# Rare Plant Survey of Washington State Park's Parcels On the Long Beach Peninsula: Leadbetter Point, Skating Lake and Loomis Lake


**Pacific Biodiversity Institute**

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## Project Funding

This project was conducted under a contract with the Washington State Parks and Recreation Commission.

# *Table of Contents*

# *Introduction*

Under contract with the Washington State Parks and Recreation Commission, we surveyed three separate land parcels totaling over 2500 acres on the Long Beach Peninsula for rare plant occurrences. The State Park parcels include Leadbetter Point State Park, Loomis Lake State Park and Skating Lake State Park. This report summarizes the activities and findings of the contracted work.

Though the three State Park parcels inventoried in this project are spaced wide apart and occupy different regions of the Long Beach Peninsula, all three parcels are located mostly on the upper parts of ancient sand dunes and tsunami deposits that contain closed canopy conifer forests on the higher parts of the ancient dunes with swampy ponds and wetlands in the dune depressions.

Typically, the inner-dune wetlands of all three parcels are located in the deeper depressions between the large ancient dunes, and consist of a continuous cover of various sedges and rushes with a thick shrubby cover of *Malus fusca* and *Spiraea douglasii* around the wetland margins. Unlike the other two parcels which are land-locked, Leadbetter State Park has unique estuarine, and intertidal marshes on the Willapa Bay side of the park, and open beach and grassy dunes on the Pacific Ocean side.

# *Methods*

We visited the project area several times during the field season equipped with reference literature, rare and sensitive plant lists for the region, maps showing possible rare plant locations from previous surveys, and a portable plant identification lab. Rare plants were looked for throughout the park property with more weight put on habitats previously identified as being the most likely for them to occur (e.g. wetlands, lagoons). So as to not miss a rare plant not currently listed on the Long Beach Peninsula, all vascular plant species encountered during the survey were identified, either on site in the field, at base camp using our portable laboratory, or back at our headquarters in Winthrop, WA.

We prepared detailed maps of each parcel prior to fieldwork. These maps incorporated high-resolution aerial photography, satellite imagery, topographic information, access routes and parcel boundaries. Field personnel used these maps in planning routes, orientation and location in the field.

Survey routes were determined based on the desire to cover a large proportion of each parcels' area during field sessions, but with a balance toward more intensively surveying high likelihood habitats where rare plants might occur. Survey routes for the rare plant inventory and rare plant locations were recorded either by hand on a hardcopy topographic maps, or as GPS waypoints and trackpoints, all of which were later compiled into a single GIS data layer (maps 1 - 3).

## *Survey Conditions and Survey Routes*

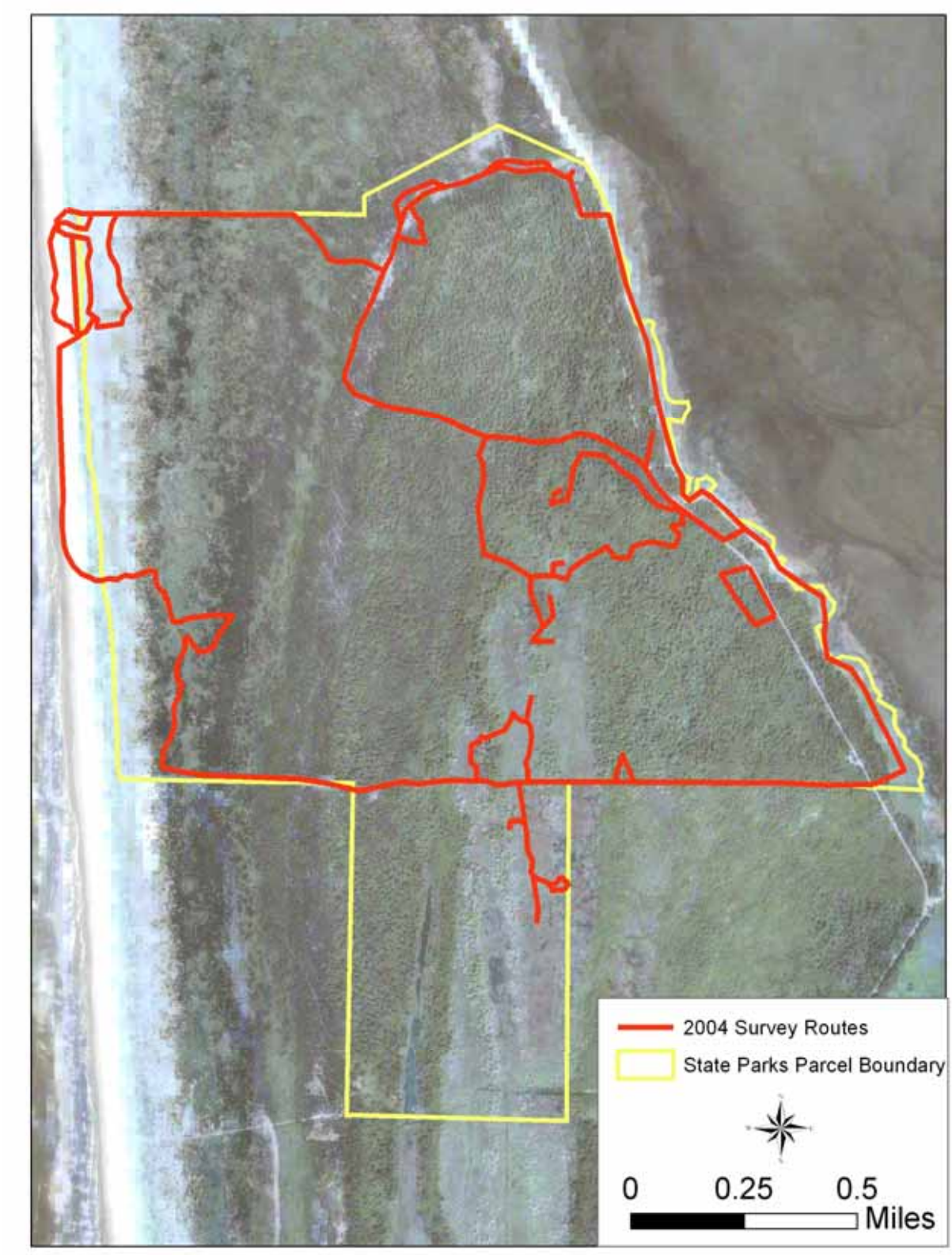
All three park parcels on the Long Beach Peninsula are characterized by very dense, nearly impenetrable vegetation in many areas. Few trails or roads exist. We used kayaks to access portions of the Skating Lake and Loomis Lake parcels. Otherwise, we conducted the surveys on foot, and at times crawling or slithering through nearly impenetrable stands of gorse, evergreen huckleberry, and other very dense vegetation. We surveyed the wetlands at Leadbetter Point using a kayak and rowboat as well as on foot, but found that many areas had vegetation too dense to push a boat through and too deep to traverse by foot. These areas were not surveyed. Public access to the Loomis Lake and Skating Lake parcels is very poor to non-existent. This made the survey work more challenging than expected. Despite these difficult working conditions, we were able to survey much of the area in all three parcels and a representative sample of all habitat types.

Although a large proportion of the park properties was sampled during this project, two constraints decreased the field crews' ability to access all areas of the three park parcels. The first constraint was property access issues and the second constraint was vegetation thickness. These two issues combined made surveying certain parts of each of the three parcels difficult to impossible given our time and resource limits. Both Loomis Lake and Skating Lake are completely surrounded by private properties with little public access available. The southern portion of Leadbetter State Park is only accessible through an easement on private lands. Trail or road access was not an option for much of the survey area. The nature of the vegetation in most of the survey areas is such that one can spend hours attempting to move only a mile through the underbrush. Further studies in the area would greatly benefit if access plans and adjacent landowner consents are in place before inventorying begins.

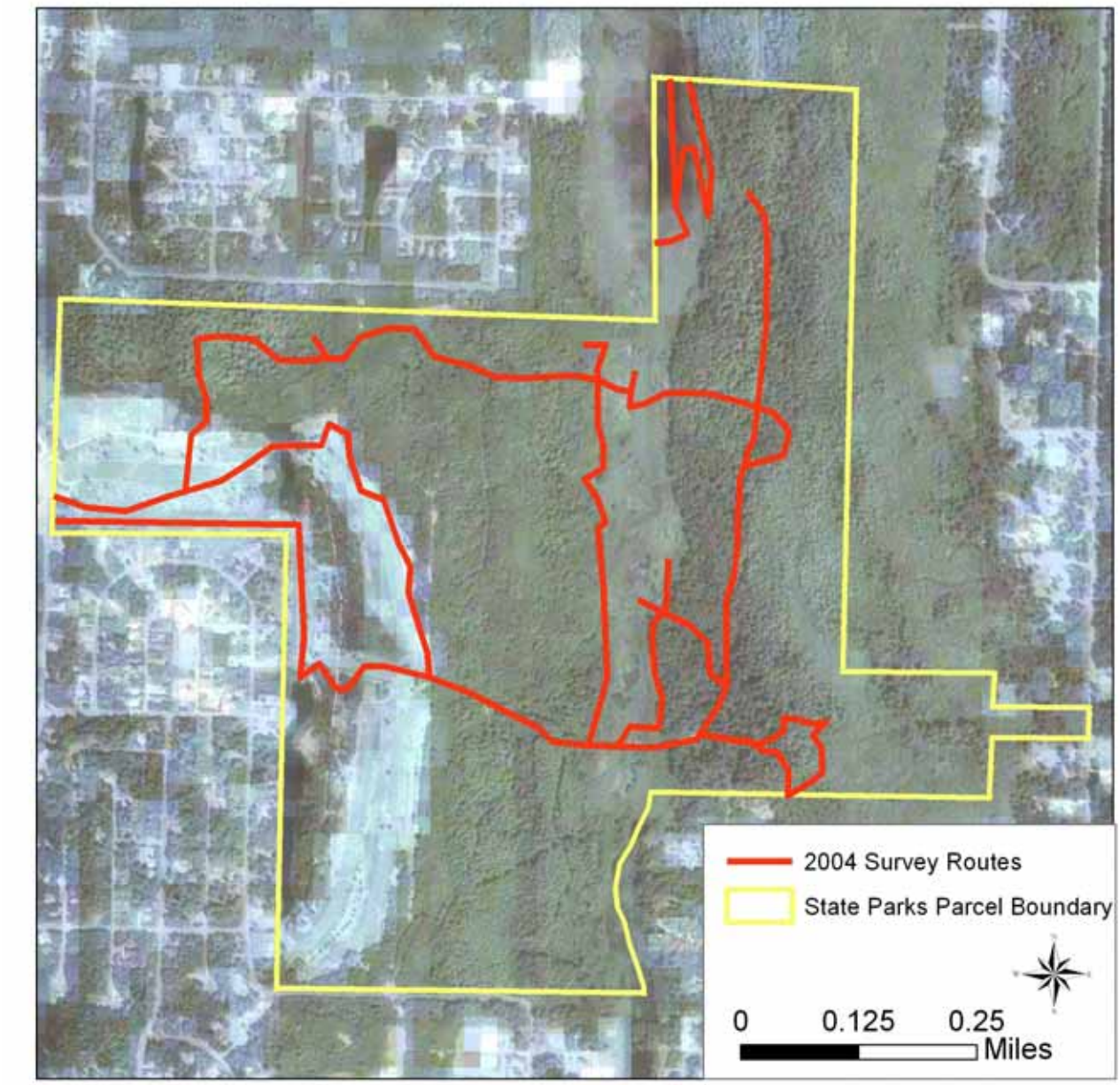
**Fighting our way through a nearly impenetrable thicket of hardhack and waist high slough sedge.**

