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

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

NWFSC Watershed Program May 5, 2014

B-IBI: PSP Vital Sign Indicator

Ecosystem Recovery Targets

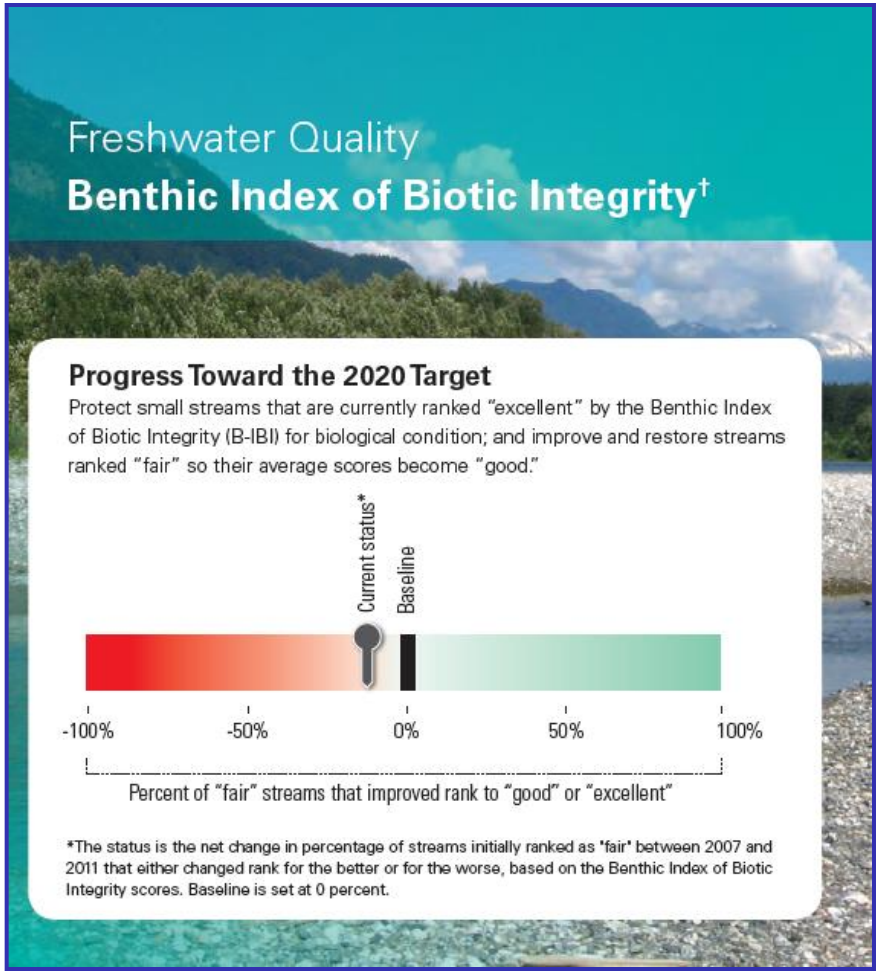
Freshwater Quality B-IBI Targets by 2020:

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

State of the Sound

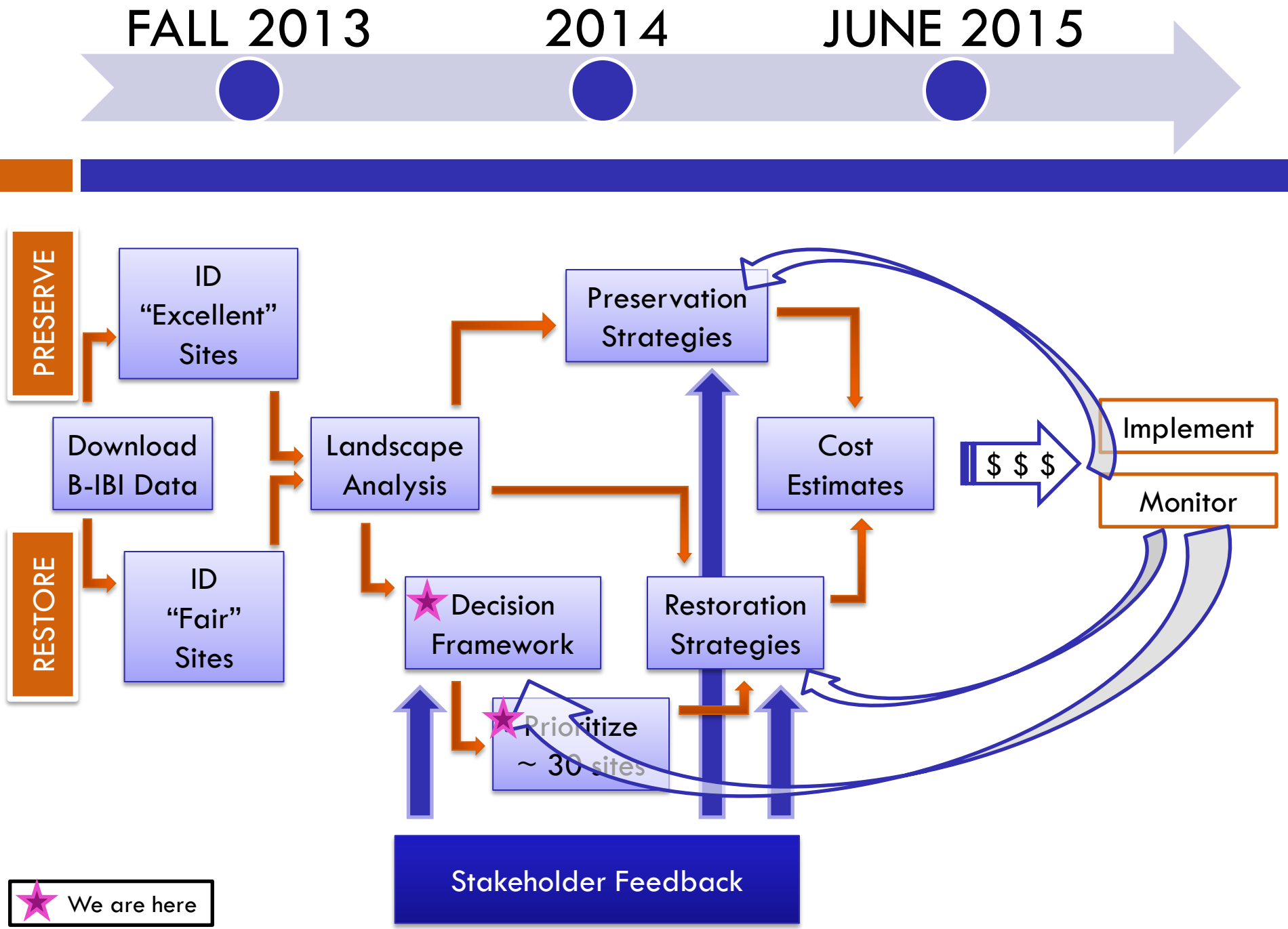
PugetSoundPartnership
LEADING PUGET SOUND RECOVERY

