Puget Sound Macroinvertebrate River Sampling

B-IBI Stakeholder's Workshop

February 27, 2014

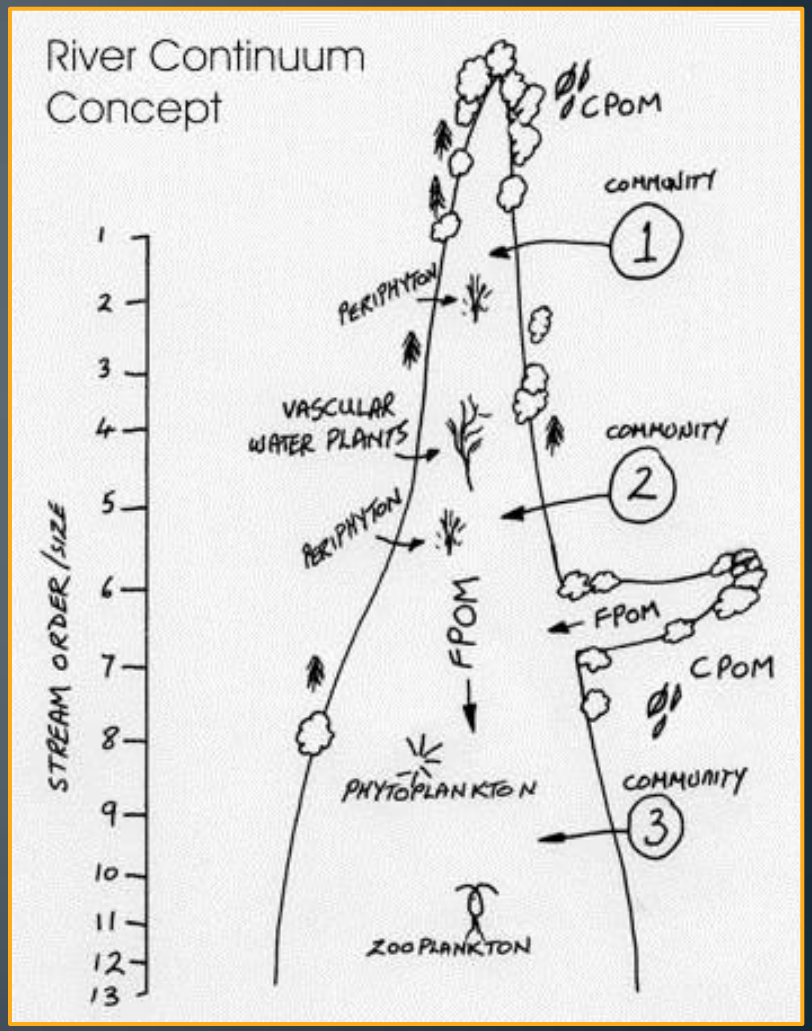
Jo Wilhelm, King County