**Field crew emerging from the deep evergreen huckleberry jungle.**

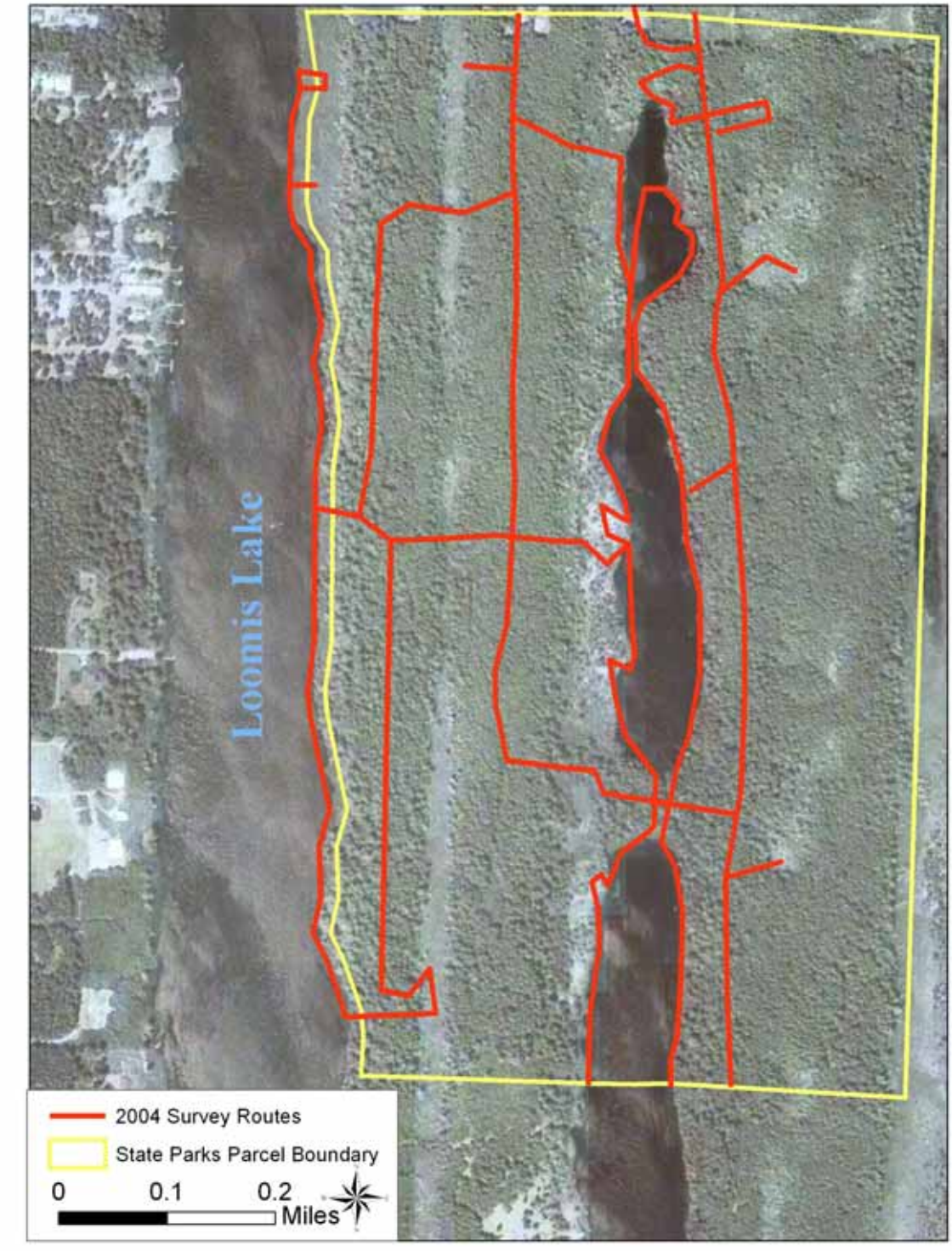
**Map 1. Rare plant survey routes in 2004 for Leadbetter State Park, overlaying a one-meter resolution digital ortho-photo combined with Landsat ETM satellite imagery.**



**Map 2. Rare plant survey routes in 2004 for the Skating Lake parcel, overlaying a one-meter resolution digital ortho-photo combined with Landsat ETM satellite imagery.**



**Map 3. Rare plant survey routes in 2004 for the Loomis Lake parcel, overlaying a one-meter resolution digital ortho-photo combined with Landsat ETM satellite imagery.**



# *Natural Communities and Ecological Condition of State Park Parcels*

## *Primary Habitat Types Found in the Long Beach Peninsula State Parks*

### COASTAL BEACH AND DUNES

#### *Beach*

A long, sandy beach is found on the west side of Ledbetter State Park. *Cakile maritima* (an alien plant) is one of the few plants growing on the beach.

#### *Sand Dunes with Beach Grass*

Inland from the beach is a broad band of European beachgrass (*Ammophila arenaria*) and American beachgrass (*Ammophila breviigulata*) with a few forbs. The grasses are growing on stabilized sand dunes.

#### *Beach Grass / Shore Pine Savannahs*

Inland from the beach grass community is a transition zone characterized by European beach grass and shore pine (*Pinus contorta* var. *contorta*) savannah.

### SALTWATER WETLANDS

#### *Marshes*

The salt-water mashes along the shore of Willapa Bay are being dominated by smooth cordgrass (*Spartina alterniflora*), though native marsh plants such as seashore saltgrass (*Distichlis spicata*) and pickleweed (*Salicornia virginica*) still occur in abundance. Most of the *Spartina alterniflora* infestation is occurring on private tidelands adjacent to the State Park boundary. We are uncertain about the exact location of park boundary at this time.

## PERMANENTLY FLOODED FRESHWATER WETLANDS

### *Open water marshes and swamps*

There are numerous, permanently flooded marshes and swamps in the park parcels of the Long Beach Peninsula. They are diverse and varied in character. They intergrade into seasonally flooded wetlands.

### *Freshwater Lakes*

Three relatively pristine lakes are found in the center of Loomis Lake State Park. They contain numerous aquatic plants (eg. *Nuphar polysepalum* ), which dominate these communities.

## SEASONALLY FLOODED OR SATURATED SOIL WETLANDS

### *Slough Sedge Swamps*

Numerous swamps dominated by slough sedge (*Carex obnupta*) are found through all three park properties.

## *Sphagnum Bogs*

Sphagnum bogs line the lakes and occur in other locations in the parks. They vary considerably in character and have a diverse set of plant communities associated with them. Some are transitional to other wetland types.





## *Spiraea Thickets*

Dense thickets of *Spiraea douglasii* are found in many wetland areas. Some places are entirely composed of Spiraea while others consist of a greater diversity of plants.



### *Mixed Wetlands*

Many wetlands defy easy classification. They are composed of many of the elements found in the other wetland types, but often in complex mixtures. These communities often contain tree, shrub, herb and moss layers.

## FORESTS

### *Shore Pine Forests*

Shore pine (*Pinus contorta* var. *contorta*) forests are found inland of the beach grass and savannah communities. Shore pine is also often found growing in the sphagnum bogs.

### *Sitka Spruce Forests*

Sitka spruce (*Picea sitchensis*) forests occur on the older dunes. Western hemlock (*Tsuga heterophylla*) typically co-dominates the canopy with spruce on the ancient dunes.

### *Western Hemlock Forests*

Western hemlock (*Tsuga heterophylla*) forests form the most common natural community on the Long Beach Peninsula. The most common plant associations are *Tsuga heterophylla*/*Gaultheria shallon* and *Tsuga heterophylla*/*Vaccinium ovatum*.

Stumps from past logging are often found scattered throughout the second growth forests. Elsewhere the stumps have rotted in this moist and relatively warm coastal environment.

The conifer forests' composition varies between parcels. Some places *are composed entirely of Tsuga heterophylla*, other areas have a more mixed composition that includes *Picea sitchensis, Pseudotsuga menziesii, Tsuga heterophylla, Pinus contorta*, and/or *Alnus rubra*. Other areas area entirely composed of shore pine (*Pinus contorta var. contorta*). Recently disturbed forests can have a canopy composed of red alder (*Alnus rubra)*.

## *Ecological Condition of Leadbetter Point State Park*

Leadbetter Point State Park is the largest of the three park parcels on the Long Beach Peninsula. It contains the greatest amount of ecological diversity and the greatest number of vascular plant species.

