

Freshwater Protection

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The Challenge

Surface water flows and groundwater resources in most watersheds of Puget Sound have been compromised as a result of dams and other hydrological modifications, loss and change of vegetative cover, water withdrawals for municipal, domestic, commercial, industrial, and agricultural water supplies, and in some cases, over-allocation of water rights. Climate change will compound these problems by reducing snowpack and groundwater infiltration, increasing stormwater runoff, raising stream temperatures, and concentrating pollutants in water bodies. As a result, Puget Sound aquatic habitats are degraded, native species have declined, and there is an uncertain future water supply for human consumption. Low water flows are identified as priority issues for salmon in 14 of the 19 Puget Sound Water Resource Inventory Areas.

Puget Sound watersheds require a comprehensive approach to protecting year-round, instream flows for people and instream uses. This is particularly important with increasing human population in the region and concomitant projected increases in water demand. Current approaches to managing stream flows, groundwater, water use, land use, and stormwater management are fragmented and the many programs that address water quantity are not coordinated. A fundamental realignment in policy and regulation is needed at the state level to repair the system, one that ensures the protection of natural hydrologic processes and associated habitats within Puget Sound watersheds. Some of these actions will also help improve water quality.

Relationship to Recovery Targets

Puget Sound has a specific recovery target for summer stream flows that support salmon habitat needs, other ecosystem needs, and provide water for people. This target includes a series of river-specific sub-targets to be achieved by 2020:

- Maintain stable or increasing flows in highly regulated rivers: Nisqually, Cedar, Skokomish, Skagit, Green
- Monitor low flow in the Elwha River after dam removal
- Maintain stable flows in unregulated rivers that currently are stable: Puyallup, Dungeness, Nooksack
- Restore low flows to bring the Snohomish River from a weakly decreasing trend to no trend
- Restore low flows to bring the Deschutes River, North Fork Stillaguamish River, and Issaquah Creek from a strongly decreasing trend to a weakly decreasing trend

Protecting and improving stream flows also will help support recovery targets related to insects in small streams, wild Chinook salmon abundance (which in turn supports recovery targets for Puget Sound resident killer whales), and freshwater quality.

A6. Protect and conserve freshwater resources to increase and sustain water availability for instream flows.

The aim of this strategy is to develop coordinated, watershed-based water management approaches, accounting for existing ecosystem goals, water management agreements, projected future climate conditions and water availability, and projections of future instream flow demands. This strategy approaches freshwater protection and conservation from three perspectives:

- Regulation, monitoring, and enforcement
- Water demand and conservation
- Supply, including reuse and reclamation
- Ground water supplies and recharge

A6.1 Regulation, Monitoring, and Enforcement: Reform state water laws to be more protective of instream flows and to encourage conservation and implement streamflow protection and enhancement programs.

A critical tool for protecting and conserving freshwater resources is rule-making for instream flows. The Department of Ecology has authority to set instream flows under several statutes – Chapters 90.22, 90.54, and 90.82, of the Revised Code of Washington. . The term "instream flow" is used to identify a specific stream flow (typically measured in cubic feet per second, or cfs) at a specific location for a defined time, and typically following seasonal variations. Instream flows are usually defined as the stream flows needed to protect and preserve instream resources and values, such as fish, wildlife, water quality, aesthetics, and recreation. Instream flows are most often described and established in a formal legal document, typically an adopted state rule. Ecology establishes in stream flow rules through the Administrative Procedures Act (RCW 34.05). In areas of the state where watershed planning has occurred, local planning units can make recommendations to the Department of Ecology for instream flow rules to be established or, for existing rules, amended. WDFW provides technical assistance in the form of instream flow studies, flow study interpretation and analysis in light of hydrology and species-specific ecology, developing instream flow recommendations based on interpretation of instream flow study results, and explaining instream flow ecology and methods to stakeholders.

Most of the watersheds in Puget Sound's (Water Resource Inventory Areas 1, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14 ,15 and 17) are currently covered by instream flow rules. Only four of these rules, however, address permit-exempt groundwater withdrawals that can have a cumulative effect on stream flows, especially in late summer. . . . For example, the instream flow rule for Kennedy– Goldsborough Water Resource Inventory Area (WRIA) 14 was codified in 1988 and has not been updated.

An additional challenge to updating instream flow rules is the degree of local support and/or opposition to the rule-making process within any given basin. The degree of support or opposition can greatly influence both the cost and time required to adopt or update a rule, as evidenced by recent rule-making activity in WRIA 17 and WRIA 18. New instream flow rules often limit access to groundwater supplies and this can cause a backlash from home builders, realtors, and property owners. To address this challenge, it will be important to work with local officials, legislators, tribes, and stakeholders to reach agreement on regulatory approaches and solutions to water supply problems. Finding solutions to the growing demand for water can take longer than developing the rule language itself. Education and

outreach efforts are also critical for building public understanding and support. . Outreach strategies would be tailored for specific basins. Ecology's staffing for instream flow rules has been reduced in recent years due to budget cuts.

[Should we say something about the lack of resources issue here? Most of the existing NTAs in this area from 08/09 are not launched or otherwise need attention because of lack of resources. . .]

Performance Objectives for Ongoing Programs

Ecology's Watershed Plan Implementation and Flow Achievement Capital Grant Program and Watershed Planning Operating Budget Grants include specific technical approval criteria such as amount of water added to instream flows and improvements to fish habitat.

