Washington Forum on Monitoring
June 24, 2009

AGENDA Item # 7

Moving from Indicators to Metrics

Presentation by:
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Problem/Issue Statement
In March, the Forum approved a proposed list of high-level indicators (in preparation for formal adoption by December 2009). And as intended, we have been coordinating closely with other state and regional entities working on similar lists of indicators (including transmitting a formal comment letter to the Northwest Power and Conservation Council on their proposed indicators).

But to meet the larger goal of aligning agency monitoring programs and supporting high-level reporting requirements (e.g. the State of Salmon in Watersheds Report), ***we must take the critical next step of identifying (and reaching agreement on) the specific metrics and field measures that will be monitored and rolled-up into those high-level indicators.***

For example, we have proposed including a Water Quality Index (WQI) as one of our high-level indicators. The next step is to identify the specific water quality elements that will be rolled-up into the WQI. Those might include temperature, dissolved oxygen, pH, total suspended solids, nutrient concentrations, and other parameters. We must begin coordinating with other monitoring entities across the state/region to reach agreement on the key metrics to be included in each high-level indicator. Once the key metrics are identified, we can also begin to identify the preferred protocols associated with those measures.

Methods/Solutions Proposed

We have already begun engaging core monitoring agencies (CBFWA, NPCC, PSP) in a series of meetings to align indicators and reporting measures as well as their component metrics and field measures. Initially, we will use Ecology's status and trends monitoring effort, and WDFW's fish-in / fish-out monitoring, as starting points for discussion with agencies across the state.

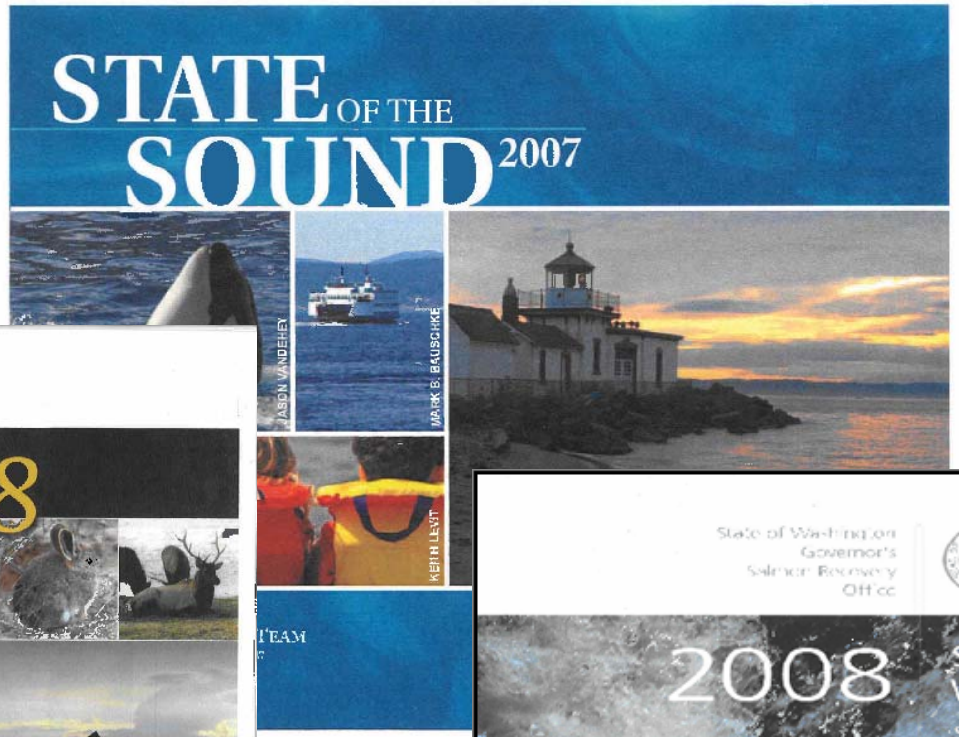
What decisions are asked of the Forum?