Leadbetter Point State Park is composed primarily of second-growth coniferous forests growing on ancient sand dunes and tsunami deposits. These forests were logged at least once in the last century. On the western side of the state park, there is a wide coastal strip consisting of a sandy beach, sand dunes and beach grasses. Further inland, this turns into a savannah with clumps of shore pine (*Pinus contorta* var. *contorta*) intermixed with beach grasses, shrubs and forbs. Beyond this zone there are narrow linear interior wetlands consisting primarily of slough sedge (*Carex obnupta*) bordered by coniferous forests.

Extensive flooded wetlands occupy much of the interior of the park. These have high species diversity. Many of these wetlands show evidence of significant hydrologic alteration through damming by roads that are built across the wetlands. Also, substantial evidence of past logging is present in the wetlands. It appears that the extent of the wetlands may now be greater than in pre-settlement conditions due to this hydrologic alteration.

**Overview of the large seasonal wetland (Hines Marsh) in the southern portion of Leadbetter State Park. *Hydrocotyle ranunculoides* was found in this wetland.**

On the west side of the park adjacent to Willapa Bay there are tidal flats, salt marshes, inter-tidal sloughs and Western hemlock forests.

**Intertidal salt marsh on the Willapa Bay side of Leadbetter State Park. *Spartina alterniflora* (an aggressive alien species) has taken over much of the marshland (mostly on private tidelands).**

Extensive invasion of gorse (*Ulex europaeus*) has occurred in the lodgepole pine forests of the park and this is becoming one of the dominant plants in about 5-10% of the park. Seventy other alien plants were also found in the park. Alien plants represent 26% of the parks known vascular flora.

American beachgrasss (*Ammophila breviigulata*) and European beachgrass (*Ammophila arenaria*), both alien plants, dominate the coastal area of the park and have stabilized the sand dunes and smothered nearly all the native vegetation. Undoubtedly, this area was much more diverse prior to the introduction of *Ammophila.* The ecological dynamics of this coastal area have been dramatically altered by the introduction of *Ammophila.* Likewise, on the eastside of the park, *Spartina alterniflora,* another alien plant, dominates the tidal marshes in most places and has dramatically altered a native ecosystem (most of the *Spartina alterniflora* infestation is occurring on private tidelands adjacent to the State Park's shoreline).

Despite the invasion of many alien plant species, the park contains a remarkable native flora and relatively intact natural communities.

## *Ecological Condition of Skating Lake State Park*

Skating Lake State Park is composed primarily of second-growth coniferous forests and extensive interdunal wetlands associated with a portion of a fresh water lake. An actively used golf course is located on the western portion of the park. The forests in the park were logged at least once in the last century, and the areas nearest the golf course were logged seemingly more recently as they possess a high component of red alder (*Alnus rubra*) in the young forest canopy. An invasion of gorse (*Ulex europaeus*) has occurred in the park around the golf course, where it is becoming a dominant sub-canopy component. Twenty-six alien plants were found in the park. Alien plants represent nearly 33% of the park's known vascular flora.

Despite past development and logging activities, areas of the park away from the golf course contain a remarkable native flora and relatively intact natural communities.

## *Ecological Condition of Loomis Lake State Park*

Loomis Lake State Park is composed primarily of second-growth coniferous forests. Three relatively pristine lakes are found in the center of the park. Nearly all the forests in the park were logged at least once during the last century. A few, small patches of old forest exist adjacent to the lakes. Seven alien plants were also found in the park. Alien plants represent 11% of the park's known vascular flora.

Despite past logging activities, the park contains a remarkable native flora and relatively intact natural communities. Its lakes and associated wetlands are real gems.

**Interior conditions of the *Tsuga heterophylla* forest in the Loomis Lake parcel. Following previous clear-cutting, the forest here has regenerated as an almost 100% hemlock overstory now in the stem exclusion successional phase. The dense canopy of this forest doesn't allow for much understory plant establishment which keeps species diversity within the forest low.**

**Slough sedge dominated seasonal wetland in the Loomis Lake parcel. Young spruce may eventually shade out some of the slough sedge cover and allow other herbaceous or graminoid species to become established.**

**Muddy flats between Mallard and Lost Lake in the Loomis Lake parcel in mid August**

## *Botanical Inventory and Rare Plant Sightings*

We identified over 315 species of plants during the 2004 site visits. One state-listed sensitive species was found within two of the Long Beach Peninsula State Park's parcels: Floating Water Pennywort, *Hydrocotyle ranunculoides* L. f. We found this species to be relatively abundant in the areas where it was sighted. The populations of this species are healthy in both the Leadbetter Point and Loomis Lake State Parks. Two rare plant-sighting forms have been prepared and submitted to the Washington Natural Heritage Program. They are attached as Appendix B and C of this report.

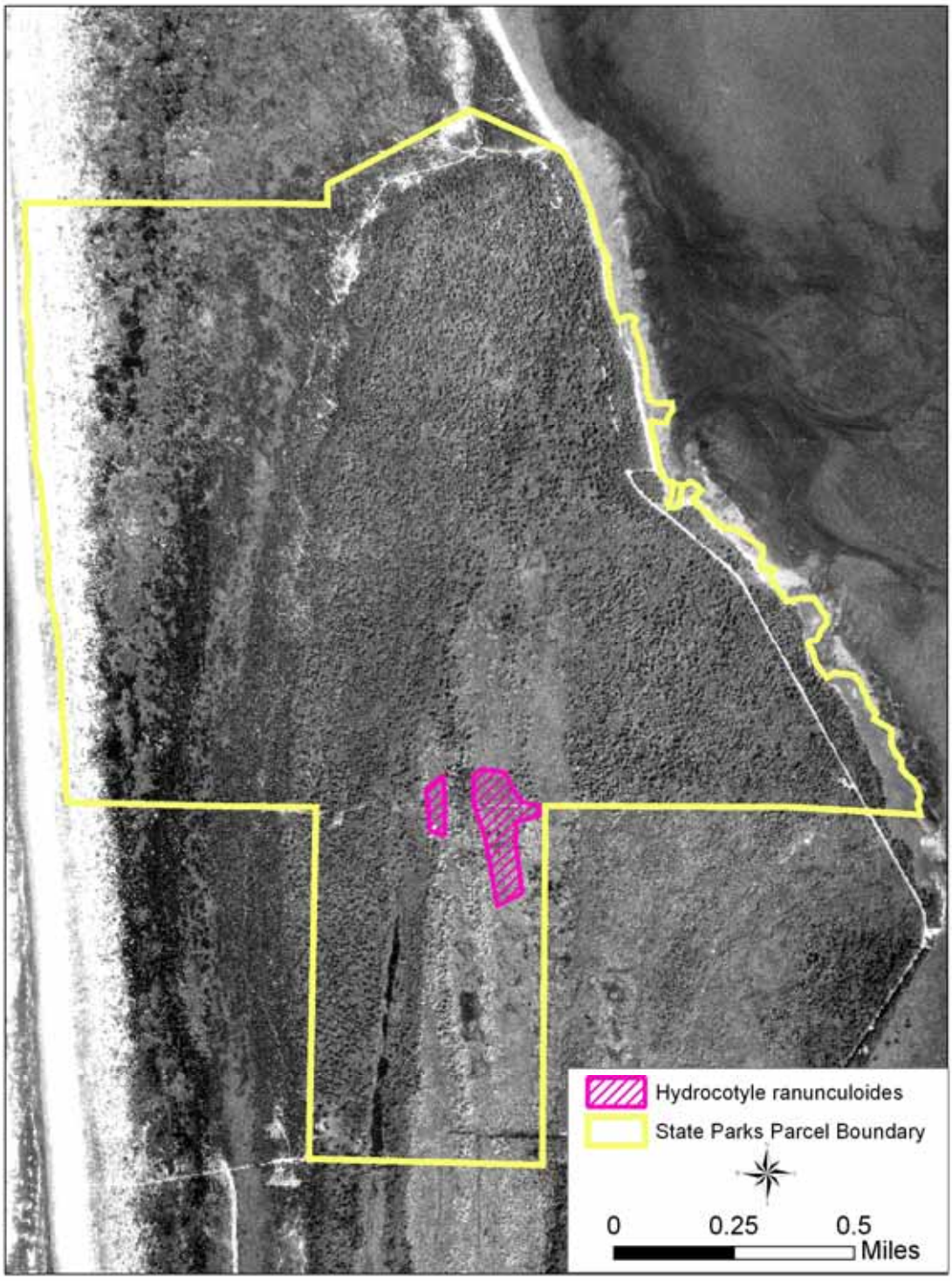
Floating Water Pennywort, ***Hydrocotyle ranunculoides* L. f.:**

| Scientific Name | Common Name | Family Name | Global Rank | State Rank | State Status | Federal Status |
|---|---|---|---|---|---|---|
| Hydrocotyle ranunculoides | Floating Water Pennywort | Apiaceae | G5 | S2 | S | none |

