

Habitat/Land Use

Comments Submitted via E-mail

4/14/2008 – 5/9/2008

From: Debby Hyde

Date: 05/9/2008

Comment: Before I knew the date of the comment period, I asked staff from the various Pierce County agencies to review the topic papers and provide comments. When I realized our review date was later than your requested date, I still felt it important to collect them and send them on for your use. Some of the comments are very general and probably similar to others. But some staff had very specific thoughts as you will see in the accompany attachment. I hope you will find them useful.

Land Use/Habitat Protection and Species and Biodiversity Topic Forums
The papers do a good job of pointing out some of the very real challenges we face. The two that arguably affect local government most are: 1) most permitting decisions ultimately become local issues but, those decisions rely on broad (read “vague”) management guidance provided at the State and Federal level; and 2) local government is constrained by inadequate resources, conflicting mandates, and transient political will.

The papers tend to downplay the 30-40 years of science that precede them. One can always learn more about any given subject but, I'm not sure I agree that "little is known" about so many aspects of Puget Sound. I expected to more frequently see comments in the two papers that acknowledge "There is much we know about the forces that threaten species survival" instead of the exact opposite.

The documents give the impression that we can't take much substantive action until our understanding of a wide range of ecosystem processes is better understood.

The documents reference the standard, universally popular and ecologically sound, buzzwords: "ecosystem scale", "ecosystem approach", "multi-stakeholder management" but, don't adequately acknowledge that, ultimately, most things boil down to local permitting and that specific quantitative standards are needed.

The papers are captioned Initial Discussion Draft and it is clear that they were prepared to “provoke thought”. Nonetheless, I was hoping that they would provide some direction immediately useful at the local level. The

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Partnership seems to have a great deal of public and political support which might be useful in promoting changes to our current processes, for example increasing our emphasis on enforcement and compliance monitoring. Instead, under “What immediateactions are needed” is listed: “Begin to design an ecosystem-based management approach”. If that is an “ immediate action”, I am concerned.

The papers left me with the impression that the Puget Sound Partnership proposes to make sweeping, fundamental changes to the current Puget Sound regulatory framework but, only when they are done studying everything remotely associated with Puget Sound.

Finally, the documents reference the standard, universally popular and ecologically sound, buzzwords: "ecosystem scale", "ecosystem approach", "multi-stakeholder management" but, don't adequately acknowledge that, ultimately, most things boil down to local permitting and that specific quantitative standards are needed.

From: Patricia Olson

Date: 05/09/2008

Comment: I would have liked to join the on-line discussion but I have been in the field and now am running out of time to comment. So please accept the attached comments as a memo instead.

COMMENTS—

I apologize that I have written comments by page instead of by question. I can rearrange by question in the future but for now time is running out.

Pp 4, footnote 2: you should stick to one term, either threats or stressors.

While stressors can be caused by human interaction, they often are used for natural disturbance. However, the 2 terms become intermixed throughout the document. For example, in the Appendix S1-1 table, human “threats” are called stressors. Using one term for human interactions and one term for natural disturbances is more consistent and less confusing.

Table S1-1, pp5: Hydrology is used incorrectly. Hydraulics or hydraulic characteristics is more appropriate when talking about wave energy, velocity, etc. Hydrology is the science of water (in all three forms) movement and distribution within the context of the hydrologic cycle.

Movement in the hydrologic sense is runoff, evaporation, transpiration, sublimation, etc. Hydraulics is the branch of science that deals with the practical applications such as the transmission of energy or the effects of flow (e.g. scour) of liquid (in this case water) in motion such as velocity,

scour, wave energy. Other places in table that hydraulics would be a better fitting term is on pp 6, under “Culverts”, “Armoring”, “river levees” (both terms—hydrologic, hydraulic); “boat launches and rails”. Armoring could be both hydraulic and hydrologic if the armoring changes the movement and distribution of surface or groundwater runoff.

Pp 10, Current Status: Shorebird colonies generally aren’t considered ecosystem functions unless you are talking about nutrient enrichment from their excrement. Perhaps riparian shade or something like that would provide a better example of ecosystem function.

Pp 11: “Integrity” is sprinkled throughout the document such as in section on “How do current conditions....?”. A definition of what you mean by integrity would be helpful

Pp 11, last paragraph: This section talks about the need for ecosystem assessments and then suggests that the King County SMP watershed characterization and Ecology’s landscape characterization could be tools for determining ecosystem integrity. The King County SMP concentrates on the first 200 feet from the OHWM (shorelines) and the purpose of the landscape assessment is more for scoping and gaining a general picture of critical areas. However, it’s rating system and methods are qualitative. Neither can answer the question of ecosystem or process integrity in more than very general terms because the methods are too general in scope.

Appendix S1-1, title insert freshwater because the discussion is about freshwater and not marine

Appendix S1-1, pp 17, water delivery: There is a fine balance between having too much information/detail for watershed level assessments and having too little based on sometimes erroneous assumptions. For example, under shallow subsurface flow, the table assumes that the only areas with less permeable soils have subsurface flow. There is much hydrologic literature that contradicts this assumption.

An oversimplified graphic modified from Dunne and Leopold 197 indicates that less permeable layers is only one criterion and not the most important. Check out hillslope and forest hydrology literature, e.g., McGlynn, B. L. and J. J. McDonnell (2003). "Quantifying the relative contributions of riparian and hillslope zones to catchment runoff." *Water Resour Res* 39(11): 1310, McGuire, K. J., J. J. McDonnell, et al. (2005). "The role of topography on catchment-scale water residence time." *Water Resour. Res.* 41(W05002); Tromp-van Meerveld, H. J. and J. J. McDonnell (2006). "Threshold relations in subsurface stormflow: 1. A 147-storm analysis of the Panola hillslope, ." *Water Resour. Res.*, 42, (W02410.), just to name of very few in recent literature.

Appendix S1-1, pp 17, Return to surface, ecosystem response column: This implies that hyporheic zones are the only important area that adds to stream

productivity. Hyporheic (meaning under flowing water, not still water) areas are not everywhere. So instead of using just hyporheic add, “reduces recharge and subsequent discharge to water bodies and their associated groundwater systems which may include the hyporheic zone.” Or something like that.

Appendix S1-1 continued: Sediment Processes, delivery and large wood delivery: mass wasting—only includes shallow rapid landslides. However, deep seated and other slope movement processes also are important. Think of the Hazel slide on the NF Stillaguamish as an example.

Appendix S1-1 continued: Nitrogen Process, Loss and Phosphorous process, delivery—hydrologic regime is listed as a major natural control. Be more specific, what part(s) of hydrologic regime, e.g. the subsurface hydrologic regime, the surface, magnitude, duration and frequency components?

pp 29: Scientific principals heading. 1st bullet: "Restoration efforts must focus on landscape- scale ecosystem processes, such as the delivery and movement of water, sediment, wood, and nutrients, as the basis of complex, high quality habitats and diverse, self-sustaining biological communities (Goetz et al. 2004; Beechie and Bolton 1999). Addressing the factors that impact ecosystem processes is critical for restoring habitats and ecosystem functions." While this is the logical start of evaluating restoration strategies, constraints, opportunities, objectives etc., efforts must also look at how the local or reach scale responds to landscape-scale in order to determine the appropriateness of actions and likelihood of success. This point seems to have been missed or hidden.

Pp34—2nd paragraph under Introduction, 1st sentence: add hydrology “ geomorphology and hydrology of an area” because you don’t have fluvial (as in reference for this statement) without hydrologic processes contributing to stream runoff. Or clarify the statement.

Pp 44: Add floodplain management and flood hazard reduction as possible tools because often protecting channel migration zones (migration being an important process that creates the diverse floodplain habitats) falls under this category.

From: Vivian Henderson

Date: 05/09/2008

Comment: Hello, Luis - Thank you so much for copying me on this Email. I'm happy to hear your voice publicly promoting the stewardship of shoreline property owners. You are right, I believe most property owners are eager to do the right thing for the environment. I'm an upland property owner who has learned much about caring for our environment. You relate to grass clipping and I relate to raising 3 automobile/motorcycle crazy boys who thought

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nothing of changing the oil and dumping the old oil on the ground. Today we all cringe when we think about it.

Representation for property owners is always left out of the never ending assembly of groups, partnerships, strategies, councils, committees and stakeholders that government is constantly organizing and promoting. The message appears to be that property owners are too stupid to know what is best for the environment.

John Cambalik will remember, as I do so well, in Sept. 2002 Kitsap County sponsored a half day workshop "Living Along the Waterfront" at the Silverdale Hotel for the public. Property owners were invited to "...better understand our living shoreline..." For a small charge of \$10 lunch was provided. There was an overflow crowd of mostly shoreline property owners. There wasn't enough room for everybody so a list was taken for a follow up workshop which never happened. It was so unique in that most meetings we go to of an environmental nature are dominated by government employees, environmental groups. This gathering was dominated by property owners!

I attended the Puget Sound Partnership Land Use/Habitat Protection and Restoration Forum recently (4/28) held at the "Fountain Room" Bremerton waterfront. Also, the Human Health forum held earlier. Copious drafts and discussion papers had been prepared for the meeting. So little (if anything) was said about education. That point was made by several in the group. One person at the land use/habitat forum - I regret I did not get his name - said that unless property owners are included, the effort will not be successful.

I've added a few recipients of our very good exchange here. I hope you don't mind. Nice chatting with you, Luis. Thank you again.

From: Susan Saffery

Date: 05/08/2008

Comment: We appreciate the opportunity to participate in the process of developing the Puget Sound Partnership Action Agenda. This document reflects the comments of professional staff with scientific, policy and programmatic expertise in this subject matter. While these comments are not "official City policy" per se, they do reflect the respected opinions of key staff from Seattle Public Utilities, Seattle City Light, and the Department of Planning and Design, with the bulk of the comments coming from Seattle City Light. In addition to these written comments, staff from all three departments

participated in the topic forum discussions directly. Comments made during those discussions stand alone and so are not necessarily reflected in these written comments. In reviewing our comments, please feel free to contact me if you have any questions, need clarification or would like more information.

General Comments

In reading the Forum Topic paper we are impressed that something of such high quality was put together in only a few weeks. We are empathetic with the paper's primary focus on aquatic habitat, but if Puget Sound is defined as "being from snow caps to white caps" citizens and professionals with a keen interest in restoration of terrestrial wildlife habitat around Puget Sound will be disappointed. This needs to be acknowledged and explained in the document.

We suggest that you use Environmental Economics when analyzing the cost of development, in contrast to the way we do things now where property value is based on what can be developed on the property. Environmental Economics is used to take into account the value of the undeveloped land based on the undeveloped land's contribution to "environmental health". Two examples of this are: 1) Undeveloped land provides a "service" of stormwater infiltration so the value of stormwater infiltration is determined and added to the cost of development or used in another way. The second example is keeping pollutants out of the Puget Sound to prevent Orcas from going extinct so that the whale watching industry stays prosperous so the economic contribution of whale watching is assessed in relation to allowing pollutants (through development) to enter the Puget Sound.

Water quality and hydrology (flow) are critical components of habitat. While we understand that they are dealt with in other topic forums papers, these two subjects are barely mentioned here, and should have been cross-referenced more frequently.

General comments/questions that could be addressed through the introduction to the synthesis paper or other material that will be provided at the time the synthesis paper is released:

1. At least three major studies that are underway will be important to consider in this topic forum—Puget Sound Change Analysis (anticipated completion late Fall 2008); Risk Analysis for the Puget Sound Ecosystem (expected early 2009); and Puget Sound Future Scenarios (UW-Urban Ecology Research Lab – assessment of nearshore functions and evaluation of alternative restoration strategies).

Question:

- The Action Agenda is scheduled to be completed by December 2008. How will the results/recommendations from these and other pertinent studies be considered in that document and discussions with the interested public as it is developed?

2. Increased education and outreach efforts have been identified by local governments, watershed planning groups, and recovery plan groups as critical to public support of adequate CAOs, watershed plans, including instream flows that are protective of fish and wildlife, and similar habitat preservation and protection initiatives. The introduction to this paper acknowledges the importance on the need for more education/outreach and new funding strategies, including creative incentives. It also states that other processes are being utilized to address them and that the work will be linked to the development of the action agenda.

Questions:

- What are the other processes, and under what timeline will education/outreach actions and funding strategies be defined, discussed with the broad public, and synthesized in work across the topics?
- What assistance and techniques will be made available to local governments, NGOs and planning groups to help with these critical tasks?
- Given the importance of these elements, we suggest that the PSP web site include information on how they are currently or will, in the future, be addressed and included in the action agenda.

3. The habitat/land use topic paper acknowledges the importance of cumulative effects and notes cumulative effects of multiple stressors on processes, habitat structure and function as a significant gap. The NOAA Fisheries' public discussion draft-- A Risk Analysis Framework for the Puget Sound Ecosystem (April 14, 2008)— notes “[t]he cumulative effects of changes in status of ecosystem components on one another’s status” as a source of uncertainty in ecosystem assessment. Other sources of uncertainty include insufficient information on the condition of an ecosystem attribute and “the ecosystem consequence of a particular amount of condition of an attribute. (p. 7).”

Recommendation:

- The PSP action agenda should include a research agenda that will advance our understanding of these and other sources of uncertainty along with a budget and timeline for implementation. Without such a component, it is possible that we will make little to no real headway on these issues.

4. Along with disturbances/threats caused by human activity, hazards such as seismic activities, volcanoes, earthquakes, flooding, drought, fires, landslides and tsunamis are natural phenomena that disturb ecosystems, impacting structures and functions as well as benefits to people, fish and wildlife. As we forecast the extent to which continued human activities will degrade ecosystems, it would seem important to factor in probabilities re: disturbances due to natural phenomena so that we can have a “full picture.”

Question:

- Are these factors addressed in any topic forum papers? How are/will they be factored into the development of the action agenda?

5. This paper appears to focus on the aquatic environment to the detriment of discussion concerning the terrestrial component. It is important to expand the treatment of the subject. It is also important to weave more discussion of the role of federal partners into the discussion and recommendations lest we continue to suffer the detrimental effects of fragmentation.

Science Question 1 (S1) What is the current documented knowledge about threats to ecosystem processes and resulting habitat as a result of land use practices in Puget Sound??

Elements Missing

Table S1-1 Major threats to habitats in freshwater, estuary, marine and terrestrial ecosystems and their resulting impacts on ecosystem processes:

In-water – Add/consider

- Management of water levels --- ecosystem: freshwater (lakes typically, for recreational and related purposes) and process impacts
- Locks -- ecosystem: freshwater (estuary, freshwater [lakes]) and process impacts
- Aquatic dredged material disposal sites/management -- ecosystem: marine and estuaries, primarily. Process impacts depend. Issue relates to physical structure, food web and species assemblages(e.g. may change benthic organisms)
- Invasive species – ecosystem: estuarine, freshwater
- Airborne contaminants – ecosystem – ecological effects. The tables in Appendix S1-1 note Nitrogen, Toxins and Phosphorus components of major processes but fail to include the phenomenon and impacts of airborne contaminants such as mercury and the insecticide dieldrin on the ecosystems. Yet, these are of increasing concerns and the subject of significant studies and should be included in one of the topic forum papers. Given that the National Parks Service has completed a study of airborne

contaminants and ecological impacts on aquatic ecosystems, there may be material to include in applicable Action Area overviews in Appendix S1-2.

At water's edge

Add/consider

- Agriculture/grazing – ecosystem: freshwater (irrigation impacts- alters timing and magnitude of flows) effect on water quality, spawning and rearing habitat, sediment dynamics (grazing: horses and cows don't just mosey along the river bank, they cross streams and alter the bank and bed)

Away from the water:

Add/consider

- Invasive species (include impacts on prairie habitat)
- Gravel mining

Table S1-2 Status of select habitat structures and threats

Add/consider

Habitat - Structure:

prairie habitat – general reduction of Southern Puget Sound prairies to 10% of historic abundance. Major threat: exotic pest plants/ e.g. noxious weeds – knapweed, leafy spurge, tansey ragwort, scotch broom

Elements/Statements with which we strongly agree/Comments

p. 10 – agree that these are significant needs

p. 10 – under Current Status – important correction/caution: not all recovery plans are by WRIA. For example, bull trout recovery plan is by Distinct Population Segment (DPS); the South Sound multi-species salmon recovery plan/approach combines WRIs; rare species recovery in prairie/oak woodland habitat occurs within at least one specific geographic area (Fort Lewis) that is not WRIA-based.

p. 12 – strongly agree with conclusions regarding moving ahead

Elements/Statements with which we strongly disagree

Not a strong disagreement per se, but a query and expression of concern that Table S1-2 – Status of select habitat structures and threats at the Puget Sound scale – is incomplete. For example, prairie and oak woodlands are significant habitats supporting rare and declining wildlife species, and are recognized by the Nature Conservancy's Ecoregional Planning and

Conservation Area Plan as critical conservation targets.

Action Areas conditions and threats
Strait of Juan de Fuca

Specific Major Threats – add/consider

- Airborne contaminants: The Western Airborne Contaminants Assessment Project Report reported the following on Olympic National Park: “[O]rganic contaminants were found at detectable levels in snow, water, vegetation, lake sediment and fish...Snow...contained unexpectedly high concentrations of mercury...Mercury compounds in fish at Olympic were among the highest of all [western national parks]...All fish from [Olympic and Mount Rainier] exceeded health thresholds for one or more species of fish-eating wildlife; some individual fish exceeded health thresholds for humans.” (ONP Press Release “Airborne Contaminants Study Released: Feb. 26, 2008).

Whidbey basin – Action Area – p, 25

Specific Major Threats – Add/consider

- When preparing the synthesis, it will be important to include the conversion of agricultural lands to non-agricultural uses as a specific major threat, just as forest loss is reflected in the table as a specific threat.

