

To: Puget Sound Partnership
From: Mark Hersh, Water Quality Specialist, Washington Trout
Subject: Comments on draft report
Date: October 26, 2006

Washington Trout appreciates the opportunity to comment on the draft report of the Puget Sound Partnership. We also appreciate the hard work of the staff and of the Partners themselves in developing solutions. These comments supplement our comments submitted by the Puget Sound Environmental Caucus of which Washington Trout is a member. Our comments are organized with the corresponding section of the draft report (*italicized below*).

2. THE CHALLENGES BEFORE US

2.1 A Sound Body

Science has “developed powerful tools,” and that is good news, but it remains that the choices that must be made to protect and restore the Sound are much less scientific choices than they are political and societal choices.

2.2 The Status of Ecosystem Health

2.2.2 Remaining habitat is disappearing.

Some information regarding recent land use changes (e.g. decrease in forest cover and the increase in impervious surface) would be helpful here.

2.2.5 Population growth and climate change make the future outlook even more challenging.

Putting both of these challenges into the same section implies that both are more or less beyond our control. Obviously, we cannot stop people from reproducing or moving to this region, any more than we can control the global climate. But as a region we can take steps to control our greenhouse gas emissions, and we can also take steps to control the “footprint” of the present residents and the expected 1.4 million additional people.

2.3 Treatment efforts for Puget Sound have been piecemeal.

2.3.3 Present challenges and future decisions.

This section sounds as if we need only produce a plan. A path must not only be “charted,” the proper path must be followed. And while this region may have the “best chance of any place in the country to succeed,” that is certainly no guarantee of success.

3. MAKING A DIFFERENCE: A 2020 Action Agenda for a Healthy Puget Sound

3.3 Recommended Essential Priorities for a Healthy Puget Sound by 2020

A. Protect Existing Habitat and Prevent Further Losses

Key Immediate Priority Actions

1. Fund priority freshwater, estuarine and marine habitat protection actions in the salmon recovery plan and along the marine nearshore, in locations such as estuaries, forage fish spawning areas, feeder bluffs, and others that may be regionally important.

The Partnership needs to strongly consider protecting areas of Puget Sound itself through the establishment of additional Marine Protected Areas. Please see Appendix A of Washington Trout’s comments for more information. In addition, both freshwater and marine areas could be protected through “outstanding resource waters” designations as described in Washington’s water quality standards (WAC 173-201A-080). Such designations will send strong signals on a regional—and national—basis that we are willing to take the first steps necessary to protect our own resources.

2. Provide funding and support to accelerate Critical Areas Ordinances and Shoreline Master Program updates, implement these regulatory programs, and provide state guidance to local governments so that these programs can more effectively protect the resources of Puget Sound.

While protection under the GMA and SMA (when fully implemented) will be greater than that realized previously, there are serious problems with this approach. Hundreds of city and county governments will be responsible for protecting habitat using the GMA and SMA. There is no particular science-based or watershed-based approach to this protection; instead, local municipalities establish the protection ostensibly based on the “best available science,” but always subject to the political process.

Washington Trout recommends instead that basin planning be a keystone of this process. Protecting and restoring Puget Sound requires in part, protecting and restoring our watersheds. That, in turn requires a comprehensive approach integrating protection measures (including stormwater permitting), land-use planning, and restoration actions. This would also be a way in which to integrate science into decision-making processes. See Appendix B for additional information on our recommendations.

4. Develop and implement specific policy proposals to provide incentives for protection, including Transfer of Development Rights and Low Impact Development where appropriate and effective.

There needs to be a requirement for local governments to mandate greater use of Low Impact Development techniques.

5. Provide funding to state and local governments to implement existing regulations.

This is a critical need, and as we pointed out above, integration of regulatory programs with science-based reviews of watershed actions is necessary.

C. Significantly Reduce Toxics Entering Puget Sound Fresh and Marine Waters

D. Significantly Reduce Pollution from Human and Animal Wastes Entering Puget Sound Fresh and Marine Waters

E. Improve Water Quality and Protect Habitat by Managing Stormwater Runoff

Washington Trout, along with other groups, notified the USEPA, through a 60-day notice letter, that its failure to conduct ESA Section 7 consultation with NOAA Fisheries on EPA's oversight of Ecology's Clean Water Act NPDES program is in violation of the ESA. Regardless of what the Partnership does, we believe that EPA has an obligation under the ESA to consult. Doing so would ensure that Ecology's NPDES program (including stormwater) is sufficient to support recovery of ESA-listed species. The Partnership could make the consultation much easier by recommending that Ecology take listed species into account in its NPDES programs.

