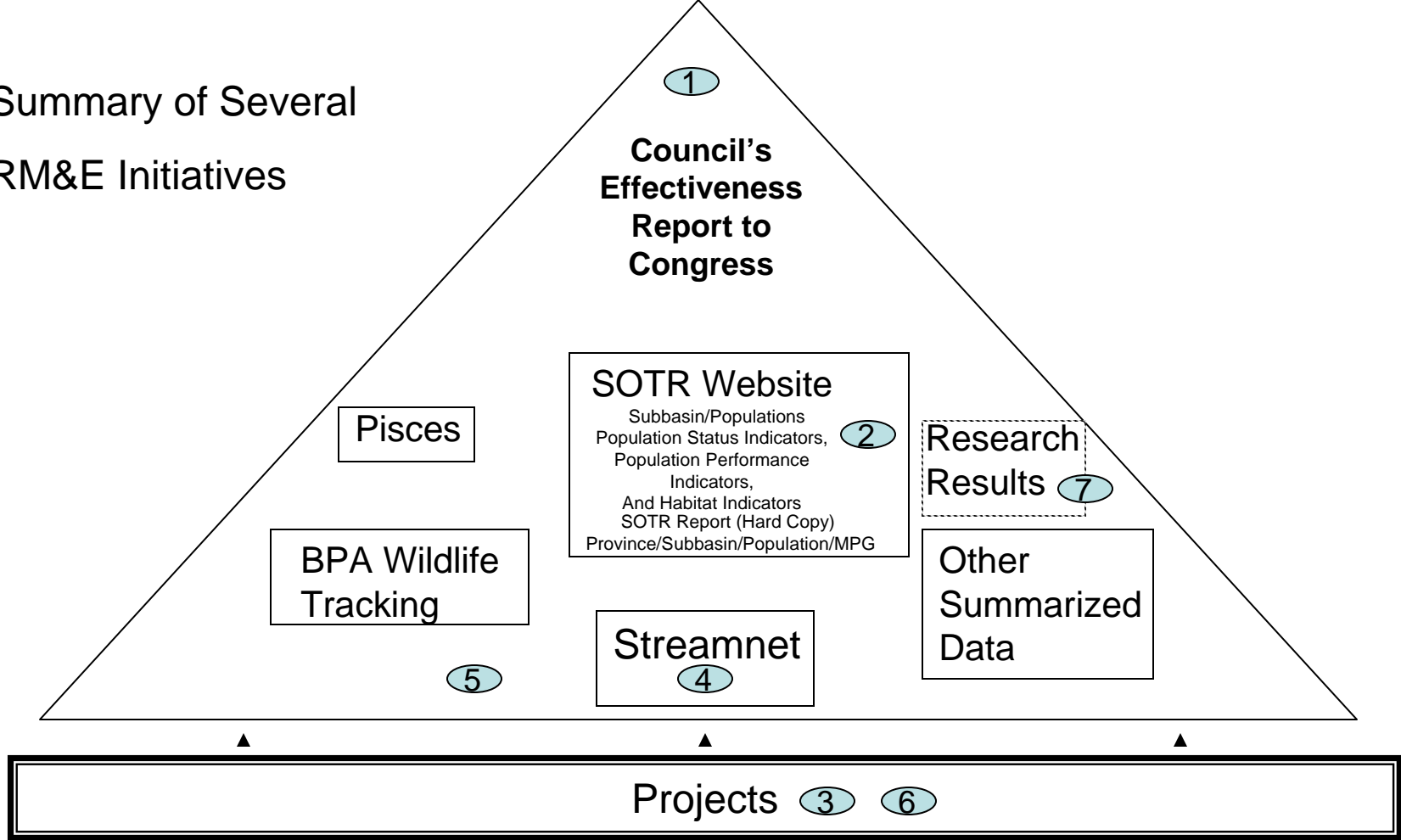


Summary of Several RM&E Initiatives



1. Agree on Council high level indicators for report
2. Roll-up high level indicators to province and basin level as an executive summary of the Status of the Resources Report
3. Agree upon reporting metrics used by projects as part of a monitoring and evaluation framework
4. Adopt developed protocols for counting fish
5. Determine data management protocols to assure quality and quantity of data to inform from the bottom up
6. Include reporting obligations in Bonneville contracts
7. Design research projects that evaluate critical uncertainties

