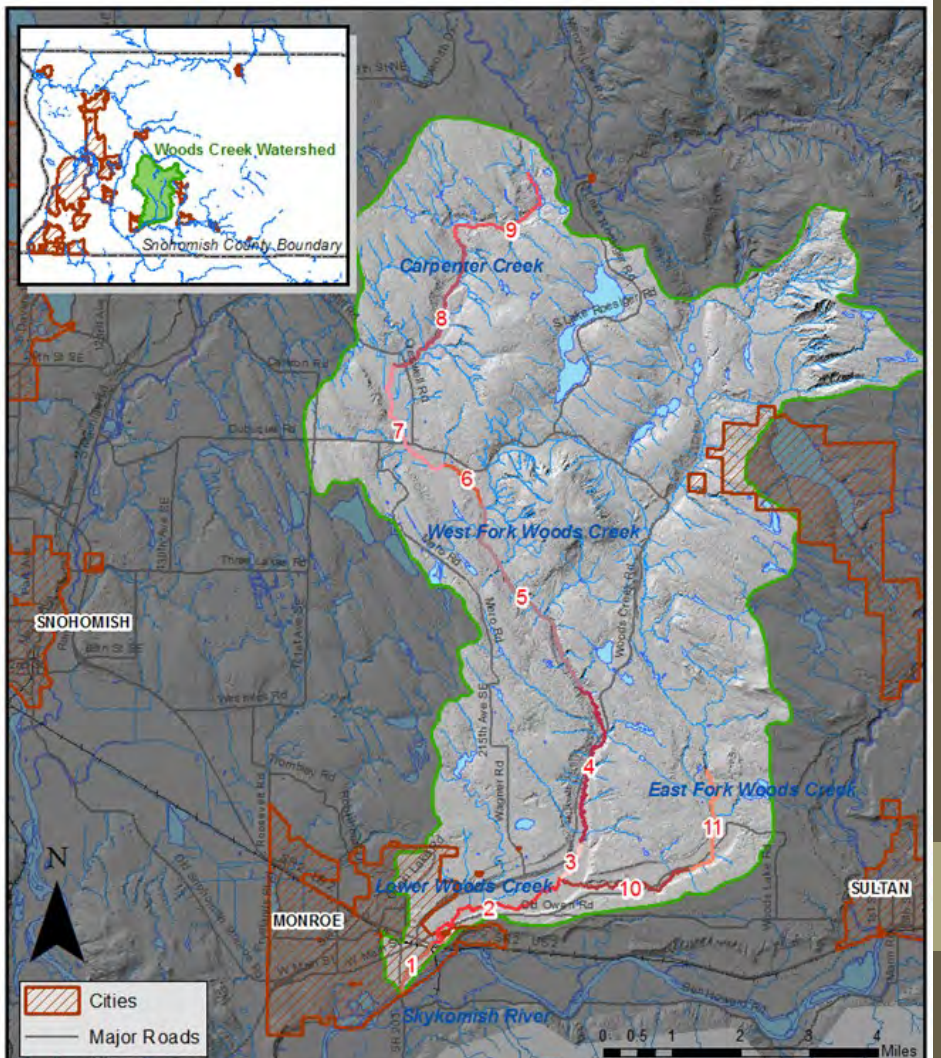
Riparian buffer flexibility allows for restoration success in Woods Creek

Cindy Dittbrenner, Snohomish Conservation District

Salmon Recovery Conference, April 9, 2019

Woods Creek

Focused Approach – Case Study



Limiting factors

- High fine sediment
- Low LWD and pool frequency
- Lack of riparian vegetation
- High water temperatures