See Appendix B for more information regarding our recommendations on stormwater. We believe that the recommendations in the draft plan will result in a delay of actions that need to be taken immediately if ESA-listed species are to be recovered and Puget Sound sufficiently protected. At various times, both NOAA and the USFWS have made comments to Ecology regarding both the Stormwater Manual and draft general stormwater permits that have not been adopted by Ecology. We note here that our 60-day notice letter to USEPA outlined, in a similar matter, the inadequate nature of Ecology's stormwater NPDES program to protect listed species. Finally, an October 26, 2006, letter submitted to the Partnership by fourteen members of Washington's scientific community points out numerous flaws in the Partnership's reliance on Ecology's stormwater NPDES permit. It is clear that the current stormwater program will not protect Puget Sound, let alone recover it or ESA-listed species.

G. Protect Ecosystem Biodiversity and Recover Imperiled Species

Key Immediate Priority Actions:

1. Implement existing recovery plans (e.g., Chinook salmon, bull trout, sea otters, southern resident killer whales, and others) and create and implement recovery programs for species at risk of extinction without recovery plans (e.g., rockfish species, northern abalone, western grebe, harbor porpoise, and others).

We note that a petition to list copper rockfish and quillback rockfish under the ESA as well as designate critical habitat has recently been submitted to NOAA. In addition, existing recovery plans themselves have little to say about implementation.

2. Set harvest quotas that account for the numbers of animals required for ecosystem needs.

Washington Trout agrees that harvest must be based on what the ecosystem requires. Unfortunately, ecosystem needs were not considered whatsoever in the past and current management strategies remain inadequate. For example, salmon harvest has been reduced from historic levels by 30% to 50%, depending on the run – but the starting point was very high, typically 60% to 90% of returning populations. Under the current management plan, allowable harvest impacts on listed chinook in Puget Sound vary from 22% to 76% for different populations. Habitat improvements in Puget Sound are expected to cost \$150 million a year for at least ten years, and may extend out 50 years. Many scientists inside and outside the federal agencies believe that chinook recovery will also require consistently achieving spawning levels of wild salmon high enough to conserve as much of the genetic, geographic, and life-history diversity within and between salmon populations as possible. That will likely require much lower total fishing impacts than current management allows.

Washington Trout urges the Partnership to set the following minimum goals for harvest in the final report to the Governor:

- Escapement goals and harvest rates are consistent with ESA recovery goals, set to assure that adequate numbers of native adults actually do return.
- Allow less non-selective, non-Tribal intercept fishing.
- Changes focus on non-Tribal fisheries, respecting conservation necessity principles.
- Any changes in Tribal fisheries should be voluntary, with incentives.

H. Build and Sustain our Capacity for Action

Key Immediate Priority Actions:

2. Provide funding for watersheds to carry out an expanded role providing accountability for results at the watershed level, developing and implementing priority projects and coordinating water quantity, quality and habitat.

We must stop subsidizing activities that cause environmental degradation and instead generate funds from these activities that can be used for protection and restoration activities.

Please see Appendix C of our comments, which is an excerpt from the book *Saving Puget Sound* by John Lombard.

3. Conduct monitoring and assessment that is tied to the Governor's Monitoring Forum.

Monitoring and assessment include physical, chemical and biological parameters and must be tied to an adaptive management program that has clear and distinct triggers.

4. Fund enforcement of existing laws at the state and local level. Local governments need the resources to effectively implement existing regulations and they need accountability for achieving implementation. Both technical assistance to property owners and compliance

oversight are key components of effective enforcement programs. Commitment from decision-makers for adequate staff and attention to environmental compliance are essential.

5. Evaluate effectiveness of our existing protection actions including regulations, incentives and education, and fund necessary improvements to increase the effectiveness of protection. A public-private effort to improve regulatory effectiveness is necessary with the participation of all levels of government.

Both local governments and volunteer entities such as watershed groups must be held accountable for the funds they will receive. Appendix B touches on ensuring that regulatory functions, restoration actions, and funding are integrated.

4. Engaging the Public: A Long-Term Strategy for Informing and Involving our Puget Sound Community

As a non-profit conservation group dedicated to Washington's native fish and their habitats, Washington Trout has been engaging the public since its founding in 1989. We urge the Partnership (and any new governmental entity) to develop an engagement strategy that takes advantage of the expertise of Washington Trout and similar organizations in speaking out for a restored, protected, and sustainable Puget Sound and its associated freshwater habitats.

5. Draft Recommendations for Improving and Enhancing Puget Sound Ecosystem-Wide Governance and Accountability

Washington Trout is concerned that the governance structure gives additional responsibilities (and funding) to watershed groups without any assessment whether their activities are compatible with existing laws. We believe that watershed activities and plans need to be assessed by the agencies with the duties to enforce state and federal environmental protection laws. Those responsibilities cannot be delegated to watershed groups. Ensuring that watershed plans will lead to attainment of water quality standards and recovery of listed species is the ultimate in "accountability" –for both the watershed groups and the regulatory agencies.

