Northwest Forest Plan Interagency Regional Monitoring, 15-Year Report
Status and Trend of Watershed Condition
Aquatic and Riparian Effectiveness Monitoring Program (AREMP)
Steve Lanigan, Module Lead

Background and New Science

Objective
The Aquatic and Riparian Effectiveness Monitoring Program (AREMP) collects data to determine if the Northwest Forest Plan's aquatic conservation strategy is achieving the goals of maintaining and restoring the condition of watersheds.

Methods
We evaluated watershed condition two different ways using decision-support models. Watersheds were given a score between -1 ("poor") and +1 ("good") based on in-channel data and also upslope and riparian data. Results were determined for watershed condition in 1994 and 2008/2009, and stratified by land use allocation.

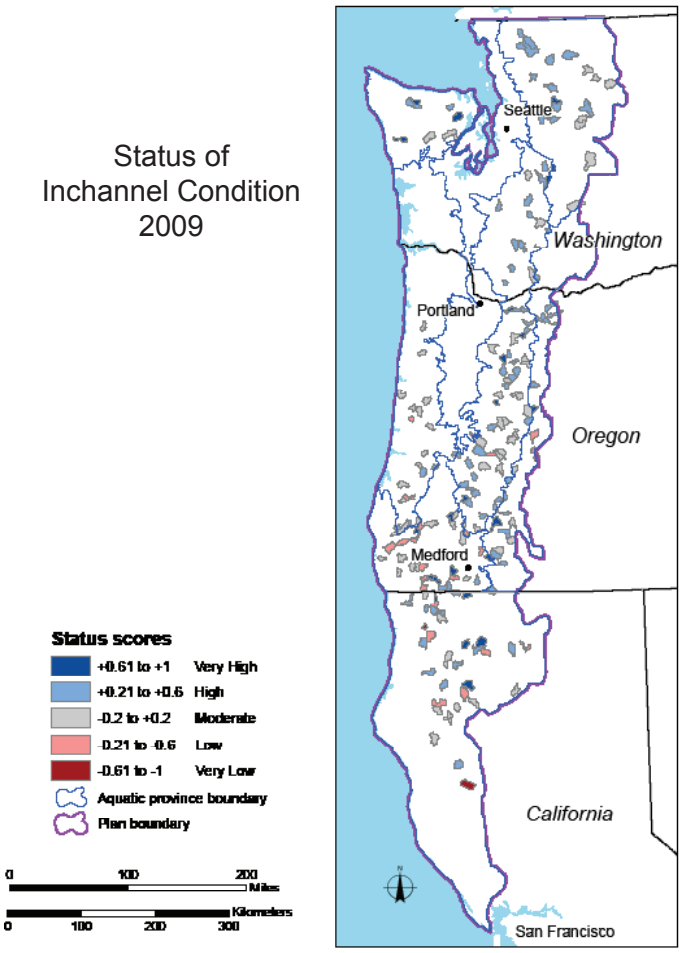
What's new this time?
The biggest change from our 10-year assessment, where we determined watershed condition for 250 watersheds, is that we evaluated watershed condition, based on upslope and riparian GIS and remote sensing data, for every 6th-field watershed with at least 25% US Forest Service, Bureau of Land Management, or National Park Service managed lands along perennial streams (a total of 1379 watersheds). We evaluated in-channel condition for a subset of watersheds based on pools, substrate, water temperature, large wood, channel morphology, amphibians, and macroinvertebrates data.

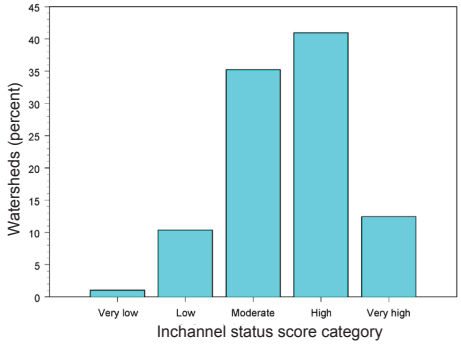
Six aquatic province models were refined based on input from unit specialists and researchers. This included adding metrics for landslide risk. and using recent Pacfic Northwest Research Station findings to refine our assessment of upslope vegetation based on the probability of rain-on-snow events.

Next steps and recommendations
Management review-A management review is proposed for 2011 to determine if changes in the monitoring protocol are warrented after 10 years of implementation.

Watershed Condition Monitoring Questions and Key Results

What is the status of inchannel condition?