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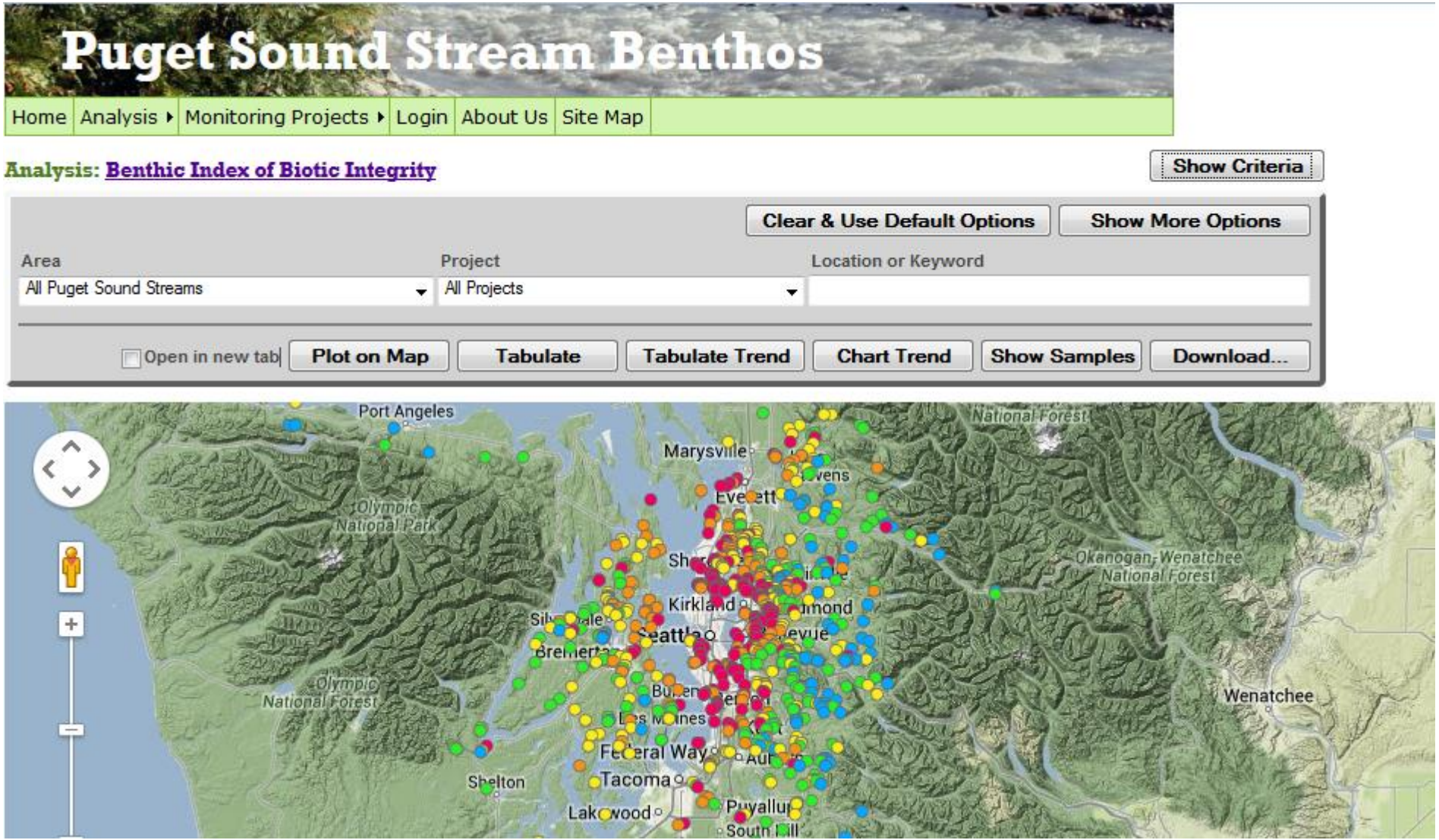
ID "Fair" Sites
Landscape Analysis
Preservation Strategies
Cost Estimates
$ $ $
Implement
Monitor
Decision Framework
Restoration Strategies
Prioritize
~ 30 sites
Stakeholder Feedback
We are here

