USING B-IBI TO IDENTIFY PUGET SOUND WATERSHEDS FOR RESTORATION AND PROTECTION

Chris Gregersen, Jo Wilhelm (Project Manager), Debra Bouchard, Chris Knutson, Kate Macneale

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King County
Department of
Natural Resources and Parks
Water and Land Resources Division

Science Seminar

November 5, 2014

B-IBI: PSP Vital Sign Indicator

PSP Ecosystem Recovery Targets

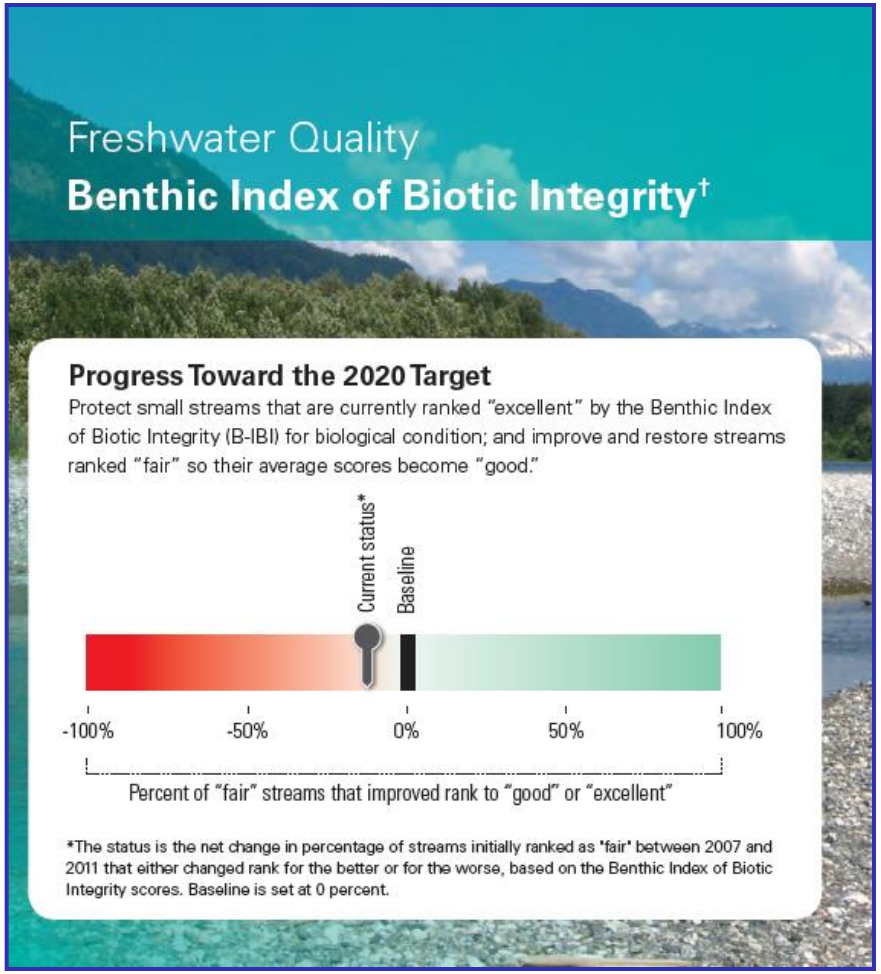
Freshwater Quality B-IBI Targets by 2020:

- PROTECTION - All stream drainage areas retain "excellent"
- RESTORATION - 30 basins improve from "fair" to "good"

PSP Report Card

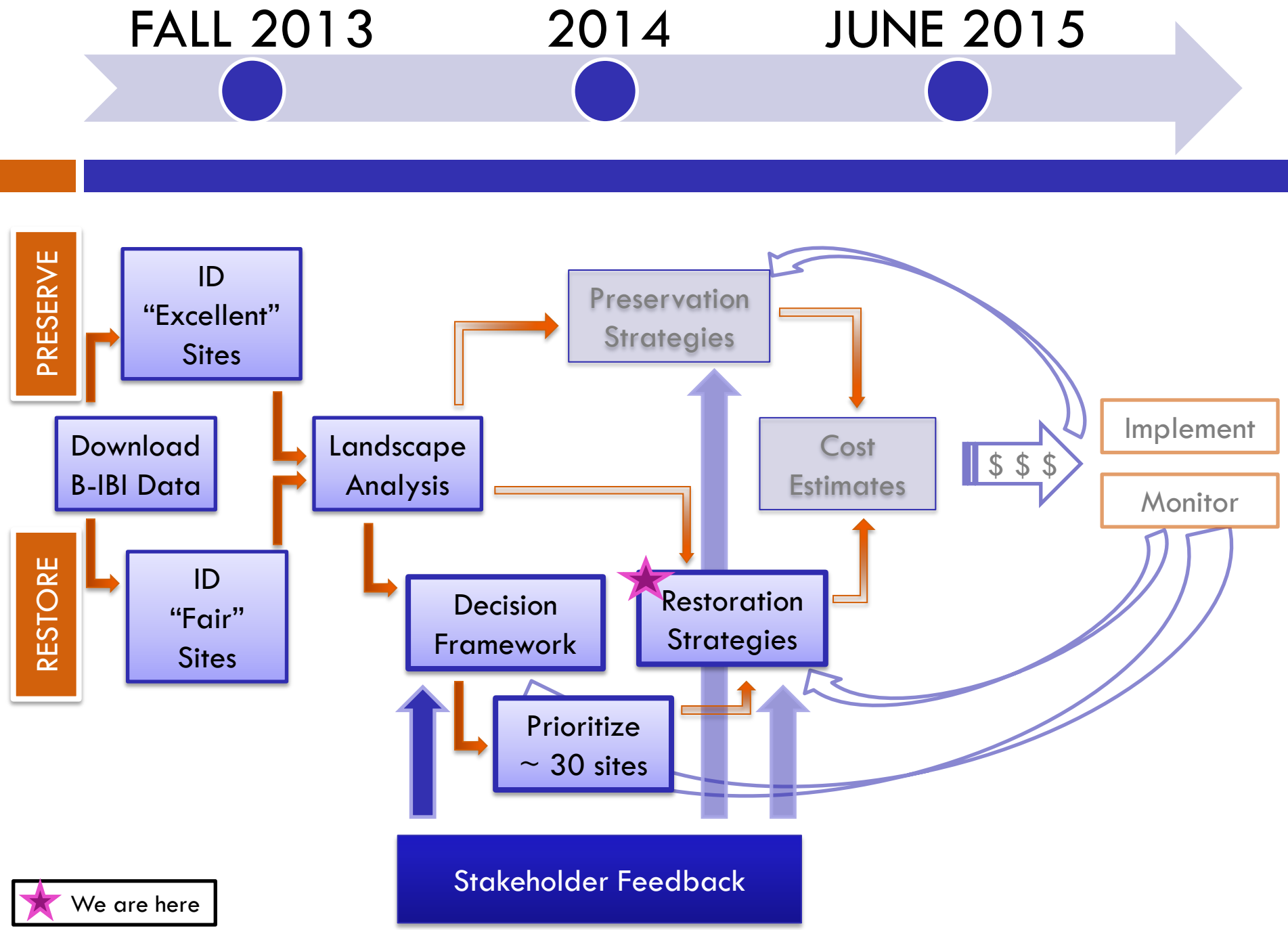
PugetSoundPartnership
LEADING PUGET SOUND RECOVERY

- On the ground progress towards targets: none
- Currently no funding for restoration & protection implementation or effectiveness monitoring
- Funding for King Co. to prioritize basins & develop strategies (this project)