- Blockage of salmon access: The language might mislead readers to think that the dams associated with the Skagit Hydroelectric Project block salmon from proceeding upstream. That is not the case. The Gorge reach of the project is generally regarded as marking the historical limit of anadromous salmon migration in the upper river. The confined bedrock and boulder section represents a certain barrier to upstream fish passage under baseflow and low flow conditions, and the presence of velocity barriers at high flows is also a factor.

- Noxious weeds/invasives (including spartina sp.)

South Puget Sound p. 26

Specific Major Threats: Add/consider

- Invasive noxious weeds (particularly relevant to prairies and recovery of rare species)
- Airborne contaminants – Mercury levels in snow in Mount Rainier National Park were relatively high when compared with other western parks; mercury compounds in fish were high, and all fish exceeded health thresholds for one or more species of fish—eating wildlife, with some exceeding health thresholds for humans. Mercury was also found in

vegetation samples.

Science Question 2 (S2): What do we know about the effectiveness and certainty of protection and restoration approaches aimed at addressing threats to habitat?

Elements Missing

Prairie and oak woodland habitats – The Nature Conservancy is working with Fort Lewis in close coordination with WDFW on priority strategies and actions and research agendas in prairie management areas. TNC would be a resource for information on what is currently known and what opportunities exist for advancing our understanding of threats to these habitats.

Airborne contaminants/impacts on aquatic ecosystems”: National Park Service was the primary sponsor of a study of 20 western national parks to evaluate potential threats to park ecosystems posed by airborne contaminants. Results are pending. Preliminary conclusions indicate that contaminants are carried in air masses from Europe and Asia as well as local counties. Other information on airborne contaminants is available and should be considered when developing the action agenda.

Elements/Statements with which we strongly agree

p. 27 – Effectiveness of Efforts to Protect and Restore Habitat

- strongly agree with statement that “efforts to understand the ecological results from regulations, education, incentives, and other sorts of programs have been sparse. The compelling issue is to identify and apply approaches that allow us to evaluate effectiveness and to ensure that the political will is present at all levels of government and among members of the public to do so. The San Juan Initiative method and conclusions, if available in time, should be considered in developing the action agenda (recommend contacting Jim Kramer, Kramer Consulting).

- Monitoring efforts that assess restoration and mitigation projects may have received increased funding in recent years; however, results of the monitoring efforts, including adaptive management, have not been broadly discussed or disseminated; nor have reports been uniformly required even when funded. The synthesis should include current information on how this is changing.

- P. 29 – Protection is currently regarded as the best approach to ensure long-term integrity of ecosystem processes and habitat conditions. Regulations and incentives to protect habitat are not always effective; however, not all

funding sources agree that acquisition for preservation/habitat protection purposes – one of the “hows” of protection-- is appropriate because regulations to protect habitat exist. The effectiveness of existing approaches must be evaluated and the synthesis and the work being done on financing needs to address this problem.

- Monitoring and adaptive management is critical to achieving ecosystem improvements through technical design and implementation as well as policy changes that address ecosystem needs. The challenge will be ensuring that monitoring results are brought into the broad public dialogue. Where budgets are approved for monitoring and adaptive management, agencies and entities receiving those funds should be held accountable for reports and results. For example, SRFB project proposals have historically included monitoring components but heretofore, results have neither been uniformly forthcoming nor required. Funds should be withheld and sanctions applied when project sponsors/lead entities fail to provide monitoring and adaptive management reports.

Elements/Statements with which we strongly disagree

Scientific Principles Underpinning Ecosystem Protection and Restoration

- Mitigation - p. 30. Agree that mitigation should be sited and designed within a watershed context but we caution that allowing or even encouraging mitigation actions “off-site” may not always be appropriate and depends on functions and values needed for specific species/life cycle needs. The 98% loss of intertidal habitat, coupled with the need to consider the life history of salmon, is an example of an important case in point (e.g. Commencement Bay and the lower Duwamish).

Policy Question 1 (P1): What policy approaches are being used to address land use management relative to habitat protection and enhancement in the Puget Sound region?

Elements Missing

Protecting terrestrial and aquatic ecosystems from human impacts: Federal and State (p. 34)

Add/consider

- NEPA – There are a number of federal and tribal trust lands within the state of Washington to which the NEPA process applies. The action agenda needs to include NEPA as a tool because the action agenda quite correctly advocates the use of the ecosystem approach.

- Fully contained communities – legislation at state and local governmental levels provide for fully contained communities as a tool to guide/manage growth. Despite the controversies, e.g. as in Snohomish Co., it should be included.
- Habitat Conservation Plan: An HCP is a major planning and conservation tool that is intended to accommodate development while providing for conservation of single or multiple species and because its application has implications for understanding and addressing impacts using the ecosystem approach. As is the case with NEPA, the area covered by an HCP may be a component of or fall within a larger ecosystem; but, the monitoring and adaptive management may not take into consideration impacts beyond the boundaries of the approved HCP. Accordingly, the impacts on the broader ecosystem may or may not be taken into account as adaptive management occurs. Nor is the information and process always readily shared with in a collaborative manner with other stakeholders beyond the HCP boundaries. That undercuts the ecosystem approach which the topic paper advocates. It has been estimated that about 11 million acres of timberland in Washington –about a quarter of the state-- was managed under HCPs by the end of 2005 (McClure, Post Intelligencer, 5-3-05). The Washington Department of Natural Resources and Washington Department of Fish and Wildlife, King Co. Wastewater Treatment Division and others are developing or proposing HCPs. Though not without controversy, but they are integral to a Puget-Sound-wide dialogue concerning land use management relative to habitat protection and enhancement.

Protecting Estuarine and Marine ecosystems: federal/state efforts (pp. 37-38)
Add/consider

- A regulatory tool for the protection of the aquatic environment, the multi-agency Dredged Material Management Program (ACOE, EPA, DOE, DNR) manages 8 unconfined open water dredged material sites around Puget Sound/Strait of Juan de Fuca.
- The Department of Ecology Toxics Cleanup Program addresses sediment source control activities, dredged material management, clean up activities and related efforts for the protection of the aquatic environment.

Influencing Human Activities: Incentives, Education, Stewardship and Restoration Programs
(p 30) Add/consider:

- Department of Ecology Solid Waste and Contaminated Sites – grants, financial assistance, monitoring, and other related programs

- Conservation Districts offer an array of voluntary small farm management programs and educational programs and activities concerning noxious weeds, livestock fencing, etc.

Monitoring and Adaptive Management to Ensure Ecosystem Health (p 40)

- Timber, Fish and Wildlife is an excellent example that should be included; participants should be invited to provide insights in a focus group (recommend contacting Steve Ralph and Northwest Indian Fisheries Commission).
- Consider monitoring components of HCPs and how the information gained is/can be woven into the broader array of efforts and initiatives.

Appendix P1-1 Summary of Key Environmental Regulations (p. 42)

Federal Laws: include NEPA, Clean Air Act, ESA tools

State: include Washington State Model Toxics Control Act /Department of Ecology

Toxics Cleanup Program; Washington State Clean Air Act/Department of Ecology

Appendix P1-2 Incentive Programs (p. 46)

Comment: It is very difficult to identify and list all active programs. PSP could consider providing links for environmental ed/involvement and stewardship opportunities to appropriate NGOs, governmental entities and recovery planning groups. That being said:

- Add - Toxics Clean-up : Ecology Remedial Action loans and grants/teachers workshops/technical consultations WA
- Add – American Farmland Trust – NGO . Education. Ag. species various. website: www.farmlandsinfo.org
- Add – Pioneers in Conservation – NGO. Grants. Species focus: salmon
- Habitat Conservation Plan (HCP) – p. 51 – add NMFS – both Services are involved.
- Cascade Land Conservancy p. 52 – preferable to label as land conservancy organizations – Cascade Land Conservancy is only one of several of these NGOs; all provide technical assistance and most also provide stewardship opportunities.
- Add scuba diving clubs that monitor nearshore/marine areas.

Elements/Statements with which we strongly agree

p. 39 Strongly agree about the multiple levels across which regulatory tools are spread with the result of a fragmented system of protection and

restoration and that we need “a comprehensive, consistent approach...to ensure the recovery of Puget Sound.” That is the reasons we need to include discussion of multi-agency and federal/tribal tools such as NEPA, and HCPs provided under ESA rules.

p. 40 – Strongly agree that education and involvement programs can result in long term involvement and stewardship and that “effectiveness has yet to be measured on a comprehensive scale.” Groups should be encouraged to develop performance measures that they will use to report to other stakeholders engaged in monitoring and adaptive management within watersheds.

Elements/Statements with which we strongly disagree

None

Policy Question (P2): Using the S1, S2, P1 results and risk analysis provided by NOAA, what needs to be done to address the documented threats to habitat from land use practices in the Puget Sound region?

Elements Missing

- Estuarine? – include with marine or create new category

Gaps/Limitations of Specific Regulatory Tools p. 58

- As mentioned in previous comments, HCPs, NEPA, Dredged Material Management Program, New Fully Contained Communities, and Clean Air regulations should be included in a discussion of regulatory tools.

Marine Areas (including estuarine, nearshore): It is important to refer explicitly to business (e.g. residential and commercial construction, water dependent industries, paper mills) and special district (especially ports) when discussing voluntary incentives and tools, particularly because they more often address environmental impacts as part of development/mitigation rather than as a general operating norm.

Terrestrial and Freshwater Aquatic Systems:

p. 60 – second paragraph - correct the reference re: ESA-listed salmon from “Chum” to read “Eastern Strait and Hood Canal summer chum”.

The emphasis here is on the aquatic environment. Please broaden the text to include prairie and other terrestrial components of the ecosystem as well as the impact of airborne contaminants on aquatic life or consider these issues as the synthesis work with other papers proceeds.

The Growth Management Act: Lack of political will is not mentioned; but, it is critical in terms of effectiveness. Some of the limitations in applying the GMA broader precepts and principles lie in the lack of broad citizen/resident and business acceptance, economic development drivers, political will of elected officials and other attributes that reflect short term and more self-interested human behavior. This is a reason to revisit the public outreach and education element of social change and to determine how to include businesses and special districts in a positive way.

Other development regulations: This section correctly notes variances and exemptions; the remedy is not in simply reviewing the regulations but understanding human behavior and achieving social change.

Other factors: p. 60 –

The text includes treaty rights enjoyed by Tribes as among the factors that “naturally limit the effectiveness of new regulatory tools designed to protect the ecosystem, because they authorize or excuse activities that may cause stress or impact to the ecosystem [and]..highlight the inherent limits of using regulatory tools and the need to use alternative approaches...to achieve protection and restoration.” Treaty rights do not belong in this category; nor do they deserve this characterization. Please separate treaty rights from this list and reconsider whether they in themselves need to be singled out and whether they belong in this topic paper. Fishing rights, which the Tribes retained when entering treaties with the U.S., are the basis for co-management agreements, authorities and responsibilities for harvest management; so if harvest management is seen as a limitation, that should be the category, addressed here, or reviewed within the context of the biodiversity topic forum. If PSP wants to characterize harvest management as a limitation, it is important to be fair and examine the evidence before making a conclusion.

This ignores political will, individual “property rights” and business resistance, and the lack of broad community support for applying tools that will help protect and restore the ecosystem components. There is no way around acknowledging the importance of social change through public education and involvement as a major factor in achieving the long term solution to the degrading habitats in Puget Sound.

Habitat Restoration Projects (p. 61)

Compensatory mitigation and habitat restoration: Washington DOT and watershed-based salmon recovery plan participants in several watersheds have begun to collaborate concerning potential mitigation sites in prioritized areas identified in salmon recovery plans. At least three salmon recovery

plan groups -- Green/Duwamish, Lake Washington/Cedar/Sammamish, and Puyallup/White – should be encouraged to discuss their experiences and “lessons learned” at the bi-monthly salmon recovery watershed group meetings and with PSP topic leaders.

The Partnership should include habitat restoration incentive programs for urban watersheds. For example, Seattle has a grant program that funds citizens to restore aquatic habitat along their property, as long as they can meet the requirements including 100% match.

<http://www.seattle.gov/util/aquaticgrant>

Recommendations for Achieving a Healthy Puget Sound by 2020

Science and Research Preliminary Recommendations (p. 63)

Study of cumulative effects of multiple stressors on the ecosystem: This is a vital, but complex undertaking that will no doubt require a research agenda and funding strategy.

Status and Trends Monitoring/Effectiveness Monitoring – questions to be addressed

Strongly agree that these are the right questions.

Projects funded by the Salmon Recovery Funding Board have a monitoring component. However, thus far, the SRFB has not collected monitoring data or asked for evidence the monitoring and adaptive management is occurring. The SRFB should work with the Salmon Recovery Program of PSP to collect and evaluate the manner and extent to which monitoring data is/has been collected and used by salmon recovery funding groups, and utilize the Salmon Recovery Program bi-monthly meetings to discuss how to improve implementation and effectiveness monitoring. They should also address how to weave results into the overall Monitoring and Adaptive Management Approach developed by individual watershed recovery groups and the Salmon Recovery Program.

Rapid assessment of each Action Area: These could add significantly to our understanding of issues. However, given that the Jefferson County example is not yet available, it is not possible to overcome skepticism and that all action areas could complete an adequate assessment in time for the NOAA Risk Assessment science team to consider results in their work. Budgets, logistics and a common approach should be agreed upon.

Funding scientific research – p. 64_

As important as some of these questions are, common agreement among experts on a research agenda on how to achieve answers to some of our

questions may be the best starting point. The complexities of understanding the thresholds and impacts of cumulative effects and the connection/linkage between instream flows and viable salmonids population parameters are prime candidates for expert workshops and agreement on a 3,5,10 year research agenda. An interdisciplinary review will be important in identifying socio-political factors and how/to what extent parallel initiatives can be undertaken so that science-policy linkage can ultimately be achieved.

Strongly support for the recommendation on page 64 to “Close our knowledge gaps through additional research.” In particular we need more information about how human activities affect freshwater and nearshore processes, structures, and functions.

Scientifically based strategy to choose restoration projects -p. 65
Like off-site mitigation options/opportunities, Figure P2-1 and the accompanying text must be treated within a larger context and according to appropriate criteria lest it be used as a simplistic management tool that would encourage selecting/funding projects that fall into the “larger dot” category without reflecting on site conditions and species’ needs within the ecosystem.

Building upon existing science-based conservation strategies and plans – p. 66.

Strongly agree. Please correct reference to summer chum recovery plan. It covers the Eastern Strait and Hood Canal summer chum salmon populations, not just the Hood Canal population.

Preliminary Policy Recommendations (p. 66)

1. Protection as preferred approach – strongly agree. However, allocating funds to restoration projects as the top priority encourages discounting the value of acquiring land for purpose of protecting/preserving important ecosystem processes, structures and functions. Consistency in message is important. In 2008, some SRFB Review Panel questioned proposals for acquisition, suggesting that regulatory protection tools should be sufficient and that scarce resources (\$) might be better spent on restoration projects. This paper acknowledges that regulatory and voluntary tools are not working as intended. and item 6 on page 68 also suggests the use of acquisition as a strategy to gain permanent protection.

Strongly agree with emphasis on developing clear standards on avoiding impacts; too often, the rush is toward mitigation.

Quality of life- p. 66– This would be the overarching context that is missing as the individual topic forum papers are presented and discussed, and will be important as we identify and implement solutions. We need a sound-wide dialogue, but it's important to consider what we've learned from other broad efforts such as the development of salmon recovery plans and watershed (2514) planning so that we truly make progress and have a dialogue that is broadly inclusive, stimulating and exciting, and results oriented.

Policy Recommendation pg 67 - #4

Suggest reviewing current federal, state and local environmental regulations, including SEPA, Shoreline Master Programs and Environmental Critical Areas ordinances and determine what is working and what isn't working and then recommend changes to these regulations.

Recommend compliance monitoring regarding existing regulations to find out if conditions of permits are being followed.

Based on science provide regulation standards regarding shoreline setbacks and other types of environmental protection.

Based on demonstrated passed impacts of certain activities that have not been able to be mitigated determine where these impacts can occur and where they should be prohibited.

Federal level - p. 67-68 – In addition to urging adoption of the Pew Oceans Commission recommendations, it is important to remember that they are part of the fragmentation problem. We need to engage the federal agencies such as the Corps of Engineers and the Services as partners in the clean-up of Puget Sound and hold them accountable in terms of their programs and actions affecting ecosystems and their components. It is also critical that special purpose districts such as ports are included in discussions and approaches identified to ensure local implementation with accountability requirements.

Policy Recommendation pg 69 - #9 Suggest broadening this recommendation to include Low Impact Development strategies targeted for urban areas. Also include green infrastructure and rain gardens and other flow control techniques to mitigate the impacts of urban stormwater. Andy Lipkis (Tree People) from LA has good information about such techniques.

Expanding the availability of off-site mitigation programs – p. 69 – This is a complex issue that must be presented within a broad context with

appropriate criteria. Off-site mitigation will not always represent the best course of action.

System of governance/single agency or group charged with adopting “integrated set of standards...and overseeing its implementation across Puget Sound by local governments.” We haven’t fully assessed and evaluated the effectiveness of existing tools and institutional frameworks and it is likely that true change is going to come not from rearranging structures, but with understanding and embracing the need for social change and holding our federal, state, local agencies, and business and agricultural sectors to higher standards for enforcement and implementation of regulations, permit conditions, including required mitigation actions, and monitoring/adaptive management. Looking at a single agency or group should be approached very carefully and include consideration of what the state has attempted before, e.g. PSWQA, PSAT, etc. A look at how Oregon organized for salmon recovery would be instructive.

The last recommendation of this Topic Forum paper is a “Preliminary Governance Recommendation” for creation of a single agency empowered to ensure that Puget Sound ecosystem policy goals are being met. While the desire for a super-agency with regulatory authority, this proposal, as described in the paper, is a not the right approach and has virtually no chance of enactment. A slightly different approach: instead of an agency with regulatory authority, set up a group of scientists, planners, and legal staff as a long-term “Puget Sound Wisdom Council” which reports to the Governor and is a permanent part of the Governor’s advisory cabinet. This group could even be a part of the UW and be headquartered there. There were several property rights advocates in discussions group at the topic forum who were absolutely enraged at the idea of a “son of PSP” agency with regulatory authority. A “Puget Sound Wisdom Council” without regulatory authority, would inherently have more credibility and a chance of success.