King County

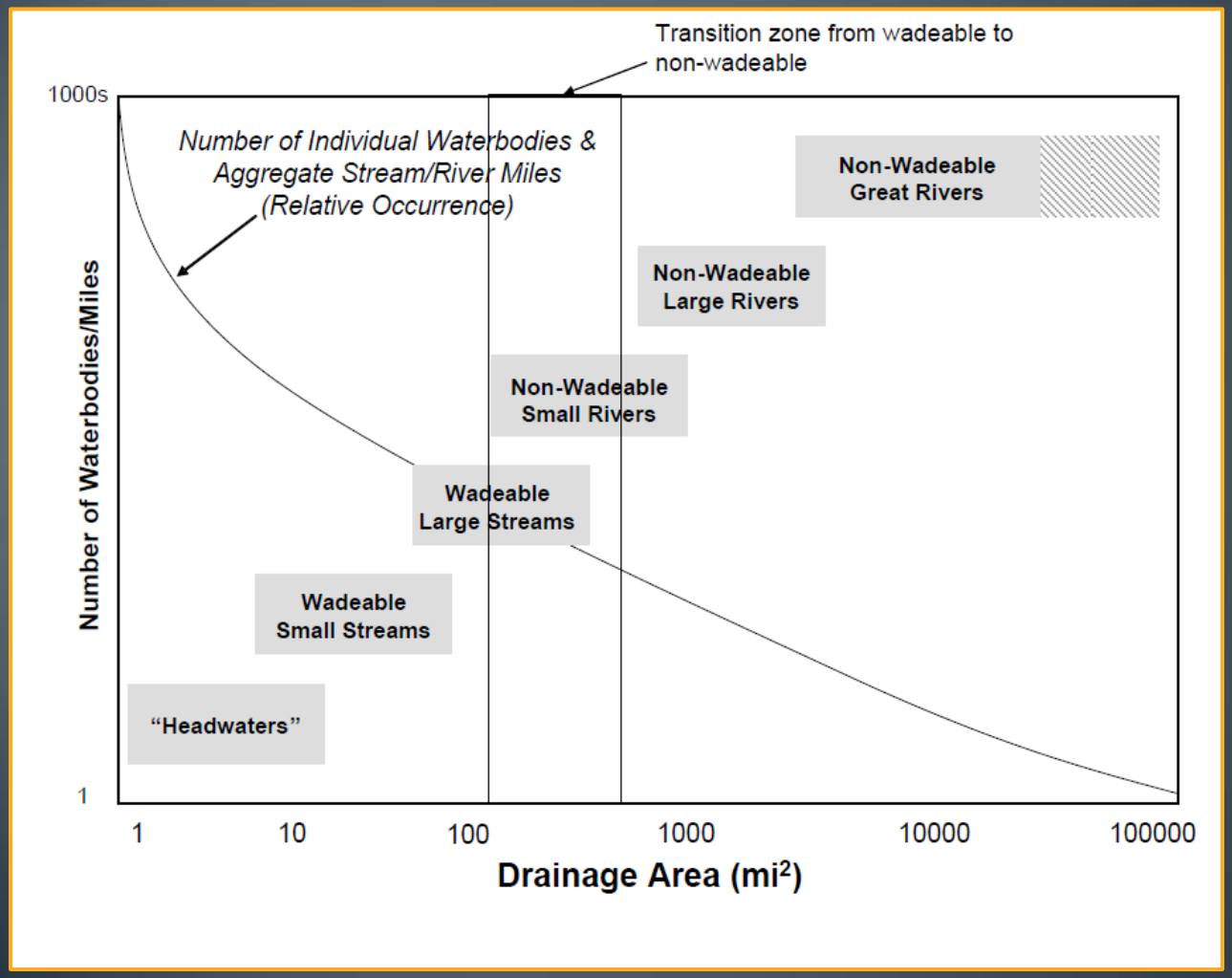
Funded by a US EPA Scientific Studies and Technical Investigation Assistance Program Grant