Download B-IBI Data: www.pugetsoundstreambenthos.org

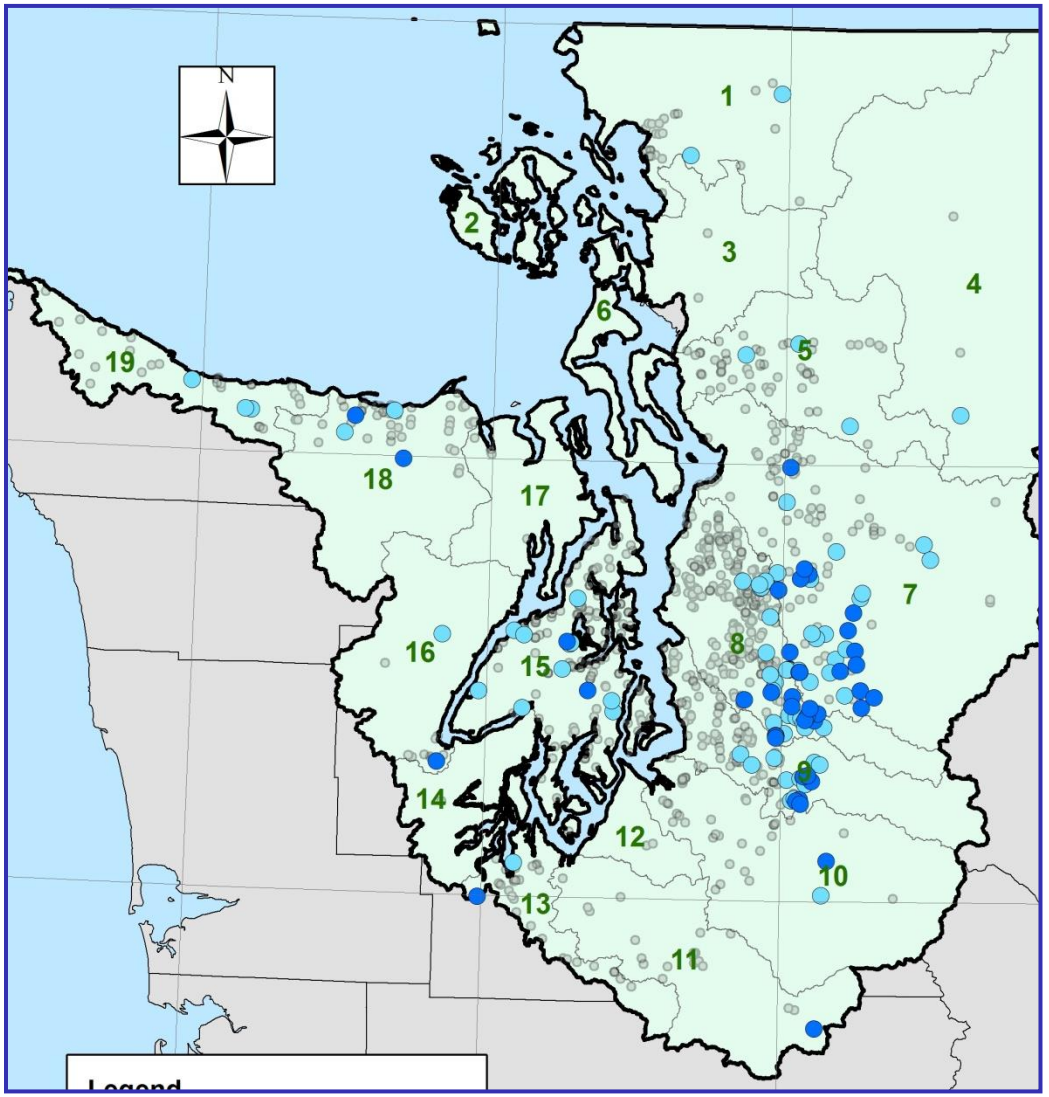


“Excellent” Sites (≥42) = Protection

“Excellent” scores

- ≥ 46
- ≥ 42 and <46

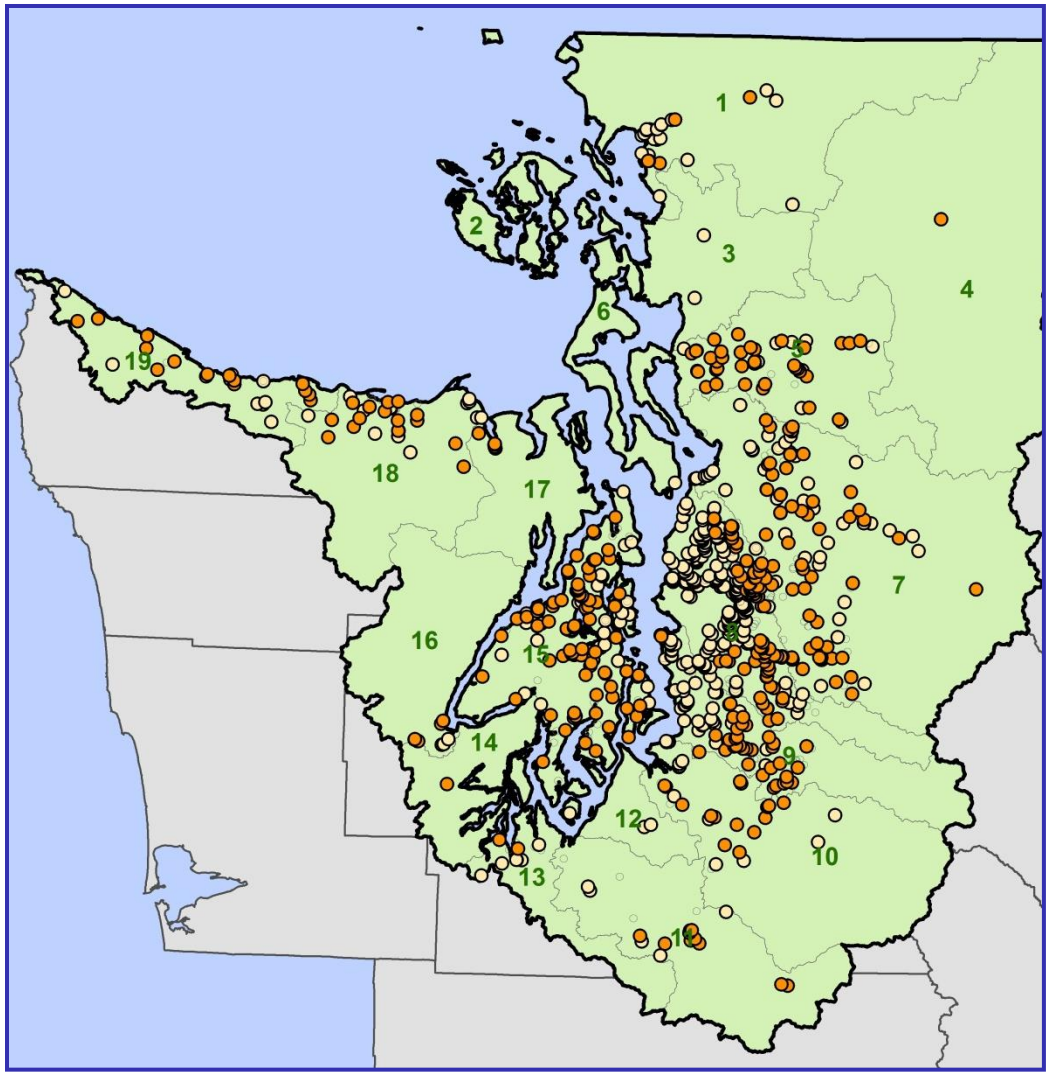
- **121** sites scored “excellent” at least once
- **35** sites had a median “excellent” score
- **33** sites averaged “excellent”



“Fair” Sites (28-36) = Restoration

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

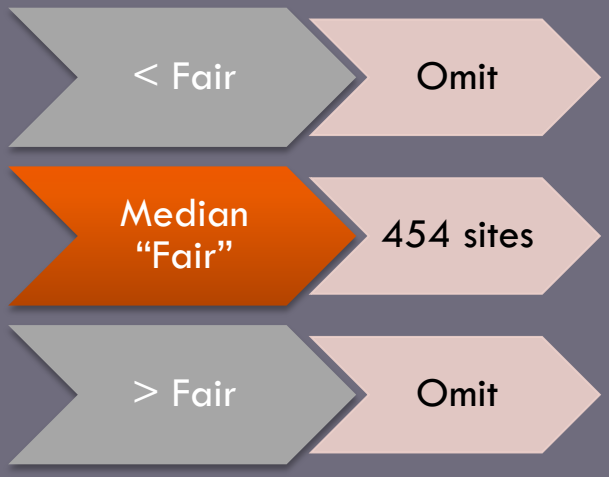
- **648** sites scored “fair” at least once
- **454 sites with median “fair” scores**
- **428** sites averaged “fair”