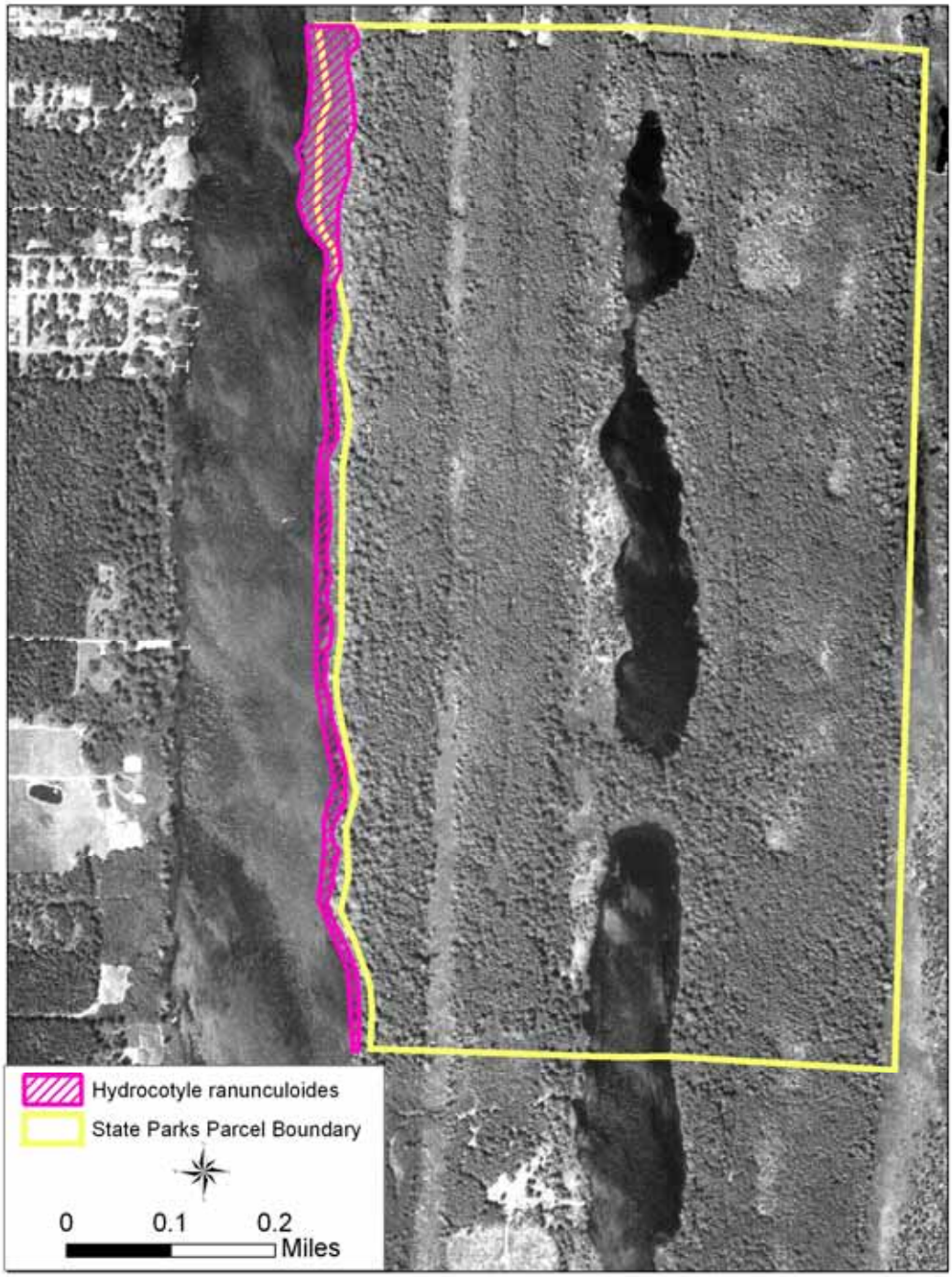
Populations of *Hydrocotyle ranunculoides* may exist in some of the unsurveyed wetlands or portions of surveyed wetlands that were inaccessible at Leadbetter Point. It is likely that the populations we found there extend somewhat beyond the mapped boundaries.

Although *Hydrocotyle ranunculoides* was found along the eastern shore of Loomis Lake, we did not find it in any of the interior lakes (Mallard, Lost and Island Lakes) or wetlands in that park, despite intensive surveys.

*Lycopodiella inundata*, a state sensitive species, has been found in the past near the Skating Lake parcel, but was not found during any of our site visits to that parcel or any other parcel during 2004.




***Hydrocotyle ranunculoides* locations at Leadbetter State Park**




***Hydrocotyle ranunculoides* locations at Loomis Lake State Park**

Though *Hydrocotyle ranunculoides* occurred in lakes and wetland areas in both the Leadbetter and Loomis Lake State Park parcels, it was not found in the wetlands of the Skating Lake parcel. No obvious differences in wetland conditions that would explain the absence *Hydrocotyle ranunculoides* in Skating Lake were apparent during this project.

## *Vascular Plant List for Leadbetter Point State Park*

| Scientific Name | *Common Name* | Family | Code | Type | Alien? |
|---|---|---|---|---|---|
| *Abronia latifolia* | yellow sand verbena | Nyctaginaceae | ABLA2 | p | |
| *Achillea millefolium* | common yarrow | Compositae | ACMI2 | p | |
| *Agrostis alba* var. *stolonifera* | fiorin | Gramineae | AGALS | g | |
| *Agrostis capillaris* | narrow bentgrass | Gramineae | AGCA5 | g | a |
| *Agrostis exarata* | spike bentgrass | Gramineae | AGEX | g | |
| *Agrostis pallens* | dune bentgrass | Gramineae | AGPA8 | g | |
| *Agrostis scabra* | winter bentgrass | Gramineae | AGSC | g | |
| *Aira caryophyllea* | silver hairgrass | Gramineae | AICA | g | a |
| *Aira elegans* | elegant hairgrass | Gramineae | AIEL4 | g | a |
| *Aira praecox* | little hairgrass | Gramineae | AIPR | g | a |
| *Alnus rubra* | red alder | Betulaceae | ALRU2 | | |
| *Alopecurus geniculatus* | water foxtail | Gramineae | ALGE2 | p | |
| *Ambrosia chamissonis* | silver burweed | Compositae | AMCH4 | p | |
| *Ammophila arenaria* | European beachgrass | Gramineae | AMAR4 | g | a |
| *Ammophila breviigulata* | American beachgrass | Gramineae | AMBR8 | g | a |
| *Anaphalis margaritacea* | pearly everlasting | Compositae | ANMA | p | |
| *Angelica lucida* | seacoast angelica | Umbelliferaceae | ANLU | p | |
| *Anthoxanthum odoratum* | sweet vernalgrass | Gramineae | ANOD5 | g | a |
| *Arctostaphylos uva-ursi* | kinnikinnick | Ericaceae | ARUV | p | |
| *Arenaria stricta* | slender sandwort | Caryophyllaceae | ARST8 | p | |
| *Armeria maritima* | thrift | Plumbaginaceae | ARMA6 | p | |
| *Aster subspicatus* var. *douglasii* | Douglas aster | Compositae | ASSUD | p | |
| *Athyrium filix-femina* | lady-fern | Polypodiaceae | ATFI | f | |
| *Atriplex patula* var. *patula* | spear orache | Chenopodiaceae | ATPAP | a | |
| *Barbarea orthoceras* | American wintercress | Brassicaceae | BAOR | p | |
| *Bellis perennis* | english daisy | Compositae | BEPE2 | p | a |
| *Blechnum spicant* | deer-fern | Polypodiaceae | BLSP | f | |
| *Boschniakia hookeri* | ground cone | Orobanchaceae | BOHO | p | |
| *Botrychium multifidum* | leathery grapefern | Ophioglossaceae | BOMU | p | |
| *Bromus mollis* | soft brome | Gramineae | BRMO2 | g | a |
| *Bromus pacificus* | Pacific brome | Gramineae | BRPA3 | g | |
| *Bromus sitchensis* | Alaska brome | Gramineae | BRSI | g | |
| *Cakile edentula* | american searocket | Cruciferae | CAED | p | a |
| *Cakile maritima* | European searocket | Cruciferae | CAMA | p | a |
| *Calamagrostis nutkaensis* | Nootka reedgrass | Gramineae | CANU | g | |
| *Callitriche heterophylla* | water starwort | Callitrichaceae | CAHE3 | p | |
| *Callitriche stagnalis* | pond water-starwort | Callitrichaceae | CAST | p | |
| *Capsella bursa-pastoris* | sheperd's purse | Cruciferae | CABU2 | a | a |
| *Cardamine pensylvanica* | Pennsylvania bittercress | Cruciferae | CAPE | a | |
| *Cardionema ramosissima* | sandbur | Caryophyllaceae | CARA3 | p | |
| *Carex brevicaulis* | short-stemmed sedge | Cyperaceae | CABR | g | |
| *Carex cusickii* | Cusick'ssedge | Cyperaceae | CACU5 | g | |
| *Carex deweyana* | Dewey's sedge | Cyperaceae | CADE9 | g | |
| *Carex lenticularis* | lakeshore sedge | Cyperaceae | CALE | g | |
| *Carex lyngbyei* | Lyngby's sedge | Cyperaceae | CALY3 | g | |
| *Carex macrocephala* | big-headed sedge | Cyperaceae | CAMA10 | g | |

