

# Action Effectiveness Monitoring Program and Integration with EMP



# Outline

- Brief overview of action effectiveness monitoring (AEM)
  - Levels, metrics, and site locations
- Conceptual integration of AEM and EMP
- Discussion



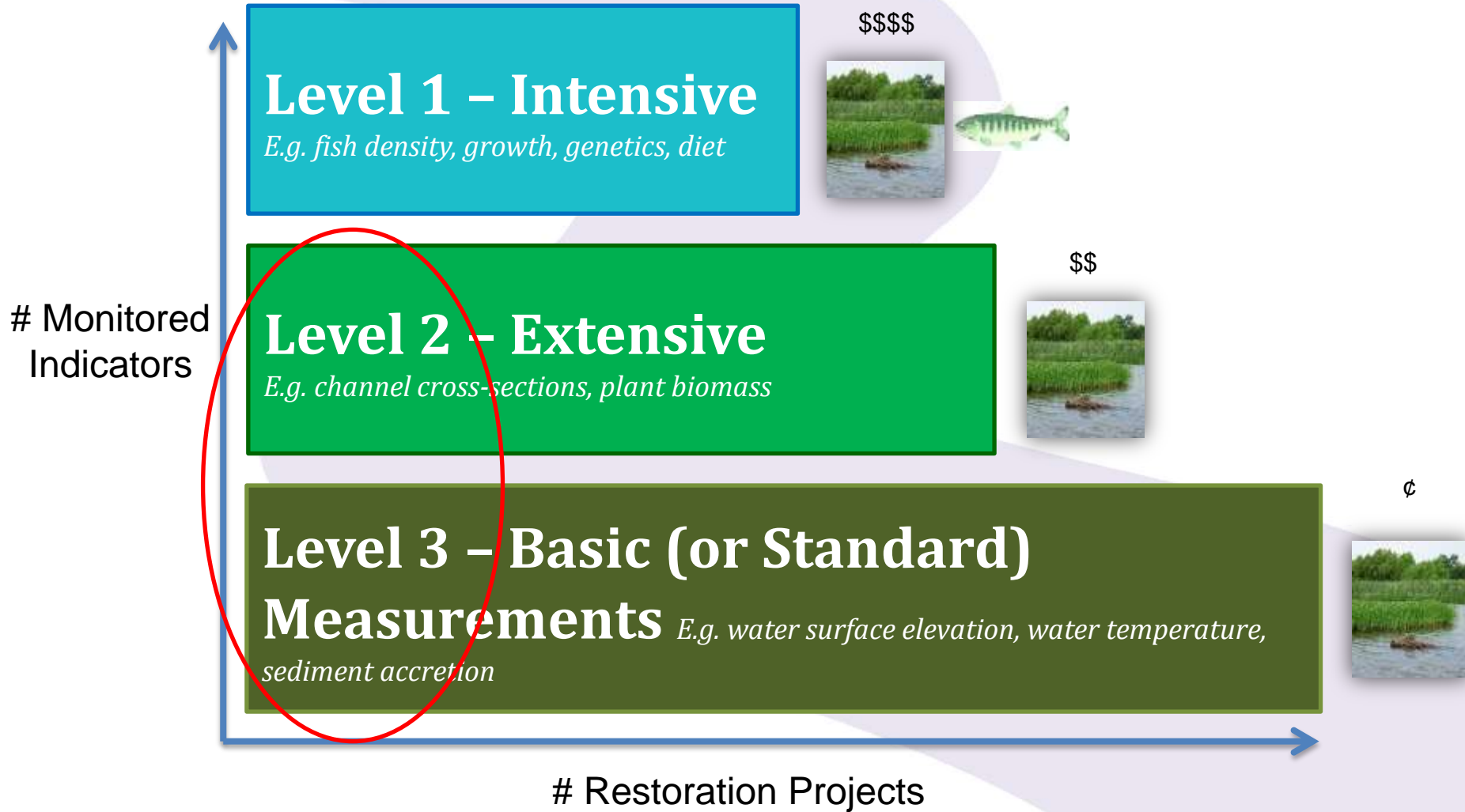
# Action Effectiveness Monitoring Objectives

- Determine the success of restoration actions at site, landscape, and estuary-wide scales in terms of improved ecosystem functionality (i.e. capacity, opportunity, realized function)
- AEM Programmatic Plan Objectives
  - Objective site selection among partners
  - Have some level of ecological effectiveness monitoring at all sites
  - Improved sharing and management of data

# Action Effectiveness Monitoring Background

- Pilot phase of AEM (2008 – 2012)
  - Resulted in standardized monitoring protocols
  - Site level evaluation of effectiveness
- Phase 2 began in 2012
  - Increase geographic coverage and number of monitoring sites
  - Prioritize sites and assign some degree of monitoring to all sites
    - Landscape location of AEM study areas
    - Address a key uncertainty in action effectiveness
    - Preliminary SBU

