

**Habitat/Land Use**  
**Comments Submitted via Discussion Forum**  
**4/14/2008 – 5/9/2008**

**From:** Mark Hersh

**Date:** 05/07/2008

**Comment:** Additional Comments on the  
Land Use/Habitat Protection and Restoration Discussion Draft

A. A review of past practices -- and errors -- as well as current practices is needed

Another question needs to be asked and answered honestly, namely, Why haven't past measures worked? Without knowing why we are in the situation that we are in today, despite the enactment of a host of environmental protection statutes, the development of numerous past plans to protect the Sound, and the expenditure of millions of dollars, we risk repeating those mistakes. It is imperative that the current effort be examined in the context of past efforts, and measures taken so that those flaws and institutional barriers can be overcome as we embark on this new effort to save the Sound by 2020.

This work will contribute more to the effort than nuances on problem definition. We suggest two key areas for focus, although a thorough examination of the history of partial and failed implementation will no doubt reveal many more.

1. Funding. The funding provided by federal, state and local governments, while considerable, has never come close to the amount actually needed to fully implement the Puget Sound Water Quality Management Plan and recover the Sound to health. The 2006 Partnership, in its final report to the Governor (December 2006) noted that "Based on the estimates of current unmet needs, achieving a healthy Puget Sound will require a doubling or tripling of current expenditures" (\$689 million per year).

The Partnership should conduct an in-depth research as part of an assessment of institutional barriers as to why funding has never been provided at the needed levels. It is worth noting that the 2006 Partnership's public opinion poll found that 76% agree "we should do everything we can to protect the Sound, even if it requires us to spend more money through taxes or fees."

2. Enforcement of Existing Programs. Positive steps to cleanup the Sound have been overshadowed by further deterioration due to lack of sufficient funding and weak enforcement of regulatory programs. Historically, no system of accountability has been in place to ensure that expenditures on regulatory programs and other aspects of

the Puget Sound recovery effort have achieved their intended results. The 2020 Action Agenda must be grounded on a fresh and thorough examination of the institutional barriers to achieving full compliance with environmental programs. Accountability is the watchword of the legislation creating the Partnership, and an analysis of enforcement shortfalls is essential to fulfilling its accountability responsibilities.

In short, past efforts to protect habitat have been marked with a lack of political will and determination. It remains to be seen if this latest effort, the one to protect and restore Puget Sound by 2020, will be different but if we are to succeed, our efforts to protect habitat must take on a new urgency.

To begin this effort, we believe that the current regulatory framework is in particular need of compliance monitoring, asking the question, Are jurisdictions implementing their regulations in a consistent and effective manner? We believe that we cannot assume that the current regulatory protection framework will protect our remaining habitat, as the first line of habitat protection is 124 separate jurisdictions implementing their land use regulations. For example, some jurisdictions have made a concerted effort to "water type" their streams (the preferred method to determine "waters of the state," one of the "fish and wildlife conservation areas" protected under Critical Areas Ordinances), while most local governments rely on inaccurate and outdated water type maps administered by the Department of Natural Resources and do not require "ground-truthing" by permit applicants nor conduct it themselves. How common is this situation? How much habitat is at risk due to this and other instances of the uneven application of regulations?

Although a case can be made that the regulatory landscape of today is far more protective than past regulations, and therefore, future efforts will be much more effective in protecting habitat, the simple assertion of this does not make it so. Even the consideration of "best available science," is simply that, a requirement for local governments to consider the science when enacting critical areas ordinances. Loopholes such as variances exist, and have been readily requested by developers and granted local governments.

The Draft correctly calls for a new standard for habitat protection and restoration, namely that of "ecosystem processes," and the new, needed standard requires a different type of review, namely that of effectiveness monitoring. We must ask the question How well does the current regulatory landscape protect ecosystem processes? Because this is a new standard, we expect that the answer may reveal that the current framework is not doing an adequate job, as it was not designed to protect ecosystem processes. That will require an analysis conducted across political boundaries and at a landscape or watershed level, keeping in mind habitat and habitat-forming processes.

Therefore, we believe that a detailed and in-depth review of the current and past regulatory frameworks is needed if we are to preserve our existing habitat. We submit that no initiative for watershed, ecosystem, or species restoration or recovery in Washington, whether statewide or regional, has taken an aggressive approach to habitat protection, including recent plans such as Shared Strategy. Instead these plans have focused more on habitat restoration, with its basis in locally-led voluntarism organized at the watershed level. Habitat protection, on the other hand, is basically a governmental function, with most land-use decisions made by local governments, with no or little accountability. That, we believe, is the weak link in our present framework of habitat protection--the lack of accountability found in the first line of habitat protection, the 124 separate jurisdictions regulating land use in Puget Sound.

## B. The "community conversation" should be robust and complete

A thoughtful community conversation on all of the topics is needed, and further believes that the Land Use/Habitat Protection and Restoration Discussion Draft ("Draft") provides a good launching pad for the land use issue. One of the stated purposes of the topic forum discussion draft papers is to "provoke and inspire a long-term, community conversation and critical thinking about the specific problems facing Puget Sound, and the strategies and actions needed to address the threats we face." At the Topic Forum meeting in Bremerton on April 28, a range of views was expressed.

For instance, some participants in Bremerton reacted strongly and negatively to the recommendation that a "single, integrated, set" of land use regulations be enacted at the "state-level" to "streamline permitting, avoid duplicative or conflicting regulatory requirements, and achieve consistent ecosystem outcomes," referring to the Preliminary Policy Recommendation on pages 67-68 of the Draft. On the other hand, members of the Caucus as well as individuals representing organizations outside the Caucus expressed support for this particular recommendation. This particular recommendation certainly served to "provoke" community discussion.

That is not unexpected as the recommendation represents a clear departure from our current practices. It was, however, based on a thoughtful review by the Topic Forum team of the host of current habitat protection measures. At this stage in the conversation, we do not think that any thoughtful option should be removed barely two weeks into the discussion. Therefore, we urge that the final version of the Land Use/Habitat Protection and Restoration Discussion Paper retain this recommendation.

## C. Responsibility--and accountability--lies with all actors

Federal agencies have responsibilities under a myriad of laws including the federal Clean Water Act, Clean Air Act, Endangered Species Act, Rivers and Harbors Act, Oil Pollution Act, Coastal Zone Act Reauthorization Amendments of 1990, Comprehensive Environmental Response, Compensation, and Liability Act, Toxic Substances Control Act, Federal Insecticide, Fungicide and Rodenticide Act, National Forest Management Act, and other statutes. Washington laws that are either state analogues of federal laws or deal with entirely separate issues include the Water Pollution Control Act, Shoreline Management Act, Growth Management Act, Forest Practices Act, Model Toxics Control Act, and laws regulating water quantity, fish passage and other laws aimed at watershed planning and salmon recovery.

Local governments have responsibilities under some of the state laws and may have other ordinances or regulations affecting habitat. Tribes may have their own laws and regulations applicable to tribal land, while federal agencies have trust responsibilities and treaty obligations to tribes, and Washington has separate responsibilities concomitant to various state-tribal agreements.

Many of the state and federal laws allow for a lower level of government to carry out the responsibilities or else direct them to. For example, the Clean Water Act allows the state the option to carry out many of the functions (many of which Washington does) but also obligated states to do some things. The Growth Management Act places responsibilities onto city and county governments, and other state laws have led to watershed planning groups, "lead entities" for salmon recovery plan coordination and implementation, and other groups are strictly voluntary. There are also water and electric utilities that are publicly owned and "special districts" have been formed for water, sewer, irrigation, drainage and perhaps other purposes. And there are many voluntary groups focused on a stream, river, or watershed.

As the Draft correctly notes, habitat is formed and maintained on a watershed basis with no consideration to political boundaries, except that varying enforcement of regulations as well as the varying interest in restoration by political entities will play a role in determining the level by which habitat-forming and maintaining processes are protected and restored in a given watershed. Effective regulations will not in themselves bring back watersheds where habitat and habitat-forming processes are too degraded. But restoration efforts will be less effective--or perhaps completely wasted--in watersheds where land use regulations (e.g., critical areas ordinances, stormwater management plans, etc.) will not effectively protect habitat or habitat-forming and maintaining processes. Obviously, what is happening in the watershed as a whole, and not in this or that political entity, will tell the tale. The protection efforts of one jurisdiction may go for naught if another jurisdiction fails.

Habitat protection and habitat restoration are often considered separately, as the former rests on individual landowners and some responsible governmental entity,

and the latter can occur on private or public land but generally has some sponsor or entity proposing a restoration project or action, financed with private or public funds. They are related in that the goal is to preserve or restore some type of habitat, habitat-forming process, or ecosystem process.