Puget Sound River Sampling

- 2013 pilot project
- Collection methods
- B-IBI applicability



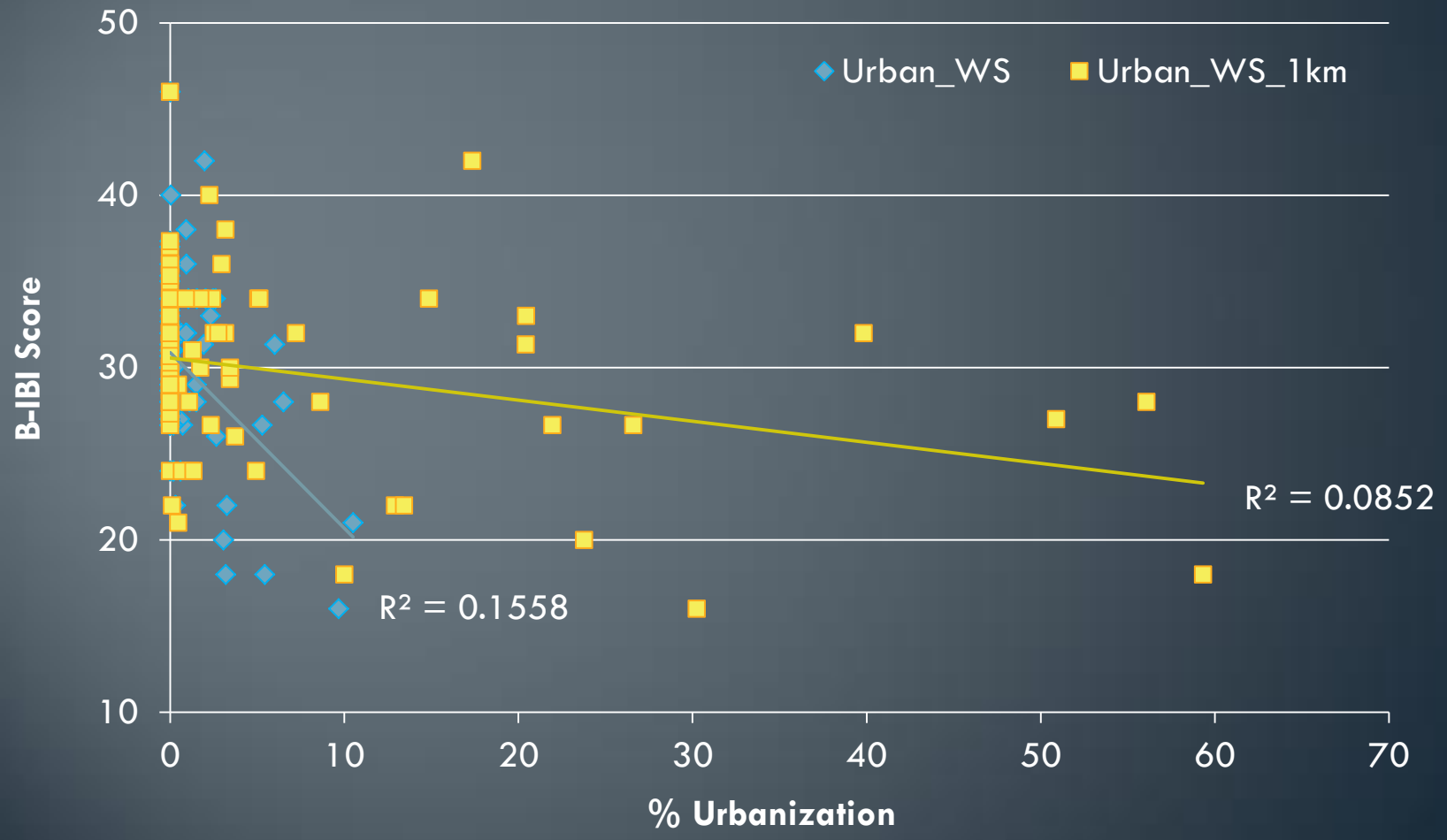
Wadeable vs. Non-wadeable
Stream vs. River



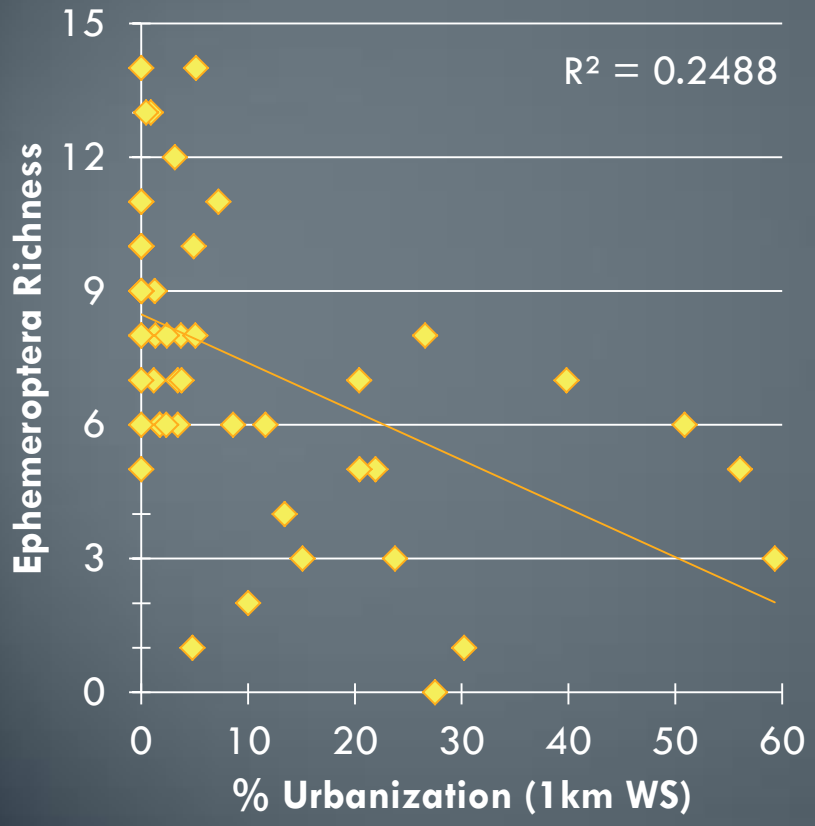
Skagit
Snohomish
Puyallup
Skykomish
Nooksack
Nisqually
Sauk
Stillaguamish
Snoqualmie
White
Duwamish/Green
Suiattle
Elwha
Skokomish
Sammamish
Dungeness
Cedar
Deschutes
Dosewallips
Samish