Attachment

HIGH LEVEL INDICATORS

The Council should provide an annual report, or expand on the current report on expenditures, that summarizes by key indicator what the Program has accomplished in relation to what needs to be done. These indicators help to define success, unmet needs, and provide overarching direction to RM&E as well as funding for specific Council programs. To do this, the Council must first develop high-level indicators to track the success of the Program at three levels: Performance Indicators, representing those programs under the auspices of the Council's Program; General Indicators, representing biological outcomes that are important but not determined or achieved solely by the Council's Program; and Management Indicators that track actions that contribute to success. These indicators can and should form an integrally related whole.¹ Examples of these indicators are provided below for the Council's consideration.

I. PERFORMANCE INDICATORS

1. Hydro survival
 - Survival rates through the hydrosystem for fish passing in-river.²
 - Total juvenile survival rates through the hydro system, in-river and barged combined.³
2. Habitat improvement: Productivity of wild fish in the subbasins.⁴
3. Hatcheries and Harvest
 - Number fish harvested for each hatchery (coded wire tag data and other sources)
 - Total cost per fish (adult and juvenile).
 - Number and percent of listed fish taken in mixed stock fishery.
 - Conservation hatcheries: Relative fitness of supplemented stocks.
4. Resident Fish
 - Population and harvest of hatchery fish (in the Program).

¹ These categories, in a rolled up or overarching sense, should match up with the respective categories used by other reporting entities (e.g., NOAA's PCSRF, Washington's Salmon Recovery Funding Board, Washington's State of Salmon report etc.) to promote consistency of description, characterization and use.

² For example, in-river juvenile survival from Lower Granite to Bonneville dams as reported in the Sixth Annual Report, p. 10. 1966-1980, 1997-2006. This is currently reported for Snake River Spring Chinook and Steelhead but there should be more species. Should also have similar survival estimates for adults.

³ It is assumed that fish will not be barged unless their overall survival, smolt to adult return, is greater than fish migrating in-river. As long as this is true, this indicator, combined juvenile survival through the hydro system, is a useful performance indicator.

⁴ This is measured by the smolt to spawner ratio for fish targeted in the program. It is an indicator of fecundity and health of the watershed. We would expect to see this productivity measure increase if habitat improvements are benefiting wild fish populations. In order to calculate this indicator we will need to count adult spawners and juvenile outmigrants.

Attachment

- Population and harvest of wild fish (in the Program).
 - Productivity improvements for wild fish where habitat is improved.
5. Wildlife: Wildlife habitat units by dam: lost & acquired. (Sixth annual report, p. 13)

I. GENERAL BIOLOGICAL INDICATORS

1. Total Adult Salmon and Steelhead Returns to the Columbia⁵
 2. Abundance of adult fish in the Council's program.⁶
 3. NOAA Reports: Abundance, Productivity, Diversity of all listed fish.
 4. Estimates of mortality by source for certain listed and nonlisted fish.⁷
 5. Harvest numbers for nonlisted and listed fish.⁸ Determine whether we are meeting goals for tribal cultural and subsistence harvest?
- Harvest of all nonlisted fish of Harvest of all listed fish of Columbia Basin origin, ocean and in-river.
 - Are goals met for

III. MANAGEMENT INDICATORS

1. Percent of F&W Budget addressing Species of Concern or ESA-listed Species
2. Habitat funding needed (from sub-basin plans or approved recovery plans). [how much spent; how much needed]
3. Fish and Wildlife Project Funding, by category
 - Protection
 - Restoration
 - Combined protection and restoration
 - Monitoring and Evaluation
 - Research
 - Coordination and Administration
4. Percent of Projects passing ISRP Review
5. Percent of Projects Adequately Reporting on Accomplishments: Implementation and Biological Benefits
 - Completed, implemented as proposed; biological benefits achieved
 - Unreported; biological benefits unknown
 - On-going; biological benefits pending
 - Not Implemented as proposed; biological benefits not achieved

⁵ Salmon and steelhead passing Bonneville Dam, 1938-2006, hatchery and wild combined plus harvest. (Sixth annual report, p. 9)

⁶ These are the fish identified in subbasin plans

⁷ These sources include harvest, predators, ocean, dams (spillway, turbines, bypass), reservoirs, transport....