Local governments must be accountable for the habitat protection measures they are charged with implementing. Likewise, watershed-level groups concerned with habitat restoration must also be accountable for the plans they develop and the implementation of those plans. The state, federal, and tribal governments need to play a bigger role in helping these groups provide these protection and restoration functions, but the first question that must be asked and answered is Will the combination of protection and restoration plans protect and maintain habitat and habitat-forming processes?

Therefore, we need greater integration of watershed-level plans with regulatory functions, and this is ultimately a responsibility of state and federal governments stemming from their mandates found in the Clean Water Act, Endangered Species Act, Water Pollution Control Act and salmon recovery statutes-as well as the legislation forming the Puget Sound Partnership. Tribal governments should participate in this as much as they desire. This integration, however, does not have to take on the form of one level of government (e.g., state) assessing and grading another (e.g., local). Instead, this can be a process which all levels of implementers are represented, and this process becomes the ultimate check on whether our land use and restoration policies will restore and protect Puget Sound.

We propose a three-step plan to integrate the "bottoms-up" watershed plans with regulatory authorities and responsibilities and reward success. The plan includes a better foundation for watershed plans, a science-based review of watershed plans by agencies and scientists coupled with an administrative review for "do-ability", and conditioning recovery funds and economic development funds on protective watershed plans.

First, create a firm foundation for watershed-based protection plans: At least four steps are needed, requiring action at the state level, so that a minimum level of protection is reached throughout Puget Sound.

a. Require integration of planning with aquatic ecosystem functions (including water quantity). We suggest the approach outlined in Ecology's publication entitled Protecting Aquatic Ecosystems: A Guide for Puget Sound Planners to Understand Watershed Processes (Ecology Publication #05-06-027), or the Alternative Futures process as has been done in the Chico Creek basin and the Willamette River basin. Future projections to "build-out" will be needed.

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 every local jurisdiction's protection framework. Greater use of low impact development techniques is also required.

c. The Department of Ecology needs to re-write Phase I and II stormwater permits on a Puget Sound-basis, as the current permits will not support recovery. Consider and incorporate NOAA's comments to King County on the King County Stormwater Program (March 4, 2008 letter) and to Ecology on the WSDOT Municipal Stormwater Permit and the State Waste Discharge General Permit (March 28, 2008 letter) into the permits.

d. Development of a Sound-wide monitoring/adaptive management strategy that uses physical, chemical, and biological indicators, including triggers for reopening watershed plans. Ecology will make necessary changes to water quality standards to reflect the needs of Puget Sound.

Each watershed will convene a group that will integrate the protection plans with the restoration plans. The latter will include a priority list for stormwater retrofits and restoration projects. The entire plan (both protection and restoration components) will require sufficient assurances that the plan will be implemented.

Second, assess and "certify" comprehensive watershed plans: As local governments and watershed groups update their plans, the PSP shall assemble a panel (or panels) of scientists and administrators (e.g., land use policy experts) to examine the comprehensive watershed plans. Members will come from the PSP, Ecology, NOAA Fisheries, USEPA, WDFW, Tribes, local governments and others as needed, and they will examine the suite of habitat protection measures in each watershed (e.g., stormwater management, land-use planning) along with restoration measures. The purpose is to ensure that habitat-forming processes are maintained, that water quality standards are met (including biological indicators), and have reasonable certainty that the ecosystem processes of Puget Sound will be restored and protected by 2020.

The criteria by which this panel will examine watershed plans will be reviewed by the PSP Ecosystem Coordination Board and Science Panel, and reviewed and approved by Leadership Council and incorporated into the Action Agenda. The attached figure shows a conceptual flow chart dealing with habitat restoration (left-hand track) and habitat protection (right-hand track), and is a way in which a science-based review of watershed-based activities could take place. Land use planners and policy experts would be needed to ensure that the protection measures outlined in each watershed can indeed be implemented, and that restoration and

protection efforts are working in concert.

The result of the review of watershed plans will be that Ecology "certifies" (akin to a Clean Water Act Section 401 certification) that satisfactory plans will result in attainment of water quality standards by issuance of a watershed-based stormwater permit, with conditions if necessary. NOAA and USFWS give 4(d) coverage for threatened species and ensure that the plans will result in recovery of all listed species.

Third, reward watersheds whose plans will lead to recovery of Puget Sound: Greater incentives (streamlined regulatory process, greater state grants, and ESA Section 4(d) coverage) will accrue to the watersheds with sufficient plans. If plans are not going to lead to recovery, state and federal restoration and economic development dollars must be withheld.

#### D. Summary

1. A review of past practices -- and errors -- as well as current practices is needed. We need to acknowledge the fact and determine why we have not fully funded enforcement of our existing laws, despite the public support for this basic protection. Other existing institutional barriers to action must be identified and eliminated.

The current protect framework must be examined both for how well it is implemented, and for how well it protects the ecosystem processes of Puget Sound. It is unreasonable to assume that 124 separate jurisdictions are implementing regulations evenly across the watershed.

2. The "community conversation" should be robust and complete. At the nascent stage of a conversation about how best to protect and restore habitat of Puget Sound, it is unwise to discard the recommendations of the Draft based on the comments of some members of the public. Instead, the recommendation for an integration of land use regulations should be retained.

3. Responsibility--and accountability--lies with all actors. All levels of government have some responsibility to protect Puget Sound. Unfortunately, habitat is formed and maintained at the landscape scale which does not respect political boundaries. Protection measures and restoration plans must be integrated and take into account the watershed approach, and be assessed on a watershed basis. Political jurisdictions whose plans contribute to watershed protection and recovery will be rewarded with incentives, but restoration and economic development funds must be withheld from those jurisdictions that do not contribute to Puget Sound recovery.

# PugetSoundPartnership

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**From:** Mark Hersh

**Date:** 05/07/2008

**Comment:** Ecology recently released two documents, one marked "draft," dated April 3, 2008, and the other a letter from Jay Manning to the Forest Practices Board, dated April 4, 2008.

The Ecology documents state that the monitoring/adaptive management program set up by the Forests and Fish Report in 1999 will fail to provide Ecology with the needed information whether to extend the "Clean Water Act assurances" provided by both Ecology and EPA in 1999. The assurances were designed to delay the development of TMDLs for watersheds all or predominantly in forests.

This relates to the Partnership's effort in two ways. First, we do not know whether the current forest practice rules will attain water quality standards, including numeric water quality criteria (temperature and sediment) as well as biological integrity (protected by the antidegradation policy of the water quality standards). Studies have not been initiated, or if they have, completed to tell the story whether the forest practice rules protect biological integrity of headwater streams (for the most part, those considered "Type Ns" and "Type Np" in the forest practice designations). Some of these habitats and the species they support will not be found elsewhere in the watershed (earlier comments by the Puget Sound Environmental Caucus on Land Use/Habitat pointed out that Washington's standards were recently revised to explicitly include protection for all aquatic species, fish and non-fish).

Therefore, both final issue papers need to point out that water quality and habitat may still be adversely affected by ongoing forest practices (besides the legacy of past practices with which we must deal).

Second, this relates to the highly-touted monitoring and adaptive management program that came out of the Forests and Fish negotiations. This may be used as a model for a Puget Sound monitoring/AM program. The evident problems of this program in developing the data needed for some of the most basic questions on water quality and habitat show that there are some serious flaws that must be investigated and considered before adopting this same approach for Puget Sound restoration, an effort that will require monitoring many more habitats, species, and parameters than the Forests and Fish effort has had to deal with.

**From:** Brenda Bachman

**Date:** 05/06/2008

**Comment:** As regulators of wetlands, the Corps of Engineers has the following comments:

1. In Table S1-1. Need to talk about more than just depressional wetland fills. Fills have and could occur in riparian or high and low salt marsh wetlands at the water's edge, in slope wetlands, in flow-through wetlands, etc. Depressional wetlands are just one part of the picture.

2. In Appendix P1-1, Need to talk about Section 10 of the Rivers and Harbors Act of 1899. While the genesis of this law was to protect navigability, the Corps does look at impacts to the environment and species so it would fit in with the statement of "tools that either directly or indirectly provide protection for some habitat-forming processes, structures or functions." ESA consultations are a major part of the Corps review process for Section 10 permits. This could also be discussed in the Federal efforts in the main portion of this section.

3. Also in Appendix P1-1 in the CWA discussion, The Corps of Engineers regulates the "discharge of dredged or fill material" and a discharge can include filling, grading, excavation, and mechanized land clearing. Therefore, you cannot make a black and white statement that we don't regulate "dredging, draining, or clearing of wetlands." In 404 land we talk more about excavation than dredging which is a Section 10 term of art for the Corps. Excavation would be regulated if it is found to be more than de minimis. Think a clean scoop with an excavator bucket (especially with a thumb) versus a drag line that pushes material around. Draining might be included in the impacts if the Corps has a 404 activity to get us in the door. For example, if a culvert was installed that needed a permit and the culvert was sized such that an upstream wetland area was drained, the Corps would include that acreage as part of the impact area. As for clearing, if they do mechanized land clearing, the Corps does regulate that. Including stump removal with the cutting of trees and shrubs would be regulated. Just cutting the trees is not regulated.

