**Native Plants—Good for Your Yard, Good for Our Forests**

**Urban forests are in trouble.**

An alarming number of trees in Northwest urban forests are being lost to development and invasive plants—plants like English ivy, English holly, European hawthorn, and Himalayan blackberry.

**As part of the urban forest, your landscape can make a difference.**

You can contribute to the well-being of our city by removing the invasives in your yard and planting native plants. Here are some of the reasons for creating a native landscape:

* Native plants filter air pollution, absorb CO2, and control soil erosion. They make our city more healthy and livable.
* Native plants attract native birds, butterflies, and beneficial pollinators.
* Invasive plants that contribute invasive “seed rain” (seeds spread by birds and wind) to nearby forests and other neighboring landscapes can be replaced by native plants that contribute beneficial “seed rain.”
* Certain rare native plants that are being crowded out by invasives in urban forests need the care of active stewards in backyard habitats.
* *Evergreen* plants and healthy soil better hold and filter stormwater, reducing winter flooding and the toxic runoff that overwhelm combined stormwater/sewage treatment facilities, overflowing directly into Puget Sound during heavy rain events.
* Non-native landscapes require excessive watering, fertilizing, and “mowing and blowing.” They can be expensive, a noise nuisance, a source of pollution ingested by the operator, and can take up precious weekend time. Also, turf installed over compacted soils do not absorb much stormwater.
* Like a native forest, your native yard can be beautiful.

**Help is available for restoring your yard.**

To learn which plants are native and which are invasive, consult the Washington Native Plant Society (link: wnps.org), or King County Noxious Weeds (link: http://www.kingcounty.gov/sites/environment/animalsAndPlants/noxious-weeds.aspx/)

Consider hiring a restoration professional for the following:

* To identify plants and develop a removal, planting, and maintenance strategy
* To identify high-risk invasives (knotweed, yellow archangel, giant hogweed, poison hemlock) that may require herbicide or special measures to safely control.

For a short list of Seattle restoration professionals, go to *Who Can Help* at: seedrain.org. You can find other licensed herbicide professionals at http://agr.wa.gov/pestfert/licensinged/search/.

* If working in steep or treacherous terrain, review City of Seattle landslide information http://www.seattle.gov/dpd/aboutus/whoweare/emergencymanagement/default.htmor, contact a professional geotechnical firm <http://www.seattlegeotech.org/firms.html>.
* Check Environmentally Critical Area permit requirements <http://www.seattle.gov/dpd/toolsresources/default.htm> and proceed with caution, preserving vegetative cover, even if invasive, to prevent slides. Remove invasives only at the rate that native plants become established. Note: With qualified soil analysis within permit parameters, landowners (notifying surrounding property owners) may accept the risks of aggressive invasive removal to efficiently kickstart native plant establishment.

**Short summary of basic restoration steps to a native landscape**

1. Eradicate all invasives: grass, blackberry, bindweed first to reduce maintenance later
2. Add woody debris/arborist woodchips as mulch on soil; and dig wood *into* soil to build soil structure
3. Plant evergreen canopy at tree, shrub, and groundcover levels to reduce invasiveness

**Detailed steps to a native landscape.**

To remove invasives and plant native species, follow steps one to six below:

**Step 1:** Slow the spread of invasive “seed rain” and prolong the life of mature trees.

* **Remove invasive vines from trees**—before they fruit, to prevent them from spreading seeds.

 \* Cut invasive vines (ivy, wild clematis) in a ring around the tree, at chest height.

 Note: Chainsaws can damage trees. Use loppers, a handsaw, or at most a Sawzall-type saw.

 \* Leave the vines above the cut to wither (pulling these vines can cause injury to the tree—and also to you, from falling debris.) Remove the vines below the cut, taking care not to damage the tree.

 \* Remove the surface roots of the vine in a three-foot radius around the tree, or pull vines away from the tree to be herbicide-treated if a licensed professional will be spraying a surrounding ivy monoculture.

 \* So vines don’t re-root, air-dry any viable vines out of contact with the soil (on brush piles, snags, or small amounts in live shrubs. Turn piles as needed).

 \* Large-diameter vines or “ivy deserts” may need herbicide treatment from a licensed professional to avoid excessive loss of topsoil caused by manual removal.

