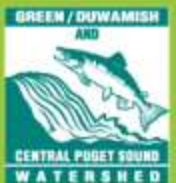


WRIA 9 Revegetation Plan and Strategy

Working Group Orientation

Will Singleton, Singleton Strategies

September 23, 2013



Member Agreement

Because the working group has been kept intentionally small and because learning about the issue and developing a strategy together is central to the purpose of the group, members are asked to agree to the following:

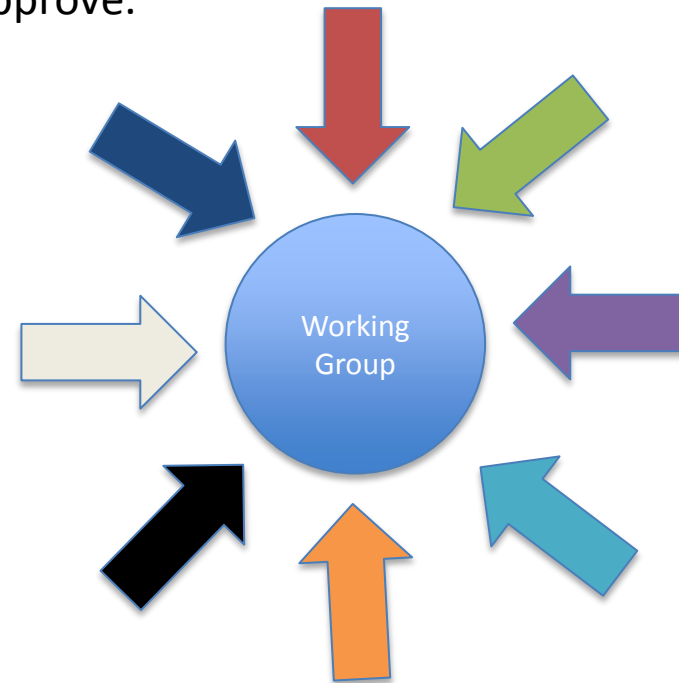
- Participate fully, actively engage in collaborative problem solving;
- Attend every meeting, avoid substitutions. If you miss a meeting, be informed;
- Strive for collaborative consensus;
- Check in with your organization and your network.

Hub and Spokes

Bringing expertise to a small working group

Instead of having membership that possesses all of the expertise needed to develop a strategy, a series of expert-driven sessions will supply information for the working group to synthesize.

- Meetings will have two expert sessions.
- Expert leads will help organize the discussions for those sessions.
- The sessions will be based on the schedule that you approve.



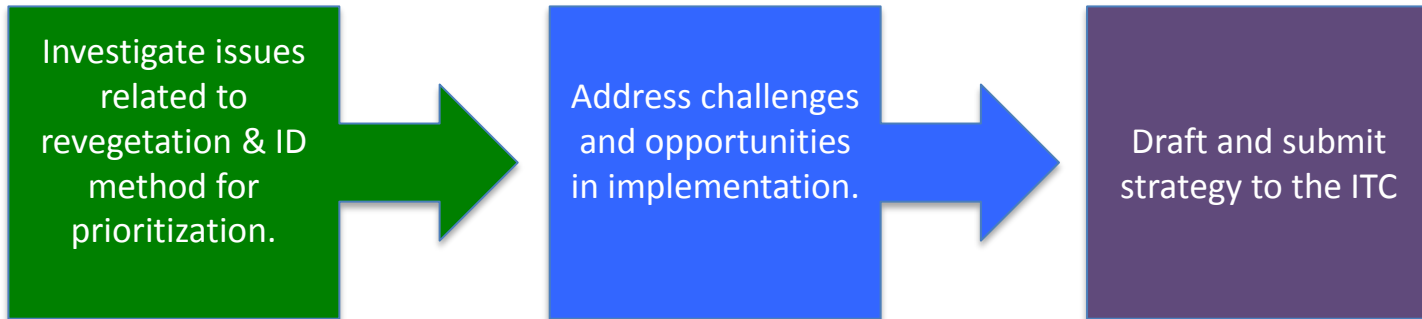
Working Group Phases

We expect that the working group will have three phases.

September

2016

April



We propose that the working group meet monthly for a total of eight meetings.

