

Integrated Vegetation Management Plan for Smith and Bybee Lakes

Goals:

- Native vegetation dominated
- Maintained and enhanced, to the extent possible, in a manner that is faithful to their original condition.
- Provide for and maintain habitat diversity representative of the lower Columbia River floodplain wetlands.
- Contain/reduce exotic species through implementation of a weed control strategy.
- Monitor success of habitat restoration-adaptive management plan.
- Establish a series of experiments in restoration ecology that have a broader application.
- Provide habitat improvements needed in the watershed and ecoregion-shorebird, warbler, raptor, and turtles

Present Conditions

- Habitat Map
- Description from the Lev report
- Restoration work at Smith Lake
- Landfill and limitations
- Ramsey Lakes mitigation site
- Columbia Slough Watershed
- Ecoregion

Site Limitations

- Location in the watershed-importing of exotic species during flooding
- Exotic species-reed canary grass, blackberries, purple loosestrife, teasel,
- Various management entities
- Surrounding development
- Hydrological impacts

Site Advantages

- Large area with intact native vegetation areas
- Seed source availability
- Space to create a nursery

Priority Areas (dependent on change in water management)

- outline on map
- restoration of willow habitat along parameter of lakes
- control of reed canary grass
- possible entrance to the Interlakes Trail (dependent on extension of N. Marine Dr.)
- Riparian area between slough and Smith lake for neotropical birds
- Riparian areas along industrial area
- Sedge meadows
- N. Portland Road riparian habitat
- Enhancement of cottonwood area along old N. Marine Dr.

Restoration techniques

- replanting lake parameters

- exotic species control
- riparian area plantings
- scrub-shrub areas
- return the area to tidal freshwater marsh

Timeline

Costs

- crews for exotic vegetation removal
- plant materials
- installation of plants, mulch
- maintenance of plantings

Who will do the work

- Community plantings
- EnviroCorps
- CRUE
- Hired Crews
- Schools-adopt the site

Measures of Success/Desired Future Conditions

Monitoring

- adaptive management techniques
- restoration and reference sites
- habitat use by key species
- monitoring techniques

Contingencies

- Removal of the dam and construction of the water control structure
- Available funds
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- What can I do now!

① Exotic Vegetation control

- cut Blackberries - continuous - mow areas, hand cut others
- can't mowing RBG - Spring, summer: fall - Facilities Plan
- cut teasel - August - signs of first flower - Seasonals
- hire crews to dig RBG Purple Loosestrife - July: August
- more bugs
- Thistle - cut & dig - July August

seasonal
CRUES

(\$ in 1990-2000: budget

② Inventory & mapping

③ Seed collection

- ① Carex oerter - spring/summer - learn how to store seed

②

④ Increase Shrub layer after removing blackberries

- Spring restoration work:

SMALL AREAS < Continue along InterLakes Trail - esp by Bybee Blind
Start work across from restoration area on way to Smith Blind

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Monitoring Needs and Protocols at Smith and Bybee Lakes

Previous and Present Efforts and Protocols

Vegetation

- 1) Three transects established by Jim Morgan
- 2) Ten permanent transects established by Lev and Wilson in different vegetation assemblages (1992)
- 3) Permanent transects established by Fishman Environmental Services (1987), unable to locate in 1992.
- 4) George Middle School - photo monitoring

Birds

- 1) Observational monitoring at specific stations by volunteer birders-9 month effort
- 2) Lev et al.-emphasis on waterfowl and shorebirds
 - survey by canoe, doing a circuit around the lakes
 - list of all birds observed and heard during field visits
 - compared results for area to over bird counts in the Lower Columbia area
 - recommended times to count-fall and spring migration and mid-winter. For shorebirds, monthly in the spring and fall.

Amphibians and reptiles

- 1) Examine aquatic vegetation and debris in shallow water, looking for egg clusters or masses.
- 2) Kick net to examine shallow water aquatic life stages
- 3) Slow walk of prescribed routes in visual search for surface-active animals, looking under surface cover. Also put out supplementary cover.
- 4) Specific for turtles:
 - Scanned aquatic area with binoculars and spotting scope during the day for turtles.
 - Swim survey in closed channels looking for turtles.
 - Diurnal aquatic and terrestrial on a regular schedule.
 - Aquatic snail sampling.

Mammals

- 1) Observational sightings-direct and indirect
- 2) Trapping-snap traps for small animals, mainly at night.
- 3) Recently documented observations.

Fish (seasonally and by habitat type)

- 1) Electroshocking
- 2) Netting

Macroinvertebrates

- 1) Collected from dominant habitat types during spring and summer (semi-quantitative).
 - dip-net (500 micron) dragged through surface sediment for a known distance.
 - Ekman dredge used in soft bottom areas and open water.
- 2) Dip-net swept back and forth through leaves and stems (qualitative)
- 3) Samples sorted in lab with dissecting microscopes; id to level practical.

COLUMBIA SLOUGH RIPARIAN MANAGEMENT PROGRAM

Monitoring Survey Summary

Background and Instructions

The following standard monitoring protocol and record-keeping format will be used to assess conditions in actively managed riparian areas along the Columbia Slough.

Each management unit will be formally surveyed in years 1, 2, 3, and 5 following initial planting. After the fifth year, additional surveys may be conducted as needed, but at least every third year.

In each unit, surveyors will collect data in a series of nested circular plots surrounding well-distributed randomly or systematically-located points. The standard plot will have a radius of 5.3 feet (1/500th-ac). Data from these plots will be used to calculate trees and shrubs per acre. A minimum sample of two percent of standard plots, or 20 survey points, whichever is greater, will be required. For example, a five-acre unit would require a 25-point sample.

1/100th-acre or larger plots may also be taken at each point or at a subset of points as a refinement to stocking data and to help identify significant "holes" in native tree and shrub stocking. In young stands, these plots are simply "count" plots. Individual, well-spaced, non-clonal trees and shrubs are each counted as one tree or shrub.

Takes a long time to take a lot of data - Representative sampling

Densely spaced or clonal shrubs such as dogwood and spiraea will be counted as groups. Large clones or dense groups will be divided for counting into subgroups of 1/1000-acre. For instance, a dogwood thicket covering half of a 1/100-acre plot counts as five shrubs. Seven red elderberry on the same plot would bring the total to twelve shrubs.

As planted and naturally-occurring vegetation grows and expands to cover significant proportions of the management unit, stocking may be further defined in forested areas as gross basal area, percent of normal basal area, percent canopy closure or other appropriate measure depending on the age, size and species composition of the stand. Stocking of shrub and herbaceous layers will be quantified by percent cover. Larger plots will eventually replace small plots as trees and shrubs grow. The two percent sample size will continue to be the standard.

Herbaceous vegetation will be

On all sizes of plots, surveyors should distinguish between planted and naturally-occurring vegetation.

Based on the results of the monitoring survey, treatments will be prescribed to insure that each management unit meets the following stocking and vegetation management goals:

For tree species, minimum stocking at age 5 will be approximately: 870 stems per acre for willow and cottonwood, 435 trees per acre for alder and other hardwoods, and 300 trees per acre for conifers. Beyond age 5, stocking will be assessed on a percent canopy cover basis with a target of 90 percent cover by age 10 and beyond. Minimum stocking

for shrubs at age five will be approximately 1000 plants per acre. Herbaceous plant cover, where managed, will be assessed based on percent ground cover with a target of 90 percent cover by year 10.*

* (from the "Columbia Slough Riparian Planting and Maintenance Plan," Feb 5 1996):

COLUMBIA SLOUGH RIPARIAN MANAGEMENT PROGRAM

Monitoring Survey Summary and Analysis

Management Unit _____ Unit Acres _____

Survey Type _____ Survey Date _____ Surveyor _____

SURVEY RESULTS

Trees

Planted trees per acre _____ Existing TPA _____ Total TPA _____

Tree survival _____ % Species Composition _____

Avg planted tree height _____ Avg planted tree growth _____ Exotic TPA _____

Comments _____

Shrubs

Planted native shrubs per acre _____ Existing NSPA _____ Total NSPA _____

Native shrub survival _____ % Species composition _____

Planted shrub condition _____ Exotic shrub cover _____ %

Comments _____

Ground Cover

Exotic plant ground cover _____ % Native plant ground cover _____ %

Comments _____

Exceptional Critter Activity

Species _____ Impacts/effects _____

Recommended Treatments

Recommended Treatment(s) _____ RT Date _____ RT Priority _____

Recommended Next Survey Date _____