Appendix C

Management and Maintenance Practices

Maintenance and Management Practices

The following maintenance practices are presented in reference to Section 5. They are intended to provide a greater level of detail needed to carry out the maintenance and project-specific work outlined in this VMP. This appendix and Sections 5 are meant to be used together to describe what is to be done, when, and where (Section 5) and specifically how to do it (Appendix C). The format and some of the following practices for maintaining, restoring, establishing or removing vegetation have been developed for this VMP with adaptation of some portions from Seattle DPR Landscape, Horticulture and Urban Forestry Best Management Practices Manual (BMPs) (1999), and City Among the Trees (1998), as adapted by Sheldon & Associates, Inc., for the Sandpoint Magnuson Park VMP, from Arboriculture by Richard Harris, and from resources available on the internet including King County Water and Land Resources Bulletins and technical bulletins from State and Federal agencies (see http://www.invasivespecies.gov/profiles/main.shtml). These practices have been tailored to address the conditions at Fauntleroy Park. Specific emphasis has been provided for control of non-native invasive species, and how to care for, establish, and maintain native vegetation in restoration and enhancement projects in the park.

I. Amending Soils

With the exception of rogue trails, organic matter is usually adequate and soil amendments should not be necessary in the park. Moreover, because of steep slopes, amending soils in Fauntlery Park would cause excessive erosion and siltation issues, which should be avoided. In instances in which the organic matter is unusually low, the plant palette should be limited to plants that grow well in bare mineral soils.

II. Mulching

Mulching is one of the easiest and most important maintenance practices for protecting and nurturing most vegetation types. With the exception of wetlands, mulching is an essential component of any planting project for suppressing weeds/invasives, to conserve soil moisture and keep soil cool, and to add organics to the nutrient-deficient soils. On many sloped surfaces, plants should be installed into a secured geotextile such as Jute mesh overlain by 2-3” of woodchips, which will provide for adequate moisture retention and weed control while protecting slopes from erosion.

Mulch will be an important part of improving soil conditions in areas of reclaimed rogue or excessively steep trails. Planting projects should avoid large-scale disruption of soil, and surfaces should be covered with a geotextile material such as Jute mesh before mulch is applied to prevent movement of soil downslope and potential sedimentation of streams or wetland areas. Plants may be planted into the geotexile material.

Wetlands areas in Fauntleroy Park require no mulch. Conserving soil moisture, and ameliorating temperatures in these wetlands is generally not a problem.

If large amounts of wood chips are needed, in most cases, chips of recycled SDPR plant material are available at no cost. Plastic, landscape fabric, or inorganic mulch should be avoided.

Trees

- Clear weeds and grass from under the tree, in a circle out to the drip line at the tips of the branches. Where weeds are very aggressive, vigilant monitoring and removal of newly sprouted weed species will have to be done.
- Spread layer of organic mulch 3-4" deep in a circle out to the tree's drip line or in a 3' diameter circle (whichever is greater).
- Keep mulch away from the tree trunk to prevent crown rot or insect damage.
- Maintain 3-4" of mulch (during *3* year establishment period or beyond as needed).

Shrubs

- Follow similar procedures as for trees, above.
- Spread layer of organic mulch 3-4" deep and *2-3'* in diameter around shrub.
- Cover entire planting area with mulch where applicable.

Keep mulch away from contact with crown of plant.

Herbs

Smaller plant material should be mulched with finer material. Spread a shallow layer of mulch depending on size and spacing of plants. Do not smother plant crowns with mulch.

III. Planting

Site preparation, species selection, and planting layout are site-specific and depend on the goals of the project as well as the micro-site conditions. Instructions for planting trees, shrubs, and herbaceous material are given below. Because the broad goals of any natural area planting include restoration of a functional native plant community, information about plant species recommended in section 5 is given in Appendix D. Due to difficulties in providing water as part of the three year establishment care, planting in Fauntleroy Park should be limited to the fall. Fall plantings allow for continued root development after the top portion of the plant has gone dormant, which provides a better-established plant to withstand the typical drought conditions of summer.