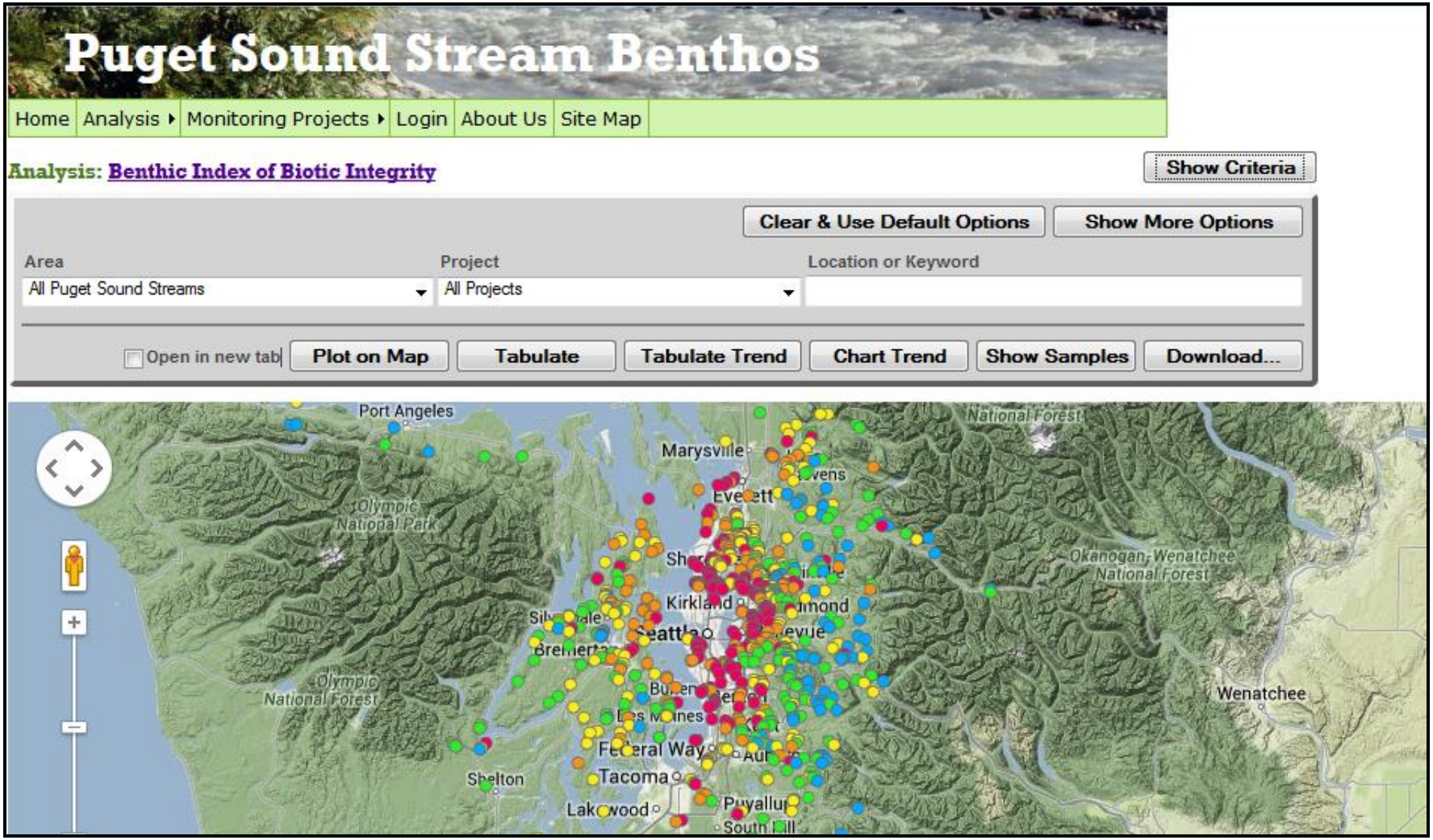


Limits and Opportunities

- EPA Restoration framework vs. opportunistic, single site actions
- Thoughtful, practical approach
  - using only the data we have available
  - identify where we should focus, what other data we would want
- Not fish focused, though restoration activities that benefit fish would likely benefit bugs
- May be able to leverage additional support for restoration if there are fish recovery goals for the stream or watershed


FALL 2013
2014
JUNE 2015
PRESERVE
ID "Excellent" Sites
Download B-IBI Data
RESTORE
ID "Fair" Sites
Landscape Analysis
Preservation Strategies
Cost Estimates
$ $ $
Implement
Monitor
Decision Framework
Restoration Strategies
Prioritize ~ 30 sites
Stakeholder Feedback
We are here

Download B-IBI Data: www.pugetsoundstreambenthos.org

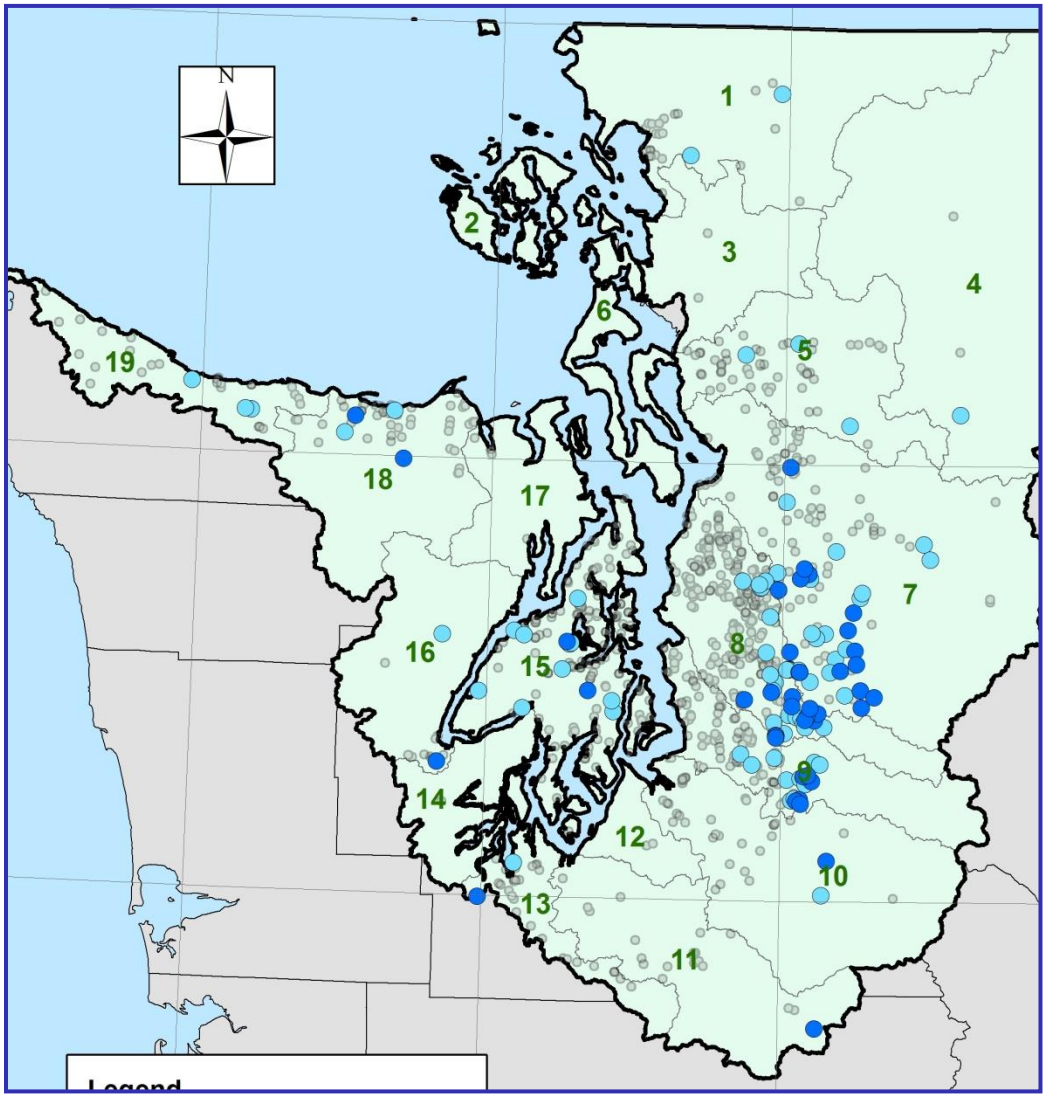


“Excellent” Sites (≥42) = **Protection**

“Excellent” scores

- ≥ 46
- ≥ 42 and <46

- **121** sites scored “excellent” at least once
- **35** sites had a median “excellent” score
- **33** sites averaged “excellent”