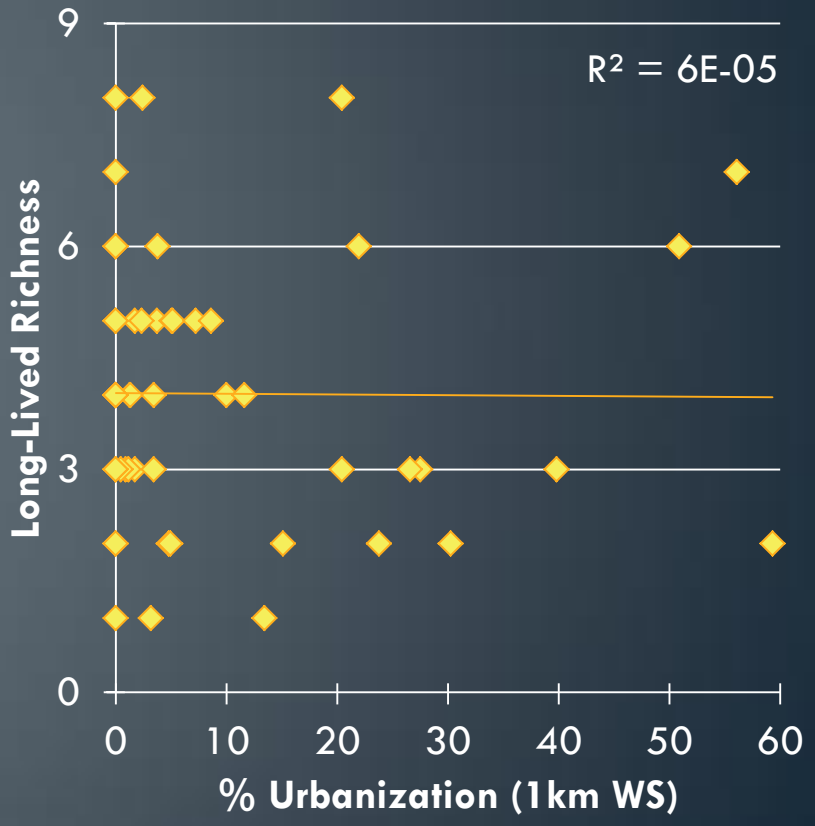
Delineation not discrete, a gradual transition *Flotemersch et al. 2006*

B-IBI Applicability?

