Building Industry Association of Washington

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TO: Puget Sound Partnership
FROM: Andrew Cook, BIAW Legal Counsel
RE: Comments to Puget Sound Partnership Topic Forum Papers
DATE: May 5, 2008

Introduction

The Building Industry Association of Washington (BIAW) appreciates this opportunity to submit comments regarding the Initial Discussion Draft of the Puget Sound Partnership's Land Use/Habitat Protection and Restoration Topic Forum paper. This letter also provides comments to the Water Quality Topic Forum paper.

BIAW is the largest trade association in the state representing over 13,500 members involved in various aspects of the homebuilding industry. The typical BIAW member builds five to 15 homes per year. Unlike large, out of state conglomerate developers or commercial developers, such builders operate on much smaller budgets and have much fewer resources to navigate the costly and onerous maze of land use and environmental regulations. Ultimately, more regulations lead to higher operating costs for builders that exacerbate the housing affordability crisis in Washington. BIAW is very concerned with the provisions in the proposed draft recommendations and the severe implications they will have, particularly on small builders. BIAW will oppose many of the recommendations if/when they are proposed to the Legislature.

Proposed Regulations in Land Use/Habitat Protection and Restoration Topic Forum Paper Will Further Exacerbate the Affordable Housing Crisis in Washington State

A recent study by University of Washington economics professor, Theo Eicher, found that current land use regulations add roughly $200,000 to the cost of a home in Seattle and the Puget Sound region. *UW study: Rules add $200,000 to Seattle house price*, The Seattle Times, Feb. 15, 2008. The proposed recommendations contained in the topic forum papers, if enacted, would further drive up the cost of housing and make it virtually impossible for first-time home buyers and middle and low income families from ever being able to afford a home. At the same time, the proposed recommendations would do little to enhance Puget Sound.

The recommendations contained in the Land Use/Habitat Protection and Restoration Topic Forum are an example of what breeds mistrust between the building industry and the environmental community. The sweeping anti-growth, anti-development regulations would drive small builders out of business, while leaving only large, out-of-state corporations able to afford to build in Washington state. In turn, the cost of housing would skyrocket.

BIAW opposed creation of the Puget Sound Partnership precisely because it was concerned that the new agency would take extreme measures. It appears that BIAW's fears were well-founded.

The Puget Sound Partnership Does Not Have Authority to Impose New Regulations

It is perplexing that the Partnership is proposing the extreme recommendations, especially when the agency has no authority to impose such regulations. Along with stripping the Partnership of regulatory authority, the Legislature also explicitly withheld from the Partnership the authority to transfer responsibility to another agency unless specifically authorized. *See* RCW 90.71.360(1) ("The partnership shall not have regulatory authority nor authority to transfer the responsibility for, or implementation of, any state regulatory program, unless otherwise specifically authorized by the legislature.").

Thus, in order to carry out the recommendations the Partnership would need to come back to the Legislature to seek authorization. BIAW will adamantly oppose the recommendations contained in this document. In addition, if the Partnership attempts to carry out any of the recommendations without seeking legislative authority, BIAW will sue the Partnership.

Comments to Specific Recommendations – Land Use/Habitat Protection and Restoration Topic Forum

1. **Enacting a single, integrated, set of regulations at the state-level that apply to the lands, streams and marine areas within Puget Sound (Preliminary Policy Recommendation 4).**

As noted, *supra*, the Partnership has no authority to create a new agency or impose regulations. Thus, the Partnership has no authority to impose this recommendation.

If the Partnership goes back to the Legislature to obtain authority to create a new top-down, one-size-fits-all regulatory regime, BIAW will strongly oppose the legislation. Such a system would take away all local control and undoubtedly be used as a way to strictly limit development. In turn, this would drive up the cost of housing.

In short, creation of a new regulatory agency would do nothing to protect Puget Sound but instead would be used to stop development and make it virtually impossible for average citizens to live in this State.

2. **Use acquisition and other voluntary tools as a strategy to gain permanent protection for existing, undeveloped lots in key areas (Preliminary Policy Recommendation 6).**

There are already a number of state programs, *e.g.* Washington Wildlife and Recreation Program, which purchase easements and development rights. Another state agency with more state funding is not the answer. Too often these programs purchase land within or near urban growth areas that one day could be used to alleviate high housing costs.

Moreover, too often transfer of development rights programs, which purport to be voluntary, are in fact de facto mandatory programs. Many of these programs also run into constitutional taking problems.

While BIAW does not oppose the use of private money to purchase development rights, BIAW does oppose a new government agency using more tax dollars to take away potential buildable land in perpetuity.

3. **Examine the entire spectrum of land ownership and ensure that management tools that protect the ecosystem are being used to address all phases of the process (Preliminary Policy Recommendation 7)**

While extremely vague, BIAW has concerns with this policy recommendation. Thousands of dollars are added to the cost of a home in Washington state due to the lengthy permitting process in many jurisdictions. Therefore, BIAW has concerns that this policy recommendation could be used to make it even more difficult to obtain a permit in a timely fashion.

4. **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 (Preliminary Policy Recommendation 9)**

BIAW will oppose this recommendation if it is proposed to the Legislature. While many builders are voluntarily adopting low impact development (LID) techniques, making LID mandatory would drive up the cost of housing.

BIAW specifically opposes the recommendation of using low impact development techniques such as "limitations on clearing in rural areas..." Such clearing and grading restrictions reduce the amount of badly needed affordable housing in rural areas. Moreover, regulations that impose mandatory set asides or dedications of land without showing that the dedication is necessary as a direct result of proposed development may potentially run afoul of Washington statutory and case law. *See* RCW 82.02.020; *see also Isla Verde Intern. Holdings, Inc. v. City of Camas*, 146 Wn.2d 740 (2002) (Court ruling that RCW 82.02.020 requires a municipality to demonstrate "that a dedication is 'reasonably necessary *as a direct result of the proposed development or plat,*' and also mandates that, in the case of a payment in mitigation of a '*direct impact* that has been identified as a *consequence*' of the proposed development, a municipality must establish that the payment is 'reasonably necessary *as a direct result of the proposed development or plat.*'") (Emphasis in original).

In short, BIAW opposes this recommendation.

5. **Consider amending the state's vested rights doctrine to achieve opportunities for higher protection of ecosystem processes, structures and functions (Preliminary Policy Recommendation 10)**

This policy recommendation is a non-starter and will be opposed by BIAW. Washington's vesting laws further society's interest in having government agencies follow the law, and they establish certainty, predictability, and fundamental fairness. Rolling back vesting laws will unnecessarily increase the cost of housing.

6. **Use incentives and non-regulatory programs (Preliminary Policy Recommendation 13)**

See response to number 2, *supra*.

7. **Address cumulative effects of stressors on the ecosystem by adopting new mitigation standard (Preliminary Policy Recommendation 14)**

While not clear, this policy recommendation appears to be adding a restoration requirement. No such requirement exists under the Growth Management Act (GMA), thus if this is the intent of this policy recommendation, BIAW would oppose such legislation.

8. **Preliminary Governance Recommendation – creating a single land use regulatory agency in the Puget Sound Region**

Similar to the vesting law recommendation, this recommendation is a non-starter. BIAW will vigorously oppose the legislation if/when it is proposed to the Washington Legislature.

The Washington Legislature has long recognized the need for local control and has repeatedly rejected attempts to make Washington's GMA a top-down planning process. For example, the Legislature amended the GMA to ensure that the growth management hearings boards grant local jurisdictions proper deference when planning based on local circumstances. *See* RCW 36.70A.320 & 36.70A.3201.

A single agency with all-encompassing power to regulate land use would strip away local control. Moreover, BIAW is concerned that any agency would be stacked with unelected bureaucrats with anti-growth and anti-development ideology.

Therefore, BIAW strongly opposes this recommendation.

Comments to Specific Recommendations – Water Quality Topic Forum

Unlike the Land Use/Habitat Protection and Restoration Topic Forum paper, the Water Quality Topic Forum paper contains fewer and more vague recommendations. Below are a few comments to the proposed strategies.

Regulatory Strategies – Stormwater, wastewater, and land use

- One strategy suggests addressing the lag in adoption of new stormwater standards with state vesting laws. As noted above, BIAW will oppose any recommendations that would weaken Washington vesting laws. Washington's vesting laws provide property owners with certainty and thus are one of the remaining mechanisms developers still have to keep housing costs down. Thus, BIAW opposes this recommendation.
- Another strategy calls for improving the rate of existing permits through additional staff. BIAW opposes this recommendation. Washington has the most restrictive construction stormwater regulations in the country. Adding more inspectors—whose sole purpose is to shut down development—will only exacerbate housing costs and do little to protect Puget Sound. BIAW therefore opposes this recommendation.

Conclusion

BIAW is extremely concerned with the direction the Partnership is heading based on the topic forum papers. Many of the policy recommendations would drastically increase the cost of housing yet do very little to protect Puget Sound. Therefore, BIAW will oppose many of the substantive policy recommendations contained in the draft topic forum papers.

King County Comments on
PSP Habitat/Land Use Topic Forum Draft Discussion Paper
May 6, 2008

Here are comments from King County on the Habitat/Land Use topic forum draft discussion paper. These are organized in three sections, from the general to the particular. The first section provides high level answers to key questions for the county; the second section offers the county's general concerns on the topic as presented in the paper; and the last section provides specific notes on gaps, inaccuracies, or particular points of concern. Wherever possible and appropriate, we have included references to back our comments. Thanks for considering our comments as you revise the paper and move it into the integration phase.

County Questions for Review

Does the report focus on responding to the four questions? Is it thorough, accurate, and telling the truth? Are the conclusions grounded in fact?

- In general, the paper is written clearly.
- Could benefit from some minor revisions in Appendix S1 and expansion of some concepts. However, other than the details that the reader can infer from Appendix S1, the paper is sparse in its answer to S1, needs further detail and seems to be awaiting the results of the three major studies cited in S1. Appendix S1 seems to have the major issues well represented.
- Should make sure that the Habitat paper is consistent with the Water Quality/Water Quantity/ Species, Biodiversity & Food Web papers. They are all inter-connected. Could have conflicting goals if papers are viewed as stand alone items.

Does it lay out the problems succinctly?

- Increase emphasis on future scenarios.
- Identification of threats could be more thorough and still be succinct
- Does a reasonable job of painting the "big picture" without losing the message in a sea of detail, but more detail is needed, especially in fleshing out S1.

Does it propose viable solutions?

- Focus more on how to make recommended changes in addition to what should be done.
- Proposed changes to regulatory paradigm would involve legislative changes at the state and local (and perhaps federal) levels, involving massive restructuring. This would require immense political will, funds, and stakeholder buy-in.
- Proposed solutions are probably viable if fully funded, subject to property ownership limitations. Not sure that a "watershed-based" mitigation strategy will work because of ownership issues. E.g., an applicant cannot be compelled to do mitigation on land owned by others unless the other landowner agrees. Fragmented land ownership is probably the biggest obstacle in landscape scale restoration.
- Funding will be a major issue and has not yet been addressed in the paper.
- Proposal for a single regulatory agency has merit but has a high uncertainty of success and a long time frame for implementation. Oversight group may have more likelihood of approval.

Are there other existing programs and models that are not covered as possible solutions that we can share?

- Be more specific about how WRIA plans can be used as the foundation for accomplishing ecosystem restoration in Puget Sound.
- Paper fails to note that marine areas are covered under King County Critical Areas Ordinance as well as Shoreline Master Plan, giving additional options for protection/mitigation.
- Funding for regional "mitigation" could be done by "taxing" development projects with a "Puget Sound mitigation fee", similar to the existing process for traffic mitigation fees etc. This of course would affect the "triple bottom line" economic approach, but would build upon existing mitigation models. Would need the details fleshed out but is one possible source of restoration funds. Would financially impact King County agencies.
- As described in this Topic Forum meeting and others, there is the potential that existing regulatory authority and programs could achieve greater effectiveness if the current limitations/ barriers to their full implementation were removed. The PSP should conduct an analysis of those barriers and limitations to see what added effectiveness existing programs could bring with some adjustments.

Is there a logical structure to the paper?

- Improve cohesiveness and organization of responses to science questions, beginning with a robust conceptual model that balances detail and simplicity.

