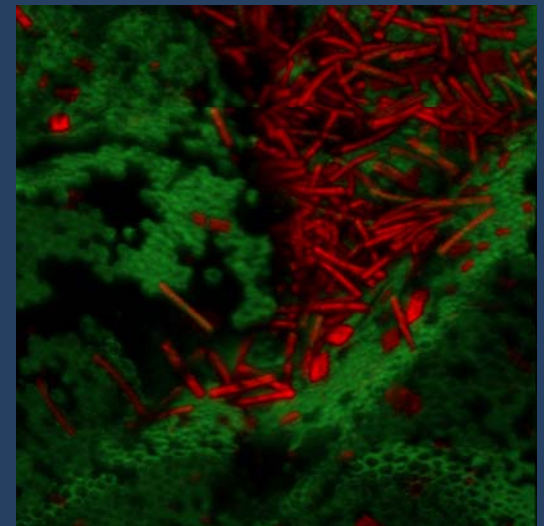
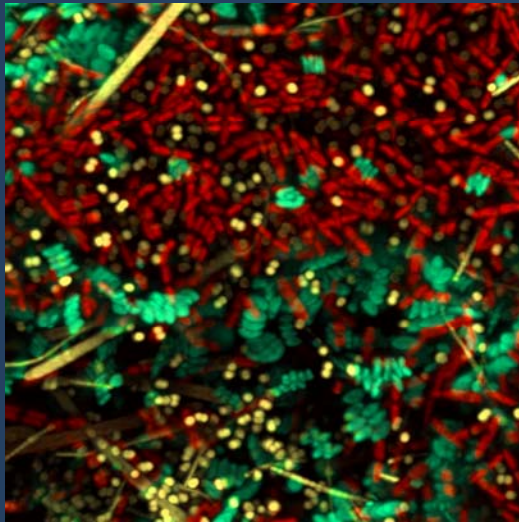
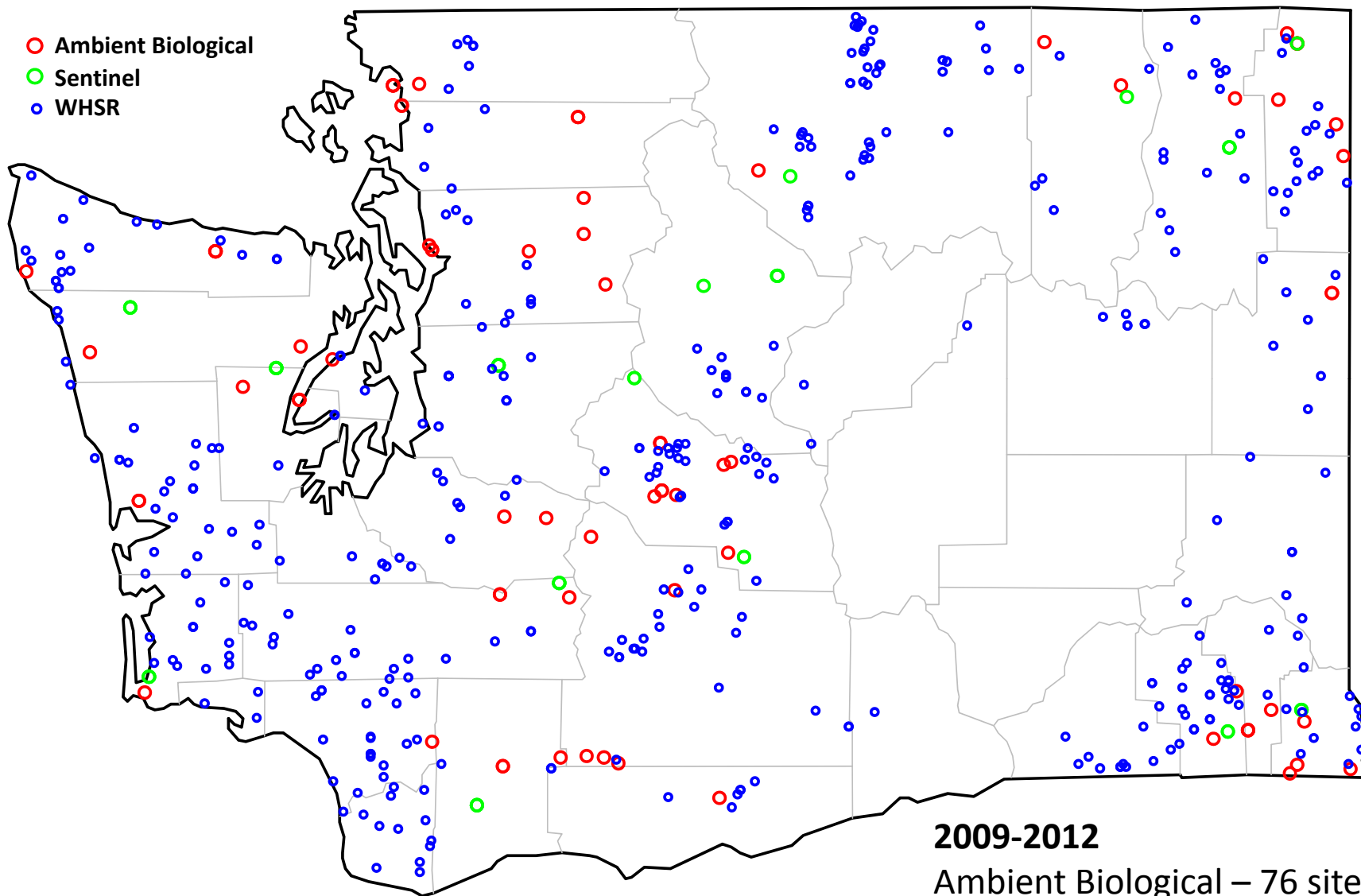


