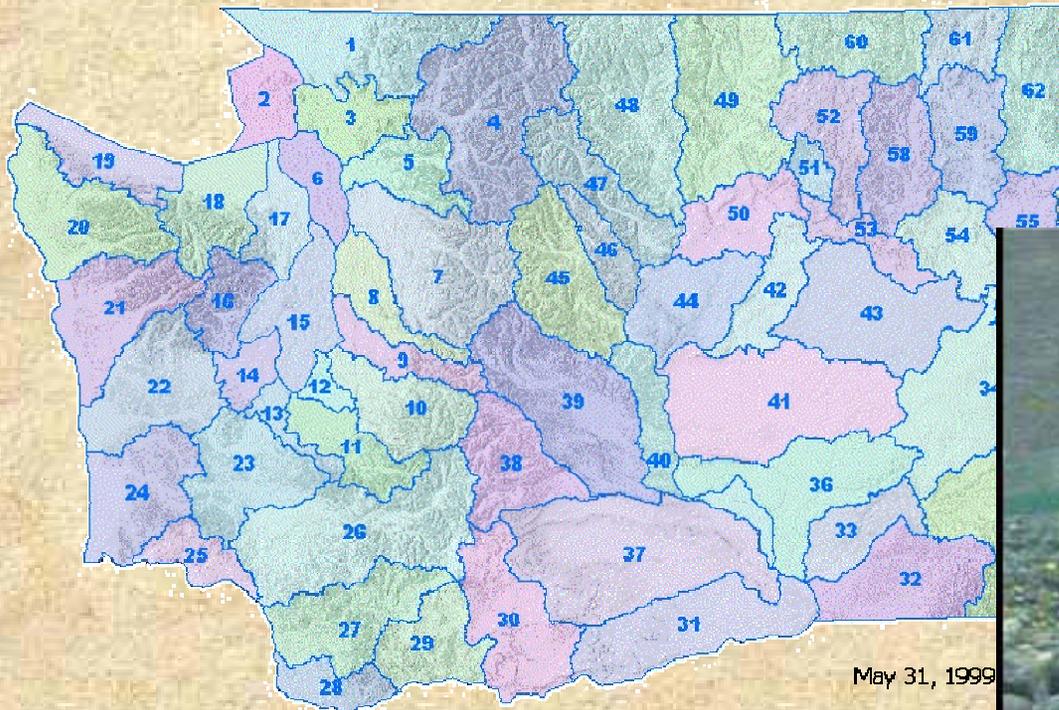


# Status and Trends Monitoring Plan Rivers and Streams

Water Resource Inventory Areas - WRIA

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Washington Department of Ecology

Washington Conservation Commission

Washington Department of Fish and Wildlife

# Six Issues Posed from Governor's Forum on Monitoring

What are the issues that we need to address?

1. Sampling Framework - statistically valid, statewide
2. Remote Sensing - land use/land cover
3. Identify Local Monitoring Efforts - include other data
4. Indicators & Protocols - greatest sensitivity to the change
5. Use of Volunteers - collecting & processing useable data
6. Data Management - an agency manager

How will we address them?

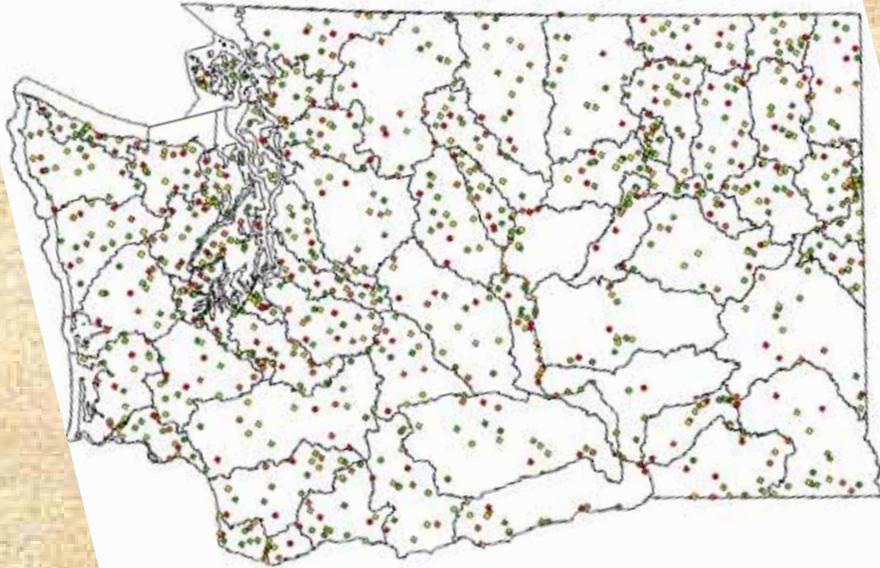
# Goals and Objectives

- The goal of status and trends monitoring is to provide quantitative, **statistically valid estimates** of habitat and water quality that are important for policy and management decisions.
- Provide a probability based sampling framework that can be used at the **state, SRR, and WRIA scales** by all levels of government and volunteers to assess the conditions of the state's aquatic resources.
- Determine a sampling site selection process that provides a **minimum of 80% confidence** in the estimated status of wadeable and non wadeable streams.
- Identify **specific metrics or indicators** that will be monitored and the protocols used to measure them.
- **Incorporate existing information and monitoring data**, where possible, into the status and trends assessment.
- **Develop partnerships** with other agencies, local governments, and volunteer groups to implement the monitoring plan or share data.

