

## Plant Selection Worksheet

Selecting plants to fit specific habitat types is the difference between restoration with native plants and traditional landscaping, which fits the site to the plant. A good knowledge of the site and its needs and characteristics is the best method to ensure mitigation success. Time spent in design is often time saved in replanting. You may need the assistance of SHRP staff if you are not familiar with evaluating site conditions.

In order to select plants for revegetating streams, wetlands and buffers two plant lists have been provided:

- Plant list **A** provides plant selection guidelines where information is available to determine habitat types.
- Plant list **B** provides plant selection guidelines where information is not available (e.g. as a consequence of human or natural disturbances such as the placement of fill, flooding, logging or other site alterations).

### Plant List A

Use the “Site Placement” column to select plants for habitat types.

Use the “Light Needs” column in the Habitat Worksheet to select plants for available light.

#### SITE PLACEMENT\*\*

SW=Shallow water

WE=Water’s edge

SS=Saturated soil

WB=Wetter buffer (dries up April-June)

DB=Drier buffer (dries up March-April or never holds water)

#### LIGHT NEEDS\*

SI = Sunny areas, select shade-intolerant

SD = Shady areas, select plants that are shade-dependent

ST = In-between areas, select plants that are shade-tolerant

HA = For almost all areas, plants that are highly adaptable

TREES					
Scientific Name	Common Name	Max Ht.(ft.)	Light Needs*	Site Placement**	Comments
<i>Abies grandis</i>	grand fir	125	SI-ST	DB	Best conifer for soil binding roots
<i>Acer macrophyllum</i>	big leaf maple	100	SI-ST	WB,DB	Seral/sprouter - shallow rooter
<i>Alnus rubra</i>	Red alder	80	SI-ST	WB,DB	Seral, sprouter & spreader
<i>Arbutus menziesii</i>	Pacific madrone	80	SI	DB	Likes drier, coastal: slow-grower
<i>Betula papyrifera</i>	paper birch	80	SI	WE, SS	Saturated soils
<i>Fraxinus latifolia</i>	Oregon ash	80	SI-ST	WE,SS	Requires flat, damp soils
<i>Picea sitchensis</i>	Sitka spruce	230	SI	WE,SS	Wettest conifer

<b>TREES</b>					
Scientific Name	Common Name	Max Ht.(ft.)	Light Needs*	Site Placement**	Comments
<i>Pinus contorta</i>	Shore pine	60	HA	WE,WB,DB	Tolerates poor soil
<i>Pinus monticola</i>	Western white pine	120	SI	WB,DB	NOT within 900' of <i>Ribes</i> spp.!
<i>Populus tremuloides</i>	quaking aspen	75	SI	DB	Seral in montane
<i>Populus trichocarpa</i>	black cottonwood	200	HA	WE,SS,WB	Seral; sprouter
<i>Prunus emarginata</i>	bitter cherry	50	SI	DB	Tree form has heavily pubescent leaves.
<i>Pseudotsuga menziesii</i>	Douglas fir	300	SI	WB,DB	Driest conifer-seral, fast grower
<i>Taxus brevifolia</i>	Pacific yew	80	ST-SD	WB	Very slow growing
<i>Thuja plicata</i>	western red cedar	230	SD	SS,WE,WB	Basic to PNW & wetlands
<i>Tsuga heterophylla</i>	western hemlock	200	SD	DB	Dry conifer

<b>SHRUBS</b>					
Scientific Name	Common Name	Max Ht.(ft.)	Light Needs*	Site Placement**	Comments
<i>Acer circinatum</i>	vine maple	25	SD	WB,DB	Needs canopy shade or lots of moisture.
<i>Amelanchier alnifolia</i>	serviceberry	20	SI	DB	Edge-loving
<i>Berberis aquifolium</i>	tall Oregon grape	7	SD	DB	Dry sites
<i>Berberis nervosa</i>	short Oregon grape	4	ST-SD	DB	Drier sites
<i>Cornus stolonifera</i>	red-osier dogwood	20	ST	WE,SS,WB	Takes sun if has lots of moisture
<i>Corylus cornuta</i>	hazelnut	15	ST	DB	Good wildlife habitat
<i>Crataegus douglasii</i>	black hawthorn	20	SI	WB,DB	Typically on meadow hummocks
<i>Gaultheria shallon</i>	salal	7	ST-SD	DB	Basic forest groundcover
<i>Holodiscus discolor</i>	ocean spray	10	SI-ST	DB	Drought-tolerant, edge-loving
<i>Lonicera involucrata</i>	black twinberry	10	SI-ST	WE,SS,WB	Takes sun if has lots of moisture
<i>Myrica gale</i>	sweetgale	6	SI	WE,SS	Common in scrub-shrub wetlands
<i>Oemleria cerasiformis</i>	Indian plum	15	SD	WB,DB	Sub-canopy
<i>Oplopanax horridus</i>	Devil's club	7	ST	WE,WB	Needs good drainage, forms thickets
<i>Philadelphus lewisii</i>	mock orange	10	SI-ST	WB,DB	Likes streams, good drainage
<i>Physocarpus capitatus</i>	Pacific ninebark	20	SI-ST	WB,DB	Needs good drainage
<i>Prunus virginiana</i>	choke cherry	20		DB	Native to the whole US
<i>Pyrus fusca</i>	western crabapple	35	SI-ST	WE,WB	Edges - most of value in streamside control
<i>Rhamnus purshiana</i>	casacara	30	ST-SD	WB,DB	Found in most wetlands
<i>Ribes bracteosum</i>	stink currant	10	ST	WB,DB	Transition
<i>Ribes lacustre</i>	prickly currant	7	ST	WB,DB	Can take drought
<i>Ribes sanguineum</i>	red-flowering currant	7	SI	WB,DB	Doesn't form thickets!
<i>Rosa gymnocarpa</i>	Wood rose	7	ST	DB	Tough, hardy
<i>Rosa nutkana</i>	Nootka rose	10	ST	SS,WB	Rapid volunteer on damp soil