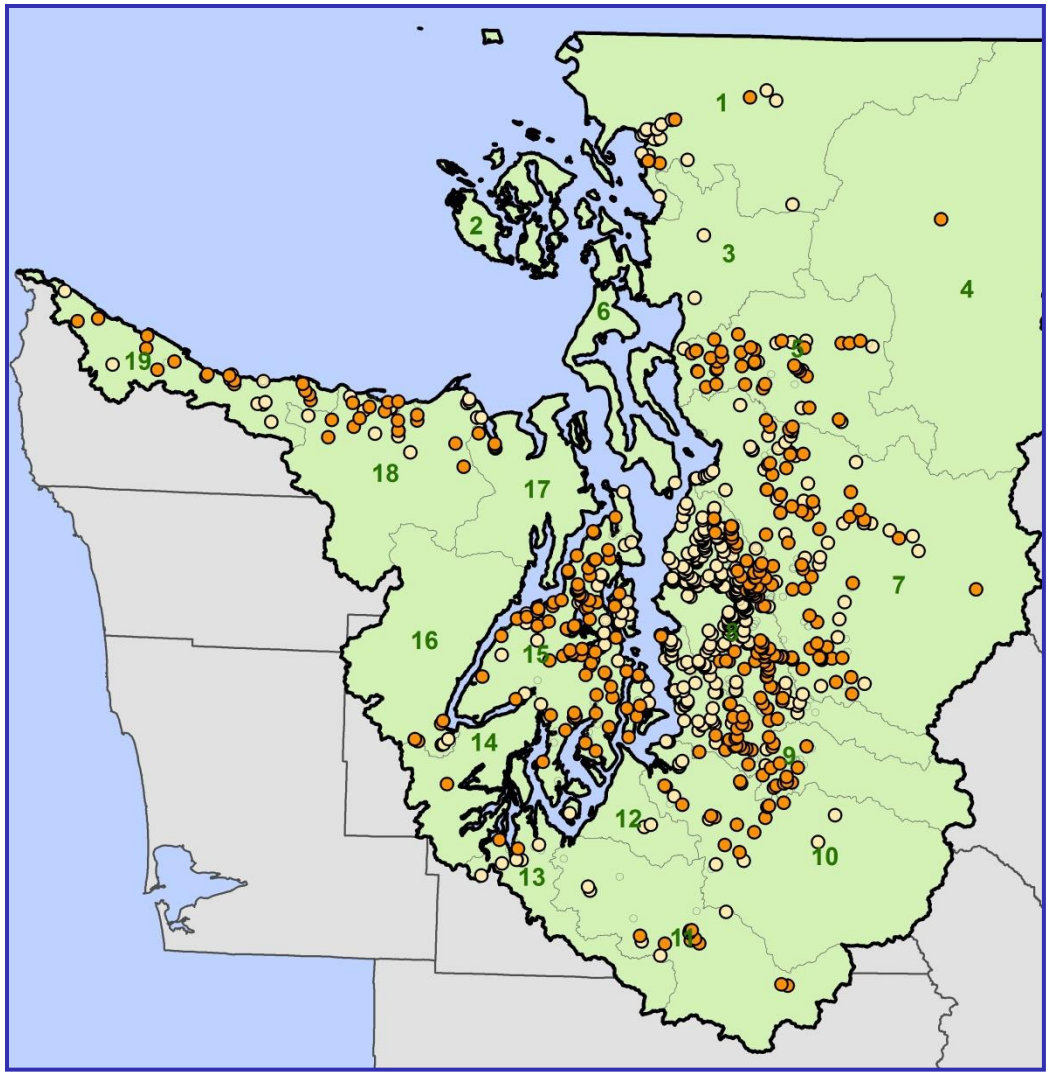


“Fair” Sites (28-36) = **Restoration**

- “Fair” average
- “Fair” at least once

- **648** sites scored “fair” at least once

- **439** **sites with median “fair” scores**

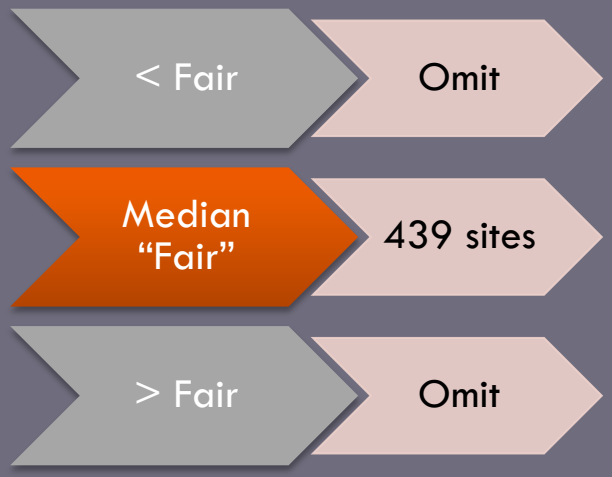


Restoration Decision Framework

Part 1

Filtering

Applied first. Criteria used to reduce number of sites considered.