| | | | | | |
|---|---|---|---|---|---|
| *Carex obnupta* | slough sedge | Cyperaceae | CAOB3 | g | |
| *Carex pansa* | sanddune sedge | Cyperaceae | CAPA16 | g | |
| *Carex phyllomanica* | coast stellate sedge | Cyperaceae | CAPH6 | g | |
| *Carex sitchensis* | Sitka sedge | Cyperaceae | CASI3 | g | |
| *Carex vesicaria* | bladdersedge | Cyperaceae | CAVE6 | g | |
| *Centaurium umbellatum* | rosy centaury | Gentianaceae | CEUM | a | a |
| *Cerastium arvense* | field chickweed | Caryophyllaceae | CEAR4 | p | |
| *Cerastium viscosum* | sticky chickweed | Caryophyllaceae | CEVI3 | a | a |
| *Cerastium vulgatum* | common chickweed | Caryophyllaceae | CEVU | p | |
| *Chenopodium album* | lambsquarters | Chenopodiaceae | CHAL7 | a | a |
| *Chrysanthemum leucanthemum* | oxeye daisy | Compositae | CHLE80 | p | a |
| *Cicuta douglasii* | western water-hemlock | Umbelliferaceae | CIDO | p | |
| *Cirsium arvense* | Canada thistle | Compositae | CIAR4 | p | a |
| *Cirsium edule* | indian thistle | Compositae | CIED | p | |
| *Cirsium vulgare* | bull thistle | Compositae | CIVU | b | a |
| *Convolvulus sepium* | bell bindweed | Convolvulaceae | SOSE* | p | a |
| *Convolvulus soldanella* | beach morning-glory | Convolvulaceae | COSO4 | p | |
| *Cotula coronopifolia* | brass buttons | Compositae | COCO7 | p | a |
| *Cuscuta salina* | alkali dodder | Cuscutaceae | CUSA | a | |
| *Cystopteris fragilis* | fragile fern | Polypodiaceae | CYFR2 | f | |
| *Cytisus scoparius* | Scot's broom | Leguminosae | CYSC4 | s | a |
| *Dactylis glomerata* | orchardgrass | Gramineae | DAGL | g | a |
| *Deschampsia caespitosa* | tufted hairgrass | Gramineae | DECA | g | |
| *Digitalis purpurea* | foxglove | Scrophulariaceae | DIPU | a | a |
| *Distichlis stricta* | alkali saltgrass | Gramineae | DIST3 | p | |
| *Eleocharis palustris* | common spike-rush | Cyperaceae | ELPA3 | g | |
| *Eleocharis parvula* | small spike-rush | Cyperaceae | ELPA5 | g | |
| *Epilobium angustifolium* | fireweed | Onagraceae | EPAN2 | p | |
| *Epilobium brachycarpum* | tall willowherb | Onagraceae | EPBR3 | p | |
| *Epilobium minutum* | small-flowered willow-herb | Onagraceae | EPMI | a | |
| *Epilobium watsonii* | Watson's willowherb | Onagraceae | EPWA | p | |
| *Equisetum telmateia* | giant horsetail | Equisetaceae | EQTE | p | |
| *Erechitites minima* | toothed coast fireweed | Compositae | ERMI | p | a |
| *Festuca arundinacea* | tall fescue | Gramineae | FEAR3 | p | a |
| *Festuca bromoides* | six-weeks fescue | Gramineae | FEBR. | a | |
| *Festuca microstachys* | small fescue | Gramineae | FEMI2 | g | a |
| *Festuca myuros* | rat-tail fescue | Gramineae | FEMY2 | g | a |
| *Festuca rubra* var. *littoralis* | coastal red fescue | Gramineae | FERUL | g | |
| *Festuca rubra* var. *rubra* | red red fescue | Gramineae | FERUR | g | |
| *Filago minor* | small filago | Compositae | FIMI* | a | |
| *Fragaria chiloensis* | coast strawberry | Rosaceae | FRCH | p | |
| *Galium aparine* | cleavers | Rubiaceae | GAAP2 | a | a |
| *Galium cymosum* | Pacific bedstraw | Rubiaceae | GACY | p | |
| *Galium trifidum* var. *pacificum* | small bedstraw | Rubiaceae | GATRP | p | |
| *Gaultheria shallon* | salal | Ericaceae | GASH | s | |
| *Geranium molle* | dovefoot geranium | Geraniaceae | GEMO | a | a |
| *Glaux maritima* | saltwort | Primulaceae | GLMA | p | |
| *Glehnia leiocarpa* | beach carrot | Umbelliferaceae | GLLE5 | p | |
| *Glyceria elata* | tall mannagrass | Gramineae | GLEL | g | |
| *Gnaphalium chilense* | cotton-batting cudweed | Gramineae | GNCH | a | |

| | | | | | |
|---|---|---|---|---|---|
| *Gnaphalium purpureum* | purple cudweed | Compositae | GNPU2 | a | |
| *Gnaphalium uliginosum* | marsh cudweed | Compositae | GNUL | a | a |
| *Goodyera oblongifolia* | rattlesnake plantain | Orchidaceae | GOOB2 | p | |
| *Grindelia integrifolia* | low gumweed | Compositae | GRIN | p | |
| *Habenaria maritima* | coast rein-orchid | Orchidaceae | HAMA4 | p | |
| *Hedera helix* | English ivy | Araliaceae | HEHE | s | a |
| *Heracleum lanatum* | cow parsnip | Umbelliferaceae | HELA4 | p | |
| *Hieracium longiberbe* | long-beaked hawkweed | Compositae | HILO | p | |
| *Hippuris vulgaris* | mare's-tail | Hippuridaceae | HIVU2 | p | |
| *Holcus lanatus* | common velvetgrass | Gramineae | HOLA | g | a |
| *Holcus mollis* | creeping velvetgrass | Gramineae | HOMO | g | a |
| *Honkenya peploides* | honkenya | Caryophyllaceae | HOPE | p | |
| *Hordeum jubatum* | squirrel-tail | Gramineae | HOJU | g | a |
| *Hydrocotyle ranunculoides* | marsh pennywort | Umbelliferaceae | HYRA | p | |
| *Hypericum anagalloides* | bog St. Johnswort | Hypericaceae | HYAN2 | p | |
| *Hypocharis radicata* | hairy cat's-ear | Compositae | HYRA3 | a | a |
| *Impatiens capensis* | orange balsam | Balsaminaceae | IMCA | p | |
| *Jaumea carnosa* | fleshy jaumea | Compositae | JACA4 | p | |
| *Juncus acuminatus* | tapered rush | Juncaceae | JUAC | g | |
| *Juncus articulatus* | jointed rush | Juncaceae | JUAR4 | g | |
| *Juncus balticus* | Baltic rush | Juncaceae | JUBA | g | |
| *Juncus bolanderi* | Bolander's sedge | Juncaceae | JUBO | g | |
| *Juncus bufonius* | toad rush | Juncaceae | JUBU | g | |
| *Juncus covillei* | Coville's rush | Juncaceae | JUCO5 | g | |
| *Juncus effusus* var. *pacificus* | soft rush | Juncaceae | JUEFP | g | |
| *Juncus ensifolius* | dagger-leaved rush | Juncaceae | JUEN | g | |
| *Juncus geraldii* | mud rush | Juncaceae | JUGE | g | |
| *Juncus lesueurii* | salt rush | Juncaceae | JULE | g | |
| *Lactuca muralis* | wall lettuce | Compositae | LAMU | a | a |
| *Lathyrus japonicus* | beach pea | Leguminosae | LAJA | p | |
| *Lathyrus littoralis* | beach peavine | Leguminosae | LALI2 | p | |
| *Lathyrus pusillus* | tiny peavine | Leguminosae | LAPU* | a | |
| *Lemna minor* | duckweed | Lemnaceae | LEMI3 | a | |
| *Leontodon nudicaulis* | hairy hawkbit | Compositae | LENU2 | p | a |
| *Lepidium perfoliatum* | clasping peppergrass | Cruciferae | LEPE2 | a | a |
| *Lepidium virginicum* | tall peppergrass | Cruciferae | LEVI3 | a | |
| *Leymus mollis* | American dunegrass | Gramineae | ELMO9 | g | |
| *Lilaea scilloides* | flowering quillwort | Lilaceae | LISC4 | p | |
| *Lilaeopsis occidentalis* | lilaeopsis | Lilaceae | LIOC | p | |
| *Linnaea borealis* | twinflower | Scrophulariaceae | LIBO3 | p | |
| *Listera cordata* | heartleaf twayblade | Orchidaceae | LICO6 | p | |
| *Lonicera involucrata* | black twinberry | Caprifoliaceae | LOIN5 | p | |
| *Lotus corniculatus* | birdsfoot trefoil | Leguminosae | LOCO6 | p | a |
| *Lotus formosissimus* | seaside lotus | Leguminosae | LOFO2 | p | |
| *Lotus micranthus* | small-flowered deervetch | Leguminosae | LOMI | a | |
| *Ludwigia palustris* var. *pacifica* | water-purslane | Onagraceae | LUPAP | p | |
| *Lupinus littoralis* | seashore lupine | Leguminosae | LULI2 | s | |
| *Luzula parviflora* | small-flowered woodrush | Juncaceae | LUPA | g | |
| *Lycopodium clavatum* | elk-moss | Lycopodiaceae | LYCL | cm | |
| *Maianthemum dilatatum* | may-lily | Liliaceae | MADI | p | |

| | | | | | |
|---|---|---|---|---|---|
| *Medicago lupulina* | black medic | Leguminosae | MELU | p | a |
| *Mentha arvensis* | Canadian mint | Labiatae | MEAR4 | p | |
| *Menziesia ferruginea* | fool's huckleberry | Ericaceae | MEFE | s | |
| *Mianthemum dilatatum* | may-lily | Liliaceae | MIDI* | p | |
| *Montia parvifolia* | littleleaf montia | Caryophyllaceae | MOPA5 | p | |
| *Montia perfoliata* | miner's lettuce | Caryophyllaceae | MOPE | a | |
| *Montia sibirica* | Siberian miner's lettuce | Caryophyllaceae | MOSI2 | a | |
| *Myosotis laxa* | small-flowered forgetmenot | Boraginaceae | MYLA | p | |
| *Myrica californica* | Pacific wax myrtle | Myricaceae | MYCA | s | |
| *Oenanthe sarmentosa* | water-parsley | Umbelliferaceae | OESA | p | |
| *Oenothera glazioviana* | red-sepaled evening primrose | Onagraceae | OEGL | p | |
| *Orthocarpus castillejoides* | paintbrush owl-clover | Scrophulariaceae | ORCA4 | a | |
| *Orthocarpus pusillus* | dwarf owl-clover | Scrophulariaceae | ORPU3 | a | |
| *Osmorhiza chilensis* | mountain sweet-cicely | Umbelliferaceae | OSCH | p | |
| *Physocarpus malvaceus* | mallow ninebark | Rosaceae | PHMA5 | s | |
| *Picea sitchensis* | Sitka spruce | Pinaceae | PISI | t | |
| *Pinus contorta* var. *contorta* | shore pine | Pinaceae | PICO | t | |
| *Plantago coronopus* | tooth-leaved plantain | Plantaginaceae | PLCO3 | a | a |
| *Plantago lanceolata* | narrowleaf plantain | Plantaginaceae | PLLA | p | a |
| *Plantago major* | common plantain | Plantaginaceae | PLMA2 | p | a |
| *Plantago maritima* | seaside plantain | Plantaginaceae | PLMA | p | |
| *Plantago subnuda* | Mexican plantain | Plantaginaceae | PLSU* | p | |
| *Plectritis congesta* | rosy plectritis | Valarianiaceae | PLCO4 | a | |
| *Poa annua* | annual bluegrass | Gramineae | POAN | ag | a |
| *Poa confinis* | coastline bluegrass | Gramineae | POCO2 | g | |
| *Poa douglasii* ssp. *macrantha* | seashore bluegrass | Gramineae | PODOM | g | |
| *Poa palustris* | lake bluegrass | Gramineae | POPA2 | g | |
| *Poa pratensis* | Kentucky bluegrass | Gramineae | POPR | g | a |
| *Polygonum cuspidatum* | Japanese knotweed | Polygonaceae | POCU6 | p | a |
| *Polygonum hydropiperoides* | waterpepper | Polygonaceae | POHY2 | p | |
| *Polygonum paronychia* | black knotweed | Polygonaceae | POPA7 | p | |
| *Polygonum persecaria* | spotted ladysthumb | Polygonaceae | POPE3 | p | |
| *Polygonum polystachyum* | Himalayan knotweed | Polygonaceae | POPO* | p | a |
| *Polygonum punctatum* | water smartweed | Polygonaceae | POPU5 | p | |
| *Polypodium amorphum* | Pacific polypody | Polypodiaceae | POAM7 | f | |
| *Polypodium glycyrrhiza* | licorice fern | Polypodiaceae | POGL8 | f | |
| *Polypodium scouleri* | leather-leaved polypody | Polypodiaceae | POSC4 | f | |
| *Polypogon monospeliensis* | rabbitfoot polypogon | Gramineae | POMO5 | a | a |
| *Polystichum munitum* | sword-fern | Polypodiaceae | POMU | f | |
| *Populus trichocarpa* | black cottonwood | Salicaceae | POTR15 | t | |
| *Potamogeton berchtoldii* | Berchtold's pondweed | Potamogetonaceae | POBE9 | p | |
| *Potamogeton natans* | floating-leaved potamogeton | Potamogetonaceae | PONA4 | p | |
| *Potentilla anserina* | silverweed | Rosaceae | POAN5 | p | |
| *Potentilla egedii* var. *groenlandica* | marsh silverweed | Rosaceae | POEGG | p | |
| *Potentilla palustris* | marsh cinquefoil | Rosaceae | POPA | p | |
| *Prunella vulgaris* | self-heal | Labiatae | PRVU | p | |
| *Pteridium aquilinum* | bracken fern | Polypodiaceae | PTAQ | f | |
| *Puccinellia lucida* | shining alkaligrass | Gramineae | PULU2 | g | |
| *Puccinellia pumilla* | dwarf alkaligrass | Gramineae | PUPU3 | g | |
| *Pyracantha coccinea* | firethorn | Rosaceae | PYCO* | s | a |

