Appendix C
Vegetation Inventory

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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 TYPE	DATA POINT ID	MAP
SPOKANE RIVER			
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 ID	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 Heraceleum 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 tansey 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 tansey NI
THAR Thlaspi arvense field pennycress NI
TRDU Tragopogon dubius yellow salsify NI
VETH Verbascum thapsus great mullein NI

STAND A DATA POINT 1

A dp1 A away 008.jpg

A dp1 A down 006.jpg

A dp1 A up 007.jpg

A dp1 B down 009.jpg

A dp1 C up 010.jpg

A eroded foot trail 011.jpg

STAND B DATA POINT 2

B dp2 A down 014.jpg

B dp2 A up 015.jpg

B dp2 B down 021.jpg

B dp2 B up 022.jpg

B dp2 C down 013.jpg

B dp2 C up 012.jpg

B dp2 C up 023.jpg

B dp2 high water mark 02...

STAND C DATA POINT 3

C beaver lodge 030.jpg

C dp3 A away 033.jpg

C dp3 A down 032.jpg

C dp3 A up 031.jpg

C dp3 B down 035.jpg

C dp3 B to 036.jpg

C dp3 B up 034.jpg

C dp3 C down 038.jpg

C dp3 C up 037.jpg

STAND D DATA POINT 7

D dp7 A away 067.jpg

D dp7 A down 065.jpg

D dp7 A up 066.jpg

D dp7 B away 068.jpg

D dp7 B down 069.jpg

D dp7 B to 070.jpg

D dp7 B to 071.jpg

D dp7 C down 073.jpg

D dp7 C up 072.jpg

STAND E DATA POINT 6

E dp6 A down 050.jpg

E dp6 A to 048.jpg

E dp6 A up 049.jpg

E dp6 away 051.jpg

E dp6 B down 053.jpg

E dp6 B up 052.jpg

E dp6 B up 054.jpg

E dp6 C down 055.jpg

E dp6 C up 056.jpg

STAND F DATA POINT 5

F dp5 A down 061.jpg

F dp5 A up 060.jpg

F dp5 B away 064.jpg

F dp5 B down 062.jpg

F dp5 B up 063.jpg

F dp5 C away 057.jpg

F dp5 C down 058.jpg

F dp5 C to 059.jpg

STAND G DATA POINT 4

G dp4 A away 042.jpg

G dp4 A down 041.jpg

G dp4 A to 039.jpg

G dp4 A up040.jpg

G dp4 B down 043.jpg

G dp4 B up 044.jpg

G dp4 C away 047.jpg

G dp4 C down 045.jpg

G dp4 C up 046.jpg

STAND H DATA POINT 8

H dp8 A down 077.jpg

H dp8 A down 084.jpg

H dp8 A up 078.jpg

H dp8 B up 079.jpg

H dp8 C away 075.jpg

H dp8 C up 074.jpg

H dp8 C up 076.jpg

STAND I DATA POINT 9

I dp9 A away 097.jpg

I dp9 A down 095.jpg

I dp9 A up 096.jpg

I dp9 B down 098.jpg

I dp9 B to 100.jpg

I dp9 B up 099.jpg

I dp9 C away 103.jpg

I dp9 C down 102.jpg

I dp9 C up 101.jpg

STAND J DATA POINT 10

J dp10 A away 107.jpg

J dp10 A down 104.jpg

J dp10 A down 106.jpg

J dp10 A up 105.jpg

J dp10 B away 109.jpg

J dp10 B down 108.jpg

J dp10 B up 110.jpg

J dp10 C down 111.jpg

J dp10 C up 112.jpg

STAND J DATA POINT 11

J dp11 A away 121.jpg

J dp11 A down 122.jpg

J dp11 A down 127.jpg

J dp11 A up 120.jpg

J dp11 B down 126.jpg

J dp11 B up 125.jpg

J dp11 C down 129.jpg

J dp11 C up 128.jpg

STAND J DATA POINT 12

J dp12 A away 142.jpg

J dp12 A down 141.jpg

J dp12 A up 140.jpg

J dp12 B down 143.jpg

J dp12 B up 144.jpg

J dp12 C down 145.jpg

J dp12 C up 146.jpg

J dp12 flood debris 149...