<b>SHRUBS</b>					
Scientific Name	Common Name	Max Ht.(ft.)	Light Needs*	Site Placement**	Comments
<i>Rosa pisocarpa</i>	clustered rose	7	ST	WE,SS,WB	Will hybridize with nootka rose
<i>Rubus leucodermis</i>	black raspberry	10	ST	DB	Good buffer planting
<i>Rubus parviflorus</i>	thimbleberry	10	SI	DB	Seral groundcover in clear-cuts, drought tolerant
<i>Rubus spectabilis</i>	salmonberry	15	HA	WE,WB,DB	Takes sun if has lots of moisture
<i>Salix geyeriana</i>	Geyer willow	15	SI	SW,WE	Likes inundation, sluggish water, wet meadows
<i>Salix hookeriana</i>	Hooker's willow	20	SI	SW,WE,SS	Only found <5 mi. from coast
<i>Salix lasiandra</i>	Pacific willow	50	HA	WE,SS,WB	Common, tolerant, prefers riparian
<i>Salix scouleriana</i>	Scouler willow	35	ST	SS,WB,DB	Upland & wetland
<i>Salix sitchensis</i>	Sitka willow	25	HA	WE,SS,WB	Common, tolerant
<i>Sambucus racemosa</i>	red elderberry	20	HA	WB,DB	Rapid grower, tolerates sun, seral on clear-cuts
<i>Sorbus sitchensis</i>	Cascade mountain ash	15	SI-ST	WB,DB	Montane, not to be mistaken for <i>S. aucuparia</i>
<i>Symphoricarpos albus</i>	snowberry	7	SI	WB,DB	Common, tolerant
<i>Vaccinium ovatum</i>	evergreen huckleberry	5	SD	DB	Prefers mature shade
<i>Vaccinium parvifolium</i>	red huckleberry	13	SD	DB	Requires lots of organic matter

<b>Sedges and Rushes</b>					
Scientific Name	Common Name	Max Ht.	Light Needs*	Site Placement**	Comments
<i>Carex comosa</i>	<i>Bristly sedge</i>	2	SI	SW,WE,SS	<i>Rare in King County</i>
<i>Carex lenticularis</i>	Shore sedge	3	SI	WE,SS	From shore to high mountains
<i>Carex lyngbyei</i>	Lyngby sedge	3	SI	SW,WE,SS	Coastal only
<i>Carex obnupta</i>	Slough sedge	4½	ST	SW,WE,SS	Extremely common, coast to Cascade crest
<i>Carex rostrata (utriculata)</i>	Beaked sedge		SI-ST	SW,WE,SS	Common
<i>Carex stipata</i>	Sawbeak sedge	3	SI-ST	SW,WE,SS	Lowland to mid-montane
<i>Eleocharis acicularis</i>	Spikerush	½	SI	SW,WE	Rhizomatous, lowland to mid-montane
<i>Eleocharis palustris</i>	Common Spikerush	½	SI	SW,WE	Rhizomatous, coastal to mid-montane
<i>Juncus acuminatus</i>	Tapered rush	2	SI	SW,WE	Tolerant
<i>Juncus articulatus</i>	Jointed rush	2	SI	SW,WE	Tolerant
<i>Juncus effusus</i> (var. <i>pacificus</i> , <i>gracilis</i> native to PNW)	Soft rush	3	SI-ST	SW,WE,SS	Weedy, common, hardy - often invasive
<i>Juncus ensifolius</i>	Dagger leaf rush	2	SI	SW,WE,SS	Lowland to mid-montane, lovely flowers & foliage
<i>Juncus oxymeres</i>	Pointed rush	3	SI	SW,WE,SS	Lowland
<i>Scirpus acutus</i>	Hardstem bulrush	6	SI	SW,WE	Tolerates up to 3' of water; common, hardy