What are possible implications to the county, including costs and resources?

- Loss of jurisdiction, less room for innovation, increased processing time, restricted funding.
- Proposed changes to regulatory paradigm would involve legislative changes at the state and local (and perhaps federal) levels, involving massive restructuring. This would require immense political will, funds, and stakeholder buy-in. Changes to construction practices and land use regulations could affect county budgets for roads, parks maintenance, management of ecological lands, facilities. Streamlining permitting through a central authority could have positive financial implications.
- Difficult to assess in a draft document that deals with Land Use and Habitat issues only and does not address funding issues. Increased regulation of development and placement of large tracts into open space could lower potential property tax revenue. Implementation will certainly cost money and require staff time. Where will the money come from? See funding idea mentioned above in final bullet under other existing programs to share.
- The development of a regional set of regulations/agency will probably incur costs to King County in training, implementation, public outreach, appeals, etc. This assumes that local jurisdictions will still implement the new regulations through existing land use and building permit agencies.

General Comments

Please note that the order of the suggestions is not necessarily related to their priority. Minor suggestions and editorial comments are outlined in Sections II and III

1. Propose acceptable and unacceptable outcomes, from science and policy standpoints.

- Make outcomes actionable: Defining acceptable and unacceptable outcomes is crucial. It is not enough to have good data. The acceptability of the findings must be judged for the data to become meaningful in the decision-making process. Focusing on the acceptability of outcomes helps to translate the quantitative results of effectiveness monitoring into policy commitments that are influenced by the perceived need for change. This is an essential step in the adaptive management process.

- Systematic improvements: We suggest setting preliminary outcomes that are thought to be attainable, in order to test our ability to effect a change. Next, we need to determine whether the whether the change is sufficient. This approach recognizes the political difficulties and scientific challenges in setting meaningful outcomes. Perhaps if we focus on outcome-based performance measures, and on understanding the mechanisms that lead to a response (or may explain the lack of response), our knowledge base will increase systematically over time, better preparing us to find solutions.

- Monitor processes and outcomes. Propose a strategy for evaluating process recovery, given its central role. Similarly, propose how outcomes can be gauged and the results embedded in a decision support tool (even a conceptual model) that is expected to influence perceptions about the need for changes and course-corrections.

2. As an alternative to creating a 'super-agency', propose ways to help existing, overlapping entities to harmonize their effort and to avoid working at cross purposes.

- Build on WRIA Plans: The rationale for and feasibility of an overarching planning agency is in question. Consider focusing on policies have been successful and strengthening or building upon them. In particular, we emphasize the need to build from and work in concert with existing WRIA plans.

- Bolster rationale: If the working group believes that an overarching planning agency must exist, we request that more supporting evidence be provided to illustrate this need and to demonstrate that it is likely to succeed. For example, it would be helpful to explain how such an agency would be insulated from pressures and lack of funding that constrains other environmental protection efforts (e.g., diverse demographics and interests, competing priorities, overlapping jurisdictions, etc). Cite other successful examples, and can we learn from them (e.g., Lake Tahoe Regional Planning Agency)? Consider the settings in which such agencies work – is this region one of them?

- Uniformity vs idiosyncrasy: In some cases, it will be advantageous for everyone to do the same thing. For example, a standardized best available science document that could be applied uniformly throughout Puget Sound would be a valuable output. Other centralized efforts could include land/easement acquisition. In other cases, we need to allow for idiosyncratic approaches. Some things can be standardized to raise the lowest common

denominators. Yet, our approach must account for fundamental differences that exist among populations, watersheds, land uses, and demographies.

3. Expand conceptual model to identify factors that shape human activities (drivers) and to include biological determinants of habitat, in addition to the existing physical factors.

- Humans are essential ecosystem components: Include humans more explicitly in all conceptual diagrams and tables, where they currently are not accounted for. Humans are fundamental to the problem and solution. Adapt concepts from Grimm et al. (2000) as in attached figure. Arrange human related threats (and WRIA plans) in nested hierarchy.

- Strive for equity: As a way to improve the triple bottom line, consider how plan implementation may have differential effect on quality of life and burdens borne by different groups of citizens (demographic and geographic groups). Strive for equity. Suggest ways to engage vital local communities and interests. How can we get the citizens to get behind this?

- Expand from physical to biophysical: Habitat is defined by organisms, shaped by processes, and characterized by structure. We suggest expanding the treatment of basic terrestrial and aquatic ecology (primary production, trophic structure, species, population, and community dynamics) to build on robust description of the physical perspective of the system. Also, floodplains and riparian areas should be explicitly recognized as distinct from freshwater and terrestrial ecosystems, given their functional importance.

- Emphasize a landscape perspective. A landscape perspective was implicit in the report, but we encourage more emphasis on the relationships between structure and function in time and space; the hierarchical organization of things; patterns of species use over time and space. For example, relatively few intact areas remain where we need them most. Propose a Sound-wide landscape level analysis or classification (stratification).

4. Place greater emphasis on improved management of private land as a critical complement to acquisition and restoration.

- Extent of private land. Improving the management of private land must a central strategy for restoring processes and recovering Puget Sound, considering the tremendous amount of land in private ownership. In unincorporated King County alone, privately held lands total 393,000 acres or 614 square miles. In the eastern third of King County including the federal and industrial forest lands, 24% are private holdings. In central, unincorporated King County, including the low foothills, lowlands and also Vashon Island, 81% of the land is in private ownership. Revise discussion of Incentives, Education and Stewardship accordingly.

- Fragmentation. Land ownership patterns set real constraints on what can be done for restoration and protection – especially where large protected areas are required for restoration of processes. Fragmented land ownership patterns, the isolation of many

individual projects, and spatial and temporal gaps between mitigation and restoration projects often prevent small projects from addressing watershed-scale limiting factors. We must consider how the values, politics, priorities, and resources of individual landowners vary within and among watersheds. Large, process based restoration/protection efforts requires acquisition of large tracts of often desirable, and expensive property. Perhaps funding for acquisition could be obtained by "taxing" the hundreds of small "mitigation" projects (but not restoration projects) conducted each year. [i.e. in addition to the localized mitigation effort, a proportional "fee in lieu" could help fund acquisition of property. (see p.69, item 15)].

- Incentive-based and land use-specific actions that create willingness for private landholders to act in ways that protect and enhance ecosystem health should be a part of all strategies. This concept was echoed frequently at the Topic Forum meeting as well.

5. Address near-term consequences of climate change.

- Risk analysis. Draw from existing predictions of regional changes to anticipate (even speculate) where climate change will influence vital ecological processes and the human drivers of change (e.g., economics, consumptive water use, etc). To the extent possible, we suggest identifying specific habitats and locations that are likely to be most vulnerable. Rather than taking a comprehensive view, try to identify factors that 1) are likely to be affected, and 2) if so, can be expected to have severe consequences (e.g., loss of forage fish spawning habitat). Some recent examples of climate related risk analyses exist and may provide insight (e.g., recent WTD reports).

6. Emphasize incentives and education to improve private land management.

- Carrots and sticks: Focus more on the 'carrots and sticks' to make sure the planning policies do what you want them to do (e.g., consider payments for ecological services, if new funding sources exist to support them, or explore the feasibility of using Public Benefits Rating System in commercial and industrial areas).

- Limitations of code enforcement: Recognize limitations of relying on code enforcement and mitigation to accomplish restoration goals. Damage is already done once code enforcement comes online. Mitigation responses are widely acknowledged to be ineffective. Enforceable land use regulations have an important place, but only apply during a very narrow window in time, mostly when development is being proposed and constructed. Outside of this window, it is not feasible for a variety of reasons to control behaviors on private property other than through complaint-based nuisance and code enforcement actions. Incremental loss of forest cover retained through a 65% development standard will occur until and beyond when critical thresholds are passed. Stream corridors will be manipulated and bulkheads will be constructed. Also, eliminating (legal) non-conforming uses may not withstand litigation.

- Acquisition is not an incentive: Avoid treating acquisitions as incentives. When land is acquired by government or land trust, the private landowner is removed from the equation. We are not providing landowners with a benefit that in turn induces them to

protect or restore their land. Acquisition is a valuable tool for land conservation; it simply should not be called an incentive program but should be represented as a separate tool.

- Understanding habitat: Expand on the definition of habitat and its conceptual foundations. Essential to explain how habitat is formed and maintained. This is an important opportunity to educate people and give them a sense for the importance of context, and how these processes span jurisdictions. One way to initiate this would be to create maps that visually depict the 'habitat' of the people that live in Puget Sound, compared to the orcas or salmon. For example, use arrows to show the direction and magnitude of resource flows into, within and out of Puget Sound. Use resources that are both illustrative and important. This might be helpful in creating a broader sense of community and shared responsibility in residents.

- Increase sophistication of outreach efforts. Ongoing programs that educate and encourage property owners are proving to be increasingly effective as they become increasingly sophisticated. These program improvements include both a refined understanding of the obstacles to people changing their behavior as well as stronger partnerships with community groups and NGOs to organize and support large scale efforts. Funding must be ensured for staff to implement these programs and for the cost-share elements that bring owners to the table. Emphasis on these programs needs to be mandated, in contrast to the NPDES permits that fundamentally ignore maintaining watershed integrity through private property programs. Finally, consider alternatives based on emerging research that suggests that the spread of new ideas are driven not by influential 'opinion leaders', but by reaching a critical mass of easily influenced individuals (Watts and Dodds, 2007).

7. Be realistic about cost and feasibility of acquisitions

- Feasibility. The call for protection as a first priority should recognize that remaining areas may have relatively little functional value due to their context and position. Policy recommendation #6 assumes that undeveloped lots exist in key areas, when they often do not. Most of the intact areas – especially in King County – exist in high elevation areas. Relatively few intact areas remain where we need them most. As a result, many acquisitions must be followed by restoration to improve the condition of the land.

- Cost of land ownership. Address the feasibility of a large-scale acquisition program. We must acknowledge the real costs of bringing land into public ownership (maintenance costs in developed areas are high and long-lasting). The current extent of private ownership makes it impractical to control the necessary land for recovery through ownership or easements, under existing constraints on time and money, and given the political context.

- Other tools and motivations. Consider that different jurisdictions by lands for different reasons. Keep all the tools available, from easements to outright ownership. Feasibility of buying in fee is somewhat limited.

8. Consider how existing infrastructure could be improved or modified to support the goal of habitat restoration.

- Improve essential infrastructure. Some infrastructure is essential (e.g., sewer, water, roads, etc). These must exist, but can be modified during key windows of opportunity and through specific mechanisms (e.g., Executive initiatives, changes in State guidelines) that encourage redesigning or retrofitting existing structures in new, better ways. For example, regulations allow for upgrading existing infrastructure for safety and maintenance.

- Retrofits. Consider recommending storm water system retrofitting within existing infrastructure to control water quantity and quality. Roadside drainage systems convey the majority of the pollution from urbanizing and residential areas to streams and to Puget Sound. Providing additional water storage and water quality treatment facilities/BMPs within roadside drainage systems could be a novel and relatively inexpensive way to address impacts from storm water runoff and impervious surfaces. King County DOT Road Maintenance Section is exploring this possibility via a grant from WA Department of Ecology.

- Exceptions for wastewater facilities: There are basically two types of land use impacts the wastewater (WTD) system might be thought to have on habitat:

    - 1) Driving growth by providing wastewater treatment/conveyance services; This is not an impact of the wastewater system. The system responds to growth that is directed by GMA and other land use regulations. Wastewater treatment and conveyance as well as other utility services such as power, water, roads, etc. are provided only in response to growth that is already allowed under these regulations.
    - 2) Direct effects on habitat by placing facilities (or conveying wastewater to) in that habitat. WTD facilities can this type of impact. The paper appears to focus on protecting and enhancing habitat by regulating land uses. This could include restricting or even barring certain uses in certain areas, including low areas near water. Often WTD has or needs to have facilities in these areas. The paper points out that existing regulations include exceptions that allow otherwise prohibited uses under certain circumstances. Such uses can include wastewater facilities (e.g., pump/regulator stations, pipelines, treatment facilities). A key question is whether exceptions for wastewater facilities should be allowed. The answer to this question should involve consideration of the tradeoff between potential impacts of wastewater facilities on habitat and the pollution control benefits of these facilities. Viewed another way, there could be a tradeoff between wastewater facility impacts on habitat and costs associated with configuring/designing wastewater facilities to avoid that habitat. In some instances, the costs of reconfiguring/redesigning could be very high. In weighing these tradeoffs, consideration should be given to the full range of potential impacts, not only those that may directly affect Puget Sound. An example of such impacts would be "carbon footprints" (e.g., the embedded costs of materials needed to construct

facilities that would avoid a particular type of habitat; the energy costs of additional pumping needed to avoid such habitat). Weight should also be given to the monetary costs of different alternatives, including those for mitigation. These costs would be borne by WTD ratepayers.