Trees

The two basic steps in planting are preparing the site, and setting the tree or shrub. Proper preparation will encourage root growth rather than adding to the difficulties already challenging the newly planted trees or shrubs.

- Ideal planting hole is 2-3 times the diameter of the root spread or the root ball (depending on existing soil conditions) Minimum planting hole is 12" wider than root spread or root ball. Hole shall be no deeper than the ball and the ball shall sit firmly on the undisturbed subsoil. To encourage root growth out of the planting hole, the edges of the planting hole should be scored or ‘loosened up’ using a rake or edge of a shovel. Native soil shall be used to backfill the planting hole. Trees shall not be fertilized at the time of planting.
- Balled-and-burlapped trees shall be placed in the hole and plumbed vertically. All rope shall be removed from around the trunk of the tree and the top 1/3 of the burlap shall be folded back down into the hole. Whenever possible complete removal of the top third of burlap by

cutting it away with a sharp knife is preferred. Do not remove any B&B packaging material until the tree is placed in the hole and securely plumbed into its final position.

- Trees in wire baskets shall have all of the basket removed, using bolt cutters.
- Backfill soil in lifts of 4-6" at a time with compaction of each layer. Do not compact muddy backfill. Water thoroughly after backfilling if possible to settle the soil, eliminate air pockets and re-wet the root system.
- If the project scope allows, watering soil rather than compacting is preferred. Backfill 1/2 the soil in the tree pit and thoroughly drench with water to settle. Complete backfilling and then thoroughly drench with water again. This method is preferred for removing air pockets and settling soil, but can be impractical in this park.
- Trees planted in sandy or loamy soils should have a 3" high berm erected just past the perimeter of the planting hole to funnel water to the root ball and wet the hole/sidewall interface. Berms will be especially important on the downslope side of newly planted trees.
- Berms should not be constructed in clay soils, wetland soils, or on heavily compacted sites.
- Stake only in unusual situations where normal planting procedures do not provide a stable plant, otherwise, staking is not generally required.
- Remove tree trunk wrapping materials, tags, and all ties at the time of planting.

Shrubs (refer to general guidelines for trees, above)

- Plant shrubs with proper spacing to allow for spread at mature size.
- Plant at proper depth, taking into consideration room for mulch.
- Plant bareroot stock at the same grade as grown in the nursery.

Herbs

Plant ground cover to provide adequate coverage to compete with weeds. Do not crowd. Remove containers prior to placement in the planting pit. Tease pot-bound roots with hands or tools prior to final placement in planting pit.

- Protect bare roots of plants from root drying prior to and immediately after planting.
- Cleanly prune exceptionally long roots to create a uniform root mass.

Live Stakes

Live stakes are cuttings harvested from live native plants. Stakes are cut from the parent plant, and then installed directly into the soil where they establish roots and grow to maturity. The best species to use for live stakes are willow species, black cottonwood, and red osier dogwood. Stakes should be planted in areas that will be consistently moist through out the growing season, such as in wetland areas. Although live staking can be done throughout the year, to maximize survival the best time for taking cuttings and installing them is during the dormant season, between early November and late February.

Stakes can be harvested from an appropriate site or purchased. They should be installed as soon as possible after harvesting - ideally within 24-72 hours - and kept wet in a bucket and in the shade until installation. Stakes should be at least 2-3' in length and >3/4" diameter for willows and cottonwood, and >1/2" diameter for red osier dogwood.

Stakes should be installed with a rubber mallet if the ground is soft enough, or by using a planting bar to create the hole in more compacted soils. The stake should be installed with no more than 3-6" remaining above the ground, and there should be good soil contact below ground for the length of the stake.