UWFP will convene federal agencies to help address issues

Meeting Schedule

Month		Meeting Objectives
September	Meeting 1	<ul style="list-style-type: none"> • Context • Scope • How the process will work • Agree on Outline • Schedule/focus of each meeting
October	Meeting 2	Programmatic Issues
November	Meeting 3	Programmatic Issues
December	Meeting 4	Programmatic Issues Implementation Issues
January	Meeting 5	Implementation Issues
	Federal Convening	<ul style="list-style-type: none"> • Discussion of UWFP to address programmatic barriers to outline strategy. • Identify potential funding sources and grant management capacity.
February	Meeting 6	Implementation Issues Draft discussion/review
March	Meeting 7	Draft discussion/review
April	Meeting 8	Finalize Draft

Invited Revegetation Work Group

- Judy Blanco, Forterra (confirmed)
- Holly Coccoli, Muckleshoot Indian Tribe (confirmed)
- Josh Kahan, King County (confirmed)
- Matt Knox, City of Kent (confirmed)
- Elissa Ostergaard, WRIA 9 (confirmed)
- Tyler Patterson, City of Tacoma (confirmed)
- Tracy Stanton, Urban Waters Federal Partnership
– non-consensus member

WRIA 9 Revegetation Plan and Strategy:

Setting the Context

Elissa Ostergaard and Kollin Higgins, WRIA 9

Revegetation Working Group Meeting #1

September 23, 2015



Revegetation Strategy for WRIA 9

BACKGROUND: 2005 SALMON HABITAT PLAN



Plan Goals (page 4-3 for full text)

- Overall goal-protect, rehabilitate, and enhance habitat.
 - *Sub-goal: Protect currently functioning habitat*
 - *Sub-goal: Restore habitat connectivity (corridors that link habitat)*
 - *Sub-goal: Protect & improve water quality (enhance riparian vegetation)*
 - *Sub-goal: Provide implementable plan*



Conservation Hypothesis ALL-2

Protecting and improving riparian conditions by adding native riparian vegetation will enhance habitat quality by improving water quality, stabilizing streambanks, providing overhanging vegetation and large woody debris (LWD), and contributing organic matter, nutrients, and terrestrial prey items, thereby leading to greater juvenile salmon growth and higher survival.



Conservation Hypothesis ALL-7

Protecting and improving temperature by addressing point and nonpoint sources will enhance habitat quality and lead to greater juvenile salmonid growth, disease resistance and survival. Improved water quality will also enhance migration, productivity, and survival of adult salmon

(This Conservation Hypothesis is in the 2014 WRIA 9 Draft Monitoring and Adaptive Management)



Necessary Future Conditions

- The riparian zone is functioning and effective buffer widths are established to provide all riparian functions (shade, bank stabilization, sediment control, organic litter, large woody debris, nutrients, and microclimate)
 - *Upper Green (segments 8-12-excludes segment 13, p 4-16)*
 - *Middle Green (segments 4-7, p 4-20)*
 - *Lower Green (segment 3, p4-23)*
 - *Duwamish (Segments 1-2, p4-26)*
 - *Nearshore (slightly different statement, no segments, implies all of it)*



Programs, Policies and Projects in the Plan

- The Plan has three types of actions:
 - *Projects - site specific action, expected to happen once*
 - *Policies - intended to help guide partner jurisdictions, not mandatory*
 - *Programs - actions that need an ongoing effort and staff resources to create and maintain*

Program WW-5 (page 7-6):

Promote the planting of native trees

- Coordinate with nurseries, arborists and home improvement centers to develop a marketing campaign
- Offer native trees to residents
- Promote benefits of tree cover: shade in summer, increased property values, improved habitat, and improved groundwater recharge
- Cities may want to identify desired percentages of tree cover to achieve to provide a goal to work toward and measure progress
- *King County has a goal to plant 1,000,000 trees by 2020 and increase forest cover to the extent feasible by 2040*



Program N-1 (page 7-102)

- Promote Habitat Restoration on Private Property by Offering a “Toolbox” of Nearshore Habitat Project Designs
 - *Should include how to address removal of derelict docks & pilings, revegetation, removal of shoreline armoring)*
 - *Technical assistance to landowners would accompany the tool box for those landowners lacking funds*
 - *Note-replanting steep bluff properties can be very challenging and costly to do safely.*