Performance measures from Ecology's Water Resources Division include: 2 instream flow rules adopted (Q6, 2009-2011 biennium), number of instream flow rules adopted, 0% of monitored stream flows below critical flow levels, and 1,250 acre-feet of water saved for instream flow (for each period, 2009-2011 biennium). Additional measures include percentage of Hood Canal summer chum and Puget Sound Chinook stocks with spawner escapement (number of fish returning to a stream or river to spawn) exceeding their 1993-97 pre-Endangered Species Act (ESA) listing base period. An increasing number of populations with spawner escapement exceeding the population's pre-ESA base period would indicate progress toward a healthier Puget Sound ecosystem.

Near-Term Actions

A6.1 NTA 1: Ecology, with support from WDFW, will set flow rules in three remaining Puget Sound watersheds (WRIA's 16, 18, and 19) that currently do not have instream flow rules within 6 years. Two additional watersheds – San Juan (WRIA 2) and Island (WRIA 6) are not near-term candidates for instream flow rules due to naturally limited freshwater habitat. Priority will be given to critical basins or those with known significant problems meeting instream or out-of-stream demands. By 2013 Ecology will have adopted an instream flow rule for the Dungeness River portion of WRIA 18.

A6.1 NTA 2 Ecology will develop and implement the comprehensive basin flow protection and enhancement programs called for in the recovery plans for Puget Sound Chinook and Hood Canal/Strait of Juan de Fuca summer Chum by [date]. By 2013 Ecology will [increment of anticipated progress.]

A6.1 NTA 3: Implement the recommendations from approved watershed plans prepared under the Watershed Planning Act (RCW 90.82) consistent with the Action Agenda and coordinated with other local restoration and protection efforts.

A6.1 NTA 4: Ecology will establish local water masters in each Puget Sound watershed to increase water code compliance and enforcement by [date]. By 2013, Ecology will establish at least one water master in a selected high priority watershed to increase water code compliance and enforcement, this will include providing funding for the water master to be a local contact

to water users, provide a local compliance presence, protect the resource, reduce water use, and protect senior water rights, including instream flows.

A6.2 Water Demand and Water User Conservation: Decrease the amount of water withdrawn or diverted and per capita water use.

The previous section focused on regulation and monitoring of freshwater resources through implementation of instream flow protection programs; this section considers freshwater resource protection through demand and conservation strategies. Managing demand and promoting conservation will be critical as the human population increases in the Puget Sound region. Population stress on water supply will be further exacerbated by predicted decrease in snow-pack and increased frequency of droughts brought about by climate change. The near-term objectives for water demand and water conservation address four key sectors: municipalities, agriculture, industry, and rural domestic water users. Demand and conservation goals will be met through a combination of implementation/enforcement of rules, voluntary participation in conservation programs, market-based approaches to adjust water usage, and deployment of current and emerging water conservation technologies.

[Placeholder for examples of existing programs]

Performance Objectives for Ongoing Programs

[placeholder]

Near-Term Actions

A6.2 NTA 1: [Who] will support municipal water systems' implementation of Washington Department of Health's Water Use Efficiency Rule, including establishing water conservation goals, metering, and reporting from all municipal suppliers by [when? If not 2013 need to specify an increment of progress by 2013]

A6.2 NTA 2: [Who] will support an increase in periodic audits of industrial water users of [how much] by 2013.

A6.2 NTA 3: Building on existing public-private models, public utilities will adopt demand management strategies (such as tiered pricing structures) to discourage inefficient and unnecessary use of municipal water, particularly in flow-limited areas or low flow periods. By 2013, [x] number of utilities will have adopted demand management strategies.

Comment [JAC1]: Adopted from 2008/2009 Action Agenda, sub-strategy A3.2.2

Comment [JAC2]: Identify agency responsible for ensuring this goal is met?

A6.3 Implement effective management programs for groundwater.

A critical approach to protection and restoration of freshwater resources includes management of groundwater in conjunction with surface water to better account for the interaction between the two. The groundwater strategy will include monitoring of groundwater resources (including exempt wells) and use projections, and completion and implementation of groundwater management plans

throughout Puget Sound. It will also require an emphasis on work in areas without current groundwater management plans that are at high risk of groundwater pollution and/or current or future demand. The Critical Aquifer Recharge Area (CARA) program (under the state's Growth Management Act) is one potential vehicle for coordinating protection of groundwater resources across Puget Sound counties to support instream flows.

Performance Objectives of Ongoing Programs

[Placeholder]

Near-Term Actions

A6.3 NTA1: [who] will convene a stakeholder group to identify management options for exempt wells and make a recommendation to the Partnership and Ecology by [date].

Emerging Issues Related to Improving Freshwater Flows

In addition to the specific ongoing program activities and near-term actions described above, there are a number of ideas for future work that might be undertaken to address protection of freshwater flows in Puget Sound. These ideas should be an ongoing part of the regional discussion about freshwater flows, and may inform future funding decisions, programmatic priorities and guidance, and/or may become near-term actions in future Action Agenda cycles. They include:

- The proper balance between establishing new in stream flow rules and updating existing rules. Ecology current has no resources to update existing rules. Diverting resources to update existing rules would slow establishment of new instream flows.
- Application of more holistic, watershed and water budget based approaches that would examine all the water needs in a watershed (e.g., growth, industry/agriculture, stream flows) and all the potential water resources (e.g., reclaimed water, stormwater, and rainwater harvesting) and work to best match needs and resources.