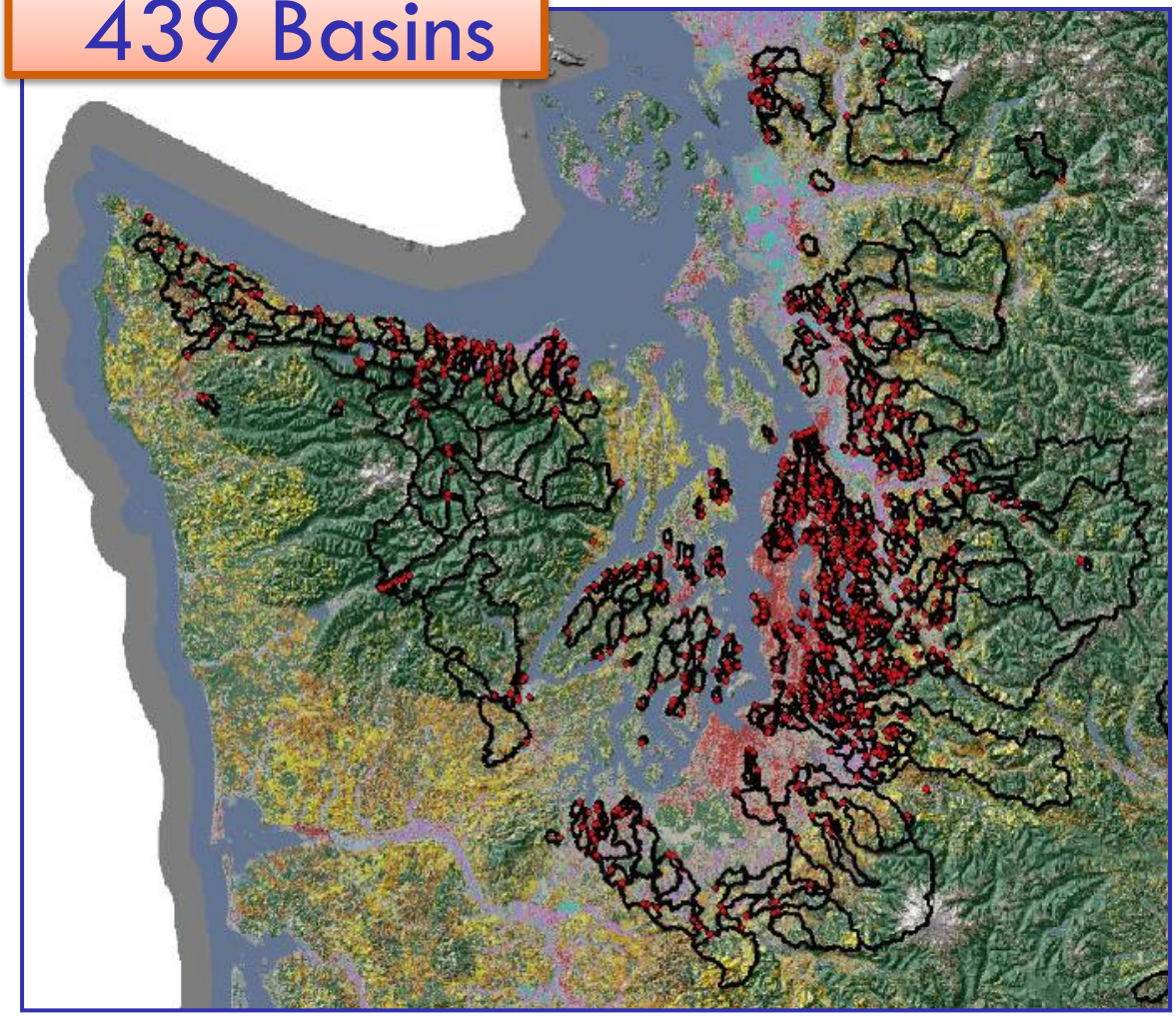
Part 2

Ranking

Applied after filtering. Uses a cumulative ranking to assess the criteria and assign a score to each site so that the sites can be prioritized.

Landscape Analysis

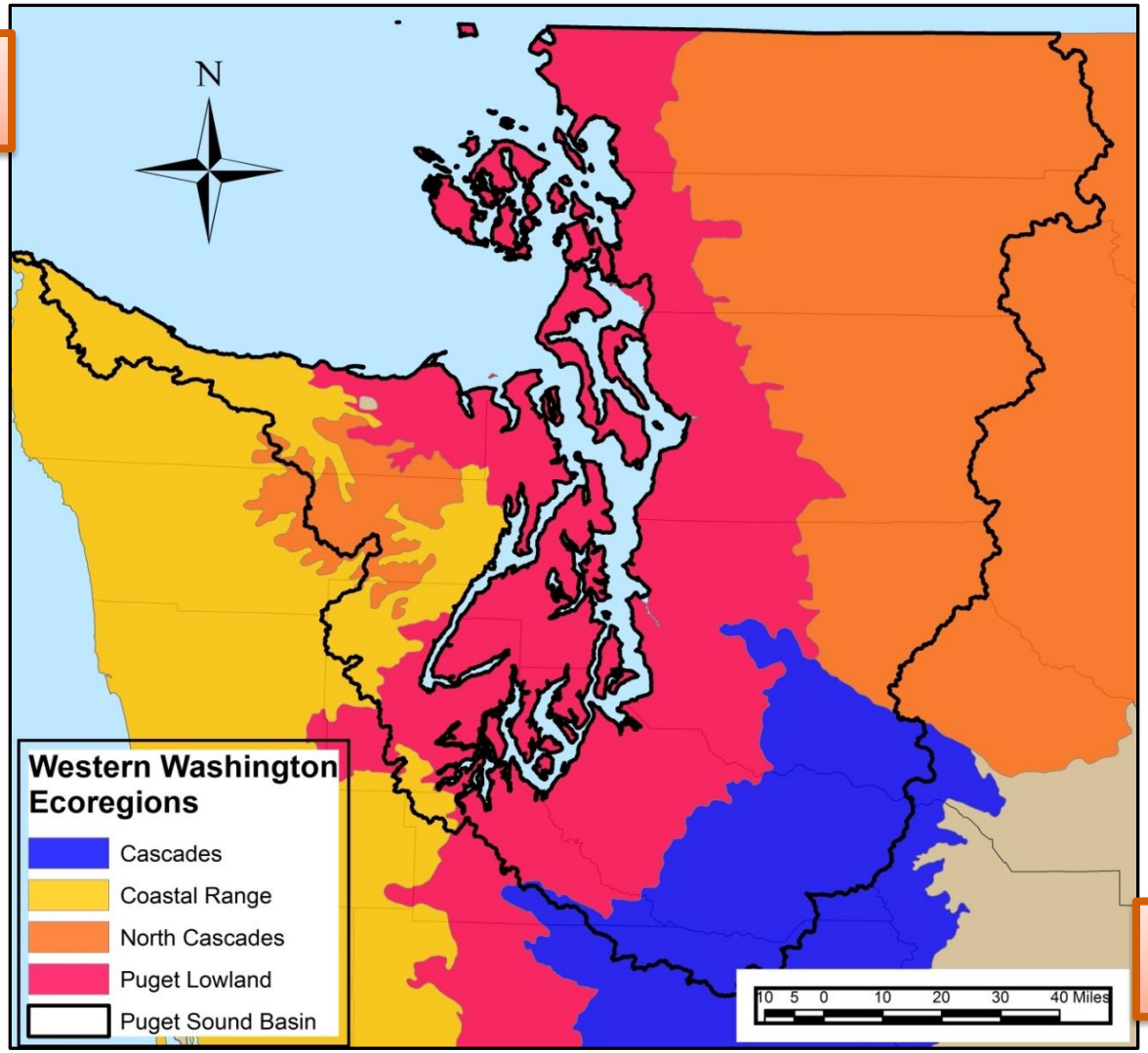
439 Basins



- Basin delineation
- Scale
  - Watershed
  - Local (1km)
  - Buffer (90-m)
- Metrics
  - Landcover
  - Geology
  - Site characteristics