* **Eradicate invasive trees**—English holly, English laurel, European hawthorn, European mountain ash, bird cherry, domestic plums. Do this before they fruit, to prevent them from spreading seeds, but not if they’re holding soil in critical slopes (such invasive may be topped or girdled to reduce seedrain, but kept alive for soil binding attributes until the roots of native plants can supplant the roots of invasives). For more information about invasive identification, consult King County Noxious Weeds: <http://www.kingcounty.gov/sites/environment/animalsAndPlants/noxious-weeds.aspx/>
* Hand pull small (less than one-inch-diameter) trees.
* For larger trees, use one of these methods:

 *Organic method:* Girdle the tree by peeling a foot of bark, at chest height, from around the circumference. Do this in the spring, when the bark is “slipping” (sap is flowing).

 *Herbicide method:* If the tree is less than four inches in diameter, saw the tree to a stump (“cut-stump”). If it is larger than four inches, “frill” it: chop into the cambium or saw-frill a quarter-inch cut around the circumference. Either way, apply herbicide (per product label) to the *fresh* cut. Early summer or late fall is usually the best time to do this.

* + Hire a licensed herbicide professional—to be sure the herbicide is handled properly, and is correctly\* applied to the cambium layer inside the bark. A common mistake when frilling with an ax is that the herbicide gets applied to the cut’s “cup” in the sapwood, missing the critical vascular cambium layer just inside the bark. \*Note: Cut-stump or frill application methods often require (per legal label) 50-100% product concentrations. If using an aquatic wetland-safe herbicide (formulated without surfactants), an approximate 1/10th of 1% (.1%) addition of surfactant to the product will help absorption into the fresh cut.
* If possible, keep all organic matter on-site.

Keep girdled or treated trees upright until they die (to avoid layering/re-rooting), leaving them as snags for wildlife habitat (unless they’re a hazard) or cutting them down for “habitat piles” (logs on bottom, criss-crossed, with branches on top) to give small birds safe places to forage.

* You can also speed soil building by cutting dead branches to shorter lengths and spreading them as sheet-mulch, helping capture autumn leaf drop for further soil building.

**Step 2:** Remove or reduce lawn, ivy, and blackberry patches, at least enough to proceed with tree planting (Step 4).

* **Two ways to remove a lawn:**
1. After your lawn/weed patch starts growing in the spring, mow or string trim it, add 1” of compost or fertilizer, minimally water (avoiding runoff), then “sheet mulch” the lawn: cover it with cardboard overlapped one foot, or newspaper (six-pages thick); then pile on four to six inches of wood chips (up to a foot, if enough are available).

To get free wood chips, contact a tree service and ask to be put on their waiting list (for faster service, offer to pay for delivery.)

1. Spray the grass with the proper herbicide (per product label)—best during spring growth and not during rainy periods or summer dormancy. On windy days, wipe the grass with an herbicide-soaked cloth or mop.

Hire a pesticide-licensed professional for safe handling (nitrile gloves, safety glasses, respirator, long sleeves/pants, rubber boots) of wetland-safe herbicide and to avoid herbicide “drift” that can damage adjacent plants.

* **To remove ivy patches**, three different methods offer choices to avoid herbicide use, gasoline combustion (exhaust ingestion is likely worse than incidental herbicide exposure), and topsoil loss (which reduces stormwater interception and filtration):
1. Hand pull the ivy. Then cover the area with wood chips, four to six inches deep.
2. Knock back the ivy with a string trimmer (Weedwacker) and cover remaining roots with wood chips, one foot deep, to smother new sprouts (or, sheet mulch with cardboard plus four to six inches of wood chips).
3. Spray\* ivy deserts (greater than 80% ivy cover; less than 20% native cover) with an herbicide. Leave treated ivy on the ground as sheetmulch, avoiding topsoil loss.

Hire an experienced professional to avoid herbicide damage to native plants. The latest “best practice” in forest restoration is a “4-2-2” herbicide mix applied with a backpack sprayer: 4 % glyphosate product with 53% active ingredient (certain glyphosate products may have surfactants already added, so adjust accordingly, according to the label); 2% triclopyr product (with 44% active ingredient); 2% surfactant. Beware that mixing concentrated glyphosate and triclopyr will cause a chemical reaction unless added to a dilute tank (add water first).

* **Follow these steps to remove Himalayan blackberry:**

*Organic* method: 1) At flowering stage (when plant has spent reserves, cut the blackberry to a six-inch height, leaving the stem-cuttings (in approximately one-foot lengths) as mulch. Keep cutting back (three times per year: approx. May, late June, Oct.) until evergreen plants shade out regrowth. If you grub out roots, disturbing soil, be sure to mulch the area with wood chips. Any pulled roots or rooting tips of stems (white roots) need to be air-dried (on a “drying rack,” similar to a habitat pile).

