

SALMON-SAFE INC.

**Report of the Evaluation Team regarding
Salmon-Safe Re-certification of
University of Washington Bothell/Cascadia Community College
Bothell, Washington**

June 25, 2013

RECOMMENDATION SUMMARY

The Salmon-Safe evaluation team recommends recertification of University of Washington Bothell/Cascadia Community College (UWB/CCC) subject to five conditions that are discussed in detail in this report.

BACKGROUND

In 2000, Salmon-Safe began an initiative to apply the Salmon-Safe label to urban restoration efforts and land management. Salmon-Safe implemented this initiative with the objective of significantly advancing urban restoration efforts while developing urban aquatic protection guidelines and a citizen education campaign that can be transported throughout the Northwest.

Working closely with independent scientists and a project team from the city of Portland, Salmon-Safe developed a comprehensive urban park system certification framework oriented toward reducing impacts on water quality and fish habitat from park operation and management. In 2004, the Portland Park system became the first Salmon-Safe certified park system in the country. In 2005, Salmon-Safe expanded this urban effort to include corporate and university campuses and other urban sites. Under these standards, Salmon-Safe certified Nike World Headquarters, the first corporate campus to be certified under the program, and has since certified corporate and university campuses in Oregon and Washington ranging from University of Washington and WSU Vancouver to Seattle Art Museum's Olympic Sculpture Park.

To maintain Salmon-Safe certification, an urban site is re-assessed every five years. An interdisciplinary team with expertise in salmon habitat and restoration, integrated pest management (IPM), and stormwater treatment conducts the certification and re-certification evaluations for Salmon-Safe. The assessment team conducts a comprehensive assessment and field review of the overall management plans and practices related to habitat and water quality protection. For re-certification, the team also reviews site compliance with conditions required by the assessment team for initial certification.

OVERVIEW OF THE PROJECT

The 70+ acre campus of UWB/CCC is located in Bothell, Washington and includes a 58 acre wetland restoration area along North Creek, a tributary of the Sammamish River. UWB/CCC includes college campus buildings, two parking garages, and extensive outdoor parking lots. The grounds also include ornamental shrub beds, natural forest areas, trees, lawns, impervious courtyards and walkways, and the wetland restoration site. Since the initial 2008 assessment, UWB/CCC has constructed a sports field adjacent to the wetland buffer. In addition, a veteran's memorial arch and science building are under construction. An environmental education center and restoration center (Conservancy) is near completion, built on historic fill within the wetland.

Stormwater on the UWB/CCC campus flows from pavement and rooftops into a series of catch basins, a large coalescing vault and wet vault, and then through rock weirs and grassland swales before entering the wetlands. Since the 2008 assessment, some of the bioswales adjacent to the wetlands have been modified in conjunction with construction of the sportsfields. Also, since 2008, beaver have recolonized the wetlands in a significant manner, building four large dams that flooded the wetland floodplain to such an extent that the dams were destroyed to prevent heavy tree mortality and allow construction of the Conservancy.

Historically, the UWB/CCC campus was probably a forested hillside and floodplain wetlands along North Creek. Clearing of the property probably began in the early 1800s for timber and farmland. Initial construction of the UWB/CCC campus began in 1999. Construction and planting of the 58-acre wetland restoration project was completed in 2002. North Creek was re-meandered through the wetlands and logs added to the stream margins and wetlands. The top two feet of vegetation and topsoil was removed from the entire site to control reed canary grass and the area was replanted with a mix of native species. The campus has the potential to impact the water quality and habitat conditions of North Creek, which in this general location provides potential migration, spawning and rearing habitat for juvenile and adult steelhead and salmon.

RE-CERTIFICATION EVALUATION OF THE UWB/CCC CAMPUS

Assessment Date

The field inspection and evaluation of the UWB/CCC campus took place on May 2, 2013.

Evaluation Team

The interdisciplinary evaluation team that conducted the inspection and evaluation on behalf of Salmon-Safe was composed of the same individuals who conducted the original assessment on October 30, 2007 with a final assessment report of January 16, 2008.

Peter Bahls: Aquatic Ecologist and Salmon Biologist, Northwest Watershed Institute. Mr. Bahls received an M.S. in Fisheries Science and Aquatic Ecology from Oregon State University, and a B.S. in Environmental Studies-Biology from Middlebury College, Vermont. He worked for six years as the salmon habitat biologist for the Port Gamble S'Klallam Tribe, followed by three years as the principal fish biologist for David Evans and Associates. In 2001 he founded Northwest Watershed Institute, a non-profit organization that provides scientific and technical assistance in watershed assessment and restoration. Mr. Bahls was the scientific lead for the development of Salmon-Safe's park and corporate campus standards and served as team leader for UWB/CCC re-certification assessment.