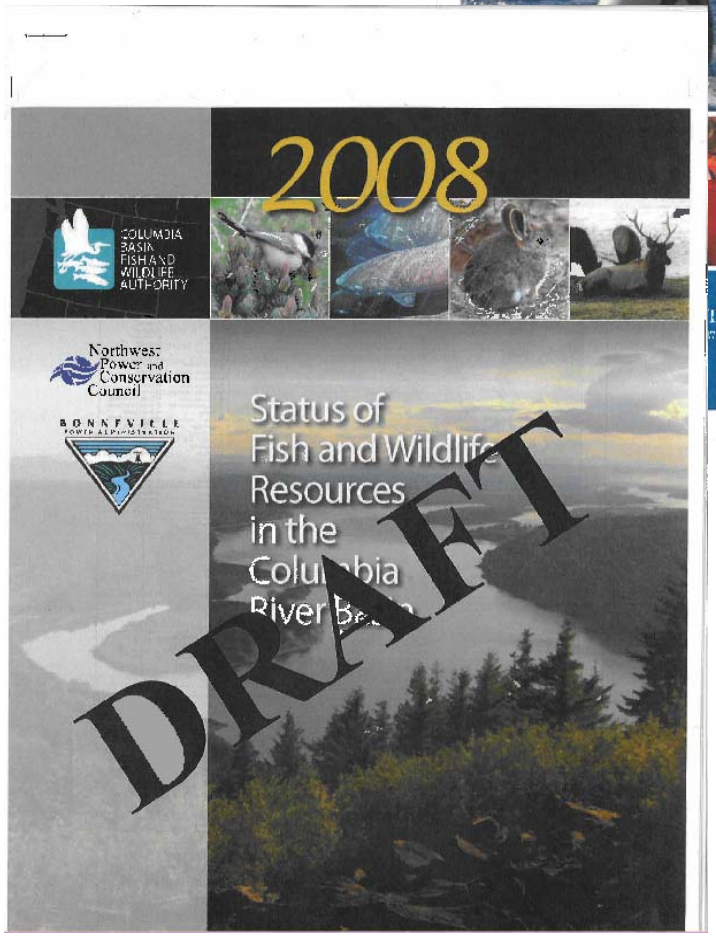
1) Continue to support staff participation in coordination meetings through the summer and fall, building towards statewide agreement among core agencies on primary metrics and measures necessary to align monitoring programs and feed data into the high-level indicators.