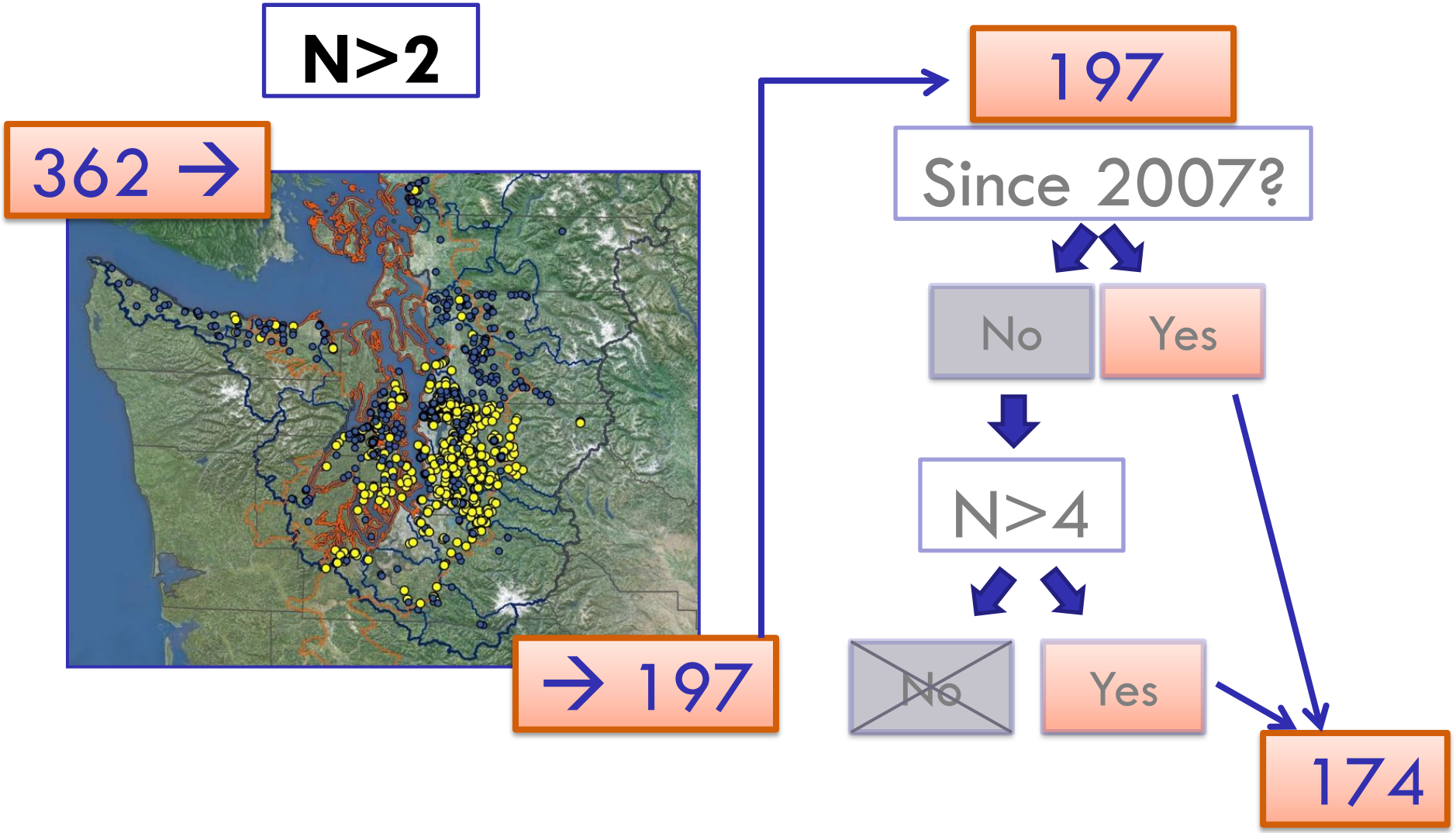
Filtering: **Ecoregion**

439 →



→ 362

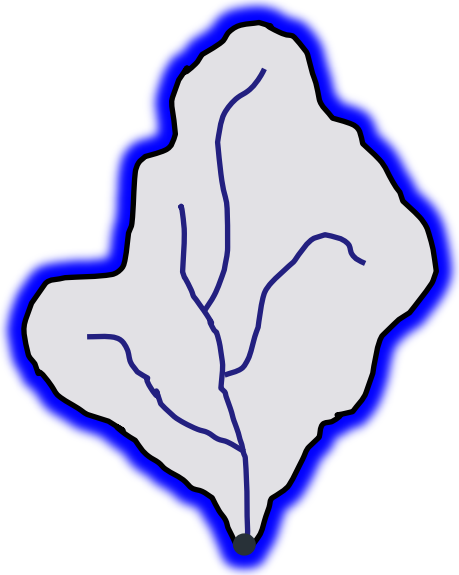
Filtering: **Sampling History**



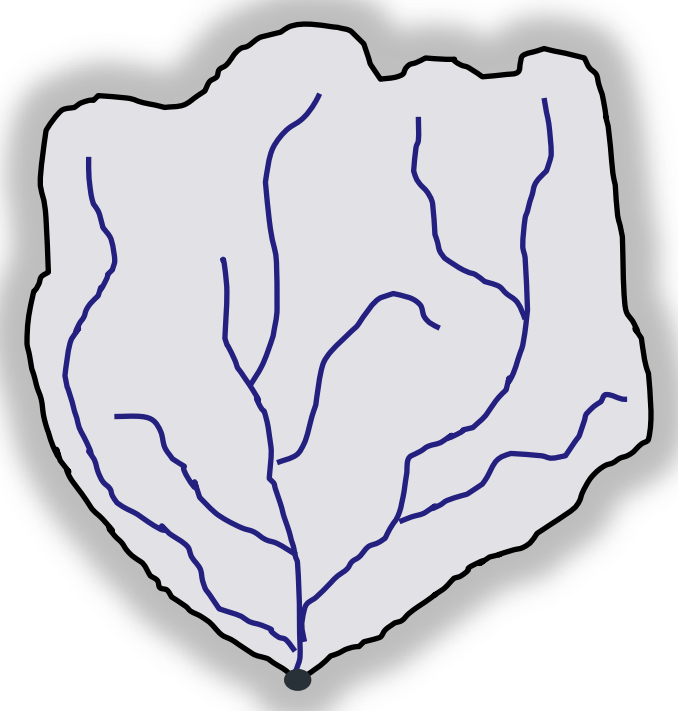
Filtering: **Watershed Area**

174 →

<200 Acres:
Too Small



200-3000 Acres:
Just Right



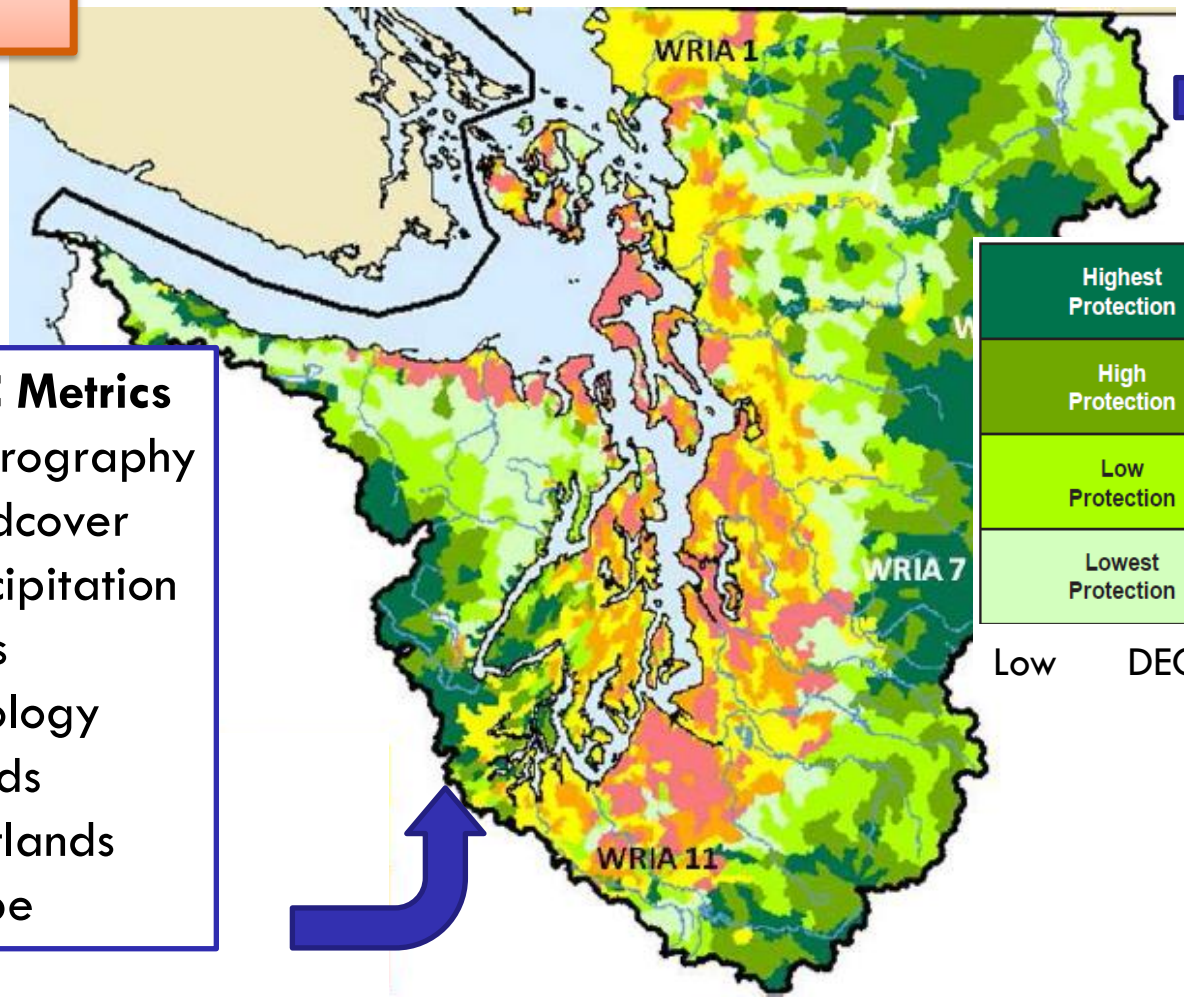
>3000 Acres:
Too Big

→ 81

Filtering: **PSWC**

81

PS Watershed Characterization



PSWC Metrics

- Hydrography
- Landcover
- Precipitation
- Soils
- Geology
- Roads
- Wetlands
- Slope