Minor Comments

- **Multiple Goals**
  - Acknowledge that governmental agencies have many different goals, in addition to environmental protection.
  - The paper says, "The regulation should provide a limited amount of time for nonconforming uses to continue before they are required to be removed." This may prove extremely costly in the case of some utility facilities. Possible wastewater examples may include wastewater treatment plants, pump/regulator stations and conveyance pipelines. It may even prove impracticable to remove some of these facilities.
  - The report says that SEPA "is largely an ineffective tool in ensuring the best outcome(s) for Puget Sound." For WTD, SEPA is an effective tool for mitigating environmental impacts. Other agencies do use mitigation measures identified in the SEPA process to mitigate environmental impacts of projects they regulate.
- **Unintended Consequences**
  - Consider including a discussion on how "unintended consequences" or "trade-offs" have been considered or are at least acknowledged, and perhaps identify mechanisms in the event the potential exists for greater adverse impact associated with some trade-offs/unintended consequences. For example, under the preliminary policy recommendation #1, first bullet on page 66, it states "Establish clear standards that state when impacts are to be avoided at all costs", there could be situations where this could conflict with needs of essential public facilities and the costs/risks of "avoiding at all costs" would cause even greater impacts.
  - Use words like 'require' and 'all' in a deliberate and thoughtful manner, cognizant of unintended consequences and hardships. For example, in Policy Recommendation 9, it states "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" – In a recent presentation by the City of Seattle, they explored how to require low impact development in their land use regulations, and found that it would be very difficult to achieve this with single-family homes.
- **Overlapping issues**
  - Make sure water quality aspects of land use (e.g., septics) will be dealt with in the WQ forum (cross-pollination) (e.g., WQ effects of overwater structures and impacts resulting from use of marinas as opposed to the marina structures alone).
- **Costs**
  - Proposed responses to science question S2 and policy question P2 would result in a small increase in costs for County non-restoration projects requiring mitigation.
- **Agriculture and Forestry**

  - Comments on rural character, and ecosystem effects of 5- and 10- acre lot pattern, were right on. However, there is some concern that it would be more constructive to focus on how BMPs could be use in agriculture and forestry to achieve desired outcomes, rather than just characterizing them as threats/stressors. (reduction of nitrogen, phosphorus, etc).
- **Stewardship Programs**
  - Create a separate section describing "Stewardship Programs." As noted above, stewardship is a body of ongoing actions to maintain – to steward – property. The ongoing work required for public agencies and land trusts to steward land is vital, but often underfunded by agencies and ineligible for grants. It includes regular monitoring of land, working with and educating site users, picking up garbage, installing improvements to protect natural resources, dealing with homeless encampments, coordinating with adjacent private and public landowners, etc. Restoration can also be considered a component of stewardship, including the day-to-day control of invasive species and small steps to improve the overall habitat on the site.
- **Growth Management Act**
  - Try to engage the audience and avoid unnecessary divisiveness by presenting a more evenhanded, in-depth evaluation of the GMA, including growth management and urban growth boundaries. Try elevating the discussion to include some national - and more neutral - references. As written, the case for throwing out the GMA is not well-supported.
  - A greater emphasis on low impact development is required. Installation of porous pavement should be a higher priority. Within the UGA, promote more multi-family dwellings. Build up, rather than out.
- **Monitoring and Ad. Mgmt:**
  - Better define the kinds of activities required for the monitoring and adaptive management plan. For example, what kinds of monitoring are desired? Have the "gaps" in management tools in Puget Sound been identified (p. 41)? If so, identify them in the paper, and if not, explain how they will be identified.

Editorial Comments

General:

- Provide a table or some reference in each topic paper that explains the big picture and sets context by indicating what other topic areas are being addressed.
- When using word "region", it might be helpful to define what "region" refers to i.e. – what are all the jurisdictions that make up the "Puget Sound region" – a glossary would be helpful; for example, preliminary policy recommendation #3 "Growth throughout the Puget Sound region should be focused in a way that is consistent with the Puget Sound Regional Council's Vision 2040 plan" – Does that include the jurisdictions within the Strait of Juan de Fuca or San Juan/Whatcom action areas or is it just for Snohomish, King, Pierce, Kitsap counties?
- Special purpose districts such as port, water, and sewer districts need to be mentioned as other governments with planning and decision-making powers that can affect habitat.

Specific Comments by Page:

P6
Boat wakes/prop wash. May affect aquatic vegetation community such as eelgrass.

P7.
Culverts. Clarify that they "impede sediment transport". Culverts reduce benthic production (sterile concrete or metal vs natural stream bed), primary production, upstream flow of marine derived nutrients. Increase fragmentation and isolation of populations.
Aquaculture. Fish farms may be focal points for disease and parasite transmission. There is no reference to harm to the environment from diseases and parasites caused by concentrated raising of fish.
Armoring. Alters nearshore and inter-tidal vegetation communities, altering primary productivity, shade, nutrient inputs.
River levees. Alters riparian vegetation community, alters nutrient inputs, reduces shade.

P8.
Native vegetation removal reduces allochthonous nutrient inputs.
Marine boat launches can act as groins with similar impacts.
Timber harvest. Need to include effects of associated roads.

P18.
Breakage/decomposition – I can't cite sources, but I thought work was being done that examined the impacts on fungus and invertebrates from the measured levels of fungicides and pesticides found in urban streams

P26. (and Table in Appendix S1-2)

South Central Puget Sound Action Area, Dominant Marine and Estuarine Habitats, add the following:

- Armoring by the railroad has several decreased the feeder bluff function to the sandy beaches and piped some creeks that used to flow into Puget Sound.
- WRIAs 8 and 9 were replumbed to alter river flows and estuaries.
- The Cedar River no longer drains into the Black River, which severely decreased the Black River's contribution to the Green River. The Cedar River now flows into Lake Washington through a straight channel in Renton.
- The level of Lake Washington is controlled by the Corps of Engineers.
- The Ship Canal and the Hiram M. Chittenden (Ballard) Locks were built to connect Lake Washington and Puget Sound. There is no natural estuary here, so saltwater intrusion is a challenge.
- The Duwamish River was dredged and straightened into the Duwamish Waterway, removing some natural estuarine characteristics.
- Sockeye salmon were planted in the replumbed Lake Washington system.

P35.
It was the Cuyahoga River in Cleveland, not the Ohio River, that caught on fire.

P39:
("Influencing Human Activities: Incentives, Education, Stewardship and Restoration Programs" section):

- Remove the mention of land acquisition from "Landowner Incentives Program" section. The paper defines incentive programs in the introductory paragraph preceding this section: "With regard to incentive programs, these are activities that provide landowners with benefits that in turn, induce them to protect or restore the ecosystem processes, structures and functions on their land." When land is acquired by government or land trust, we simply are taking the private landowner out of the equation. We are not providing landowners with a benefit that in turn induces them to protect or restore their land. Acquisition is a valuable tool for land conservation; it simply should not be called an incentive program but should be represented as a separate tool.

- Change "Stewardship Programs" heading to "Acquisition Programs." Stewardship is usually considered to be a body of ongoing actions which maintain, conserve, and restore property; it does not typically refer to an action to just acquire land or easements. For example see: http://www.usccls.org/Stewardship/StewardNatural.html. This section describes acquisition rather than stewardship and should be retitled as such.

- Retitle overall section to "Influencing Human Activities: Incentives, Education, Acquisition and Stewardship Programs." See couple of preceding comments about what "acquisition" and "stewardship" mean. Habitat restoration can be lumped under stewardship heading.

P40.
Other Voluntary Efforts, under Watershed Planning Efforts, need to add Ch. 77.85 RCW State Salmon Recovery Act to list of authorized planning resulting from ESA listings of salmon species.

P41
Types of monitoring -- the paper should differentiate between project effectiveness monitoring and cumulative effectiveness monitoring

P55 (and Table in Appendix P1-2 of Incentive Programs)
Add King County's Rural Stewardship Program, lead agency is King County, Incentive Type is landowner assistance, Geographic Scope is rural lands in King County, Sector (Land Use) is rural lands, Species Focus is multiple, Website is http://dnr.metrokc.gov/wlr/cao/rural-stewardship-plan.htm

P46 (Appendix P1-2):
Add a note stating this is not a comprehensive list. There are opportunities not listed here, but the list lacks a disclaimer stating it's not comprehensive.

P48 (Appendix P1-2):
Change the SRFB listing to a more general RCO listing. This would reflect the many conservation-related RCO programs beyond just SRFB

P60.
In the ESA Listings section, the paper discusses Habitat Conservation Plans. Note that WTD attempted to develop a Habitat Conservation Plan (HCP) under the federal Endangered Species Act but, for various reasons, was unable to reach agreement on one with the federal services. The effort spanned several years and was costly. At present WTD complies with ESA through Section 7 reviews by federal agencies.

P62.
Where it states in bold "In order to achieve the goal of a health Puget Sound by 2020….region needs a fundamental change…" Might be helpful to have some text that defines that those changes are, as well as discuss what has worked well and should continue to be implemented.

P67. Table S1-2
Might be helpful to show how the threats and impacts to ecosystems could change in the context of climate change scenarios (Table S1-2).

P54.
Stewardship Planning Programs – "Sector" in King County includes private forest land, rural residential development and agricultural lands.

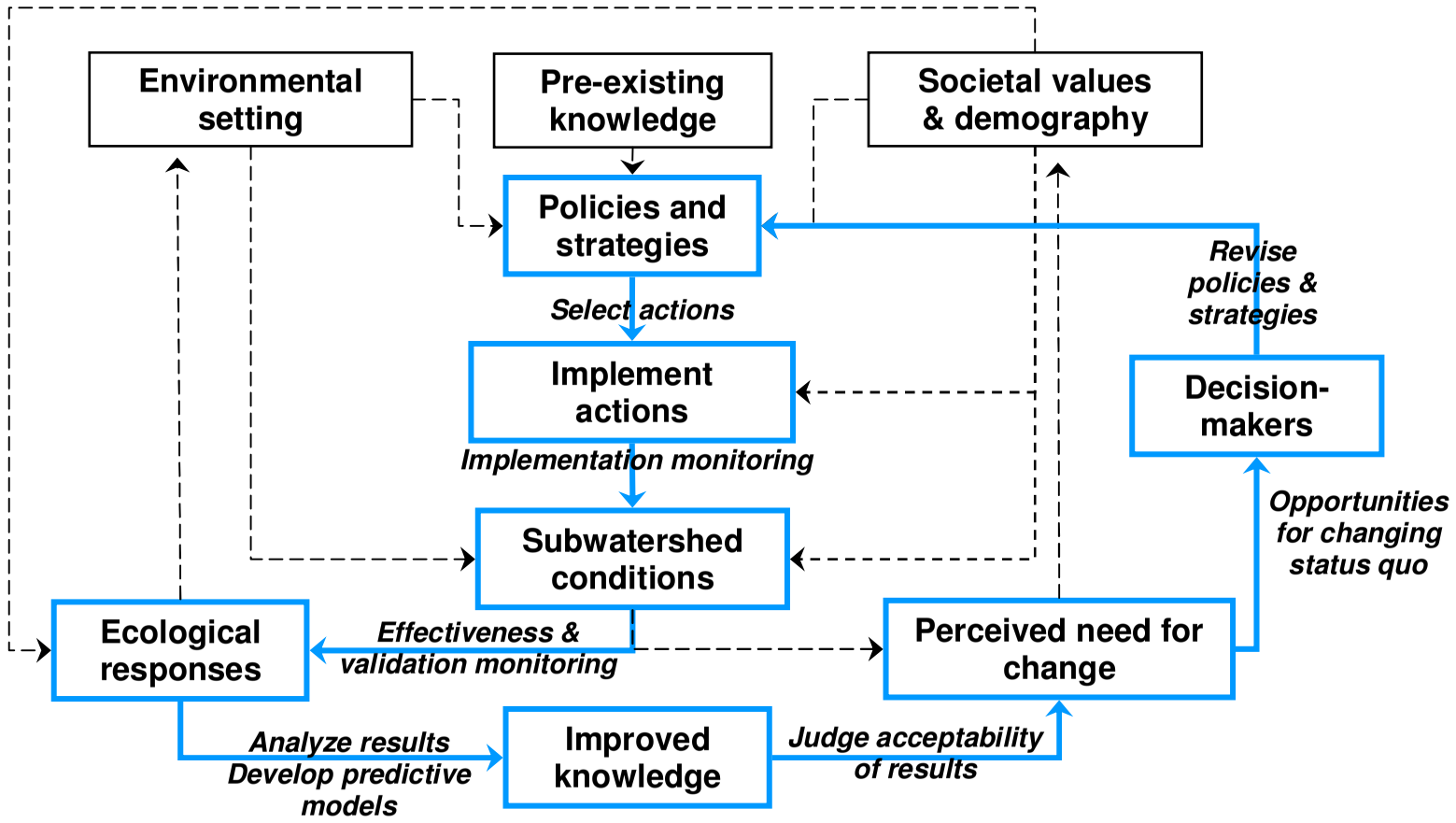
P62.
The Corps in conjunction with the EPA has recently published national rules governing the formation of "fee-in-lieu" programs that can focus required mitigation on the optimal site on the landscape to achieve the greatest habitat improvement with the highest likelihood of success. King County's Mitigation Reserves Program is a pilot attempt to implement this tool – State agencies including WSDOT and Ecology and some WRIAs have been evaluating the potential of regional programs based on these principles.