Restoration Decision Framework

Filtering

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



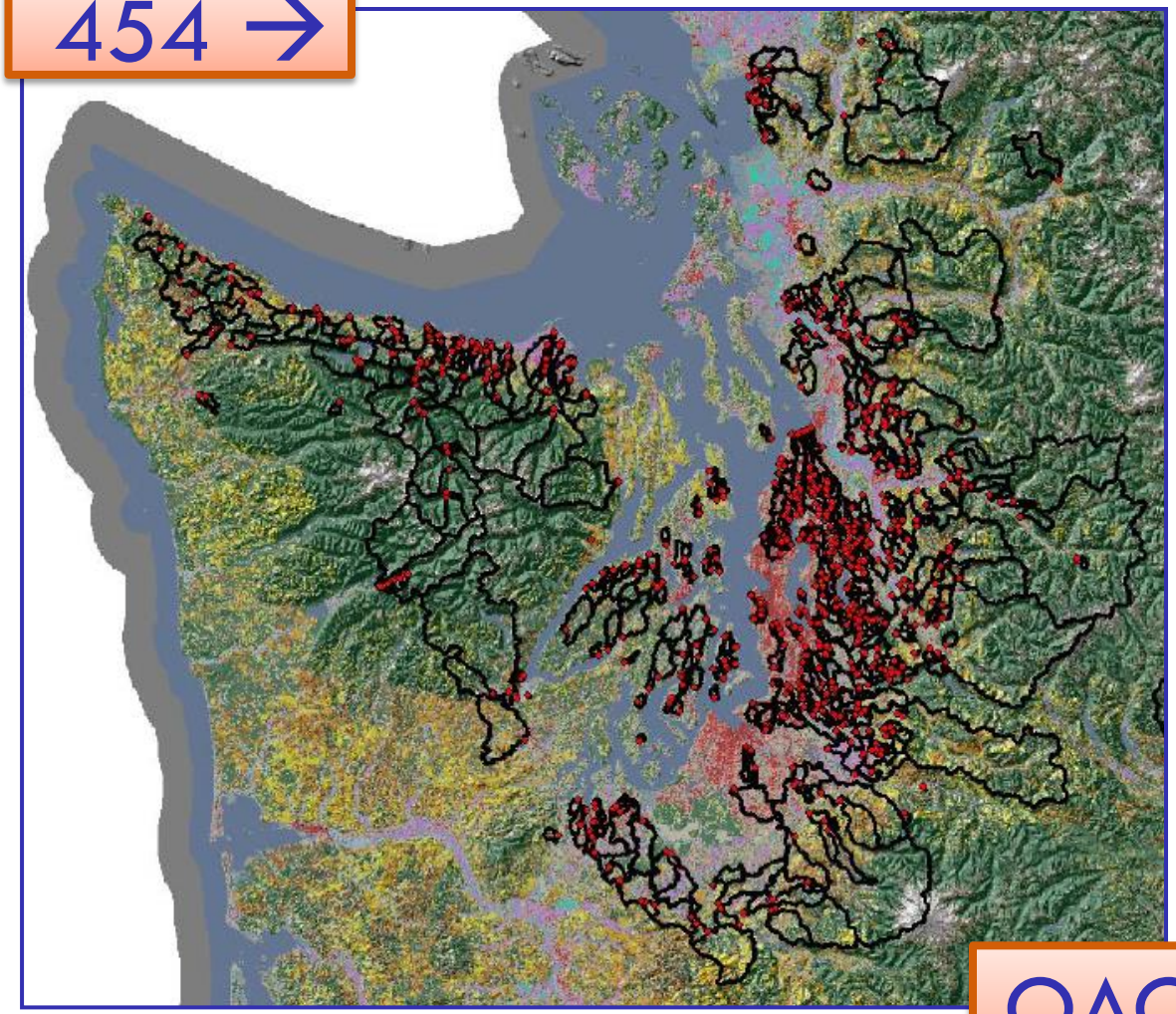
Ranking/Scoring

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.

	SITE 1	SITE 2	SITE 3
Watershed Context	2	1	0
Biotic Potential	2	2	1
OVERALL SCORE	4	3	1