**From:** Richard Pratt

**Date:** 05/06/2008

**Comment:** 1. SC1: First paragraph should include the following additional habitats: Urban developed lands, suburban developed lands, industrial lands. Conditions on these lands are amenable to restoration or enhancement also and they may already contain species or species assemblages of interest.

2. Disturbance processes discussed here seem to only include natural processes rather than development related impacts. Suggest adding impacts from urban/suburban development since most of the Puget Sound lowlands is in this state.
3. Should include invasive species as an example of controlling factors.
4. Last sentence of first paragraph of SC1 should read as follows for accuracy: “Native plant, wildlife, and fish species are robust enough to and can ultimately benefit from the frequency and magnitude of disturbances in their habitat”. Ecosystems are not static and large natural disturbances can negatively impact native and non-native species. This should be reflected for accuracy.
5. Table S1-1: Should include bridges and roads as threats in both in-water and water’s edge.  
Away from the water: threat should be stated as “aquatic systems or wetlands” rather than depressional wetlands. Also, urban developed lands should be included for how they function within the landscape.
6. Urbanization of undeveloped lands and the effect on ecosystem processes needs additional study. Not clear if this is included in the cumulative effects gap identified on page 10.
7. While non-point source contaminant effects may be considered in the water quality topic forum it should also be considered here as part of the impact of upland development.
8. Table S1-2: Add the following to the table- large deltaic habitats and praries systems. Both of these have been largely lost to development. All aspects of urban, suburban, and industrial development should be considered a threat, not just impervious surfaces from that development. The development itself should be considered as a forced change to the ecosystem.

**From:** Millie Judge

**Date:** 05/06/2008

**Comment:** As the Lead of this Topic Forum, I want to thank those of you who commented here and on other threads for your thoughtful and detailed comments. We have learned much from you and your suggestions, ideas and proposals will make our next draft much better. Thanks again, Millie

**From:** Jeffree Stewart

**Date:** 05/05/2008

**Comment:** I'd like to concur with Kathy Taylor's comment about adding SMA where it belongs in the second bullet of the list on page 27, or possibly making a line that focuses on the comprehensive updating of local shoreline master programs (SMPs) statewide- which is currently underway.

A new requirement for SMPs is an element dedicated to Restoration Planning. The intent is better organizing the habitat restoration efforts already underway, finding overlaps and identifying ways to combine forces- and also, for prioritizing targets for future restoration sites, based on which stretches of shoreline offer the best opportunities for viable projects.

I'd like to clarify a point made by Gordon Thomas: statutory exemption language in RCW 90.58 is widely and often misunderstood, as you've discussed here. The exemption, as you note, is from permit requirements.

In the case of residential development, not only is there the exemption, but the legislature identified residential in the SMA as a "preferred use" of waterfront lands. So a property owner with a legal lot who wants to build a single family residence can do so without a shoreline permit- as long as all the setback and other regulatory requirements are adhered to. And so long as a variance or conditional use approval are not needed- in which case they would need a shoreline permit. The bulkhead or armoring question is related but separate.

Its my experience that local governments are constrained from excercising their authority as you suggest, more often by the kind of staff training and workload limitations mentioned by Rick Mraz in regard to wetland issues. If a property owner has a report from a geotech consultant who says a bulkhead is needed, how do planning staff argue against that necessity?

Better provisions can and will be written in the new SMPs that should help planning staff prevent some of the shoreline armoring proposals in areas where ecological functions would be lost and where armoring is practically unnecessary. Also needed are clearly written policies and regulations about shoreline vegetation management associated with single family residences.

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**From:** Art Castle

**Date:** 05/05/2008

**Comment:** The Home Builders Association of Kitsap County launched our environmentally-friendly building program in February, 1997. It was updated in 1998 to include a land use development checklist as well, and the name was changed to Built Green® in 2002. Our program provided tours to the NAHB Green Building Conferences in 2001 and 2002. The program has received numerous local, state and national awards and has been used as a model for other Built Green® programs around Washington State and the western United States.

In 2003, the HBA created the Kitsap Home Builders Foundation. The foundation is currently nearing completion on an EPA Section 319 Clean Water Act grant (grant contract signed in October, 2005) to develop Low Impact Development Standards and have them adopted by our four cities and county. In addition, the foundation received a Puget Sound Action Team PIE grant to retrofit the Home Builders Association's office site as a Low Impact Development Showcase. That project was completed in 2007. Additional information on both grants is available on our grants website at [www.KitsapLID.org](http://www.KitsapLID.org).

Land development and stormwater are some of the primary drivers (if not the primary driver) for marine and fresh water degradation. And we know that slowing and reversing that trend will require actions on many fronts including regional/watershed planning, transportation systems, education, and better site scale design and implementation. Low Impact Development is arguably the best set of tools we have for managing stormwater at the site scale is omitted or mis-represented from these three Topic Forum documents that is central to policy and action development.

We believe that Low Impact Development techniques are perhaps the most effective and likely least expensive tools available. With fair flow credits, low impact development will become tools of choice in jurisdictions that has enabled their use, except where the soils, slope, etc are inappropriate for its use.

The PSP "Initial Discussion Draft" documents for Freshwater Resources Topic Forum, Water Quality Topic Forum, and Land Use/Habitat Protection Topic Forum have been reviewed. We are concerned that Low Impact Development and its set of stormwater volume and water quality tools has been largely omitted in these three draft documents. Where it has been mentioned, there are factual inaccuracies and other misleading statements that show that the authors of the documents are clearly not knowledgeable about low impact development and its many techniques.

We will first point out issues with each of the three Topic Forum documents, then provide information on recommendations regarding what should be included in the work plan regarding low impact development.

## Freshwater Resources Topic Forum

On page 18, Key Findings A. In the second paragraph it states "The Land Use and Water Quality Topic Forums are addressing the effectiveness of management approaches aimed at reducing threats associated with land use and stormwater practices ..."

This is inaccurate. The other documents do not adequately or fairly provide accurate information or provide mis-leading information about low impact development.

The Water Quality Topic Forum provides the following on Low Impact Development techniques for stormwater "Low Impact Development methods: Low impact development techniques for stormwater management include the installation of features that attempt to mimic natural hydrologic conditions, such as porous pavement, infiltration facilities, rain gardens, and other techniques (Puget Sound Action Team, 2005). Limited research has been conducted on the effectiveness of low impact development techniques to improve water quality."

This is a spectacular omission! Low Impact Development is arguably the best set of tools we have for managing stormwater at the site scale is omitted from a document that is central to policy and action development.

## Land Use/Habitat Protection and Restoration Topic Forum

The Land Use/Habitat Protection and Restoration Topic Forum provides the following four references to Low Impact Development. These are not substantial and only reflect one technique, that of surface dispersion and references it in a mandate and regulate context.

On Page 65, 6. "As these areas (lowland areas) develop, watershed based restoration and development using smart growth or low impact measures will be essential to achieving no net loss of ecosystem processes, structures and functions."

On page 66, 3. "The focus should be to minimize land conversion to urban-style uses or intensities outside UGA's and to require best management practices and low impact development standards within resource and rural lands which have the highest value for preservation of habitat and eco-systems that support the health of the Puget Sound."

On page 67, 3 "Within urban growth boundaries, critical existing ecosystem processes, structures and functions should receive special protection. Where it does not exist, actions should concentrate on reducing polluted run-off, low impact development standards, and site specific shoreline clean-up and restoration where it can make a difference."

On page 69, 9. "Require low impact development techniques to be used in all Puget Sound jurisdictions to reduce the loss of forest cover and increase impervious surfaces. Low impact development techniques include limitations on clearing in rural areas where maintenance of existing hydrology is most likely through maintenance of natural systems rather than reliance on engineered solutions."

Page 20, Supply Strategies. In the second paragraph there is discussion of the "limited ways to physically put water back into streams".

These references in the Habitat/Land Use paper are extremely limited, myopic and somewhat of a distortion of low impact development techniques.

Low Impact Development techniques such as bioretention and pervious pavement are effective at both water quality treatment and aquifer recharge, especially important in Kitsap County where 80% of all potable water comes from wells. But there is another important benefit. The low impact development techniques that infiltrate stormwater also reduce stormwater temperature ten to fifteen degrees within the first several hours and allow sub-surface seep of naturally treated stormwater into streams and wetlands. These are important tools neglected in the Topic Paper.

Page 26. Washington State Water Law.