# Uses of Status & Trends Data

- **State of the Salmon Report (SOS)**
- **Salmon Recovery Region Watershed Planning**
- **Watershed Planning (2514)**
- **Regional, State, and Federal Responsibilities**

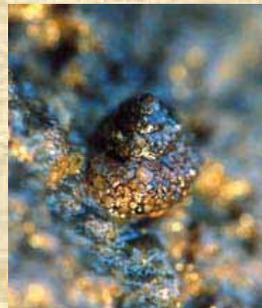
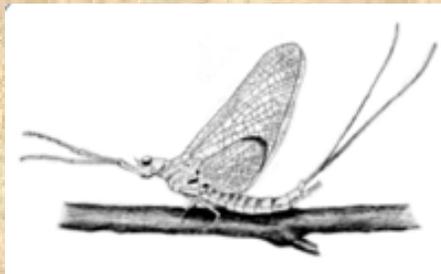
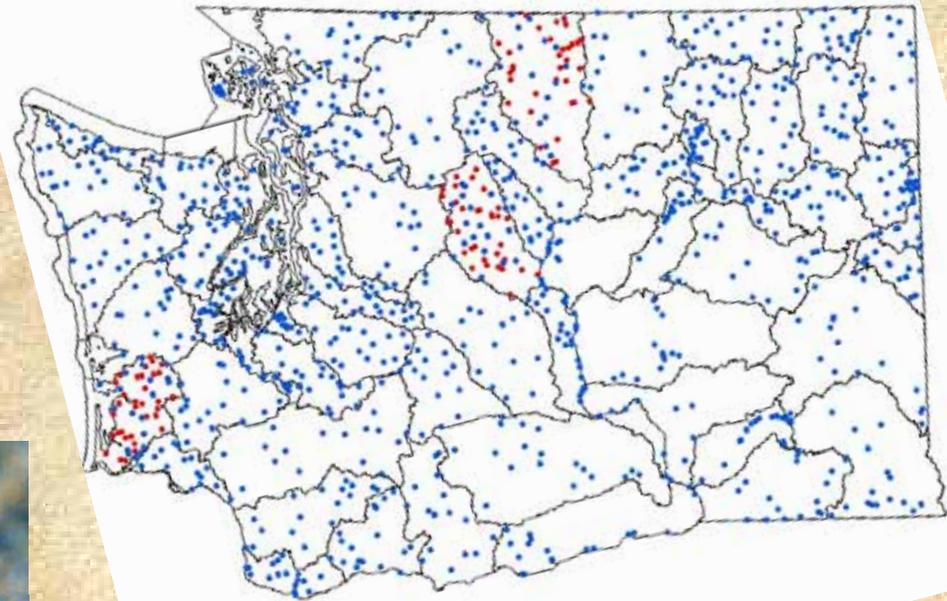
# Sampling Framework



Statewide by WRIA

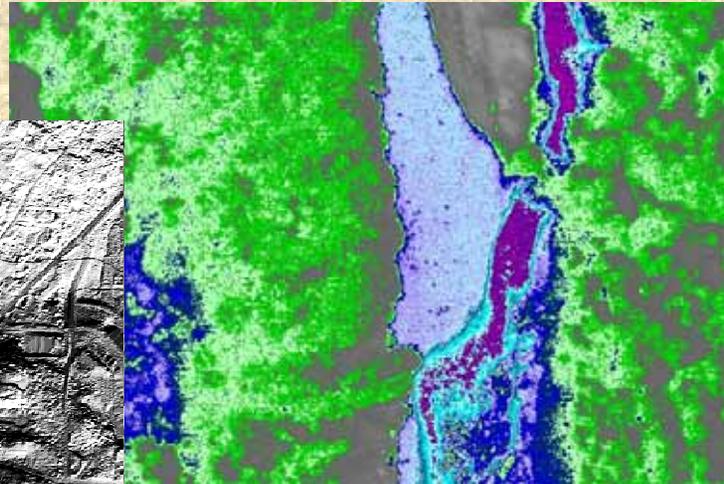
- a. "Core" sites visited annually
- b. Regional sampling-SRR's
- c. WRIA's

WRIA + IMW + (Local Gov't, other groups)



# Remote Sensing

- a. Linkages to wadeable & non-wadeable streams
- b. Use of aerial photography and other methods
- c. Landscape changes that influence stream condition
- d. Identifying cost-savings in evaluations



Satellite Imagery

LiDAR

Digital Orthoquads

Thermal IR Imaging

# Workshops

- **The Site Selection Process and Sub-Populations**
  - Base Map Scale (1:24,000) for site selection
  - Appropriate scales for assessment: WRIA, SRR, etc. (Who can use it?)
  - Overview of probability site selection (The monitoring plan.)
- **Indicator Performance, Evaluation, and Selection**
  - Indicators related to: instream, riparian, upland, floodplain, connectivity & wq
  - Attractive features: easy training, repeatable measurements
  - Enable use of "Good/Fair/Poor" categories (sensitivity in assessments)
- **Existing Data Sets and their Contribution to the Monitoring Plan**
  - Examples of "fixed-field" & "free-form" data management systems
  - Isolating existing monitoring programs is undesirable
  - Ensure local participation by using strengths of existing monitoring programs
  - (e.g., volunteers, cities, counties; permitting, ESA listings, stormwater mngmnt.)
- **Analytical Products & Status Reports**
  - Rolling-up data presented major challenges/resulted in huge data gaps
  - Use remotely-sensed data; convergent with federal programs
  - Time-relevant indicators (respond in <10 years)

# Next Steps

- Draft monitoring plan review; comments due April 28<sup>th</sup>.
- Meet with Tribes on April 21<sup>st</sup>; comments due May 19<sup>th</sup>.
- Prepare final review draft by June 9<sup>th</sup>.
- Final review draft; comments due by June 23<sup>rd</sup>.
- Finalize monitoring plan by June 30<sup>th</sup>.