Program WW-8 (page 7-8):

Increase Involvement of Volunteers in Habitat Stewardship

- Increase citizen participation in stewardship programs that involve volunteers in restoring, maintaining, and monitoring habitat protection and restoration projects.
- Continued grant assistance to non-governmental groups will support their volunteer organization
 - *Assumes involving volunteers saves money, educates people, builds support for salmon recovery, and creates a sense of community and place.*
 - *KCD, NGOs, and local jurisdictions with expertise are encouraged to grow and expand these programs.*



Program WW-9 (page 7-8):

Green/Duwamish Volunteer Revegetation Program

- Partnership between U.S. Army Corps of Engineers and local jurisdictions
- Provide native plants to volunteer groups for replanting
- Green/Duwamish Ecosystem Restoration Project (Karen Bergeron has more details)



Program WW-16 (page 7-15):

Develop Salmon Restoration Tools Consistent with Agricultural Land Uses

- Involve farmers in developing ideas to allow and encourage voluntary habitat protection and restoration that also preserve agriculture by solving existing problems
- Work with KCD on farmer incentives
- Apply to the KCD Agricultural Opportunity Fund for funding for fencing, invasive plant control, native planting, irrigation, and LWD



Program WW-16 (page 7-15), cont.

Develop Salmon Restoration Tools Consistent with Agricultural Land Uses

- Use first projects as demonstration sites; conduct tours for decision makers and the public
- Work with incentives programs (PBRs, NGPE, Conservation Reserve Enhancement Program, etc.) for willing landowners
- Promote existing stewardship programs
- Work with landowners to remove fish barriers



Policy I-18 (page 8-28)

- Jurisdictions shall protect, enhance, and restore high quality salmon habitat in the Agricultural Production Districts while retaining the agricultural lands zoned for protecting and maintaining the viability of agriculture...
 - *Prevent any further removal of forested riparian buffers*
 - *Continue riparian plantings...limiting the scope of projects such that future farming on non-forested acreage is not precluded through acquisition unless:*
 - Projects are on lands that are not farmed or deemed as farmable or
 - Projects also present benefits for farmland such as reducing bank erosion
 - *Correct water quality problems resulting from ag practices:*
 - Planting riparian corridors as needed where temperature is a water quality issue for salmonids



Policy IN-4 (page 3-17)

- Support new and existing incentives to protect salmon habitat. Such incentives for local governments to choose from include but are not limited to:
 - *Small Forest Landowner Riparian Easements*
 - *Public Benefit Rating System*
 - *Conservation Easements*
 - *Federal programs-USDA Legacy program, Wetland Reserve Program, Conservation Reserve Enhancement Program*
 - *WDFW Small Forest Landowner Incentive Program*



Project specific actions

- UG-1: replant 2.8 mile stretch of Sunday Creek (*100ft wide each bank*)
- MG-6: Newaukum Creek restoration-RM 0-14.3 (*expand riparian to area up to 200ft wide*)
- MG-16: Ray Creek Restoration—enhance with plantings and fencing—*no width noted*
- LG-8: Schuler Brothers-Mill Creek rehabilitation RM.3 to 2.1—add plant & LWD, modify channel—*no width noted*

Revegetation Strategy for WRIA 9

CURRENT ISSUES



Primary Riparian Buffer Functions

- *Large wood material source*
- *Filter out sediment, nutrients, pollutants even flood debris*
- *Microclimate effects (humidity, wind speed, soil moisture air & soil temp)*
- *Insect/prey fall out*
- *Organic inputs (leaf litter)*
- *Shade (affects temp and DO)*
- *Instream cover*
- *Bank stabilization*
- *Nutrient uptake*
- *Wildlife Habitat*

Other Functions of Riparian Revegetation

- Air Quality
- Carbon sequestration
- Evapotranspiration
- Equity and Social Justice – access to open space, parks, river, fishing

Temperature – TMDL = Total Maximum Daily Load

- Department of Ecology – needed to meet state standards
- Main stem Green River and Newaukum Creeks have TMDL reports and implementation plans
- Soos Creek has a draft report and plan
- 2015 was one of the warmest years on record
- Shade modeling has produced “rules of thumb” that can be used to guide revegetation



Emerging Issues

- SWIF (still in development)
- Levee vegetation: PL 84-99 program and vegetation and inspection guidelines
- Federal & State grant programs requiring large buffers
- Agriculture resurgence
- Ag protection easements (FPP)
- Trails: views and safety issues
- Access for fishing & potential for vandalism
- Many groups working, no way of tracking who is working where

What Riparian data do we have?