P63.
Any proposed governance structure must have a funding stream at its disposal to ensure implementation of the programs it requires. Local governments should not be asked to individually expend political capital, over and over, to implement a program of such high priority at both the State and federal levels.

Appendix S1-1, p 15.
The link between increasing impervious surfaces and decreasing forest cover on the reduction of summer base flow in streams is implied in the Table ("reduces recharge") but perhaps this should be called out more explicitly.

SECTION BREAK DO NOT DELETE SECTION BREAK DO NOT DELETE

Science informing decisions



Modified from Grimm et al. 2000

17

Topic: Puget Sound Partnership Topic Forum Papers: Analysis of Data Management Needs

From: Stewart Toshach –NOAA/NWFSC

Data/Information Management Needs Identified in Puget Sound Partnership Topic Forum Papers and Suggestions for Further Work to Identify and Document Needs.

Introduction

I am providing this analysis for your consideration as I thought it would be useful to the Partnership as it decides how to proceed on data management.

In any science based decision making enterprise, such as that proposed for the recovery of the Puget Sound by 2020, it is critically important to identify, plan and provide for information management practices, services, tools and technologies.

Identification of actual data and information needs is an important step to be completed before investments are made in system changes or improvements.

The Puget Sound Partnership (PSP) recently published 7 separate Topic Forum papers for public discussion. Through some basic analysis the papers offer a 'window' into some of the data that could be needed for Puget Sound science and recovery decisions. The papers also reveal that more work is needed to define data/information management needs.

Analysis Method:

Each paper was searched for the use of common data or information management terminology as follows: "data management", information management", "data quality", "data gaps", "data inventory", "data" and,"database". Table I shows the number of 'hits' for the use of each term are shown in Table I.[1]

[1] This analysis has not been reviewed.

Then each of the 'hits' was reviewed for the context of the use of the term. Where the use of the term identified a possible data need such as at page 8 in the Human Health paper –"*Most of the data characterizing metals are from sediment sampling programs. There is less information characterizing metals in the water column*" the need was compiled in Table II. In addition a brief summary of the possible need was written, eg *"More data needed on metals in water column. Lack of Comprehensive data"*

Note that when a report stated, for example in the Risk Analysis paper at page 8, *"We briefly summarize methods and data sources for each ecosystem attribute below.",* this comment did not constitute a data or information management need so was not compiled into Table II.

Analysis Results:

While Table I shows some 387 references to common data management terms the great majority of these references are for generic uses of the terms and do not identify needed improvements to data/information quality, systems or gaps.

Table II shows approximately 60 information or data management needs. They identify a typical range of needs from data being inadequate to establish certainty to data not being collected at all to the need to specific data bases to the need to link data to management objectives or principles. Each of these is instructive but they do not define the extent of data or information management needs. In part this is because of the limited questions that were posed to the Authors of the Topic Forum Papers. No questions specifically asked authors to address data management or information management needs. In addition the authors were all asked to answer questions within their specialty or discipline. None were asked to identify needs or gaps with respect to our Puget Sound wide capability to integrate data across multiple disciplines. Therefore it could appear as if integrated cross-discipline data is not needed – which is unlikely to be the case. This is understandable for a couple of reasons. Few if any information specialists have participated as authors in the Topic Forums and the task of understanding how all of the Topics relate to each other is, in fact, a future topic. The Partnership may want to consider including data/information specialists in this upcoming discussion.

The results are instructive and helpful but they are insufficient for the purpose of designing, providing or locating data/information management practices, services, tools and technologies to meet Partnership science (or management) needs. Other methods such as focus groups, surveys and interviews are typically used by data/information management professionals to define data needs within and across disciplines. When put together these are called information needs assessments. In conventional data/information management practice these are considered to be a prerequisite before data/information management investment decisions are made.

In addition to local knowledge about specific Puget Sound Data/Information management needs there is a wealth of information from needs assessments prepared for other environmental recovery efforts that are similar in size and scale to the proposed Puget Sound recovery. These assessments and the lessons learned from deployment are interesting and instructive and could provide valuable information to the PSP as it decides what information and data management practices, services, tools and technologies are needed to support Puget Sound Recovery.

The Puget Sound Science Panel has a task at @ RCW 90.71.280 (1) b *"…to assist in developing an ecosystem level strategic program that: (i) addresses monitoring, modelling, data management and research…"*, and at @ RCW 90.71.290 *"…a strategic science program shall be developed by the [science] panel and may include recommendations regarding data collection and management to facilitate easy access and use by all participating agencies and the public..."*

As the Panel and the Leadership Council address data management action items for Puget Sound Recovery by 2020 the value of first completing a formal and detailed enterprise level information needs assessment might be considered before proceeding too far in addressing data management needs.

Again, this analysis and suggestions are offered only as information that may be useful to the Partnership.

Table 1: Number of References to Common Data Management Terms Used in PSP Topic Forum Papers

Data/Information Term	Human Health	Quality of Life	Species Biodiversity	Land Use, Habitat, Food Web	Water Quality	Water Quantity	Risk Analysis	
Data management	0	NA	0	0	0	0	0	0
Information management	0	NA	0	1	0	0	0	1
Data quality	0	NA	0	0	0	0	0	0
Data gaps	1	NA	0	0	1	12	0	14
Data inventory	1	NA	0	0	0	0	0	1
Data	26	NA	21	11	19	79	42	198
Information	24	NA	18	29	20	14	51	156

Database	2	NA	1	3	5	6	0	17
	54		40	44	45	111	93	387

Table 2: References to Data Needs from Topic Forum Text			
PAGE #	Topic Forum	Reference	Summary of Data Mgt Need
	Key: HH: Human Health, SB: Species and Biodiversity, LU&H: Land Use and Habitat, WQL: Water Quality, WQ Water Quantity, RA: Risk Assessment		
5	HH	Limited data on toxics in shellfish from Puget Sound have been collected and evaluated by the Washington State Department of Health (DOH).	More data on shellfish
7	HH	*C. What is the certainty about our understanding of these threats and their status?* The certainty of understanding relating to characterizing human health risks varies. Human health risk is dependent on chemical toxicity, pathogen virulence, and level of exposure. However, many years of monitoring data help to shape the understanding of these risks, and in some cases provide a reasonable certainty.	*More certainty from monitoring data*
8	HH	Metals Most of the data characterizing metals are from sediment sampling programs. There is less information characterizing metals in the water column. Limited site-specific data for metals indicate a potential human health risk from consumption of shellfish in urbanized bays and at hazardous waste sites. Levels of metals in shellfish outside of these sites indicate little risk, but comprehensive data are lacking.	More data needed on metals In water column. Lack of Comprehensive data
9	HH	Fish consumption rates More data about the historical use of resources across different populations would allow for a more accurate assessment of human health exposure for different communities and their cultural uses.	Data needed on historical use
10	HH	"Emerging" contaminants, pathogens, and biotoxins A host of chemicals are present in discharges to Puget Sound that have not yet been assessed for their risk to human health. These include pharmaceuticals and PFCs, amongst others. In addition, there are a number of pathogens that will require additional analysis to determine the risk they pose to human health. One example is *Vibrio parahaemolyticus*, for which there are data available regarding presence in water, shellfish, and plankton, but the synthesis of that information has not yet occurred.	Synthesis of data on contaminints pathogens and biotoxins

10	HH	Broad risk assessment for toxics in shellfish While a Puget Sound-wide risk assessment has been done for human health threats associated with the consumption of toxics in finfish[72], a similar risk assessment has not been conducted for shellfish. ……More data are available for metals in shellfish than other contaminants.	Data on shellfish contaminants
10	HH	Toxics and pathogens in crab Data are limited for toxics and pathogens in Puget Sound crab.	More toxic and pathogen data
10	HH	Toxics in additional species Information about toxics in other salmon species such as pink, chum, and sockeye is currently limited. This information is needed to confirm predicted low contaminant levels in these Puget Sound species. DOH work has characterized these as species likely to be consumed, but for which data are unavailable (DOH professional judgment). Lingcod, cabezon, and shrimp are additional species that are consumed, but with little characterization of contaminants.	More data on toxics in pink, chum and sockeye
10	HH	Cumulative impacts Little is known about the cumulative, additive, and synergistic impacts of exposure to multiple contaminants through multiple consumption pathways or direct contact over time. Traditional risk assessment should assume that exposure to multiple contaminants is additive with respect to overall risk when considering the same toxic endpoint (e.g., neurodevelopment). More specific information about interaction of toxics in the body would be helpful in validating this assumption.	Information on cumulative impacts of toxics in humans
10	HH	Toxics in the water column There is a lack of understanding about the presence and concentration of toxics in the water column. Information from PSAMP and NPDES monitoring is available, but it is either site-specific or does not address the specific toxics of concern. More complete information about toxics in the water column may lead to a better understanding of the human health risk from direct exposure, as well as the sources of contamination in fish and shellfish.	Improved data on toxics in water column
11	HH	Reference conditions While some site-specific data are available, the extent to which current conditions in Puget Sound meet or exceed reference conditions is not fully known.	Improved data on Puget Sound reference conditions

14	HH	*From a scientific standpoint, which management approaches have been documented to have the most effective response?* Several programs have been documented as effective in reducing threats to human health, within the limitations of effectiveness measurement. Washington State Mercury Chemical Action Plan based on reductions in mercury concentrations in the 2005-2006 biosolids data. Fish consumption advisories, based on awareness of advisories and on success of outreach efforts (including Washington Department of Fish and Wildlife pamphlet, website hits, and grocery store pilot project and evaluation). There are limited data that show these advisories are reducing human health risk. However, there is some indirect evidence of the programs' effectiveness in that species with lower contamination levels are increasingly preferred by consumers	*Data to show effectiveness of health advisories*
20	HH	A new European Community Regulation, referred to as the Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH), was established in 2007. This regulation requires that manufacturers and importers of chemical substances gather information about the properties of these substances to ensure their safe handling and register the information in a central database maintained by the European Chemical Agency. The agency will coordinate in-depth evaluation of chemicals that present a potential threat and maintain a public database for consumers and professionals to provide information on these chemicals.	A database for chemical substances affecting Puget Sound
22	HH	*What are the gaps between existing programs or plans and the identified needs?* There are both "general" gaps (such as geographic gaps in data collection) and "specific" gaps (such as lack of information on specific biotoxins) that limit the effectiveness of existing programs and plans.	*Data gaps in geographic extent of and specific biotoxins*
23	HH	What criteria should be considered for prioritizing actions to address threats to human health? A comprehensive inventory of data being collected would enhance the coordination of data collection and information between state and local agencies and Tribes.	Comprehensive inventory of data related to human health
24	HH	How will we know we are making progress on human health? We will know we are making progress on reducing threats to human health when…We have reduced the number and severity of data gaps.	Identify and reduce data gaps for human health