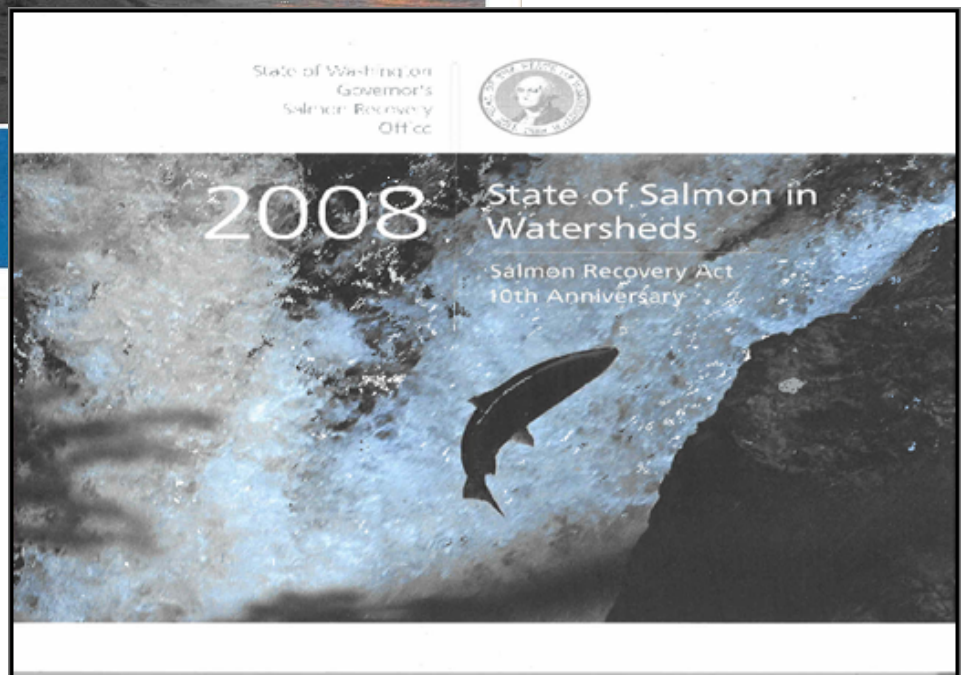
Moving from Indicators to Metrics

Goals:

- Meet the consolidated reporting requirements of RCW 77.85.020 (SOSIW, SRFB, PSP)
- Ensure consistency between and among high-level reports
- Incorporate data and results from other on-going monitoring programs

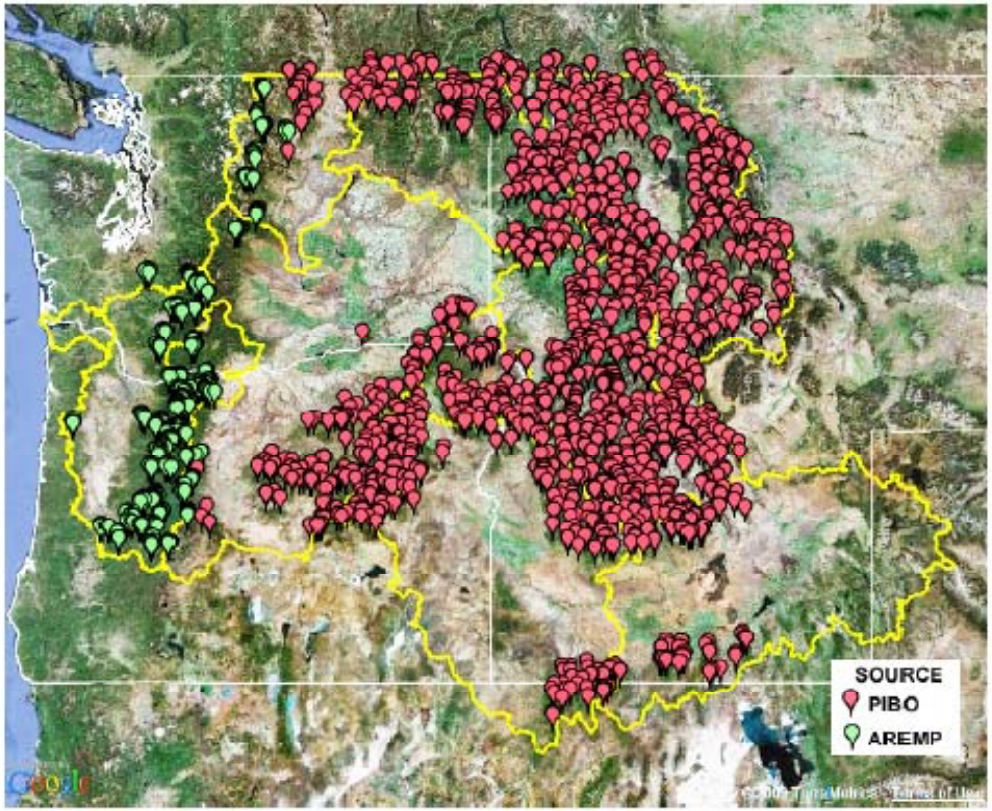

STATE OF THE SOUND 2007
JASON VANDEHEY
MARK B. BAUSCHKE
KEITH LEVIT
TEAM


2008
COLUMBIA BASIN FISH AND WILDLIFE AUTHORITY
Northwest Power and Conservation Council
BONNEVILLE POWER ADMINISTRATION
Status of Fish and Wildlife Resources in the Columbia River Basin
DRAFT


State of Washington Governor's Salmon Recovery Office
2008
State of Salmon in Watersheds
Salmon Recovery Act 10th Anniversary

Watershed Conditions

Stream Inventory Sites on National Forest and Bureau of Land Management Lands in the Columbia River Basin[45,46]



Green Symbol—Indicates locations where stream information is collected by the USDA Forest Service and USDI Bureau and Land Management through the Aquatic and Riparian Effectiveness Monitoring Program (AREMP).