- Newer data
 - Duwamish: 2013 veg condition, 300 ft buffer area (polygon)
 - Lower Green: 2012 veg condition, 300 ft buffer area (polygon)
- ‘Older’ data
 - Middle Green: 2009 veg condition within the current CMZ (polygon)
 - Nearshore: 2009 veg condition within 200ft of OHWM (line)
 - Soos & Newaukum: 2009 Veg Condition of banks (line)
 - Upper Green-none developed at this time



Riparian Data from 2000

Reach	% Poor Condition*
Duwamish	73%
Lower Green	85
Middle Green	29
Upper Green	49
Elliott Bay (West Point to Alki Point including East & West Waterways)	86.3
Big Soos (19.9 miles)	78
Newaukum (17 miles)	53

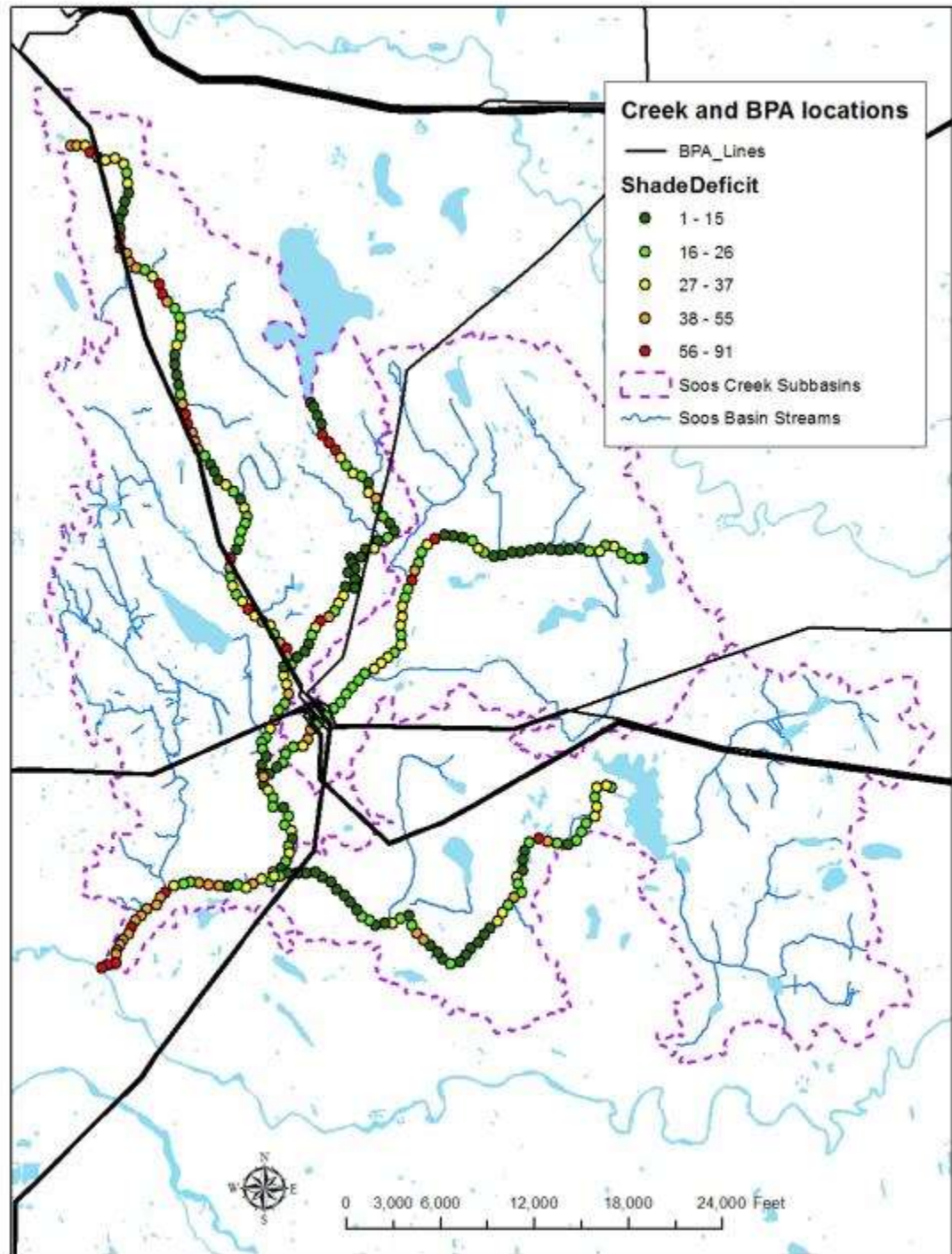
* Source: Habitat Limiting Factors and Reconnaissance Assessment Report, WRIA 9, 2000, where