# AEMR Levels



# Standard or Level 3 Metrics

- Photo Points
- Water Surface Elevation (continuous)
- Water Temperature (continuous)
- Sediment Accretion
- Elevation (Topography)

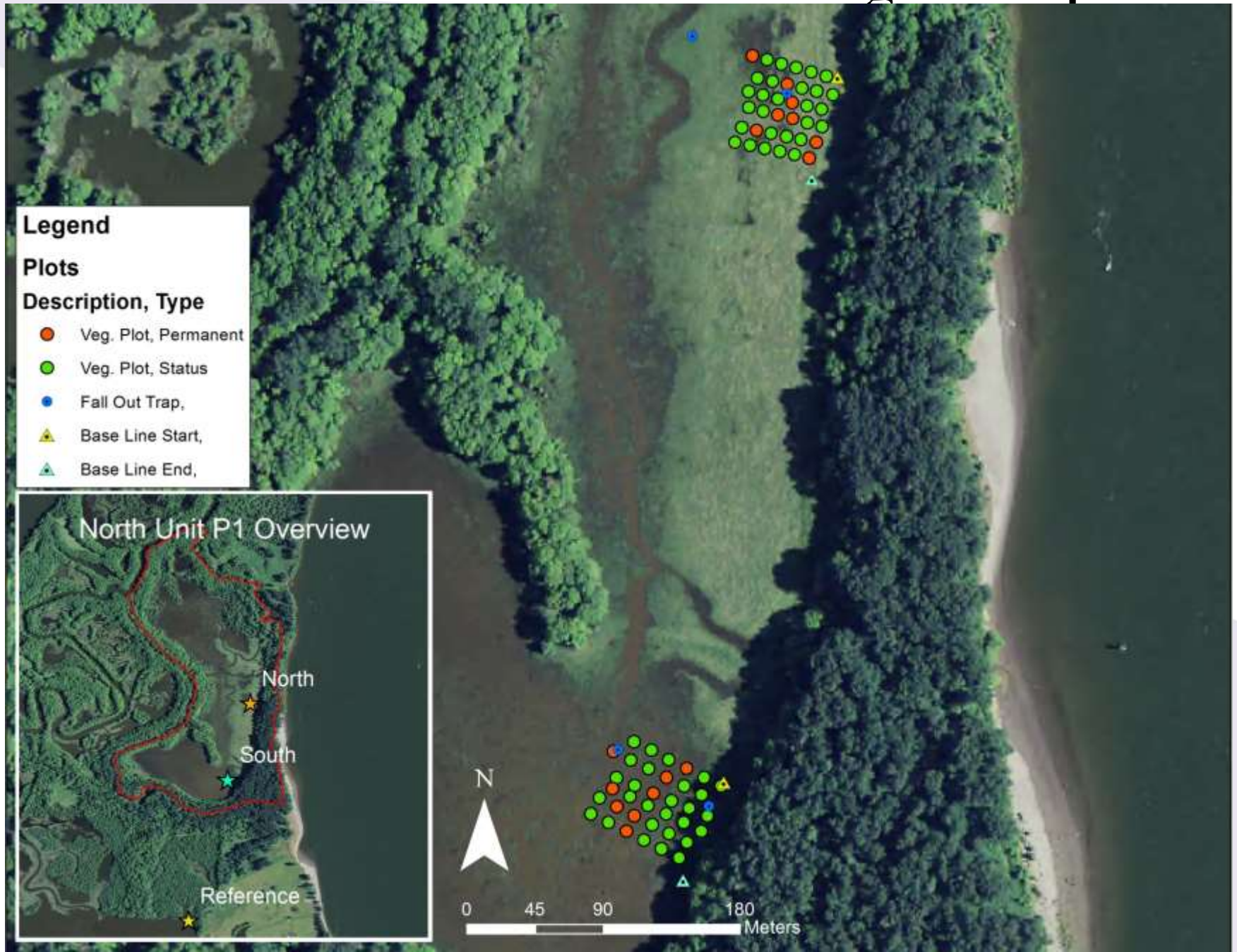


# Extensive or Level 2 AEM

- Metrics are based on project objectives
  - Vegetation Composition and Elevation
  - Terrestrial Macroinvertebrates
  - Channel Cross Sections