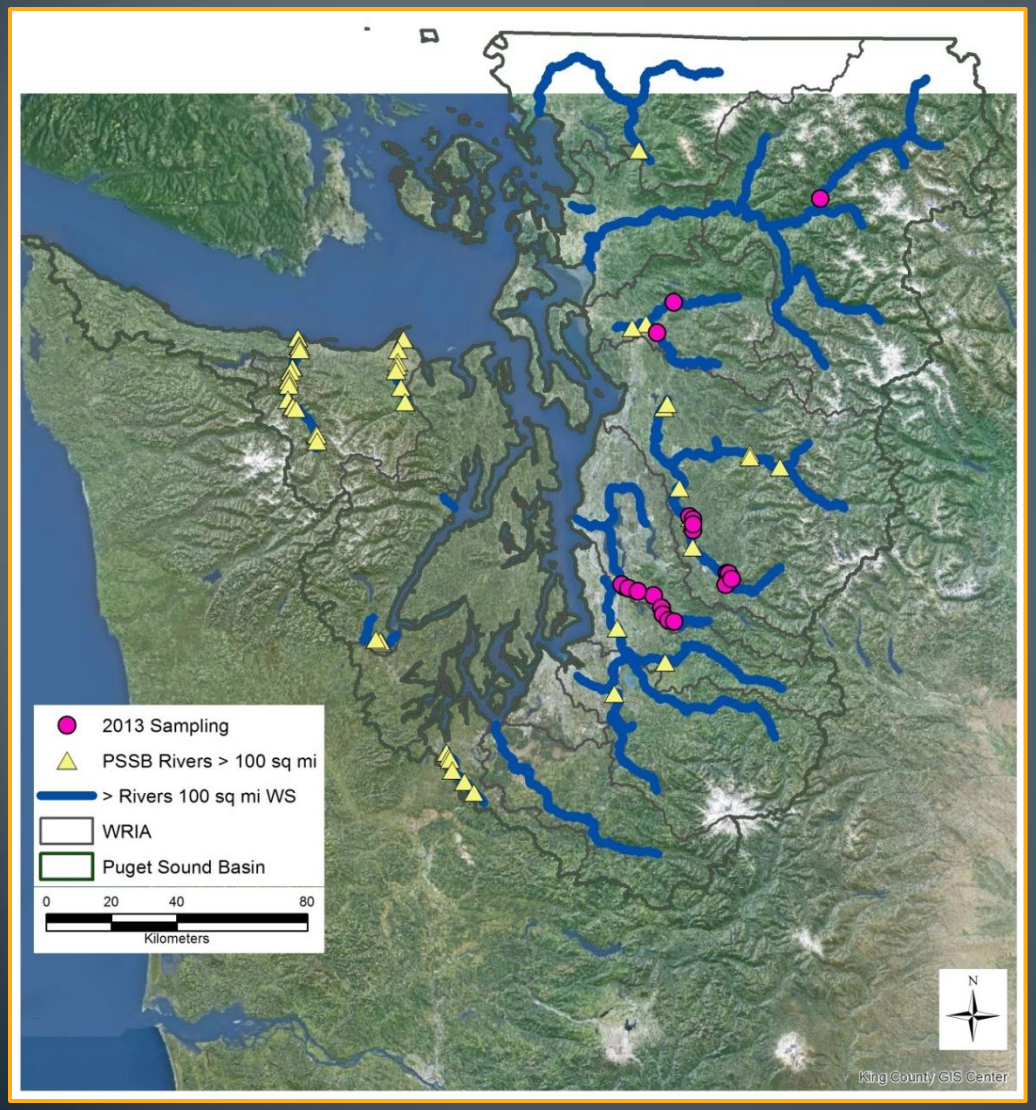


B-IBI Metric Applicability?