From: Tami Ishler

Date: 05/08/2008

Comment: Please find attached the Department of Natural Resources comments on the Puget Sound Partnership Topic Forums. A hard copy will follow in the mail.

General comments by the Department of Natural Resources
Aquatic Resources Division and Forest Practices Division on
Puget Sound Partnership Topic Forums

Aquatic Resource Division Comments

The Department of Natural Resources (DNR) appreciates the opportunity to comment on the Topic Forums presented by the Puget Sound Partnership. We recognize the papers prepared by the Partnership were intended to elicit comment and are not meant to be definitive statements by their authors on the subject topic. While we are impressed by the volume of work that was completed in a short time frame in the Topic Forums, we view them only as first steps. A significant amount of additional work is needed to adequately summarize the state of the resources, assess the effectiveness of existing management tools, and to identify actions. These general comments and the attached forum specific comments are provided with that understanding and with the intent that they will strengthen the work of the Partnership in its effort to restore a healthy Puget Sound by 2020.

We remind the Partnership that DNR has a unique and central role as the manager of extensive terrestrial and aquatic lands with a diverse set of both regulatory and proprietary tools. Nearly all the marine and freshwater bedlands in Puget Sound remain in state ownership and are managed by DNR. DNR Aquatics staff believe there are potential synergies from working with DNR and utilizing its proprietary authority to help protect and restore the Sound. Accordingly, forum papers, especially the habitat topic, need to consider and integrate DNR's land management role more fully in order to effectively lead restoration of Puget Sound.

The topic forums suffer from artificial limitations placed on the scope of the topic. For example, an analysis of habitat status, threats and priority actions that omits water quality is fundamentally incomplete. This limitation will be a major challenge for the Partnership to address in the cross-topic synthesis workshop especially since it will be the only identified opportunity to discuss Human Quality of Life, a topic of central interest. Human Quality of Life is critical to integrate since a significant challenge for the Partnership is to identify how the region can balance environmental needs with human well being.

Balancing how best to accommodate increased population growth and economic development with improvements to the health of Puget Sound will be difficult to achieve. The aggressive schedule for completing the Action Agenda and its supporting documents should help build public interest and their consequent buy-in to actions and needed resources. However, the Partnership must increase efforts to maintain clear objectivity in its written products so citizens, agencies and organizations will engage in the Partnership's work.

Additionally, accountability and responsiveness should be a critical component of the forthcoming Action Agenda. To that end, monitoring programs should be established to assess the effectiveness of management efforts and whether those efforts are in compliance with the applicable laws, rules and management guidelines.

Forest Practices Division Comments

Major concerns we have with the "Initial Discussion Draft Land Use/Habitat Protection And Restoration Topic Forum" (Forum) include the following.

1. The Forum's Preliminary Policy Recommendations call for "at state-level a single, integrated, set of regulations that apply in [sic] to the lands, streams and marine areas within Puget Sound to replace our present fragmented system of regulations." We are concerned that this recommendation may be inconsistent with RCW 90.71.360, which specifies,

No action of the partnership may alter the forest practices rules adopted pursuant to chapter 76.09 RCW, or any associated habitat conservation plan. Any changes in forest practices identified by the processes established in this chapter as necessary to fully recover the health of Puget Sound by 2020 may only be realized through the processes established in RCW 76.09.370 and other designated processes established in Title 76 RCW.

As you know, Washington's Forest Practices Act and Rules are built on a foundation of collaboration among the State, Indian Tribes, forest landowners, federal agencies, and others concerned with Washington's private and state forests. This foundation traces back over 20 years to the 1987 Timber, Fish & Wildlife Agreement (TFW). A call to wholesale replace our current system of regulation would be of great concern, for diverse reasons, to the caucuses that have worked together so hard, for so long, in the spirit of TFW and later, Forests & Fish. Any departure from our current system of regulation also could jeopardize the State's Forest Practices Habitat Conservation Plan, a 50-year agreement implemented in 2005 by the State, U.S. Department of Commerce / National Marine Fisheries Service, and U.S. Department of the Interior / U.S. Fish & Wildlife Service.

2. The Forum appears to assume that the Forest Practices Act and Rules were last updated in 1987 ("Updates to the FPA were added in 1987, as a result of the 'Timber, Fish and Wildlife' negotiations ..."). No mention is made of Washington's 1999 Forests & Fish Report, which was subsequently enacted into law by the legislature, then translated into major revisions to the

Forest Practices Rules adopted by the Washington State Forest Practices Board (Board) in 2001. We are concerned that the Forum's perspective on the Act and Rules may be skewed, as it appears to assume that 2008 levels of public resource protection are the same as those that existed 20 years ago.

This "1987" perspective is again reflected in the statement, "The [1987] update also failed to address issues relating to small forest landowners (mainly those with parcels smaller than 20 acres in size)." As part of the 2001 rule changes, and since that time, several initiatives have been implemented to help maintain the viability of small forest landowners. These include the Forestry Riparian Easement Program, changes to road maintenance and abandonment plan requirements, the Family Forest Fish Passage Program, and long-term (up to 15-year) forest practices approvals.

3. The Forum overlooks the existence of the Forest Practices Adaptive Management Program (AMP):

Monitoring and adaptive management programs are sparse in Puget Sound. Although good examples of programs do exist ... there are few regulatory programs that require their use. This is an area where a significant gap exists in management tools in Puget Sound.

The AMP is a requisite, integral part of the Forest Practices Rules. Its purpose is "to provide science-based recommendations and technical information to assist the board in determining if and when it is necessary or advisable to adjust rules and guidance for aquatic resources to achieve resource goals and objectives." Over \$20 million in federal and state funding has been obtained over the past 8 years to implement dozens of scientific projects. Significant funding has been secured for the future; additional work is planned.

Time constraints prevent us from providing more detailed comments on the Forum at this time. We hope that the points noted above illustrate the need for increased interaction between the Partnership, DNR, and other organizations that are playing a leadership role in the conservation of Puget Sound's forest ecosystems.

Please let us know how the Forest Practices Program can best engage with the Partnership to accomplish the important work that is before us.

Forum-specific comments by DNR Aquatic Resources Division and Asset Management and Protection Division on Puget Sound Partnership Topic Forums

PugetSoundPartnership

our sound, our community, our chance

From: Jane Lamensdorf-Bucher

Date: 05/08/2008

Comment: Attached please find a cover letter from Theresa Jennings, Director of the King County Department of Natural Resources and Parks, and the following sets of comments on the Puget Sound Partnership topic forum discussion papers and risk analysis:

- 1) General Comments
- 2) Human Health
- 3) Land Use-Habitat
- 4) Water Quality
- 5) Species-Biodiversity
- 6) Water Quantity
- 7) Risk Analysis

We are also sending a hard copy to your attention at the Puget Sound Partnership address in Olympia.

see PDFS:

cover ltr to MNeuman from TJennings re comments.pdf

KC General Comments pdf

KC HumanHealth Comments pdf

KC LandUse-Habitat Comments pdf

KC Water Quality Comments pdf

KC Species-Biodiversity Comments pdf

KC Water Quantity Comments pdf

KC Comments on Risk Analysis pdf

From: Stewart Toshach

Date: 05/08/2008

Comment: Please forward attached comments/analysis to appropriate people in the Partnership or Science Panel.

See document:

PSP Topic Forums_data needs_2008-05-07.doc

From: Randall Marshall

Date: 05/07/2008

Comment: I cannot send this to you except as a private citizen. I am sure that you will at least find the references useful. Perhaps the proposal for monitoring urban streams as well.

The Need For Biological Effects Monitoring of Urban Streams in Washington State

Discussion Draft – November 6, 2007

by Randall Marshall, WET Coordinator

Executive Summary

I. Problem Definition

Pacific Northwest fish populations are susceptible to the toxicity of urban storm water. Salmon spawn in urban streams. Forage fish on which salmon depend are exposed to storm water contaminants along urbanized shorelines during spawning in winter. Storm water commonly contains metals, PAHs, and pesticides. Copper is very bad for salmon and for the invertebrates on which they feed. Polycyclic aromatic hydrocarbons (PAHs) have very bad effects on fish eggs (embryos). Pesticides at low concentrations can have adverse effects on fish or invertebrates.

II. The Need for Biological Monitoring of Storm Water Effects

Biological monitoring can guide and justify the commitment of public resources for urban runoff control. The public will understand better the biological consequences of water quality degradation or improvement than numbers generated by physical or chemical measurements. Chemical analysis is inadequate by itself. Many toxic pollutants cannot easily be detected by chemical analysis. Little toxicity information is available for many chemicals. Mixtures of chemicals can have unknown combined effects. Biological monitoring does not have these disadvantages and has demonstrated its usefulness in assessments related to storm water.

III. The Need for Ambient Monitoring of Storm Water Effects

Laboratory toxicity testing of ambient samples assesses the combined effects of all upstream sources and can determine cause and effect. In situ toxicity testing reflects real environmental conditions and improves interpretation of results. Ambient or in situ toxicity testing can be done with important local species which are not approved for NPDES compliance monitoring. Far fewer ambient samples are needed than would be for monitoring storm water outfalls. Monitoring of ambient water toxicity has a long history in Puget Sound and around the nation. The SeaTac Airport storm water permit

requires testing stream samples for toxicity to rainbow trout embryos and has withstood appeal before the Pollution Control Hearings Board.

IV. The Benefits of Integrated Receiving Water Monitoring Techniques

Monitoring would be best done using lab toxicity tests, in situ toxicity tests, and instream bioassessments in an integrated package. Instream bioassessments reflect real world conditions but cannot easily establish a cause and effect relationship. Laboratory tests can establish a cause and effect relationship, but that relationship may not reflect real world complexity. In situ toxicity testing falls in between field and laboratory techniques by exposing test organisms under environmental conditions while retaining some of the control of a lab test. These techniques performed together can provide information useful for controlling storm water.

V. Urban Stream Monitoring Proposal

A small set of biological monitoring techniques can identify pollutants in urban streams at levels of concern and direct efforts to reduce these pollutants in storm water. The approach would be cost-effective and also protect urban bays. The proposal describes using benthic invertebrate assessments, toxicity testing of salmonid embryos and fry, and daphnid or amphipod toxicity testing in an integrated system combining realistic environmental assessment with the ability to determine cause and effect relationships. The system is structured to protect salmon reproduction.

VI. Regulatory Rationale

WAC 173-205-030(6) allows permits to require ambient toxicity testing in order to facilitate the determinations in WAC 173-201A-400 for granting a mixing zone including demonstrating that a mixing zone will not result in loss of habitat, interfere with beneficial uses, be a barrier to migration, or otherwise harm the ecosystem. A similar demonstration would be involved in complying with the narrative water quality criteria in our state's standards.

VII. References

I. Problem Definition

Pacific Northwest fish populations are particularly susceptible to the toxicological effects of urban storm water runoff. Adult salmon return from the ocean to spawn in urban rivers and streams and their offspring must survive and develop within these urban areas. The forage fish on which adult salmon depend for food also have exposure to storm water contaminants

along urbanized shorelines. Surf smelt and sand lance spawn in sediments in the intertidal zone along the increasingly urbanized shorelines of Puget Sound. Pacific herring spawn along the shores of bays near the mouths of urban streams which are dominated by storm water during the herring winter spawning season.

Copper is a ubiquitous storm water pollutant and may be the worst-case toxic metal for adverse effects to salmonids. The 96-hour LC50 for yearling coho salmon exposed to dissolved copper is in the range of 60 – 74 $\mu\text{g/L}$. An EPA study found that dissolved copper at concentrations of 5 $\mu\text{g/L}$ or above impaired the migration of yearling coho downstream. [1] Other studies found a variety of adverse effects associated with copper. Juvenile chinook salmon exposed for 1 hour to 50 $\mu\text{g/L}$ dissolved copper or for 4 hours to 25 $\mu\text{g/L}$ dissolved copper lost a significant number of olfactory receptors reducing the ability to smell. [2] Fingerling rainbow trout exposed to dissolved copper concentrations of 10 $\mu\text{g/L}$ for 24 hours showed greatly increased mortalities from a common viral salmon pathogen (IHN) compared to rainbow trout receiving a virus exposure but no copper and rainbow trout receiving a copper exposure but no virus. [3] Steelhead salmon embryos, alevins, and fry intermittently exposed to copper for 4.5 hours each day for 78 days exhibited greater impairment than other steelhead salmon of the same age continuously exposed to the same concentrations indicating that water quality criteria based on continuous exposures may be inadequately protective for intermittent exposures to contaminants in runoff from rain events. [4]

Polycyclic aromatic hydrocarbons (PAHs) are another class of compounds that are ubiquitous in urban runoff. PAHs are persistent, bioaccumulative, and often toxic. The most serious consequences from PAH exposure occur in the earliest life stages of fish. Surf smelt hatched from eggs exposed to Eagle Harbor and Elliott Bay sediments containing PAH levels as low as 10 mg/kg along with other contaminants had reduced growth and an increase in mortalities and malformations. [5] Studies have shown reduced survival and increased developmental problems in pink salmon hatched from eggs exposed in a laboratory to PAH concentrations in water at 16.4 ppb and perhaps as low as 1.0 ppb. [6, 7] Dissolved and particulate PAHs at levels perhaps as low as 0.7 ppb produced mortalities, malformations, genetic damage, decreased size, and impaired swimming in Pacific herring hatched from eggs exposed for 16 days in a laboratory. [8] Some PAHs become much more toxic after exposure to sunlight. [9, 10]

Because urban runoff is freshwater and usually warmer than marine waters, it will float on top of the saltwater in an urban bay and deliver contaminants

directly to the sea surface microlayer. Flat fish eggs are buoyant and incubate near the surface. Sand sole eggs incubated in surface water samples taken from Elliott Bay and Commencement Bay in February and March had reduced hatching success and increased chromosomal aberrations relative to samples from Sequim Bay and Central Puget Sound. Sand sole eggs incubated concurrently in floating containers in Elliott Bay and Commencement Bay had half the hatching success as in Sequim Bay and verified that the results of the laboratory testing reflected what was happening in the environment. A statistical evaluation of the chemicals found in surface water samples showed that toxicity was likely due to a combined effect of the PAHs, pesticides, PCBs, and metals in the surface water layer of the urban bays. [11, 12]

Organophosphorus and carbamate pesticides are toxic to fish and act by inhibiting a compound which regulates nerve impulses (acetylcholinesterase). These pesticides are widespread in urban and agricultural runoff. Diazinon, an organophosphorus pesticide, has been found to inhibit antipredator behavior in juvenile chinook salmon exposed to 1 µg/L for 2 hours and to inhibit homing behavior in maturing chinook salmon exposed to 10 µg/L for 24 hours. [13] The scientists suggested that olfactory impairment was involved in reducing the chinook salmon antipredator and homing behavior in their study because another study showed that diazinon interferes with milt release from male Atlantic salmon by blocking the ability to smell roe immediately after deposition by a female. [14] A study in California found that diazinon and chlorpyrifos are significantly more persistent in seawater than freshwater and recommended that these pesticides be reduced in freshwater streams before entering saltwater. [15]

II. The Need for Biological Monitoring of Storm Water Effects

Success measures showing improvements for our aquatic and marine species are a prerequisite for a sustained effort in managing storm water. The beneficial uses for the nation's waters in the Clean Water Act are biological in nature. Biological monitoring will be important for guiding and justifying the commitment of public resources for urban runoff control. The public will better understand the biological consequences of water quality degradation or improvement than they will the numbers and associated units generated by physical or chemical measurements.

Chemical analysis of storm water or receiving water samples is inadequate by itself for evaluating environmental impacts. Many toxic pollutants cannot be detected by commonly available chemical analyses. Many of the

chemicals that can be detected have little toxicity information available on them. Many of the chemicals with known toxicity have unknown additive or synergistic effects when present in complex mixtures. A study mentioned above showed that intermittent exposures to copper were worse for steelhead embryos, alevins, and fry than continuous exposures at the same concentrations. [4] A study of runoff toxicity in the Vancouver BC area looked into the contribution to toxicity of four metals at concentrations found in storm water and found that lead enhances the toxicity of copper and zinc and that iron reduces the toxicity of copper, zinc, and lead. [16]

The following are some examples of the kinds of benefits from biological monitoring techniques:

- Samples collected from urban streams in Sacramento and Stockton, California during the rainy season were tested for toxicity to daphnids. Thirty-six of 47 samples (76.6%) produced total mortality within 72 hours. Toxicity identification evaluations confirmed that toxicity was primarily due to diazinon and chlorpyrifos use in urban areas. Pesticide concentrations were lower in a commercial and industrial area compared with a residential area. [17]
- Toxicity tests were used to evaluate the effectiveness of an urban runoff treatment marsh in Fremont, California. The study produced a recommendation to increase storm water detention in order to facilitate additional toxicant removal. The same toxicity tests were used afterwards to document improvements in performance after floating baffles were installed to increase detention time and discourage discharge of water from the more toxic surface layer. [18]
- An assessment of fish populations in the Willamette River showed that point source discharges contributed much less to the gradual downstream decline in water quality and fish species diversity than did natural causes and nonpoint source discharges. The study also found that fish populations had improved in some locations in recent years and suggested that impoundment of winter runoff to compensate for the loss of natural storm water runoff storage systems was responsible. [19]
- A study of fish populations in Kelsey Creek in Bellevue, Washington found that both salmon and other native fish species were displaced by cutthroat trout within the urbanized watershed. A simultaneous study of the nearby but rural Bear Creek found a more natural balance of fish species which included many more coho and chinook salmon than in Kelsey Creek. Urbanization seems to favor cutthroat trout over both salmon and non-salmonid fishes such as sculpins. [20]
- A study quantified the changes in fish populations from 1958 to 1990 in Tuckahoe Creek, a Virginia stream subjected to gradual urbanization of its

watershed. This study found a similar change in fish population structure as that discussed above for Kelsey Creek. Bluegills and common shiners had become the dominant fish species rather than a once greater variety of fish. Reductions in benthic invertebrates were thought to be a major cause of this shift in species structure. [21]

- In order to develop information to use in establishing guidelines for nearshore development in British Columbia, the Canada Department of Fisheries and Oceans recently did an assessment of the fish species which use Burrard Inlet. The study found that habitat and the fish species which depend on it appeared to be healthy in Burrard Inlet at that time. By quantifying which fish species use Burrard Inlet at different seasons of the year, the study produced a baseline for comparing future monitoring of fish populations and preventing significant habitat destruction. Other shoreline habitats in the Vancouver area were degraded by industrial and commercial development before their fish populations had been assessed. [22]

III. The Need for Ambient Monitoring of Storm Water Effects

Ambient toxicity testing would focus resources on toxicity hotspots and have other advantages:

- Toxicity tests are broad spectrum and will detect any toxicant or toxicant combination. Chemical analysis is only efficient when all of the potential toxicants are known and the list is small in number. When there is a large number of potential toxicants or the possibility of unknown toxicants, toxicity testing is the best method for assessing water quality. A study in Chesapeake Bay demonstrated that ambient toxicity tests can find exceedances of water quality criteria and detect unknown toxicants. [23]

Another Chesapeake Bay study found ambient toxicity test results to correlate well with fish community diversity. [24]

- A far smaller number of samples and tests are needed for assessing ambient water quality than would be for monitoring thousands of storm water outfalls for individual chemicals and toxicity. The cost will be much lower for sampling, testing, and data management.