IV. Pruning

At Fauntleroy Park, pruning is to be done mainly in the case of hazard trees that pose a threat to public safety. Pruning can produce strong, healthy, attractive plants, but only if done well. Poorly pruned plants often become bigger problems than when left alone. Pruning can stimulate fruit production, invigorate the plant, promote growth, repair injury, and increase value of trees and shrubs. If plants are planted in the right place then pruning is less of an issue, and many future pruning problems can be eliminated. The entrances at Barton Street and 97th Avenue SW may require pruning for aesthetic or plant health reasons. If pruning is necessary at the entrances, begin with removing dead, diseased or damaged wood. Use clean, sharp pruning tools including handsaws, loppers, pruners, and chainsaws. The goals of pruning within the rest of the park are different than those for pruning at entrances. Dead, diseased and damaged wood often provides a habitat in the form of a food or shelter source for animals and birds. Therefore pruning in the park need only occur if a threat is posed to public safety, otherwise, dead and dying wood should be left in the trees.

Trees

Prune for Safety

- Remove branches that grow too low and could cause injury or property damage.
- Remove or trim branches in natural areas that are a hazard to public safety.

Prune for Health

- Create a strong structure when tree is young.
- Remove dead, diseased or damaged branches to increase strength and longevity of trees.

Prune for Aesthetics

- Enhance the natural form and character of the tree.
- Never ‘top’ trees. It is against SDPR adopted Tree Policy (2001).

Shrubs

In developed areas such as the Barton Street entrance or the 97th Avenue SW entrance, shrubs may be pruned for health or aesthetics. Shrubs in the natural areas of the park require no pruning.

Prune for Health

- Follow principles of natural target pruning.
- Make cuts as close to the bud as possible.
- Do not make flush cuts.
- Do not leave stubs.

Prune for Aesthetics

- Enhance balanced, natural shape of shrub species.

- Remove crowded and crossing branches.
- Remove terminal bud to stimulate lower branching.
- Remove reverted shoots.
- Enhance flowering and fruiting.

V. Removing Plants

Plant removal outside of non-native control efforts is done primarily for the following reasons in developed areas such as the entrances to the park: poor tree architecture, summer branch drop, increased exposure, root loss, unstable rooting, girdling roots, leaning trees, unfavorable soil conditions, cracks, cankers, conks, seams, decay, cavities, and root and butt diseases. Trees in particular may present a risk because of old age, storm damage, poor structure, past construction activities or death of the tree. Derelict trees that do not pose a hazard should be left standing.

If the tree is defective AND has a target, it is considered a hazard.

- Remove derelict trees that cannot be made safe or functional by corrective pruning.
- Remove trees that constitute a high hazard if no other prescription will eliminate the risk.
- Alert the community before tree removal begins to provide opportunity for comment.

At times trees and shrubs may be removed for access or other issues not related to the plant's viability, including trail construction.

- Trees that will become destablilized, or that will create a hazard to park users due to necessary trail work should be removed and replaced with an appropriate species for the Management Area. In general, conifers are a preferred replacement species over hardwoods.

Transplant shrubs by carefully digging rootball and placing in pots. Do not let roots dry out. Remove plant material that is too large for the allotted space.

Large woody debris and brush piles are critical elements that are often lacking in the habitat areas of the Park. When large trees have been removed, recycle as much of the parts of the woody debris on site as possible. Trunks and large branches that will not live sprout can be placed directly on the ground within any of the habitat areas. Addition of brush piles and CWD to wetlands should occur only as part of a specific plan developed for wetland projects. Brush (non-sprouting limbs and branches from the tree tops) can be used for wildlife brush piles scattered throughout the various management zones of the park. Placing brush piles and large woody debris is appropriate within any upland habitat in the Park. Workers should avoid dumping brush piles and CWD over the side of trails into wetland areas without a specific plan to accommodate such behavior in an ecologically justifiable fashion.

VI. Three Year Establishment Care

All new plantings require follow-up care for a period of three years that is more intensive and frequent than plants that are already established. Main components of this three-year care program are: mulching and weeding. A three-year calendar for these actions is shown below. Detailed instructions on how to perform these maintenance actions can be found in this section

under the title of the specific practice, (e.g. "Mulching" (Section II)). Once the three-year period is over and the plantings have established, care of these planted areas should be incorporated into the regular ongoing maintenance within the management area that they are located.