J dp12 PIPO on terra#35...

STAND J DATA POINT 13

J dp13 A down 6378.jpg

J dp13 A up 6379.jpg

J dp13 B down 6380.jpg

J dp13 B up 6381.jpg

J dp13 C away 6384.jpg

J dp13 C down6383.jpg

J dp13 C to 6384.jpg

J dp13 C up 6382.jpg

STAND K DATA POINT 14

K dp 14 A away 6389.jpg

K dp 14 A down 6388.jpg

K dp 14 A up 6387.jpg

K dp 14 B away 6395.jpg

K dp 14 B down 6394.jpg

K dp 14 B up 6393.jpg

K dp 14 C down 6397.jpg

K dp 14 C to 6398.jpg

K dp 14 C up 6396.jpg

STAND L DATA POINT 15

L dp 15 A away 6402.jpg

L dp 15 A down 6401.jpg

L dp 15 A to 6400.jpg

L dp 15 A up 6399.jpg

L dp 15 B away 6412.jpg

L dp 15 B down 6411.jpg

L dp 15 B up 6410.jpg

L dp 15 C down 6413.jpg

L dp 15 C up 6415.jpg

STAND M DATA POINT 16

M dp 16 A away 6421.jpg

M dp 16 A down 6420.jpg

M dp 16 B away 6424.jpg

M dp 16 B down 6423.jpg

M dp 16 B up 6422.jpg

M dp 16 C away 6427.jpg

M dp 16 C down 6426.jpg

M dp 16 C up 6419.jpg

M dp 16 C up 6425.jpg

STAND N DATA POINT 17

N dp 17 A away 6430.jpg

N dp 17 A down 6428.jpg

N dp 17 A up 6429.jpg

N dp 17 B away 6433.jpg

N dp 17 B down 6432.jpg

N dp 17 B up 6431.jpg

N dp 17 C away 6436.jpg

N dp 17 C down 6435.jpg

N dp 17 C up 6434.jpg

STAND O DATA POINT 18

O dp 18 A down 6452.jpg

O dp 18 A up 6451.jpg

O dp 18 B away 6450.jpg

O dp 18 B down 6449.jpg

O dp 18 B up 6448.jpg

O dp 18 C away 6447.jpg

O dp 18 C down 6446.jpg

O dp 18 C up 6445.jpg

STAND P DATA POINT 19

P dp 19 A away 6455.jpg

P dp 19 A down 6454.jpg

P dp 19 A up 6453.jpg

P dp 19 B away 6458.jpg

P dp 19 B down 6457.jpg

P dp 19 B up 6456.jpg

P dp 19 C away 6461.jpg

P dp 19 C down 6460.jpg

P dp 19 C up 6459.jpg

STAND Q DATA POINT 20

Q dp20 A away 6553.jpg

Q dp20 A down 6554.jpg

Q dp20 A up 6552.jpg

Q dp20 B down 6556.jpg

Q dp20 B up 6555.jpg

Q dp20 C awayn 6558.jpg

Q dp20 C down 6559.jpg

Q dp20 C up 6557.jpg

STAND R DATA POINT 21R

R dp21R A down 6562.jpg

R dp21R A up 6560.jpg

R dp21R B away 6564.jpg

R dp21R B down 6565.jpg

R dp21R B up 6563.jpg

R dp21R C away 6561.jpg

R dp21R C away 6569.jpg

R dp21R C down 6568....