- Ambient toxicity tests assess environmental impacts under real world conditions. There is no need to worry whether the analytical method is over-estimating impacts by including nonbioavailable fractions in the evaluation. Tests conducted on ambient samples or in the stream itself will detect the toxicity from all upstream sources: point sources (industries and POTWs), nonpoint sources (storm water and groundwater), and natural (toxic phytoplankton).

- Toxicity tests can be chosen to fit specific circumstances. Testing can be done with important local species that were not necessarily used in deriving

the chemical-specific water quality criteria. The variety of toxicity tests available for ambient testing is quite large since we are not confined to only those tests approved for NPDES compliance monitoring.

- Getting samples of storm water discharges that accurately represent the environment is very difficult. Storm water toxicity varies widely as pollutant loading rises and falls and as the proportion of toxicants in the dissolved versus suspended state changes rapidly. A study measured storm water toxicity to daphnids in samples taken every 20 minutes during a 4-hour rain event in Vancouver BC and found a toxicity peak in the first flush, another worse peak about 2 hours into the rain event, and then the worst toxicity a little past 3 hours into the storm. [4]

- Monitoring of ambient water toxicity has a long history in Puget Sound [25-28] and has been used around the nation to assess the impacts of nonpoint source discharges [29-31]. The NPDES permit for SeaTac Airport contains requirements to test stream samples for toxicity to rainbow trout embryos in order to assess the impact of storm water runoff. These requirements withstood appeal before the state Pollution Control Hearings Board.

IV. The Benefits of Integrated Receiving Water Monitoring Techniques

Meaningful storm water monitoring would be best done using lab toxicity tests, in situ toxicity tests, and instream bioassessments in an integrated package [32-35]. Instream bioassessments reflect real world conditions but cannot easily establish a cause and effect relationship because of known and unknown factors that interact in complex ways. Laboratory tests can establish a cause and effect relationship by keeping all factors constant except the one factor of interest, but that relationship may not remain intact in the complex real world. In situ toxicity testing falls in between field and laboratory techniques by exposing test organisms under environmental conditions while retaining some of the control of a lab test. The same test species should be used for both in situ and laboratory testing so that the strengths of one method can more readily offset the weaknesses of the other in resolving environmental questions.

Laboratory tests provide the controlled conditions needed to separate effects due to toxicity from other stressors. Toxicity identification evaluations (TIEs) for identifying unknown toxicants can only be performed in a lab. Quality assurance procedures such as reference toxicant testing are laboratory-based. Laboratory tests can be performed on a series of dilutions so that the concentration-response relationship can be evaluated to estimate how much additional reduction in storm water pollutants is necessary and to detect anomalous test results. Extreme weather or flow conditions can

prevent successful in situ monitoring but have little influence on the availability of laboratory toxicity tests. Lab tests should be performed on ambient samples, and storm water discharge samples should be tested only when necessary to find the source of receiving water toxicity.

In situ testing is done by exposing test organisms in a test chamber that is placed in the stream under realistic exposure conditions. In situ testing avoids the need to choose between grab versus composite sampling, time-weighted versus flow-weighted composites, first flush sampling versus peak flow, etc. Storm water toxicity often occurs in pulses [4, 36] and laboratory tests performed on samples collected during or between pulses will either over-estimate or under-estimate toxicity. Hardness, temperature, pH, dissolved solids, suspended solids, dissolved oxygen, dissolved organic carbon, and exposure to sunlight can all affect toxicity and only in situ testing can reflect actual environmental conditions. In situ testing locations should coincide with instream bioassessment locations so that results can be used in interpreting bioassessment results for that location.

Environment Canada has developed laboratory tests and in situ tests on early lifestages of rainbow trout [37-38]. Every lifestage used in the in situ salmonid testing has a laboratory version which can verify and identify toxicants. The in situ trout embryo test procedure has been used in Canada to assess the effects of mining discharges [39]. Rainbow trout are in the same genus as our endangered salmon and are available year round. The same technique can be done using other salmon such as coho when they are available. Salmonid embryos are highly sensitive when exposed to a variety of environmental contaminants [40-44]. Many of the studies discussed above also raise serious concerns about storm water pollutant effects on the embryos of other important fishes in Washington State. The discharge permit for SeaTac Airport storm water requires sampling adjacent streams for trout embryo testing.

The in situ procedure involves an exposure of trout beginning at the eyed-embryo stage. The laboratory version of the test might be more sensitive because embryo exposure begins soon after fertilization. Test endpoints include survival, normally developed larvae, and larval growth. In addition to the test endpoints, the tissue concentrations of anthropogenic chemicals can be measured at test termination to determine whether the fish were exposed to bioconcentratable pollutants. This may also provide insight into causes of reductions in normal development or growth. The in situ test can be continued into or begun with the fry lifestage to account for toxicants affecting fry more than embryos. Studies have shown that rainbow trout and Atlantic salmon fry are the most sensitive lifestage to nonylphenol, a

common environmental contaminant that is sometimes found in storm water. [45-46]

Bioassessments are the most direct measure available of ecosystem health. Benthic invertebrates are by far the easiest organisms to survey for impacts because they are less mobile than organisms which swim or drift in the water column. These benthic organisms sustain a constant exposure by remaining nearly stationary and are easy to collect and quantify. Benthic invertebrates are a key food source for fish in streams. For these reasons, monitoring of benthic invertebrate communities is widely used for evaluations of stream health by use of metrics such as the Benthic Index of Biotic Integrity (B-IBI). The B-IBI is an effective and generally reproducible tool for evaluations of benthic invertebrates and the quality of the environment that supports them. Bioassessments also detect adverse effects that are not related to toxicity such as siltation, scouring by floods, diseases, or natural population cycles. Any toxicity causing adverse effects to benthic invertebrate populations might come from water and/or sediments.

A method for benthic invertebrate monitoring in which rocks are put in cages, placed on or within bottom sediments, and evaluated later for colonization by benthic invertebrates has been used in Maine and elsewhere. The in situ colonization test can produce similar results to those obtained by traditional B-IBI measurements at a lower cost. This method allows control over substrate type and size in order to avoid differences in sediment quality between stream stations which reduce the ability to separate toxic effects from substrate effects in some B-IBI results. It also allows more control over siting in order to determine sources of toxicity, more frequent measurements at many locations than possible by sampling from benthic communities, and the ability to assess locations not conducive to traditional B-IBI measurements.

Daphnid acute tests are widely available, relatively inexpensive, and good surrogates for benthic invertebrates. Daphnids have proven to be reliable in both laboratory testing and for in situ monitoring of storm water. Daphnids and amphipods are known to be among the most sensitive of test organisms to metals and pesticides [15-16, 47] and will provide protection for salmonids against the effects of copper and pesticides discussed above. EPA has developed toxicity identification procedures using daphnids which have successfully identified unknown toxicants in storm water.

V. Urban Stream Monitoring Proposal

A small set of biological monitoring techniques can detect and identify

pollutants at levels of concern for urban streams and help direct efforts to reduce these pollutants in storm water. The proposed approach would be cost-effective and is structured to protect salmon reproduction by focusing on sensitive early lifestages such as eggs and fry and on the invertebrates needed by young salmon for food while growing up in urban streams. Once thoroughly implemented within an area, it would also protect urban bays and their fish populations from storm water contamination conveyed by urban streams. The steps in this stream monitoring approach should be implemented on an as needed basis in order to minimize cost.

Invertebrates:

1. Monitor benthic invertebrate communities at standardized locations by use of the Benthic Index of Biotic Integrity (B-IBI).
2. Use the in situ benthic invertebrate colonization method to increase measurement frequency and answer questions about the source of impairment found by the B-IBI.
3. Use in situ testing with daphnids or amphipods to verify toxicity as causing impairment in benthic invertebrate communities and to search for sources.
4. Use daphnids or amphipods in lab testing to identify toxicants which may be adversely affecting invertebrate populations.
5. If toxicity is not found in lab or in situ testing, assume that toxicity is not the cause of the adverse effects on benthic invertebrates.

Salmon:

1. Conduct in situ testing using rainbow trout embryos and fry at the same locations as the B-IBI measurements. When toxicity is detected, include additional upstream locations to find sources.
2. Use the laboratory versions of the trout tests to verify and identify toxicants. Analyze tissue concentrations if necessary.

Other Parameters to Measure: Measure temperature, pH, dissolved oxygen, total suspended solids, hardness, alkalinity, conductivity, and stream flow at the same times and locations to provide inexpensive supplemental information.

VI. Regulatory Rationale

Biological monitoring of urban streams would be a prudent step to take now. Environmental problems would be found sooner and fixed. Progress in protecting urban streams could be documented using biological data of obvious relevance to scientists, regulators, and the public. In addition, the information generated would support the regulatory determinations

discussed below concerning compliance with water quality standards in urban streams receiving storm water.

The considerations which would apply in determining compliance with the narrative criteria for toxicity in the state water quality standards are found in WAC 173-201A-240(1) and (2) which say:

(1) Toxic substances shall not be introduced above natural background levels in waters of the state which have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the department.

(2) The department shall employ or require chemical testing, acute and chronic toxicity testing, and biological assessments, as appropriate, to evaluate compliance with subsection (1) of this section and to ensure that aquatic communities and the existing and characteristic beneficial uses of waters are being fully protected.

In addition, WAC 173-205-030(6) says:

The department may conduct or require permittees to conduct toxicity tests on ambient water or may use or require permittees to use ambient water as dilution water in order to facilitate the determination of compliance with WAC 173-201A-100 (now WAC 173-201A-400).

WAC 173-201A-400(4) and (10)(b) set conditions for when mixing zones or exceedances of the mixing zone size limits and overlap criteria are allowable for storm water. These conditions include demonstrating to the department's satisfaction that the proposed mixing zone will not result in the loss of habitat, interfere with beneficial uses, be a barrier to migration, or otherwise harm the ecosystem. Given the small size of many urban streams and the large number of storm water outfalls discharging to them, it will be difficult to implement numeric water quality criteria without the ability to allow, where justified, exceedances of the mixing zone overlap criteria. Integrated biological monitoring will be needed to provide this justification.

The integrated biological monitoring in this proposal could be used to determine compliance with a narrative water quality standard, establish where mixing zones or exceedances of overlap criteria are justified, evaluate progress in managing urban storm water, and provide for a cost-effective and more direct measure of watershed health. In doing so, it would supplement assessments related to other storm water concerns, such as flow and pollutant loading, in achieving a comprehensive management system.

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From: Mark Hersh

Date: 05/07/2008

Comment: Please consider these comments for both the Water Quality discussion as

well as the Land Use/Habitat Restoration and Protection discussion. Also, please forward on to the Ecological Monitoring and Adaptive Management work group. Attached are three documents from Ecology, one marked “draft,” dated April 3, 2008, and the other a letter from Jay Manning to the Forest Practices Board, dated April 4, 2008, and a joint Ecology/USEPA document dated January 11, 2006.

The Ecology documents state that the monitoring/adaptive management program set up by the Forests and Fish Report in 1999 will fail to provide Ecology with the needed information whether to extend the “Clean Water Act assurances” provided by both Ecology and EPA in 1999. The assurances were designed to delay the development of TMDLs for watersheds all or predominantly in forests (see “cwa 0106 white paper” document).

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

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

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

Attached PDF files:

Review of CWA Assurances (Ecology draft 4-3-08).pdf

PugetSoundPartnership

our sound, our community, our chance

Forest Practices Board 4-4-08.pdf
cwa_0106whitepaper.pdf

From: Allison Butcher

Date: 05/07/2008

Comment: Attached please find our association's initial comments on several of the topic forum discussion papers. Please let me know if you have any questions.

Attached PDF file:
Topic Forum Papers_May_08.pdf

From: Naki Stevens

Date: 05/07/2008

Comment: For Water Quality, Habitat, and Biodiversity papers: Copper in stormwater runoff might play a role in coho kill-off in Longfellow Creek.

attached pdf file:
mccarthy.pdf

From: Darlene Schanfald

Date: 05/06/2008

Comment: This is Part 2 of the submission from the Olympic Environmental Council regarding our comments for the Topic Forum issues.

Air Operating Permits (AOP). (continued)
AOPs are overseen by two agencies. Ecology has selective oversight of some industrial sites; the Clean Air Agencies (CAA) over others. We strongly recommend that all AOP's be put under the CAAs in order to have consistent laws, oversight and enforcement.

Currently, Ecology's AOP regulations and oversight are so lax that industry has little regulation, which is why there is so much air pollution.

Example (and see attachment)
http://seattletimes.nwsourc.com/html/localnews/2004189039_mill19m.html

The Director of Ecology needs to direct staff to respond to concerns of citizens,

EPA and ORCAA.

Ecology must do the following to satisfy the citizens, to protect their health, and to protect Puget Sound.

A more responsive and transparent Department of Ecology:

- 1) An investigation should be conducted at the Department of Ecology to uncover reasons deficient permits are granted to industries that emit pollutants, and to weed out the root causes of an agency culture that has grown inappropriately cozy with the industry it is meant to regulate, while demonstrating hostility to the public it is chartered to protect.
- 2) Laws require there be adequate reliable monitoring data to prove compliance. Citizen reports of apparent permit violations to Ecology must be recorded, investigated, and tracked, and details of any investigation must be passed on to citizens and/or be made available upon.
- 3) Appropriate fines should be levied. Companies that need air(AOP) and water (NPDES)permits to pollute should put up significant funding for potential cleanup purposes. These monies can be banked by Ecology for future need. Legislation that lets polluting companies decide the type of guarantee it will give the agency should be done away with and proactive legislation should be written that protects the public good.
- 4) As the only agency with the legal right to request additional emissions information from corporations, Ecology must honor data requests from other agencies and not refuse legitimate requests from the Washington State Department of Health and the Clean Air Agencies.

OVERSIGHT AND ENFORCEMENT

- 1) An enforced responsive and transparent policy for citizen complaints about mill emissions.
- 2) Ecology must conduct more mill inspections.
- 3) Ecology must require reporting of emissions from the ponds on industrial sites.
- 4) Ecology must review mill complaint records monthly to ensure that maintenance problems do not continue for protracted periods of time.
- 5) Ecology must cite and fine industry when it a company is violating the Facility Wide General Requirements (FWGR) #'s 1, 2, and 7.
- 6) Ecology should conduct a study of soils for contamination as a result of contaminated dust/particulates from the mill emissions

AIR OPERATING PERMIT

- 1) Permits must "allow for meaningful review."
- 2) Permits must require 24-hour access to a real person via phone who can take citizen reports and begin an immediate investigation of problems as they arise.

- 3) Permits must require companies to report to Ecology citizen reports that include investigative information about mill conditions.
- 4) Companies must be required to promptly report all citizen reports
- 5) Permits must require monitoring of ambient air in the surrounding neighborhoods.
- 6) Permit must require complete testing and monitoring of pond conditions.
- 7) Companies must be required to document working order of equipment to Ecology monthly.
- 8) Permits must include a full accounting of fuels used and the contaminants contained in those fuels.
- 9) Permits must require more complete testing of reprocessed fuel oil (RFO) and a full air pollution modeling study on the effects of burning hazardous waste in the air.
- 10) Permits must request testing of the RFO ash composition.
- 11) Permits must require documentation of mill procedures to prevent the ash in company landfills from becoming fugitive dust.
- 12) Determination of waivers for meeting daily emission limits for criteria pollutants should be based on recent data, not data a decade old and reported to Ecology annually
- 13) Permits needs to require companies to meet the additional requirements for an acid rain generator.
- 14) Permit exemption limits need to be minimized.
- 15) There should be direct measurement of the most hazardous chemicals emitted by companies.
- 16) All TRS gases need to be reportable on a twice-daily average to track whether the polluter is increasing emissions at night.
- 17) Ecology must be given records for ALL fuels of ALL types used by companies.

COMPANIES THAT POLLUTE THE AIR

- 1) Companies should share monitoring and air condition information with the public and public agencies.
- 2) Companies should respond to citizen reports and comments with respect.
- 3) Companies should resolve their emission problems, especially on keeping air pollution equipment in good operating condition.
- 4) Companies should upgrade their equipment; grand fathering equipment should cease.
- 5) Companies should install pollution control equipment throughout their sites, and assure that the reprocessed fuel oil (RFO) does not have chlorinated compounds and solvents in the fuel.
- 6) Companies should capture all their pollutants and recycle materials that can be reused.

