

**Puget Sound Partnership  
DRAFT Dashboard of Ecosystem Indicators  
(19 Proposed Dashboard Measures)**

| Strategic Outcome Family of Measures (& Team Champion(s))   | Action Agenda Goal | HLI - Yes = X | DIENSION                        | MEASURE # | Strategic Outcome Measure Names | Operational Definitions   | Calculation (if Data Source any)                             | Data Frequency | Action Agenda Objective | Component | Comments  |
|---|--------------------|---------------|---------------------------------|-----------|---------------------------------|---|--|----------------|-------------------------|-----------|---|
| Performance (John Becker & Mary Beth Brown, Puget Sound Partnership)  |                    |               | P<br>R<br>O<br>G<br>R<br>A<br>M |           | Funding for the Sound           | Federal. State and local funding allocated to the Action Agenda | Puget Sound Partnership                                      | Annual         |                         |           |   |
|   |                    |               |                                 |           | Action Agenda Engagement        | % of Action Agenda items actively being addressed               | Puget Sound Partnership                                      | Annual         |                         |           |   |
| People (Trina Wellman, University of Washington; Jacques White, Long Live the Kings; & Angela Grout, Environmental Protection Agency) |                    |               | H<br>U<br>M<br>A<br>N           |           | Puget Sound Trends Index        | See Puget Sound Regional Council website                        | Puget Sound Regional Council - Rick Olsen<br>ROlson@psrc.org | Monthly        |                         |           | This index reflects what is guiding the region's economic development and sustainable growth goals; Includes four counties (King, Kitsap, Snohomish, and Pierce); there is nothing like it elsewhere that covers the geographic scale and time frame that we need |

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|   | Human Well-being   |               | H U M A N               |                 | Personal Vehicle Miles Traveled                      | Per capita vehicle miles traveled  | This data is extracted from the Puget Sound Regional Council Index to represent Changes in Behavior strategic outcome Measure - check with Brian Smith, from Department of Transportation | Annual         |                         |           | State-mandated in Climate Bill; Methodology needs to be finally determined to include annual estimate of mostly observed Vehicle Miles Traveled totaled by county, and/or average weekday estimate of vehicle miles traveled (or by 5 daily time periods)  |
|   | Human Well-being   |               | H U M A N               |                 | Commercial Fisheries Harvest (tribal and non-tribal) | Annual wild harvest (pounds) of tribal and non-tribal commercial fisheries (salmon, crab, shellfish, groundfish, shrimp) in Puget Sound (wild) | Pacific Fisheries Information Network - <a href="http://pacfin.psmfc.org">http://pacfin.psmfc.org</a> - State of the Sound  | Annual         |                         |           | PacFin data base reported annually by Pacific Marine Fisheries Commission.   |
|   | Human Health       |               | H U M A N               |                 | Swimming Beaches                                     | Percent of core beaches meeting water quality standards during swim season (allowing one exceedance)   | Departments of Ecology and Health   |                |                         |           | This measure looks at a set of core beaches, which have been monitored every year since 2004 by the Washington BEACH Program. The percent of core beaches meeting standards reflects the fecal bacteria water quality at swimming beaches and the human health risk of playing at these beaches. Ecology can report quarterly, but yearly 1/1 is more appropriate as it covers the full season. The baseline is 62% and the target is 75% by 1/1/2013. |

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|   | Human Well-being   |               | H U M A N               |                 | # of recreational fishing permits sold annually in Puget Sound | Recreational fishing permit sales | WDFW recreational fishing permit sales - data collected by license type, year issued and number of licenses – Eric Kraig- Eric.Kraig@dfw.wa.gov |                       |                         |           | Participation rates are indicative of the quality of the recreational experience and access to the resource....lots to harvest (less management restrictions and shellfish beds closed) the greater the participation; 2006 (most recent) Outdoor Recreation Survey, Washington State Recreation and Conservation Office. Recreational regions and data collected by counties every five years; Present data in stacked form |
| Water (Rob Duff)  | Water Quality      | X             | N A T U R A L           |                 | Marine Water Quality   | Marine                            | Marine Water Quality Index  | Department of Ecology | Annual                  |           | This index has been recently formulated and presented to the Science Panel, local governments and the CERF Conference last November. No formal publication as yet. <u>Contact:</u> Christopher Krembs  |