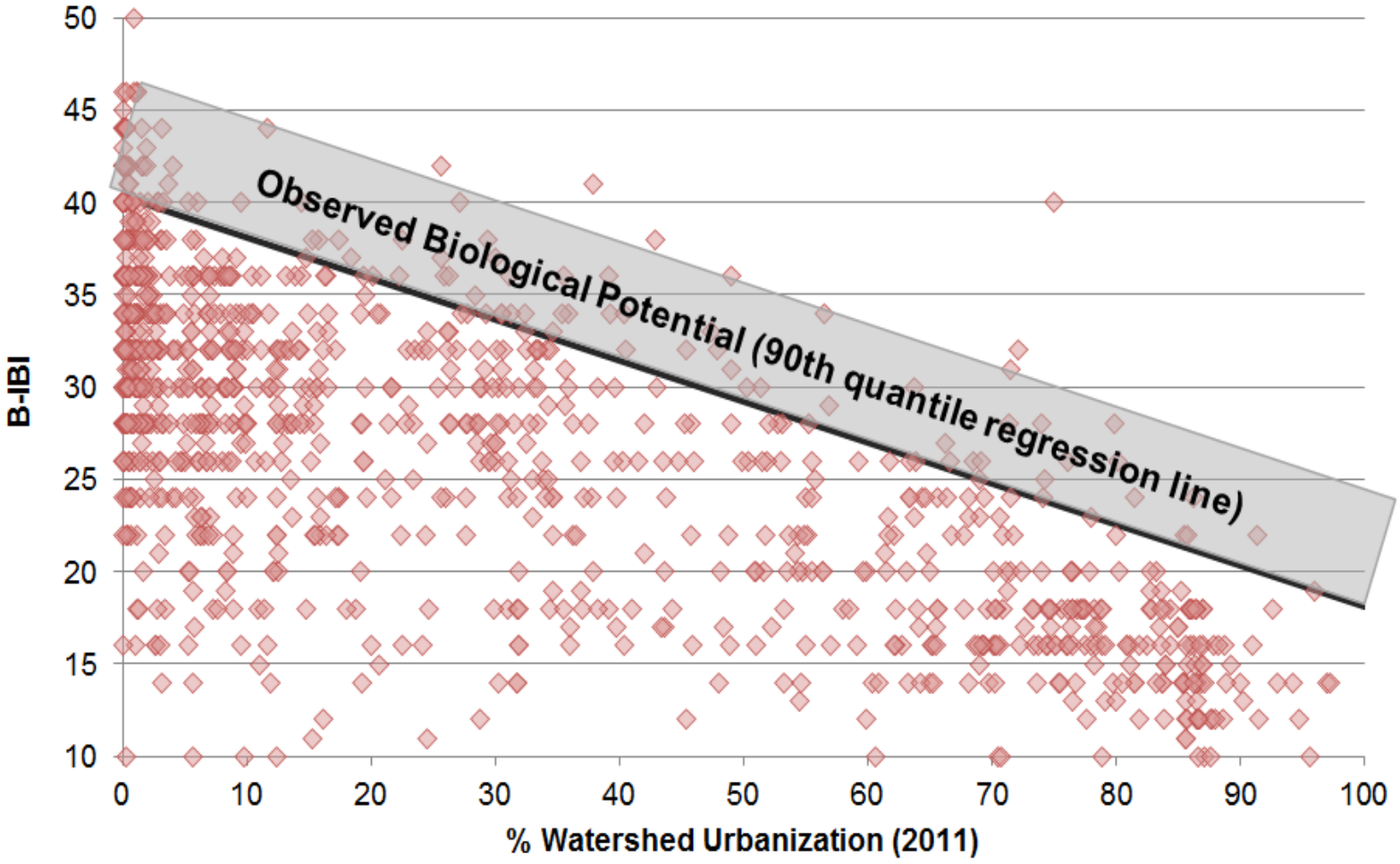
Highest Protection	Highest Restoration
High Protection	High Restoration
Low Protection	Low Restoration
Lowest Protection	Lowest Restoration