Adequate monitoring must be included in permits:

Per WAC 173-401-615, All air pollution laws must have adequate reliable monitoring that allow compliance to be judged.

Some State Laws that Ecology has refused to enforce:

Code:WAC 173-401-615

Monitoring and related recordkeeping and reporting requirements.

(1) Monitoring. Each permit shall contain the following requirements with respect to monitoring:

(b)

Impacts to health and property are banned by state law:

(WAC 173-400-040(5):

"The permittee shall not cause or allow emission of any contaminant if it is detrimental to the health, safety, welfare of any person, or causes damage to property or business."

WAC 173-400-040(4)

Air Act: Any person causing odor which may unreasonably interfere with use and enjoyment of property must use recognized good practices and procedures to reduce odors to a reasonable minimum

WAC 173-405-040 (10)

"The permittee shall at all times, including periods of abnormal operation and upset conditions, to the extent practicable, maintain and operate any affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practice."

WAC 173-400-105(2):

"Ecology shall conduct a continuous surveillance program to monitor the quality of the ambient atmosphere as to concentrations and movements of air contaminants. As a part of this program, the director of ecology or an authorized representative may require any source under the jurisdiction of ecology to conduct stack and/or ambient air monitoring and to report the results to ecology."

WAC 173-405-072(5)

§.. "Other data: Each kraft mill shall furnish, upon request of ecology, such other pertinent data required to evaluate the mill's emissions or emission control program".

PESTICIDES

The attached photos show the results of a snail whose habitat was invaded by Garlon 3A, compliments of the WA State Department of Transportation. Don't

let the snail die in vain. Use it as the poster life for what pesticides are causing.

This was incident at Jimmy Come Lately Creek area in Blyn WA. Jimmy Come Lately Creek was just restored for salmon habitat with millions of dollars of federal, state, regional and local governments, including employee time and resources. Yet, the WA State Department of Transportation has no compunction about spraying the area to hold back vegetation along the highway, even though the highly toxic substance will float, one way or another, right into the Creek.

Some of the areas

sprayed extended down toward the creek and estuary and into the woods on the east

side of the estuary. The spray was as close as 10 feet away from the water.

Talk about cumulative affects! Noxious weed programs, county roadside vegetation management, the WA State Department of Transportation, the WA State Department of Agriculture, and the WA State Department of Natural Resources all apply cides, and right into wetlands.

Here's a local example of how cavalier and insensitive to harm government can be. In 1990, Clallam County banned county roadside spraying on ALL rights of ways to maintain vegetation, and have moved to mowing. Yet, a few years ago they turned to spraying the recreation trail, used for health, that runs from eastern Clallam County west to the City of Port Angeles and beyond, and with little to none notification that the trail area is sprayed with poisons that take 6 months to 2 years to have no impact, except that the area is sprayed more than once, so there is always a health and environment impact. This is were pregnant women, women of child bearing age, youngsters, babies are strolled, and pets are walked, as well as where wildlife tries to survive. Trail maintenance volunteers are too lazy to pull weeds along the trail and wanted to use toxins. Well, toxins only make plants resistant to the toxins, so the situation is bizarre and the county personnel does not want to educate the volunteers on the hazards of cides, or become educated themselves. Who suffers, all those using the trail and the wildlife.

DNR aerial sprays. And on and on. Besides killing and maiming wildlife and eventually humans that are in the way, the poisons end up in surface and ground water; and in soil that blows all around.

OEC does not need to send you reading material. You should already know the issue and have easy access to getting more.

In sum, WA State needs to wean itself off of toxins and work with organizations like the WA Toxics Coalition, the Eugene OR based NW Coalition for

Alternatives to Pesticides (NCAP), and the WA D.C. based Beyond Pesticides to plan a strategy to do this. Money will be needed from the WA State Legislature to bring such groups together to plan an agenda which will include the development of safe methods for handling noxious weeds, roadside and forest vegetation, etc., and, most of all, a plan to educate state employees, the medical industry personnel, nurseries, and the public on why they should not use poisons and what they can effectively substitute.

Many people are sickened and die from these poisons, acutely or over time. Many can not even afford to get well because they can't afford medical care. Public health must count, and so must the environment. These must be the two highest priorities to make healthy and keep healthy.

AQUACULTURE

Volumes of material have been written on this subject. Shamefully the WA State Department of Fish and Wildlife participates in this very toxic industry. NPDES permits are given to this industry by Ecology to pollute. And now DNR is involved.

The farmed fish industry is helping to poison Puget Sound, damaging bottom lands and ruining marine habitat and all aquatic life around these sites. Atlantic Salmon escapees have managed to take over wild spawning streams and move out the wild salmon from their historic sites. Sealice abound in penned fish. Diseases can spread between wild and penned fish. Interbreeding between the escaped penned fish and wild salmon have occurred, further ruining the wild gene pool. The penned fin fish food has enough toxins involved that pregnant women are warned not to eat the fish. Retail sellers don't label these as farmed fish. And NOAA is pushing to fill our waters, in state and beyond state boundaries, with penned fish farms.

<http://www.doh.wa.gov/ehp/oehas/fish/farmedsalmon.htm> lists some of the environmental concerns, yet exhibits no back bone to protect the public.

The West Coast Governors' Agreement on Ocean Health Draft Action Plan does not hold back on the problems this industry causes.

(<http://query.nytimes.com/gst/fullpage.html?res=9A01E3D81031F93BA15756C0A9659C8B63&sec=&spon=&pagewanted=all>)

Issues of Purity and Pollution Leave Farmed Salmon Looking Less Rosy

By MARIAN BURROS

Published: May 28, 2003

<http://www.fluoridealert.org/pesticides/epage.teflubenzuron.htm>

Teflubenzuron is an acyl urea derivate classified as an insecticide for use in treatment of infestation with sea lice in salmon. Teflubenzuron is admixed with pelleted diet at a level of 2 g/kg. The intended dosage level of teflubenzuron is 10 mg/kg bw administered once daily for 7 consecutive days. The substance is also used as a pesticide on crops. Very few substances are available for treatment of sea lice in salmon....t is likely that the sediments will act as a sink for teflubenzuron and so sediment associated organisms are more likely to be affected by this chemical...

A recent video of penned salmon impacts

<http://www.youtube.com/watch?v=of3URNIMLMk>

Alex Morton presents to Cermaq AGM

Additionally, DNR is leases public lands to geoduck farmers and are, themselves, doing massive sized research in the waters. But the white plastic bags and tubing don't remain stationary, move around, and cause some havoc in the marine system. Too, they reportedly snag birds. This plantings change beach ecology and wipe out other marine life, such as mussel beds. In sum, these plantings and farming are degrading state tide lands.

http://www.ProtectOurShoreline.org/legal/080326_PierceCnty_TaylorShellfishDecision.pdf

A recent Pierce County court decision and documentation of environmental impacts.

http://www.protectourshoreline.com/slideshow/POS_ShellfishAquacultureConcerns.pdf

A slide show of a geoduck farm on Nisqually Reach.

FLUORIDE

On August 13, The Lillie Center, Inc., filed ethics charges against the CDC's Oral Health Division and the CDC's director Julie Gerberding for failure to follow the CDC's own ethical code. The charge is specifically aimed at their failure to warn the public, especially the most vulnerable in the population-- "kidney patients, diabetics, infants, and seniors", of the dangers of drinking fluoridated water. These dangers were clearly stated in the National Research Council's report (2006) on fluoride's toxicity, as well as concerns raised by the US Department of Agriculture about the total dose of fluoride people are getting from all sources, including food, toothpaste, mouthwash, dental floss, and dietary supplements, to name a few.

Not only is fluoride added to water which, we now know from a Harvard study is

harmful to the development of youngsters 10 years of age and under and other studies regarding infants getting too much, but fluoride is in food and toothpaste, so it compounds the problem. Fluoride then runs down our drains into ground, then surface waters, and into the world of marine life. What is the effect on them?

The Environmental Working Group has added to its web site a long list of articles, etc. about fluoride impacts on humans.

<http://www.ewg.org/featured/222>

Further, from this web site (see

(www.ada.org/prof/resources/positions/statements/fluoride_infants.asp):

"It is deeply troubling that children, including bottle-fed infants, will begin drinking fluoridated water without the benefit of the ADA warning and in spite of the many [other] serious concerns [about fluoridation] raised by the National Academy of Sciences last spring," EWG wrote. "Public water supplies should be safe for all consumers, young and old alike." (The letter is available at www.ewg.org.)

Last November, the ADA - long a strong advocate of fluoridation, said: "Infants less than one year old may be getting more than the optimal amount of fluoride" if they consume formula or food prepared with fluoridated water. ADA added: "If using a product that needs to be reconstituted, parents and care givers should consider using water that has no or low levels of fluoride."

<http://www.msnbc.msn.com/id/23651072/page/2/>

This is an article about people looking for graves at the old Charles Manson sites. They use a detector that finds fluoride because it is expected to be in human bones and not animal bones.

(noted on page 2)

This is a review on fluoride toxicity to aquatic organisms:

Fluoride toxicity to aquatic organisms: a review

Julio A. Camargo,

Departamento Interuniversitario de Ecología, Edificio de Ciencias, Universidad de Alcalá, Alcalá de Henares, Madrid E-28871, Spain

Received 8 March 2002; revised 22 July 2002; accepted 23 August 2002. ;

Available online 9 November 2002.

Abstract

Published data on the toxicity of fluoride (F⁻) to algae, aquatic plants, invertebrates and fishes are reviewed. Aquatic organisms living in soft waters may be more adversely affected by fluoride pollution than those living in hard or

seawaters because the bioavailability of fluoride ions is reduced with increasing water hardness. Fluoride can either inhibit or enhance the population growth of algae, depending upon fluoride concentration, exposure time and algal species. Aquatic plants seem to be effective in removing fluoride from contaminated water under laboratory and field conditions. In aquatic animals, fluoride tends to be accumulated in the exoskeleton of invertebrates and in the bone tissue of fishes. The toxic action of fluoride resides in the fact that fluoride ions act as enzymatic poisons, inhibiting enzyme activity and, ultimately, interrupting metabolic processes such as glycolysis and synthesis of proteins. Fluoride toxicity to aquatic invertebrates and fishes increases with increasing fluoride concentration, exposure time and water temperature, and decreases with increasing intraspecific body size and water content of calcium and chloride. Freshwater invertebrates and fishes, especially net-spinning caddisfly larvae and upstream-migrating adult salmon, appear to be more sensitive to fluoride toxicity than estuarine and marine animals. Because, in soft waters with low ionic content, a fluoride concentration as low as 0.5 mg F²/l can adversely affect invertebrates and fishes, safe levels below this fluoride concentration are recommended in order to protect freshwater animals from fluoride pollution.

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V74-476073H-

[3&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V74-476073H-3&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_)

From: Tim Gugerty

Date: 05/06/2008

Comment: Please find the attached AWC comments on the 1) Land Use/Habitat Protection and Restoration; 2) Water Quality; and 3) Water Quantity Topic Forum Discussion Papers. Please consider this one of many opportunities for us to share our perspective with the Partnership as you move forward to develop the Action Agenda. Specifically, we look forward to reviewing and providing comments on your Topic Forum synthesis paper, which we understand will be available the week of May 19.

Thank you for the opportunity to provide input, and please let me know if you have any questions about our comments.

AWC Comments on Puget Sound Partnership Land Use and Habitat Topic Forum Discussion Paper

AWC's membership and Board of Directors has adopted a Land Use and Environmental Stewardship Policy Resolution that provides helpful context

for our comments below on specific preliminary policy recommendations. Highlights of this Resolution include the following overall statement and principles:

A core function of cities and towns is their ability to plan for, manage and protect land uses and municipal services within their borders. These fundamental activities are frequently the subject of considerable discussion and debate within each community and are undertaken within an increasingly complex array of state and federal laws governing land use and environmental protection.

Washington's cities and towns desire to both maintain and expand opportunities for their citizens to live, work and play in vibrant and healthy communities.

To support cities and town in fostering land use and environmental stewardship, AWC shall work to:

- Maintain cities' fundamental and basic planning and zoning authorities.
- Oppose measures that would encroach upon city authority to protect the public interest, health, safety, and welfare.
- Maintain local discretion as to the intensity and character of growth accommodated within each community.
- Adopt clarifications at the state level to help guide how cities and towns are expected to protect environmental values while providing opportunities for growth and development.
- Encourage the state to work in partnership with cities, towns and other local governments to develop its own strategic plan to help foster healthy and vibrant communities.
- Ensure that federal and state regulatory authorities recognize regional and local difference in how best to apply and mitigate impacts from their programs or activities.

In addition, the following principle from AWC's Flexible General Government Operations Policy Resolution provides helpful context:

- Encourage legislative and administrative solutions that are free of unfunded mandates, and strongly oppose additional state and federal mandates (both legislative and administrative) unless they are accompanied by sufficient financial resources and are compelled by significant public interests.

AWC Comments on Preliminary Policy Recommendations

Recommendation #1 – "Protection should be the preferred approach to ensuring that ecosystem processes, structures and functions are sustained over time. Where impacts have already occurred in areas that are critical to ecosystem processes, structures and functions, restoration projects should receive top priority for funding and other resources."

- This sounds good/supportable, but doesn't identify how "impacts" that have already occurred are identified, measured and quantified and how the best and most cost-effective projects are identified and prioritized. This is particularly important within urbanized and/or urbanizing areas.

Recommendation #2 – "The region should discuss its vision for a future quality of life."

- This recommendation notes that "this discussion should include the concepts of the maximum capacity of the region to accommodate increased population from a quality of life standpoint, and from the viewpoint of the resiliency of the ecosystem to sustain stressors over time." The state's growth management planning framework is structured to plan for, accommodate and manage continued population growth. Cities plan for population figures provided by the state. This regional discussion should focus on one of the primary challenges we will face in the efforts to restore Puget Sound – accommodating population growth in even more compact, livable cities while protecting and restoring the Sound's environmental health.

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."

- Major infrastructure investments need to be made in order for cities to accommodate growth projections and help maintain a high quality of life. Current infrastructure funding amounts and programs are not sufficient.

- The Partnership needs to broaden its perspective in this recommendation to include communities in the following counties: Clallam, Jefferson, Mason, Thurston, Skagit, Island, San Juan, and Whatcom. The challenges associated with growth management in, for instance, Skagit County, are different than those in the four "urban counties" – this Land Use/Habitat paper needs to broaden its scope and interest to include growth management challenges and success in communities in the "non-urban" counties.

- For communities in Snohomish, King, Kitsap and Pierce Counties, the Puget Sound Regional Council's Vision 2040 has been a good exercise in developing a common vision for the future, but implementation of the regional policies at the local level, as stated in Vision 2040, will require a lot more work to define what land use policy changes are required at the local level to improve the Puget Sound.

Recommendation #4 – "Consider enacting at a state level a single, integrated, set of regulations that apply in to the lands, streams and marine areas within Puget Sound to replace our present fragmented system of regulations."

- In accordance with AWC Policy Resolution above, AWC has serious reservation and concerns about this recommendation.

- Local ordinances that implement the Shoreline Management Act, the Growth Management Act, and the State Environmental Policy Act all flow from grass roots public participation efforts that ensure buy-in from local communities. This buy-in is essential to compliance efforts, funding for adaptive management, and support for conservation and restoration. The existing management tools and regulations can and should be continually improved. The recommendation of a landscape analysis and adaptive management approach is the antithesis of a one-size fits all set of regulations.
 - This recommendation would include a long list of complicated regulations that would be replaced with, presumably, one set of standards. Integrating SMA and GMA alone has been difficult, but adding SEPA, NPDES, FEMA and Corps regulations into one set of rules would be significantly more challenging. That is not to say we should not consolidate and streamline regulations, but to get complete agreement from local, state and federal agencies seems unlikely.
 - Under "Local Implementation with accountability requirements," this recommendation states that local governments would update their existing regulations to be consistent with State guidelines. This implies a one size fits all approach, and our experience has been that approach sometimes stifles environmental improvements because the overly restrictive state approach removes any economic incentive for a private property owner to develop, even if development is what will trigger restoration and enhancement efforts. Recommendation #5 – “At the federal level, the Congress should immediately adopt the recommendations of the 2003 Pew Oceans Commission.”
 - No comment at this time.
- Recommendation #6 – “Use acquisition and other voluntary tools as a strategy to gain permanent protection for existing, undeveloped lots in key areas.”
- A good idea on the surface, but needs to be more specific as to the location of such lands, their environmental value and cost. If such acquisition results in substantial reductions in growth capacity in urban areas, as identified under buildable lands analyses, the capacity would have to be replaced in some other areas, perhaps by triggering a need to expand urban growth area boundaries.
- Recommendation # 7 – “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.”
- This recommendation implies that a significant educational effort is needed, and it should not be an unfunded mandate on local governments.
- Recommendation # 8 – “Examine and promote the best incentive programs at the local level.”

- Incentives should be utilized, provided such incentives do not create an unfunded financial obligation on local governments.
- Recommendation #9 – “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.”
- Any requirement to implement LID’s in local jurisdictions needs to be accompanied with sufficient funding and technical assistance to make LID development happen.
 - LID’s are a good strategy and should be promoted vs. required.
 - However, in high density urban areas expected to accommodate the concentrations of growth as called for under Recommendation 3, it should be recognized that loss of forest cover is inevitable on most currently undeveloped but buildable lands.
- Recommendation #10 – “Consider amending the state’s vested rights doctrine to achieve promote [sic] opportunities for higher protection of ecosystem processes, structures and functions.”
- From a city perspective, this change could result in a decrease in assumed growth capacity under buildable lands inventories in several Puget Sound Counties. This could result in pressure to expand UGA boundaries.
- Recommendation #11 – “Establish a centralized and transparent approach to managing information, maps, studies, plans and data related to Puget Sound ecosystem and the Action Agenda.”
- No comment at this time.
- Recommendation #12 “Plan for wildlife on a watershed scale.”
- No comment at this time.
- Recommendation #13 “Use incentives and non-regulatory programs.”
- Not just “use,” but greatly rely upon them coupled with a significant public education effort.
- Recommendation #14 “Expand the availability of off-site mitigation programs both institutionally and functionally.”
- Sounds like a good idea – particularly in urban and urbanizing areas. How and where to do this are both challenges.
- Recommendation #15 – “Address cumulative effects of stressors on the ecosystem by adopting a new mitigation standard.”
- No comment at this time.