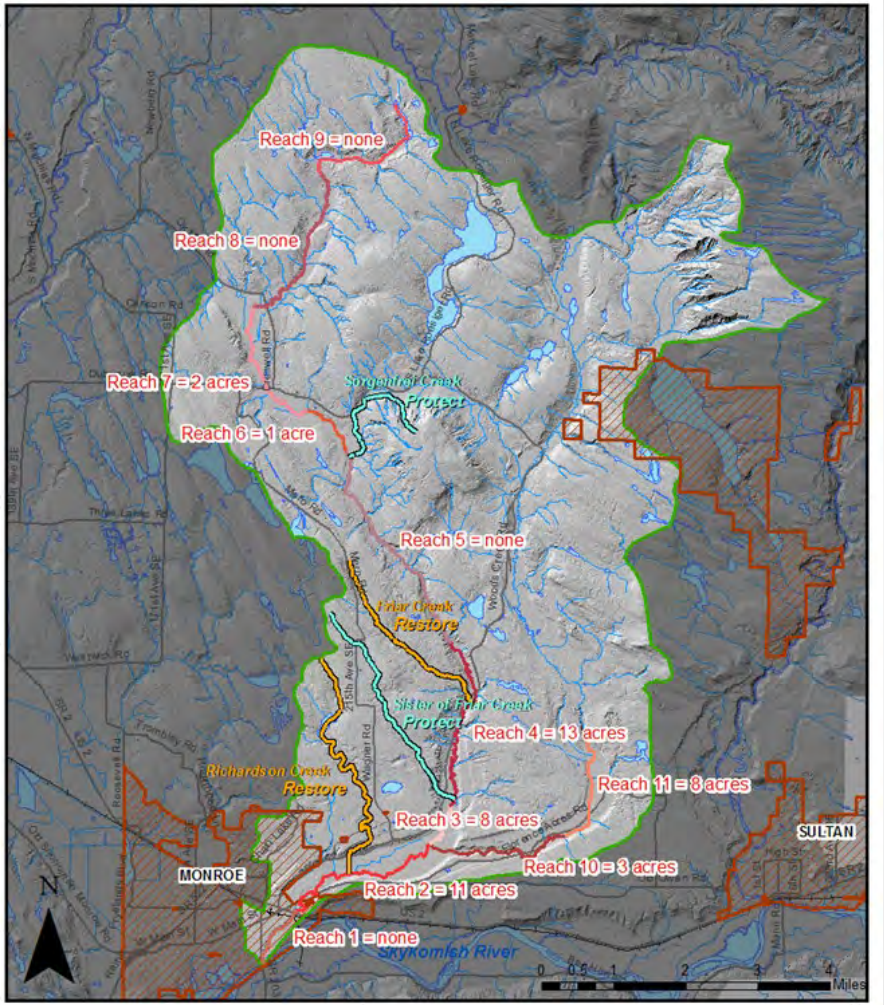
Woods Creek Action Plan for Riparian Restoration

By Cindy Flint

August 2012

SNOHOMISH CONSERVATION DISTRICT

Snohomish Conservation District, 528 91st Ave NE Ste A, Lake Stevens, WA 98258, 425-335-5634



Woods Creek Collaborative

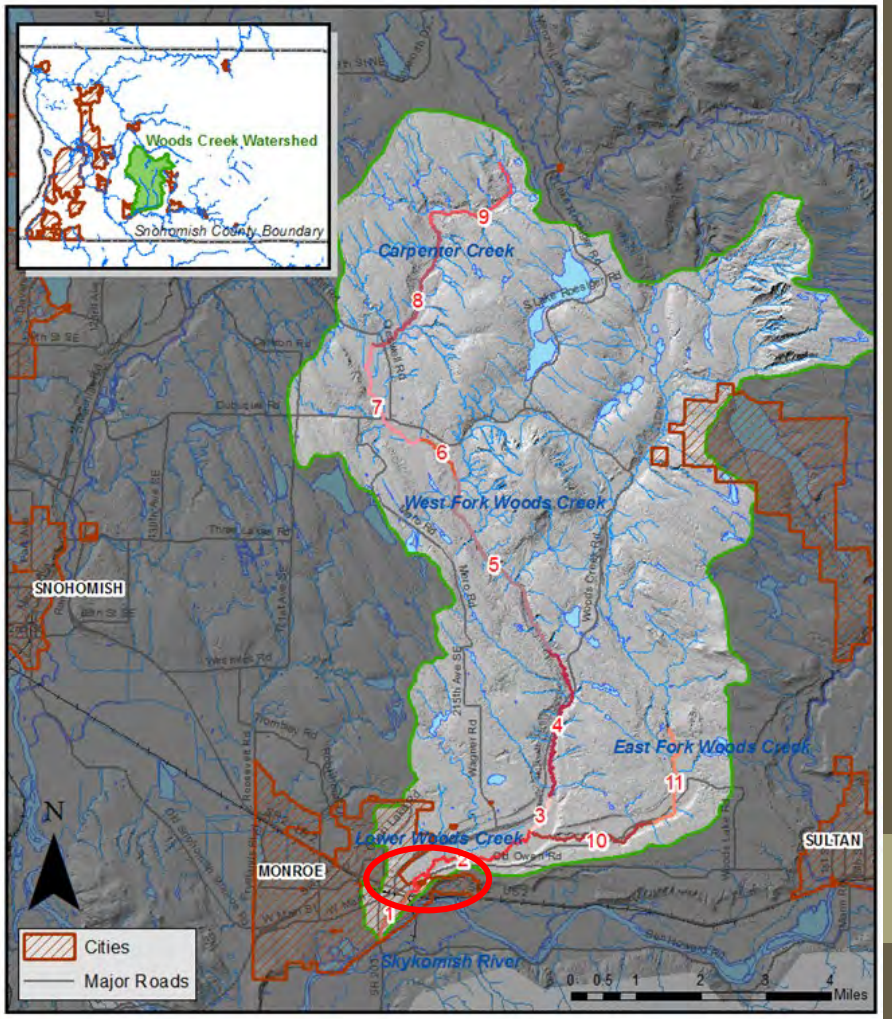
- Snohomish Conservation District
- Adopt-a-Stream Foundation
- Wild Fish Conservancy
- Snohomish County