There has been a tremendous amount of work conducted at the watershed level, although much of the work has been organizational and procedural. For example, local jurisdictions have spent considerable resources updating Critical Areas Ordinances and Shoreline Master Programs. Because they are jurisdiction-specific rather than watershed-based, however, these measures can vary. And they have yet to be implemented in full. It is too soon to tell whether local governments will provide sufficient protection, and watershed groups will restore sufficient habitat, so that recovery will occur. In the past, laws have been disregarded. Local governments are much more familiar with promoting economic growth than they are promoting ecosystem recovery. For all of these reasons, watershed plans must be assessed by regulatory agencies and contain assurances that they will be implemented.

Our comments above on the need of science in the integration of protection, restoration, and regulatory efforts speaks directly to the governance question.

6. A Long-Term Funding Strategy to Protect, Restore, and Manage Puget Sound

Please see our comments above and Appendix C for additional recommendations.

7. Making Sure Science Informs Our Actions and Decision-Making

Our comments above on the governance structure and integrating protection and restoration actions with regulatory functions and agencies speak directly to this issue.

Thank you for the opportunity to comment. Please contact me at 425-788-1167 or at mark@washingtontrout.org if you have any questions.

Appendix A

Expanding Marine Protected Areas (MPAs)

Overview:

Presidential Executive Order 13158 defines a marine protected area (MPA) as "any area of the marine environment that has been reserved by Federal, State, territorial, tribal or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein" (Federal Register, 2000). Both nationally and internationally, MPAs have been used effectively to conserve biodiversity, manage natural resources, and protect endangered species (Salm et al. 2000). The 2005-2007 Puget Sound Conservation and Recovery Plan names the designation and management of "aquatic reserves" by WDNR as a key step toward protecting marine areas with important ecological function in the Sound. A further critical step, proposed here, is to integrate existing and new Puget Sound MPAs under Federal, State and local jurisdiction into a network of protected areas whose conservation value exceeds that of individual, functionally disconnected MPAs.

MPA networks are systems of discrete MPAs with explicit ecological linkage. Such networks are designed with an interconnected ecosystem perspective, which includes knowledge of the life history and behavior of the marine biota therein, and understanding of the human uses of and impacts upon the marine environment. Selection of areas for inclusion in an MPA network must take into consideration larval and adult migration patterns, food web relationships as well as commercial and recreational activities. An MPA network is not merely a collection of "hot spots" of abundance or diversity, but instead a carefully planned system of areas each of which supports critical ecosystem processes.

Limiting human activity within MPAs has resulted in ecological successes worldwide. Zoned restrictions on fishing, for example, have resulted in rapid recovery of depleted fish stocks, which, upon expansion outside MPA boundaries, can provide overall benefit to local fisheries (Roberts et al. 2001; Halpern and Warner, 2002). Protecting sites through MPA networking allows protection of important marine resources without limiting human use of large, contiguous ocean areas. Such networks are particularly valuable in supporting migratory species, including salmon, and can serve to protect against regional overfishing.

MPA networks ideally include a range of critical habitats for species targeted for conservation, especially when such habitats are not concentrated in a single area (Dyer and Holland 1991). Other important considerations in the development of MPA networks include the size, proximity and location of individual MPAs, as well as the number of at-risk marine species. In the case of Puget Sound, a regional MPA network should also take into account salmonid migratory corridors that span U.S. and B.C. waters.

In Washington and Canada, numerous agencies manage a diverse array of MPAs, many with similar nominal designations but different types and degrees of protection. For example: (1) an "aquatic reserve" (WDNR) limits but does not prohibit human and commercial use (WDNR 2002) while a "marine preserve" (WDFW) is a permanent, year-round harvest closure that protects two or more species (Atkinson and Hart 2001); (2) a "natural resources conservation

area” (WDNR) allows fishing that does not adversely affect the target resources while a “*conservation area*” (WDFW) is closed to all forms of non-tribal harvest (Atkinson and Hart 2001). Such potentially confusing language reflects a lack of coordination among multiple governmental entities.

The Puget Sound Partnership’s Preliminary Report to the Governor (June 26, 2006 Draft) emphasizes the need for a ecosystem-based management approach to recovering and preserving the health of Puget Sound. Establishment of a Puget Sound Marine Protected Area Network will serve as an important resource management tool in line with this new approach.

2020 Goal:

Establish and maintain Puget Sound/Transborder MPA network.

Action Steps by 2007:

(1) Promote dialog among State and Federal agencies with jurisdiction over MPA administration and management (WDNR, WDFW, WDOE, Washington State Parks, National Park Service, USFWS, NOAA, Fisheries and Oceans Canada, Parks Canada, Environment Canada) to ensure efforts to protect marine resources in the Sound/Georgia Strait are coordinated and transparent to the public;

(2) Review state of the science regarding effective MPA network design.

Action Steps by 2010:

(1) Select new Puget Sound MPAs on the basis of attributes related to overall ecosystem health, as opposed to site-specific diversity or abundance alone; integrate into MPA network;

(2) Institute enforcement of human-use restrictions within MPA boundaries.