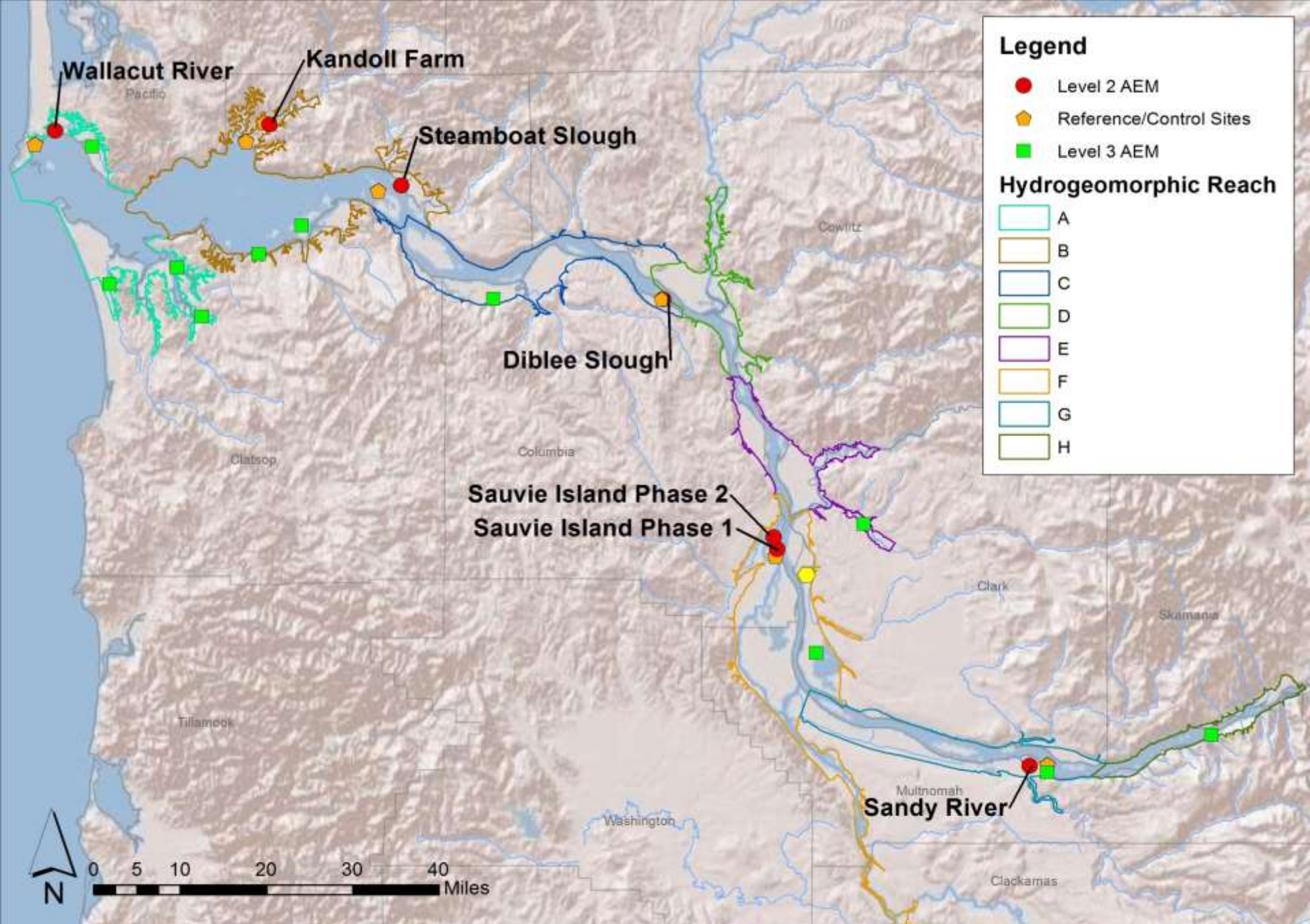
# Pre-restoration Monitoring Set-up





# Post Restoration Monitoring Set-up