Outreach campaign

45 acres of trees

Planting a future along Woods Creek

Lower Woods Creek




N
0 105 210 420 630 840
Feet
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community


BeNen



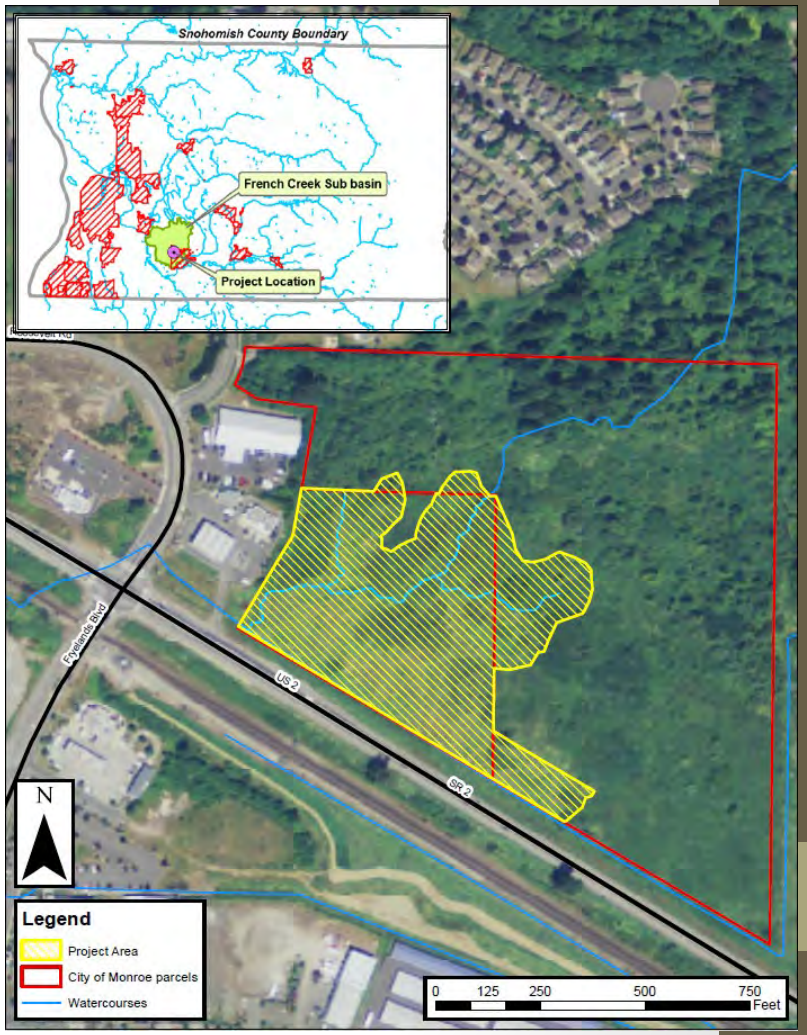

HYUNDAI

Projects completed

Projects with new buffer requirement

Current DOE Grants

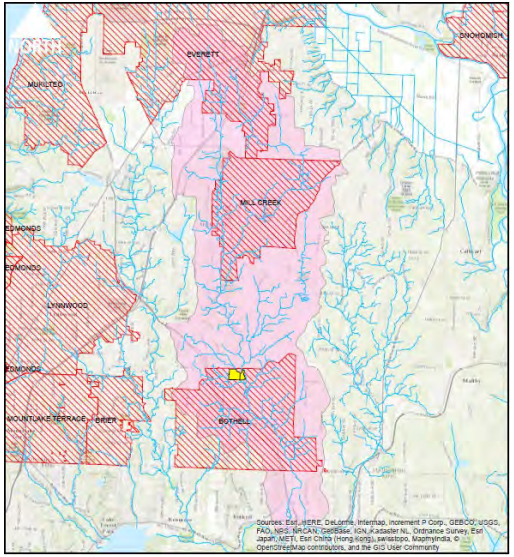
City of Monroe - Monroe Wetland Park
French Creek