3	SB	Marine primary producers: Phytoplankton is the foundation of Puget Sound's pelagic food chain. Its distribution is highly variable, with maximum abundances in the summer. Long-term status and trends are not well known	Long term status and trends of phytoplankton are not well known
4	SB	Food web status Fundamental data are still needed on many basic food web elements, such as phytoplankton productivity. Indicators of marine and freshwater food web status could include predator-to-planktivore and other ratios.	Lacking fundamental data on basic food web elements
5	SB	Assessments of Puget Sound biodiversity are rare, with perhaps the most prominent being the Puget Sound Ecoregional Assessment prepared by The Nature Conservancy and partners. This work highlights areas of the Sound that are understood to both support significant biodiversity and to be vulnerable; due to limitations on data for marine biodiversity, this work focuses on upland areas.	Only limited marine biodiversity data
7	SB	*B. Main gaps in our understanding of threats* There is much we do not know about the forces that threaten species survival, or about how the interactions between natural and anthropogenic stressors affect populations and alter food webs and biodiversity.[57] We do not understand the cumulative effects of stressors and major drivers, the magnitude of impacts from individual stressors, or the relative importance of threats.[4] Perhaps the largest gap is in our understanding of the impacts of climate change on biodiversity and species. Current predictions incorporate our best estimates of future changes in the Northwest weather regime, based on global-scale models, combined with our understanding of the impacts of these changes on species and ecosystems. While new empirical data on climate change impacts continue to inform these projections, uncertainties in the data and model assumptions make it difficult to forecast effects precisely.	Data uncertainties limit predictions of impact of natural and anthropogenic stressors on ecosystem
13	SB	An additional benefit of harvest management is that required catch and population abundance data can be useful species-status information for purposes other than harvest management.	Harvest data can be used for other purposes
16	SB	*How is the effectiveness of management techniques measured and documented?* While a number of agencies and groups monitor species' abundance or health in the Puget Sound ecosystem, little of	PSAMP data not linked to management objectives or approaches

		this monitoring is done with the goal of informing modifications in management approaches.[49] For example, the Puget Sound Assessment and Monitoring Program (PSAMP) has been monitoring key indicators of water and sediment quality, nearshore habitat, shellfish beds, and the health of fish, seabirds, and marine mammals for almost 20 years. While PSAMP has provided a wealth of information on species health, abundance, diversity, and distribution, these data are not well-linked to management objectives or approaches.[50]	
16	SB	The Washington Department of Fish and Wildlife monitors a network of 18 marine reserves in Puget Sound for research purposes. Scuba divers estimate fish densities, measure individual fish, and identify and quantify lingcod nesting activity.[8] While these data do have relevance for the impacts of harvest on species, benefits for species or overall population management outside the reserves have not been demonstrated.	Limited data on impacts of harvest on populations outside of reserves
23	SB	*E. Plans or programs in place to address food web status and biodiversity in the Puget Sound region* • Establishing a Biodiversity Science Panel and a Biodiversity Data Partnership, as well as a Biodiversity Inventory to document all species in the state, and a Biodiversity Monitoring Plan to track the status of those species. The Nature Conservancy has found that Ecoregional Assessments provide a common information base, identify additional data needs, and help to build partnerships essential to conservation.	Biodiversity data partnership is needed to track status of species
34	SB	Build understanding of species, biodiversity, the food web, and the effectiveness of management actions: Conduct research to constrain and define the problem: what is the Puget Sound food web? This research should be designed to provide information about trends, patterns, and mechanisms of change in the food web, so that we can discriminate between natural and human-caused changes.	Need more information on trends, patterns
10	LU & H	Current Status of Puget Sound Threats and Habitat Structure Studies and monitoring of Puget Sound have measured certain aspects of habitat structure (e.g., eelgrass beds), human-induced threats (e.g., impervious surfaces), and ecosystem function (e.g., shorebird colonies). Rarely have ecosystem processes been addressed. Also, information that is Sound-wide tends to be limited in terms of data detail and accuracy, while localized information is often not consistent between different Puget Sound jurisdictions	Ecosystem process data limited in accuracy and detail. Local information inconsistent between jurisdictions
29	LU & H	Habitat Restoration and Mitigation	Project performance

		As these examples show, there is project performance monitoring information, both for habitat structure and resulting functions. However, scientific certainty about project results is difficult to attain as projects differ in what they examine, how they collect and data, and the time over which the project is studied.	difficult to measure – projects collect different data
40	LU & H	Monitoring and Adaptive Management to Ensure Ecosystem Health over Time Measuring our progress in restoring the health of Puget Sound with objective data and information from a comprehensive monitoring and adaptive management plan is critical to ensuring that our strategies are effective and ensuring that our actions are increasingly efficient in the context of reaching recovery goals.	Objective data and information is needed to measure progress
63	LU & H	*Science and Research Preliminary Recommendations* 1. Create a clear science framework and database from which to measure and act. 11. Establish a centralized and transparent approach to managing information, maps, studies, plans and data related to Puget Sound ecosystem and the Action Agenda. A centralized approach to information management would maximize transparency, accessibility and the sharing of information to improve our scientific knowledge about the Puget Sound ecosystem.	Need a science framework and database Need a centralized and transparent approach to managing maps, studies, plans and data. Improve sharing
5	WQL	Water Quality in Puget Sound Freshwater Systems …Overall trends in water quality for freshwater systems in Puget Sound are difficult to determine due to the lack of consistent data at the same sampling locations over long enough periods of time.	Overall trend analysis limited by lack of consistent date, sample locations and time periods
6	WQL	Sediment Quality The available scientific evidence, combined with the regulatory assessments conducted by Ecology under their Clean Water Act responsibilities, generally supports a conclusion that marine sediments in localized areas of Puget Sound are contaminated. However, there is greater variability in the data for freshwater sediments, making it difficult to conclude the status.	High variability for freshwater sediments prevents status assessment
10	WQL	Septic systems: There are approximately 472,000 septic systems in the Puget Sound basin, according to previous estimates by the Puget Sound Action Team. …….When systems are	Need data on geographic

		located near streams and marine waters, the leachate may be a significant source of nitrogen, and if they are improperly designed or maintained, they are a major source of pathogens. *[Authors and reviewers note more specific description with data on geographic concentrations and magnitude is needed.]*	concentration and magnitude of septic tank locations/impacts
13	WQL	*C. Gaps in knowledge* While new empirical data on climate change impacts continue to inform these projections, uncertainties in the data and model assumptions make it difficult to forecast effects precisely (Lawler and Mathias, 2007).	Climate data is uncertain
30	WQL	Mapping of interjurisdictional stormwater networks. Improved coordination and mapping of stormwater networks across jurisdictions is needed to reduce the potential for spills to travel across waterways through stormwater connections.	Need inter jurisdictional map of storm water networks
32	WQL	Source control To address the human and environmental concerns associated with chemical manufacturing and use, the European Union has moved forward with a regulatory program that requires cradle-to-grave understanding of chemicals prior to allowing their import or use within the European Union. Implementation of the regulation is in its early stages, but a part of the effort that may be of immediate use to the Partnership is the "REACH" database that is being assembled to assess relative risks and potential for source reduction of commonly used chemicals. The Partnership could begin by tracking the REACH database and bringing the available information to bear on decisions in the Puget Sound region.	Need to track chemical manufacturing and use with a REACH type database
	WQL	Improve understanding of the dynamics and levels of nutrients in Puget Sound. How increased nutrient levels affect the Puget Sound food web. In this case we lack both	Need monitoring info on phytoplankton and

		the basic monitoring information on the phytoplankton and zooplankton constituents of the food web and an understanding of the dynamics related to nutrient additions.	zooplankton as parts of food web
34	WQL	*How will we know when we're making progress?* The only way we will know that progress is being made to improve water quality in Puget Sound is to measure it against baseline conditions. There are limited water quality monitoring data available for all of the geographic regions of interest, so a carefully thought out water and sediment quality monitoring program should be established against which to compare future conditions in the fresh and marine water bodies of the Puget Sound basin. It is important to compile all of the existing data available, identify geographic or chemical constituent data gaps, and collect baseline data to fill the gaps.	Need an inproved water and sediment monitoring program to evaluate recovery progress. Need to compile existing data, id gaps and collect data to fill gaps
4	WQ	Data Gaps and Uncertainties To date, no regional summary exists of the adequacy of freshwater resources in the Puget Sound basin. Much of what we know about the adequacy of water resources in Puget Sound has been assessed at a watershed scale by WRIA (water resource inventory area) or more locally. There are 19 WRIAs within the Puget Sound basin (Figure S1-1). However, even with local information, a regional summary of ecological and human water needs is difficult due to: • The disparity in water quantity data and its varying geographic distribution, • Regional variation in climate and geology, • The temporal and geographic variability in the needs of different species, and • Institutional and political sensitivities associated with water use and instream flows. For example, the adequacy of groundwater to meet human needs can vary at a local level within a watershed, or even within an aquifer. Some wells may provide adequate supply while others within the same subwatershed may provide inadequate or saline water. Similarly, streamflows may be limiting for human water supply or aquatic species in some tributaries and not in others within a single watershed. Our understanding of whether low flows are adequate for individual aquatic species is further limited by incomplete knowledge of the complex relationship between flow and channel structure and function, offchannel wetland storage, and riparian condition. Full ecosystem function needs to be considered to determine whether flow is "adequate" for species' needs.	Need summary of freshwater resource adequacy and data. Local information does not approximate a regional summary
5	WQ	Current Adequacy of Freshwater Supply The 2004 State of Salmon Watersheds Report lists the Nooksack, Snohomish, Lake Washington, Green, White, Puyallup, Dungeness and Elwha as "water-critical basins" that are over-appropriated. The Stillaguamish and lower	No data to show impacts of appropriations on

		Skagit watersheds are listed as "low flow," and are noted to be experiencing signficiant pressure for increased water use and declining flows. However, data are not presented to document the impact of these flows on aquatic species.	water critical basins
5	WQ	Data Gaps and Uncertainties Major gaps in our understanding include: • Low-flow requirements for aquatic species are not well understood, and they are intricately linked to other elements of the ecosystem. For example, relationships between flow and the four Viable Salmon Population (VSP) parameters (abundance, productivity, spatial structure, and diversity) that are used to determine the relative health of salmonids have not been determined in the Puget Sound region (Shared Strategy, 2007). There is no regional assessment of the adequacy of flow variations for optimum habitat function, although some newer operational permits for FERC licenses and HCPs are considering high- and low-flow release prescriptions (Cushman Hydroelectric Project, Seattle Public Utilities Cedar River HCP). • Local data about the effects of flow alterations on native species are available. For example, local empirical data indicate the adverse effects of scouring floods and low spawning flows on smolt production (e.g., Seiler *et al.*, 2005). However, such information has not been quantified or extrapolated more regionally. • There are no known studies that address the potential adequacy of flows for aquatic habitat in the future. Threats such as increased groundwater and surface water withdrawals due to growth, associated land use impacts, and climate change may impair flows in watersheds where this is not currently an issue.	VSP parameters for Salmon not determined for Puget Sound region. Only local data is available for low flow impacts on native species. No studies (and data?) on adequacy of flows for aquatic habitat for future
6	WQ	Future Demand for Fresh Water Data Gaps and Uncertainties Major gaps in our understanding include: • There is no statewide program that compiles and reports water use information (Lane, 2004). Where watershed planning has occurred (under RCW 90.82), local communities have attempted to identify local problem areas for water supply and develop demand solutions. However, watershed planning under RCW 90.82 is not occurring in all watersheds in the Puget Sound region, nor are the data consistent between watersheds planning under the act, and so data on potential water supply shortfalls are not available consistently throughout the Sound. • Water system plans are numerous and not regionally compiled. Water supply management is typically addressed at the scale of a retail or wholesale service area of a water system through a water system plan.	No state wide water use information. Data inconsistent between watersheds No compilation of water system plans at

