PHAR3  
**Graminoids Perennial:** 4  
**Graminoids Annual:** 0  
**Forbs Total:** 2  
**Dominant Forbs:** ASFA, TYYA, URDI, SOCA6, CIAR4, MEAR4, IRPS  
**Forbs Perennial:** 2  
**Forbs Annual:** 0  
**Ferns Total:** 0  
**Ferns Evergreen:** 0  
**Ferns Deciduous:** 0  
**Exotics Total:** 4  
**Noxious Exotic Plants:** CIAR4, IRPS  
**Exotics Perennial:** 4  
**Other Exotic Plants:** 0  
**Exotics Annual:** 0  
**Water:** 30  
**Gravel:** 1  
**Logging:** 0  
**Fire:** 0  
**Stand Age:** 2  
**Agriculture:** 0  
**Livestock:** 0  
**Development:** 3  
**Wildlife:** 6  
**Recreation Severity:** 3  
**Recreation Type:** 4  
**Hydrology:** 2  

#### Vegetation Types

<table>
<thead>
<tr>
<th>Existing Veg1:</th>
<th>Percent</th>
<th>Pattern</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAEX/PHAR3</td>
<td>60</td>
<td>Matrix</td>
<td>FAIR</td>
</tr>
<tr>
<td>Veg Community1:</td>
<td>SAEX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg2:</td>
<td>water</td>
<td>30</td>
<td>GOOD</td>
</tr>
<tr>
<td>Veg Community3:</td>
<td>water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Veg3:</td>
<td>POBAT/COSE16-SAEX/PHAR3</td>
<td>10</td>
<td>Small patch</td>
</tr>
</tbody>
</table>

**Notes:** Islands and channels of open water. Mostly covered with SAEX/PHAR3 but many patches of trees, including POBAT and lots of introduced trees.
Polygon Number: 9

Survey Intensity: 1
Observer: PM
Date: 9/15/2008

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: 0
- Graminoids Perennial: 0
- Graminoids Annual: 0
Forbs Total: 0
- Dominant Forbs: 0
- Forbs Perennial: 0
- Forbs Annual: 0
Ferns Total: 0
- Ferns Evergreen: 0
- Ferns Deciduous: 0
Exotics Total: 0
- Exotics Perennial: 0
- Exotics Annual: 0
Water: 0
Rock Outcrop: 0

Logging: 0
Fire: 0
Stand Age: 0
Agriculture: 0
Livestock: 0
Development: 0
Wildlife: 0
Recreation Severity: 0
Recreation Type: 0
Hydrology: 0

Vegetation Types:

Existing Veg1: water 100 Matrix GOOD
Veg Community1: water
Existing Veg2: 0
Veg Community3:
Existing Veg3: 0
Veg Community3:

Notes: