

Appendix C

Vegetation Inventory

City of Spokane Valley shoreline inventory field narrative.

The objective was to examine and inventory the habitat of the waters of the state shorelines within the city limits; the Spokane River, Shelley Lake and two large gravel pits. The specifics of the inventory are to recognize the different portions of the shorelines and document the dominant vegetation according to species name, percent cover and native/introduced status. The Spokane River and Shelley Lake were examined on foot and from the water, but the gravel pits could not be examined in the field and are inventoried from aerial photograph examination only.

The majority of the Spokane River could be relatively easily accessed on foot and was inventoried as follows.

The shoreline vegetation is classified into different stands, each with a characteristic dominant vegetation structure and species mix. For this task the term stand is used to identify a specific portion of a vegetated shoreline that is not the same as adjacent areas. Each stand is given an identifying letter, A through X and is described on a field data sheet at a representative site or data point. For this task the term data point is used to identify an individual location that was evaluated for plant species presence and dominance by percent cover. Each data point is given an identifying number, 1 through 35. Each stand has at least one data point and larger stands have as many as five. The areas of the stands and the locations of the data points are shown on the field maps. The stand letters and the data point numbers were assigned as the work progressed so they are not sequential along the river.

The stands identified in this task essentially follow the classification pattern presented as riparian vegetation types by Crawford (2003) and elaborated as plant associations in the Spokane County PFC Assessment (2005), however the Crawford study did not include the Spokane River drainage so it does not include all of the stand types encountered in this inventory. Stand types in this document;

PSME/PREM, *Pseudotsuga Menziesii*/*Prunus emarginata*

POTR/CRDO, *Populus trichocarpa-balsamifera*/*Crataegus Douglasii*

PIPO/CRDO, *Pinus ponderosa*/*Crataegus Douglasii*

PIPO/AMAL, *Pinus ponderosa*/*Amalanchier alnifolia*

POTR, *Populus trichocarpa-balsamifera*

POTR/PRVA, *Populus trichocarpa-balsamifera*/*Prunus virginiana*

PIPO/SAEX, *Pinus ponderosa*/*Salix exigua*

SAEX, *Salix exigua*

PHLE/RHGL, *Philadelphus Lewisii*/*Rhus glabra*

POTR/SAEX, *Populus trichocarpa-balsamifera*/*Salix exigua*

FERAL, dominated by a combination of escaped domestic species and invasive exotic species on sites with essentially natural slopes and soils.

LANDSCAPED, dominated by mowed and managed vegetation on sites with intensive cut-fill surfaces. Landscaped stands are not documented by field sheets.

At each data point the vegetation was documented in three different hydric zones; zone A, the frequently flooded lower elevation nearest the water, zone B, the riparian transition area, and zone C, the adjacent upland.

The vegetation was documented by examining plot areas. The plot sizes are; zone A, a 20 foot circle
zone B, a 50 foot transect 12 feet wide
zone C, a 100 foot transect 16 feet wide.

Photographs were made at each zone in each data point and are identified according to the direction of view; up river, down river, to the river and away from the river. Each photo image has a unique number assigned by the camera. More than one camera was used, so the numbers are not in sequence. For example; the image 'E dp6 A down 050' is from stand E, data point 6, in the frequently flooded zone, and looking down the river. The urbanized shoreline in maps SR35-SR37 was not so systematically photographed because of poor access. The Spokane River shoreline is documented by 347 images. The images are made available in printed contact sheet form and in individual 22mb jpeg documents.

The lower reach of the Spokane River as shown on field maps SR35-SR37 has no land access and was inventoried from the water. This necessarily required a modification of the field procedure and resulted in less detailed documentation.

All of this lower portion of the shore is strongly impacted by human activity such as construction, bulk-heading and landscaping and no parts are dominated by native species on natural slopes with unmodified soils. It was possible to differentiate the sections of the shore that were completely modified (landscaped) from those with some significant remnant aspects of original topography and wild vegetation (feral). Those two different aspects of the shoreline are identified on the field maps and the vegetation of the feral portions is described in field data sheets. No field data sheet was made for the landscaped portions.

Shelley Lake was examined on foot and two different vegetation stands are mapped and described using three data sheets. The Shelley Lake shoreline is documented in 18 images.

The field maps have delivered at an earlier date and further analysis requires that and some amendments are necessary.

1. Data point 28 is not shown and is to be added to the field map, essentially under the Trent Street Bridge on field map SR26.
 2. Data points 32 through 35 must be added in stand X on field maps SR 35 through SR37.
 3. Data points 36 and 37 must be added to stand Y on field map SL2.
 4. Data point 38 must be added to stand Z on field map SL1.
- These changes are illustrated on annotated copies of field sheets, attached.

LIST IN NUMERICAL ORDER BY MAP NUMBER

STAND ID STAND TYPEDATA POINT IC MAP

SPOKANE RIVER			
STAND ID	STAND TYPE	DATA POINT	IC MAP
Q	PIPO/AMAL	20	SR1
P	PIPO/CRDO	19	SR2
O	POTR/AMAL	18	SR3
R	POTR/CRDO	21R	SR3
N	POTR/CRDO	17	SR4
M	PIPO/AMAL	16	SR5
S	PIPO/AMAL	29	SR7
L	SAEX	15	SR9
S	PIPO/AMAL	30	SR9
K	PIPO/CRDO	14	SR10
S	PIPO/AMAL	31	SR10
J	PIPO/AMAL	13	SR11
S	PIPO/AMAL	22	SR13
J	PIPO/AMAL	12	SR14
S	PIPO/AMAL	21S	SR16
J	PIPO/AMAL	11	SR17
T	PHLE/RHGL	24	SR18
U	POTR/AMAL	25	SR19
J	PIPO/AMAL	10	SR20
V	POTR/AMAL	26	SR21
H	PIPO/AMAL	8	SR22
I	POTR/PRVA	9	SR22
F	PIPO/CRDO	5	SR23
G	PIPO-AMAL	4	SR23
W	POTR/PRVA	27	SR23
E	PIPO/CRDO	6	SR24
D	POTR	7	SR26
W	POTR/SAEX	28	SR26
C	PIPO/CRDO	3	SR31
B	POTR/CRDO	2	SR31
A	PSME/PREM	1	SR33

SPOKANE RIVER SEQUENCE DOWNRIVER

NORTH BANK

STAND ID STAND TYPE DATA POINT IC MAP

Q	PIPO/AMAL	20	SR1
R	POTR/CRDO	21R	SR3
S	PIPO/AMAL	29	SR7
S	PIPO/AMAL	30	SR9
S	PIPO/AMAL	31	SR10
S	PIPO/AMAL	22	SR13
S	PIPO/AMAL	21S	SR16
T	PHLE/RHGL	24	SR18
U	POTR/AMAL	25	SR19
V	POTR/AMAL	26	SR21
W	POTR/PRVA	27	SR23
W	POTR/SAEX	28	SR26

SOUTH BANK

P	PIPO/CRDO	19	SR2
O	POTR/AMAL	18	SR3
N	POTR/CRDO	17	SR4
M	PIPO/AMAL	16	SR5
L	SAEX	15	SR9
K	PIPO/CRDO	14	SR10
J	PIPO/AMAL	13	SR11
J	PIPO/AMAL	12	SR15
J	PIPO/AMAL	11	SR17
J	PIPO/AMAL	10	SR20
H	POPO/AMAL	8	SR22
I	POTR/PRVA	9	SR22
G	PIPO/AMAL	4	SR23
F	PIPO/CRDO	5	SR23
E	PIPO/CRDO	6	SR24

SPECIES LIST FOR SPOKANE VALLEY SHORELINE INVENTORY **Native species in bold.**

ACGL *Acer glabrum* Rocky Mtn maple FAC
ACMI *Achillea millifolium* yarrow FACU
 ACPL *Acer platanoides* Norway maple NI
 AEOC *Aesculus octranda* buckeye NI
 AGRE *Agropyron repens* quackgrass FACU
AMAL *Amalanchier alnifolia* service berry FACU
 ARAB *Artemesia absinthum* herb sage NI
 AREL *Arrenatherum elatius* tall oatgrass UPL
 ARMI *Arctium minus* burdock NI
ASFA *Asclepias fascicularis* FAC
 ASOF *Asparagus officinalis* FACU
ASSU *Aster subspicatus* FACW
BASA *Balsamifera sagitata* balsamroot NI
BENE *Berberis nervosa* tall Oregon grape NI
BERE *Berberis repens* creeping Oregon grape NI
 CEMA *Centaurea maculosa* spotted knapweed NI NW
 CHJU *Chondrilla juncea* rush skeletonweed NI NW
CLLI *Clematis ligusticifolia* western virginsbower FAC
 COARV *Convulvulis arvensis* field bindweed NI
 COAR *Colutea arborescens* Bladder senna NI
CRDO *Crataegus Douglasii* Douglas hawthorn FAC
EPCI *Epilobium ciliatum* hairy willow herb FACW
EQAR *Equisetum arvense* field horsetail FAC
ERHE *Eriogonum heracleoides* creamy buckwheat NI
GLTR *Gleditisia triacanthos* black locust NI
HECY *Heuchera cylindrica* round-leaved alum-root NI
HELA *Heraceum lanatum* cow parsnip FAC
 HYPE *Hypericum perforatum* St. Johns wort
JUSC *Juniperus scopulorum* Rocky Mtn juniper NI
 LASE *Lactuca serriola* prickley lettuce FACU
LYCA *Lysimachia ciliata* fringed loosestrife FACW
 MEAL *Melilotus alba* white clover FACU
MEAR *Mentha arvensis* field mint FACW
PACA *Panicum capillare* witchgrass FACU
 PACI *Parthenocissus cinquefolia* Virginia creeper NI
PHAR *Phalaris arundinacea* reed canarygrass FACW
PHLE *Philadelphus lewisii* mockorange NI
PHMA *Physocarpus malvaceus* ninebark NI
PIPO *Pinus ponderosa* ponderosa pine FACU
 POAL *Populus alba* white poplar NI
POAM *Polygonum amphibium* water smartweed OBL
POTR *Populus trichocarpa-balsamifera* cottonwood FAC
PREM *Prunus emarginata* bitter cherry FACU
PRVA *Prunus virginiana* chokecherry FACU
PSME *Pseudotsuga menziesii* Douglas Fir FACU
RHGL *Rhus glabra* smooth sumac NI
RHPU *Rhamnus purshiana* Cascara FAC
RHRA *Rhus radicans* poison ivy NI
RONU *Rosa nutkana* Nootka rose FAC
ROWO *Rosa woodsii* Woods rose FACU
 PYMA *Pyrus malus* feral apple NI
 SABA *Salix babylonica* weeping willow NI
SACE *Sambucus cerulea* blue elderberry FACU
SAEX *Salix exigua* sandbar willow OBL
 SAOF *Saponaria officinalis* bouncing-bet NI
 SIAL *Silene alba* white campion NI
 SODU *Solanum dulcamara* climbing nightshade FAC
SYAL *Symphoricarpos albus* snowberry FACU
 TAVU *Tanacetum vulgare* common tansy NI
 ULPU *Ulmus pumila* Siberian elm NI
 URDI *Urtica dioica* stinging nettle FAC
 VEBL *Verbascum blattaria* moth mullein NI
 VETH *Vervascum thapsus* great mullein NI

SPECIES LIST FOR SHELLEY LAKE SHORELINE INVENTORY

Native species in bold.

ACGL Acer glabrum Rocky Mountain maple FAC
AMAL Amalanchier alnifolia serviceberry FACU
ANOF Anchusa officinalis common bugloss NI
BRTE Bromus tectorum cheatgrass NI
CEMA Centaurea maculosa spotted knapweed NI
CHJU Chondrilla juncea rush skeletonweed NI
CIAR Cirsium arvense creeping/Canada thistle FACU
CRDO Crataegus Douglasii Douglas hawthorn FAC
ECCR Echinochloa crus-galli barnyardgrass FAC
ELRE Elymus repens quackgrass NI
ERCI Erodium cicutarium storks bill NI
HOJU Hordeum jubatum foxtail barley FAC
LASE Lactuca serriola prickley lettuce FACU
LIDA Linaria dalmatica Dalmatian toadflax NI
LIVU Linaria vulgaris butter-and-eggs NI
MEAL Melilotus alba white sweetclover FACU
PACA Panicum capillare witchgrass FACU
PACA Panicum capillare withchgrass FACU
PIPO Pinus ponderosa ponderosa pine FACU
POAM Polygonum amphibium water smartweed OBL
POTR Populus trichocarpa-balsamifera cottonwood FAC
ROPI Rosa pisocarpa cluster rose FAC
ROWO Rosa woodsii Woods rose FACU
RUCR Rumex crispus curly dock FAC
SAEX Salix exigua sandbar willow OBL
SALA Salix lasiandra Pacific willow FACW
SIAL Sisymbrium altissimum tumble mustard FACU
SYAL Symphoricarpos albus snowberry FACU
TAVU Tanacetum vulgare common tansy NI
THAR Thlaspi arvense field pennycress NI
TRDU Tragopogon dubius yellow salsify NI
VETH Verbascum thapsus great mullein NI