<b>Sedges and Rushes</b>					
Scientific Name	Common Name	Max Ht.	Light Needs*	Site Placement**	Comments
<i>Scirpus maritimus</i>	Saltmarsh bulrush	4½	SI	SW,WE	Coastal only
<i>Scirpus microcarpus</i>	Small-fruited bulrush	4½	SI-ST	SW,WE,SS	Lowland to mid-montane, very common

<b>Grasses</b>					
Scientific Name	Common Name	Max Ht.(ft.)	Light Needs*	Site Placement**	Comments
<i>Alopecurus aequalis</i>	Short-awn foxtail		SI-ST	SW,WE,SS	Often submerged
<i>Alopecurus geniculatus</i>	Water foxtail	1½	SI-ST	SW,WE,SS	Often submerged, tolerant
<i>Beckmannia syzigachne</i>	American sloughgrass	2	SI	WE,SS	Good wildlife forage, lowland to mid-montane
<i>Calamagrostis canadensis</i>	Bluejoint reedgrass			WE,SS,WB	Rhizomatous, coastal to mid-montane
<i>Cinna latifolia</i>	Wood reed	6	ST	WE,SS,WB	Coastal to sub-alpine
<i>Deschampsia caespitosa</i>	Tufted hairgrass	2	SI	WE,SS,WB	Common, keystone species in wet meadows
<i>Elymus glaucus</i>	Blue wildrye	2	SI	DB	Very drought-tolerant, good wildlife forage
<i>Festuca idahoensis</i>	Idaho fescue	2½	SI	DB	Drought-tolerant
<i>Festuca rubra var. rubra</i>	Red fescue	2½'	SI	SS,WB	Common, tolerant
<i>Glyceria borealis (occidentalis)</i>	Northern mannagrass	4	ST	WE,SS	Tolerates up to 3' of water
<i>Glyceria elata</i>	Tall mannagrass	4½	SD	WE,SS,WB	Prefers streamside
<i>Panicum occidentale</i>	Western panic-grass		SI	WE,SS,WB	Coastal to sub-alpine

<b>Ferns</b>					
Scientific Name	Common Name	Max Ht.(ft.)	Light Needs*	Site Placement*	Comments
<i>Athyrium filix-femina</i>	lady fern	3	ST	SS,WB	Very common, tolerant
<i>Blechnum spicant</i>	deer fern	2	SD	WB	Needs shade, moisture
<i>Dryopteris expansa</i>	shield fern	2	SD	WE,SS,WB	Likes muddy soil
<i>Polystichum munitum munitum</i>	western sword fern	5	ST	DB	PNW basic; needs shade or moisture
<i>Pteridium aquilinum</i>	bracken	4	SI	DB	Seral on disturbed areas

Herbs and Groundcovers					
Scientific Name	Common Name	Max Ht. (ft.)	Light Needs*	Site Placement**	Comments
<i>Achillea millefolium</i>	Yarrow	1	SI	DB	Self-seeds, robust, tolerant
<i>Anaphalis margaritacea</i>	Pearly everlasting	1	SI	DB	Robust, tolerant
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	1	SI	DB	Slow grower - likes dry stony soil
<i>Aruncus dioicus</i>	Goat's beard	2	ST	WB,DB	Streamside
<i>Caltha palustris</i>	Marsh marigold	¾	ST	SW,WE	Coastal
<i>Dicentra formosa</i>	Bleeding heart	1½	ST-SD	WB,DB	Very common, tolerant
<i>Epilobium angustifolium</i>	Fireweed	4	SI	DB	Seral on clear-cuts, common, tolerant
<i>Fragaria chiloensis</i>	Coast strawberry	½	SI	DB	Rapid spreader, evergreen
<i>Geum macrophyllum</i>	Big-leaf avens	3	ST	WE,SS,WB	Common
<i>Heracleum lanatum</i>	Cow parsnip	6	ST	WE,SS,WB	Likes riparian, self-seeds
<i>Hydrophyllum tenuipes</i>	Pacific waterleaf	1	ST-SD	WB,DB	Wet forest groundcover
<i>Linnaea borealis</i>	Twinflower	½	ST	DB	Usually in forests, but seral on clear-cuts
<i>Lupinus polyphyllus</i>	Big-leaf lupine	3	SI	DB	Seral, common, tolerant
<i>Lysichiton americanum</i>	Skunk cabbage	1	SD	SW,WE	Totemic plant, like cedar
<i>Maianthemum dilatatum</i>	Wild lily of the valley	1	ST	WB,DB	Rapid spreader
<i>Mimulus guttatus</i>	Yellow monkey flower	3	SI	WE,SS,WB	Forms sheets near seeps
<i>Myosotis laxa</i>	Small forget-me-not	1½	ST	WE,SS	Uncommon, pretty
<i>Oenanthe sarmentosa</i>	Water parsley	3	ST	SW,WE,SS	Common, hardy, good amphibian habitat
<i>Osmorhiza chiloensis</i>	Sweet cicely	½	ST-SD	DB	Very common in PNW forest
<i>Oxalis oregana</i>	Wood-sorrel	¾	ST	WB,DB	Very rapid spreader, robust, highly tolerant
<i>Petasites frigidus</i>	Coltsfoot	1½	ST	WE,SS,WB	Rhizomatous, good spreader
<i>Polygonum persicaria</i>	Lady's thumb	3	SI-ST	SW	Many species in this genus, good amphibian habitat
<i>Potentilla fruticosa</i>	Bush potentilla	3	SI	DB	Montane, pretty
<i>Smilacina stellata</i>	Solomon's Star	1½	ST	WB	Forms drifts near streams
<i>Stachys cooleyae</i>	Great betony	4	SI-ST	WB	Common
<i>Tellima grandiflora</i>	Fringecup	2	ST	DB	Common, tolerant
<i>Tiarella trifoliata</i>	Foamflower	2	ST	DB	Common, tolerant
<i>Tolmiea menziesii</i>	Piggy-back plant	2½	SD	WB	Forms drifts near streams
<i>Viola glabella</i>	Stream violet	½	SI-ST	WB	Common, rapid spreader