Action Step by 2015:

(1) Demonstrate ecological and societal costs/benefits of Puget Sound MPA network through marine resources/fisheries monitoring and reporting.

References:

Atkinson, J. and T. Hart. 2001. Conservation Coast to Coast: Comparing State Action on Marine Protected Areas in California, Washington and the U.S. Gulf of Maine. Conservation Law Foundation. 111 pp. + appendices.

Dyer, M. and M. Holland. 1991. The Biosphere reserve concept: needs for a network design. *BioScience* 41(5): 319-325.

Federal Register. 2000. *Presidential Documents. Executive Order 13158 of May 26, 2000.* Volume 65, No. 105. May 31, 2000. Washington, DC: U.S. Government Printing Office.

Halpern, B. and R. Warner. 2002. Marine reserves have rapid and lasting effects. *Ecology Letters* 5: 361-366.

Roberts, C.M., J.A. Bohnsack, F. Gell, J.P. Hawkins, and R. Goodridge. 2001. Effects of marine reserves on adjacent fisheries. *Science* 294(5548): 1920-1923.

Salm, R.V., J. Clark, and E. Siirila. 2000. Marine and Coastal Protected Areas: A Guide for Planners and Managers. Washington, DC: IUCN – The World Conservation Union. xxi + 371 pp.

WDNR. 2002. Aquatic Reserve Site Evaluation Criteria and Ecological Framework. Washington Department of Natural Resources – Aquatic Resources Division. Olympia, Washington. 68 pp.

Appendix B

Integrating Watershed Restoration, Protection Actions, and Regulatory Functions

Watershed-level groups must be accountable for the plans they develop and the implementation of those plans. The proposal is correct in linking watershed plans to conservation and recovery funding, but that linkage is not strong enough. Restoration efforts will be less effective in watersheds where land-use plans and stormwater management will not protect habitat or maintain habitat-forming processes. State and federal agencies must be accountable by clearly stating that the proposed watershed plans are science-based and will lead to recovery.

Washington Trout suggests greater integration of watershed-level plans with regulatory functions. We propose a three-step plan to integrate the “bottoms-up” watershed plans with regulatory authorities and responsibilities. The plan includes a better foundation for watershed plans, a science-based review of watershed plans by agencies and scientists, and conditioning recovery funds and economic development funds on protective watershed plans.

1. Create a firm foundation for watershed-based plans:

- a. Re-write Phase I and II stormwater permits on a Puget Sound-basis, as the current permits will not support recovery.
- b. Mandate minimum BAS for CAOs and Shoreline Master Programs, such as “65/10/100” (65% native vegetation left, 10% effective impervious surface, 100% infiltration of post-development runoff compared to pre-development), so that a minimum of science-based protection is the core of all watershed-based plans.
- c. Require integration of planning with aquatic ecosystem functions, as outlined in Ecology’s publication entitled *Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes* (Ecology Publication #05-06-027).
- d. Develop a Sound-wide monitoring/adaptive management strategy that uses physical, chemical, and biological indicators.

2. Develop, assess, and “certify” comprehensive watershed plans: PSEP should play a role in ensuring that watershed plans are complete. Necessary ingredients for plans (besides comprehensive stormwater management, land-use planning, minimum CAOs, and an outline of restoration plans):

- a. Greater use of low impact development techniques.
- b. Priority list for stormwater retrofits.
- c. Minimum monitoring and adaptive management strategy including triggers for reopening watershed plans.

d. Sufficient assurances that the plan will be implemented.