		The plan addresses population projections, demand forecasts, supply sources, and infrastructure requirements. There are over 2,300 Group A water systems (water systems with 15 or greater connections) that have prepared water system plans in the Puget Sound region (WDOH, 2008). The Washington State Department of Health is responsible for approving water system plan updates once every six years. However, they do not compile water system information at a regional scale. Comprehensive Irrigation District Management Plans address the adequacy of water supply for agriculture in the Dungeness and Skagit River watersheds. • Water rights provide an accounting of permitted water withdrawals. However, actual water withdrawals may differ from the water right, and illegal water use occurs. • Regional water supply planning is not occurring everywhere. In some areas such as central Puget Sound, regional water supply planning is comparing regional water demand with regional water availability (CPSWSF, in process). This has not occurred in other areas in Puget Sound. • Permit-exempt water use is not well accounted for. More current instream flow rules call for tracking future installation and use of permit-exempt wells. Reservations for new domestic and municipal supply have been established in those basins, and new uses are tracked through a reservation as a condition of the instream flow rule. Other watersheds that do not have instream flow rules, or have older flow rules, have no method of accounting for current or future permit-exempt water use.	a regional scale
8	WQ	Watershed Scale Assessments Numerous studies and planning processes have addressed aspects of freshwater supply needs, some focusing on species' needs and others including human water uses. Table S1-1 describes these assessments and indicates where these studies and planning processes have been conducted in the Puget Sound region and general outcomes by WRIA.Each has a different geographic coverage and uses different methodologies for identifying flow needs and inadequacies. Lack of inclusion of a watershed in a study or a planning process does not necessarily indicate that there are water availability issues in that geographic area.	Different geographic coverage and methodologies for identifying water flow needs
8	WQ	Water Quantity Data The collection and analysis of data on freshwater quantity, and the use of this information in planning, occurs on geographic scales ranging from individual point locations to coordinated regional monitoring. Surface water data are monitored through stream gages maintained by federal, provincial, state, and local agencies. These gages provide point data that are often used to infer flow conditions in some portion of the upstream area. Where data do not exist, it is possible to use models to create streamflow records based on rainfall, stream gage data, and runoff characteristics from a similar watershed. There is no statewide ambient groundwater monitoring program and	No statewide ambient water quality monitoring so lack of data. Monitoring not uniform

		generally, there is a lack of ambient groundwater monitoring data for Puget Sound. Where groundwater is monitored within Puget Sound, it is not monitored uniformly. Monitoring is primarily performed by local or state agencies. It typically is driven by site-specific needs and limited in scope to particular management objectives (e.g., nitrates, chlorides for seawater intrusion, or other contaminants of concern).	
9	WQ	*F. What is the certainty of our understanding?* As described in earlier sections of this report, there is little certainty regarding freshwater supply, or its adequacy for instream needs and out-of-stream beneficial uses at a regional level. In the Puget Sound region, most ecological assessments and studies have been broadly focused on habitat conditions and impacts to salmon species listed under the Endangered Species Act, and have not addressed water quantity and streamflow issues. As a result, the information regarding the extent and nature of streamflow issues is in most cases general in nature (Lombard and Sommers, 2004). The salmon limiting factors analysis (WSCC, 2005), which provides the most detailed statewide assessment, is a snapshot in time of habitat conditions. In those places where quantitative models and empirical data confirm conclusions, it is reasonable to hold them with confidence. However, given the disparity of data across the Puget Sound region, whether it is gage measurements of freshwater supplies or studies conducted to establish flow-biota relationships, it may not currently be possible to apply site-specific analysis to other areas in the region.	Disparity of data across the Puget Sound region means that site specific analysis cannot be applied across the region
9	WQ	*G. What are the main known gaps in our understanding?* Specific topics were detailed earlier in this report. In summary, the main gaps include: • Data that indicate groundwater levels, trends, and depletion on a regional scale; • Localized hydraulic continuity between surface water and groundwater; • A quantitative correlation between streamflow and fish productivity; • A quantitative understanding of geomorphology and fish needs during high flows; • Identification of flow impairments (both low and high flow problems) within the Puget Sound watershed (similar to the inventory of low flow impairments conducted by the King County Tributary Flow Committee (2006) in WRIAs 8 and 9); Regional understanding (survey) of water system plans and watershed plans: Where is current water supply inadequate to meet projected demand between now and 2020; • Evaluation of freshwater requirements for estuary health; and • The quantity of water used to meet consumptive needs.	Gaps in groundwater data levels trends and depletion. Data to support streamflow and productivity for fish. Data needed to relate geopmorp to fish needs at high flow. Low flow impairments. Water availability projections.
28	WQ	*Watershed Planning and Implementation*	Most WRIA's

		Watershed planning is voluntarily occurring in some watersheds in Washington State under RCW 90.82 (see Table S1-1). Where watershed planning has occurred, citizens, Tribes, local governments, and state agencies have worked together in WRIAs to develop watershed management plans that address the quantity of surface and groundwater. Local groups undertaking this type of planning have addressed water quantity issues in their plans, and some have also performed supplemental assessments of instream flows, water quality, storage, and fish habitat needs (Ecology, 2007a). Most plans address data gaps with actual projects to fill these gaps. Most of these WRIA groups are just beginning to implement the watershed plans they have developed; therefore the effectiveness of the plans is currently unknown and will likely vary over the region.	watershed plans identify data gaps – but effectiveness of plans is unknown and will likely vary over region
33	WQ	Review of a number of freshwater management plans[14] indicates a lack of coordination or integration among existing plans at the regional level. None of the planning programs to date have provided a consistent summary of current water use, projected future water use, current supply, and potential shortfalls in meeting projected demands or instream flow needs for the Puget Sound region at any scale (across all WRIAs, action areas, or other jurisdictional areas). This can be attributed to both programmatic inadequacies and to disparities in the scale at which different aspects of water quantity are addressed by programs in the Puget Sound region. Instream needs[15] are typically addressed at a subwatershed scale, not a WRIA scale. However, municipal water use is addressed at the even smaller scale of a water service area. Individual water users operate at the smallest scale, their own projects. Individual water use data for water systems in Puget Sound have not been summarized at a more regional level (Lane, 2004), nor have the data been correlated with watershed-scale instream needs or streamflow.	Freshwater mgt plans do not provide consistent summary of water use projected use supply and etc. Individual water use data has not been summarized at a regional level. Data has not been correlated to watershed instream needs or flow
42	WQ	Identify benchmarks for flow improvements and evaluate them. (Short-term) Analyze streamflow trends for all of the major tributaries to Puget Sound and compare to instream flows set by rule. Identify metrics that indicate the benefits of flow improvements. Quantify those benefits for individual species. Collect the data that will quantify the benefits of flow improvements for individual species.	Identify metrics and collect data to quantify benefits to individual species
42	WQ	Conduct a regionally consistent assessment of water use and future water needs, and availability. (Long-term) • Estimate the quantity of ground and surface water use and future water availability by watershed (WRIA) or regional management area (action area) in the Puget Sound region. Integrate findings about water needs with reclaimed-water planning and stormwater planning.	Develop a groundwater monitoring program database

		• Develop an integrated and regionally accessible groundwater monitoring program (including some targeted streamflow monitoring) and associated database.	
43	WQ	Model climate impacts uniformly in the ESU. (Long-term) Project the effects of a changing climate on streamflow over time by applying the model created by The Climate Impacts Group (CIG) at the University of Washington (Palmer, 2007) to all major watersheds in the Puget Sound region. Maintain a database of the information developed from the model that is available (through web access) to resource agencies and water suppliers. Update the assessments every 5 or 10 years to reflect new data and knowledge.	Maintain a database of information developed for the Climate impacts Group at UW.
43	WQ	Require metering and reporting for 80 percent of water use (by volume) in all watersheds. (Immediate) Begin with "fish critical" Puget Sound watersheds (Nooksack, Snohomish, Cedar/Sammamish, Duwamish/Green, Puyallup/White, Chambers/Clover, Quilcene/Snow, and Elwha/Dungeness). Create a web-enabled database for metering data.	Create a web-enabled database for data on metered water use in fish critical watersheds.
2	R A	This first iteration of the risk analysis is a mix of qualitative and quantitative information; as more data are amassed in the latter half of 2008 and into the future, increasingly quantitative analyses will be included in the risk analysis so that better estimates of the potential ecosystem response to threat mitigation are available to help inform decisions on priority actions.	More qualitative and quantitative information is needed
2	R A	We summarize status for several attributes of each ecosystem component, depending on the availability of information. Gaps in our understanding of status are noted for those attributes lacking information.	Details of data gaps – go to specific tables in Risk Analysis report
3	R A	For many attributes, information either is not available throughout the region or it has not been compiled and summarized. Such gaps in our understanding of ecosystem status are noted in subsequent tables to accurately reflect this source of uncertainty.	Data gaps are prevalent
7	R A	We aim to document several sources of uncertainty that should be kept in mind when interpreting the results of this risk assessment: (1) information is insufficient or lacking to	Data is insufficient or lacking

		describe the status of an attribute (e.g., in many cases, trends in condition or a reference condition for the attribute is not known, thus it is difficult to relate the current abundance to status	
9	R A	For those data that did not fit cleanly into Action Areas (e.g., county-based data may overlap with 2 or more Action Areas), some data manipulation was required, and this is noted in the corresponding summary tables.	To fit data, data manipulation is needed
8	R A	It is important to note that some of the data available are proxies or surrogate metrics for the attribute, and thus should be considered to be potential, rather than actual threats to ecosystem components. For example, one of the metrics summarized for the toxic pollution attribute is the number of permitted hazardous waste facilities by Washington Department of Ecology. This number is likely to be correlated with the risk of a hazardous chemical spill, but it is not a direct count of how many spills actually have occurred.	For some attributes only proxy data is available
10	R A	**Sources of uncertainty in threat/driver assessment** (1) Information does not exist or is insufficient for several potentially important threats/drivers, (2) metrics available to summarize spatial information are proxies or surrogates for a potential threat or driver, but are not a direct measure of that threat,	Data gaps contribute to uncertainty
11	R A	As for many other ecosystem components, there is little/no information on reference condition or trends in water quality attributes; making interpretation of its status difficult. In addition, different data sources can produce different indications of status (e.g., WA DOE 303d data and the PS Update), so further work is needed to reconcile the implications of different results from different sampling approaches and sources.	Little or no information for reference conditions for water quality

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May 5, 2008

Puget Sound Partnership
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RE: Comments Regarding Initial Discussion Drafts: Habitat and Land Use, and Water Quality

Dear Puget Sound Partnership:

Thank you for the opportunity to comment on the Initial Discussion Drafts relating to Habitat and Land Use and Water Quality. WFPA represents private forest landowners who grow and harvest trees on approximately 4.2 million acres in Washington State. We are committed to sound forest management that protects public resources, is sustainable, and keeps the industry economically viable in Washington State. As such, we have a significant interest in the Puget Sound Partnership's Action Agenda for restoring Puget Sound.

To start, we would like to commend the Partnership and its constituent entities in tackling the important and difficult task of restoring Puget Sound. Many of WFPA's member companies have been in existence in Washington for over 100 years, and because they desire and intend to be here for at least another 100 years, share a deep commitment for protecting the quality of life in the state. For a large area of Washington State, Puget Sound is truly a cornerstone of the quality of life we all enjoy.

Habitat and Land Use Discussion Draft

We acknowledge that timber harvest can have an impact on riparian and upland ecosystems which can be transferred to Puget Sound (Question S1 - Status of Land Use/Habitat in Puget Sound). Having said that, it is critical that the Discussion Draft, the Action Agenda, and ultimately all of the Partnership's actions recognize that Washington State currently has a robust program designed to minimize and mitigate the impact of timber harvest, specifically on riparian ecosystems. The process impacts listed in table S1-1 with respect to timber harvest are quite generalized potential impacts that in large part are avoided or mitigated through the existing regulatory programs. Additionally many of these impacts are functions of historic practices, which are also addressed within existing regulations that provide for restoration. While this program was not designed explicitly with the restoration of Puget Sound in mind, it is designed to meet salmon recovery and water quality goals, and to generally ensure properly functioning riparian systems. This program is embodied in the state's Forest Practices Act (RCW 76.09), implementing regulations (WAC 222), and programs.