Low DEGRADATION High

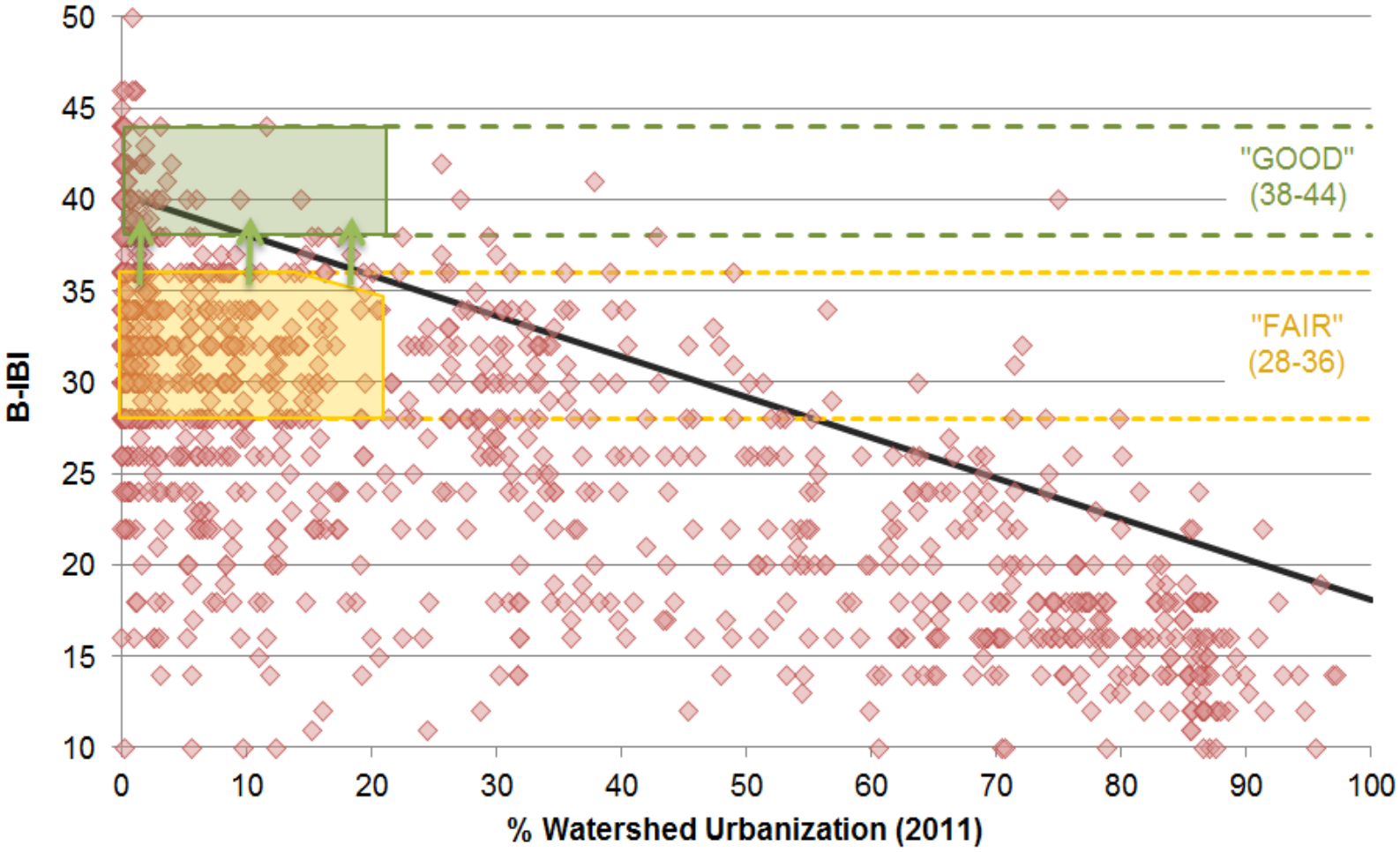
Low IMPORTANCE High

→ 59

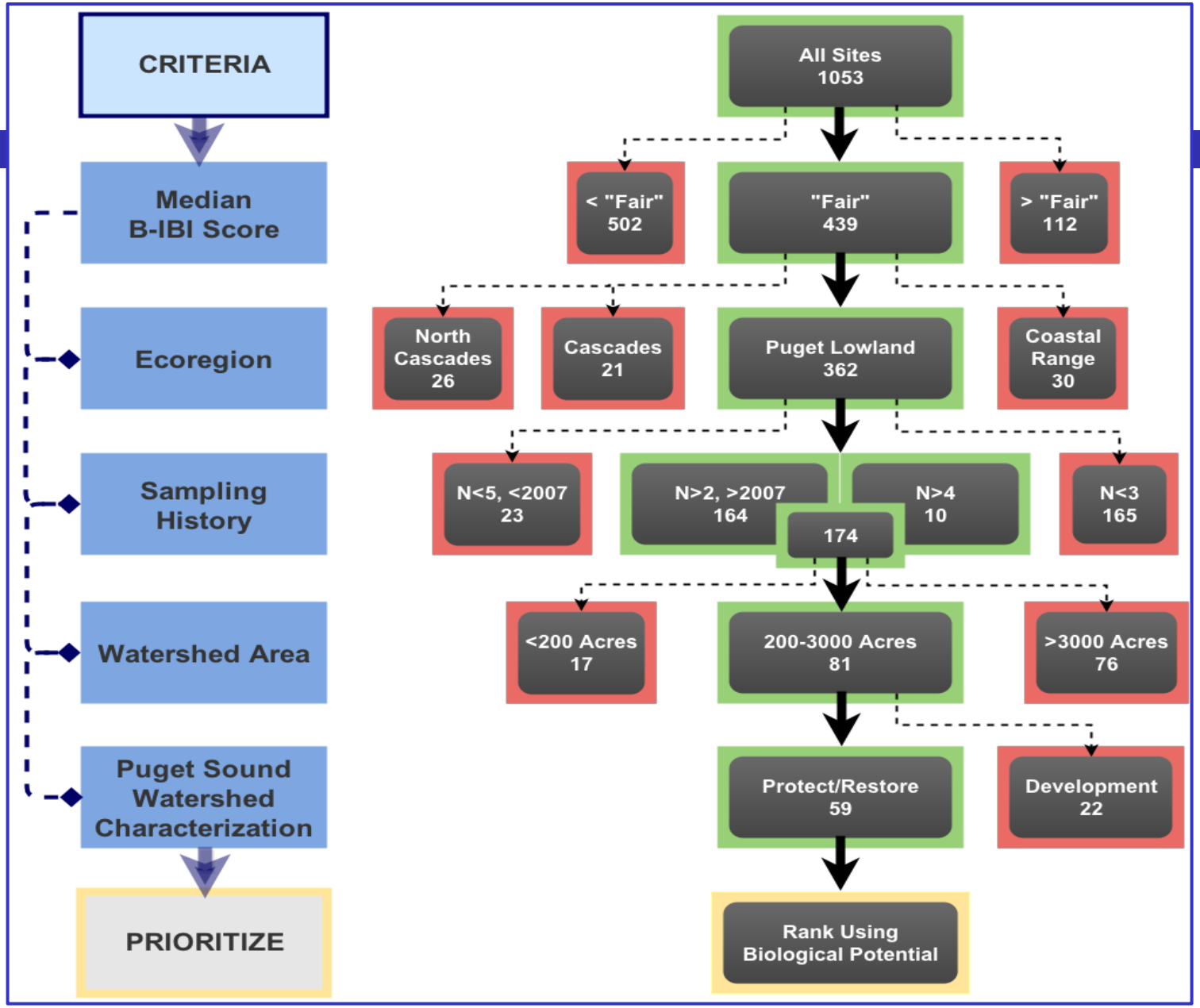
Ranking: **Biotic Potential**



Ranking: **Biotic Potential**

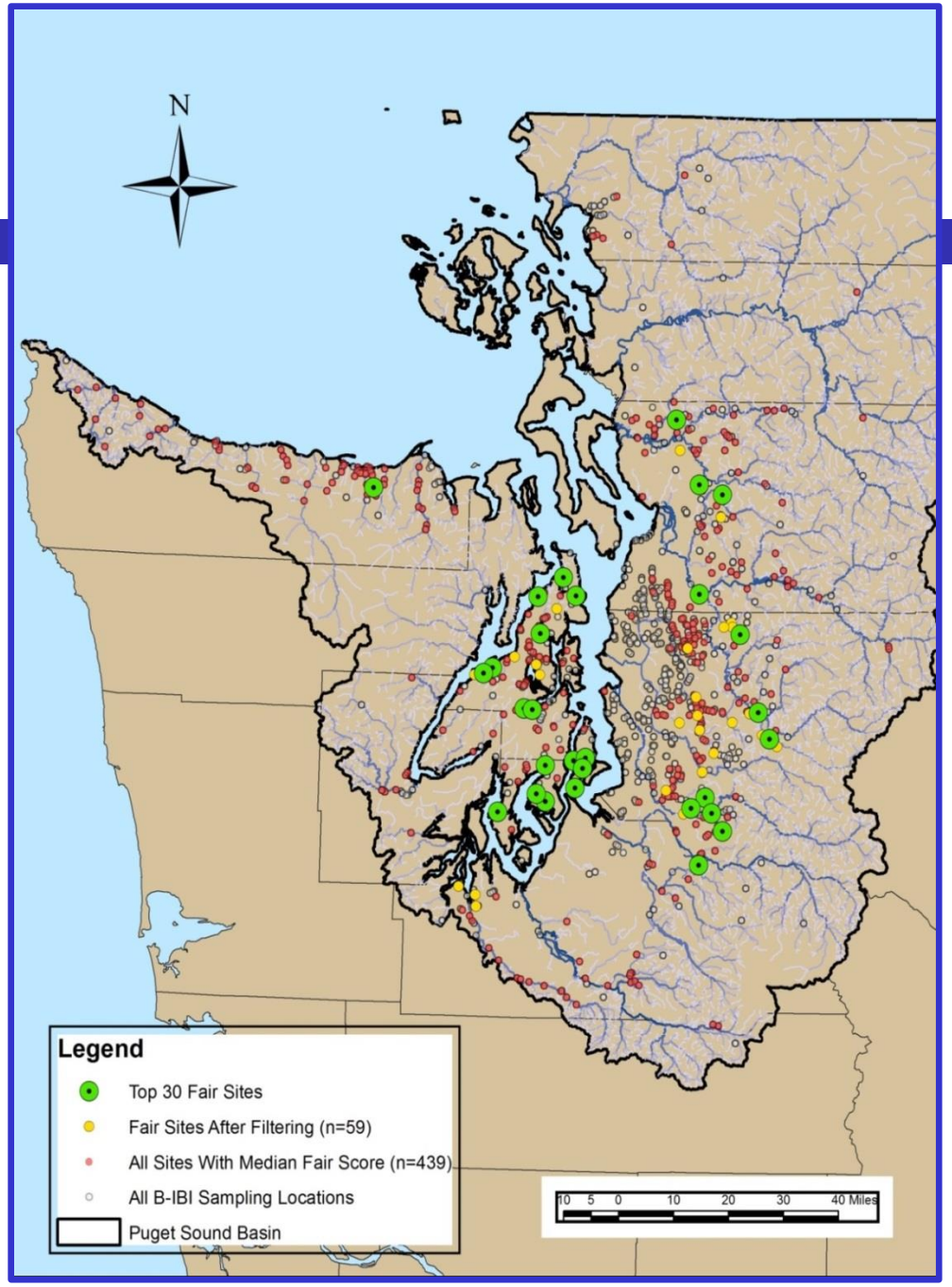


Recap:


CRITERIA
Median B-IBI Score
Ecoregion
Sampling History
Watershed Area
Puget Sound Watershed Characterization
PRIORITIZE
All Sites 1053
< "Fair" 502
"Fair" 439
> "Fair" 112
North Cascades 26
Cascades 21
Puget Lowland 362
Coastal Range 30
N<5, <2007 23
N>2, >2007 164
N>4 10
174
N<3 165
<200 Acres 17
200-3000 Acres 81
>3000 Acres 76
Protect/Restore 59
Development 22
Rank Using Biological Potential

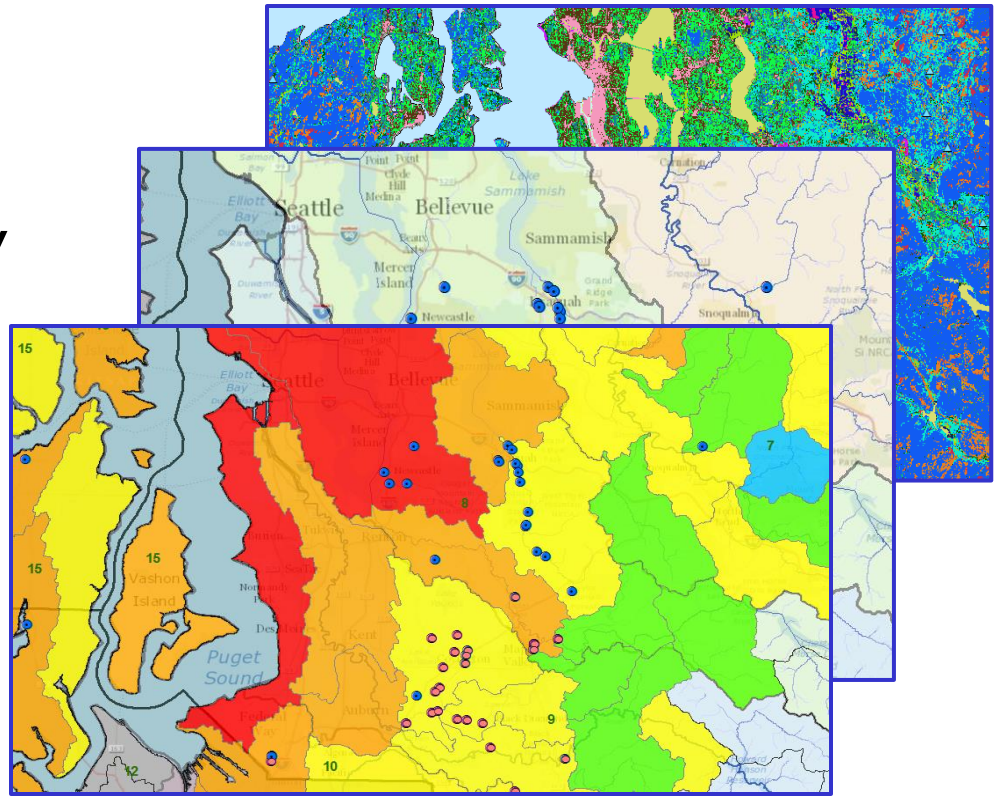
Top 30 sites

WRIA #	WRIA Name	Sites in Top 30
5	Stillaguamish	1
7	Snohomish	6
9	Duwamish-Green	9