Other pertinent data sets

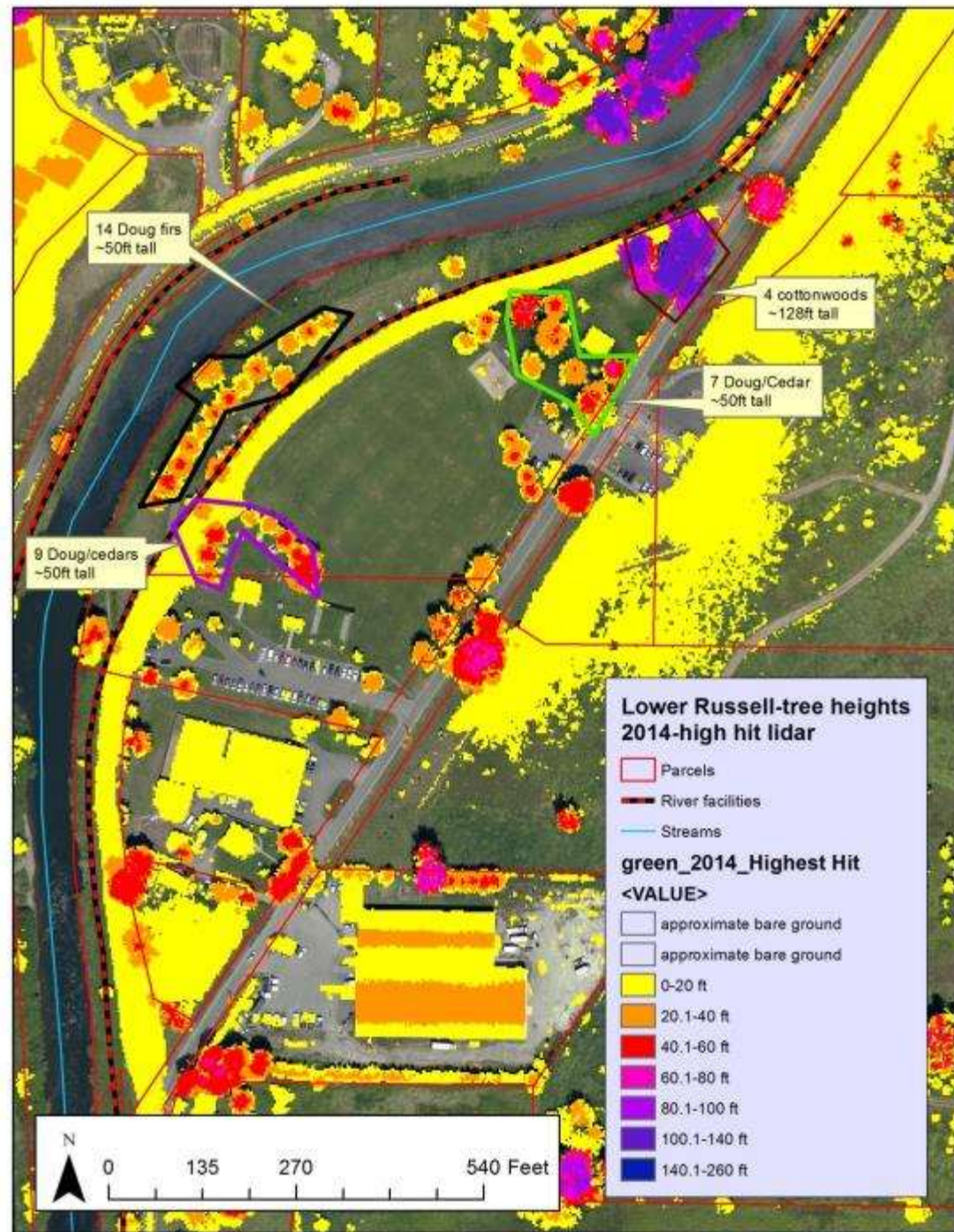
- MIT-solar aspect model (entire mainstem Green)
- Various land cover data sets—CCAP data, WDFW data
- ADAP stream classification data in APDs
- Shade Deficit data in Soos Creek (WADOE)
- Can pull tree height information from recent high resolution lidar data in limited areas
 - *Lower Green: entire buffer*
 - *Middle Green: several segments, several miles long each*
 - *Newaukum Creek: several segments, several miles long each*
 - *Soos Creek: MGRC may have this data-unclear at this time*