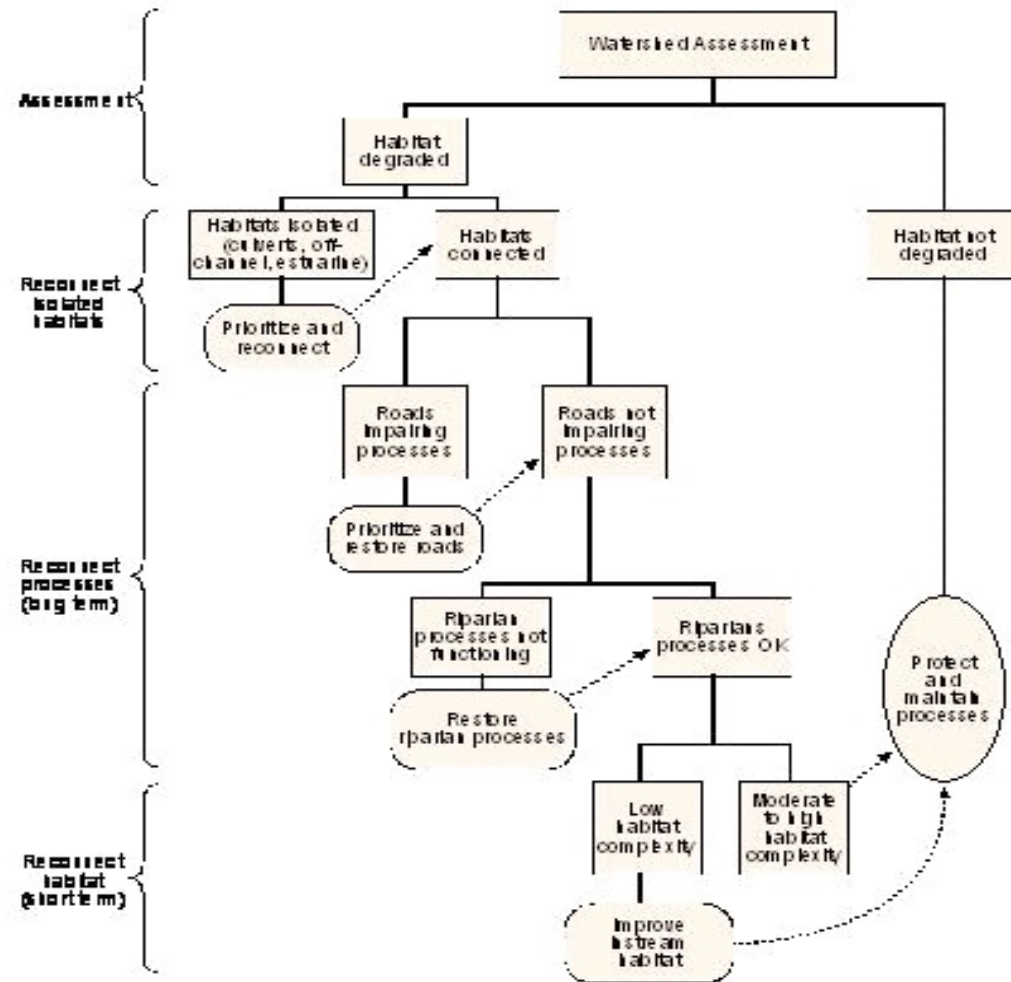
A panel of scientists made up of staff from PSEP, Ecology, NOAA Fisheries, USEPA, WDFW, Tribes, and other scientists as needed should examine the suite of plans in each watershed (e.g., stormwater management, land-use planning, habitat protection and restoration measures) in order to ensure that habitat-forming processes are maintained and that water quality standards are met (including biological indicators). Ecology “certifies” that the watershed plan will result in attainment of water quality standards by issuance of a watershed-based permit, with conditions if necessary. NOAA gives 4(d) coverage.

3. Reward watersheds whose plans will lead to recovery: Greater incentives (streamlined regulatory process, greater state grants, and ESA Section 4(d) coverage) to watersheds with sufficient plans. Restoration dollars are less effective or even wasted in watersheds where land-use plans and stormwater management will not protect habitat or maintain habitat-forming processes. **If plans are not going to lead to recovery, state and federal restoration and economic development dollars must be withheld.**

A way in which a science-based review of watershed-activities could take place is depicted in the attached figure. Assessment of existing land-use plans and protection (regulatory) activities would take place in right-hand track to ensure that habitat-forming processes are maintained.

Figure 3. Example of a strategy for prioritizing specific restoration activities developed for use in streams and watersheds in the Pacific Northwest United States (modified from Roni et al. 2002). Ovals indicate where restoration activities should take place. The strategy was developed as an initial template for prioritizing restoration, with the intent that it be modified as more information becomes available on watershed processes and restoration effectiveness or for use in other regions.

From: Roni, P., editor. 2005. *Monitoring stream and watershed restoration*. American Fisheries Society, Bethesda, Maryland.



Appendix C

**Excerpt from *Saving Puget Sound: A Conservation Strategy for the 21st Century*
(used with permission; see www.savingpugetsound.com/home.htm for more details)**

Funding

We must seek alternatives to existing taxes to fund a regional conservation program for two fundamental reasons. First, there are already too many competing demands for existing revenues. Since November 1993, a series of citizen initiatives have lowered state and local taxes and restricted the raising of new general revenues. Funding for natural resource agencies at the state level, never especially high, has dropped steadily under these conditions as a proportion of the overall budget (Figure 4-1). Voters clearly want lower taxes. Just as clearly, the legislature believes existing natural resource programs are a lower priority than other state responsibilities, such as public schools, Medicaid, and corrections (all of which have grown in their share of the state budget). Given these facts, it is very unlikely that a regional conservation strategy could be adequately funded by increases in sales, property, and business taxes, the primary existing sources of state and local revenues.