From: Patti Case

Date: 05/06/2008

Comment: RE: Comments Regarding Initial Discussion Draft – Habitat and Land Use

Thank you for the opportunity to comment on the Initial Discussion Draft

regarding Habitat and Land Use. On behalf of Green Diamond Resource Company, which owns 320,000 acres of timberland in Washington State, much of it in the vicinity of Puget Sound and particularly Hood Canal, we appreciate the importance restoration of this unique body of water represents. Green Diamond signed a Habitat Conservation Plan in 2000 which covers most of its land in the Puget Sound Basin. Many aspects of the Habitat Conservation Plan are similar to Washington State's Forests & Fish Law, under which the remainder of our land is regulated; however, in addition to protecting 52 aquatic and terrestrial species, our HCP is the first in the nation to include protection under the Clean Water Act.

From the workshops I have attended and the information I have read, it is clear that you are inviting and listening to Puget community members from business to tribes, residents to conservation groups, municipalities to scientists. I commend you on this effort. That said, I received an e-mail after one such meeting thanking me for participating and acknowledging that PSP has had difficulty engaging business participants. I vowed to continue my efforts to educate myself and participate in the process.

Washington State timberland owners have committed thousands of hours and millions of dollars, implementing individual Habitat Conservation Plans as well as the Forests & Fish Law to protect fish and wildlife habitat and clean water. This effort should be reflected in the final Action Agenda and in fact may be recognized as a road map to other protection efforts. Ours is a long term business; our increased efforts may not be recognized on the landscape for five years, ten years, a generation or more. I found in reading the Discussion Draft on Habitat and Land Use that many of the comments seemed to relate to past practices rather than present day realities. Specifically, I would like to call your attention to the following:

Page 8 – Habitat Threats:

- Light delivery: Literally thousands of acres have been set aside across Washington State, in private and public forest land holding, in order to maintain shade along streams and wetlands. increases stream temperatures and reduces dissolved oxygen levels
- Sediment delivery: Washington State landowners have spent millions of dollars disconnecting road networks from stream networks to improve fish passage, minimize surface erosion and ensure mass wasting resulting from road failure is a thing of the past. Case in point: In the Skokomish basin, site of the most frequently flooded river in Washington State, Green Diamond had just one road failure on our 23,000 acres of timberland. The failure was a road on which we share maintenance with a small vacation community, and there has been no active forest management in 60 years in the area. We

initiated Road Management and Abandonment planning and implementation in this watershed in 1998..

Green Diamond conducts a geotech review on all identified potential unstable slopes and protects them accordingly. I want to emphasize that protection of streams and unstable slopes was never meant to stop sediment delivery; our aim is to minimize the human imprint in favor of natural processes.

- Wood: The riparian buffers mentioned above are currently delivering and will continue to deliver wood and woody debris which improves fish habitat. Continuous buffers reduce habitat fragmentation. In addition, clearcutting actually improves habitat for some species. Over time, the ebb and flow of forest management activities assures a balance of habitat for all species.

Page 11 – Status of select habitat structures and threats at the Puget Sound scale

- Loss of old growth: The percentage and the significance, let alone the very definition of “old growth” forest and its loss is a subject of much debate. By protecting, streams, wetlands and unstable slopes as well as leaving scores of wildlife trees, we are growing more “old growth” every day.

Page 17, 18 –Sediment process

- Surface erosion and mass wasting: Loss of forest cover is mentioned in this context, as well. This reference may apply solely to development, but there is no specificity in the draft.

- Large woody debris process: See above comment regarding mass wasting.

Pages 24-26 - Action area conditions and threats:

This section mentions loss of forest cover in several areas. In some, the alteration is attributed to past (heavy) logging practices. We are currently harvesting second growth timber which grew up naturally after initial logging practices; this in a time period when reforestation was not required as it is today. For this reason, I would submit that loss of forest cover is not due to past logging practices but to conversion of many areas after logging. In any case, this is not mentioned as an issue in some areas but is in others.

Page 28-29 – Habitat protection/restoration:

- This would be a perfect place to mention the Forests & Fish Law as well as Habitat Conservation Plans on the part of individual industrial forest landowners and the state.

Page 34 – Protecting terrestrial and freshwater ecosystems:

- Ditto above comment.

Page 53 – Incentive Programs:

- The Forest Stewardship Council (FSC) is mentioned as providing “technical assistance.” Having studied FSC’s offerings, I’m not sure what assistance might be provided, other than to direct consumers to this brand of “green” certified wood. Many landowners in Washington State are certified under the Sustainable Forestry Initiative, and there are other certification programs applicable to forest management and wood products. Regardless, green certification programs are a market choice and as such can only provide “technical assistance” in terms of practices required for the certification plan. These amount to forest management choices and are not necessarily based in science.

Green building programs such as Leadership in Environmental and Energy Design (LEED), Green Globes and others would be better sources of information for reducing impacts to the environment caused by development.

Again, thank you for the opportunity to comment. This is a substantial effort and one that will affect all of us who live and work around Puget Sound. As a company that has operated on this landscape since 1890 and hopes to continue our stewardship of the land far into the future, we appreciate your careful consideration and wish you the best as we move from forums to action.

From: Sam Anderson

Date: 05/06/2008

Comment: 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 reater 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 muchneeded

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 MBA comment letter 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

From: Cheryl Smith

Date: 05/06/2008

Comment: Comments from The Department of Community, Trade and Economic Development (CTED) on Habitat and Land Use Topic Forum Discussion Draft

Thank you for the opportunity to comment on the Land Use/Habitat Topic Forum Discussion Draft. We understand this is an initial discussion draft intended to provoke community conversation and critical thinking. We also appreciate the monumental effort the Partnership is engaged in and pledge our support to the overall goal. We believe the Partnership can be an invaluable ally in building on the substantial investments in existing state and local regulatory and restoration programs and helping to improve the information and monitoring baseline to evaluate those efforts in a meaningful way.

While CTED is submitting these specifically on science and policy recommendations in the land use/habitat paper, we notice that land use-related recommendations are also included in other topic forum discussion draft papers. We ask that our comments also be applied to those papers, where appropriate. In addition, we have noticed a few inaccuracies in the land use and habitat paper; specific corrections are listed at the end of this comment letter and have already been submitted via the online discussion forum.

CTED supports several of the science and policy recommendations in the discussion draft, and we heartily concur that land use affects the health of Puget Sound. However, CTED has serious concerns about policy

recommendations 2 and 4.

We support Science and Research Recommendation 2 to implement a strong monitoring and adaptive management framework. Central to that effort should be improving our understanding of the effectiveness of existing local and state protection programs at both the landscape scale and the project scale. At the landscape scale, CTED has contracted with the University of Washington Urban Ecology Lab to begin developing and applying landscape metrics as benchmarks to quantify landscape change associated with urban growth. (Landscape Benchmarks Project, 6/30/2003)

This is part of a larger effort to establish performance measures for all goals of the Washington Growth Management Act, which has been coordinated with the University of Washington Northwest Center for Livable Communities. We would like to continue this effort, and have sought additional funding to continue this effort without success. We urge the Partnership to build on that work. At the project level, the Partnership should consider an expanded version of the pilot Environmental Compliance project being administered by Ecology. These grants are funding systematic surveys of compliance with critical area permit conditions – a simple but vital step in determining the effectiveness of the regulatory regime.

We fully support Policy Recommendation 1 that protection of existing habitats should be the preferred approach in ensuring ecosystem processes, structures and functions are sustained over time. Although this seems like an obvious suggestion, we believe it deserves more emphasis as a centerpiece of Partnership efforts. The goals of including best available science to protect functions and values and ensuring no net loss of functions and values are already embodied in the Growth Management Act (GMA) and the Shoreline Management Act (SMA).

We support the portion of Policy Recommendation 3 that references the Puget Sound Regional Council's (PSRC) Vision 2040 plan to support preservation of forest and agricultural lands. This is a core substantive mandate of the GMA and has been a challenge in many communities outside the four PSRC counties as well. Ensuring the viability of resource industries and improving farm and forestry stewardship are key strategies to protecting and restoring ecosystem processes across the region.

We support the idea of examining incentive approaches to land use and promoting those that are most effective. This idea is discussed in Policy Recommendations 8 and 13, and in the footnote to Policy Recommendation 7. We note that although most incentive programs are non-regulatory in

nature, there may also be opportunities to include incentives that are built into the regulatory program.

We support Policy Recommendations 14 and 15 to expand the use of off-site mitigation strategies and address cumulative impacts. Ecology has already begun hosting this conversation in earnest with its Mitigation That Works forum, in which CTED is a participant.

Our chief concern is with the document's overall conclusion that to achieve a healthy Puget Sound by 2020 and support predicted growth in people and jobs, the region needs "a fundamental change in the way in which it manages natural resources and the human activities that impact them." CTED believes the Partnership would be better served by adopting a narrower but deeper agenda that focuses on achievable actions that builds on existing efforts. Our concerns are detailed below.

CTED has concerns about the portion of Policy Recommendation 2 that calls for the Partnership to lead a discussion on "maximum capacity of the region to accommodate increased population." The title of the recommendation, which calls for the region "to discuss its vision for a future quality of life," seems to echo the central requirement of the GMA to plan for growth. The GMA requires local governments to face squarely the realities of population growth by turning Office of Financial Management (OFM) population projections into allocations and actually planning for inevitable growth. A study of regional carrying capacity, however, seems to reflect an unrealistic perspective about possibly not needing to accommodate future growth. Actions that affect existing rights of individual property owners do not have a high likelihood of being implemented.

The paper's reference to other communities that have engaged in this discussion are relatively small cities, not entire regions. Significant further investigation into these references is needed to determine the effect that approaches to "capping" building permits in those communities has had in pushing development into nearby portions of the region. We note that the only recent attempt at such an approach in central Puget Sound, in the City of Sammamish, was found to be noncompliant with the GMA by the Central Puget Sound Growth Management Hearings Board. (CPSGMH 05-3-0041, MBA/Camwest, et al v. City of Sammamish, Final Decision and Order (February 21, 2006)

CTED has concerns about Policy Recommendation 4, which proposes that the state consider integrating and replacing a diverse set of state (and federal) regulations including critical areas regulations, "and other contrary

GMA requirements,” with a Puget Sound ecosystem regulation written and overseen by a single agency or group.

Inadequate evidence of need: The report acknowledges that its summary of what is known about effectiveness of protection and restoration actions in question is “based on a very limited literature review and web search.” The document includes many similar frank acknowledgments that indicate recommendations for sweeping reform are not well-founded. It is not sufficient to point to the degraded environment as evidence of a need for fundamental shift because existing conditions are the result of a hundred years of human alteration. The discussion draft fails to provide a compelling case that the GMA, SMA and other laws have failed to protect Puget Sound. In fact, the GMA has not been fully funded and implemented. Additionally, the GMA requirement to include the best available science in critical area ordinances and the new shoreline master program guidelines have been only recently adopted or are still being developed. Many local governments have adopted significant advances in critical areas and shoreline protections in the past 3-4 years, and these protections are required to be reviewed and updated again in 2011-2012. See <http://www.cted.wa.gov/site/394/default.aspx> for latest statistics.

Compliance monitoring ignored: Monitoring and accountability are the greatest needs in making existing land use-related regulations and laws effective. CTED requests that the Partnership consider this idea as a key recommendation in the final discussion draft.

Without adequate information on compliance, even the most scientifically-based codes and standards cannot ensure environmental protection. Many local governments do not have sufficient resources to comprehensively monitor the effect of their critical areas and shoreline protections, or their storm water programs, and therefore struggle to implement adaptive management of key resources. These are specific areas where the Partnership could focus assistance efforts that we believe would significantly advance habitat protection in the Puget Sound watershed.

A concentrated effort on improving implementation and enforcement of local comprehensive plans, critical areas ordinances and shoreline master programs would provide immediate benefits to Puget Sound. The Partnership could be invaluable in helping build accountability into these local protection efforts. It is imperative that local governments be involved in establishing the accountability measures.

Significant hurdles: The integration proposal could not be achieved through

administrative regulation (amendments to the Washington Administrative Code) but would require the state legislature to create an entirely new governance structure for managing land use in Washington. Based on previous attempts at governance reform (including the Land use Study Commission, which is noted in the paper), we believe the authors appear to be underestimating the enormity of the task to integrate the diverse set of statutory authorities. (For example, see Land Use Study Commission attempts to integrate GMA, SMA, and SEPA in the mid-1990s. <http://www.cted.wa.gov/landuse/>)

The proposal sketched out in the discussion draft is essentially to adopt the Shoreline Management Act (SMA) model of governance, writ large to oversee all land use actions within the Puget Sound region.

The Growth Management Act certainly has limitations and flaws, and CTED encourages a thorough examination of how it and the other laws and regulations cited could effectively work to protect Puget Sound. We are eager to assist in meaningful reform together with our local government partners. However, we are convinced this should be a strategic, targeted effort to resolve key areas of consternation, such as confusing legislative direction about the integration of SMA and GMA critical areas requirements and processes. An “integrated set of regulations” does not represent a viable or strategic direction, as it is likely to result in years of process and diversion from actual protection measures.

In addition, the suggestion to replace “other contrary GMA requirements” seems to imply that other requirements, such as planning for inevitable population growth and economic development, protecting private property rights, and promoting affordable housing are contrary to protection of the environment. We believe this advances a dichotomy between growth and protection goals that is not helpful in building partnerships between diverse interests that will be necessary to protect Puget Sound.

CTED would like to better understand the rest of the process, and specifically, how these comments will be used. We would like to participate in future discussions on these topics, including the quality of life forum that does not appear to be scheduled yet. We want to help and we offer our assistance in developing a workable and effective approach to land use policies and practices that can protect Puget Sound for the long term. Again, thank you for the opportunity to provide comments on the discussion drafts.

Corrections:

(Comments submitted via the online discussion forum, under “Current

knowledge,” on April 22, 2008:

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

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

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

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

From: Andrew Cook

Date: 05/06/2008

Comment: Attached are the Building Industry Association of Washington's comments to the topic forum papers. Please let me know if you have any problems opening the attachment. A hard copy is being mailed to the Partnership as well.

Attached: BIAW Comments - Topic Forum Papers.pdf

From: Ginny Broadhurst

Date: 05/06/2008

Comment: Thank you for the opportunity to comment and participate in the development of the topic papers. We provided hard copy references and oral comments at the Everett meeting on species and biodiversity to ensure that derelict fishing gear impacts are addressed and well referenced in that topic paper. Derelict fishing gear (nets and crab pots) cause direct damage to species as well as marine habitats. For example, a derelict gillnet can damage kelp beds, scour rocky reef habitat and/or prevent access to all types

of marine habitats. Derelict crab pots have been documented to scour eelgrass beds in addition to having a direct footprint on the seabed. These impacts are documented in our Cost/Benefit Analysis (attached). We suggest that these impacts be referenced in the Habitat topic paper as well as the Species and Biodiversity (or cross referenced).

Discussion and acknowledgement of other marine debris issues (i.e. creosote debris, plastics, boater waste) also seem to be missing in these reports and we suggest that they be considered for inclusion as appropriate.

Thank you. Please let us know if you have questions or additional need for information.

(Attached: DG cost benefit final.pdf, PriorityRankingReport-041808.pdf)

From: Tami Ishler

Date: 05/06/2008

Comment: Land Use/Habitat Protection and Restoration Topic Forum

Aquatic Resource Division Comments

General Comments

- The draft report uses the term mitigation to refer to compensation of damage done as a result of human impacts. Mitigation is a sequential process that starts with avoidance of impacts and moves to minimization, with compensation not only being the last step but the most expensive and least effective part of the sequence. The draft reports should be reviewed to ensure appropriate use of the term mitigation, as well as incorporation of avoidance and minimization as preferred alternatives for ecosystem protection and restoration.
- Accountability and responsiveness are identified as critical components of the forthcoming Action Agenda. To meet these goals, monitoring programs are needed to assess the effectiveness of management efforts and whether those efforts are in compliance with the applicable laws, rules and management guidelines.
- While the document adequately addresses regulations associated with aquatic systems, more consideration is needed of non-regulatory tools. With respect to DNR, this includes DNR's proprietary role for state-owned aquatic lands; the implications of the laws associated with DNR's management of wetted habitats; and potential synergies from working with DNR and utilizing its proprietary authority to help protect and restore the Sound.
- A central question with respect to management is, "would current regulations be adequate to ensure protection if they were fully implemented?" The report does not address this question by differentiating

between implementation issues and gaps. Its broad conclusion that there is no comprehensive plan suggests that the major issue is gaps, not implementation issues. This discussion needs to be developed further.

- The draft report correctly identified a key issue: the “no net loss” standard for the protection of critical areas functions and values is not being met because every jurisdiction has adopted regulations and standards with exemptions that prioritize human activities rather than an ecosystem protection approach. The lack of an acceptable process to assess cumulative impacts adds to this problem. No net loss by definition maintains the status quo and cannot realize an improvement in the health of the sound.