Three-Year Establishment Care Calendar

	Month																							
Action	J		F		M		A		M		J		J		A		S		O		N		D	
At Time of Installation																								
Mulching																								
Year 1																								
Mulching															■	■	■	■						
Weeding								•			■	■	■	■	■	■	■							
Year 2																								
Mulching															■	■	■	■						
Weeding								•			■	■	■	■	■	■	■							
Year 3																								
Mulching							■	■																
Weeding								•			■	■	■	■	■	■	■	■			■	■	■	

Table is based on three year establishment care calendar designed by Sheldon & Associates.

- • Indicates specific time to perform action
- ■ Indicates range of time to perform action as needed

Mulching: See M&M Practice "Mulching".
Weeding: See M&M Practice "Weeding and Invasive Control".

VII. Watering

Water is unlikely to be available within the interior of the park. Planning for plant survival with no water inputs should be done accordingly.

VIII. Weeding and Invasive Plant Control

Weeding and controlling invasives are necessary as an ongoing maintenance action throughout the park. In addition, several planting projects will include initial removal and ongoing control of invasives as a major component of the project. Invasive control is also an important part of 3-year establishment care for all newly planted areas throughout the park. The most commonly occurring and problematic non-native invasive species in the park are listed below with a brief description of their characteristics, some information about where each species is typically found in the park, and some recommended eradication and control methods for that particular species. Recommendations and protocols (including herbicide use) are in accordance with SDPR's 1999 Landscape, Horticulture, and Urban Forestry BMPs, and focus on using an integrated pest management approach characterized by a combination of control and removal methods.

Generally, the most effective long-term control of invasive species is achieved by using a combination of control methods, reducing site disturbance, and establishing healthy native plant communities. All control efforts should be directed over time towards establishing and maintaining more sustainable plant communities. To this end, weedy species and infestations that pose the greatest threat to healthy desirable plant communities are those that should be targeted. In addition, to keep the weed control workload at the most reasonable level possible, new infestations should be targeted for control before they become widespread or well-established, and the extent of current invasion should be controlled at or below existing levels for those species that threaten to spread.

Thus, invasive control should focus on those species and specific infestations that are: 1) the fastest-growing, 2) the least established but potentially threatening, 3) the most disruptive to functional habitat, and 4) listed noxious weeds with mandated control.

The following text describes in detail how to remove each of the identified non-native invasive plants or noxious weeds identified as a significant presence in Fauntleroy Park.

Shrub Species

Laurel (Prunus laurocerasus, Prunus lusitanica), English holly (Ilex aquifolium)
Laurel and holly are broad-leaved evergreen shrubs that are spread readily by birds due to their prolific and tasty fruit. They also sucker and re-sprout vigorously. They prefer at least partial shade and are generally found in upland forest in the understory, or along forest edges. In Fauntleroy Park, these species are found in the wetland buffers, and in the Hardwood and Mixed Hardwood/Conifer Management Areas. They grow in particularly dense patches and thickets along the northern boundary of the park, and are dotted in the understory in a variety of areas thoughout the park.

Removal of these species where densities are still low should be a high priority because it will be easier to prevent establishment than to eradicate the shrubs once they are grown. Thickets can be addressed as resources become available. Young plants that are small enough can be hand-pulled, with consideration given to slope stability. Most removals of larger plants that cannot be removed with the roots intact will probably be done most effectively by a combination of mechanical means and herbicide. A 25% solution of Garlon 3A is recommended in upland areas away from aquatic resources (e.g. shoreline, wetlands.) Within 100' of aquatic resources, a 50% solution of Rodeo in a water base (no surfactant) is recommended. Herbicide should be mixed with a water-soluble dye. Several cut and paint methods can be used:

1) Cut shrub to a stump at or near ground level and paint entire cut surface immediately with herbicide.
2) Cut shrub to a stump at or near chest level and with a portable drill, make 1/8" diameter holes 1" deep into the stump from the outer sides all the way around the circumference of the stump every 2". Then inject herbicide with syringe directly into each hole. If standing dead brush is desired, this method can be used without cutting the plant to a stump.