Natural Resources Spending as a Percentage of State Spending, 1995 - 2005

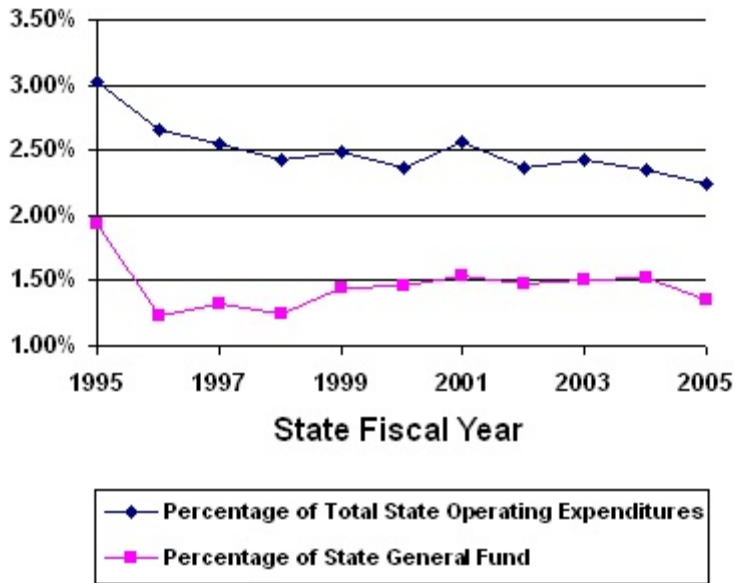


FIGURE 4-1 Natural resource spending as a percentage of state spending.

Source: Washington Office of Financial Management

Note: Natural Resource agencies include: Departments of Fish and Wildlife, Natural Resources, Ecology, and Agriculture; State Parks and Recreation Commission; Interagency Committee for Outdoor Recreation; State Conservation Commission; Environmental Hearings Office; Pollution Liability Insurance Program; Columbia River Gorge Commission.

The second reason to seek alternative funding is arguably more profound: we must incorporate ecological costs into market decisions so those parties that create the costs pay for them (for a more complete discussion of these issues, see Durning and Bauman 1998). This would correct a structural problem in our economy that currently leads us to indirectly provide enormous subsidies for environmental degradation. Even a partial correction of this problem could raise far more money than the cost of my conservation program, which could provide for a significant reduction in general taxes.

A prime example, affecting all of us, is the lack of charges for water withdrawals, despite their enormous ecological cost. We withdraw about 250 billion gallons per year in Puget Sound (Lane 2000; R.C. Lane, U.S. Geological Survey, personal communication). This profoundly alters the natural cycles that native species adapted to in our rivers, creeks, wetlands, and even Puget Sound itself. A tax averaging one tenth of a cent per gallon (which could be higher in summer, when ecological costs are greater, or higher for larger withdrawals, to encourage conservation) could raise \$200 million or more a year across the region (the total would not simply be current withdrawals times the tax rate because the tax almost certainly would reduce withdrawals—which, of course, would be a good thing). An average household uses about 150 gallons a day, so this tax rate would equal about 15 cents a day, or less than \$5 a month.

A tax rate that rose with larger withdrawals would be more progressive. Agriculture, which makes disproportionately large withdrawals, might be exempted if it implemented water conservation practices, including water-efficient equipment that the larger fund could help pay for. (Such an exemption would recognize some of the ecological benefits of agriculture, as discussed later in this chapter. The exemption would lower revenues by about 15%, or \$40 million.) Where water withdrawals are not metered, the tax could apply to the related water right. This would make the tax easier to administer and create an incentive to meter withdrawals and give up unused water rights, both of which are important public policy goals in their own right.

A second example, affecting all of us, is a change to the tax on gasoline. Our vehicles and road system have profound environmental effects. Roads and parking areas account for about two-thirds of all impervious surface on the landscape (see Figure 4-2). These surfaces dramatically alter aquatic habitat, eradicating or drastically reducing many native species by

changing flood patterns, decreasing flows, and discharging toxic metals, hydrocarbons, and other pollutants. Roads also fragment terrestrial and riparian habitat across the landscape, blocking or degrading the natural dispersal patterns and interactions of a huge number of species. Our vehicles are the major source of our region's most harmful air pollutants, including particulates and ozone that are responsible for public health problems (and probably many ecological problems, though this has received little study). The majority of greenhouse gases produced in the United States are from vehicle emissions, thus contributing to climate change that may devastate ecosystems worldwide in coming decades. Lighting for streets is another subtle but important way we alter the natural environment, which affects a huge number of species that rely on darkness for important life functions.

Instead of incorporating these ecological costs into the cost of driving, by taxing gas for more than the direct cost of road construction and maintenance, we subsidize road construction and maintenance with general tax revenues at the federal, state, and local levels (for a discussion of federal highway financing, see http://www.fhwa.dot.gov/policy/1999cpr/ch_06/cpm06_4.htm; for a discussion of state and local financing of roads and highways, see Transportation Pricing Task Force 1999¹). Road construction projects are required to mitigate site-level effects on the environment, but they generally do not mitigate the cumulative effects on ecosystem processes or their indirect effects on development patterns and vehicle miles driven.