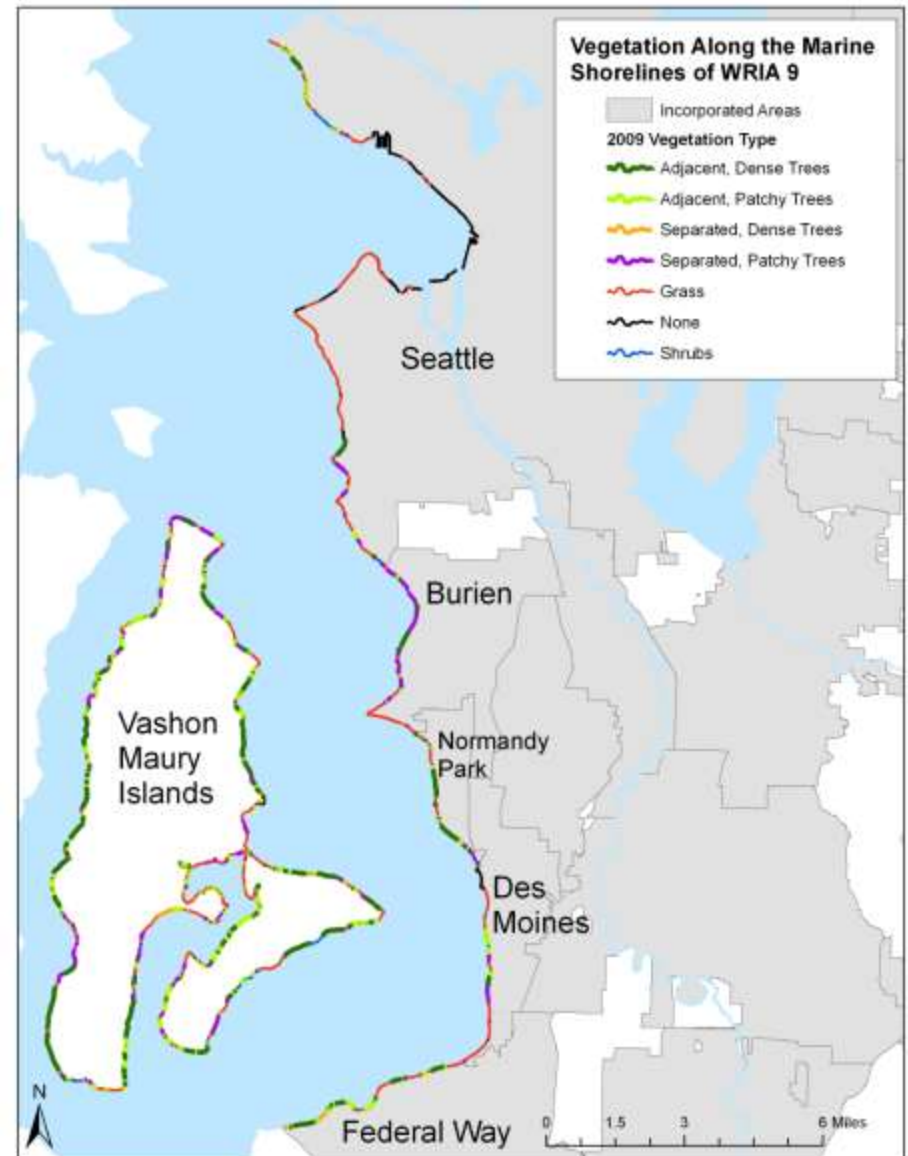
Soos Creek Shade Deficit data with BPA power line locations