# Washington Department of Ecology's Stream Biological Monitoring Program



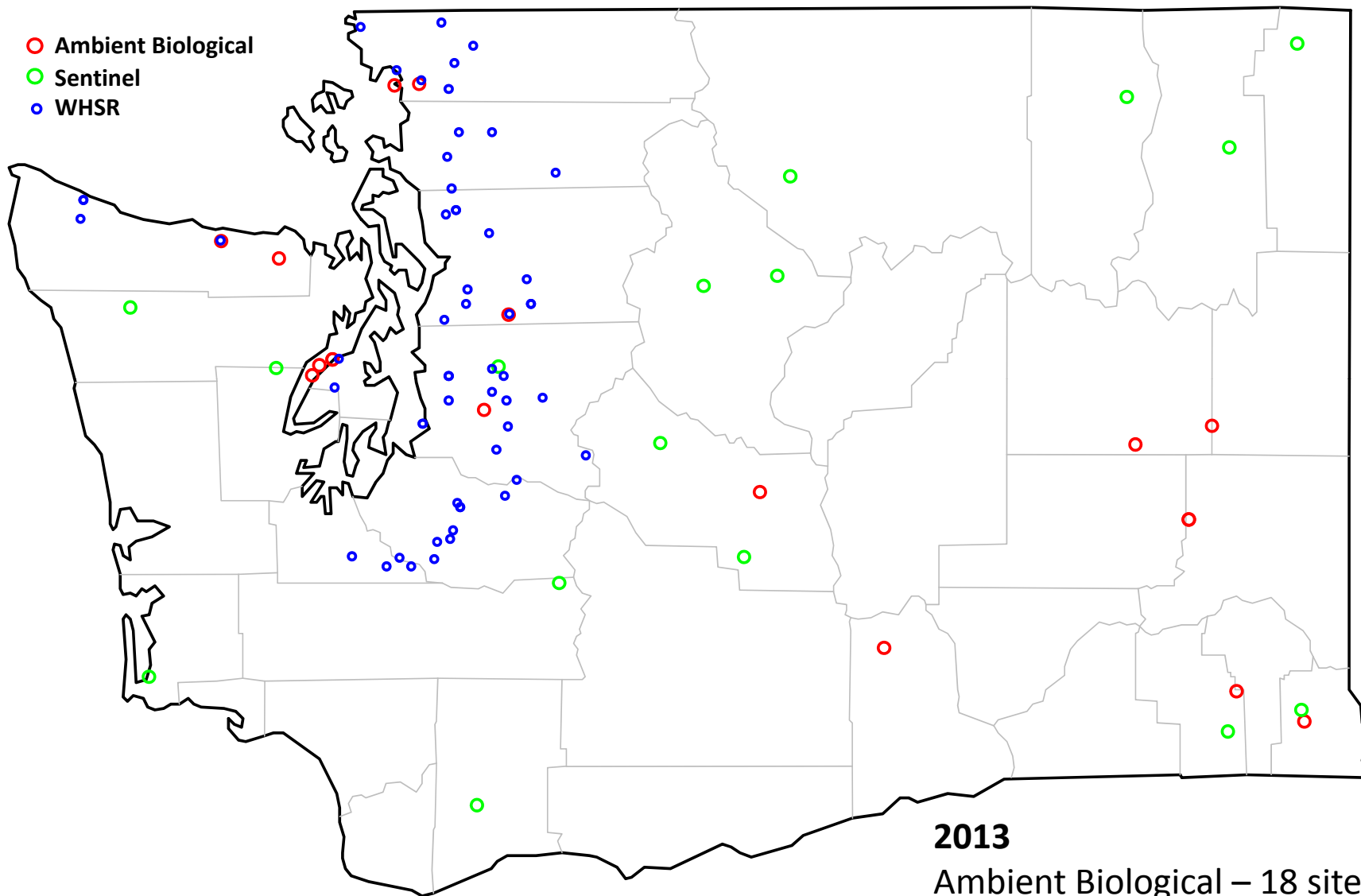
## **Three primary biomonitoring programs at Ecology:**