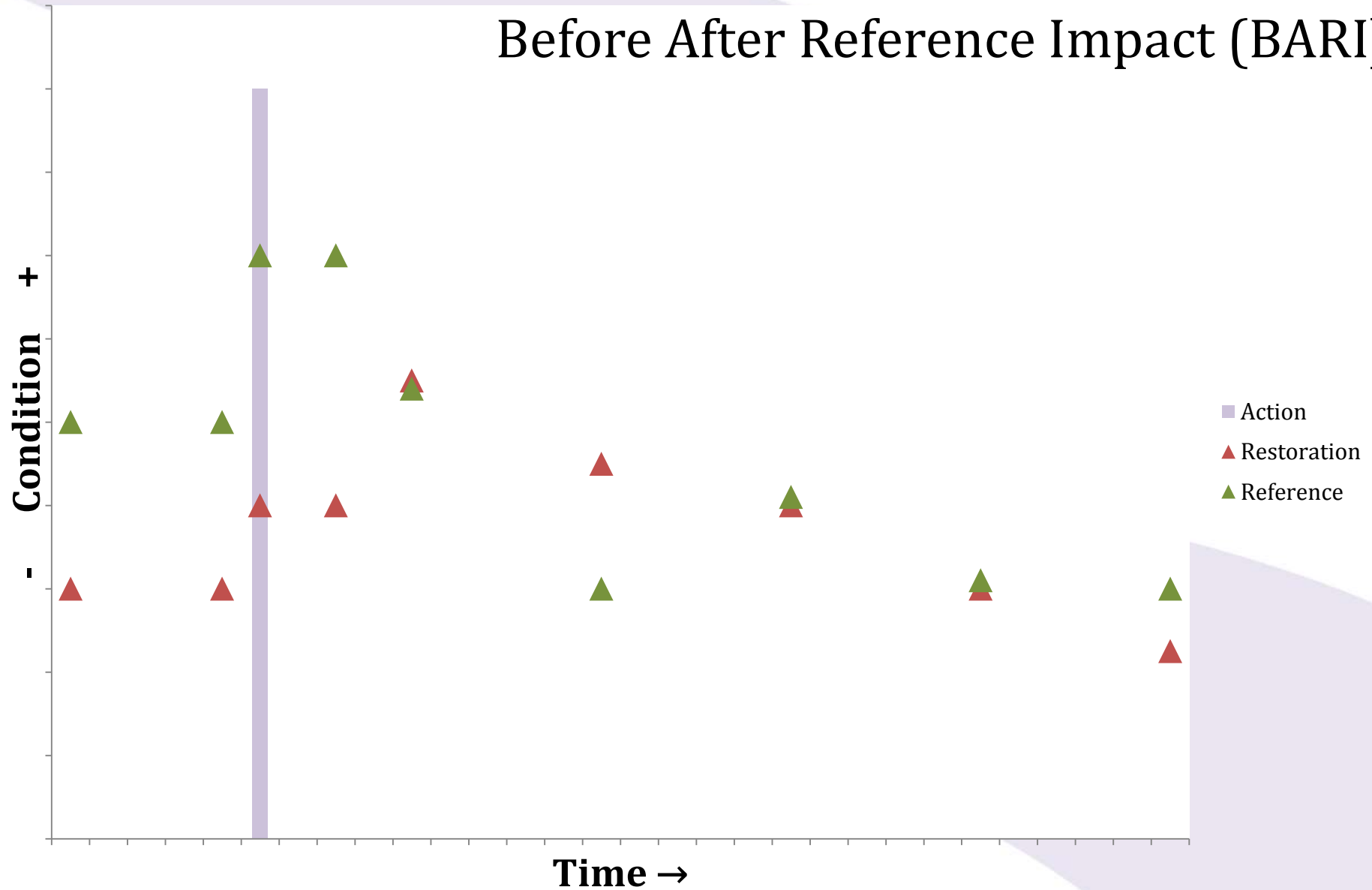
**2013 -2014 Level 2 and Level 3 Action Effectiveness Monitoring by Hydrogeomorphic Reach**