Carrie Foss: Urban IPM Director, WSU Puyallup. Ms. Foss manages the WSU IPM Certification Program and the Pesticide Safety Education Program in western Washington. Landscape maintenance personnel are trained in plant problem diagnosis, integrated pest management, personal safety and environmental protection through lectures and workshops. Carrie earned a Bachelor of Science degree in botany from the University of Washington and a Master of Science degree in plant pathology from the University of Hawaii. Her background includes plant problem diagnosis, research on beneficial microorganisms, and management strategies for turf and ornamental diseases.

Dr. Richard Horner: Stormwater management expert, University of Washington (emeritus). Dr. Horner received engineering B.S. and M.S. degrees from the University of Pennsylvania and the Ph.D. in civil and environmental engineering from the University of Washington in 1978. Following 13 years of college

teaching and professional practice, he joined the University of Washington research faculty in 1981, where he held appointments in Civil and Environmental Engineering, Landscape Architecture, and the Center for Urban Horticulture. His principal research interests involve analyzing the effects of human activities, especially in urban areas, on freshwater ecosystems and solutions that protect these resources. Dr. Horner founded the Center for Urban Water Resources Management in 1990 to advance applied research and education in these areas. He is now emeritus research associate professor.

Assessment Process

UWB/CCC staff compiled the annual condition verification reports and related documentation for the period since the initial 2008 certification. The Salmon-Safe evaluation team members reviewed this information prior to, during, and after the field assessment phase of the re-certification process. The evaluation team met with UWB/CCC staff responsible for site management and conducted an inspection tour of the campus. At the end of the field review, the evaluation team members, supported by Salmon-Safe staff, met to review the certification criteria and conditions of the initial 2008 certification report against notes taken during the process. The team decided that they needed additional specific information from UWB/CCC before reaching a decision. Over the next several weeks, UWB/CCC provided this additional information that was evaluated by team members. On June 25, 2013, the team and Salmon-Safe staff finalized conditions for re-certification and reached a final unanimous decision on re-certification.

General Observations & Conclusions

In the judgment of the Salmon-Safe evaluation team, UWB/CCC continues to demonstrate a high level of environmental stewardship in accordance with Salmon-Safe standards. In particular, reviewers were impressed with the following management actions -

- Full compliance with all of the pre-conditions and conditions of the 2008 assessment report, including completing and implementing progressive pesticide, fertilizer and water conservation plans.
- Decommissioning the wetland irrigation system and generally reducing water use over the five years.
- Minimizing the use of pesticides on campus.
- Reducing fertilizer use by using soil testing, use of slow-release fertilizers, and installing plantings that did not require high fertilizer inputs.
- Establishing “eco-turf” and drought tolerant native plantings to reduce energy, water, fertilizer and pesticide inputs.
- Continued excellent stewardship of the wetland restoration project, including additional plantings and invasive weed control.
- Comprehensive and effective stormwater and erosion control measures implemented by contractors during recent new construction.

However, the operational management and infrastructure planning can be further enhanced over the next five years in accordance with Salmon-Safe standards, including -

- Improvements to the IPM and fertilizer management plans, including maps that describe management by zones and document the low-input management that is being practiced.
- Improved recordkeeping and reporting for pesticide use.
- Re-constructing two stormwater bioswales that drain to the wetlands.

CONDITIONS AND DISCUSSION

Certification Recommendation: The evaluation team recommends that UWB/CCC be recertified as Salmon-Safe subject to five conditions listed below. Furthermore, to avoid a lapse in certification, UWB/CCC must agree to meet these conditions by August 15, 2013.

All conditions are subject to annual verification by Salmon-Safe. Timelines for accomplishing objectives are measured from the official date of Salmon-Safe re-certification.

Condition 1: UWB/CCC shall re-construct the recently installed rock lined ditch (located immediately south of the new sports field and west of the wetland trail) to function successfully as a rain garden and bioswale per the Puget Sound Partnership's Low Impact Development standards. The existing rock lining shall be removed and replaced with amended organic soil. The bottom and sides of the swale shall be fully vegetated with native wetland and upland plants. The rain garden shall be re-shaped so as to retain and infiltrate stormwater to the maximum extent feasible, then allow for slow runoff and filtration runoff from larger storms that cannot be infiltrated.

Timeline: UWB/CCC shall complete the project within 2 years.

Condition 2: UWB/CCC shall reconstruct the bioswale identified in the initial 2008 assessment report (the main swale that directs outflow from the detention vault), since patching the swale was not adequate to prevent flow from breaching over the side. The main problems appear to be that the swale is at too low of a gradient to effectively convey stormwater and the sides of the swale are porous or can be overtopped or blown out. The swale shall be reconstructed, based on an engineered design and the Puget Sound Partnership LID standards for rain gardens and bioswales, to retain and infiltrate stormwater to the maximum extent feasible, then allow for slow runoff and filtration runoff from larger storms that cannot be infiltrated.