- 1) Ambient Biological – reference sites from eight of Washington’s Level III ecoregions (8-10 sites in each ecoregion)**
- 2) Sentinel – reference sites sampled annually from 16 sites statewide**
- 3) Watershed Health and Salmon Recovery – randomly selected sites sampled throughout seven Status and Trends Monitoring Regions (50 sites per region, with 25 new random sites & 25 revisits on repeat cycle)**

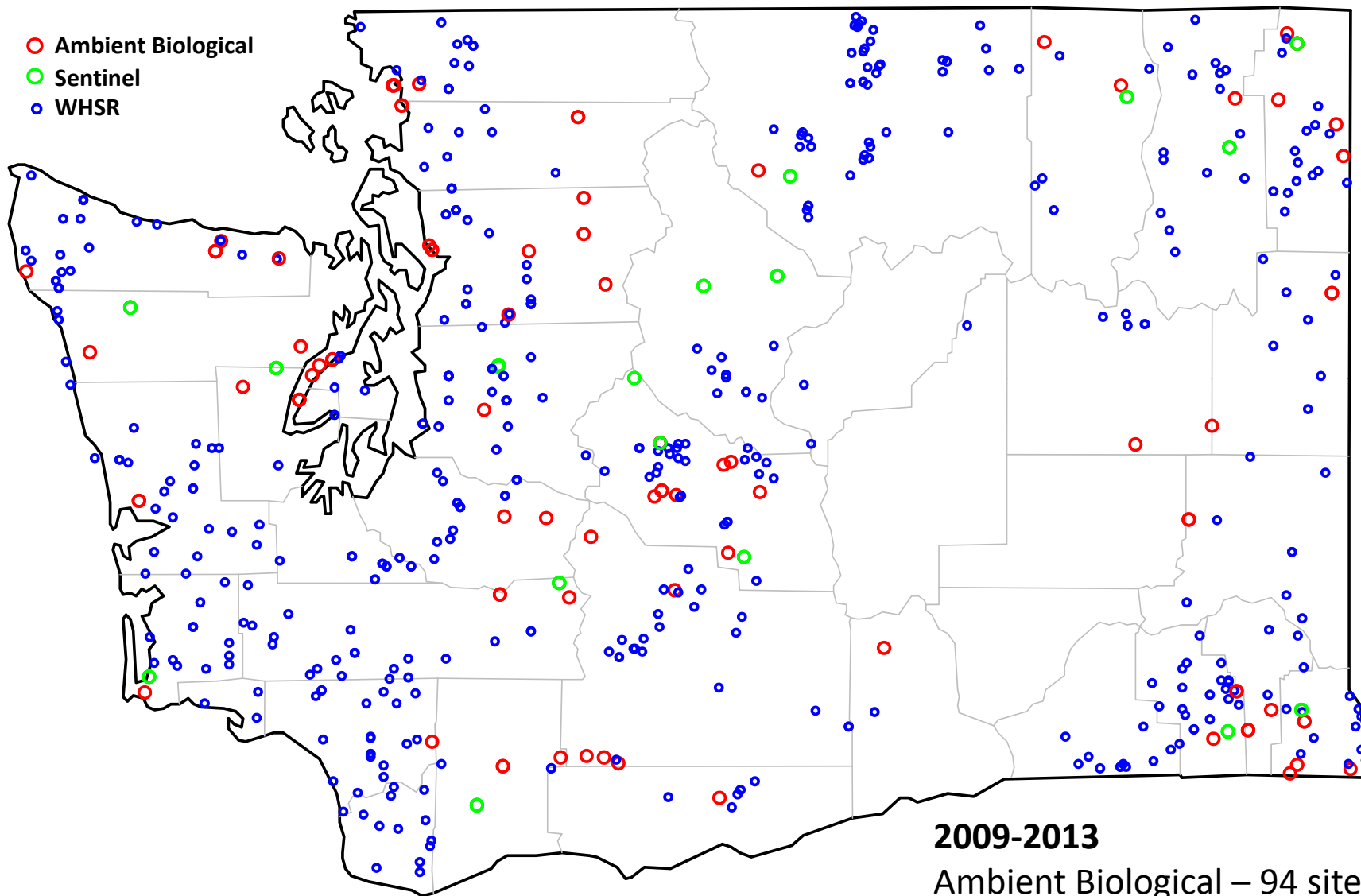


**2009-2012**

Ambient Biological – 76 site visits  
Sentinel – 38 site visits  
WHSR – 388 site visits



**2013**  
Ambient Biological – 18 site visits  
Sentinel – 16 site visits  
WHSR – 55 site visits



**2009-2013**

Ambient Biological – 94 site visits

Sentinel – 54 site visits

WHSR – 443 site visits

## Ambient Biological - Ecoregions

2014	2015
Coast Range	Cascades
Eastern Slopes	North Cascades
Northern Rockies	Blue Mountains

**Starting in 2014, annual sampling of 3 sites from each Ecoregion not sampled during a particular year**

## WHSR – Status and Trends Monitoring Regions

2014	2015
Coastal	Mid Columbia
Lower Columbia River	Snake River

**In 2012, Water Quality Assessment adopted a new policy for listing stream reaches on the state's 303(d) list using biological criteria:**

**Category 5 ("poor" and "very poor") when B-IBI score is less than 27 or RIVPACS score of  $\leq 0.73$ .**

**Category 2 ("waters of concern") when B-IBI score is between 28 and 37 or RIVPACS score of 0.74-0.86.**

**Category 1 (no biological impairment) when B-IBI score is 38 or higher or RIVPACS score of  $> 0.86$ .**

**Starting 2013, Ecology requires that data used for listing stream reaches should be analyzed at a fine taxonomic resolution (i.e. genus/species).**

## **Going forward:**

**Working with statisticians from USGS to evaluate reference conditions throughout Washington**

**Developing multi-metric & O/E RIVPACS-type models for different regions in Washington**