# Conceptual Integration of Action Effectiveness and Ecosystem Monitoring

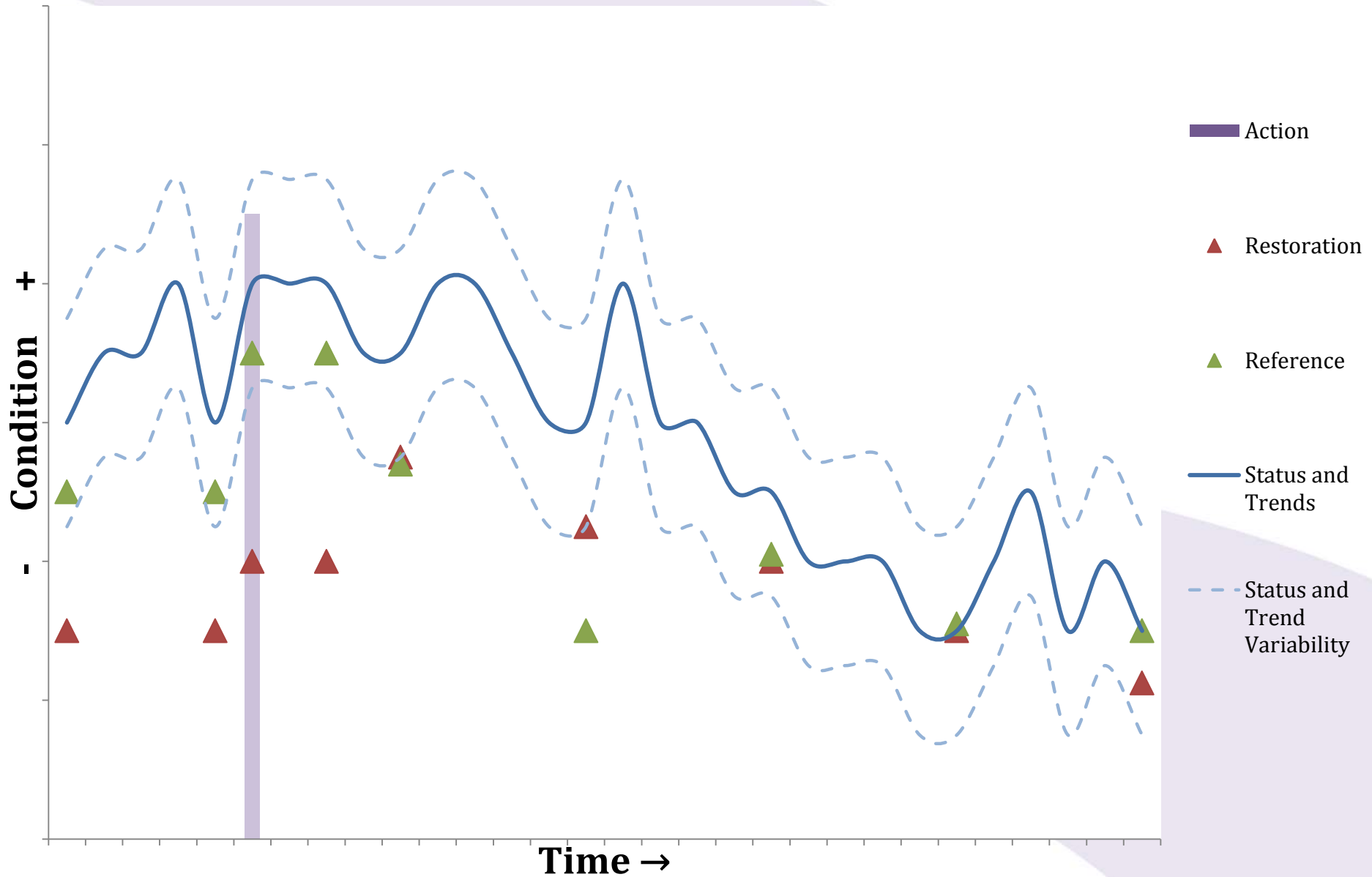


# Action Effectiveness Monitoring

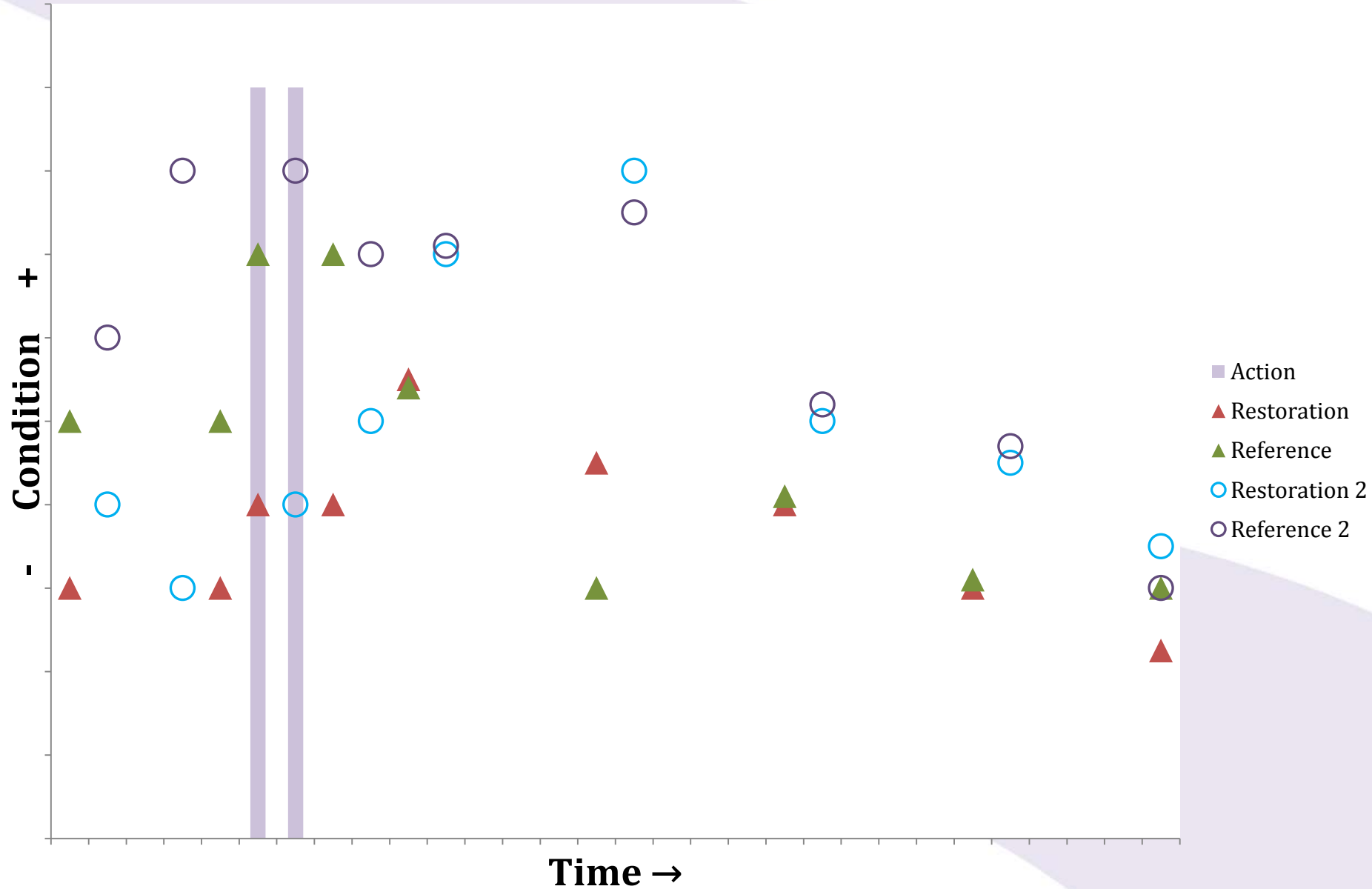
Before After Reference Impact (BARI)