Timeline: UWB/CCC shall complete the project within 2 years.

Condition 3: UWB/CCC shall complete pesticide application records for the 5 years since initial certification in January 2008 and ensure that future records have all fields completed as legally required, including - EPA registration number, weather conditions, and site of application. Although not a legal requirement, UWB/CCC shall also record the pest targeted in an added field on the application record for all pesticide applications conducted after the re-certification date.

Timeline: UWB/CCC shall ensure complete pesticide application records within 1 year.

Condition 4: UWB/CCC shall expand their Integrated Pest Management (IPM) Plan to –

- a) Ensure that pesticide applicators using Rodeo for knotweed or other purposes have an aquatic endorsement on their pesticide application license as required by WSDA.
- b) Add a strategy for knotweed control methods. Methods shall be consistent with the attached guidelines for safe, effective, and legal means of control of this noxious weed.
- c) Clarify how pesticide use is being reduced over time through a zoned approach by providing a map and short description of pesticide management guidelines for each zone, including identifying pesticide-free zones, if appropriate.

Condition 5: UWB/CCC shall clarify how fertilizer use is being reduced through a zoned approach, with a map and short description of fertilizer management guidelines for each zone.

RECOMMENDATIONS

The evaluation team also recommends the following actions:

- 1) Consider establishing at least a one-half time position to coordinate wetland restoration monitoring and studies to be conducted primarily by students.
- 2) To ensure that all large-scale new construction meets Salmon-Safe zero sediment runoff requirements, consider working with UW Capital Planning to require that all contractors be Salmon-Safe accredited for pollution prevention in large-scale construction management (more info: <http://www.salmonsafe.org/getcertified/construction-mgt>).
- 3) Consider addition of rain gardens as landscape features adjacent to all new construction. A good example of this can be found at recent construction at Lewis and Clark College, Portland.
- 4) Consider capture of rooftop rainfall for irrigation.
- 5) Consider pervious pavement where feasible in new construction.
- 6) Consider registration of rain gardens with the WSU/Stewardship Partners *12,000 Rain Gardens* campaign.

CONCLUSIONS

Salmon-Safe and the Assessment Team commend UWB/CCC for high-level performance throughout the initial 5-year certification cycle and an intention to manage the site to continue to improve water quality and salmonid habitat over the next five years.

We extend appreciation and congratulations to UWB/CCC staff and contractors for their excellent work in preparing for the re-certification assessment and assisting the assessment team in its evaluation.

Attachment A: Japanese Knotweed Fact Sheet

Japanese Knotweed

Polygonum cuspidatum



Family: Polygonaceae

Weed Class: B

Year Listed: 1995

Native to: Asia

Toxic: not known to be

[additional photos](#)

Why is it a noxious weed?

It is a very aggressive escaped ornamental that is capable of forming dense stands, crowding out all other vegetation and degrading wildlife habitat. It can also create a fire hazard in the dormant season. It is difficult to control once established.

How would I identify it?

General Description: It is a perennial species with spreading rhizomes and numerous reddish-brown, freely branched stems. Plants can reach 4 to 8 feet in height and is often shrubby.

Flower Description: The whitish to whitish-green flowers are in drooping panicles (clusters) from leaf axils. Male and female flowers are on separate plants.

Leaf Description: Leaves are alternately arranged with petioles (stalks) and are 4 to 6 inches long, ovate and have a truncated base and an abrupt tip.

Stem Description: Stems are upright, branching and deciduous.

Fruit/Seed Description: The fruits are approximately 1/8 inch long, shiny brown and triangular.

May be confused with: Knotweed species resemble each other, Japanese knotweed is shorter than Bohemian knotweed or giant knotweed. If you need help with plant identification, please contact your county noxious weed coordinator.

How does it reproduce?

It spreads by seed and by long stout rhizomes. Colonies rarely establish from seed.

Where does it grow?

It is often found in waste places, gardens, roadsides and stream and riverbanks. Please [click here](#) to see a county level distribution map of Japanese knotweed in Washington.

How do I control it?

General Control Strategy

Mowing or cutting plant shoots is ineffective alone; however, mowing followed by herbicide treatments will provide some control. Methods must be repeated if infestation is very large. Care must be taken not to produce new plants. All plant material should be removed, dried and burned if possible. New plants can sprout from very small fragments.

Mechanical Control

Grubbing out small clumps when discovered can prevent new colonies from establishing. Rhizomes and fragments left in the ground, or nearby, can regenerate and spread infestations. The entire root system must be removed since re-sprouting can occur from rhizomes.

Biological Control

There are currently no registered biological control agents for use on any of these Polygonum species. Grazing may be an effective strategy to prevent establishment. Any grazing strategy should be carefully controlled to prevent damage in riparian areas.

Herbicide Control

Please refer to the [PNW Weed Management Handbook](#), or contact your county noxious weed coordinator.