This section does not discuss or address Rainwater Harvesting and it's related surface water rights issues. Rainwater collected from the roof of buildings, held then used through-out the year for non-potable or even potable uses is another tool that can assist with Water Quantity, Quality as well as Land Use/Habitat functions. Initially, they reduce the peak flows that cause erosion in streams. The contained stormwater is then used for irrigation or other internal building uses and much of it will infiltrated through septic systems. It also collects stormwater during periods of higher rainfall, and is then used during dryer periods reducing the need to withdraw water from aquifers and rivers.

Page 29. Source Exchange. Low Impact Development techniques also can be an effective tool.

These references to low impact development only discuss one technique - that of

surface dispersion into natural vegetation, sometimes mentioned as the 65/10 (65% native vegetation and 10% impervious surface). Using this technique mitigates stormwater 100%. However, it is only one of many techniques that include such things as bioretention cells, pervious pavement, amended soils, minimum excavation foundations, vegetated roofs and amended soils. The document is thus misleading as to what low impact development is, and it's role in Land Use/Habitat Protection. In addition, its recommendation to "Require low impact development techniques to be used in all Puget Sound jurisdictions to reduce the loss of forest cover and increase in impervious surfaces" is simply more "mandate and regulate" philosophy - and it is not accurate and won't do what it says it will! Even if the statement is approved such practices aren't going to achieve what this says will be achieved. This one (the most controversial and likely least to be used) technique preserves native vegetation and limits impervious surfaces only.

In addition, three Kitsap County jurisdictions currently have provisions that in some cases allow the use of low impact development techniques in the buffers of wetlands and streams. Where approved, these low impact development techniques provide water quality treatment and subsurface seep, after reducing stormwater temperatures, of clean water into streams and wetlands. This enhances not only water quality but habitat and the hydrology.

## Water Quality Topic Forum

Page 17. Low Impact Development methods. "Low Impact Development methods: Low impact development techniques for stormwater management include the installation of features that attempt to mimic natural hydrologic conditions, such as porous pavement, infiltration facilities, rain gardens, and other techniques (Puget Sound Action Team, 2005). Limited research has been conducted on the effectiveness of low impact development techniques to improve water quality."

Amazingly, this is the only reference to low impact development in the Water Quality Topic Forum is this section. And it is not accurate! There are hundreds, if not thousands of research papers that have been written about low impact development techniques and how effective they are in naturally treating pollutants in stormwater.

In fact, the research shows that these techniques are substantially more effective in removing pollutants from stormwater than any of the traditional techniques. The Department of Ecology already considers bioretention as an "enhanced treatment facility" and based on other research, pervious pavements should also be considered as an "enhanced treatment facility." Low Impact Development techniques have been used in some areas of the world for over fifty years. There is growing use of the techniques throughout the United States, Europe and elsewhere in the world.

Monitoring and research are all showing effective treatment of such stormwater pollutants as suspended solids, hydrocarbons, organic carbon, dissolved metals, fecal coliform, bacteria, and depending on technique design, nitrogen among others. Certainly more monitoring and research is warranted - but these techniques have proven they work and are effective elsewhere.

## Additional Recommendations

### Watershed Modeling

Low Impact Development techniques provide the opportunity to significantly reduce "effective impervious surfaces." All watershed modeling that we've seen "assumes" future development will have the same percentage of impervious surfaces as past development and this projects the loss of habitat, stream erosion, reduction in water quality and other environmental degradation based on those assumptions. However, low impact development techniques depending on the soils, slopes and site conditions can significantly reduce effective impervious surfaces and in some cases even get to a zero or near zero "net effective impervious surface." If the use of low impact development techniques were included in modeling, the resultant negative environmental effects would be substantially less. The watershed monitoring tools should be changed to allow alternative types of development and techniques. They could then project how different types of development and techniques such as low impact development would effect the watershed.

### Science of Low Impact Development

We've read hundreds of studies, research papers, reports and articles about low impact development techniques over the past several years, and there is a significant theme in every document. Low Impact Development techniques, especially bioretention cells and pervious pavement, are very effective in providing dramatically enhanced water quality treatment. They naturally treat or dramatically reduce a wide range of stormwater pollutants including hydrocarbons and dissolved metals. The Department of Ecology currently considers bioretention cells as "enhanced water quality treatment facilities" and we believe that pervious pavement where the stormwater goes to soil should also be approved as an "enhanced water quality treatment facility." The research clearly shows the performance and results.

We will not attempt to compile a complete list of reference documents. Instead we recommend two specific actions.

First, gather scientific studies, reports, monitoring results, documentation and other documents listed as references and appendixes in such publications and organizations as the;

. 2005 Puget Sound Action Team Low Impact Development Technical Guidance Manual for the Puget Sound; Prince Georges County, Maryland LID Analysis

document and their LID Strategies document;

- . U.S. Department of Housing and Urban Development - The Practice of Low Impact Development; Metropolitan Milwaukee Sewerage District (MMSD) Surface Water & Stormwater Rules Guidance Manual for Low Impact Development;
- . City of Portland, Oregon Stormwater Management Manual for Low Impact Development;
- . Seattle Public Utilities Natural Drainage Systems Program;
- . Pierce County Water Quality Program;
- . The Low Impact Development Center ([www.lowimpactdevelopment.org](http://www.lowimpactdevelopment.org));
- . WSU Extension Service Water Quality;
- . EPA Municipal Technology Branch;
- . University of Washington Department of Civil and Environmental Engineering;
- . University of Connecticut;
- . Villanova University;
- . NAHB Research Center ([www.nahbrc.org](http://www.nahbrc.org))

There are many more references available in addition to those above. There is a wealth of research and monitoring results regarding low impact development throughout the U.S. as well as Europe and other countries.

Second, I would recommend requesting the creation of a Low Impact Development working group to gather and review known science regarding the water quality benefits of low impact development. Among those who should be included in the work group are; Dr. Chris May, Seattle Public Utilities and Curtis Hinman, WSU Extension - Pierce County. I would trust their judgment both for others who could contribute to the work group and what is appropriate known science. This work group could also develop recommendations for future research efforts regarding low impact development.

#### Low Impact Development Recommendations for the Puget Sound Partnership

Include Low Impact Development techniques as an important part of water quality improvement for the Puget Sound.

#### Flow Credits

Encourage review of existing monitoring projects to evaluate flow credits for low impact development techniques, especially for pervious pavement and bioretention. Currently DOE allows the void area in the volume of a bioretention cell to be used for volume mitigation, unless the bioretention cell has under piping. With under piping only the volume below the pipe is allowed for volume mitigation. The Seattle SEAS Street project (has under piping) when modeled by the DOE method only shows a modest volume benefit, yet the projects own actual monitoring shows over 99% reduction in volume leaving the site compared to pre-retrofit, and it is reported that no stormwater has left the site since 2003 despite several unusually large storm

events since. Bioretention is likely to be the widely used LID practice and one that shows spectacular results for water quality and infiltration back to aquifers.

DOE allows publicly owned pervious pavement to be modeled as landscaping, which still requires additional volume mitigation. If privately owned, it is treated as half landscaping and half impervious surface, which can be addressed by adequate maintenance requirements so that privately owned pervious surfaces can be treated as landscaping for volume mitigation. When under piping, all volume mitigation is eliminated. Thomas Cahill is an engineer with over 20 years experience in designing and monitoring pervious pavements in the upper Midwest, New England, and Eastern Seaboard (in addition to Portland, Oregon). In articles, he reports that he designs the flow from five impervious acres into each acre of pervious pavement. We point this out to show the dramatic gap between flow credit modeling currently allowed by DOE and proved practices in other areas of the country.

"Fair" flow credits are needed. As flow credits become fairer, it is our opinion LID implementation will become the stormwater mitigation strategy of choice where LID use is appropriate.

#### Education

Encourage and support additional technical training on how to design, install, maintain as well as review and approve low impact development practices. Continuing education for the public, private sector, land owners, public and private sector engineers are all important so that all understand exactly what low impact development is and is not. The education should also teach to utilize these techniques in project design and construction - as well as how project that utilize LID techniques are reviewed and approved.

#### Rainwater Harvesting

Rainwater Harvesting is a potentially significant low impact development technique that is severely limited in usage due to Surface Water Rights issues. DOE currently allows rainwater harvesting without a surface water right permit for de minimus uses (i.e. for one single family home). Surface Water Right permitting is lengthy, expensive and difficult to obtain for larger projects. There should be a simpler, less expensive and more timely Surface Water Right permit when rainwater harvesting is used on larger projects. When an annual water budget that shows how all the collected stormwater will be used during that year, the roof area is no longer considered impervious. Uses for rainwater collection include; irrigation, grey water uses and when approved by the local health district even for potable uses. The environmental benefits include; collecting stormwater during it's peak events which reduce the volume effects traditionally found from impervious surfaces. The water is then returned to the surface or subsurface through irrigation, or internal building uses - generally through a septic system. While the stormwater is used, it is more

delayed in its return to the natural environment - generally returning large percentages of it back to the environment during drier periods of the year.