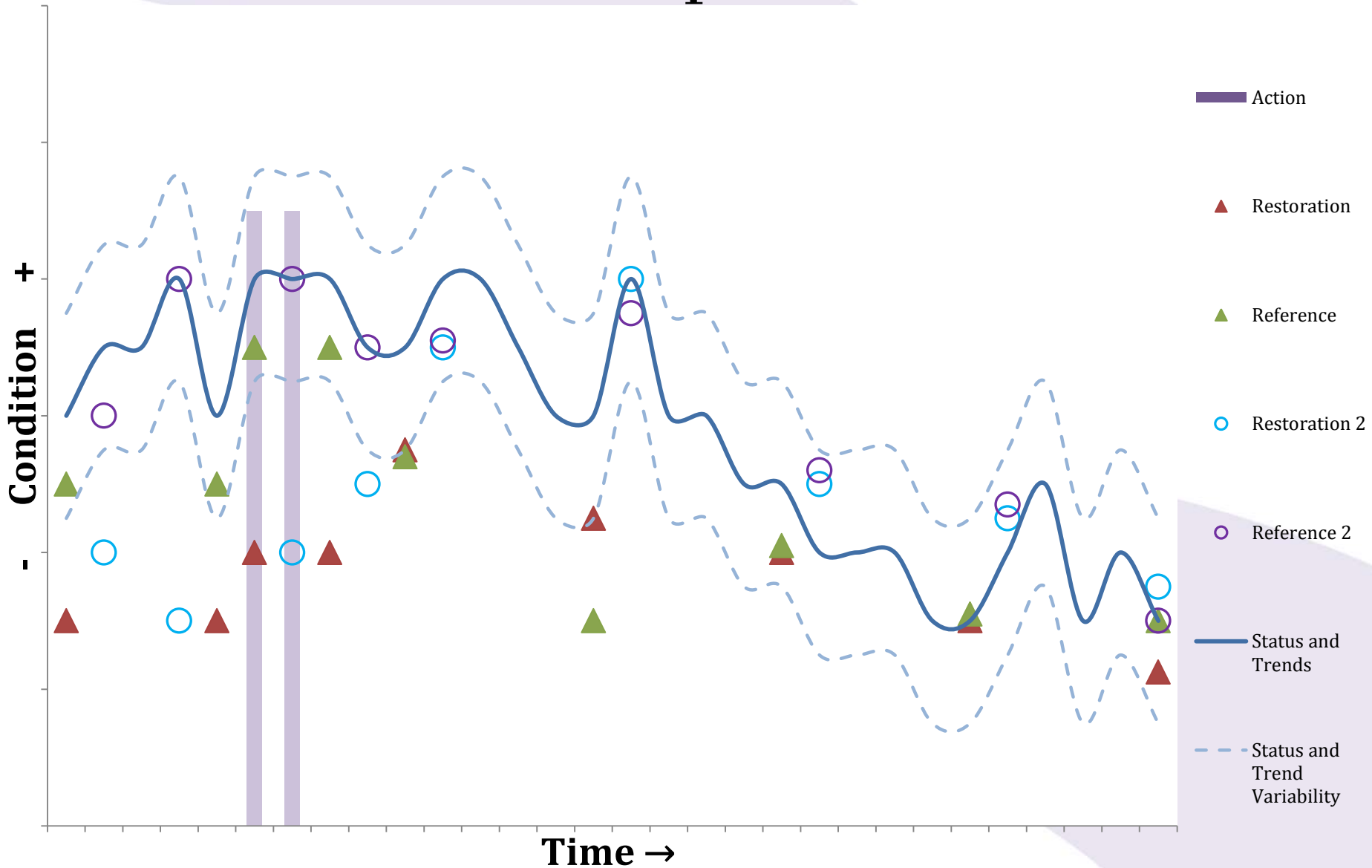
# Action Effectiveness Monitoring with Status and Trends