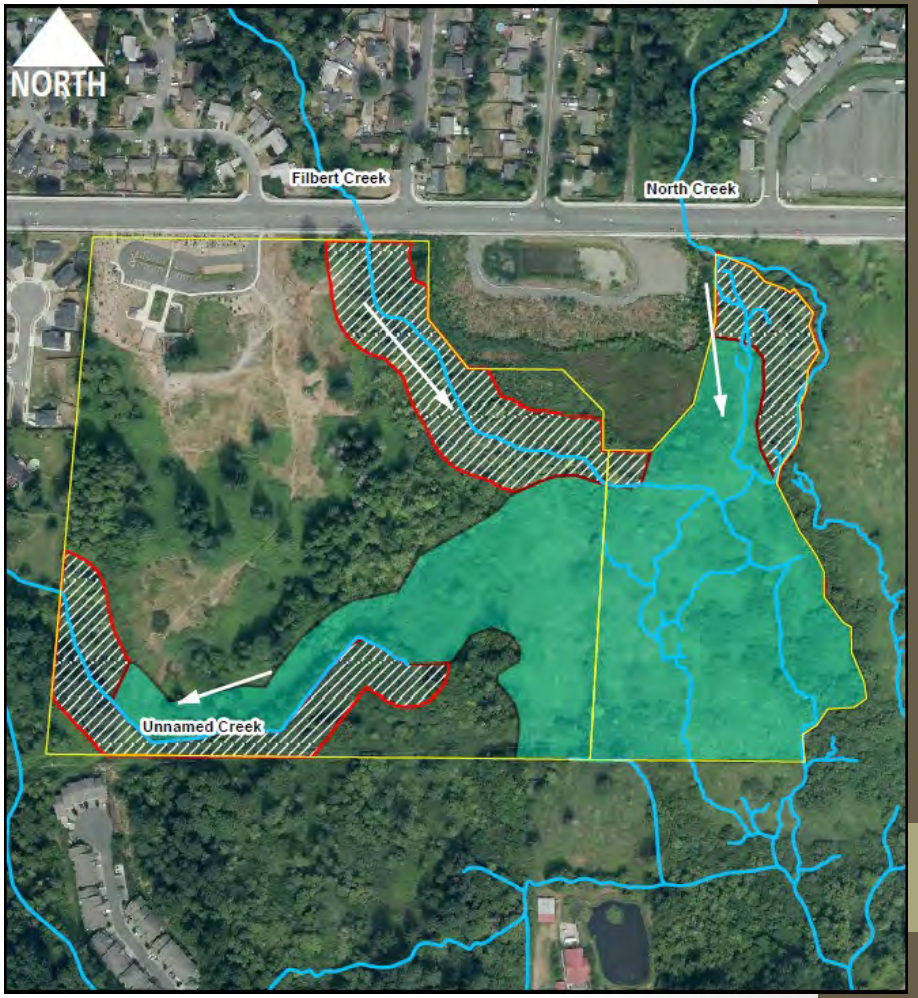


Current DOE Grants

City of Bothell - Centennial Park

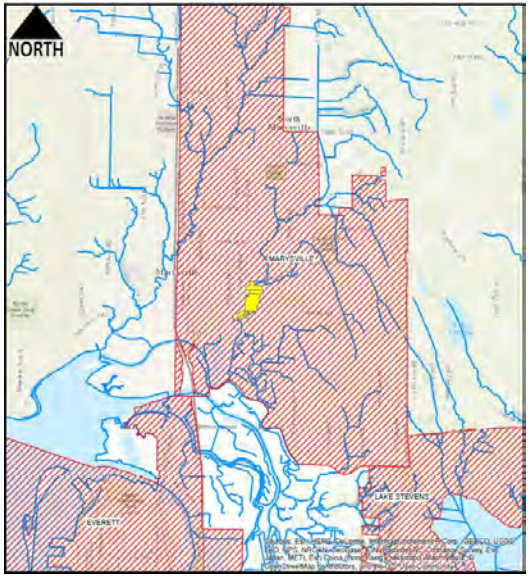
North Creek

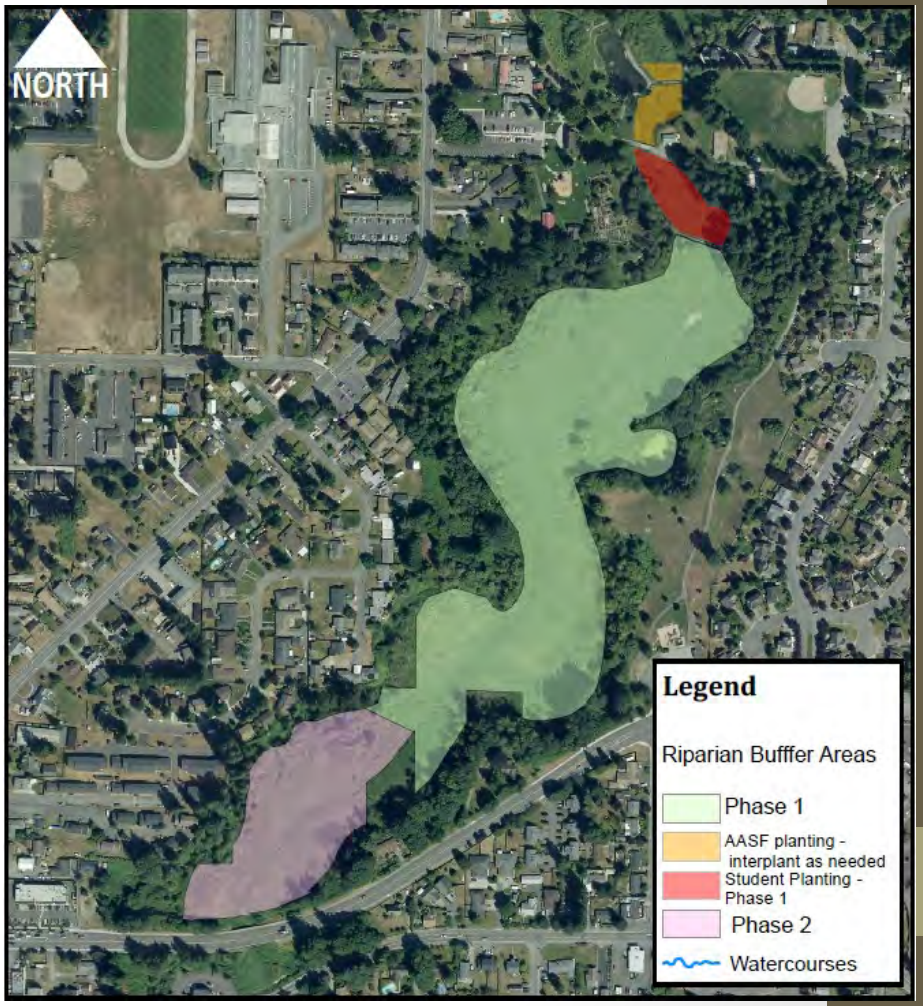