## Maintenance

Maintenance is an important issue with low impact development techniques. Maintenance often raises questions of how to insure that LID installations will continue to perform in the future. While more research is warranted, LID maintenance requirements (especially for bioretention cells and pervious pavement) are simple and relatively inexpensive. In the initial LID implementation stages the concern will be greater than once regulators have a period of time to actually monitor the effectiveness of different maintenance practices. While an important issue, education and practical applications will provide greater understanding and insight for regulators to understand appropriate maintenance practices.

## Voluntary or Required

We believe that Low Impact Development should remain a voluntary stormwater mitigation strategy. Certainly incentivized to encourage its use where appropriate, but should not be required. Low Impact Development practices are not appropriate for all sites. LID practices are important, but only a partial solution to proper stormwater management. Other stormwater techniques such as regional or area management are other parts to the stormwater puzzle. In areas where soils are unsatisfactory for infiltration, there should be surface or piped conveyance to "regional" or "area" management. This could be on a fee basis to support these activities, and at these regional or area management facilities low impact development, detention, and other techniques could be used to clean the stormwater before infiltration or its use to supplement the hydrology of wetlands and streams.

We know that low impact development is very effective in removing stormwater pollutants. With fair flow credits it will also reduce development costs for stormwater mitigation, provide additional amenities to the development projects and reduce private and public maintenance costs.

Encouragement of its use by consistent standards for design and approval. Assistance in eliminating its use as an "exception" (exceptions take lots of time and money for approval.. "no good deed goes unpunished") in local codes. As these occur, low impact development will become the desired stormwater mitigation strategy for most future development - providing benefits for all interests without requiring mandates.

Currently stormwater mitigation is the single most costly mitigation for development projects. As the Phase II implementation occurs with dramatically great volume and quality mitigation requirements, low impact development is the most cost effective solution for nearly all projects, and the only solution for many projects to be

financially viable. Let nature work with us to address stormwater quality issues rather than continuing to work against nature.

**From:** Gordon Thomson

**Date:** 05/02/2008

**Comment:** The discussion of Habitat Protection Efforts effectiveness (page 28) erroneously states that: "...single family residences are exempt from the SMA even though 30% of shoreline armoring within Puget Sound is associated with single family residences."

Under the definition of Substantial Development (RCW90.58.030(3)(e)(ii))the "Construction of the normal protective bulkhead common to single family residences," are not defined as substantial development. This language does not "exempt" normal protective bulkheads from SMA. It simply says a substantial development permit is not required. In fact, no where does the SMA say that single family residential bulkheads are "exempt" from the requirements of the SMA. There is a fair amount of caselaw both at the Shorelines Hearings Board level and the State Court of Appeals that confirms just the opposite, including a recent case out of Bainbridge Island. All local jurisdictions have the authority to mitigate and deny so-called "exemption" request for single family residential bulkheads. The key words in the definition are "normal" and "protective." If a homeowner is proposing a bulkhead that does nothing to protect the residence (which in fact is the case in far too many instance, particularly when feeder bluffs are proposed or armoring) the local jurisdiction has the authority to deny the request, something far too few jurisdictions have seen fit to do.

**From:** Doug Hennick

**Date:** 04/30/2008

**Comment:** The PSP should establish a program that: (1) evaluates the continuing impacts to ecosystem processes caused by existing land use on each land parcel in the Puget Sound watershed; (2) records those impacts on the parcels' deeds in the records of the local government; and (3) requires continuing annual mitigation for those impacts until they are eliminated.

The first round of parcel-by-parcel impact evaluations could be done by a combination of remote sensing analysis and searches of government records. For example, LIDAR and aerial photos could detect places where retaining walls, construction in buffers, or cleared buffers exist; local building records could supply

information about the quality of stormwater control facilities for each site; local health department records could inform the analyses of septic pollution sources; and state records could supply information about the quality of culverts for fish passage and some water pollution sources. By conducting the best analyses feasible with data such as that, programs established by PSP could quantify a substantial portion of existing impacts during an initial round of analysis, and that portion would be sufficient to establish initial mitigation requirements. I think PSP should establish a goal of quantifying 85% of the impacts during the first round of analysis, and assign mitigation requirements for the first few years based on that effort. A second round of impact evaluations could be conducted in later years, when impact analysis procedures improve, and better ways are developed to quantify required mitigation. Land owners should be able to request site visits by habitat biologists to update the records on their deeds when they feel impacts are erroneously specified, and site visits to reduce the mitigation requirements appropriately when they have made corrections to the conditions listed on their deeds as causing continuing impacts. PSP should offer to delegate the tasks of parcel-by-parcel evaluation of impacts to watershed lead entities or local governments, with sufficient oversight from the PSP to ensure consistency throughout Puget Sound.

It would not be easy to establish such a program, but I think it is feasible, and with its accomplishment PSP would create very powerful ways to: (1) educate people about the impacts they are causing and why existing practices will degrade our future; (2) teach people ways to eliminate or compensate for impacts; (3) minimize costs of restoration for people who are not causing substantial impacts; (4) prioritize where grant money can be spent to best effect; and (5) enforce the minimum set of requirements that must be met if our region is to enjoy a healthy Puget Sound in the future.

This program would compensate for the overall weaknesses of existing watershed plans which include the following problems. (1) Their emphasis on “protection” puts greater burdens on owners of undeveloped sites than on owners of existing development. This is not fair, because existing development has caused the degradation we are concerned about. (2) Restoration proposals mostly rely on voluntary efforts to improve the sites of willing landowners, generally by using grant money. Although this tactic facilitates consensus during plan development, and avoids the unpleasantness of confronting non-willing landowners in attempts to get them to refrain from hurting the resources, it will accomplish only part of the restoration that is needed.

Fixing and protecting Puget Sound will require such high expenditures that we cannot rely on voluntary actions of willing landowners. For guidance we should look at the major improvements to the environment that have happened so far. These accomplishments have been due to establishment and enforcement of requirements,

and not due to reliance upon voluntary efforts at cleanup or protection. Even most of the apparently voluntary action that has occurred has happened with the threat of requirements in the background. These successes include the Clean Water Act, Clean Air Act, Forest and Fish Rules, and Endangered Species Act. The major improvements these laws have caused are due either to people attempting to avoid the additional costs that will develop for them if they fail to correct the problems they have caused, or due to people seeking to avoid the costs of the enforcement actions that they know will develop if in the future they harm the environmental functions covered by those acts. We can call some of the beneficial actions that occur in these circumstances “voluntary”, but many were done because the responsible person could predict that the government would step in if they did not volunteer. Even the most eager of the volunteers stepped forward only because they saw their efforts would not be swamped by degradation elsewhere, due to the required actions occurring on other sites. Due to this experience of the region and nation, PSP should augment the existing voluntary efforts developed from consensus agreements for restoring Puget Sound, by making requirements for continuing mitigation of continuing impacts. Although watershed scale restoration of processes is needed, in most cases that goal can only be accomplished by cumulative discrete actions on many specific land parcels. This proposal would cause such work to happen.

**From:** Mike Shepherd

**Date:** 04/26/2008

**Comment:** Most of this is a bureaucratic work around instead of facing the fact that the State of Washington should never have transferred so much shoreline habitat to private ownership.

Almost every attempt to regulate these areas is doomed because humans are so competent at exploiting their environments and there are so many private individuals that there can be no cost effective way to monitor and regulate them. (McNamarah had the same problem in the Viet Nam war, which by the way we lost)

A far more cost effective approach is to simply buy back/condemn all these critical areas and place them in state/NGO/fed management. This approach has worked in Oregon and California and will work here also.

# PugetSoundPartnership

our sound, our community, our chance

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**From:** Mike Shepherd

**Date:** 04/26/2008

**Comment:** Forest cover is a good measure of the ecosystem deterioration, but there is no good measure of ecosystem restoration since it has not occurred anywhere in this area. One could measure improvement in any number of ways, but all improvement depends upon change of land ownership to public rather than private ownership. Costa Rica has had success in regrowing its forests, but only after the government took over management.

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**From:** Kathy Taylor

**Date:** 04/25/2008

**Comment:** I have a few specific comments:

Table S1-1, pages 6-9: For the “In-water” section, it would be helpful to add Process Impacts such as “Aquatic species habitat fragmentation and loss.” This would parallel “Away from the water” Process Impacts “Terrestrial species habitat fragmentation and loss.” Habitat loss and fragmentation is important in both terrestrial and aquatics systems.

Page 10, first bullet: I suggest adding the words “and habitats” to the end of the sentence so that it reads “.implications of human activities on nearshore ecosystem process and habitats.”

Appendix S1-1, pages 15-20: I suggest amending the title of the table to read “Major FRESHWATER process tables for water, sediments, large woody debris.” This table is not applicable to the marine environment and this should be made clear.