R dp21R C up 6567.jpg

STAND S DATA POINT 21S

S dp21S A away 6532.jpg

S dp21S A down 6531.jpg

S dp21S A up 6530.jpg

S dp21S B away 6535.jpg

S dp21S B down 6534.jpg

S dp21S B up 6533.jpg

S dp21S C away 6538.jpg

S dp21S C down 6537.jpg

S dp21S C up 6536.jpg

STAND 2 DATA POINT 22

S dp22 A away 6543.jpg

S dp22 A down 6544.jpg

S dp22 A down 6545.jpg

S dp22 B away 6547.jpg

S dp22 B down 6548.jpg

S dp22 B up 6546.jpg

S dp22 C away 6550.jpg

S dp22 C down 6551.jpg

S dp22 C up 6549.jpg

STAND S DATA POINT 29

S dp29 A away 6700.jpg

S dp29 A down 6701.jpg

S dp29 A up 6699.jpg

S dp29 B down 6703.jpg

S dp29 B uyp 6702.jpg

S dp29 C away 6705.jpg

S dp29 C down 6706.jpg

S dp29 C up 6704.jpg

STAND S DATA POINT 30

S dp30 A away 6708.jpg

S dp30 A down 6709.jpg

S dp30 A up 6707.jpg

S dp30 B away 6711.jpg

S dp30 B down 6712.jpg

S dp30 B sown 6715.jpg

S dp30 B up 6710.jpg

S dp30 C away 6714.jpg

S dp30 C up 6713.jpg

STAND S DATA POINT 31

S dp31 A away 6719.jpg

S dp31 A down 6721.jpg

S dp31 A up 6718.jpg

S dp31 B away 6723.jpg

S dp31 B down 6724.jpg

S dp31 B up 6722.jpg

S dp31 C away 6726.jpg

S dp31 C down 6727.jpg

S dp31 C up 6725.jpg

STAND T DATA POINT 24

spring flow dp24 6578.jpg

T dp24 A down 6575.jpg

T dp24 A up 6574.jpg

T dp24 B down 6580.jpg

T dp24 B to 6581.jpg

T dp24 B up 6579.jpg

T dp24 C away 6583.jpg

T dp24 C down 6584.jpg

T dp24 C up 6582.jpg

STAND U DATA POINT 25

U dp25 A away 6624.jpg

U dp25 A down 6625.jpg

U dp25 A up 6623.jpg

U dp25 B to 6627.jpg

U dp25 B to 6628.jpg

U dp25 B up 6626.jpg

U dp25 C down 6631.jpg

U dp25 C to 6630.jpg

U dp25 C up 6629.jpg

STAND V DATA POINT 26