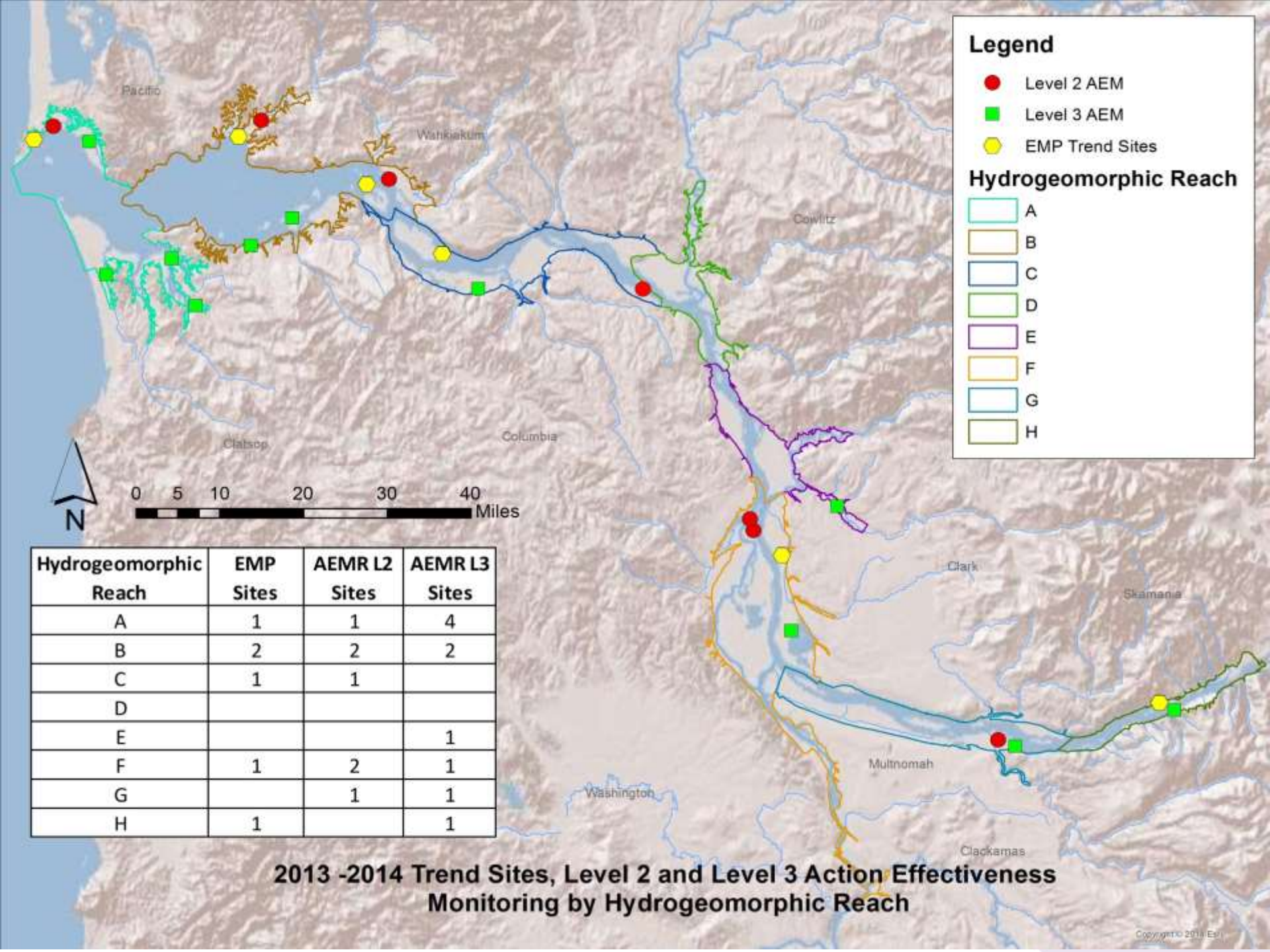


# Action Effectiveness with Status and Trends



# Action Effectiveness with Status and Trends w/ Multiple Sites





**Legend**

- Level 2 AEM
- Level 3 AEM
- ⬡ EMP Trend Sites

**Hydrogeomorphic Reach**

- A
- B
- C
- D
- E
- F
- G
- H

Hydrogeomorphic Reach	EMP Sites	AEMR L2 Sites	AEMR L3 Sites
A	1	1	4
B	2	2	2
C	1	1	
D			
E			1
F	1	2	1
G		1	1
H	1		1

