

State of the Sound Report – Selection of Ecosystem Indicators Agenda Item #2b

Prepared by: Scott Redman

Approved by Director: DDD

Presented by: Scott Redman

Proposed Action: Decision

Summary: Per RCW 90.71.370(3c), the 2009 State of the Sound report will present scientific findings and interpretation of ecosystem status and trends. The Science Panel has recommended categories of indicators for this reporting. Staff and Science Panel members have begun working with teams of experts to develop status and trends reports on specific, available indicators to address the Science Panel recommended categories and the high level indicators being developed by the Washington Monitoring Forum. The attached suite of indicators for 2009 reporting is recommended for Leadership Council approval to authorize further development and reporting of scientific findings and interpretations for presentation in the State of the Sound report.

Staff Recommendation: Council approval of attached list of proposed status and trends indicators

Background: At its July 2009 meeting, the Leadership Council was briefed on the categories of ecosystem indicators for reporting in 2009 recommended by the Science Panel and the Washington Monitoring Forum. Staff have been working with Science Panel members and teams of experts over the past two months to identify specific ecosystem indicators whose status and trends can be reported in the 2009 State of the Sound. The suite of specific indicators being pursued for 2009 reporting, which follows the categories presented to the Leadership Council in July, will be discussed with the performance management cross-Partnership work group on September 1.

Analysis: Selection of indicators for the Partnership's status and trends reporting has been a focus of technical and policy discussions since early in 2008. Technical projects conducted in 2008 identified more than 100 available indicators related to the Partnership's (legislative) ecosystem recovery goals. A list of available indicators is provided in Table 1-1 of the Action Agenda. Partnership staff and science and policy leaders have recognized that status and trends reporting in the State of the Sound should be limited to a subset of the available indicators.

The recommended suite of ecosystem indicators for 2009 reporting (see attachment) reflects one of many possible "small" sets of reporting indicators following the advice of the Partnership's Science Panel and the Washington Monitoring Forum.

At its June and July meetings, the Science Panel endorsed a set of priority categories for 2009 status and trend reporting under each of the Partnership's ecosystem recovery goals. This set of categories was expanded slightly in staff's presentation to the Leadership Council in July 2009 to ensure that the "high-level indicators" being developed by the Washington Monitoring Forum were included.

Alternative suites of ecosystem indicators could be selected from frameworks used by the Partnership. Two sources of alternative indicators or suites include: the Partnership's work in May and June 2009 to adopt the Open Standards for the Practice of Conservation and (2) the list of indicators associated with ecosystem outcomes as presented in Table 1-1 of the Action Agenda.

The Science Panel recommended against using the 2009 Open Standards work to identify a subset of indicators for 2009 reporting in their June and July discussions. They suggested that the Partnership adoption of indicators via the Open Standards approach be implemented over a longer timeframe so that it could incorporate the findings on indicators to be published in the 2010 Puget Sound Science Update. The Panel was informed about the Partnership's Open Standards framework for indicators when they made their June and July 2009 recommendations on indicators for 2009 reporting.

The Science Panel's recommended categories of indicators do not address most but not all of the desired ecosystem outcomes articulated by the 2006 Puget Sound Partnership and presented in the Action Agenda. Outcomes that would not be explicitly addressed using Panel's recommended indicator categories include:

- Air is healthy for people to breathe
- Aesthetic values are continued and preserved
- Resources are adequate to sustain treaty rights and other needs and endeavors of tribal communities
- Economic prosperity is supported by and compatible with protection and restoration of the ecosystem
- Non-native species do not significantly reduce native species viability or habitats
- Biological harvest are balanced, viable, and ecosystem based
- Freshwater delivery to shorelines and estuaries supports estuarine, nearshore, and marine food webs

Next Steps: Staff will work with the Science Panel, data providers and other experts to develop science-based reports on findings and interpretations of status and trends of a suite of ecosystem indicators to address the six ecosystem goals. The Science Panel will discuss draft status and trends reports on September 9 and endorse a process for completion of a technical background report to serve as the basis for the preparation of the status and trends section of the State of the Sound report.

Attachment: Proposed Status and Trends Indicators

Attachment: Proposed Status and Trends Indicators

Status and trends reporting for the 2009 State of the Sound report: Following the advice of the Partnership's Science Panel, as amended to encompass the Washington Monitoring Forum's recommended high level indicators, the Puget Sound Partnership's Leadership Council directs staff to work with the Science Panel and regional experts to develop reports on the ecosystem status and trends for the following indicators:

1. Human Health
 - a. Safety of seafood
 - i. Commercial shellfish growing area classifications/closures
 - ii. Biotoxin closures
 - iii. Fish consumption advisories
 - b. Safety of water
 - i. Public drinking water
 - ii. Marine beaches for swimming
2. Human Well-being
 - a. Working resource lands and industries
 - i. Shellfish harvest
 - ii. Finfish harvest
 - iii. Marinas
 - iv. Timber harvest
 - v. Land in farms
 - b. Nature based recreation
 - i. Scenic & sightseeing recreation
 - ii. Wildlife viewing days
 - iii. Index of user days for activities related to healthy ecosystem
3. Species and food webs
 - a. Species of greatest conservation concern
 - i. Counts & lists by system, habitat type, etc.
 - b. Flagship species
 - i. Pacific herring
 - ii. Salmon
 1. Listed salmon
 - a. Adult Chinook & Hood Canal summer chum reported as in 2008 State of Salmon in Watersheds
 - b. Juveniles for Chinook and Hood Canal summer chum
 2. Non-listed salmon:
 - a. Coho
 - b. Chum
 - c. Pink
 - iii. Red-legged frog

- iv. Pileated woodpecker
 - v. Madrone or Woodwardia
 - vi. Southern resident orcas
 - c. Food webs
 - i. Note on future of this attribute/indicator
- 4. Habitat
 - a. Extent of ecological systems
 - i. Coarse scale
 - 1. Distribution of ecological systems and human footprint
 - 2. Change in forest canopy & forest stands
 - 3. Change in % impervious
 - ii. Fine scale
 - 1. Change from historic shore forms
 - 2. Eelgrass
 - 3. Oak grasslands
 - 4. Freshwater wetlands
 - b. Condition of ecological systems
 - i. Freshwater benthic invertebrates (BIBI)
 - ii. Marine benthic communities
 - iii. Note on upcoming river & stream habitat quality index from new status & trend monitoring program
 - iv. Note on future development of habitat connectivity indicators and/or indices
- 5. Water Quantity
 - a. Streamflow
 - b. Hydrologic regime
- 6. Water Quality
 - a. Toxic chemical contamination
 - i. Marine benthic conditions
 - 1. English sole
 - 2. Marine sediment
 - ii. Marine pelagic conditions
 - 1. Herring
 - 2. Note about mussels as better pelagic indicator
 - iii. Freshwater conditions
 - b. Water quality index
 - i. Marine WQI
 - ii. Freshwater WQI