Current DOE Grants

City of Marysville - Jennings Park
Allen Creek



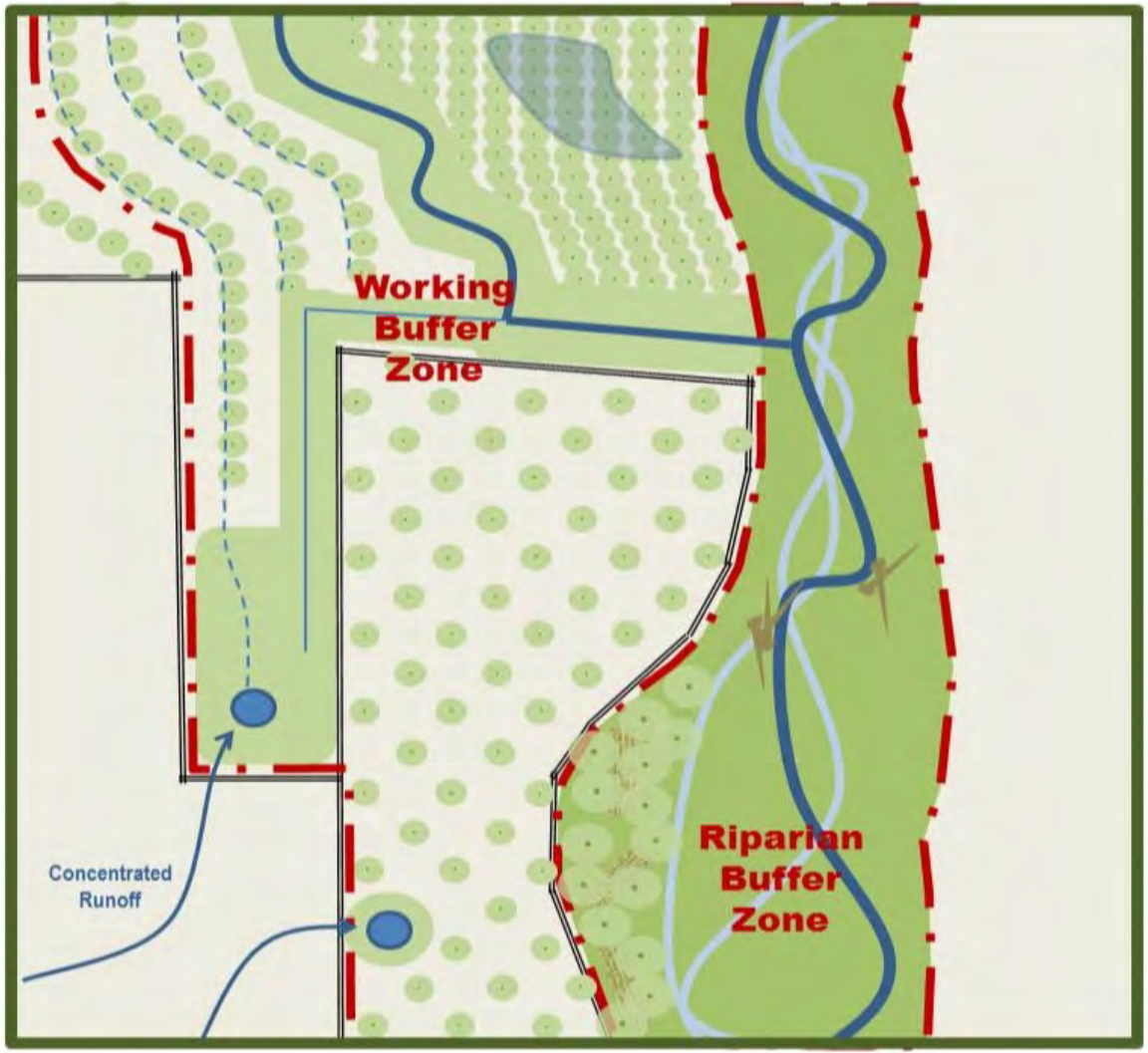


Ideas…

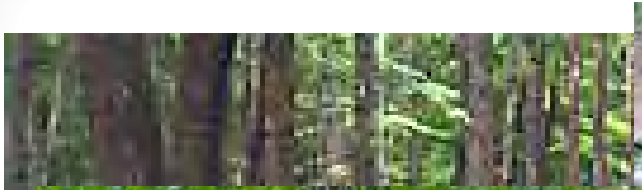
- Working buffers
- Make buffer widths goal not minimum
- Allow for exemptions based on science

What is a working buffer?

- Applying **agroforestry** principles to a riparian buffer
- Agroforestry = trees + crops and/or livestock