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|---|---|---|---|---|---|
| *Pyrola asarifolia* | pink wintergreen | Ericaceae | PYAS | p | |
| *Pyrus fusca* | pacific crabapple | Rosaceae | PYFU | s | |
| *Ranunculus acris* | meadow buttercup | Ranunculaceae | RAAC3 | p | a |
| *Ranunculus flabellaris* | yellow water buttercup | Ranunculaceae | RAFL | p | |
| *Ranunculus repens* var. *repens* | creeping buttercup | Ranunculaceae | RARER | p | a |
| *Ranunculus sceleratus* | celery-leaved buttercup | Ranunculaceae | RASC3 | p | |
| *Rhamnus purshiana* | cascara | Rhamnaceae | RHPU | s | |
| *Ribes divericatum* | coast black gooseberry | Grossulariaceae | RIDI | s | |
| *Ribes laxiflorum* | western black current | Grossulariaceae | RILA3 | s | |
| *Ribes lobbii* | gummy gooseberry | Grossulariaceae | RILO | s | |
| *Rorippa islandica* | marsh yellowcress | Cruciferae | ROIS | b | |
| *Rosa gymnocarpa* | baldhip rose | Rosaceae | ROGY | s | |
| *Rosa nutkana* | Nootka rose | Rosaceae | RONU | s | |
| *Rubus discolor* | Himalayan blackberry | Rosaceae | RUDI2 | s | a |
| *Rubus laciniatus* | evergreen blackberry | Rosaceae | RULA | s | a |
| *Rubus spectabilis* | salmonberry | Rosaceae | RUSP | s | |
| *Rumex acetosella* | sheep sorrel | Polygonaceae | RUAC3 | a | a |
| *Rumex crispus* | curly dock | Polygonaceae | RUCR | p | a |
| *Rumex maritimus* | seaside dock | Polygonaceae | RUMA | p | |
| *Rumex occidentalis* | western dock | Polygonaceae | RUOC3 | p | |
| *Sagina maxima* ssp. *crassicaulis* | stickseed pearlwort | Caryophyllaceae | SAMAC | p | |
| *Salicornia virginica* | Pickleweed | Chenopodiaceae | SAVI | p | |
| *Salix hookeriana* | coast willow | Salicaceae | SAHO | s | |
| *Salix lasiandra* | pacific willow | Salicaceae | SALA5 | s | |
| *Salix rigida* var. *mackenzieana* | Mackenzie willow | Salicaceae | SARIM4 | s | |
| *Salix scouleriana* | Scouler's willow | Salicaceae | SASC | t | |
| *Sanicula crassicaulis* | Pacific sanicle | Umbelliferaceae | SACR2 | p | |
| *Scirpus americanus* | three-square bulrush | Cyperaceae | SCAM2 | p | |
| *Scirpus cernuus* | dwarf bulrush | Cyperaceae | SCCE6 | a | |
| *Scirpus subterminalis* | water clubrush | Cyperaceae | SCSU | p | |
| *Scrophularia californica* | California figwort | Scrophulariaceae | SCCA | p | |
| *Senecio jacobaea* | tansy ragwort | Compositae | SEJA | a | a |
| *Senecio sylvaticus* | wood groundsel | Compositae | SESY | p | |
| *Senecio vulgaris* | common groundsel | Compositae | SEVU | p | a |
| *Sidalcea hendersonii* | Henderson's sidalcea | Malvaceae | SIHE4 | p | |
| *Sieglingia decumbens* | heathgrass | Gramineae | SIDE2 | g | a |
| *Sisyrinchium californicum* | golden-eyed grass | Iridaceae | SICA8 | p | |
| *Sisyrinchium littorale* | coast blue-eyed grass | Iridaceae | SILI4 | p | |
| *Solanum dulcamara* | bittersweet nightshade | Solanaceae | SODU | p | a |
| *Solidago spathulata* | coast goldenrod | Compositae | SOSP* | p | |
| *Soliva sessilis* | field burrweed | Compositae | SOSE2 | a | a |
| *Sparganium emersum* | simple-stem bur-reed | Sparganiaceae | SPEM2 | p | |
| *Spartina alterniflora* | smooth cordgrass | Gramineae | SPAL | g | a |
| *Spergula arvensis* | field stickwort | Caryophyllaceae | SPAR | a | |
| *Spergularia canadensis* var. *occidentalis* | Canada sandspurry | Caryophyllaceae | SPCAO | p | |
| *Spergularia macrotheca* | beach sandspurry | Caryophyllaceae | SPMA | p | |
| *Spergularia marina* | salt marsh sandspurry | Caryophyllaceae | SPMA2 | p | |
| *Spiraea douglasii* | hardhack | Rosaceae | SPDO | s | |
| *Spiranthes romanzoffiana* | white ladies-tresses | Orchidaceae | SPRO | p | |

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|---|---|---|---|---|---|
| *Stachys mexicana* | great betony | Labiatae | STME | p | |
| *Stellaria calycantha* | northern starwort | Caryophyllaceae | STCA | a | |
| *Stellaria humifusa* | lowstarwort | Caryophyllaceae | STHU | p | |
| *Stellaria longipes* | longstalk starwort | Caryophyllaceae | STLO2 | a | |
| *Stellaria nitens* | shining chickweed | Caryophyllaceae | STNI | a | |
| *Suaeda maritima* | seablite | Chenopodiaceae | SUMA | p | |
| *Tanacetum douglasii* | seaside tansy | Compositae | TADO | p | |
| *Taraxacum officinale* | common dandelion | Compositae | TAOF | b | a |
| *Teesdalia nudicaulis* | teesdalia | Cruciferae | TENU | a | a |
| *Thuja plicata* | western redcedar | Cupressaceae | THPL | t | |
| *Trifolium pratense* | red clover | Leguminosae | TRPR2 | p | a |
| *Trifolium repens* | white clover | Leguminosae | TRRE3 | p | a |
| *Trifolium wormskjoldii* | springbank clover | Leguminosae | TRWO | p | |
| *Triglochin concinnum* var. *concinnum* | graceful arrowgrass | Juncaginaceae | TRCOC | p | |
| *Triglochin maritimum* | sea arrow-grass | Juncaginaceae | TRMA4 | p | |
| *Tsuga heterophylla* | Pacific hemlock | Pinaceae | TSHE | t | |
| *Ulex europaeus* | gorse | Leguminosae | ULEU | s | a |
| *Vaccinium ovatum* | evergreen blueberry | Ericaceae | VAOV2 | s | |
| *Vaccinium parvifolium* | red huckleberry | Ericaceae | VAPA | s | |
| *Veronica americana* | American brooklime | Scrophulariaceae | VEAM2 | p | |
| *Veronica arvensis* | field speedwell | Scrophulariaceae | VEAR | a | a |
| *Veronica longifolia* | longleaf speedwell | Scrophulariaceae | VELO2 | p | a |
| *Veronica scuttelata* | marsh speedwell | Scrophulariaceae | VESC2 | p | |
| *Viburnum edule* | highbush cranberry | Caprifoliaceae | VIED | s | |
| *Vicia gigantea* | Giant Vetch | Leguminosae | VIGI | p | |
| *Vicia sativa* | common vetch | Leguminosae | VISA | p | a |
| *Vicia villosa* | woolly vetch | Leguminosae | VIVI | a | a |
| *Viola glabella* | pioneer violet | Violaceae | VIGL | p | |
| *Viola palustris* | marsh violet | Violaceae | VIPA4 | p | |
| *Viola sempervirens* | evergreen violet | Violaceae | VISE3 | p | |
| *Zostera japonica* | dwarf eelgrass | Zosteraceae | ZOJA2 | p | a |
| *Zostera marina* | big eelgrass | Zosteraceae | ZOMA | p | |