**From:** Kathy Taylor

**Date:** 04/25/2008

**Comment:** I have the following specific comments:

Page 27, second bullet: May want to consider adding SMA.

Page 29, first bullet: I suggest adding the words "In addition to habitat structure," so that it reads "In addition to habitat structure, restoration efforts must focus on." I think it is important to make it clear that habitat structure is still an important component.

Page 29, fourth bullet: suggest rewording of second sentence to include shorelines such as "For example, if a disturbed site sits within an intact landscape or shoreline, restoring the site will probably be successful."

Page 30: Two of the references cited on this page (Shreffler and Thom 1993; Thom et al. 2007) are not listed in the references for this section. I just noticed these by chance -- I have not done a comprehensive crosscheck of references and suggest that the folks who are producing this paper do so before publishing the next version.

Page 30, second bullet: suggest inserting the words "or shoreline" in the first sentence so that it reads "Mitigation should be sited and designed within a watershed or shoreline context."

**From:** Kathy Taylor

**Date:** 04/25/2008

**Comment:** I have the following comments:

Page 63, item 1, third bullet: It is important that this model accurately reflects the important components of marine, freshwater, and terrestrial systems. Details are important and this should involve an interdisciplinary team.

Page 64, item 3: It is difficult to know what is really being recommended without seeing the case study described in the Note.

Page 65, item 6: Prioritizing restoration is important. However, there are significant details to work out and this section seems to be written with freshwater systems in mind. I would strongly recommend that an interdisciplinary team involving marine, freshwater, and terrestrial specialists work together on this.

**From:** Mark Hersh

**Date:** 04/25/2008

**Comment:** Short version of the Puget Sound Environmental Caucus's Preliminary Comments on Habitat/Land Use Discussion Draft

We strongly recommend that the final Habitat/Land Use paper include detailed analyses on the institutional barriers to action, asking and answering the truly hard questions of why the many plans to save the Sound since 1986 have not been fully implemented.

Science Question 1: We appreciate the acknowledgement that assessment of ecosystem process integrity is critical for understanding current conditions and assessing what protection and restoration is necessary for a healthy Sound. But we cannot allow "gaps" (p. 10) to stand in the way of action that we can take now to protect and restore habitat. Both are urgently needed.

Science Question 2: We agree that little is known about the effectiveness of efforts to protect and restore habitat from a site-specific standpoint. There is no reason to expect consistency in the protection afforded by the GMA and SMA, primarily because of the delegation of the responsibilities to numerous local governments.

We support the statement that protection is the best approach to ensure long-term integrity of ecosystem processes and habitat conditions. We support the statement that restoration should be prioritized, and that watershed-based and other smart growth measures should be employed in other areas to minimize ecosystem impacts.

Policy Question 1: We appreciate the assessment of existing laws and politics. Ecosystem restoration has been left to state and local governments; it is difficult for local leaders to implement significant changes to land use activities using regulatory approaches.

The GMA, when used well, is a powerful tool for local governments to concentrate growth, but it is not designed to slow the region's growth as a whole. As an environmental protection tool, it has shortcomings, most of which are pointed out. We agree that the current system of protection and restoration regulatory tools is fragmented, with conflicting goals and inconsistent outcomes, and that a comprehensive approach is needed to recover the Sound. But it is not clearly pointed out that our current framework has not been adequately funded, implemented, or enforced.

Policy Question 2: We agree that there is no comprehensive Puget Sound-wide

ecosystem plan for protecting and restoring marine life and marine areas, including the nearshore. We agree with the bolded statement at the bottom of pp. 62-63.

Of the "Preliminary Policy Recommendations" on pp 66-69, we particularly agree with the following (with additional suggestions in italics): #1, protection as the preferred approach (increase funding for successful programs, like DNR's aquatic reserve program); #2, the region should discuss its vision for a future quality of life (include analyses why past efforts have failed); #3, focusing growth and using BMPs and LID within UGAs to afford special protection; #4, a state-level integrated set regulations (include water quantity programs as well as Clean Water Act programs such as stormwater and antidegradation, including designation of ORWs; use water quality standards as a threshold for many more projects); and #9, require LID to reduce loss of forest cover and the increase of impervious surfaces (this is a good example of a measure that can be started now without waiting for assessment).

We also support the governance recommendation, that is, a single agency or group charged with convening the region, reaching consensus on science, and developing a set of policies and actions to lead us to a healthy Sound.

**From:** Mark Hersh

**Date:** 04/24/2008

**Comment:** Wow, I didn't think any jurisdiction relied solely on NWI maps, but I shouldn't be surprised...

I don't think that we could rely on mapping entirely, unless there was a concerted effort to actually inventory everything in a fairly quick time frame (see page 64 of the PSP habitat paper, where they call for a "rapid" assessment of each action area) and then update the maps (I don't know if water-typing is included in this proposed effort).

Probably a better approach would be for the legislature to require ground-truthing of the maps by either the local government or the party asking for the permit (the change in land use)--make them characterize the resource. That would require some advance planning for everyone in that they would have to be aware of the window for the fish/no fish sampling, and plan accordingly.

Training of local staff would be central, however, especially if county governments wanted to offer assistance to landowners.

Thanks for the feedback!

**From:** Mark Hersh

**Date:** 04/24/2008

**Comment:** Preliminary Comments on Habitat/Land Use Discussion Draft

PSEC Habitat Committee

Note to Reader: This paper represents the preliminary work of the Puget Sound Environmental Caucus's Habitat Committee to answer questions posed by the Puget Sound Partnership's "Initial Discussion Draft Land Use/Habitat Protection and Restoration Topic Forum," April 14, 2008.

Overall general comments:

We believe that this is a very good first draft and that the recommendations are necessarily bold and are what is needed. We agree with most of the analyses and recommendations.

Although this draft isn't supposed to be about the "how," some great examples of what others are doing are scattered throughout the document.

Science Question 1:

We appreciate the robust discussion of the major threats to ecosystem processes, particularly the acknowledgement that assessment of ecosystem process integrity is critical for understanding current conditions and assessing the extent of protection and restoration necessary to maintain a healthy Puget Sound. We cannot, however, allow "gaps" (p. 10) to stand in the way of action that we can take now to protect habitat. For example, the Puget Sound Salmon Recovery Plan recommends removal of barriers to fish passage as a key component of salmon recovery. Actions such as these do not have to wait for analyses of how human alterations affect ecosystem processes, nor do detailed watershed-specific analyses need to be conducted before beginning a concerted effort to remove fish passage barriers.

Similarly, we do not need additional detailed analyses to document the need for both protection and restoration. Both are needed if we are to restore Puget Sound by 2020; the need to recover Puget Sound habitat-forming processes and species has been well documented by agencies, scientists and watershed groups. We suggest inclusion of a strong statement that both protection and restoration are needed to meet the Legislature's 2020 goal.

## Science Question 2:

Page 27 correctly contains a clear statement that states that habitat continues to degrade from human activities. That page also states "little is known about the effectiveness of efforts to protect and restore habitat from an ecosystem standpoint." As other parts of the S2 discussion indicate (and as members of the Caucus know all too well), little is known about the effectiveness of efforts to protect and restore habitat from a site-specific standpoint. This also applies to the repetition of this statement on page 28. We also note that little assessment has been made as to whether the regulations and other programs are being implemented, which seems like a necessary first step. In addition, there is no reason whatsoever to expect consistency in the protection afforded by the GMA and SMA, primarily because of the delegation of the responsibilities to numerous local governments.

Page 29: We support the statement that protection is the best approach to ensure long-term integrity of ecosystem processes and habitat conditions. We support the section entitled "Scientific Principles Underpinning Ecosystem Protection and Restoration," and suggest it also be included in a preamble as well as in the S2 question.

Page 30: We support the statement that restoration should be prioritized, and that watershed-based and other smart growth measures should be employed in other areas to minimize ecosystem impacts. We agree that mitigation should be sited and designed within a watershed context and that adaptive management and monitoring is critical to achieving ecosystem improvements. The draft correctly states: "To date, there is no comprehensive adaptive management program for restoring Puget Sound".

## Policy Question 1:

We appreciate the authors' frank assessment of existing laws and politics, particularly page 35, which notes that there is no comprehensive, national framework that requires the protection and restoration of ecosystems (although the ESA's objective is to restore the ecosystem on which listed species depend, it did not set out a framework other than voluntary compliance with recovery plans, federal agency consultations, and HCPs for non-federal actors that are so inclined). Ecosystem restoration is left to state and local governments. The authors point out the result, which is that it is difficult for local leaders to implement significant changes to land use activities using regulatory approaches.

The discussion on pages 34-39 also needs to point out that federal, state and

local governments have not fully funded, implemented, and enforced the environmental protection mandates they have enacted. For example, four counties (San Juan, Skagit, Thurston, and Island) have not yet met the statutory deadline for adopting their Critical Areas Ordinances based on Best Available Science.