*Chemical* method: Have a licensed professional herbicide-spray accessible, actively-growing patches (after full leaf expansion, not during spring growth or summer dormancy). Dense, inaccessible patches may need mowing or brushcutting first (best timing at flowering stage), leaving cut stems (less than 1 foot lengths) on the ground as sheetmulch. Then spray regrowth after full leaf expansion, at least before October 15.

Smaller infestations may be treated with a “cut & dab” hand method, applying concentrated herbicide across the entire cut, not missing the outside vascular tissues of the cut.

Benefits of spraying vs. “cut & dab” are that: 1) less product may be used in a dilute spray vs. concentrated cut & dab, 2) spraying is also effective against bindweed (the nemesis of new plant establishment), giving a headstart on eventually shading out this troublesome weed, and 3) the efficiency of spraying allows more budget to be dedicated to plant purchases. An experienced restoration professional can avoid spraying benficial plants, or choose to “surgically” cut & dab.

**Step 3:** Mulch any bare or disturbed soil, and any perennial garden beds, with variable depths of arborists’ wood chips, two to six inches deep. This will improve soil, conserve moisture, with lesser amounts assisting the germination of native seed banks, and greater amounts suppressing weeds.

**Step 4:** Plant evergreen trees.

* If your yard is big enough for tall trees, plant the following:
* Douglas fir, grand fir, shore pine, and Sitka spruce—in sunny clearings
* Western red cedar, western hemlock, and Pacific yew—in areas of partial shade
* Madrone (by seed is best)—in well-drained places
* In a smaller yard, consider:
* mountain hemlock and shore pine
* Plant trees seven to twelve feet apart (not all will survive. Thin later as needed for appropriate spacing).
* Avoid sewer lines, gas lines, and electrical wires.
* Plant October to March, the earlier the better.
* For best results, follow these planting instructions:
* Planting instructions:
* Dig 2 or 3 holes such that an untouched mound of soil in the center (volcano) will prevent the root crown from sinking too deep into the hole. Make the holes wide and deep enough for the roots to spread out and go down. Put the soil you removed in a bucket.
* Set the crown of the plant on the mound in the hole and spread the roots down and out. Avoid “J-roots” that double back. Prune long roots as needed.
* Fill in the hole with a mixture of three-fourths soil (from the bucket) and one-fourth rotting woody debris or wood chips.
* “Mud in” (water well and tap the soil to get rid of air pockets) to ensure contact between the soil and the roots, and make sure the root crown is at soil level.
* Mulch around the tree with at least two five-gallon buckets of wood chips or rotting woody debris, keeping the mulch from contacting the stem of the tree.
* Well-amended planting holes may only need one watering the first summer, however, monitor and water weekly to monthly, as needed—saturating to a depth of one foot. Plastic jugs filled with water and poked with a thumbtack can drip-irrigate deeply while allowing time for chlorine in tapwater to dissipate, helping preserve benficial fungi.
* Maintain “tree circles.”
* Remove competing plants in a two-foot radius around each tree.
* Keep the weeded area around the tree mulched with leaves, wood chips, or woody debris, leaving a six-inch radius around the tree mulch-free.
* To allow light to penetrate, prune competing vegetation in a two-foot radius up to a height of eight feet above each tree.

**Step 5:** Replant bare areas, to avoid repopulation with weeds.

* Prioritize native *evergreen* trees, shrubs, and groundcovers—as they are the most effective at reducing new invasives and intercepting winter stormwater.
* Ask your local nursery to stock native plants, or order inexpensive bareroot plants from your local conservation district, kingcd.org.
* Plant cuttings - live stakes are also a source of native shrubs: snowberry, elderberry, salmonberry, and Indian plum.
* Cut thick stems when the shrub is dormant (December to February).
* Poke the stems, at an angle, twelve-plus inches into the soil to maximize stem contact with the rooting zone of the soil.
* For evergreen groundcovers, sword ferns may be divided, or (with less success) transplant viable roots/tops of salal or Low Oregon grape.
* Continue to spread woody debris—logs and branches—to improve the soil’s “fungal food-web,” which will nurture new plantings and improve the forest “sponge.”
* Plant native or ornamental flowers in front of evergreen “workhorses,” similar to how florists use cedar, salal, or evergreen huckleberry as a backdrop for floral arrangements.

**Thank you (!) for making our city more healthy and livable.**

For comments or suggestions, email Steve Richmond: gardencycles@hotmail.com