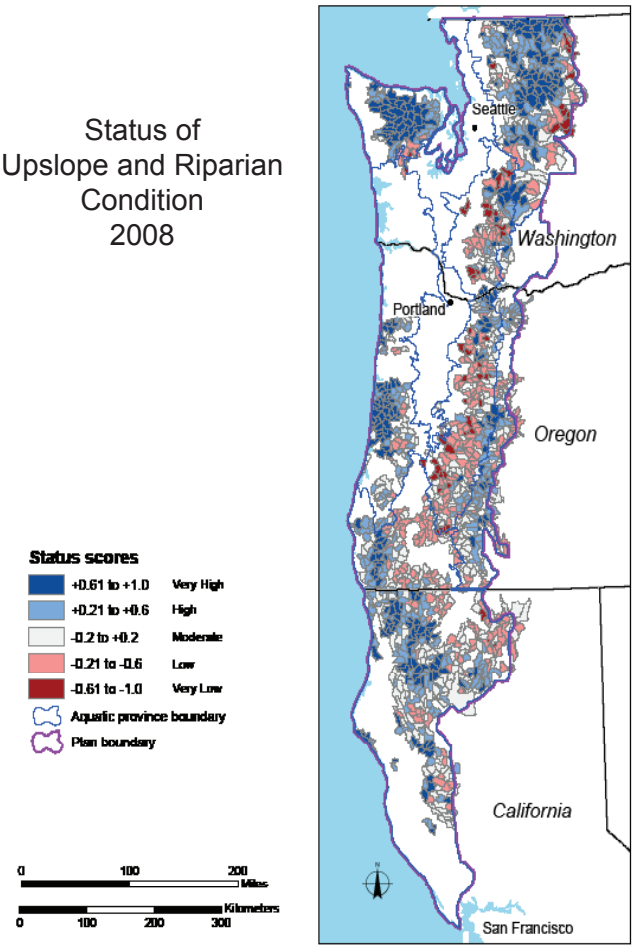


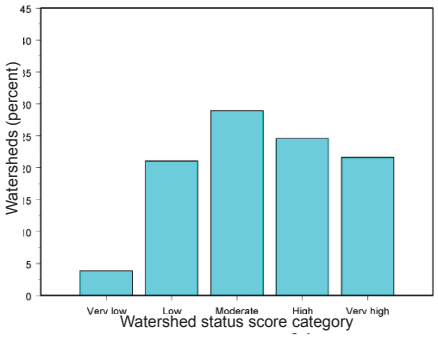


Grouping scores for the 193 subwatersheds with inchannel data into categories, shows that relatively few fell into the low (10%) and very low (1%) categories. The majority of inchannel attribute scores fell into the moderate (35%) and high (41%) ranges, with relatively few (12%) in the very high category. For low scoring subwatersheds, water temperature was usually the most influential factor.

What is the status of upslope and riparian condition?

Status of Upslope and Riparian Condition 2008

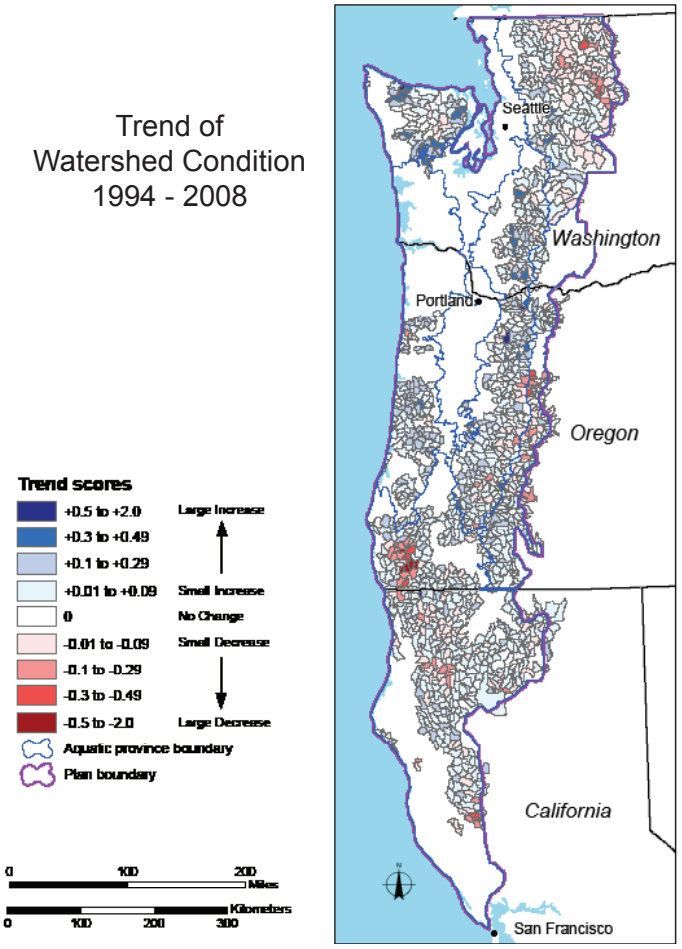


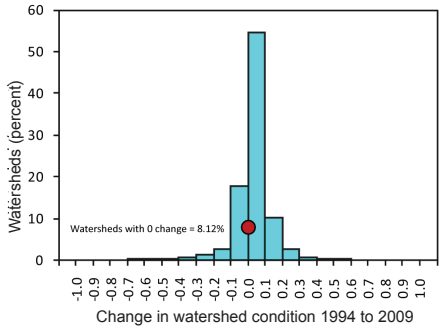


Overall condition scores of the 1,379 watersheds were clustered in the center of the distribution and skewed positive. Most fell into the low (21%), moderate (27%), high (26%), and very high (22%) categories; relatively few watersheds scored in the very low (4%) category.

What is the trend of watershed condition (based on upslope and riparian data)?

Trend of Watershed Condition 1994 - 2008





The majority of watersheds had a positive change in condition scores. Of those with larger positive changes, most were driven by both improvements in road (decommissioning) and vegetation (natural growth) scores. The greatest negative score changes were caused by the Biscuit Fire and other fires along the eastern side of the Cascades. Half of the fire impacted watersheds were in Congressional reserves, 35% in late successional reserves, and 15% in matrix (lands identified for timber production).