In its discussion of the forest practices program the Discussion Draft appears to omit the last 21 years of history (Initial Discussion Draft – Protecting the terrestrial and freshwater ecosystem: State and Local Laws, page 35, Protecting terrestrial and freshwater aquatic ecosystems from human impacts:

Federal regulations, pages 36-37, and Habitat and Land Use, pages 44-45). The forest practices program has undergone substantial change since the 1987 TFW revisions. Notably, the Forest Practices Act, regulations, and programs were all substantially revised between 1999 and 2001 with the adoption of the Forests & Fish Agreement.

The goal of Forests & Fish is to meet the requirements of the Endangered Species Act as well as the Clean Water Act. In order to meet these goals, the Forests & Fish Agreement resulted in modified rules and regulations related to:

- The protection of riparian areas, unstable slopes and wetlands;
- The construction, maintenance and abandonment of forest roads;
- The application of forest chemicals, and;
- The implementation of a formal adaptive management program to ensure that the program adapts through time according to new scientific learning.

Forests & Fish covers about 6.1 million acres of forest land on the west side of the crest of the Cascade - all private and state forestlands in this region. Many of these lands ultimately impact Puget Sound. Washington's forest practices program is the only program in the country to operate under a Habitat Conservation Plan approved by the U.S. Fish and Wildlife Service and National Marine Fisheries Service, providing ESA coverage for all fish and seven amphibian species.

It is our view that having identified timber harvest as a threat under Question S1 (Status of Land Use/Habitat in Puget Sound), the Discussion Draft must recognize the fact that Forests & Fish is designed specifically to address these threats in Questions P1 (Policy Approaches to Address Land Use and Habitat: What is currently being done?) and P2 (Needs Assessment and Actions: What are the gaps?). Furthermore, the Discussion Draft must recognize that the Forests & Fish adaptive management program is designed to address the issues raised in Question S2 (Management Approaches Addressing Land Use/Habitat Protection and Restoration).

We have attached a copy of Review of the Scientific Foundations of the Forests and Fish Plan which was prepared by CH2MHill on behalf of the WFPA. We hope that this document will prove useful in understanding how the specific prescriptions enacted under Forests & Fish will address the habitat and ecosystem impacts identified in the Discussion Draft. We have also included a copy of the Forest Practices Habitat Conservation Plan and Final Environmental Impact Statement. Both of these documents describe in great detail the state forest practices regulations and the scientific underpinnings for them.

We also recommend that the final draft take into consideration the fact that there are several other Habitat Conservation Plans (HCPs) for forested landscapes, all of which are designed to protect aquatic species. A number of these HCPs are geographically located in areas that will have positive implications for the recovery of Puget Sound. Approved HCPs on private forestland cover approximately 723,000 acres (approximately 9%) of forestland in Washington State. Industrial Landowners with HCPs include: West Fork Timber Company, Plum Creek Timber Company, Port Blakely Tree Farms and Green Diamond Resource Company. In addition to private land HCPs, the

DNR entered into a multi-species HCP covering 1.6 million acres (approximately 70%) of state trust land managed by the DNR. Municipalities having completed HCPs for nonfederal forestlands include the City of Seattle with a 90,500 acre Cedar River watershed HCP and the City of Tacoma multi-species HCP in the Green River watershed, which covers 14,188 acres.

Table 1. Completed Forestland Habitat Conservation Plans

Company	Species Covered
West Fork Timber Company, LLC (formerly known as Murray Pacific)	The 54,610-acre West Fork Timber HCP covers all species (vertebrates and invertebrates) and the list of protected species runs into the hundreds. However a partial list includes: *Bull Trout, Northern Spotted Owl, Gray Wolf, Marbled murrelets, Golden eagle, Grizzly bear, Northern Goshawk, Osprey, California wolverine, Vaux's swift, Pileated woodpecker, Western bluebird, Olive-sided flycatcher, Little willow flycatcher, Larch Mountain salamander, Pacific fisher, Townsend's big-eared bat, tailed frog, Cascades frog, Vandyke's salamander, Northern red-legged frog, Columbia pebblesnail, Fender's soliperlan stonefly.*
Plum Creek Timber Company	The Plum Creek HCP includes land from 32 watersheds totaling 418,690 acres along the Interstate 90 corridor between Seattle and Ellensburg. Of that total, 148,300 acres are owned by Plum Creek, 218,700 acres belong to the Forest Service, 45,300 acres to the State of Washington and private landowners, and 6,683 acres account for various lakes. The Plum Creek HCP covers 315 vertebrate species of which five are federally listed as threatened or endangered. A partial list of the species covered in Plum Creek's HCP includes: *Coastal-Puget Sound population of Bull Trout, Northern spotted owl, Gray Wolf, Marbled murrelets, Golden eagle, Grizzly bear, Northern goshawk, Osprey, California wolverine, Vaux's swift, Pileated woodpecker, Western bluebird, Olive-sided flycatcher, Little willow flycatcher, Pacific fisher, Townsend's big-eared bat, tailed frog, Cascades frog, Vandyke's salamander, Northern red-legged frog, Columbia pebblesnail, Fender's soliperlan stonefly*
Port Blakely	The HCP covers the 10,671-acre Robert B. Eddy Tree Farm in Grays Harbor and Pacific Counties. The property is dominated by second growth Douglas fir and western hemlock. The Port Blakely HCP covers multiple species, including: *Coastal-Puget Sound population of Bull Trout, Northern spotted owl, Gray Wolf, Marbled murrelets, Golden eagle, Grizzly bear, Northern goshawk, Osprey, California wolverine, peregrine falcon, Vaux's swift, Pileated woodpecker, Western bluebird, Olive-sided flycatcher, Little willow flycatcher, Pacific fisher, Townsend's big-eared bat, tailed frog, Cascades frog, Vandyke's salamander, Northern red-legged frog, Columbia pebblesnail, Fender's soliperlan stonefly.*
Green Diamond (Simpson)	The HCP covers Simpson's 262,000 acres in Mason, Thurston, and Grays Harbor County. The HCP covers 51 species of fish and wildlife, including the Coastal-Puget Sound populations of Bull Trout, marbled murrelet, Chinook salmon, and Hood Canal summer run chum.

Company	Species Covered
Department of Natural Resources	The DNR HCP covers 1.6 million acres of state trust land. The HCP provides protection for the following federally listed species: *Coastal-Puget Sound Bull Trout, Northern spotted owls, marbled murrelets, Oregon silverspot butterfly, Aleutian Canada goose, peregrine falcon, Bald eagle, gray wolf, grizzly bear, and Columbia white tailed deer.* The HCP also conserves habitat for other species in western Washington including western Washington runs of several salmonids, other federal and state candidate species, and other unlisted species west of the Cascade crest.
City of Seattle	The City of Seattle HCP covers the 90,500 acre Cedar River watershed. The HCP provides significant benefits to 83 species. A partial list includes *Coastal-Puget Sound population of Bull Trout, Northern spotted owl, marbled murrelet, northern goshawk bull trout, Coho and Chinook salmon, steelhead trout, bald eagle, peregrine falcon, grizzly bear, gray wolf, and a host of other birds, fish, mammals, amphibians and reptiles*
City of Tacoma	The City of Tacoma HCP covers 14,188 acres in the Green River Watershed. Covered endangered and threatened species include: *Coastal-Puget Sound population of Bull Trout, Gray wolf, bald eagle, marbled murrelet, northern spotted owl, grizzly bear, Chinook salmon, bull trout, Canada Lynx. Many other species are also covered in the HCP.*

Finally, we are concerned with the recommendation to "Consider enacting at a state-level a single, integrated, set of regulations that apply in to (sic) the lands, streams and marine areas within Puget Sound to replace our present fragmented system of regulations" including the Forest Practices Act. (Initial Discussion Draft – Habitat and Land Use, Page 67). As described above, the Forest Practices Act and implementing regulations have been specifically designed to protect riparian functions that have the potential to impact Puget Sound. In all likelihood, this program will sufficiently ensure that Puget Sound is restored so long as other factors are addressed. The Forests & Fish adaptive management program is created to determine whether this is in fact the case. In our view, it would be imprudent to tinker with a system that is currently contributing to the Partnerships goal of restoring Puget Sound in an attempt to create a unified regulatory system. For this reason, we do not support this recommendation.

Water Quality Discussion Draft

We believe that the Water Quality Discussion Draft has appropriately recognized that the greatest threats to Puget Sound water quality are not related to forest practices on forested landscapes. Having said that, we feel it is important that the discussion draft recognize the fact that many of the habitat-based regulations and plans mentioned above have a direct positive impact on water quality. For example, the Forests Practices Habitat Conservation Plan was designed specifically with Clean Water Act compliance in mind.

We also believe it is important to recognize that the Forests & Fish adaptive management program is conducting several multi-year monitoring studies to determine whether forest practices are meeting water quality goals. The Puget Sound Partnership should defer on this process for the forested landscape.

We would be happy to provide any additional information or answer any questions that you might have, and look forward to tracking the progress of the Puget Sound Partnership.

Very truly yours,

Josh Weiss, JD
Director of Environmental Policy

cc: David Dicks, Director, Puget Sound Partnership
Bill Wilkerson, Puget Sound Partnership Leadership Council
Bill Dewey, Puget Sound Partnership Ecosystem Coordination Board
Sam Anderson, Puget Sound Partnership Ecosystem Coordination Board
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MASTER BUILDERS ASSOCIATION of King and Snohomish Counties

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May 6, 2008

Ms. Martha Neuman
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Dear Martha,

On behalf of the 4,500 member companies of the Master Builders Association of King and Snohomish Counties ("MBA"), following are some initial comments on the Water Quality and the Land Use/Habitat Protection and Restoration topic forum discussion papers. We appreciate the opportunity to comment on these preliminary proposals.

PSRC Vision 2040 plan

We strongly support the idea of directing new growth to urban areas and promoting responsible, compact development patterns to help preserve forest and pristine lands in rural areas. However, we are concerned about language in the Land Use Discussion Paper describing Vision 2040 as a plan that "reduces growth levels in rural areas and supports maintaining the current urban growth boundaries."

First, while we agree most growth should be directed to urban areas, we must also recognize that a certain, limited amount of growth will continue to occur in rural areas. As such, our goal should be to identify sensible growth levels in these areas and to engage in a meaningful dialogue about how this growth should occur. For example, given long-term population projections, large lots in rural areas may ultimately cause more harm than good.

The problem with 2.5- or 5-acre zoning is that once it is established, it is very difficult, if not impossible to change in the future as we grow. Allowing this type of large-lot zoning outside existing urban growth areas would be very shortsighted because it only serves to promote sprawl and place added development pressure on our most pristine forestlands. Large lot development can also cause more harm than good as impacts are spread across a larger area, potentially thwarting conservation efforts vital to the environment and our region's quality of life.

Second, it was never the intent of the Growth Management Act to rigidly maintain current urban growth boundaries. Our urban growth areas must remain flexible as we continue to grow and be allowed to expand where appropriate, or to be re-shaped to allow for more sensible boundaries.

There are a variety of measures we can take to better accommodate growth and reduce barriers to infill development throughout the region. For example, local jurisdictions should reexamine height restrictions to allow greater density in urban areas. Also, concurrency should not be a state mandate because all this policy serves to do is to promote use of the single-occupant vehicle, which creates sprawl. Instead, projects should be allowed to move forward based on what city or county decision makers determine they can tolerate, want to do or need to do in order to satisfy their GMA housing requirements. Additionally, the Action Agenda should call out, recognize and adhere to growth targets established by the Washington State Office of Financial Management.

Single, integrated set of regulations

We have serious concerns about the recommendation to adopt a single set of regulations to protect the ecosystem of Puget Sound. The MBA believes that local control allows for local innovation when it comes to critical areas regulations, the Growth Management Act, NPDES stormwater permits and so on. We have always maintained that performance based requirements, rather than prescriptive regulations, are significantly more effective at achieving any desired ecological goal.