Landscape Analysis

454 →

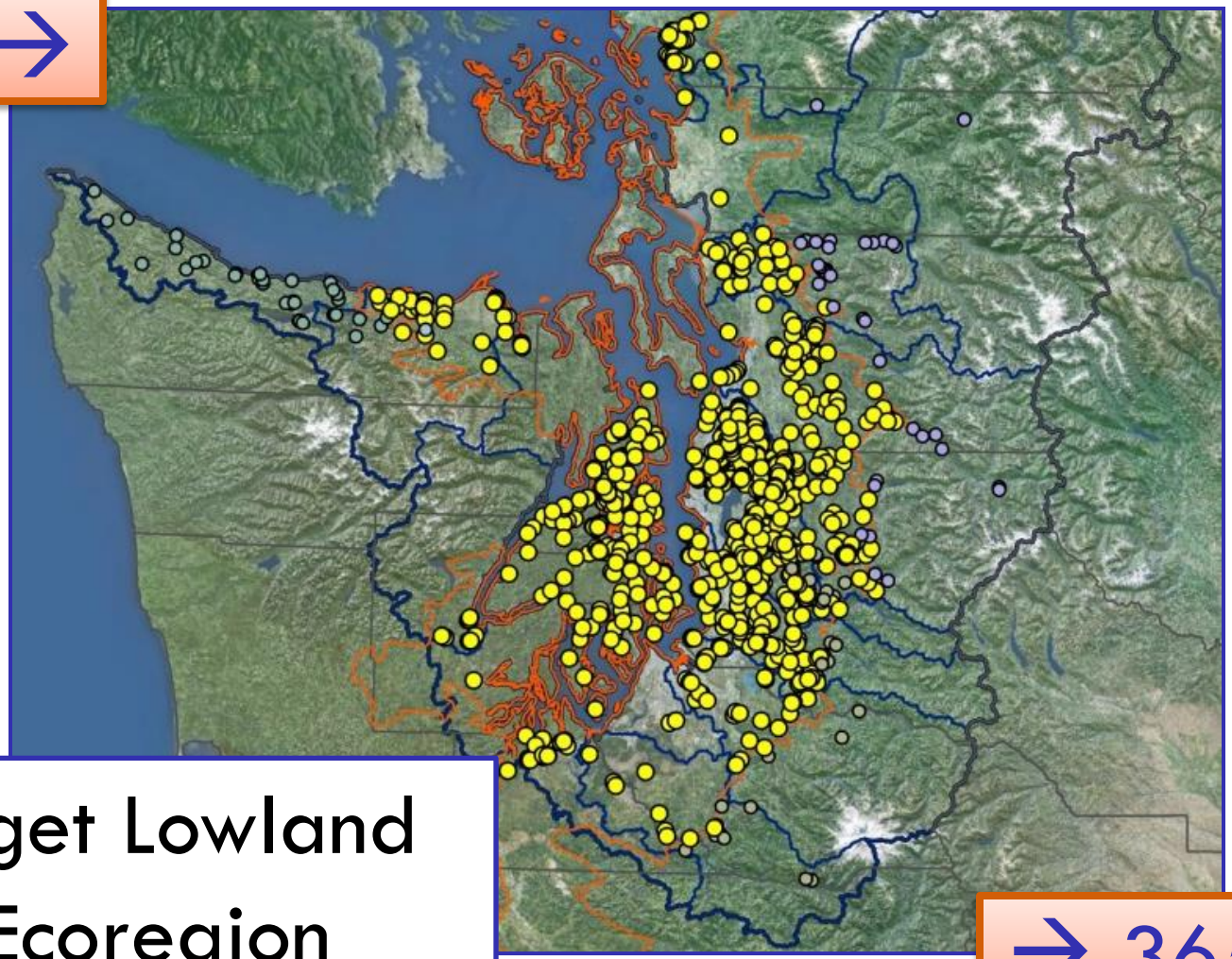


- Basin delineation
- Scale
  - Watershed
  - Local (1km)
  - Buffer (90-m)
- Metrics
  - Landcover
  - Geology
  - Site characteristics

QAQC→432

Initial Filters: Ecoregion

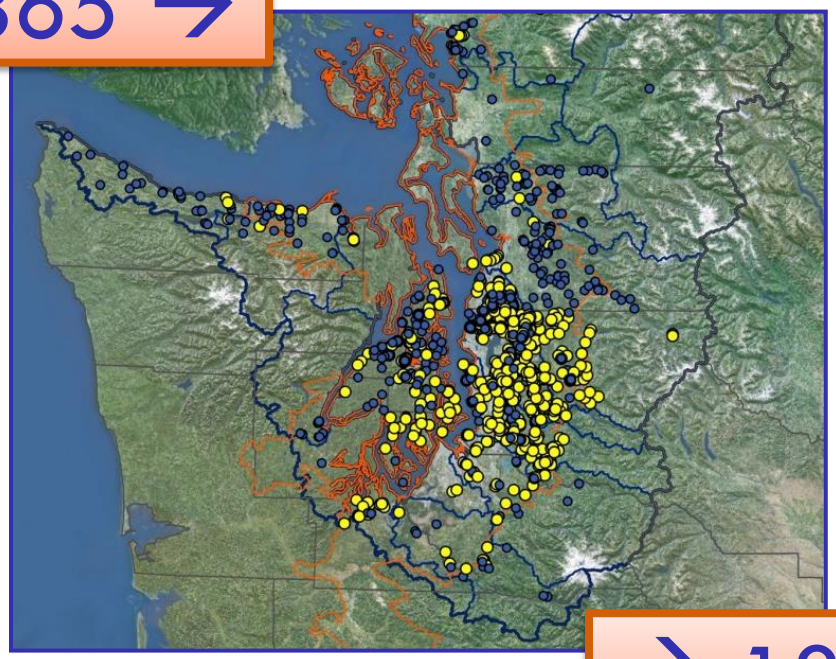
432 →



Puget Lowland Ecoregion

→ 365

Initial Filters: Sampling History



N>2

365 →

→ 180

180 →

Since 2007?