3) Frill the plant, then paint herbicide onto fresh cuts. Frilling is done by girdling the standing plant by making a series of downward overlapping cuts all the way around the trunk, leaving the chips attached to the trunk at the base of the cut. This technique should be used before fruit production so that standing dead plant does not have fruit on it.

Treated cut stumps should be checked for resprouts every 2 to 6 months for the first year after cutting and re-treated if necessary. If no herbicide is used, repeated cutting will be required to weaken and eventually kill the plant over time. This is a more labor-intensive method and will require diligent follow-up visits over a period of at least several years to remove suckering growth resulting from initial cutting.

Himalayan Blackberry (Rubus discolor aka R. procerus)

Blackberry is found in several upland areas throughout the Park, particularly in the Hardwood Management Area in the Southeast corner. It grows as an understory species where light penetration is high due to a thin hardwood canopy. It grows in dense monotypic stands on park boundaries where street ends meet the park on the South side, and in dense monotypic stands in the Fletcher Street right-of-way. Blackberry is shade-intolerant, so long-term control is linked to successful establishment of healthy native plant communities that will create undesirable conditions for this species. Removal methods include hand grubbing with root removal, repeated cutting or mowing, cutting and dabbing stubs with herbicide (cut and dab), or combinations of two or more of these techniques. Hand grubbing is generally only a reasonable method for small areas, or for maintenance around trees or shrubs. However, care should be taken to prevent disruption of soil on slopes. If herbicide is used, a glyphosate herbicide is recommended -Roundup for upland areas and Rodeo for areas within 100' of an aquatic resource. The method(s) chosen depends mainly on how bad the infestation is, and the available labor resources.

For sparse occurrences, hand-grubbing is recommended. Because of the generally small areas of dense thickets, significant wildlife will generally be undisturbed by removal efforts. Maximum removal effectiveness may take precedent over these minimal wildlife impacts. In general, if herbicide is used, timing of its application should coincide with the time of year that the target plant is most actively growing and translocating resources to its roots to maximize herbicide effectiveness. For Himalayan blackberry, this is generally considered to be mid-summer during flowering. For removal of denser stands or thickets the following method is recommended:

Mow or cut to the ground numerous times during the growing season (May - Oct) to reduce plant vigor. If combining with an herbicide treatment, do a late summer (August through September) cut and dab (herbicide) treatment on resprouts. Herbicide should be applied to fresh cuts immediately (within 30 min.) for most effective treatment.

English ivy (Hedera helix)

English ivy is a broad-leaved evergreen found in Fauntleroy Park in the forest ground layer and climbing up tree trunks in upland forest areas, mainly along the park edges, and particularly along the East side of the Park in both the Conifer Management Area and in the Hardwood/Mixed Hardwood Conifer Management Area. Ivy is shade-tolerant, and forms dense

mats on the ground. Hand-pulling appears to be the most effective removal method for this plant. Any efforts to control ivy should initially target vines climbing into trees. Vines should be cut at shoulder height and again at the base of the tree all the way around its circumference. Cut vines should not be pulled down out of trees. A radius of at least 5' from the base of the tree all the way around the tree should also be cleared of ivy. Patches of ivy on the ground are best removed by hand-pulling and rolling into a mat. Planting should only be done if removal of dense mats in the ground layer is successful. Great care should be taken with removal along the north and east side of the park, as the slopes are extremely steep in some locations, and disruption by hand grubbing may cause soil instability and subsequent soil movement down hill. Control in areas of low infestation should be prioritized to prevent further spread of this species.