Red Symbol—Bureau and Land Management through the PacFish/InFish Biological Opinion Monitoring Program (PIBO). The locations and information reported are for the sentinel and integrator sites used to track habitat status and trend within the PIBO area over time.[47]

Want to include samples collected on federal lands by USFS and BLM (AREMP / PIBO)

Approach:

1. Align high-level indicators
   - Forum, PNAMP, CBFWA, NPCC, PSP
2. Standardize on <u>metrics and field protocols</u> where possible
3. Standardize on <u>assessment protocols</u> (decision support models) elsewhere

Two categories of indicators:

- Fish
- Watershed Health

Forum fish indicators (proposed March 2009)

Abundance of wild (also hatchery) fish populations:

<u>For listed species by MPG and ESU</u>

- Total adult spawners
- Total adults harvested
- Total juveniles

<u>For all species by ESU</u> (*not currently compiled*)

- Total adult spawners
- Total adults harvested
- Total juveniles

Fish Indicators (salmon, steelhead, bull trout)

1. **Fish indicators are moving toward alignment**
   - focus on <u>populations</u>
   - NOAA monitoring guidance for VSP parameters
   - Inventory of monitoring programs underway with gap and needs analyses
   - Columbia Basin strategy for integrated monitoring & evaluation for anadromous fish

Fish Indicators (salmon, steelhead, bull trout)

1. Metrics and field protocols are largely standardized, *but different methods will be required in different locations*
2. Therefore: emphasis must be on reporting results (e.g. abundance estimates) at comparable scales (populations) with known precision
3. Improving data management systems will improve reporting

Watershed Health Indicators

1. Less agreement on metrics and protocols

2. But only a few large scale, long-term programs to align
   - Ecology, AREMP, PIBO, ODF&W

Approach:

1. Align high-level indicators
   - Forum, CBFWA, NPCC, PSP, Oregon
2. Standardize on <u>metrics and field protocols</u> where possible
3. Standardize on <u>assessment protocols</u> (decision support models) elsewhere

Forum watershed health indicators (Proposed March 2009)

- **Water Quality**
  Ecology WQ Index (by region/province)
- **Stream Flow**
  % time in-stream flows met Aug - Sept
- **Sediment Quality**
  sub-set of sediment quality measures
- **Habitat Quality (in-stream & riparian)**
  sub-set of habitat measures
- **Biological Health (in-stream)**
  macro-invertebrate index
- **Land Use / Land Cover**
  % impervious surface; % forest, urban, ag

Watershed Health Indicators

1. **Ecology's Status & Trends program will help standardize watershed health measures across non-federal lands**
   - Quality Assurance Manual, standardized field forms, field sampling training, and accessible data base will encourage smaller-scale (watershed) programs to align
   - EPA proposing to establish long-term climate-change reference stations in Puget Sound using Ecology's methods and protocols

Watershed Health Indicators

1. **Standardize on <u>assessment protocols</u> (decision support models) to align with federal programs**
   - AREMP and PIBO use different approaches and methods than Ecology
   - AREMP tests premise that watersheds fully support natural physical and biological processes, biodiversity, etc…
   - Calculates numeric estimate that the premise is supported: 100% supported = 10; No support = 0

Next Steps

1. **Fish**
   - Complete monitoring inventory, gap and needs analysis
   - M&E Strategy for anadromous fish
   - Improve data management systems

Next Steps

1. **Watershed Health**
   - Implement Ecology S&T Program (statewide)
     - Continue working toward agreement on final set of metrics and methods within state and local family at least
   - CBFWA facilitating meeting between Ecology, AREMP, PIBO, Oregon, tribes in late August
     - Explore similarities and differences, and propose additional steps to improve comparability