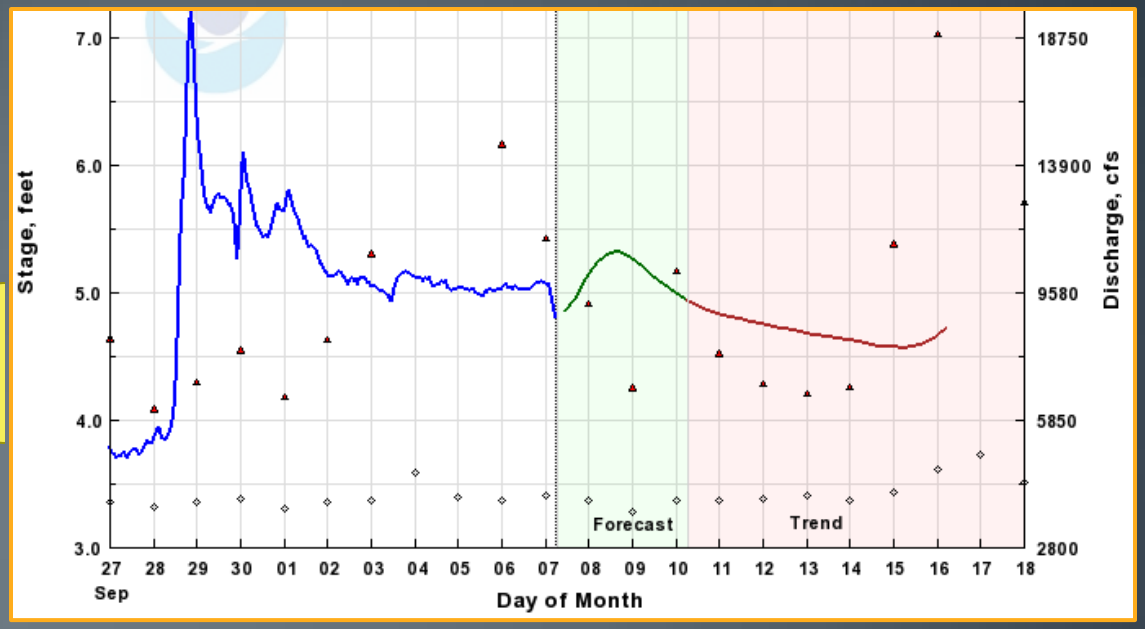
Puget Sound River Sampling

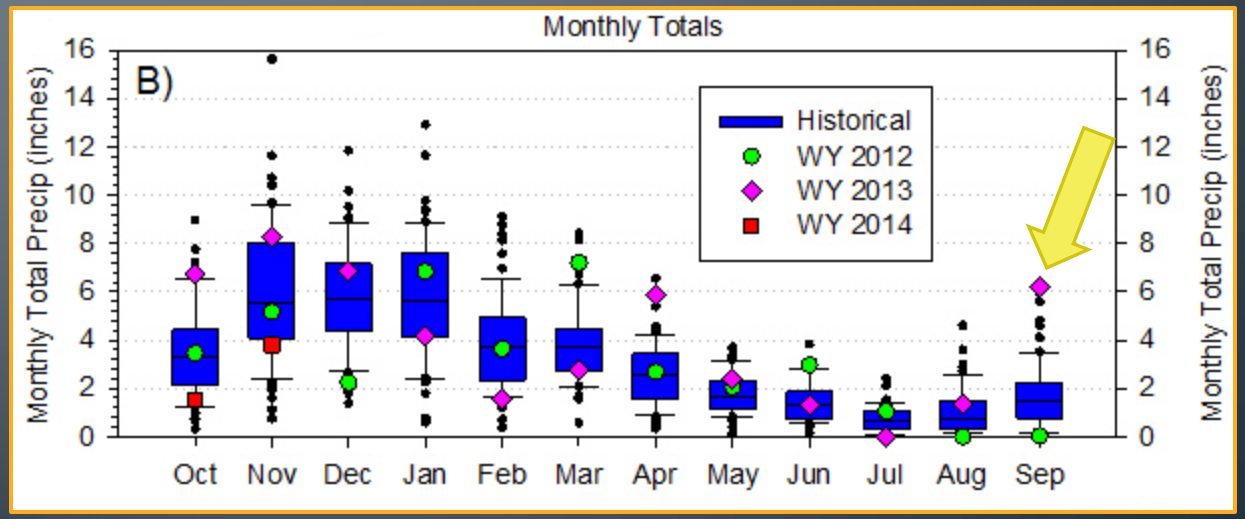


- Sept – Oct 2013
  - 20 sites
  - 4 rivers
- Existing PSSB data
  - WS > 100 mi^2
  - 52 sites

Challenges: Wet Sampling Season

~1.5 ft.