⁸ Columbia Basin origin fish harvested in the ocean and in-river (counted separately). All species, including listed fish.

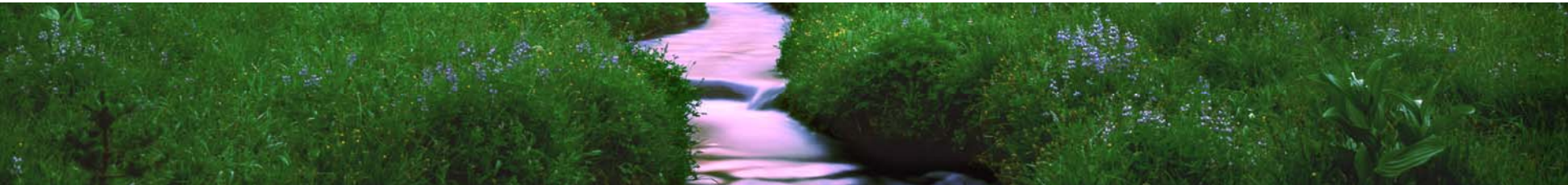
Attachment

6. Summary of management actions in response to inadequate reporting: project terminated, project renewed, conditioned approval
7. Hydropower:
 - Council funded projects producing biological benefits (percent increase in biological survival relative to a survival target)
9. Habitat Improvement:
 - Fish Passage Barriers Corrected and Stream Miles Opened (WA, State of Salmon 2006, p.12)
 - Acre-feet of Water Restored to Streams (WA, State of Salmon 2006, p.13)
 - Acres Acquired for Salmon Restoration (WA, State of Salmon 2006, p.14)
 - Restored tributary habitat (miles, and as percent of total needed in sub-basin plans)
 - Restored estuary habitat acres (miles, and as percent of total needed in sub-basin plans)
 - Tributary habitat acquisition/easements acres and stream miles (miles, and as percent of total needed in sub-basin plans)
 - Estuary habitat acquisition/easement acres (miles, and as percent of total needed in sub-basin plans)
 - Fixed passage barrier (number of barriers, # of miles opened up, as percent needed)
 - Irrigation screens installed (number; percent of total needed)
 - Water acquisition (cfs, as percent of total needed)
 - Water quality (as percent of total impaired quality projects needed)
10. Hatcheries:
 - Projects implementing ESA-compliant goals (HSRG; Section 7 Consult; percent of total needed.)
11. Harvest:
 - Selective fisheries (percent of fisheries subject to selective fishing)
12. Predation:
 - Projects producing biological benefits (percent of fisheries subject to predation)