Working
Buffer
Zone
Concentrated
Runoff
Riparian
Buffer
Zone

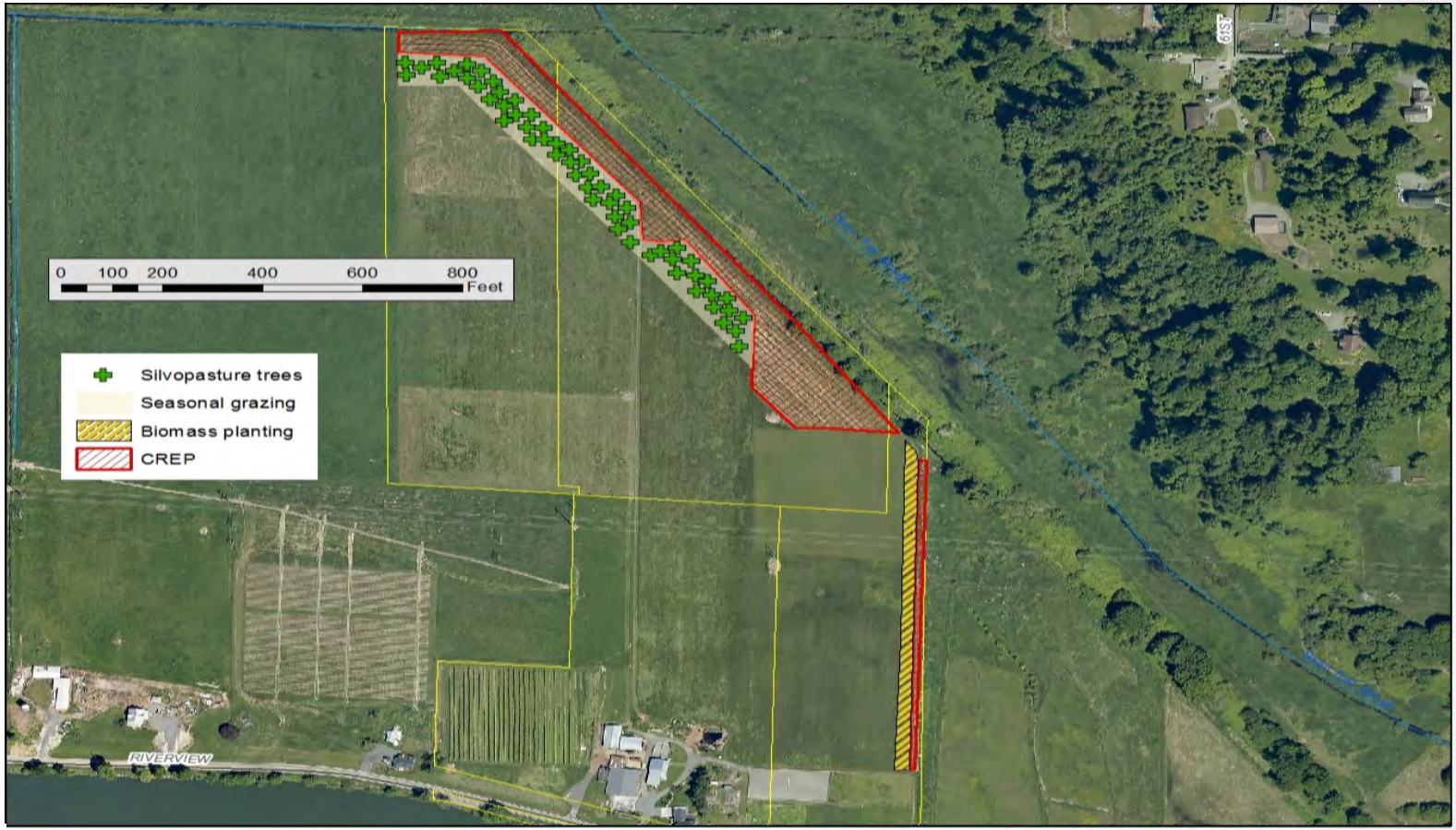
Forest Farming



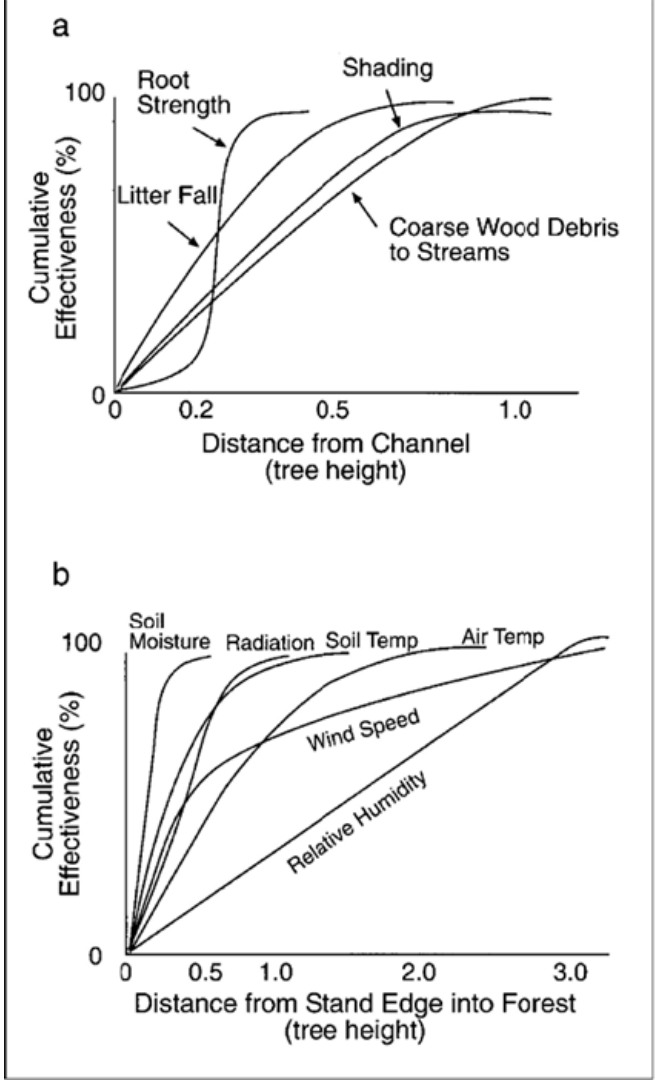
Alley Cropping

Silvopasture

Biomass


0 100 200 400 600 800
Feet
Silvopasture trees
Seasonal grazing
Biomass planting
CREP
RIVERVIEW

Thank you



Snohomish County BAS, 2006 - Modified from FEMAT (1993) and Naiman et al (2000).