- We recommend addressing five additional broad concepts:

- Scientific Research and Modeling
- Conditions for Sustainability
- Indicators and Reference Conditions
- Instruments, Laws, and Institutions
- Socio-economic Considerations

Specific Comments

- The S1 section of the draft report does not adequately describe the state of knowledge of the status of habitats. It would be extremely difficult to adequately cover this topic within a short report, so it may be more reasonable to adjust the scope rather than address this limitation. Major topics that need to be added to meet the current scope include:

- o Deep water habitats and oceanographic processes;
- o The role of water characteristics (often called water quality) as an essential component of habitat condition;
- o Toxics and contaminants;
- o Estimates of areal losses in different habitat types, degradation of remaining habitats.

- o Terrestrial habitats are covered only peripherally, primarily through the activities which affect water such as agriculture and timber harvest;

- o The aquatic microlayer is an important habitat. It is severely impacted by aerial deposition and contaminants in the freshwater surface lens after storm events. One contact on this topic is Jack Hardy at Western Washington University.

- Pg. 1: The process-based framework that is adopted for considering habitat is appropriate. In fact, it is essential to achieve protection and restoration.

- Pg. 5: In order to prioritize actions, the relative magnitude of threats needs to be identified. The threats should be broadly prioritized.

- Pg. 6, Table S-1: As the table addresses both fresh and marine systems, the use of the term “seafloor” is inappropriate.

- Pg. 11, Table S1-2: Correction: Puget Sound contains “20,000 hectares (50,000 acres)” of eelgrass (not 20,000-50,000 acres as reported).

- Pg. 22, Appendix S1-2: Proposed changes to table:
 - o Additions to all areas: invasive species, runoff, stormwater, sediment contamination, consideration of historical vs current threats.
 - o Hood Canal: eelgrass is a common habitat; common threats include: anthropogenic nutrients, sensitivity to water quality degradation due to reduced flushing and stratification;
 - o South Puget Sound Action Area: private ownership of tidelands is not an activity; it is not specific to the South Sound; and it does not necessarily result in impervious surface.
- Pg. 27, P1 and Pg. 34, S2: The discussion of management effectiveness needs to consider the predecessors to the PS Partnership: the Puget Sound Water Quality Authority and the Puget Sound Action Team. If the Partnership does not learn from this history, it is likely to repeat it. One key finding by the Puget Sound Assessment and Monitoring Program (PSAMP) in its recent ‘lessons learned’ White Paper to the Partnership is that integration of policy and science is critical to successfully identifying linkages between management and environmental health. The previous agencies never succeeded in integrating policy and science analysis, this should be a top priority for the Partnership.
- Pg. 27, S2: The draft report describes the historical development of the different tools that we have for managing land and shoreline use activities. Additional assessment of the impacts of local decisions in a regional context is needed.
- Pg. 28, first paragraph: It would be accurate to include the Puget Sound Ambient Monitoring Program (PSAMP) in the list of monitoring groups.
- Pg. 28. Correction: Approximately one-third of the saltwater shorelines have been modified by bulkheads or other shoreline modification, and 50% of the modifications are associated with single family residence (not “30% of shoreline armoring... is associated with single family residences” as reported). Citation: 2002 Puget Sound Update, page 26.
- Pg 34, P1 and Pg. 57, P2: The draft report needs to address the potential impacts of local permit decisions on a regional level. One of the main goals of the Shoreline Management Act (SMA) is to conduct a “planned, rational, and concerted effort, jointly performed by federal, state and local governments, to prevent the inherent harm in an uncoordinated and piecemeal development of the state’s shorelines.” It is important to consider the effectiveness of the environmental planning in avoiding jurisdictional fragmentation in the permitting process.
- Pg. 34, Policy question 1:
 - o Pg. 34: Controlling Impacts, protecting terrestrial and freshwater ecosystems, state and local laws - This section should include the regulatory protections afforded to forest lands through DNR’s State Forest Lands HCP and the Forest Practices HCP.

- o Pg. 39: This section should include reference to potential benefits to freshwater and marine systems through DNR's Aquatic Reserves Program.
- Pg. 42, Appendix P-1: This section should include references to laws associated with the management of state-owned aquatic lands (RCW 79.105.010 to 79.109.060; WAC 332-30-100 to 332-30-107).
- Pg. 57, P2: Within the recommendations, compliance, effectiveness and implementation monitoring need to be prioritized much more highly. These types of monitoring are critical to the Partnership's ability to meet its accountability mandate. The dearth of information available on these topics is underscored by the report's broad conclusion that little is known about the effectiveness of policies.
- Pg. 63 and pg. 64: The draft report recommends performing a natural history survey and a rapid assessment of each Action Area. We recommend compiling existing data before planning data collection efforts.
- Pg. 67, #4: The Topic Forum recommends considering adoption of a single set of regulations to protect the ecosystem of Puget Sound. This recommendation is not realistic, given the legal and management mandates associated with existing systems. Additionally, the report does not adequately identify how the proposed integrated system would successfully address existing gaps and limitations.

From: Treva Coe

Date: 05/06/2008

Comment: Below please find my comments on the following two Topic Forum Papers.

- Land Use/Habitat Protection and Restoration in Puget Sound (Initial Discussion Draft Paper, April 14, 2008)
- Species and Biodiversity Topic Forum (Initial Discussion Draft, April 14, 2008)

Please note that I did not attend either of these Topic Forum workshops, nor have I specifically addressed the questions posed for the online discussions.

HABITAT AND LAND USE

Question S1

- Page 3, 2nd paragraph: "Native...species are adapted to and ultimately benefit from the natural frequency and magnitude..."
- Generally, the section underrepresents the body of knowledge relating land use to ecosystem processes and habitat conditions. Much of that is presented for the watershed scale in the Puget Sound Salmon Recovery Plan. I do agree there needs to be a consistent, quantitative assessment across the broader Puget Sound ecosystem and better quantification of linkages.
- Page 4, Figure: Good summary figure, but not perhaps so meaningful as

paper doesn't elaborate further on structure and function. Consider adding (example) structure and function columns to Table S1-1.

- Table S1-1

- o General: "Toxics" should be in its own category. See also comment above regarding adding information on structure and function.

- o Culverts: Culvert failure is also associated with debris flows. What about passage impairment and resulting habitat fragmentation and isolation?

- o Fill/dikes: under "sediment dynamics", indicate that fine sediment delivery is increased because of reduction in storage of overbank flows (and thus sediment)

- Page 11, Table S1-2: Consider including road network densities, riparian conditions to the extent available.

- Appendix S1-1: Under Large Woody Debris process, include role of wood in channel stability (moderating scour, channel shifting), floodplain island formation in unconfined, low-gradient channels

- Appendix S1-1: Include sections for light, pathogens.

- Appendix S1-2, Whatcom portion: Add hydromodifications/flood control, sedimentation from forestry, and degraded riparian conditions as threats.

Question S2

- Page 29, last bullet; after protection, habitat reconnection (e.g. through fish passage improvements) is considered to be the next most cost-effective and certain to benefit

- Page 29-30: recognize that, to the extent that recovery of specific species drives recovery efforts, the status of the population has some impact on the strategy employed. For example, in WRIA 1, with early Chinook populations at critically low abundance and productivity levels, our strategy is to implement conservation hatchery programs to prevent extinction while prioritizing habitat actions with greatest magnitude and immediacy of benefit (i.e. wood placement). In other watersheds where salmon population status is less dire, protection and restoration of process is more appropriate.

Question P1

- Great summary, but more specifics would be useful.

- Page 44, Forest Practices Act: include reference to Forest and Fish Report and Revised Permanent Rules in 2000/2001

- Appendix P1-2: a short statement of purpose for each program would be helpful

Question P2

- I strongly support the ambitious recommendations provided herein.

- Pages 65-66, #5. In prioritizing/selecting restoration actions, please be clear about the spatial scale of application. A criterion for Puget Sound Chinook recovery and delisting is to achieve viability for 2 independent populations per ESU subregion, establishing the case for distributing resources across the region. As indicated previously (see last comment under

Question S2), species population status has some bearing on what strategy is appropriate for a watershed. Restoration of processes is important, but time scale of benefit should be also considered; the more critical the status of a (salmonid) population, the more important it is to implement projects expected to provide benefits on a short time scale. Finally, while I strongly support the recommended ecosystem-based restoration approach, some focus on recovery of key species is warranted to garner and maintain tribal and broader public support for PSP efforts.

- Appendix P2-3: Include wood placement as a project type.

From: Dan Stonington

Date: 05/06/2008

Comment: Cascade Land Conservancy, along with coalition partners throughout the Central Puget Sound Region and over the Cascades, launched The Cascade Agenda in 2005. The Agenda is a 100-year vision and set of strategies for conserving 1.3 million acres of working and natural lands, and creating vibrant, livable urban centers to house the population growth coming to the region.

Stakeholders created The Cascade Agenda in part to protect our waterways and Puget Sound. Conservation and ‘smart growth’ have substantial benefits for water quality because they reduce the percentage of impervious surface in a watershed and decrease stormwater runoff.

The following comments on the Land Use, Water Quality, and Human Health Topic Forum papers expand upon this theme: what happens uphill impacts Puget Sound downhill and land conservation and smart growth are two of the most effective preventive strategies available. These comments do not address the Water Quantity and Species/Biodiversity papers because these papers reference the other Topic Forums for information on the impact of land use policies on Puget Sound.

The authors and ‘core groups’ for all of the papers do a good job of stating the connection between land use and Puget Sound health. There are also opportunities in the papers, highlighted in the comments below, to clarify and strengthen this important connection.

Land Use Topic Paper

- Pg 12 – RE: ‘Moving Ahead on Understanding Ecosystem Processes and Habitat Conditions – Our increase in understanding about ecosystem processes needs to be within the context of the long-term population growth coming to the region and the fact that significant growth is occurring in suburban, rural, and resource land areas. Given these growth trends, we can understand that threats to ecosystem processes are increasing in severity, and that strategies to address and adapt to this growth are high priority. There is some appropriate language on page 62 of the report about growth trends that could also be used to establish this context in the section on page 12.

Looking out 100 years, these growth trends are even more dramatic, with an increase on the order of 10 million new people in the region.

- Pg 28 – RE: ‘general consensus that the Washington State Growth Management Act is slowing sprawl’ – There is also information that shows sprawl is occurring and even accelerating in particular areas. Snohomish County, for example, has seen an increasing share of growth occur in rural areas outside the Urban Growth Area. 75% of the growth in the Puget Sound Regional Council region within the UGA between 2000 and 2007 has occurred in the outlying, unincorporated and suburban areas compared with 25% within the region’s five core cities of Seattle, Tacoma, Bellevue, Everett, and Bremerton. Language to this effect should be added in this section. Source: Puget Sound Regional Council, Puget Sound Trends, April 2008 <http://www.psrc.org/publications/pubs/trends/d5apr08.pdf>

- Pg 46 – RE: Appendix P1-2: Incentive Programs – This appendix does not include description of any urban programs that encourage sustainable growth in center cities as an alternative to the low density sprawl that is harmful to watersheds and Puget Sound. Examples of such programs include

- o The Cascade Agenda Cities Program – this program works with cities to foster compact, complete, and connected new developments
- o Shoreline’s Ridgecrest neighborhood sub-area plan – the plan gives height incentives for integrating LID (rain gardens, permeable pavement, vegetated roof, rainwater harvesting)
- o Issaquah LEED program – this gives permitting preference to LEED or BuiltGreen commercial and residential residences
- o Kirkland cottage housing ordinance – the ordinance establishes regulations and incentives to encourage innovative housing types in single-family zones. The ordinance specifically addresses standards for developing cottages, carriage units, and multiplexes in a manner compatible with the surrounding neighborhood.

- Pg 62: 1.7 million people is the increase that PSRC projects for the PSRC region. This figure should be larger for the population increase in the entire Puget Sound basin.

PugetSoundPartnership

our sound, our community, our chance

From: Tom Clingman

Date: 05/05/2008

Comment: Comments from Tom Clingman and Peter Skowlund, Department of Ecology Shorelands & Environmental Assistance Program on Puget Sound Partnership Land Use/Habitat Protection and Restoration Topic Forum, Discussion Draft April 14, 2008

This is very broad topic and difficult to capture in a summary document. Please consider the following comments to the 4/14/08 draft:

- In the science overview and throughout the document, there is a bias toward watershed-wide processes, and insufficient attention to marine shoreline processes and issues. For example, table at Appendix S1-1 pages 15-20 should be re-titled “Major Freshwater process tables...” This is a useful table but it deals only in a couple spots with marine systems. If we do not yet have such a table for marine shoreline processes, ok. But we need to recognize that much watershed-based planning to date (90.82 plans, salmon recovery plans) fail to give adequate consideration to the marine shorelines. We need to break out of this pattern. Another example is on page 65, item 6 on restoration effectiveness. The discussion is entirely oriented to freshwater systems. It is true that watersheds must be protected and managed for a sustainable Puget Sound. But the vulnerability of the highly important narrow band of intertidal area to shoreline land use activities is not sufficiently addressed in the document.

- The significant Shoreline Master Program updates underway are not adequately identified or assessed. The very significant and on-going investment in Shoreline Master Program updates is not mentioned. Regulation of marine and freshwaters are shifting from CAOs to SMPs. As a result of recent legislation, local CAO regulations applicable to shorelines of the state will be replaced by updated SMP regulations, once the local SMPs are approved by Ecology. Over the next five years, updated SMPs are scheduled to be updated for all Puget Sound jurisdictions – each one superseding the CAO within the shoreline area. Leaving SMA out of the “bottom line” analysis of the most important regulations on page 60 fails to recognize the importance of this effort.

These statutorily required comprehensive SMP updates fully support and are entirely compatible with the draft recommendations for achieving a healthy PS. Comprehensive SMP updates coalesce around the requirement (of the 2003 SMP guidelines rule) that each updated SMP when implemented over time, will result in no net loss of shoreline ecological functions. For example, the required tasks in updating each SMP include:

1. Documenting existing land use, development patterns and ecological

functions at both the watershed and reach level, as baseline conditions in a shoreline inventory and characterization.

2. Projecting “reasonably foreseeable future development” over a minimum 20 year planning period, in a shoreline use analysis. This must address “commonly occurring and planned development” and accommodate future demand for SMA preferred uses, balanced with local community desires.

3. Assessing ecological impacts resulting from “reasonably foreseeable future development” identified in the use analysis, considering at a minimum habitat, hydrology and water quality functions.

4. Identifying management measures for each shoreline planning unit which demonstrate how future (both anticipated and unanticipated) development impacts will be mitigated through proposed SMP environment designations, policies, regulations, administrative provisions, and prioritized restoration activities identified in a shoreline restoration plan, and

5. Evaluating how incremental impacts, remaining after mitigation is applied, will be mitigated over time in a cumulative impacts analysis.

- Land use regulations are discussed in several sections – but the issues of compliance and enforcement are never mentioned. Lack of compliance is a huge challenge to effective protection of natural resources. Unless we improve compliance, we can adopt new codes and standards (maybe even standards for a new super-permit as proposed by the paper) but they still will not protect the environment without better compliance. We will continue the pattern of penalizing those that voluntarily comply with delays and complex permit conditions, with no repercussion on non-compliers. Failing to address the compliance conundrum is a significant gap in the paper.

- One element of compliance is adherence to conditions of permits. In many agencies, there is currently very little follow-up on permit conditions. Regulations and permit processes have grown significantly in complexity over the past three decades. We now have multiple permits for many projects, with an entire stack of permit conditions. The plethora of permits and volume of conditions actually work against effective environmental protection – no landowner could understand and comply with all the paper, and no regulator could check on compliance. We need to apply strong analysis and clear thinking to the challenge of compliance. We need to conceptualize and develop the next generation of effective regulation and permitting. Failing to recognize this challenge is a big gap in the paper.

- The Preliminary Policy Recommendation to “consider enacting at a state-level a single, integrated, set of regulations...to replace our present

fragmented system of regulations”, may overreach our current capabilities, and distract our attention from a potentially more productive set of actions aimed at removing existing loop-holes, eliminating incompatible permit exemptions, and revision of land use policies at cross-purposes with PSP priorities. For the most part, the necessary authority to implement PSP land policy recommendations already exists. Working toward necessary reforms within our existing set of land use statutes and agency directives, will surely result in a more realistic and timely action agenda for PS recovery.

- The potential for the “state”, if given the resources, to coordinate and conduct much of the science, at least at a coarse scale, needed for decision-making. This could avoid much of community-by-individual-community “debate” over science that hampers many of our current efforts.
- The draft report accurately describes the many complex challenges we face in addressing this topic. In the interest of timely action, simplicity should be stressed in the development of straight forward “models” and widely understood policies, standards and methodologies. Without such focus, analysis paralysis could end up delaying the deployment of efficient and effective reforms at all levels.
- A couple of important “stressors” are not included in Table S1-1. Air pollution may be a significant contributor to nitrogen loading to the Sound. And the emerging concerns about pharmaceuticals and related compounds in wastewater should be added.
- The report indicates that single-family development is exempt from the Shoreline Management Act. This is not accurate. Single-family development and several other specified activities are exempt from obtaining a Shoreline Substantial Development Permit. However, these activities are subject to Shoreline policies and regulations. This is an important distinction. Please correct this.

From: Doug Levy

Date: 05/05/2008

Comment: I am a Government Affairs Consultant and Lobbyist who works on behalf of the cities of Everett, Kent, Federal Way, Renton, and Puyallup. Staff in the cities of Everett and Kent specifically asked that I submit these comments on to you, with Kent staff asking that I additionally integrate some of their comments into what you are receiving below.

This letter is being transmitted via E-Mail to meet your May 6 comment deadline, and focuses on the Habitat & Land-Use, Water Quantity, and Water Quality issue papers that impact local governments most directly. Comments are in order of the papers as just outline, and generally in order

by page number – though in the response to the Habitat & Land-Use paper, I wanted to be up-front with the most significant concerns on behalf of cities for which I work. Additionally, I am starting with a couple of overall comments on behalf of my City of Kent folks.