Tree height data example



Nearshore data examples

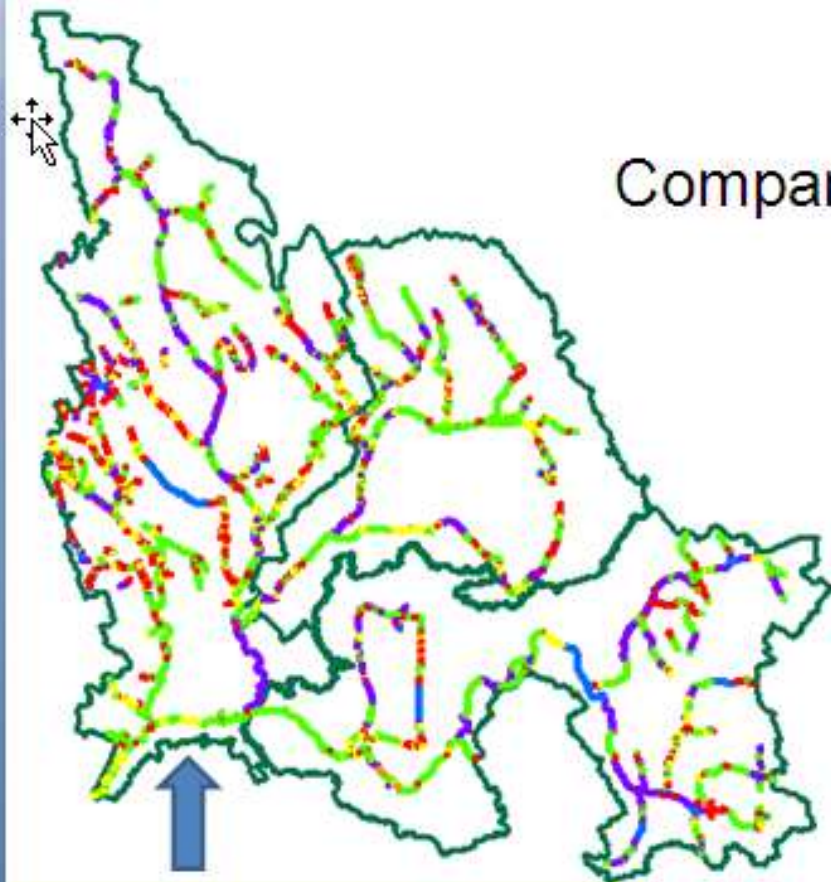


Single tree shade example



From 2012 Status and Trends report

At a Glance: Comparison of the Two Tributaries



Soos Creek

(Middle Green RM 33.7)

70 mi² catchment

25 tributaries, 123.3 mi

18% channel no tree canopy

46% tree canopy on both banks

Newaukum Creek

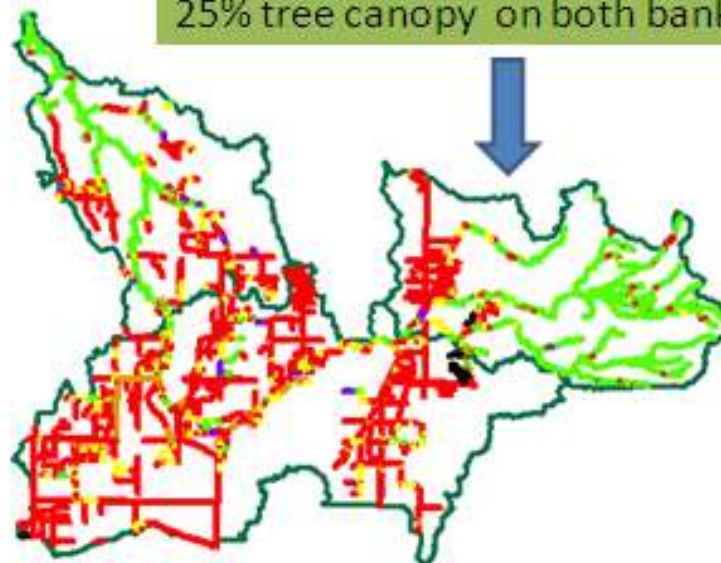
(Middle Green RM 40.7)