On pages 34 and 36, the description of state and local laws to protect freshwater and marine ecosystems should include a description of Washington's Department of Natural Resources (DNR) aquatic lands program. Washington's Department of Natural Resources (DNR) manages 2.6 million acres of state-owned aquatic lands to balance public benefits for recreational, commercial, and natural. DNR has established an aquatic reserves program to conserve state-owned aquatic lands to enhance the health of native marine and freshwater aquatic habitats, and the fish and wildlife that depend on them. Currently, there are three aquatic reserves: Maury Island, Fidalgo Bay, and Cypress Island. Another aquatic reserve designation is pending for Cherry Point upon completion of a management plan. Aquatic reserves typically involve managing existing leases of state-managed aquatic lands to reduce impacts over time and to prohibit new leases that conflict with reserve goals. DNR recently solicited proposals from the public for new reserves. The ability of DNR to designate new reserves is based in part on the ability of DNR to provide financial resources to carry out the program, which includes long-term management, monitoring, research, and restoration.

On page 35, the first full paragraph: It appears that the authors have confused the Cuyahoga River (which is in Ohio) with the Ohio River (which is in Ohio and a number of other states) (<http://www.epa.gov/grtlakes/aoc/cuyahoga.html#Background>).

Also on page 35, we point out that while the state's three key environmental laws (SEPA, SMA, and Forest Practices) are key environmental tools, they were not designed to protect at the ecosystem scale.

At the bottom of page 35, "rebelled" is too strong a word, even if backed by a citation.

On page 36, and also later in the document, the authors state that GMA, when used well, is a powerful tool for local governments to concentrate growth, but it is not designed to slow the overall pace of the region's growth as a whole. Also, on page 36, the first paragraph gives a good description of the GMA but does not point out that the "bottom up" approach also applies to the environmental protection provisions of the GMA, including

researching, adopting, and implementing critical areas ordinances. This results in varying levels of protection for similar resources, depending on which local government has jurisdiction.

This section also fails to point out this other critical shortcoming of the GMA:

"Fish and wildlife habitat conservation means land management for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean cooperative and coordinated land use planning is critically important among counties and cities in a region. In some cases, intergovernmental cooperation and coordination may show that it is sufficient to assure that a species will usually be found in certain regions across the state" (emphasis added) (WAC 365-190-080(5)).

This basic level of protection is less than that found in either the ESA (which protects individuals of listed species) or the Clean Water Act (via Washington's water quality standards, which protects designated and existing "uses") (footnote 1).

Other problems with the GMA include the fact that "best available science" need only be considered when adopting critical areas ordinances-local governments can (and do) allow policy considerations to trump best available science, and that when implementing their CAO's, there is no requirement for local governments to "ground-truth" assumptions. For example, local governments can and do rely on outdated and inaccurate "water-typing" maps to afford protection to headwater streams, resulting in inadequate protection to important habitats.

On page 37, the first full paragraph is confusing in that it initially states that counties and cities were subject to NPDES permits in 1995. That is true of the stormwater program but not for other point sources (they were subject long before).

Also on page 37, the draft doesn't seem to acknowledge that the GMA requires CAO's to protect marine habitats. The WAC clearly calls out the need for protecting the following marine fish and wildlife habitat conservation areas: commercial and recreational shellfish areas, kelp and eelgrass beds, herring, surf smelt, and areas with which endangered, threatened, and sensitive species have a primary association (like salmon). See WAC 365-190-080(5)(a)(i, iii, iv). However, many local governments

have misinterpreted the laws, believing they could wait until their next SMP update to protect marine critical areas. The Growth Boards have upheld the need for local governments to protect marine critical areas, see recent appeals against Pierce and Kitsap Counties.

On page 38, we agree with the statement that GMA is focused on managing growth, not preventing it, meaning it may not be effective in avoiding impacts of ever-increasing population growth. We also agree with the statement that most of the environmental tools available have an effect at the site scale, rather than ecosystem scale, often missing the need to protect key ecosystem-forming processes. The discussion at the bottom of page 38 should include a statement that no evaluation of the GMA's environmental protection provisions has been attempted, similar to most environmental protection statutes. This holds true for the site scale as well as the ecosystem scale.

On page 39, we agree with the statement that the current system of regulatory tools for protection and restoration is fragmented, with conflicting goals and inconsistent outcomes, and that a comprehensive, consistent approach is needed to recover Puget Sound.

On page 40, we agree that the effectiveness of long-term volunteer engagement in protection and restoration efforts has yet to be measured on a comprehensive scale.

On page 41, we agree that there are few regulatory programs that require use of monitoring and adaptive management, resulting in significant gaps in management tools.

Appendix P1-1: Page 43, last bullet under the CWA: This bullet over-generalizes. Various Clean Water Act programs are available for the state to administer, but Ecology does not administer every program (e.g., the Section 404 program: although Ecology does have a wetlands program, the US Army Corps of Engineers issues Section 404 permits; similarly, USEPA issues some NPDES (CWA Section 402) permits, although Ecology issues most of them).

This section should also include that under the authority of both the CWA and the state Water Pollution Control Act, Ecology promulgates state water quality standards that are actively applied to some, but not all, activities, including point and nonpoint sources of pollution. The state act prohibits "pollution" which is broader, and arguably different and more powerful than a prohibition of "the discharge of pollutants" (see RCW 90.48.020). The

Water Pollution Control Act gives Ecology the "jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, water courses, and other surface and underground waters of the state of Washington," and "pollution" is broadly defined (footnote 2).

On page 45, we agree that the HPA program has significant limitations and is an ineffective tool to protect habitat in most cases.

Policy Question 2:

On page 57, we believe that the report does present a good analysis of "the gaps and limitations existing in the protection and incentive tools that exist today in Puget Sound." We also believe that we do need "fundamental changes," and that such changes will "challenge the commitment of policymakers, scientists and most importantly, our citizens, to our goal of a healthy Puget Sound." We believe that this draft will indeed "provoke and inspire a community discussion."

We agree with this important point: there is no comprehensive Puget Sound-wide ecosystem plan for protecting and restoring marine life and marine areas, including the nearshore. We agree that more time should be spent analyzing how a regulatory program could work to protect marine drift cells through an ecosystem approach, and include incentive tools that enhance regulatory programs.

Page 58 is a description of various processes but it seems to be overstating it to discuss these as if they are ecosystem restoration plans. Some of them might be integrated into such plans, but neither the Forests and Fish Report nor the SMA update process is such a plan.

We agree that GMA has limited ability to reduce the rate of development in rural areas; citizens and state agencies rely on an appeal process to ensure effective growth plans. This has added to the variability afforded to the ecosystem across the Sound. The shortcomings of the GMA that were pointed out previously (e.g., p 38) were not included in the analysis on pages 58-60.

On page 60, we agree that SEPA is primarily a tool to provide information, rather than effective environmental protection for Puget Sound. We also agree that the "no net loss" standard is not currently being met, because every jurisdiction has adopted exemptions to CAOs, there is no investment in comprehensive ecosystem restoration to transcend effects that occur beyond parcel boundaries, and there is no acceptable procedure for assessing

cumulative impacts. Also on page 60, we agree that Washington's vesting laws are too generous and directly resulting in limiting effectiveness of protections.

On page 61, we agree that the ESA listings in Puget Sound have not yet resulted in noticeable ecosystem-wide benefits in Puget Sound. We also agree that voluntary programs have limits in that the most willing may not be situated in areas with the greatest need or potential for ecological benefits, and that we haven't performed a comprehensive analysis of which tools are most effective.

We agree with the bolded statement at the bottom of pp. 62-63. It should be repeated in the introduction or an executive summary. It is clear that if we are to achieve the goal of a healthy Sound by 2020, and support predicted growth in people and jobs, this region needs a fundamental change in the way in which it manages natural resources and the human activities that impact them. We point out that a "fundamental change" must include that the habitat protection tools (whichever ones are ultimately chosen) need to be fully funded, implemented, and enforced. Making bold changes to regulation and policy, without the political will to allocate the resources to actually implement those changes, is a recipe for failure.

We support the seven "Science and Research Preliminary Recommendations" on pages 63-66. Item 6 on page 65 should be clearer on the amount of restoration that is needed, or else this needs to be a separate recommendation: restoration needs to take place at a greater pace and magnitude in order to recover Puget Sound by 2020. In order to realize a net gain in healthy habitat, we will need to go beyond relying on mitigation for permitted impacts (which has been shown to be ineffective as it is practiced). We will need significantly more funding to restore what has been lost in the past as well as what will likely continue to be lost due to inadequate protection, cumulative impacts, and exempted projects.

The "Preliminary Policy Recommendations" on pages 66-69 are urgently needed. We have comments on the following particular recommendations:

. Protection as the preferred approach (#1).