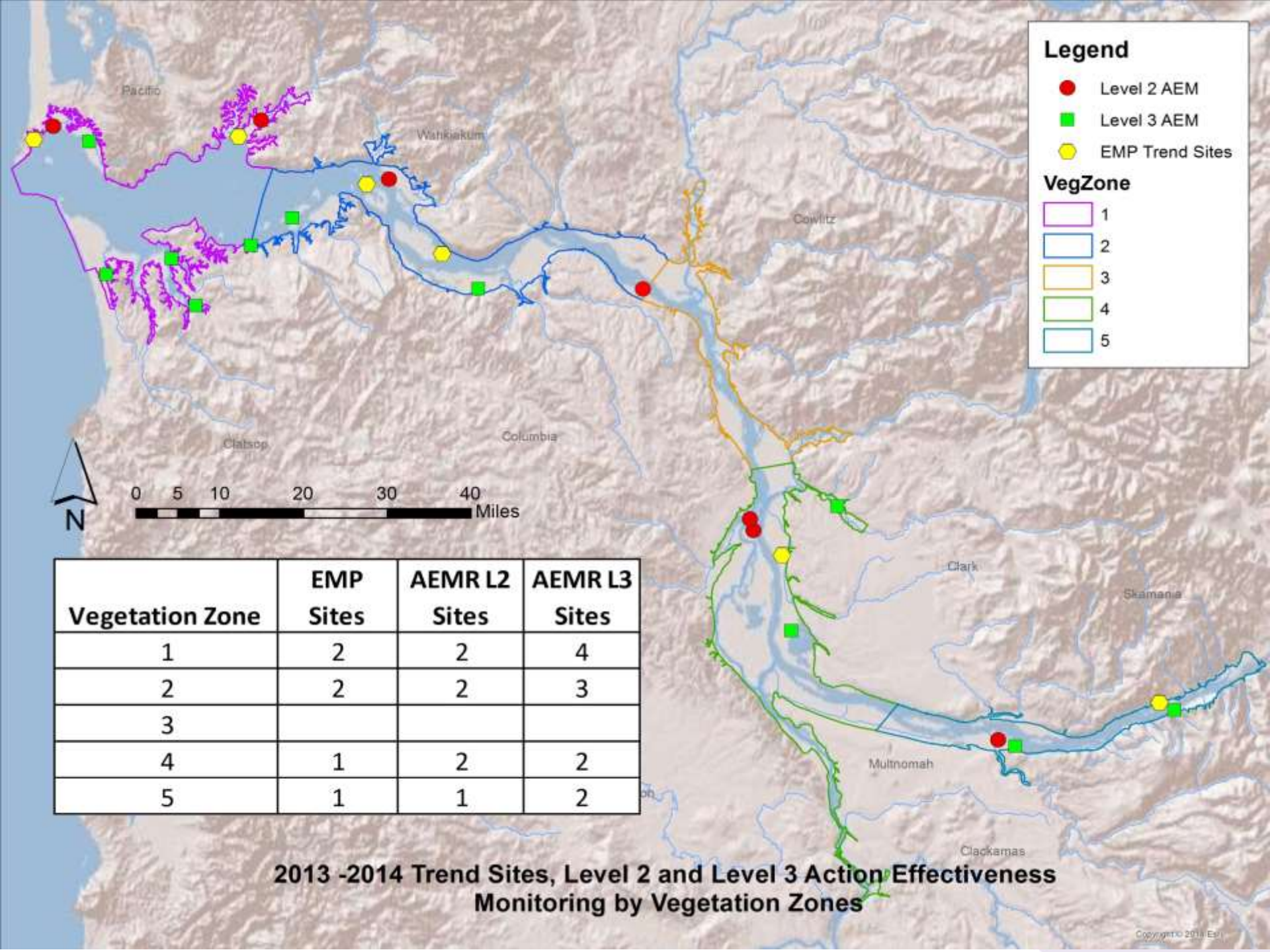
**2013 -2014 Trend Sites, Level 2 and Level 3 Action Effectiveness Monitoring by Hydrogeomorphic Reach**



# Next Steps

- Integrate current overlapping metrics into RME reporting
- Identify additional metrics to include in AEM
  - Identify or confirm appropriate scale/units
  - Determine/Develop appropriate variability envelope





**Legend**

- Level 2 AEM
- Level 3 AEM
- ⬡ EMP Trend Sites

**VegZone**

- 1
- 2
- 3
- 4
- 5

Vegetation Zone	EMP Sites	AEMR L2 Sites	AEMR L3 Sites
1	2	2	4
2	2	2	3
3			
4	1	2	2
5	1	1	2

**2013 -2014 Trend Sites, Level 2 and Level 3 Action Effectiveness Monitoring by Vegetation Zones**

# Questions and Discussion