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

| Scientific Name | Common Name | Family- Scientific | Code | Type | Alien? |
|---|---|---|---|---|---|
| *Alnus rubra* | red alder | Betulaceae | ALRU2 | | |
| *Aster foliaceus* | leafy aster | Compositae | ASFO | p | |
| *Athyrium filix-femina* | lady-fern | Polypodiaceae | ATFI | f | |
| *Azolla mexicana* | Mexican water-fern | Salviniaceae | AZME | a | |
| *Blechnum spicant* | deer-fern | Polypodiaceae | BLSP | f | |
| *Botrychium* sp. | grapefern | Ophioglossaceae | | p | |
| *Calamagrostis nutkaensis* | Nootka reedgrass | Gramineae | CANU | g | |
| *Callitriche stagnalis* | pond water-starwort | Callitrichaceae | CAST | p | |
| *Carex lyngbyei* | Lyngby's sedge | Cyperaceae | CALY3 | g | |
| *Carex obnupta* | slough sedge | Cyperaceae | CAOB3 | g | |
| *Carex sitchensis* | Sitka sedge | Cyperaceae | CASI3 | g | |
| *Carex vesicaria* | bladdersedge | Cyperaceae | CAVE6 | g | |
| *Digitalis purpurea* | foxglove | Scrophulariaceae | DIPU | a | a |
| *Dulichium arundinaceum* | dulichium | Cyperaceae | DUAR3 | p | |
| *Eleocharis palustris* | common spike-rush | Cyperaceae | ELPA3 | g | |
| *Epilobium watsonii* | Watson's willowherb | Onagraceae | EPWA | p | |
| *Equisetum fluviatile* | water horsetail | Equisetaceae | EQFL | p | |
| *Eriophorum chamissonis* | Chamisso's cottongrass | Cyperaceae | ERCH7 | g | |
| *Gaultheria shallon* | salal | Ericaceae | GASH | s | |
| *Glyceria borealis* | northern mannagrass | Gramineae | GLBO | g | |
| *Glyceria grandis* | reed mannagrass | Gramineae | GLGR | g | |
| *Goodyera oblongifolia* | rattlesnake plantain | Orchidaceae | GOOB2 | p | |
| *Hypericum anagalloides* | bog St. Johnswort | Hypericaceae | HYAN2 | p | |
| *Hypocharis radicata* | hairy cat's-ear | Compositae | HYRA3 | a | a |
| *Ilex aquifolium* | English holly | Aquifoliaceae | ILAQ80 | s | a |
| *Juncus acuminatus* | tapered rush | Juncaceae | JUAC | g | |
| *Juncus articulatus* | jointed rush | Juncaceae | JUAR4 | g | |
| *Juncus effusus* | common rush | Juncaceae | JUEF | g | |
| *Ledum glandulosum* | western labrador tea | Ericaceae | LEGL | s | |
| *Lotus corniculatus* | birdsfoot trefoil | Leguminosae | LOCO6 | p | a |
| *Lotus crassifolius* | big deervetch | Leguminosae | LOCR | p | |
| *Lotus formosissimus* | seaside lotus | Leguminosae | LOFO2 | p | |
| *Lycopus uniflorus* | northern bungleweed | Labiatae | LYUN | p | |
| *Lysimachia terrestris* | bog loosestrife | Primulaceae | LYTE2 | p | |
| *Mianthemum dilatatum* | may-lily | Liliaceae | MIDI* | p | |
| *Montia sibirica* | Siberian miner's lettuce | Caryophyllaceae | MOSI2 | a | |
| *Myrica gale* | sweet gale | Myricaceae | MYGA | s | |
| *Nuphar polysepalum* | yellow water-lily | Nympaeaceae | NUPO | p | |
| *Phalaris arundinacea* | reed canarygrass | Gramineae | PHAR3 | p | a |
| *Picea sitchensis* | Sitka spruce | Pinaceae | PISI | t | |
| *Pinus contorta* var. *contorta* | shore pine | Pinaceae | PICO | t | |
| *Polypodium glycyrrhiza* | licorice fern | Polypodiaceae | POGL8 | f | |
| *Polystichum munitum* | sword-fern | Polypodiaceae | POMU | f | |
| *Potamogeton foliosus* | close-leaved pondweed | Potamogetonaceae | POFO3 | p | |

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|---|---|---|---|---|---|
| *Potentilla palustris* | marsh cinquefoil | Rosaceae | POPA | p | |
| *Prunella vulgaris* | self-heal | Labiatae | PRVU | p | |
| *Pteridium aquilinum* | bracken fern | Polypodiaceae | PTAQ | f | |
| *Pyrus fusca* | pacific crabapple | Rosaceae | PYFU | s | |
| *Ranunculus repens* var. *repens* | creeping buttercup | Ranunculaceae | RARER | p | a |
| *Rhamnus purshiana* | cascara | Rhamnaceae | RHPU | s | |
| *Rubus spectabilis* | salmonberry | Rosaceae | RUSP | s | |
| *Rubus ursinus* | trailing blackberry | Rosaceae | RUUR | s | |
| *Salix hookeriana* | coast willow | Salicaceae | SAHO | s | |
| *Salix rigida var. mackenzieana* | Mackenzie willow | Salicaceae | SARIM4 | s | |
| *Salix scouleriana* | Scouler's willow | Salicaceae | SASC | t | |
| *Sambucus racemosa* | red elderberry | Caprifoliaceae | SARA2 | s | |
| *Scutellaria galericulata* | marsh skullcap | Labiatae | SCGA | p | |
| *Senecio jacobaea* | tansy ragwort | Compositae | SEJA | a | a |
| *Sparganium emersum* | simple-stem bur-reed | Sparganiaceae | SPEM2 | p | |
| *Spiraea douglasii* | hardhack | Rosaceae | SPDO | s | |
| *Thuja plicata* | western redcedar | Cupressaceae | THPL | t | |
| *Trientalis arctica* | northern starflower | Primulaceae | TRAR2 | p | |
| *Tsuga heterophylla* | Pacific hemlock | Pinaceae | TSHE | t | |
| *Vaccinium ovatum* | evergreen blueberry | Ericaceae | VAOV2 | s | |
| *Vaccinium oxycoccos* | wild cranberry | Ericaceae | VAOX | s | |

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

| Scientific Name | Common Name | Family- Scientific | Code | Type | Alien? |
|---|---|---|---|---|---|
| *Agropyron repens* | quackgrass | Gramineae | AGRE2 | g | a |
| *Anthoxanthum odoratum* | sweet vernalgrass | Gramineae | ANOD5 | g | a |
| *Athyrium filix-femina* | lady-fern | Polypodiaceae | ATFI | f | |
| *Blechnum spicant* | deer-fern | Polypodiaceae | BLSP | f | |
| *Callitriche stagnalis* | pond water-starwort | Callitrichaceae | CAST | p | |
| *Cardamine occidentalis* | western bittercress | Cruciferae | CAOC | p | |
| *Carex obnupta* | slough sedge | Cyperaceae | CAOB3 | g | |
| *Cerastium viscosum* | sticky chickweed | Caryophyllaceae | CEVI3 | a | a |
| *Cirsium vulgare* | bull thistle | Compositae | CIVU | b | a |
| *Corallorhiza maculata* | spotted coralroot | Orchidaceae | COMA4 | p | |
| *Dactylis glomerata* | orchardgrass | Gramineae | DAGL | g | a |
| *Digitalis purpurea* | foxglove | Scrophulariaceae | DIPU | a | a |
| *Dryopteris austrica* | mountain wood-fern | Polypodiaceae | DRAU* | p | |
| *Eleocharis palustris* | common spike-rush | Cyperaceae | ELPA3 | g | |
| *Equisetum arvense* | field horsetail | Equisetaceae | EQAR | p | |
| *Erechitites minima* | toothed coast fireweed | Compositae | ERMI | p | a |
| *Fragaria chiloensis* | coast strawberry | Rosaceae | FRCH | p | |
| *Galium aparine* | cleavers | Rubiaceae | GAAP2 | a | a |
| *Galium triflorum* | fragrant bedstraw | Rubiaceae | GATR3 | p | |
| *Gaultheria shallon* | salal | Ericaceae | GASH | s | |
| *Glyceria grandis* | reed mannagrass | Gramineae | GLGR | g | |
| *Goodyera oblongifolia* | rattlesnake plantain | Orchidaceae | GOOB2 | p | |
| *Hedera helix* | English ivy | Araliaceae | HEHE | s | a |
| *Holcus lanatus* | common velvetgrass | Gramineae | HOLA | g | a |
| *Hypocharis radicata* | hairy cat's-ear | Compositae | HYRA3 | a | a |
| *Ilex aquifolium* | English holly | Aquifoliaceae | ILAQ80 | s | a |
| *Juncus effusus* | common rush | Juncaceae | JUEF | g | |
| *Lemna minor* | duckweed | Lemnaceae | LEMI3 | a | |
| *Lonicera involucrata* | black twinberry | Caprifoliaceae | LOIN5 | p | |
| *Lupinus littoralis* | seashore lupine | Leguminosae | LULI2 | s | |
| *Luzula campestris* | field woodrush | Juncaceae | LUCA* | g | |
| *Luzula parviflora* | small-flowered woodrush | Juncaceae | LUPA | g | |
| *Lychnis coronaria* | rose campion | Caryophyllaceae | LYCO | p | a |
| *Lysichitum americanum* | skunk cabbage | Araceae | LYAM3 | p | |
| *Maianthemum dilatatum* | may-lily | Liliaceae | MADI | p | |
| *Medicago lupulina* | black medic | Leguminosae | MELU | p | a |
| *Mianthemum dilatatum* | may-lily | Liliaceae | MIDI* | p | |
| *Montia sibirica* | Siberian miner's lettuce | Caryophyllaceae | MOSI2 | a | |
| *Nuphar polysepalum* | yellow water-lily | Nympaeaceae | NUPO | p | |
| *Oenanthe sarmentosa* | water-parsley | Umbelliferaceae | OESA | p | |
| *Picea sitchensis* | Sitka spruce | Pinaceae | PISI | t | |
| *Pinus contorta* var. *contorta* | shore pine | Pinaceae | PICO | t | |
| *Plantago lanceolata* | narrowleaf plantain | Plantaginaceae | PLLA | p | a |
| *Plantago major* | common plantain | Plantaginaceae | PLMA2 | p | a |

