

(DRAFT) Suggestions for Better Restoration Practices in Seattle Public Spaces

In the context of limited budgets for urban forest restoration and funding mechanisms that dictate inefficient restoration methods – while ivy is still strangling trees and green spaces remain unplanted with evergreens – we are proposing improvements in restoration efficiency. We suggest targeting invasive seed sources that are re-infesting restoration sites and increasing the rate of evergreen tree establishment using methods that reduce topsoil loss and stormwater runoff.

1. Reform the Pesticide Reduction Policy or Integrated Pest Management practices to allow pragmatic use of herbicide (likely glyphosate) according to science-based assessments of health and environmental risks.
 - a. Manual efforts are 10X more expensive and increase erosion/topsoil loss (<http://extension.oregonstate.edu/catalog/pdf/em/em8894.pdf>)
 - b. Herbicide applications are often necessary to avoid damage to adjacent native roots
 - c. The rate of invasive spread surpasses the rate of restoration. Herbicide is necessary to make progress.
2. Review the Green Seattle Partnership “trriage” model and include quarantining infectious invasive seed sources. Focusing “100%” efforts on relatively small acreages is costly and prevents more effective strategies. Consider a triage approach that efficiently sweeps all public forests in *waves*.

WAVE 1:

- a. Address Fruiting Seed Sources (“seed rain”) to reduce re-infestation rates. Fast sweep (\$2000/acre?):
 - i. Tree Rings (ivy and clematis cut at base, herbicide treated) to prolong tree life, reduce seeding
 - ii. Herbicide-treat invasive trees > 1” (fruiting holly, laurel, hawthorn, Mt. ash, bird cherry, etc.)
 1. Treat all City-owned property: Parks, City right-of-ways, focusing on contiguous areas (Beacon Hill/South Seattle; or West Seattle/Duwamish Peninsula, etc.)
- b. Publicize “seed rain” reduction efforts; subsidize invasive treatment on private property in “seed shed”
- c. Target knotweed in high-value (salmon) watersheds; reduce permitting restrictions on herbicide use

WAVE 2: Prioritize evergreen planting in appropriate forest-types so replacement canopy is growing ASAP to supplant expected deciduous decline while maintaining deciduous diversity

- a. Fast-plant bare-root seedlings (350+per acre(?)), expecting significant mortality
 - a. Plant in Oct/Nov to reduce watering needs; mulch with woody debris, leaves; plant around natural water reservoirs and higher-survival indicator species; supplement watering as needed.
 - b. Propagate or contract with nurseries to ensure fall bare-root availability
- b. Carefully plant local-genetic, larger-caliper transplants at 100/acre density: establish 4-ft diameter planting circles (competing vegetation/roots removed); spread primary roots; “mud” in
- c. Maintain tree circles, competing vegetation removed. Maintain mulch.
- d. Periodically “knock-down” blackberry (brushcut to 2 ft) in tree-planting areas
- e. Stake-plant shrubs (Indian plum, snow/elder/salmonberry) & swordfern around primary roosting trees

WAVE 3: Preserve most intact sites (for native seedbank/diversity) to 95% standards (“100%” sites just get reinfected with invasive “seed rain,” promote erosion, and are twice as time-consuming).

WAVE 4: Fully restore remaining sites. Prioritize according to habitat value, social equity, and volunteerism.

For stormwater concerns, preserve vegetative cover to intercept rain, preserve soil health, and suppress other weeds.

- a. Minimize soil disturbance/avoid bare soil (“no-till”)
 - i. Remove invasives at the rate that native plants establish, particularly on slopes
 - ii. Herbicide spray “ivy deserts.” Pull ivy where adequate natives exist. Spread native seed mix.
- b. Avoid concentrating organic matter in large piles to reduce rat habitat, unnecessary foot traffic, erosion, and damage to native plants

These suggestions are based on the Bradley Bush methods (http://en.wikipedia.org/wiki/Bush_regeneration), steward comments, and on contractor observations/experiences working in different municipalities. For comments and suggestions for better restoration practices, contact: Steve Richmond; gardencycles@hotmail.com; 206-650-9807