This should include a recommendation that existing state protection programs that have a history of success in habitat protection should be adequately funded and staffed to ensure effective implementation and inclusion of more protected areas. In particular, we support additional funding and staffing of DNR's aquatic reserve program.

. The region should discuss its vision for a future quality of life (population growth and carrying capacity) (#2).

This discussion should include why past efforts to protect Puget Sound have failed, and what needs to be done differently if Puget Sound is to be restored and protected. A true accounting of the substantial ecosystem services provided by Puget Sound must be a part of this discussion.

. Focusing growth to minimize land conversion to urban-style uses or intensities outside the GMA; require BMPs and LID within resource and rural lands (#3).

We believe that developing best management practices that protect habitat within the UGA is a key aspect of providing special protection.

. State-level integrated set of regulations that apply to lands, streams and marine areas to replace our present fragmented system of regulations (#4).

The section on page 67 "What it would integrate" deserves particular attention. We believe that water quality standards and related programs, like antidegradation, deserve particular attention. Besides protection of "uses" (see footnote 1) and additional protection of "high quality" waters, the "antidegradation policy" provides an important habitat protection tool omitted from the draft paper. The Department of Ecology presently has the authority to designate a high quality surface water as an "Outstanding Resource Water" or Tier III water under WAC 173.201A.330. In its supplement to the Salmon Recovery Plan, NOAA endorsed the use of an ORW designation to protect salmon habitat. According to NOAA, "NMFS supports the use of Outstanding National Resource Waters program as appropriate to protect remaining high quality habitat in Puget Sound." Final Supplement to the Shared Strategy's Puget Sound Salmon Recovery Plan, Response to Comments, p. 3 (November 2006). WDFW also endorsed the use of a Tier III antidegradation designation as a tool to protect critical habitat for steelhead. Statewide Steelhead Management Plan, p. 9, 11, (February 2008). A Tier III designation can be used to protect high quality habitat in rivers and streams before pollution degrades the waterway and requires expensive restoration and remediation. A Tier III designation also gives the Department of Ecology strong authority to enforce against both point and nonpoint source polluters that degrade high quality and high priority habitat.

Stormwater requirements need to be re-examined in light of watershed-based evaluations and ecosystem needs. The "integration" of existing programs

into a single, integrated set of regulations must include a new stormwater program that has at its center the requirement to meet or exceed water quality standards and ecosystem needs. This cannot be done without full integration into land-use planning. Central to that is the need to conduct a full build-out analysis of water quality and habitat impacts associated with planned developments.

These programs, which based in state regulations (although with a partial basis in the federal Clean Water Act) are not fully effective today in part because of conscious choices made at the state level (e.g., see WAC 173-201A-320(2), describing the limited application of Tier II antidegradation; RCW 90.48.555(6) presuming that a permittee's actions do not violate water quality standards upon compliance with a general stormwater NPDES permit).

Water quantity cannot be considered in a vacuum outside land use and habitat. Water use issues must also be integrated into this watershed-based, ecosystem-function based set of regulations.

On page 68, under "Participation of key state, federal, and tribal agencies," it states that a program or mechanism to issue Section 401 certifications under the Clean Water Act must be created. We feel the need to point out that there are many more private actions that are nominally subject to the state water quality standards, but are not assessed using that threshold under the current regulatory scheme. We believe that the water quality standards are a good threshold to use to assess all projects, not just those subject to Section 401 certification (those needing a federal license or permit) (see, footnote 1).

. Require LID to reduce the loss of forest cover and the increase of impervious surfaces (#9).

This is a good example of another measure that can be taken without waiting to conduct an assessment of how human alterations affect ecosystem functions. The empirical evidence is clear that impervious surfaces destroy biological integrity and we must employ tools such as LID to minimize impervious surfaces.

On pages 69-70, we support the preliminary governance recommendation, that is, a single agency or group charged with convening the region, reaching consensus on science, and a set of policies and actions to lead us to a healthy Sound.

We appreciate the opportunity to comment.

Footnote 1: Water quality standards apply to all surface waters of the state, as well as all activities (WAC 173-201A-010(1)). Also see WAC 173-201A-200(1): "Aquatic life uses are designated based on the presence of, or the intent to provide protection for, the key uses identified below in (a). It is required that all indigenous fish and nonfish aquatic species be protected in waters of the state in addition to the key species described below." Guidance for the protection of uses is provided by USEPA's Water Quality Standards Handbook (1994): "No activity is allowable under the antidegradation policy which would partially or completely eliminate any existing use whether or not that use is designated in a State's water quality standards. The aquatic protection use is a broad category requiring further explanation. Non-aberrational resident species must be protected, even if not prevalent in number or importance. Water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species."

Footnote 2: RCW 90.48.020 reads "Whenever the word 'pollution' is used in this chapter, it shall be construed to mean such contamination, or other alteration of the physical, chemical or biological properties, of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life."

**From:** Doug Peters

**Date:** 04/22/2008

**Comment:** I'd like to correct some information about the Growth Management Act in the discussion paper. These are not comprehensive comments, but seemed important enough to comment on now. I work to assist jurisdictions adopt good Critical Areas Ordinances, and address Mineral and Forest Resource Lands.

On page 45 of the initial draft, the section on GMA is not completely correct. The GMA applies to all jurisdictions in the state, with 10 counties (and the cities therein) only required to adopt measures to designate and conserve resource lands of long-term commercial significance, and to designate and protect critical areas. The other 29 counties (and associated cities) must meet all the GMA requirements. WE like to describe the difference as either "fully" or "partially" planning jurisdictions.

In the last sentence listing critical areas, geologically hazardous areas is not included in the list and should be.

In footnote #29 for this section, there should be 14 planning goals in the GMA, with the SMA goals considered as one of those. Among the listed comprehensive plan elements, the economic development and park and recreation elements are not required until the state provides funding to address them, so they are considered optional elements in fact.

A related section on the Forest Practices Act on page 44 is slightly misleading. The FPA requires certain counties to adopt local regulations for forest practices. Of the 15 counties currently required to do so, 4 have adopted these regulations, 11 still need to do so by 12/01/08, and 2 other have adopted regulations but did not need to. (RCW 76.09.240)

**From:** Rick Mraz

**Date:** 04/21/2008

**Comment:** Mark,

I appreciate your comment. I currently provide technical assistance to 5 counties and the cities therein on wetland issues. It's a similar situation with the National Wetlands Inventory (NWI) mapping. Some local jurisdictions simply check the NWI, which is definitely flawed and incomplete, and then authorize permits. Other jurisdictions actually do site visits to confirm the absence of critical areas.

I think that the level of detailed "ground-truthing" is mixed, depending on the availability and experience of local planning staff. For them, it's really a matter of adequate staffing and training.

I was a local planner with Mason County for four years. In my experience there, we started with the available maps then conducted site visits to verify conditions. But I know it's not the same everywhere.

Solutions could include improved staffing and training at the local level. Do you think that we could/should every fully rely on mapping only?

**From:** Steve Sperr

**Date:** 04/21/2008

**Comment:** Two comments:

(1) The two questions listed after "Current Knowledge:" are framed slightly differently than Science Question 1 (S1) in the discussion paper, which asks:

"What is the current documented knowledge about threats to ecosystem processes and resulting habitat as a result of land use practices in Puget Sound?"

(2) I am concerned that the tone of this Topic Forum can be construed as reactionary, especially in its use of the word "threat" to characterize a number of existing types of infrastructure. It is one thing to try to identify major existing modifications in a given watershed or nearshore environment (and characterize its level of adverse impact, if possible), it is another to label every category of modification a "threat" to the health of the Puget Sound. The word "threat" is used at least 50 times in the 75 page draft "LAND USE/HABITAT PROTECTION AND RESTORATION TOPIC FORUM", while the word "impact" is not used once. Let me be clear: My concern is not with identifying and addressing existing, man-made changes to the Puget Sound watersheds and nearshore, but rather with lumping them all together as "threats". This plays to those who would rather turn back time 200 years, regardless of any impacts to economy and community. Let's focus on trying to change what we can, based on local community understanding and buy-in.

**From:** Drew Preston

**Date:** 04/19/2008

**Comment:** You are not being honest when you list the forest Stewardship council and fail to mention the sustainable forestry Initiative.

Is this process biased?

**From:** Mark Hersh

**Date:** 04/18/2008

**Comment:** The implementation of an important tool that is used to protect our important headwater streams, "water-typing" under the auspices of the Growth Management Act, is seriously flawed. Local governments rely on outdated and inaccurate maps and are not required to "ground-truth."

See <http://www.thenewstribune.com/opinion/insight/story/333883.html> for an in-depth story and commentary, written by my co-worker Jamie Glasgow, of Wild Fish Conservancy.

Contact me or visit our website, [www.wildfishconservancy.org](http://www.wildfishconservancy.org) for more information regarding water-typing.