For example, we believe local jurisdictions should have the ability to provide greater flexibility in determining the size of no-build buffers around critical areas, depending on the quality and function of the critical area. We have long advocated for smart buffers that enable environmental protection and also allow property owners to responsibly use their land. Larger, one-size-fits-all buffers, which would likely result were this recommendation implemented, have the potential to restrict land availability for much-needed housing in our region without providing any additional environmental benefits.

Tools like "buffer averaging," where for example, a property owner makes a buffer larger in one area and smaller in another to make room for a home improvement, should be allowed if it can be demonstrated that wetlands still receive the same protections (i.e. meet the no-net-loss standard). Another such tool would be allowing buffer reductions, if wetland functions can be improved. We are concerned that a single, integrated set of regulations would hinder this type of local innovation and not be based on protecting the subject land's ecological function.

At the same time, we are concerned that a one-size-fits-all approach would hurt local governments' ability to adequately balance other important GMA goals, such as directing growth to urban areas, providing adequate housing for residents, promoting economic development and preserving our rural and forestlands.

In our view, local government is already overburdened with GMA planning, and adding one more layer of government would only serve to exacerbate the situation. A single set

of regional regulations is just an outdated method of concentrating power in the hands of a few, defeating the trend toward local governance and adaptive management for performance based results.

Finally, we are concerned about language in the Land Use Discussion Paper stating, "Where impacts are allowed to occur, net improvement of ecosystem processes, structures and/or functions should be required as a project outcome." The GMA creates a duty to protect, not enhance or restore, critical areas. Going beyond this standard, particularly inside urban areas, forces us to make difficult choices. Moreover, it unfairly burdens a few to fix the sins of the many.

Instead of pursuing a prescriptive approach, we believe the Partnership should explore opportunities to incentivize development and redevelopment that restores degraded habitat, for example, with such things as smaller buffers or expedited permits.

Low Impact Development

The Land Use Discussion Paper includes a recommendation to require the use of low impact development. We strongly disagree with taking a mandatory approach to low impact development and cannot support an Action Agenda that contains this recommendation.

Our association supports measures to encourage greater use of low impact development (LID) techniques, where appropriate. The MBA already promotes LID through our Built Green® program and through our educational offerings.

However, as I emphasized throughout the first Puget Sound Partnership process, we would strongly oppose any attempt to require LID. While there are benefits to be gained from LID, we must also recognize its limitations. Infiltrative LID techniques do not work well over till soils or where water may be delivered to steep slopes subject to landslides. The Puget Sound region is heavily dominated by till soils, often in combination with slopes. As a result, many of the more effective LID measures to reduce stormwater runoff are not feasible in much of the Puget Sound basin.

Additionally, some LID features, such as infiltrating roof runoff, are in many cases simply too expensive for dense urban infrastructure construction. Also, some fire districts, for example, are not receptive to narrower roadways, a LID feature that would lessen impervious surface. Furthermore, forcing certain LID features, such as rain barrels or rain gardens, on homeowners unlikely to use or maintain them is not realistic.

Finally, it is unclear whether LID benefits in urban areas could be of a scale capable of having meaningful impact on Puget Sound.

That said we recognize LID techniques can be effective in naturally treating pollutants in stormwater and should be encouraged where appropriate. We believe the best way to promote LID is to remove regulatory barriers to it, create incentives for commercial and residential builders to use it and to educate the public about LID features they could employ.

Vested Rights Doctrine

The discussion paper recommends providing for a later vesting date for compliance with critical areas and shoreline regulations. We strongly oppose this approach and cannot support an Action Agenda containing this recommendation.

Land use applications vest to current regulations, only when they are substantially complete. Complete applications can and often do include delineation and plans for critical areas and geotechnical studies, assuring protection of ecosystem processes, structures and functions.

Landowners spend significant resources planning for and obtaining land use approvals under existing codes. A later vesting date that would allow appeals to the Growth Management Hearings Board or legislative bodies would have the effect of slowing the permitting process, effectively increasing uncertainty and cost for developers. In many jurisdictions, the permitting process is already unduly long, difficult and expensive. This requirement would only serve to drive up housing costs and hurt our state economy.

Also, it is important to note that current vesting laws in Washington do not apply to valid health, safety and welfare regulations or the State Environmental Policy Act.

There may be justification for expediting permits under certain circumstances, namely compliance with LID techniques, but the process of delaying vesting for other projects is not justified.

If a later vesting date were adopted, under what process would the new date be established? Is there significant scientific evidence showing that a later vesting date would significantly improve ecological protections?

Delaying the point at which projects could vest would completely undo previous efforts to provide more predictability and certainty for landowners while providing greater opportunities to those seeking to stop development. Furthermore, the Legislature already considered and rejected this concept. We believe it would be inappropriate for the Partnership to attempt to circuitously adopt it.

We believe changing the vested rights doctrine, as recommended in the Land Use Discussion Paper, would be completely shortsighted and irresponsible. We urge the Partnership to reject this recommendation.

Off-site mitigation programs

The Land Use Discussion Paper recommends expanding the availability of off-site mitigation programs. The MBA supports efforts to create more and better options for mitigation, and to that end we are participating in the Washington State Department of Ecology's Mitigation That Works Stakeholder Forum. In order to be successful, we believe that any adopted program must offer applicants a timely and predictable process.

Governance Recommendation

We find it very curious, to say the least, that the Land Use Discussion Paper recommends concentrating power in a single agency to ensure Puget Sound ecosystem policy goals are being met. According to the discussion paper, the underlying concerns this measure is intended to address is the lack or coordination among governmental agencies that play a role in protecting and restoring Puget Sound. It is our understanding that this is the very reason the Puget Sound Partnership was created! As such, it would appear this recommendation discounts the ability of the Partnership to deliver on its mission before it has even had a chance to produce an Action Agenda. Instead, the drafters of the Land Use Discussion Paper suggest that what is needed is an overarching regulatory agency. We strongly disagree.

As an original member of the Puget Sound Partnership, we supported the creation of the Partnership in order to coordinate the numerous activities of agencies charged with managing the Sound. Now, one agency is guiding the recovery of Puget Sound and helping to prioritize actions that would have the greatest positive impact, while considering their consequence on both population and economic growth. We believe the current Partnership should be given the opportunity to do its job before advancing a recommendation that neither my association members nor the broader business community can support.

Education and Outreach

The MBA maintains that public education and outreach is critical to our success in improving the health of Puget Sound. In our view, everyone has an important role to play when it comes to the Puget Sound's recovery and future health. In particular, members of the public should be educated about individual actions they can take to improve water quality and water quantity. This includes everything from car washing and lawn care practices to how we dispose of unused pharmaceuticals and maintain septic systems.

The Water Quality Discussion Paper recommends expanding outreach efforts to reduce emerging pollutants in personal care products, and we believe that is a good start. However, much more is needed to build local awareness and action, engage volunteers and to encourage behavior change. We believe the Partnership should place much more emphasis on public education and outreach as part of our efforts to improve water quality in Puget Sound.

Also, an area we believe has been sorely lacking in the land use arena is public outreach and education on the benefits of Growth Management Act required density and urban growth areas. Local builders fight battles over density and suffer through constant appeals from individuals seeking to stop growth. The public doesn't want more density in their neighborhood, but they don't see that rural and forestlands are being preserved as the other side of the equation. We believe that as we continue to grow, the state must be willing to help the public better understand the benefits of GMA required density.

Retrofitting

We appreciate the fact that the Water Quality Discussion Paper clearly acknowledges our region has not dealt in any meaningful way with existing (pre-1995) urban development in most areas. The topic forum paper rightly notes that the majority of existing urban commercial, industrial, residential and transportation infrastructure development occurred before current stormwater management standards. Most scientists will agree that development in Puget Sound prior to the mid-1990's is playing a significant and ongoing role in Puget Sound's deteriorated health, not just in terms of habitat elimination, but also in terms of untreated stormwater discharge. We view this to be a major gap in our efforts to address stormwater. Unless retrofitted with proper controls, this pre-1995 development provides no or minimal management of stormwater.

As such, we strongly support the recommendation to begin or accelerate retrofits of impervious surfaces in untreated urban areas. In fact, we believe applying current regulations and practices to retrofit untreated stormwater runoff coming from public and private development predating current stormwater management requirements should be a top priority, particularly in watersheds with significant existing development. If we are really serious about better managing stormwater runoff to improve water quality and water quantity in our region, then we must be prepared to adequately address runoff from older development.

At the same time, we recognize the significant challenges of implementing such a program. Developing a process for prioritizing retrofit projects, identifying funding sources to help pay for them and coordinating with existing property owners will be no easy task. Though expensive, we believe the cost benefit of contaminants removed per dollar spent is likely highest with retrofitting and source control of existing development. Furthermore, attempting to improve the condition of Puget Sound by further increases in regulations on new and redevelopment projects cannot possibly have the cost benefit to aquatic habitat that retrofitting existing development will.

The Washington State Department of Ecology's stormwater manual and modern flow control requirements are among the most stringent for managing stormwater from new construction sites in the country. If nothing were done to address stormwater runoff from existing, particularly pre-1995 development, then water quality improvements from those older developments – whether residential, commercial or industrial developments or highways – would be dictated by the rate of redevelopment. It is difficult to predict how long it would take to redevelop the existing pre-1995 built environment, and with such redevelopment bring about upgrades in stormwater management and sensitive area protections. But it would most certainly extend well beyond the Action Agenda's 2020 deadline.

Reuse of stormwater generated from rooftops

We support the recommendation to amend state water rights law to exempt the reuse of stormwater runoff generated from rooftops for non-potable uses. Many, including our

association's Built Green® program, promote rainwater collection as an important voluntary tool for addressing urban stormwater issues. Yet under existing water law in our state, the use of rainwater requires a water right permit that can take years to process. As such, current state law acts as another regulatory barrier to low impact development. We believe state water law should be changed to recognize and accommodate the benefits of rainwater collection from rooftops for those seeking to employ this technique.

Expanding NPDES

We have serious concerns about expanding NPDES Phase II stormwater permits to urban areas below the current threshold. The Phase II municipal stormwater permit is a very complex and costly permit to implement. Moreover, the newly issued Phase II permits have barely begun to be implemented. They will, for the first time, require 102 cities and 13 counties across Washington to implement stormwater management programs. We believe it is unreasonable to suggest expanding the Phase II permit to other jurisdictions, especially before the new permit has been fully implemented.

Protecting intact and high-quality lands and watersheds

As supporters of the Cascade Land Conservancy and the Cascade Agenda, we support responsible efforts to protect our most pristine lands. However, we would caution against any effort that would negatively impact buildable land inside urban growth areas. As such, we believe our state needs to adopt a no net loss of buildable lands policy. Such a policy would compensate for the reduction in housing units that necessarily occur any time a new public policy – such as increased wetland buffers in urban areas or increases in stormwater vault sizes – is adopted.

Any change that reduces our buildable land supply, and in turn our housing capacity, would have to include measures to increase density in the urban growth area or increase land availability, including moving the urban growth boundary. We believe this change is critical for accommodating our region's expected population growth and encouraging the Growth Management Act's affordable housing goal.

Thank you for considering our comments. I look forward to engaging in further dialogue on these and other issues as development of the Action Agenda moves forward.

Sincerely,

Samuel L. Anderson
Executive Officer

Cc: PSP Director David Dicks
PSP Leadership Council Chair William Ruckelshaus
MBA Chair Officers

From: Don Flora

Date: 05/01/2008

Comment: Re: Land Use/Habitat Agenda: Three background science papers
Their tree-related subjects are:
What is the role of tree-sourced insects in the welfare of Puget Sound salmon?
How important is the focus on providing tree-based shade for surf smelt along upper beaches? This for a central-Sound audience.
Trees have had a large role in resource planning. How durable are they near tidewater? A risk assessment.
These are obviously only sub-issues of the larger matters you are confronting now, but the May 6 target for science is at hand.
Anything that I author is grey literature, based entirely on others' research. My contribution is a considerable background in trees, buffers, and freshwater environments. And a lifetime in the company of tidewater and shellfish.

Attached:perspective of insects eaten by juvenile PS salmon.pdf