Currently, the state constitution (Article II, Section 40) requires that all revenues from the state gas tax be dedicated to transportation projects, under an amendment passed in 1944 (which sought to ensure the availability of funds for highway projects expected after World War II; for a

¹ Local jurisdictions, in particular, pay the majority of expenses for roads with non-transportation-related funds.

history of this clause, see Utter 2002). This same amendment expressly allows for applying the general sales tax or a special sales tax to gas for non-highway purposes, though currently gasoline is one of the few consumer expenditures exempt from our sales tax. Each penny of the state gas tax raises about \$33 million each year, with approximately two-thirds coming from the Puget Sound region (E. Meale, Washington State Department of Transportation, personal communication). Assuming an average price of \$2.50/gallon, extending the state sales tax (currently 6.5%) to gas in the Puget Sound area could raise more than \$350 million a year for regional environmental protection and restoration. Local sales taxes could also be extended to gas, which could raise another \$70–80 million for local environmental programs. This would not come close to accounting for the true ecological cost of our transportation system. (A 2002 study of gasoline taxes in Great Britain and the United States estimated that the tax should be 40 cents a gallon to address the costs of air pollution alone [Parry and Small 2002]²) It would, however, be an initial step, which would not only raise valuable revenues for conservation but would also raise awareness of the environmental effects of our driving habits.

Other impervious surfaces, besides roads, could also be charged for their ecological costs. Local stormwater management programs are already funded by charges on impervious surfaces, with single-family residences paying a flat fee and commercial and multi-family developments paying variable rates based on their acreage of impervious area. If the legislature enacted a similar fee across the Puget Sound region, an annual rate equivalent to \$25 per single-family home would raise approximately \$50 million a year for ecosystem restoration (R. Rice, King

² Interestingly, the study concluded that the tax was too high in Great Britain, at least for the costs considered in its study (which focused on air pollution, accidents, and congestion). British officials responded that the alternative was to raise taxes on income or other economic goods. They preferred a tax that discouraged an activity that causes so much damage.

County Water and Land Resources Division, personal communication). Such a fee could include lower per-unit rates for denser residential developments, credits for low-impact design elements, such as forest cover retention, and other adjustments to recognize ecologically preferred land uses.

A further source of new revenues would not directly affect most of us, but would address the single most important long-term threat to our natural heritage, namely the cumulative effects of development and land clearing as our population and economy grow (see Figure 4-3). The state currently authorizes local governments to charge “impact fees” to help pay for the new schools, road improvements, parks, and other infrastructure needed to serve new development. The environmental effects of development are similar to these other impacts—just as new development adds students to local schools and traffic to local roads, new development cumulatively alters the environment in ways that individual developments do not pay for. A one-time environmental impact fee of \$5,000 for each new house—probably a low estimate of the incremental effect from new development—would raise more than \$100 million a year. This fee could limit the developer’s responsibility for mitigating off-site environmental impacts. That would lower some costs and add some predictability for developers, potentially leading to support from the business community.

Moreover, most local governments in Washington currently charge much less in impact fees than they could, meaning that, through general taxes, all of us pay the huge majority of costs for infrastructure that would be unnecessary if not for new development. This is not a political or economic necessity. Local governments in California charge the full cost of infrastructure to new development, typically \$20,000 to \$30,000 for each new house, though the charge can be much higher. As discussed in detail in Chapter 10, the Washington legislature could require, rather

than authorize, local governments to charge impact fees for all (rather than some) of the cost of new development. The legislature could also mandate that the new revenues be balanced with reductions in existing sales, property, or business taxes. This would help limit the effect of higher impact fees on affordable housing (which is generally not new construction) and the cost of doing business in the state.

State voters and the legislature have already recognized another obvious target for an environmental tax: pollution. In 1988, voters passed Initiative 97, Washington State's superfund law, which includes a 0.7% tax on the wholesale value of hazardous substances (Washington State Department of Revenue 2002; Dodge 2004). This currently raises about \$50 million a year, which is used by the Department of Ecology and local governments to manage hazardous wastes. In 1991, the legislature adopted a tax on crude oil and other petroleum products delivered to marine terminals, which raises about \$6 million a year for oil spill prevention and clean-up programs. Going back further, in 1971 the legislature passed a litter tax on sellers of goods that were deemed most likely to contribute to state litter problems, which currently raises about \$6 million a year for litter clean-up and education programs. In 1987, the legislature also passed a \$30 fee on the sale of wood stoves, which raises about \$250,000 a year for education programs concerning the effects of wood stoves on air quality.