Clematis (Clematis vitalba)

Clematis is a woody invasive vine that is found in upland forest habitats. At Fauntleroy Park it occurs primarily in the Fletcher Street right-of-way and along the Park boundary in the Northeast portion of the park. It is usually seen up in the tree canopy and hanging below. Control of this species involves cutting the vine at the base near the ground in early summer before seed production occurs, and either grubbing out the root, or applying herbicide (Roundup with water soluble dye) directly onto the surface of the cut stump. Dead top growth can be removed in fall or winter when vines have become brittle.

Herbaceous Species

Japanese knotweed (Polyganum cuspidatum)

Knotweed, or false bamboo, is an herbaceous perennial that forms large monotypic clumps upwards of 6-8' in height. Reproduction is primarily by vegetative regeneration of rhizomes and fresh stems. The rhizome system may extend from a parent plant over 20 feet laterally and to a depth of 6 feet, and is impossible to remove effectively by grubbing. Fragments of rhizome as small as ¼ ounce give rise to new plants. Fresh stems produce shoots and roots when buried in a soil medium or floated in water. Stems in water may produce viable plants within 6 days. Because the risk is great for movement of small pieces via the stream system, grubbing should, in fact, be avoided.

Japanese knotweed prefers moist soil conditions, and is typically found around wetlands, along streambanks, and in ditches, but it is also tolerant of drought. In Fauntleroy Park it is found primarily outside the park boundaries in the Fletch Street right-of-way, in the northwest corner of the park both inside the entrance and on private property, and on the newly replanted hillside at the Barton Street entrance.

Immediate removal of these patches is strongly recommended to prevent further spread of this species because it is so persistent and dominant once established, and can be very difficult to eradicate. One removal method is to exhaust its root reserves by repeated cutting during the growing season (at least 3 times between April and August), and then burying the entire area after the last cutting under well stapled heavy duty weed fabric or double layer industrial strength cardboard, overlain by a deep (8-12") layer of wood chips where slopes permit. However, control work in the Stilaguamish and Skagit River valleys has demonstrated that cutting alone is not a successful strategy for eradication.

Japanese knotweed is susceptible to glyphosate containing products. Because of proximity to water resources, chemical use should be limited to Rodeo. Selective application of Rodeo can be used on re-growth in late summer, and fabric/mulch installation can be delayed until late winter. Good results have been achieved by injecting glyphosate into hollow stems immediately after cutting. Japanese knotweed requires a number of herbicide treatments over several years before it is completely eradicated.

Unless specifically trained in Japanese knotweed removal, volunteers should be discouraged from disturbing patches. Contractors may be the most appropriate individuals to eradicate this species. Planting should not be done until after 2-3 years while roots may still be viable. See Table C3 for removal strategy details.

Policeman's Helmet (Impatiens glandulifera)

Policeman's Helmet, or Himalayan Balsam is and annual plant that grows to about 6 feet with purplish pink, slipper shaped flowers in June - August. It grows in wetlands and stream banks. The flowers also resemble a British policeman's helmet, thus one of the common names. The mature seed pods explode when touched, scattering the seed, which may also be spread by water. It forms dense stands, excluding native plants. In autumn and winter the plant dies and leaves exposed bare soil on stream banks, possibly contributing to erosion and sedimentation of streams. Control must occur before maturation of seed pods for long-term control.

The plant is easy to cut. It must be cut below the lowest node, or it will regrow and flower later in the season. It is also easy to pull up by the roots. It is susceptible to glyphosate, but because the distribution in Fauntleroy Park is limited and because of the proximity to water sources of existing stands, control should be limited to mechanical means.

Herb Robert (Geranium robertianum)

Herb Robert is a both a winter and spring annual plant that is a low growing ground cover. The leaves are light green and deeply dissected. The flowers are about ¼ inch wide, pink, with five petals. The stems are glandular and somewhat hairy. It is highly adaptable and grows in a variety of soils, rocks, tree trunks and decaying organic matter. It may be found in a variety of habitats including moist forests with canopy closure, in forest gaps and on dry outcrops. It may grow in densities of up to 250 plants/meter^{2}. The species has a characteristic pungent odor giving it another common name of 'stinky Bob'. Mature seed capsules contain 5 seeds. These dry and the seeds are ejected ballistically – they may be ejected 15 or 20 feet. With adequate moisture, seeds will germinate soon after dispersal.