28 mi² catchment

8 tributaries, > 136 mi

62% channel no tree canopy

25% tree canopy on both banks



Revegetation Strategy for WRIA 9

SCOPE & PURPOSE



Scope

- Entire WRIA 9
- Establish goals for revegetation
- Prioritize locations and types of revegetation for funding
- 10 years
- Outline key implementation objectives, e.g.:
 - *Knotweed removal*
 - *Conservation easements*
 - *Funding*
 - *Target Forest Types*



Purpose

- Understand the level of effort needed
- Attract funding
- Guide work to most important areas
- Track progress

- Audience:
 - *Funders*
 - *Implementers*
 - *Planners*

Revegetation Strategy for WRIA 9

POTENTIAL TOPICS AND EXPERTS



Goal - considerations

- Temperature reduction
- Habitat improvement
- Land uses
- Shorelines, mainstem, tributaries, ag ditches
- Cost (area)
- Equity & Social Justice
- Others?

Targets-ITC

- The Implementation Technical Committee waded into this issue last year for the Lower Green in the SWIF and created draft targets for the other subwatershed in the MAMP process.
- The ITC only brought the Lower Green targets to the Forum. They were approved by the Forum



Proposed meeting topics (added during meeting)

- Goals/priorities – agree on properly functioning conditions
 - *Habitat Needs, functions that riparian provide that are priority*
 - Temperature vs. other habitat benefits plus social needs
 - *Geography – use current subwatersheds?*
 - *Strategy for what happens first*
- Agriculture and riparian plantings
- Riparian target forest types, techniques, costs, monitoring
- Land ownership, conservation easements
- Plans and initiatives that can support the strategy
 - *Funding sources & grant making, King County IM trees goal by 2020*
 - *Multiple objectives*



Pertinent Targets in the Lower Green

- Water Quality Temperature
 - 20 year goal: <3 days above the 7-Day Max state standard
 - 50 year goal: Zero days above the 7-Day Max state standard
- LWD
 - 20 year goal: 852 pieces/mile
 - 50 Year goal: 1 705 pieces/mile
- Riparian Areas
 - 20 year goal: 50% of each bank of river with >165ft wide riparian area
 - 50 Year goal: 75% of each bank of river with >165ft wide riparian area



Pertinent Targets in Middle Green

- 65% of the historic floodplain and lateral channel migration functions (assumed to include vegetation) should be reconnected.

This was used as the metric for the Status and Trends report and in the Draft MAMP

Prioritization/Goals, Modeling

- Kollin Higgins, King County/WRIA 9
- Curtis DeGasperi, Andrew Miller, King County
- Ecology (TMDL, riparian buffers)
- USFS

Funding sources and grant making:

- Karen Bergeron, WRIA 9
- Tracy Stanton, UWFP
- Ecology
- NFWF
- Boeing

Riparian targets, techniques, costs and monitoring:

- Kristi McClelland, Forester, King County
- Oliver Bazinet, Arborist, Seattle Parks
- Robert Beal, USFS Portland
- Forterra/EarthCorps
- King County basin stewards
- Josh Latterell & Laura Hartema, King County



Land ownership, conservation easements:

- Darren Greve, King County
- Colin Hume, Ecology
- Forterra/Trust for Public Lands

Agriculture and riparian plantings:

- Kollin Higgins, Rick Reinlasoder, Ted Sullivan, King County
- Josh Monaghan, KCD
- Leif Fixen, American Farmland Trust
- Green River farmer
- Colin Hume, Ecology