10	Puyallup-White	1
15	Kitsap	12
18	Elwha-Dungeness	1



Other Criteria Considered

- Threatened/endangered fish presence
- Land ownership
- Urban growth area
- Habitat connectivity
- Hydrology
- Natural buffer



Next Steps: **Restoration**

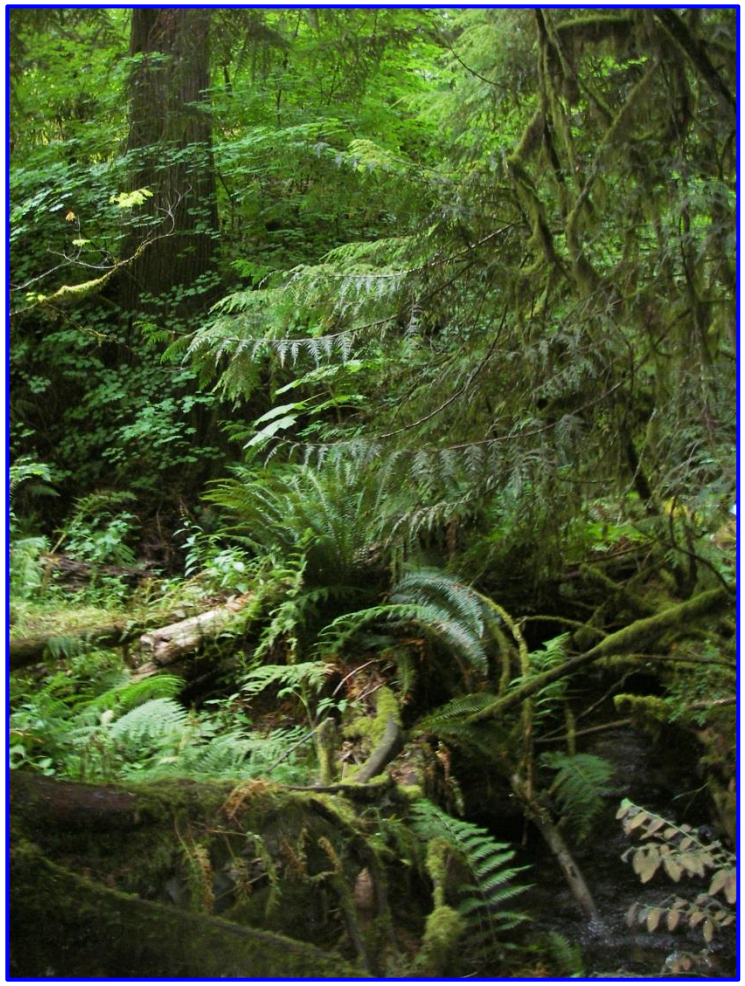
What is Feasible? Effective?

- **Your Feedback!**
  - Habitat improvements
  - Riparian plantings
  - SW retrofits
  - Agriculture BMPs
  - Education/outreach
  - Seeding inverts…

Next Steps: **Preservation**

Strategies to preserve Excellent Sites

- Land Purchase
- Conservation easements
- Development rights



Project Web Page:

http://pugetsoundstreambenthos.org/Projects/Restoration-Priorities-2014.aspx

Acknowledgements

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Stakeholder Workgroup