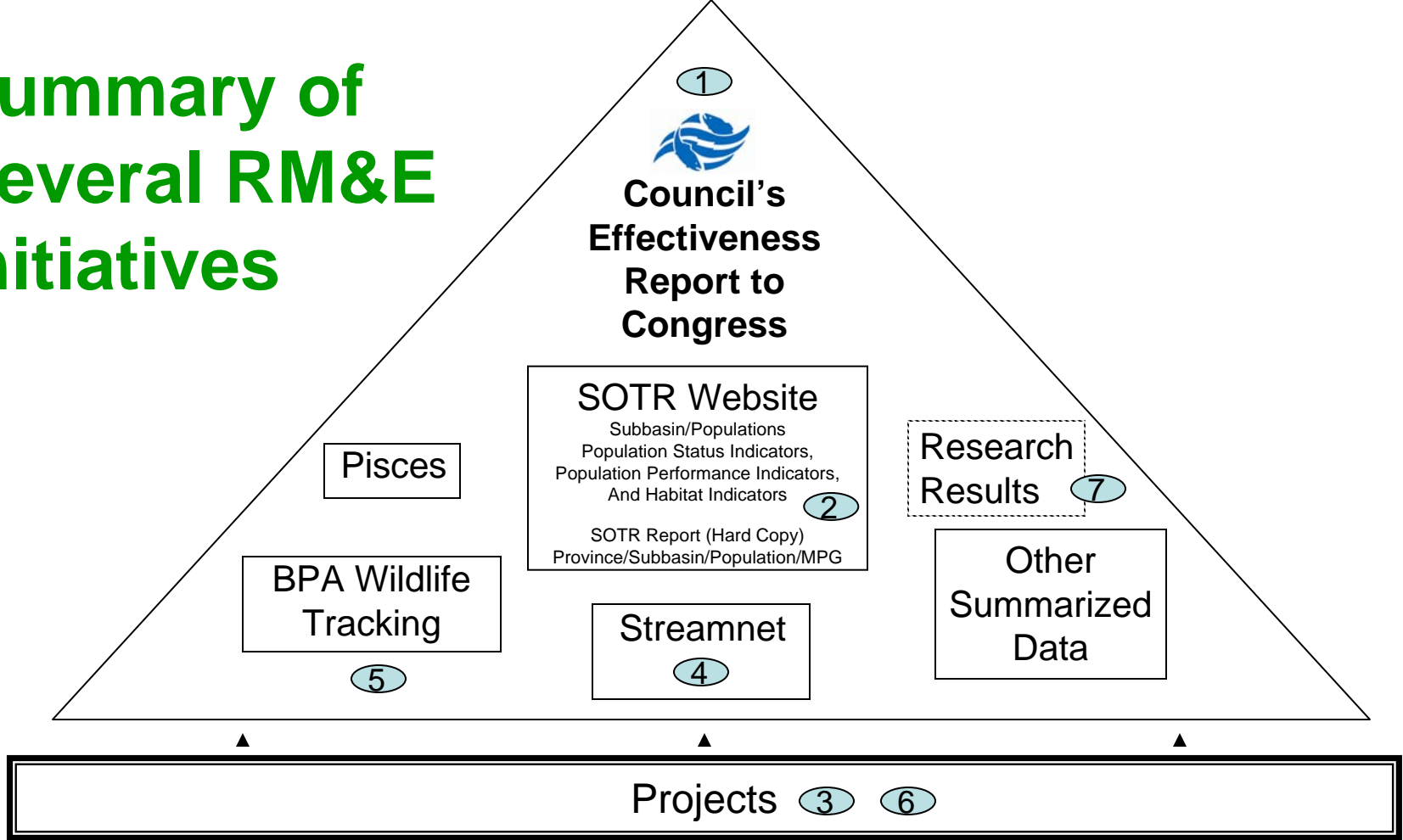
Progress Report on RM&E

High Level Indicators

May 14, 2008 Council meeting





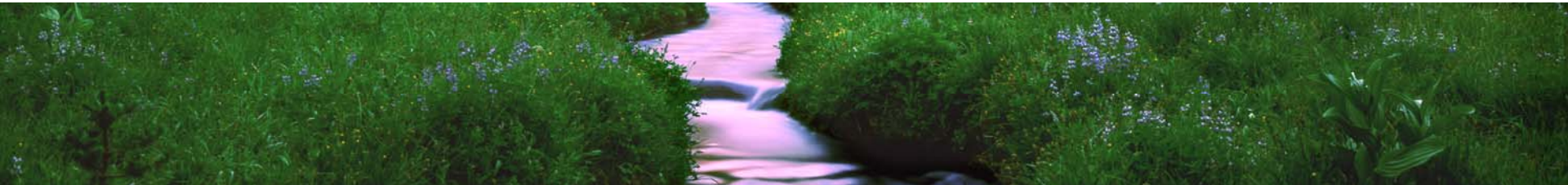
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High Level Indicators (HLI)

-  Purpose: To report to Congress and Governors measures of success
-  Goal: Council adopts a “working list” of indicators by July, final list by December



Different Types of HLI



Performance Indicators:

Closely tied to Program success



General Biological Indicators:

Important biological outcomes



Management/Implementation Indicators:

Track actions that contribute to success








Watershed Health Indicators:

Measures improvement in watershed functions



Performance Indicators





(Examples)