No

Yes

N>4

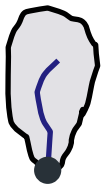
No

Yes

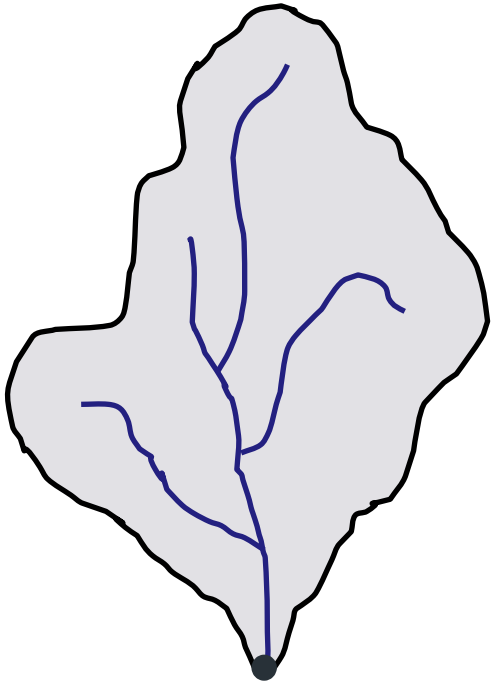
156

Initial Filters: Watershed Area

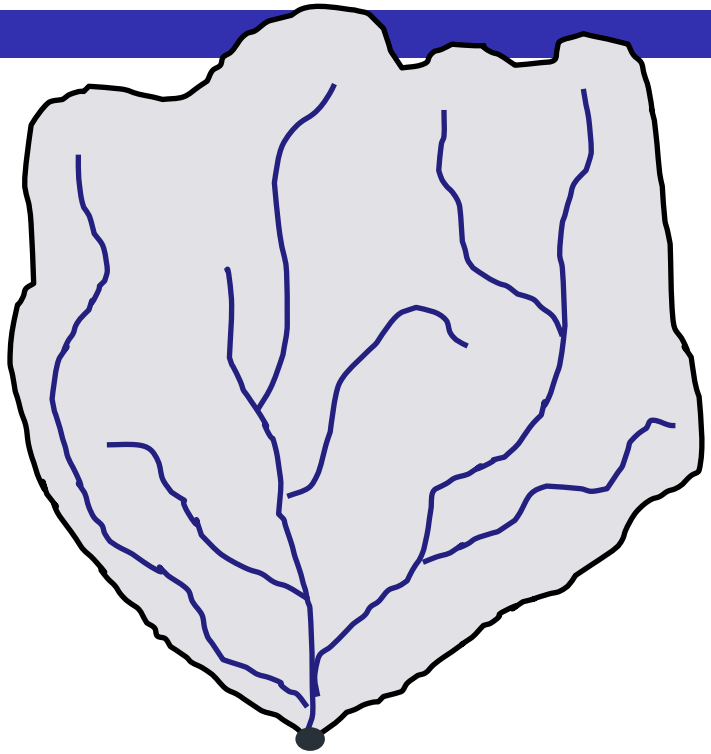
156 →



<200 Acres:
Too Small



200-3000 Acres:
Just Right



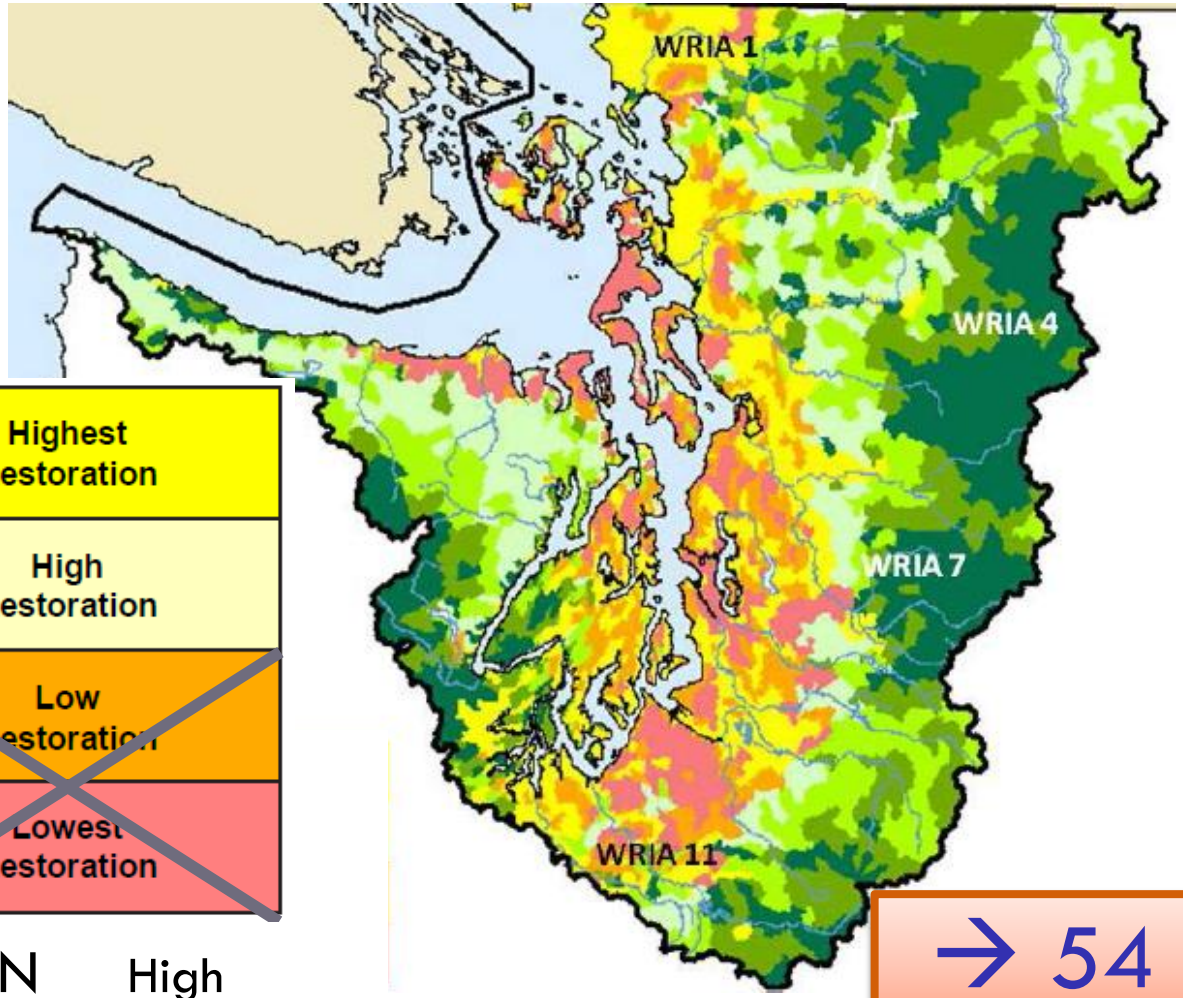
>3000 Acres:
Too Big

→ 72

Initial Filters: PSWC

72 →

PS Watershed Characterization



IMPORTANCE	DEGRADATION: Low	DEGRADATION: High
High	Highest Protection	Highest Restoration
	High Protection	High Restoration
	Low Protection	~~Low Restoration~~
Low	Lowest Protection	~~Lowest Restoration~~