| | | | | | |
|---|---|---|---|---|---|
| *Poa annua* | annual bluegrass | Gramineae | POAN | ag | a |
| *Poa palustris* | lake bluegrass | Gramineae | POPA2 | g | |
| *Poa pratensis* | Kentucky bluegrass | Gramineae | POPR | g | a |
| *Polypodium glycyrrhiza* | licorice fern | Polypodiaceae | POGL8 | f | |
| *Polystichum munitum* | sword-fern | Polypodiaceae | POMU | f | |
| *Prunella vulgaris* | self-heal | Labiatae | PRVU | p | |
| *Pteridium aquilinum* | bracken fern | Polypodiaceae | PTAQ | f | |
| *Pyrus fusca* | pacific crabapple | Rosaceae | PYFU | s | |
| *Ranunculus acris* | meadow buttercup | Ranunculaceae | RAAC3 | p | a |
| *Rhamnus purshiana* | cascara | Rhamnaceae | RHPU | s | |
| *Rubus discolor* | Himalayan blackberry | Rosaceae | RUDI2 | s | a |
| *Rubus laciniatus* | evergreen blackberry | Rosaceae | RULA | s | a |
| *Rubus leucodermis* | black raspberry | Rosaceae | RULE | s | |
| *Rubus parviflorus* | thimbleberry | Rosaceae | RUPA | s | |
| *Rubus spectabilis* | salmonberry | Rosaceae | RUSP | s | |
| *Rubus ursinus* | trailing blackberry | Rosaceae | RUUR | s | |
| *Rumex acetosella* | sheep sorrel | Polygonaceae | RUAC3 | a | a |
| *Salix hookeriana* | coast willow | Salicaceae | SAHO | s | |
| *Sambucus racemosa* | red elderberry | Caprifoliaceae | SARA2 | s | |
| *Scripus validus* | tule | Cyperaceae | SCVA | p | |
| *Senecio jacobaea* | tansy ragwort | Compositae | SEJA | a | a |
| *Shepherdia canadensis* | buffaloberry, soopolallie | Elaeagnaceae | SHCA | s | |
| *Soliva sessilis* | field burrweed | Compositae | SOSE2 | a | a |
| *Spergula arvensis* | field stickwort | Caryophyllaceae | SPAR | a | |
| *Spiraea douglasii* | hardhack | Rosaceae | SPDO | s | |
| *Stellaria nitens* | shining chickweed | Caryophyllaceae | STNI | a | |
| *Trifolium microcephalum* | woolly clover | Leguminosae | TRMI4 | a | |
| *Trisetum cernuum* | nodding trisetum | Gramineae | TRCE2 | g | |
| *Tsuga heterophylla* | Pacific hemlock | Pinaceae | TSHE | t | |
| *Ulex europaeus* | gorse | Leguminosae | ULEU | s | a |
| *Vaccinium macrocarpon* | cultivated cranberry | Ericaceae | VAMA | s | |
| *Vaccinium ovatum* | evergreen blueberry | Ericaceae | VAOV2 | s | |
| *Vaccinium parvifolium* | red huckleberry | Ericaceae | VAPA | s | |
| *Veronica catenata* | chain speedwell | Scrophulariaceae | VECA7 | p | |
| *Veronica scuttelata* | marsh speedwell | Scrophulariaceae | VESC2 | p | |
| *Vicia sativa* | common vetch | Leguminosae | VISA | p | a |

# *Appendix A - Field Survey Dates and Personnel*

**May 24-28, 2004:**
Hans Smith
Dana Visalli
Dane Springmeyer

**June 22-25, 2004:**
Hans Smith
Peter Morrison
Dana Visalli

**August 16-17, 2004:**
Hans Smith

# *Appendix B - Washington Natural Heritage Program Rare Plant Sighting Form #1*

Taxon Name: *Hydrocotyle ranuculoides*
Are you confident of the identification? Yes No Explain:

Survey Site Name: Loomis State Park
Surveyor's Name/Phone/Email: Dana Visalli 509 997-9011 dana@methow.com
Survey Date (yr/mo/day): 04/06/25
County: Pacific
Quad Name:
TRS1/41/4: T11N R11W S16
Directions to Site: From boat launch site along west shore of Loomis Lake, paddle directly across Loomis Lake to the far shore. *Hydrocotyle ranunculoides* is located intermittently along the shoreline—in the water—for much of the length of the east shore.

Mapping: Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout. If your map is a different scale (not recommended) please write the scale on the map.
Answer the following:
1. I used GPS to map the population: No (skip to #2) Yes (complete #1 and #3
   Coordinates are in electronic file on diskette (preferred) or
   Coordinates are written below or attached
   Description of what coordinates represent:

   GPS accuracy: X--Uncorrected Corrected to less than 5 m
   GPS datum:
   GPS coordinates: From 420160E 5142020N to 040120E 5142920N
2. I used a topographic map to map the population:
   Yes (complete #2) No (provide detailed directions and description above, go to #3)
   I am confident I have accurately located and mapped the population at map scale:
   Yes (skip to #3) No…but I am confident the population is within the general area indicated on the map as follows: On the same map, use a highlighter to ID the outer boundary of the area where the population could be, given the uncertainties about the exact location.
3. I used the following features on the map to identify my location (stream, bridge, road, cliff, etc)
   East shore of Loomis Lake, directly across from boat launch site

To the best of my knowledge, I mapped the entire extent of this population:
   Yes No Unknown
   If no or unknown explain: Did not check that portion of the shoreline outside of Loomis Lake State Park

Is a revisit necessary?
   Yes No
   If yes, why?

Ownership (if known): Washington State Parks

Population Size (# of individuals or ramets) or estimate: About 25 clumps seen along the shore

Population (EO) Data (include population vigor, microhabitat, phenology, etc): Population appears to be healthy

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

Associated Species (include % cover by layer and by individual species for dominants in layers):
Lichen/moss layer:
Herb layer: *Carex obnupta* 20%, *Berula erecta* 10%
Shrub layer(s): *Salix hookeriana* 5%
Tree layer: *Tsuga heterophylla* on shore

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc):
Hydrocotyle grows in the water at the edge of the shoreline, along the east shore of Loomis Lake

| | | |
|---|---|---|
| Minimum elevation (ft): 26’ | Maximum elevation (ft): 26’ | |
| Size (acres): | Aspect: none, lakeshore | Slope: Zero |
| Photo taken? Yes | No | |

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc):
The population appears secure at this time. Houses along the west shore of Loomis Lake and other development taking place in the area could affect water levels in the lake in the future.

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

Additional Comments (discrepancies, general observations, etc):

# *Appendix C - Washington Natural Heritage Program Rare Plant Sighting Form #2*

Taxon Name: *Hydrocotyle ranuculoides* L. f..
Are you confident of the identification? Yes No Explain:

Survey Site Name: Ledbetter State Park
Surveyor's Name/Phone/Email: Dana Visalli 509 997-9011 dana@methow.com
Survey Date (yr/mo/day): 04/06/23
County: Pacific
Quad Name: Oysterville, WA

Directions to Site: From Oysterville go north on Highway 103 to Ledbetter State Park. At approximately UTM 421818E 5158581N turn west onto gated gravel road (obtain key from park personnel). Drive about 1 mi, where the gravel road crosses a broad marshy area. Stop at a small wooden landing (eight feet square) that sits in the water on the south side of the road—this is just before entering a forested area, and is at the UTM coordinates given for the sighting location. Hydrocotyle grows adjacent to shore at the wooden landing, and is abundant in the wetland to the south.

Mapping: Attach a copy of the USGS 7.5 minute quad with the location and extent of the rare plant population clearly drawn. Do not reduce or enlarge the photocopy or printout. If your map is a different scale (not recommended) please write the scale on the map.
Answer the following:
1. I used GPS to map the population: No (skip to #2) Yes (complete #1 and #3
   Coordinates are in electronic file on diskette (preferred) or
   Coordinates are written below or attached
   Description of what coordinates represent: NAD 27 Zone 10

   GPS accuracy: X--Uncorrected Corrected to less than 5 m
   GPS datum:
   GPS coordinates: 419949E 5158599N
2. I used a topographic map to map the population:
   Yes (complete #2) No (provide detailed directions and description above, go to #3)
   I am confident I have accurately located and mapped the population at map scale:
   Yes (skip to #3) No…but I am confident the population is within the general area indicated on the map as follows: On the same map, use a highlighter to ID the outer boundary of the area where the population could be, given the uncertainties about the exact location.
3. I used the following features on the map to identify my location (stream, bridge, road, cliff, etc)
   Road crosses wetland.

To the best of my knowledge, I mapped the entire extent of this population:
   Yes No Unknown
   If no or unknown explain: Wetland is quite extensive and difficult to get through.

Is a revisit necessary?
   Yes No
   If yes, why?

Ownership (if known): Washington State Parks

Population Size (# of individuals or ramets) or estimate: 1000+ individual plants throughout the wetland south of the road.

Population (EO) Data (include population vigor, microhabitat, phenology, etc): Population appears to be healthy

Plant Association (include author, citation or classification, e.g. Daubenmire): No adequate wetland key for this shallow-water aquatic site; *Oenanthe sarmentosa* and *Potamogeton natans* are abundant.

Associated Species (include % cover by layer and by individual species for dominants in layers):
Lichen/moss layer:
Herb layer: *Oenanthe sarmentosa* 20%, *Potamogeton natens* 20% *Berula erecta* 20%
Shrub layer(s):
Tree layer: none

General Description (include description of landscape, surrounding plant communities, land forms, land use, etc):
Hydrocotyle grows in shallow water adjacent to land edge

Minimum elevation (ft): 23’ Maximum elevation (ft): 23’
Size (acres): 20+ Aspect: none, lakeshore Slope: Zero
Photo taken? Yes No

Management Comments (exotics, roads, shape/size, position in landscape, hydrology, adjacent land use, cumulative effects, etc):
The population appears secure at this time. There is some artificial manipulation of the water level in the wetland, which could affect the population of Hydorcotyle in the future.

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

Additional Comments (discrepancies, general observations, etc):