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|   | Water Quality      | X             | N A T U R A L           |                 | Freshwater Quality              | Freshwater Water Quality Index | Department of Ecology            | Monthly        |                         |           | The Water Quality Index (WQI) is intended as a tool to summarize and report Ecology's Freshwater Monitoring Unit's routine stream monitoring data. The WQI is a unitless number ranging from 1 to 100; a higher number is indicative of better water quality. Scores are determined for temperature, pH, fecal coliform bacteria, dissolved oxygen, total suspended sediment, turbidity, total phosphorus, and total nitrogen. Constituent scores are then combined and results aggregated over time to produce a single yearly score for each sample station. This report presents the methodology behind the WQI and the results of a trend analysis on monthly WQI scores at our long-term monitoring stations. Contact: Dave Hallock |

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|   | Water Quantity     | X             | NATIONAL  | Water Availability | Percent of monitored stream flows below critical levels | Department of Ecology & United States Geological Survey                       | Annual         |  |           | A seasonally-dependant measure of critical stream flow based on historical comparisons. Imperfect measure of water availability. While stream flows are impacted by groundwater, a more direct measure of groundwater availability is needed. An alternative measure would be % time in-stream flows met August – September. A variation of the same measure based on regulatory levels set for minimum flows as opposed to historical comparisons. |
| Species (Ken Currens)                                     | Species & Food Web |               | NATIONAL  | Salmon             | Fish Abundance  | Wild Chinook salmon population counts with distribution (not hatchery salmon) |                | Department of Fish and Wildlife & Tribes |           | Data are not available to calculate total salmon abundance for all 6 species, so Chinook would be a dashboard surrogate. Data available and well-vetted. Species occurs throughout the Puget Sound.   |
|   | Species & Food Web |               | NATIONAL  | Orcas              | Orcas abundance   | Southern Resident killer whale population trends                              |                | State of the Sound                       |           |   |

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|   | Species & Food Web |               | N A T U R A L           |                 | Jellyfish                       | Jelly fish abundance   | (Density of jelly fish/unit area or volume) X area or volume      |                |                         | National Oceanic and Atmospheric Administration?          |   |
|   | Species & Food Web |               | N A T U R A L           |                 | Terrestrial Bird Species        | Marbled murrelets and other birds abundance; breeding bird counts for composite (index) for a vareity of species or selected other terrestrial species | Birds/km2 sampled x area  |                |                         | Department of Natural Resources                           | Methods are well-documented in the scientific literature; ESA-listed species; Data available; Sensitive to loss of forest habitats, forestry impacts; Another potential ecotone transient species |
| Shorelines (Tim Quinn, Department of Fish and Wildlife; & Helen Berry, Department of Natural Resources) | Habitat            |               | N A T U R A L           |                 | Shoreline Armoring              |  | %s of freshwater and marine water shorelines armored              |                |                         | Department of Fish & Wildlife HPA? database               |   |
|   | Habitat            |               | N A T U R A L           |                 | Eel Grass                       |  | Areal extent (number of acres) of eelgrass in greater Puget Sound |                |                         | Department of Natural Resources Nearshore Habitat Program | Annual  |



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| Land (Tim Quinn, Department of Fish and Wildlife)         | Habitat            | X             | N A T U R A L           |                 | Land Use/Land Cover             | % land use/land cover; % impervious surface | Extent and condition of ecological systems (landcover by type) | National Oceanic and Atmospheric Administration CCAP? data | Five to six years       | working lands |          |

**There are currently 19 proposed dashboard indicators in total**

 Dashboard Indicators