→ 54

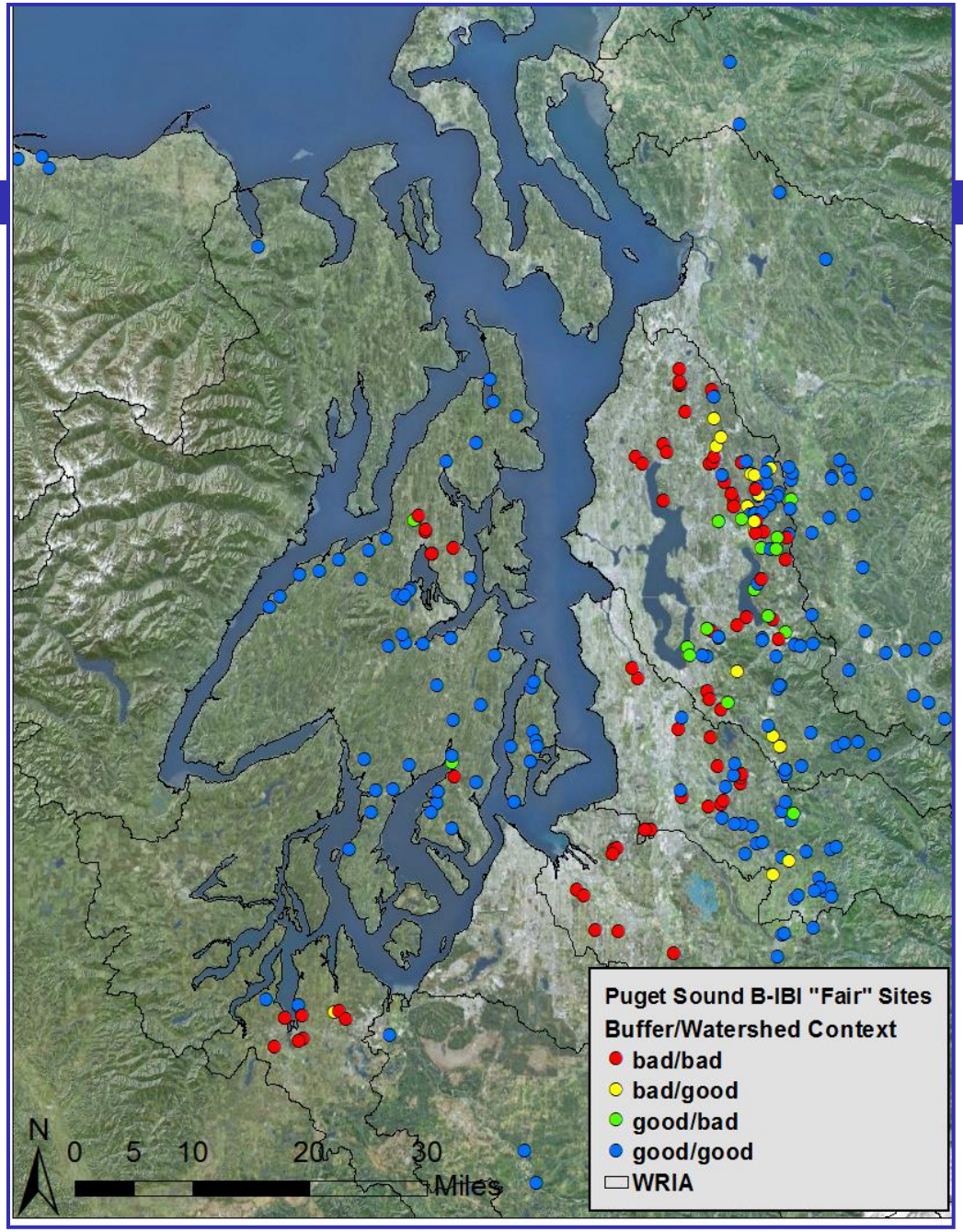
Watershed Context

Worst = 0
- Urban > 30%
- Buffer < 50% natural

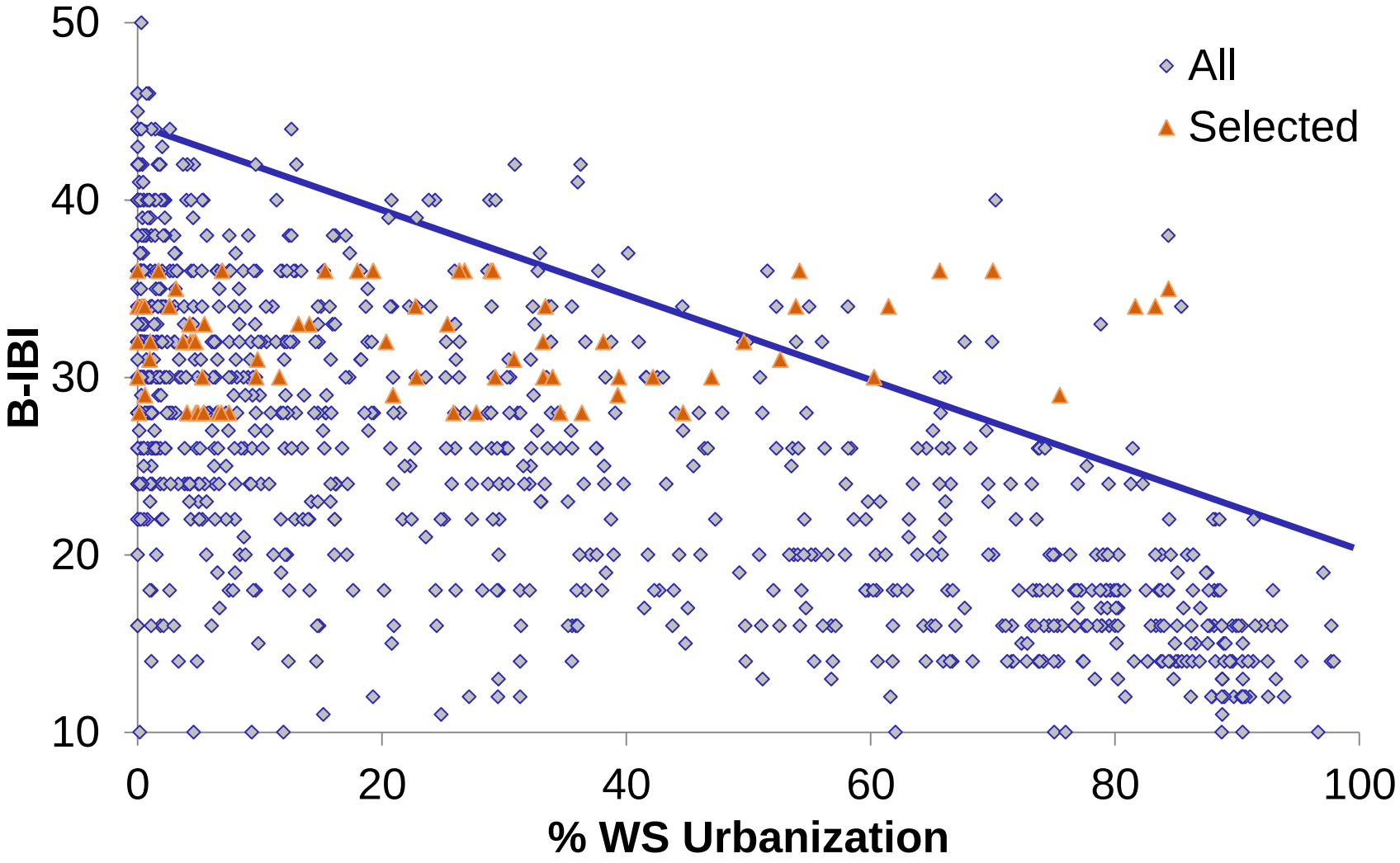
Moderate = 1
- Urban > 30%
- Buffer > 50% natural