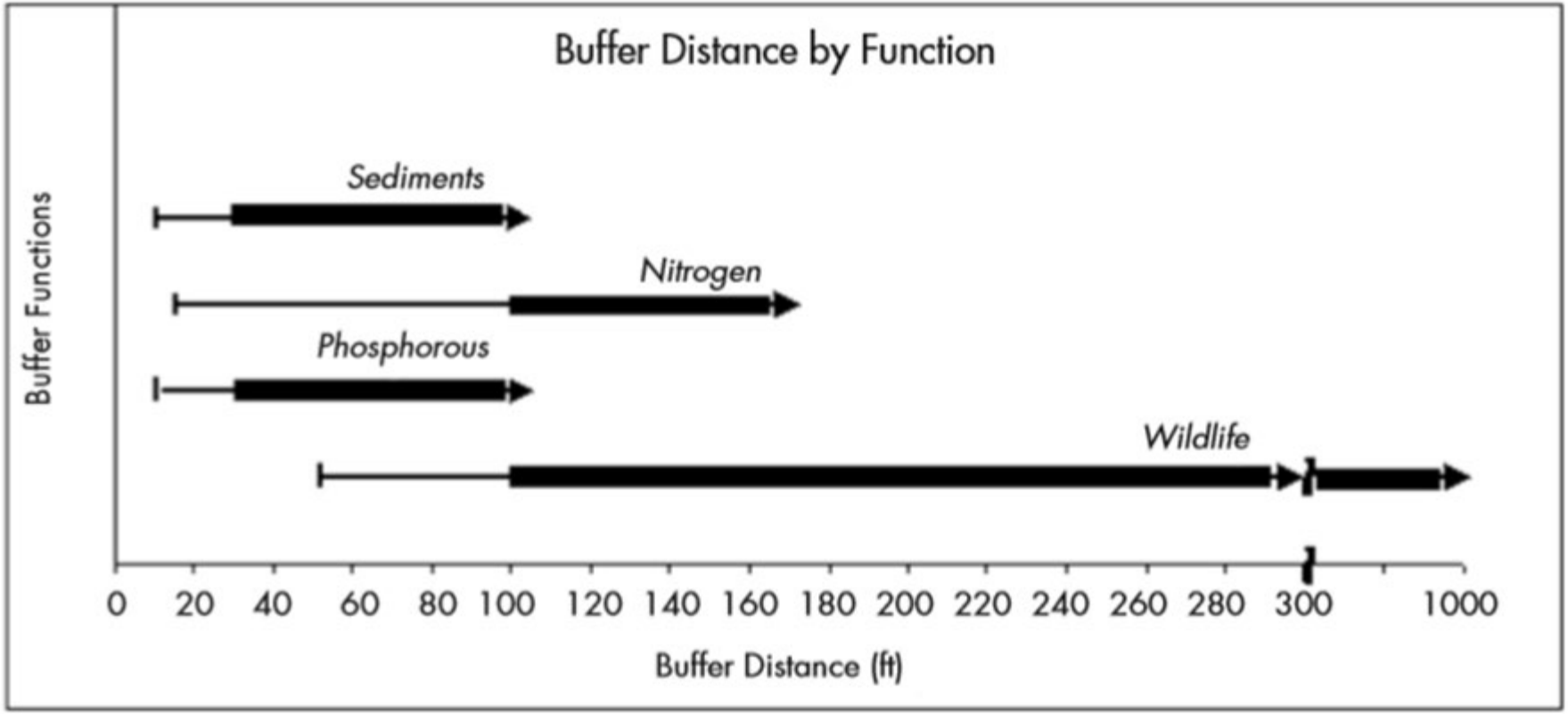
Table 3.2. Riparian Buffer Functions and Appropriate Widths Identified by May (2000).

Function	Range of Effective Buffer Widths	Minimum Recommended	Notes On Function
Sediment Removal/Erosion Control	26 - 600 ft (8 – 183 m)	98 ft (30 m)	For 80% sediment removal
Pollutant Removal	13 - 860 ft (4 - 262 m)	98 ft (30 m)	For 80% nutrient removal
Large Woody Debris Recruitment	33-328 ft (10 –100 m)	262 ft (80 m)	1 SPTH based on long-term natural levels
Water Temperature Protection	36 - 141 ft (11 – 43 m)	98 ft (30 m)	Based on adequate shade
Wildlife Habitat	33 - 656 ft (10 – 200 m)	328 ft (100 m)	Coverage not inclusive
Microclimate Protection	148 - 656 ft (45 – 200 m)	328 ft (100 m)	Optimum long-term support

Snohomish County BAS, 2006 – May, 2000.

Riparian habitat function	Range of reported widths in meters (feet)	Average of reported widths in meters (feet)
Temperature control	11-46 (35-151)	27 (90)
Large woody debris	30-61 (100-200)	45 (147)
Sediment filtration	8-91 (26-300)	42 (138)
Pollution filtration	4-183 (13-600)	24 (78)
Erosion control	30-38 (100-125)	34 (112)
Microclimate maintenance	61-160 (200-525)	126 (412)
Wildlife habitat	8-300 (25-984)	88 (287)

Knutson and Naef, 1997.



Environmental Law Institute (ELI), 2008. Planner's guide to wetland buffers for local governments