Herb Robert poses a threat to forest understories and to plant diversity in forests of western Washington. It is capable of growing into and over other plants from sunny conditions to full shade, competing with native plants for water and nutrient resources.

Shallow roots make it easy to pull the plant mechanically, but disruption of soil may expose more seeds, so weeded areas will need to have follow up care for several seasons. It may also be controlled using a string trimmer in early to mid summer before fruiting. Herb Robert is susceptible to a variety of pre emergent herbicides, and to glyphosate, but because of its close association with other plants and ground covers, the usefulness of herbicides may be limited.

Listed Noxious Weeds

Listed noxious weeds will be controlled as required by County Regulations and in accordance with SDPR's BMPs.

Table C1. Removal Schedule for Laurel and Holly

Removal Size	All sizes
Removal Strategy	Remove individuals and return once yearly to check for and remove re-sprouts in conjunction with 3-year establishment care.
Removal Quantity	Limited only by resources for replanting and 3-year establishment care.
Landscape Setting	Any Management Area
Timing	Depends on strategy chosen but July 1 - April 1 is referred
Max. Annual Removal Quantity	Limited only by resources for replanting and 3-year establishment care.
Removal Interval	3 years
Replanting Strategy	Replacement planting is necessary only where removed plants are in the mature shrub stage or at sapling ht. of > 4', and area of lost canopy exceeds 250 ft^2 at the area of removal. Replace lost aerial coverage with equal area of tree and shrub plant community at removal location 3-year establishment care is required.
Replanting Densities	Replace shrubs or saplings of holly and laurel stem for stem with a conifer tree species as appropriate for light and water conditions
Species Composition of Replacement Planting	Plants on list for Riparian or Hardwood/Mixed Conifer forest types depending on microclimate conditions and existing vegetation at replanting location.

Table C2. Removal Schedule for English Ivy

Size of Patch	Any size
Landscape Setting	Any Management Area
Removal Strategy	Remove any size patch and return twice yearly during the next 2-3 growing seasons to check for and remove re-sprouts in conjunction with 3-year establishment care.
Timing	Any time
Max. Annual Removal Area	Limited only by resources for replanting and 3-year establishment care
Removal Interval	none
Replanting Strategy	Replant cleared area with trees and shrubs for any ivy removed from the ground with less than 60% canopy coverage. 3-year establishment care is required. Ivy can be cut from trees per described removal protocol without any replacement planting.

Replanting Densities	Trees: to increase 'regeneration' coverage to 5% for conifers. Shrubs: depends upon optimal spacing for species used, relative to existing shrub coverage after removal of ivy.
Species Composition of Replacement Planting	Plants on list for Conifer Forest Areas

Table C3. Removal Schedule for Japanese Knotweed

Size of Patch	Any size
Removal Strategy	Remove entire patch and return twice yearly during the next 2-3 growing seasons to check for and remove re-sprouts.
Landscape Setting	Any Management Area.
Timing	Depends on strategy chosen
Max. Annual Removal Area	Limited only by resources for follow-up control and replanting in year 2 or 3
Removal Interval	none
Replanting Strategy	No replanting is to be done until control of invasion is complete (2-3 years). Replanting with trees and shrubs will be necessary if area of removal exceeds 50 ft^2. 3-year care are required.
Replanting Densities	Trees: 400/acre = .01 trees/ft^2. (min 25 – 50% evergreen). Shrub spacing depends upon optimal spacing for species used.
Species Composition of Replacement Planting	Plants on list for Riparian or Hardwood/Mixed Conifer forest types depending on microclimate conditions and existing vegetation at replanting location.