Good = 2
- Urban < 30%
- Buffer < 50% natural

Best = 2
- Urban < 30%
- Buffer > 50% natural



Biotic Potential – all scores



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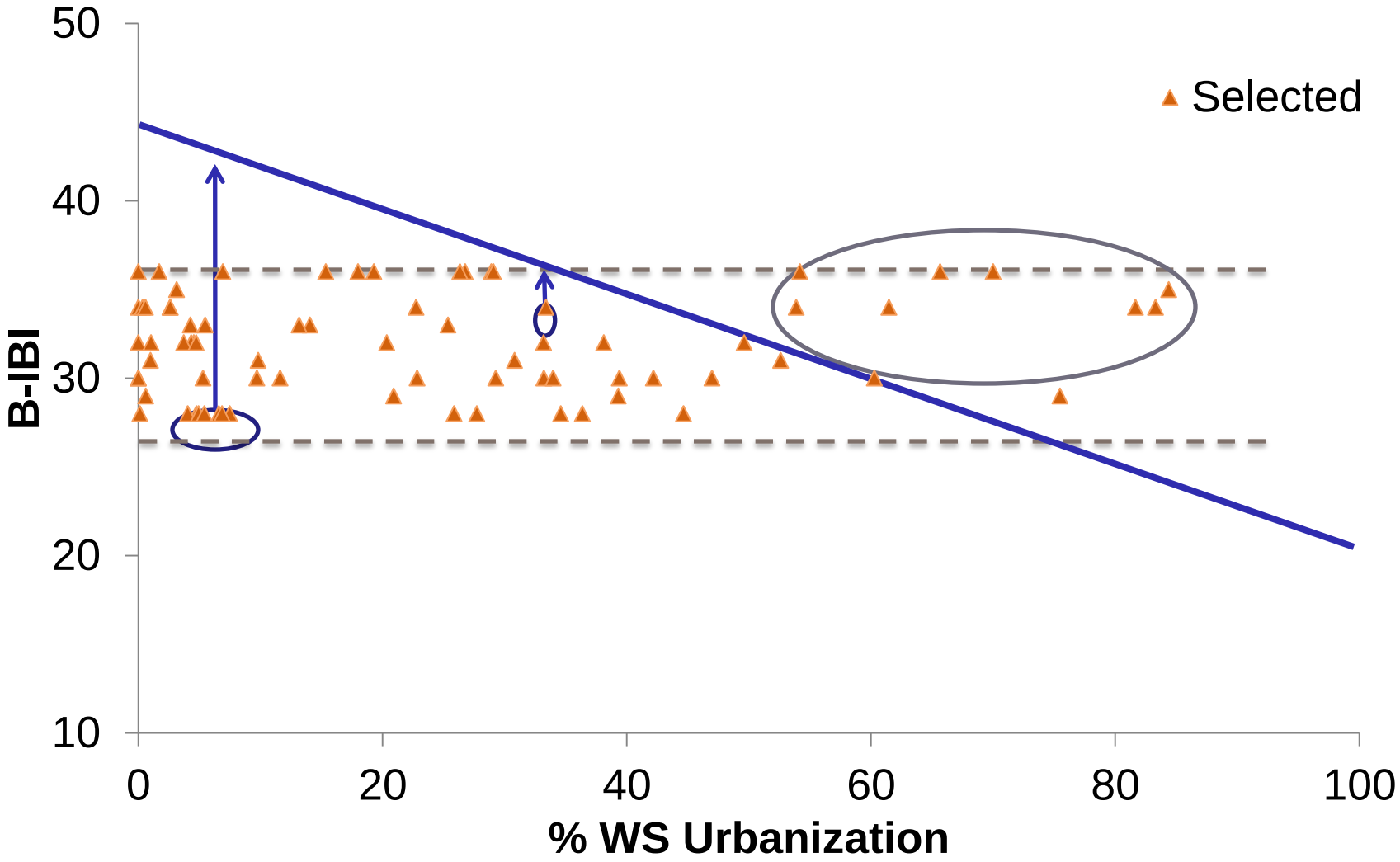
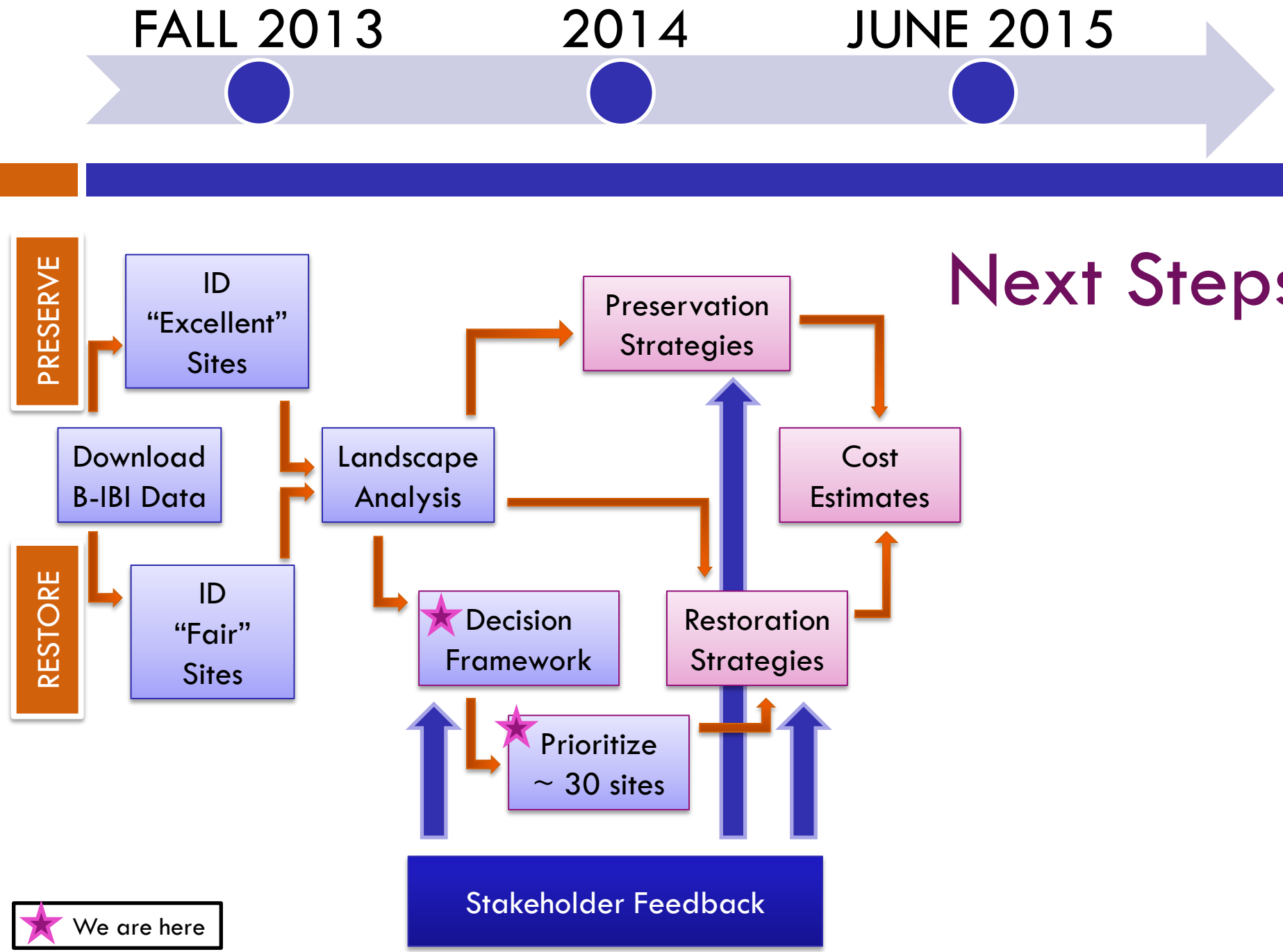


Recap: Framework

- Landscape data
- Puget Sound Ecoregion
- Sampling history
- Watershed area
- Puget Sound Watershed Characterization
- Watershed context
- Biotic potential

- Connectivity
- Land ownership
- Fish use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Next Steps: Restoration

What is Feasible? Effective?

- Habitat improvements
- Riparian plantings
- SW retrofits
- Agriculture BMPs
- Education/outreach
- Legislation
- Incentives
- Seeding inverts…

Project Web Page:

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

Acknowledgements

- King County:

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- Stakeholder Workgroup

?'s/Suggestions/Success Stories

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