These existing pollution taxes suffer from a variety of inequities and administrative problems. Hazardous substances, for example, are defined based on the federal superfund list (under the Comprehensive Environmental Response, Compensation, and Liability Act) as of March 1, 1989, when Initiative 97 went into effect, regardless of changes in the federal list since then. The hazardous substance tax also does not apply to chemicals sold for home use, which includes the majority of pesticides sold in the Puget Sound region. Items covered in the litter tax

similarly do not correspond with major sources of litter currently collected from state highways and public places, such as tires, automobile parts, and construction materials. Looking ahead, new pollution taxes could address many pollutants that do not fit into existing taxes. Some contaminants, such as water pollutants included in permits under the Clean Water Act, are easily quantified and attributable to specific sources, making them easy to tax. Collectively, new or reformed taxes on pollutants might generate another \$100 million a year for environmental programs in the Puget Sound area.

All of these new revenue sources would require authorization by the state legislature. They probably would not require voter approval.³ However, since a successful regional conservation strategy must have enduring popular support, key aspects of its funding should go before the voters to ensure that the support is there. If proposed taxes or fees would be collected and spent just within the Puget Sound area, a vote might be organized for just Puget Sound counties, though this would require reforms in governance like those discussed later in this chapter.

At the rates I have suggested, the sources of revenue in this section could raise about \$1 billion a year in the Puget Sound region (Figure 4-4), about twice the estimated cost of my proposed conservation program. These new revenue sources could provide a reduction in general taxes of perhaps \$500 million a year (roughly equivalent to \$1.25 off property tax rates for every \$1,000 assessed value across the region),⁴ *after paying for a conservation program to preserve our natural heritage*. European countries have been shifting taxes in this way since the early 1990s, reducing taxes on income and wages while raising taxes on environmentally destructive

³ Initiative 601 limits taxes only for the state's general fund, as demonstrated by recent legislative increases in the gas tax without voter approval.

⁴ The total assessed value of the 12 Puget Sound counties was \$370.5 billion in 2002, according to the Washington Department of Revenue (Washington Department of Revenue 2004).

activities such as air and water pollution, fossil fuel sales, water consumption, landfilling and water consumption (Brown 2001:237). The concept is easy to understand and potentially has widespread support, as was demonstrated by the national “Since Sliced Bread” contest, sponsored by the Service Employees International Union in 2005. Despite the fact that criteria for the contest emphasized social and economic issues,⁵ the winning idea (chosen by popular internet vote and submitted by Peter Skidmore, a Nature Conservancy scientist in Seattle) argued for environmental taxes similar in concept to my proposal (see www.sinceslicedbread.com).

Although an environmental impact fee on new development would legally need to be used to mitigate the effects from development, there is no reason why other new sources of revenue could not contribute to the state’s general fund in addition to paying for an ambitious conservation program, just as “sin” taxes on cigarettes and alcohol can contribute to health programs and the general fund. (In fact, my proposal could be described as a set of “environmental sin taxes” akin to those on cigarettes and alcohol; both types of taxes are designed in part to discourage behaviors that create public costs.) The amount of the tax cut from my proposal would approximately double if we followed California’s lead and started charging new development the full cost of the infrastructure needed to serve it, lowering general taxes an equivalent amount.⁶

⁵ This is why I did not apply for the \$100,000 prize. Sigh.

⁶ The state Office of Financial Management’s median estimate for Puget Sound population growth from 2000 to 2025 is about 1.4 million, from 3.98 million to 5.36 million. If we assume 80% of this total population growth for 20 years and an average household size of two, this equates to about 550,000 homes. The low estimate for the cost of new roads, schools, and other infrastructure to serve growth is \$23,000 per single-family home (see Chapter 7, p.46). Multiplying 550,000 by \$23,000 equals \$12 billion. However, some jurisdictions are charging impact fees already, average household size in the Puget Sound area is somewhat larger than two, and many new homes will be in multi-family buildings with smaller per-unit subsidies. This figure is high, but it also does not include any subsidies for commercial development and uses a low estimate for the cost to serve a single family home.

The regional cost of the conservation strategy could potentially be lowered by attracting federal funds for implementation, as the Shared Strategy's leaders have hoped. Given the experience of other regional environmental initiatives elsewhere in the country, however, a large federal investment is unlikely. Even where the federal government has been a leading partner in developing large-scale restoration plans—such as for the Everglades, Chesapeake Bay, and the Sacramento River estuary—it has so far provided less funding than its projected share for implementation (Wiley and Canty 2003). Leaders for each of these three plans are now calling for larger federal investments (USACE and SFWMD 2005; CBWBRFP 2004; CB-DA 2005). The federal deficit and demands for funding from other programs have already led to large cuts in federal funding for a restoration study of the Puget Sound shoreline (Stiffler 2003). Even where federal agencies are directly responsible for major environmental initiatives, such as the Northwest Forest Plan, long-term funding is uncertain, as demonstrated by the plan's almost total reduction in funds budgeted for watershed restoration. I would not expect federal funding to pay for more than 10% of the cost of my proposal. The total cost to the region could also be lowered by expanding the use of transfers of development rights, as I discussed in my review of the Cascade Agenda.