Preliminary Results

Site Code, Location	Quantities												
	Taxa Richness	Ephemeroptera Richness	Ephemeroptera Richness	Trichoptera Richness	EPT Richness	Clinger Richness	Clinger Richness	Intolerant Richness	Percent Dominant	Predator Percent	Tolerant Percent	Tolerant Percent	Overall Score
NF_STILL...	8	2	1.4	0	3	3	0.0	1	61.5%	7.7%	0.0%	10.0	18.7
SNOQ_20...	21	4	4.3	1	7	10	1.0	2	69.4%	9.2%	0.0%	10.0	28.7
SF_STILL...	20	3	2.9	3	10	8	0.6	3	58.0%	3.8%	0.0%	10.0	31.9
SNOQ_22...	39	7	8.6	6	18	22	8.8	6	63.8%	4.6%	0.4%	9.9	59.4
SKAG_DI...	50	6	7.1	5	17	21	8.2	6	67.0%	4.0%	1.8%	9.6	59.9
MF_SNO...	35	8	10.0	6	20	19	7.1	6	55.6%	8.2%	0.2%	10.0	60.7
CED_DSL...	46	8	10.0	5	17	26	10.0	6	57.0%	5.0%	0.2%	10.0	66.4
CED_149, ...	52	8	10.0	4	18	24	10.0	4	46.6%	3.0%	2.6%	9.4	68.4
CED_RM...	59	8	10.0	6	18	27	10.0	2	33.4%	4.8%	2.4%	9.4	68.6
SNOQ_21...	40	6	7.1	9	23	27	10.0	6	66.0%	4.4%	1.0%	9.8	70.5
TOLT_Mo...	51	7	8.6	8	20	24	10.0	6	50.8%	8.0%	0.4%	9.9	71.2
MF_SNO...	39	5	5.7	7	17	21	8.2	5	37.1%	22.9%	1.6%	9.6	71.7
CED_RIV...	57	8	10.0	6	19	29	10.0	4	39.6%	3.2%	1.2%	9.7	73.2
CED_RM...	51	5	5.7	10	22	30	10.0	5	57.2%	4.0%	1.0%	9.8	73.4
CED_LO...	55	8	10.0	7	20	27	10.0	2	33.4%	5.8%	1.8%	9.6	74.0
CED_US...	50	6	7.1	7	20	27	10.0	6	57.6%	5.6%	0.2%	10.0	74.3
CED_BEL...	48	8	10.0	6	21	27	10.0	5	54.2%	6.2%	0.4%	9.9	75.0
NF_SNO...	41	7	8.6	7	21	21	8.2	7	49.4%	20.8%	0.4%	9.9	76.7
SF_SNO...	44	10	10.0	8	26	27	10.0	11	52.2%	11.6%	0.6%	9.9	79.8
CED_RO...	63	9	10.0	9	24	28	10.0	7	36.6%	6.4%	2.4%	9.4	84.7

- Many "Good" B-IBI
- "Poor/V. Poor" if low counts
- Some metrics have small ranges:
  - % Tol (0-2.6%)
  - Clinger R (19-30)
  - Ephem R (5-10)

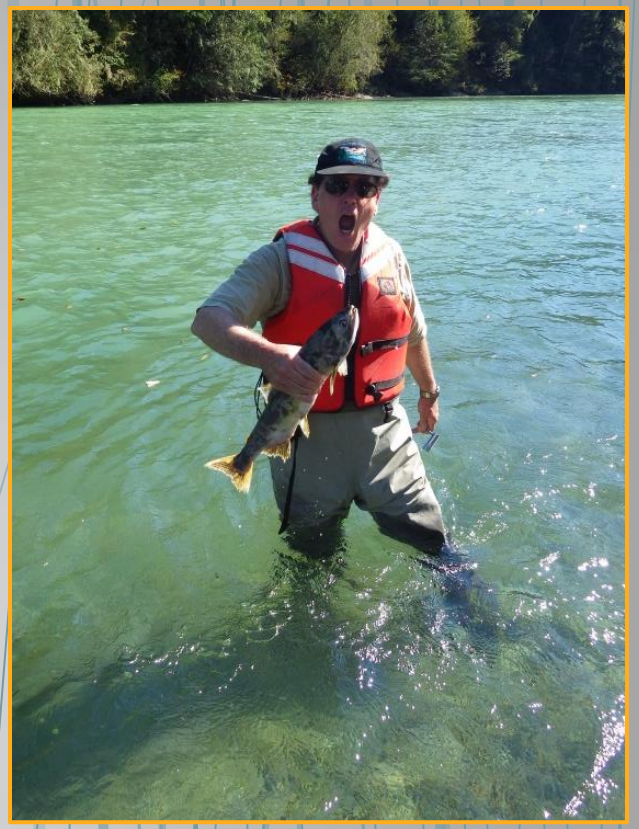
Next Steps

- Locate additional sites & combine with 2013 data
  - USGS
  - NRSA (EPA)
  - Puyallup/White 2012
- Supplementary data
  - Landcover (what scale?)
  - Flow
- Test additional metrics
- Propose recommendations

Ed Connor, Seattle City Light
Leska Fore, Statistical Design
Gretchen Hayslip, EPA
Glenn Merritt, Ecology

King County
Kate Akyuz, Hans Berge, Elene Dorfmeier, Mary Lear, Deb Lester, Ray Timm

Field:
Nicole Casper, Craig Garric, Carly Greyell, Stephanie Hess, Chris Knutson, Heather McPherson, Maria Sandercock



Acknowledgements