V dp26 A away 6634.jpg

V dp26 A down 6633.jpg

V dp26 A up 6632.jpg

V dp26 B away 6637.jpg

V dp26 B down 6636.jpg

V dp26 B up 6635.jpg

V dp26 C away 6640.jpg

V dp26 C down 6639.jpg

V dp26 C up 6638.jpg

STAND W DATA POINT 27

W dp27 A away 6673.jpg

W dp27 A down 6674.jpg

W dp27 A up 6672.jpg

W dp27 B down 6676.jpg

W dp27 B up 6675.jpg

W dp27 C away 6679.jpg

W dp27 C down 6678.jpg

W dp27 C up 6677.jpg

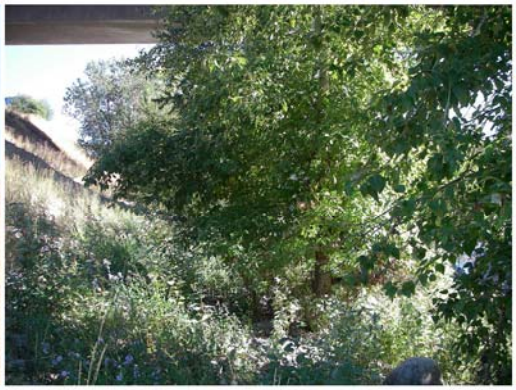
STAND W DATA POINT 28

W dp28 A down 6688.jpg

W dp28 A sway 6689.jpg

W dp28 A up 6687.jpg

W dp28 B down 6691.jpg

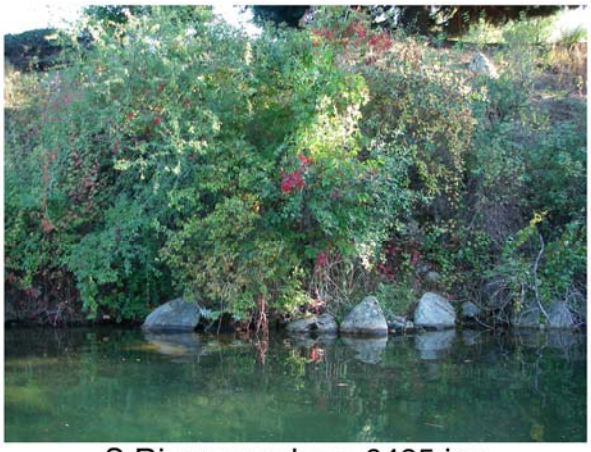


W dp28 B up 6690.jpg

W dp28 C down 6693.jpg

W dp28 C up 6692.jpg

STAND X DATA POINT 32



S Riverway shore 6485.jpg

S Riverway shore 6486.jpg

S. Riverway shore 6480.jpg

vacant shore S River#35219C.jpg

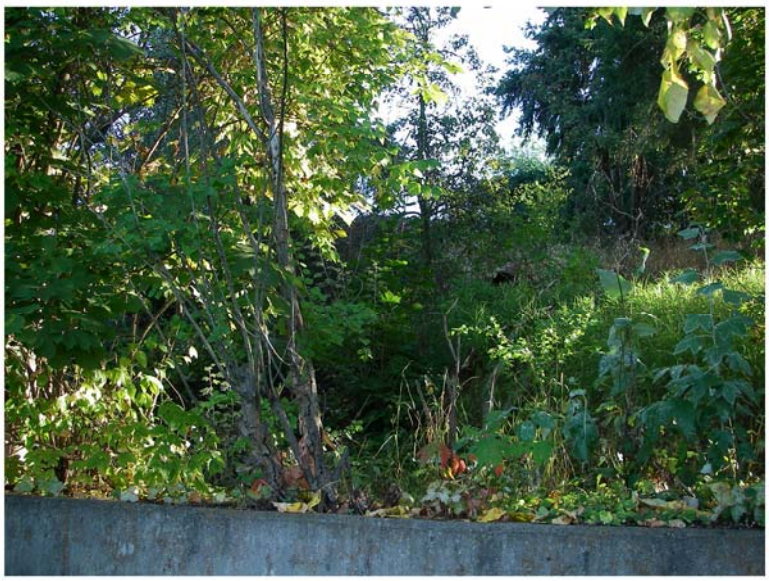
vacant shore S River#35219E.jpg

STAND X DATA POINTS 33, 34 AND 35

bulkhead S Riverway 6507.jpg

bulkhead, S Riverway 6510.jpg

bunkhead S Riverway 6501.jpg



bunkhead S Riverway 6506.jpg

STAND Y DATA POINT 36
SHELLEY LAKE

inundation zone Shel#352FE7.jpg

NE corner Shelley Lk 614.jpg

south bank Shelley Lk 594.jpg

SW corner Shelley Lk 595.jpg

west shore 6588.jpg

west shore Shelley Lk 587.jpg

STAND Y DATA POINT 37
SHELLEY LAKE

input channel 599.jpg

input culvert 602.jpg

pathway Shelley Lk 598.jpg

PIPO edge Shelley Lk 597.jpg

south arm Shelley Lk 596.jpg

south arm Shelley Lk 605.jpg

STAND Z DATA POINT 38
SHELLEY LAKE

east bank 622.jpg

east bank rock shore 615.jpg

POTR planted 606.jpg

POTR planted 607.jpg

SAEX thicket failing 618.jpg

walkway Shelley Lk 612.jpg