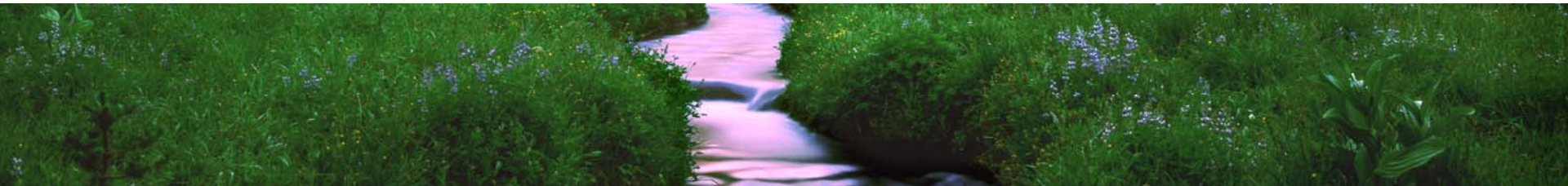
-  **Hydro:** survival rates through the hydrosystem
-  **Habitat:** productivity of wild fish
-  **Hatcheries & Harvest:** hatchery fish number and cost, fitness of supplemented fish, harvest of listed fish, meeting cultural and subsistence goals...
-  **Resident Fish:** population, productivity, harvest
-  **Wildlife:** Habitat units: lost and acquired



General Biological Indicators

(Examples)

-  Abundance of target species in Council's program.
-  NOAA Reports: Abundance, productivity, diversity of listed fish.
-  Estimates of mortality by source and life stage: dams, harvest, rearing, ocean,...
-  ...



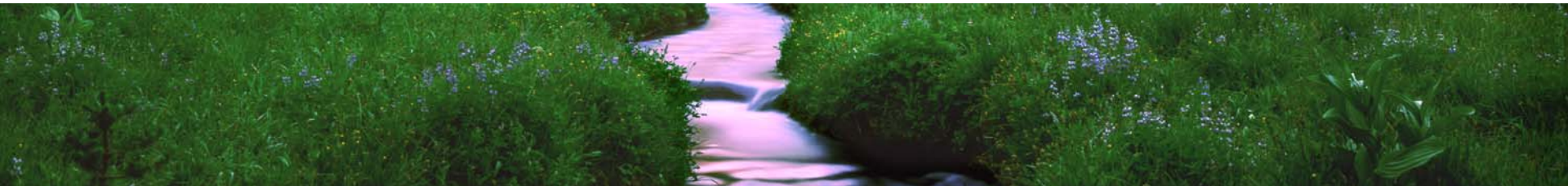
Management/Implementation Indicators (Examples)

Implementation

- Fish passage barriers removed
- Stream miles opened up
- Stream miles treated
- Irrigation screens installed

Management

- Percent of budget addressing species of concern
- Percent of projects passing ISRP review
- Percent of projects consistent with HSRG standards
- Percent of projects adequately reporting



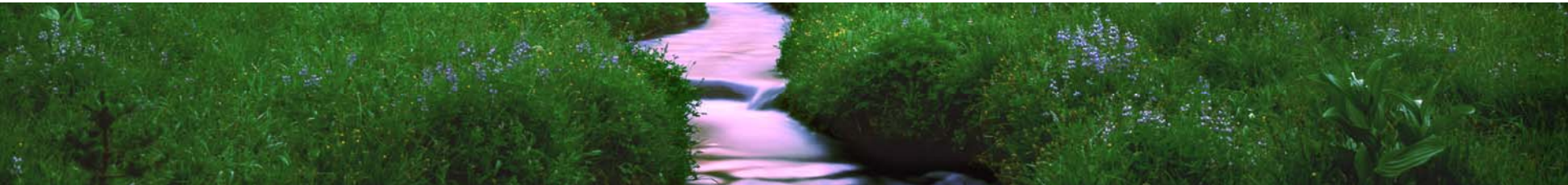
Watershed Health Indicators



To be determined



May have examples from the
Puget Sound initiative



Next Steps

- 🌊 June: Council releases Draft working list of High Level Indicators
- 🌊 July: Comments accepted until July 16
- 🌊 August: Council adopts working list of HLI
- 🌊 December: Council finalizes HLI in the Program Amendments