Habitat requirements derived from: *Flora of the PNW* (Hitchcock & Cronquist); *Plants of the PNW Coast* (Pojar & MacKinnon); *Wetland Plants of Western WA* (Cooke); *Guidelines for Bank Stabilization Projects and Surface Water Design Manual* (King County); *Proceedings of the Puget Sound Wetlands and Stormwater Management Research Study* (9/26/96); and field observations.

## Plant List B

The following basic planting plan is for restoration of sensitive areas and their buffers where information is not available to determine habitat types as in plant list B. This planting plan is suitable for varying degrees of moistness, and designed for areas bare of vegetation. Planting densities are high to allow for differences among individual sites that may cause some plants to fail.

For every 500 square feet of mitigation area, plant the following species and quantities. (If bare-root trees and shrubs are substituted for containers, bare-root quantities are indicated in parentheses.)

### Trees (5-gallon containers)

- | Quan. | Species   |
|-------|---|
| 1 (2) | Big-leaf maple ( <i>Acer macrophyllum</i> )     |
| 3 (5) | Red alder ( <i>Alnus rubra</i> )                |
| 3 (5) | Black cottonwood ( <i>Populus trichocarpa</i> ) |
| 4 (6) | Douglas fir ( <i>Pseudotsuga menziesii</i> )    |
| 1 (2) | Western redcedar ( <i>Thuja plicata</i> )       |

### Wetland or Buffer Shrubs (2-gal. containers)

- | Quan.  | Species   |
|--------|---|
| 2 (3)  | Serviceberry ( <i>Amelanchier alnifolia</i> )   |
| 2 (3)  | Hazelnut ( <i>Corylus cornuta</i> )   |
| 3 (5)  | Wood rose ( <i>Rosa gymnocarpa</i> ) <b>OR</b><br>Thimbleberry ( <i>Rubus parviflorus</i> ) |
| 8 (12) | Elderberry ( <i>Sambucus racemosa</i> )   |
| 4 (6)  | Snowberry ( <i>Symphoricarpos albus</i> )   |

### Stream Buffer Shrubs (2-gal. containers)

- | Quan.   | Species   |
|---------|---|
| 12 (18) | Willow species: <i>Salix scouleriana</i> is very drought-tolerant, <i>Salix sitchensis</i> is somewhat tolerant, <i>Salix lasiandra</i> is fairly tolerant. (If willow slips are used, plant 72 to allow for low survival rates.) |
| 6 (10)  | Red-osier dogwood ( <i>Cornus stolonifera</i> )   |
| 2 (3)   | Elderberry ( <i>Sambucus racemosa</i> )   |

### Flowers and Ferns (4" pots)

- | Quan. | Species  |
|-------|--|
| 20    | Bleeding heart ( <i>Dicentra formosa</i> )   |
| 20    | Wood sorrel ( <i>Oxalis oregana</i> )  |
| 10    | Sword fern ( <i>Polystichum munitum</i> )  |
| 10    | Fringecup ( <i>Tellima grandiflora</i> ) <b>OR if near a stream, use</b> Piggy-back plant ( <i>Tolmiea menziesii</i> ) |
| 10    | Foamflower ( <i>Tiarella trifoliata</i> ) <b>OR if near a stream, use</b> Solomon's Star ( <i>Smilacina stellata</i> ) |