Overall Comment – City of Kent

Kent has asked me to convey a concern that proposals woven throughout many of the papers raise jurisdictional issues that conflict with one another and would be extremely difficult to resolve. For example, they raise the issue of how the Partnership would merge SEPA and NPDES, Critical Areas and Shorelines and the Growth Management Act, TMDLs and monitoring and surface water design, etc., etc. All of these are on their own timelines with their own separate jurisdictions and requirements – and in a number of cases, the programs have just gone through very time-consuming and significant updates.

Habitat & Land-Use Issue Paper – Areas of MOST Concern

Of most concern in this issue paper are Policy Recommendation #4 on Pg. 67-68 and the "Governance" recommendation on Pg. 69-70.

Recommendation #4 is to "Consider" a state-level, single set of regulations applying to lands, streams and marine areas. It would be very far-reaching, potentially usurping the Growth Management Act (GMA), the State Environmental Policy Act (SEPA), and other local authorities, and potentially federal laws as well. The paper gives no indication of just how the state government would purport to supersede federal authorities.

But beyond that, the idea of trampling Acts such as GMA and SEPA in the name of a new and single set of state regulations appears to be extremely premature. There is no comparative analysis or criteria used to tell us how this would achieve better results. The issue paper spends time discussing fragmentation, then jumps to the conclusion that a single set of regulations is automatically the answer.

The paper completely contradicts the recent actions the state is engaging in with respect to major issues such as Climate Change, where state leaders have gone out of their way to emphasize a spirit of collaboration between the state level and local level. Further, in jump-starting issues related to Climate Change, the Legislature enacted ESSB 6580, to look at how Climate Change could be factored into GMA land-use planning. The Governor's Climate Action Team (CAT) formed a SEPA Work Group to look at how SEPA could be utilized to better support Climate Change-friendly initiatives.

BOTH of these recent actions – one legislative and one via the Executive Branch – would be completely undermined by the Policy Recommendation #4 and the ensuing “Governance” recommendation in this issue paper.

Additionally, Recommendation #4 would appear to conflict with Recommendation #6 which speaks to "voluntary tools" and Recommendation #8 which is to promote "the best incentive programs at the local level." Just how are we going to have voluntary tools and incentives if the state adopts a top-down set of regulations? Further, on Page 67, under "Local Implementation," it says local governments would have to update THEIR "regulations" to be consistent with the state 'guidelines' as opposed to "regulations" above. This is confusing. Bottom line: The idea that a state-level, top-down regulatory structure must be implemented is premature and seems to be in stark contrast to the “carrots” and incentives approach being employed in the climate change arena.

On Page 69 comes the "Preliminary Governance Recommendations," which appear to arise out of the blue. There is no comparative criteria, no other measuring tool or strategy suggested ... nothing. The authors of the report state on Page 70 that, "We do not reach this conclusion lightly." Yet, we are given very little clue of what other approaches they may have considered. Clearly, they considered incentives and voluntary tools -- for these are in their recommended policies ... but then, somehow, they have come to the conclusion that there are "too many governmental actors" in Puget Sound" who have "acted in an uncoordinated fashion" and that what is needed is "a single agency or group charged with convening the region..." So what is "the region"? Since we are talking about the Puget Sound, including all rivers and tributaries that drain into it, how many counties does this comprise? How big a region? How big a government? At what cost? This "preliminary recommendation" seems to have been reached in a complete vacuum, with only the notion that actions to date have not been coordinated enough and the only solution is new governance. Similar to my comments above, this would appear to be extremely premature.

Habitat & Land-Use Issue Paper – Other Comments in Order of Page Number

*"Threats" to habitat: In terms of accurately describing current knowledge, the initial chart on Pgs. 6-9 is devoid of context. It is true that past practices associated with the development of levees, culverts, and urban landscapes have been contributing factors to the decline of fisheries and habitat in the Puget Sound basin. That said, there has been an enormous amount of work done as to how to improve levees and culverts, and the work that cities have

done to focus growth in the most urban areas has played a positive role environmentally – as the issue paper notes on P. 28. Levees offer flood protection, which brings its own environmental and societal benefits. Culverts provide critical passage for salmon stocks. We would suggest some type of narrative context, or footnoting, or other language, to ensure readers understand that factors such as levees, culverts, and urbanization are not solely “bad” ‘threats’ but rather factors that have to be looked at in a certain way through a historical lens.

*On Page 39, we have a concern that the paper is premature in describing the effectiveness – or lack thereof – of a specific tool, namely the GMA. The paper draws the conclusion that the current system of habitat and land-use protection "is a fragmented system of protection and restoration...where a comprehensive, consistent approach is what's needed to ensure the recovery of Puget Sound." This is a conclusion that a top-down system, rather than a localized or incentivized system, is best -- indeed, we see with "Governance" on Pg. 69-70 that it is the very recommendation made at the end of this paper. Yet, as acknowledged in other places in the paper, the GMA and components of it such as the Critical Areas Ordinances are less than two decades old. Shouldn't the GMA, and regional strategies that spin off the GMA (for example, programs such as Transfer of Development Rights, TDR), or Green Building, or new stormwater regulations, be given some time to work and to take effect?

*P. 41 - Monitoring. It is worth commenting that the paper gets into fragmentation and "too many actors" issues in describing some of the problems in addressing land use and habitat. Given that concern, a monitoring solution probably ought not be implemented in every jurisdiction, everywhere. In fact, the authors are to be commended for their recommendation in Science and Research Recommendation #2, that monitoring should "draw upon existing" systems in place.

*P. 57 -- Voluntary Incentives -- The paper does a good job of recommending that voluntary incentive programs can be expanded in marine areas.

*P. 59 -- In describing limitations of regulatory tools, the paper describes as a shortcoming of GMA the fact that a state agency cannot simply overturn what is in a local GMA plan. We in cities would dispute that -- we would assert that this is a valuable local-control aspect of the GMA that puts authority at the local level where it belongs.

*P. 60 – We would strongly dispute the blanket statement about SEPA on P.

60 as an accurate statement of current knowledge. SEPA is described as "a tool that provides information rather than one mandating specific environmental outcomes" and thus "largely an ineffective tool." We as cities disagree, and have found SEPA to be a very effective tool in shaping responsible development. As noted above, the Gregoire Administration's CAT Team is forming a SEPA Work Group to look at how SEPA can be used to jump-start certain Climate Change initiatives.

*Policy Recommendation #2 -- The paper recommends the Partnership convene a "regional conversation" about growth and the "resiliency" expectations of our region to accommodate 5.1 million people. The implication here is that the Puget Sound Partnership wants to convene a discussion about population control, which is really outside its jurisdiction and its purview. If the authors are trying to say we need to have some sort of control over how many people move into the State of Washington, or how many children a family can have – they should be more up-front and just say that. The Recommendation #2 language ends up being code language, and it leaves the reader guessing about a policy area that, again, is probably outside the bounds of where the PSP can realistically expect to go anyway.

*Policy Recommendation #3 – Cities certainly agree with the idea of trying to utilize PSRC Vision 2040 growth expectations. But it is critical to note that these growth expectations are highly dependent on a level of infrastructure investment that is well beyond what the state's current menu of infrastructure grants and loans allow for. Cities have in recent years made the point repeatedly that the state or the feds or both have placed a series of (well-intentioned) requirements before us -- GMA, shorelines, stormwater, Clean Water, Safe Drinking Water, Puget Sound cleanup, climate change, etc. All of them have capital facilities demands associated with them – and all of them have major infrastructure costs inherent in them. The money is just not there, and we need to recognize that at the state level – and soon. Everett Planning Director Allan Giffen has raised an additional point regarding his city – namely, that Everett is being asked to accommodate density levels that simply cannot be sustained unless light-rail transit or some other high-capacity transit system is extended to the community well in advance of 2040.

From: Luis Barrantes

Date: 05/05/2008

Comment: Chris,
Regarding your "Land owners should be partners in the Puget Sound

Partnership" you posted last week.

This August marks twenty years since Kathleen and I bought our house on Lemolo Shore Drive. We've been blessed by the beauty and recreational opportunities our little piece of America has provided us. Throughout those years I have seen a definite change in actions and thinking of not only ourselves but our neighbors. Twenty years ago I thought nothing of dumping our grass clippings over the bank into the Bay. Twenty years ago I was a willing and eager participant in the war for the greenest, dandelion free lawn on the street and had an open account at the local fertilizer supplier. Twenty years ago after flushing the toilet it was out of site out of mind.

Today I no longer see people in our neighborhood dumping clippings over the bank nor do I see the ChemLawn truck next door. Though I don't particularly think the dandelion is a thing of beauty I no longer care to risk the condition of the Bay so that I maintain a manicured lush green lawn.... When the Liberty Bay Foundation hosted several Septic System workshops a couple of years ago they were the most well attended. We all seem to have a much better understanding that our actions have consequences and for the most part do what we can as shoreline property owners to be good stewards. Shoreline property owners DO care and for the most part have been listening over the last 20 years to what they are being told is good or not.

There are much bigger fish for the Puget Sound Partnership (PSP) to fry...I am going to elaborate with a couple of occurrences here on Lemolo Shore Drive that you've heard before but I feel the need to recant them in order to make my ultimate point which is that I worry that the PSP will focus too much on shoreline property owners and forget that they are just a small part of the much bigger water quality picture.

Several shoreline property owners along Lemolo Shore Drive signed property owner agreements with the Department of Ecology (DOE) several years ago in order that a local group could take out invasive weeds and replant with native vegetation to create an aesthetically appealing and environmentally friendly buffer filtering the runoff from Lemolo Shore Drive.. These agreements allowed the DOE the right to enter the property to inspect the progress and to bring others to use as a show case for what is good. These are ten year easements. That goes to show how dedicated some property owners are to the quality of Liberty Bay and everyone's' enjoyment of it. The Liberty Bay Foundation, with many volunteers, began the daunting task of pulling weeds and replanting.

A couple of years later the City of Poulsbo in conjunction with Kitsap

County came by and paved over much of this work to widen the shoulder. Despite private property owners trying to do the right thing the municipalities ignored other options that would have provided the walking path they wanted without additional paving. They had money to spend on asphalt and they sure as hell were going to use it! Now you ask any private property owner what would happen if they went to get a permit to pave this close to the shoreline. I've copied members of the Kitsap Alliance of Property Owners here if they care to chime in.

It gets worse...

If this wasn't insulting enough to this group of private property owners trying to do good, the county also allowed a developer to tight line a new outfall from half mile upland right smack in the middle of our project directly into the bay! Right under the water front property the COUNTY owns. These are pictures of that very outfall.

That one outfall does more damage to the Bay than all the shoreline properties along the entire bay could do! From a personal stand point this has been terribly disheartening. It is literally a slap in the face to these many residents that thought they could make a difference. Not only were their good intentions blown away but so was a considerable amount of Department of Ecology money and volunteer hours.

If the PSP wants to engage the private land owners that's great. But if we don't see a like commitment for municipalities your just wasting our time and yours. And while I continue to try and work the shoreline plants because I like the way they are looking as they mature, I would never waste my time initiating a project like this again. There needs to be a mechanism to punish acts like these.

I too attended the meeting in Bremerton last week as well as several others and the E3 summit of a few months ago. At all these there was a great number of City and County employees in attendance. What good is their attendance if they just go back to their cubicle and approve more municipal asphalt and outfalls?

The PSP goals are destined for failure unless they get some teeth in their directives and then have the courage to go after these municipalities as diligently as they do private land owners... Because Private Property owners have had enough of the "Do as we say not as we do" line. And you'll lose their support. Darn near have lost mine!

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We're willing to be "partners in the Puget Sound Partnership"... But not scapegoats for the environmental degradation at the hands of local government with thier heads stuck in the sand!

From: Deb Brown

Date: 05/04/2008

Comment: I was hoping that someone could contact me regarding a large development 18.12 acres which is in the preliminary planning stages in our area. I live in Brownspoint on a clay based hillside, with a wetlands area adjacent to my property. This wetlands, and the artesian springs are considered a Ns2 stream by the City of Tacoma. The developer is seeking an exemption from the wetlands permitting process in order to build on the hillside above us. His plan is to build 65 homes on this hillside, with at least one concrete wall 25 feet tall in places through the "wetlands ravine" in order to level the hillside and create as many homes as possible in this area.

We have a created a committee to address this issue. At a committee meeting the partnership was mentioned as a possible contact to perhaps provide us with some guidance as how to address our concerns.

The background information is: this large tract of land touches on many adjacent neighborhoods, Watchtower, Pinnacle Point, Seaview, Brownspoint etc. This site actually was a Watchtower during WW II and was staffed 24/7 by citizen's to warn of any incoming enemy planes. This property also at one time belonged to the Puyallup Tribe. It is one of the last remaining tracts of undeveloped land in Brownspoint.

One of our concerns other than the obvious, is the soil base and water issues on this site. The developer plans to develop this property in three stages. We do not know if he will cut down all of the trees and then start or just cut them down as he goes. Either way, the stormwater run off will be significant, and it will impact everyone on this hill, all the way down to the sound.

If someone would please contact me I would be happy to provide more information, and/or show someone the area we are concerned about. It is my understanding the wetlands, and stormwater runoff into that wetlands would be of concern to your partnership.

From: Steve Sperr

Date: 04/30/2008

Comment: I participated in the Habitat and Land Use forum in Bremerton on May 28, and enjoyed the various opinions and inputs from the audience. Someone mentioned that we should submit written comments to Millie Judge by May 5. I could not find her email address on the website, but I did find yours, so I am sending my brief attached comments to you. My comments are probably applicable to all 7 of the topics. Please forward them as appropriate to the right person. Thank you.

Comments on “Habitat and Land Use” Discussion draft

1. There is an inconsistent use of terminology, and especially the specific wording of the Action Agenda Questions. Because of this, it is hard to keep track of the organization of the Action Agenda. The questions within each topic themselves are worded one way in one location, another way in another location. Very confusing. Which leads to the second comment –
2. The Action Agenda needs an outline so that people can keep track of where things are.
3. It also needs a list of definitions somewhere, e.g. what does the phrase “attribute status” mean? It was used in the presentation on May 28. I am sure some technical specialists know what it refers to, but if you truly want public input on this, either define it or get rid of it.
4. There should have been handouts at the forum of the Powerpoint presentation(s) made. It was hard to follow what each speaker was addressing within the Action Agenda or topic, or for that matter the day’s Agenda at times.
5. Two positive comments – allowing enough time for a number of people to comment; and the obvious subject matter expertise and passions of each of the speakers. Kudos on both of these.

From: Peter Beaulieu

Date: 04/25/2008

Comment: A special note to Martha Newman:

Picking up on my two remarks to you this morning, I would like to leave on the table for possible future rumination these four ideas (beginning with the two we discussed).

First, I mentioned the critical importance of someone (the PSP?) advancing GIS across agencies with common "registration" (or whatever the term is) to finally assure layered understanding of policy issues by policy boards (as well as supporting technical coordination).

Second, I proposed that, because of the uncracked nut of implementation for problems tracing back to confounding land use factors, it is critical to develop freestanding action agendas for each of the Puget Sound sub-basins (including in some carefully articulated institutional way their tributary WRIAs). I stressed that these six action agendas should be developed alongside of and in dialogue with the overall Puget Sound agenda, not simply as subsets (their own "priorities" with some of these priorities in common and aligned with each other). In water resources issues it is necessary to work backwards from the eventual action agencies, not linearly toward these agencies as from problems now toward solutions later next year. (This backwards approach, with early and focused stakeholder engagement on a geographic basis, might even now begin to give shape to the caucus engagement that Ruckelhaus mentioned at the April 24, 2008 Regional Council annual assembly meeting last evening.)

Third (new), without elaboration here, let me plant the idea of doing something different than either historic "random acts of kindness" or the proposed "prioritized" issues. The third philosophy, "strategic choice," would angle toward separable but coherent "action packages" as the desired outcome, as compared to random acts of kindness or the the almost-but-not-quite successful prioritized IN-actions. There are a few successful examples of the strategic choice approach in our region.

Fourth, on citizen involvement and hoped for buyoff, let me recommend a book (a quick read) on nuclear waste disposal. In that case, the citizen component translates possibly into a proposed and continuing Trust to keep things on the table for several decades even as legislative and Congressional budgets lurch along in discontinuous two-year segments. For this possibly transferable lesson, see America's Nuclear Wasteland (Max Power, WSU Press, March 2008). Max worked on the Hanford project in Olympia for many years and is highly credentialed (Rhodes Scholar, prominent Regional Council staff member in earlier years, etc.). FOR EXAMPLE, one might imagine a three-part structure: (1) a trust being set up to help citizens keep Puget Sound in the spotlight, and whose ongoing findings/rumblings would feed into (2) a permanent caucus of accountable agencies as is already being assembled, and with both of these linked by (3) a credible and transparent risk assessment and risk management component which would be coopted by neither the mission specific agencies nor "the public". The risk

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assessment/mangement component would mediate between urgencies, information gaps, and budgets, to generate additional and doable "action packages".

From: Cindy Beckett

Date: 04/24/2008

Comment: I wonder if one of you would reply to my question? I have contacted the ECY office about this rating/compensatory system and asked who is responsible to see to it. The reply was the same as always - "it's up to local government, and if local government does not do it, there's nothing they can do" ECY does not do a hands on thing, even if every wetland in a county is destroyed, they still adamantly claim they have no authority nor jurisdiction. It seems very strange to fork out \$200 million tax payer dollars to "fix" Puget sound while refusing to insist that the protections are honored. What a way to run a State! Take what I say and do what you want. Is there ever a point that you will actually do something about the continued loss of functioning wetlands that used to provide plenty of fresh clean cold water to the salmon or will it forever be this way?

This means that we have yet another non enforceable document to line our shelves with. We already know (and so do you) that none of ECY's criteria are met now, this county claims that OFM & CTED have virtually ordered them to build at a minimum of 4 per no matter what, so they refuse to remove the wetlands from the available buildable land but instead claim the what property's total "could be if there wasn't wetlands on it" and cram them all together on what's left, ending with lots that range between 4500 & 5000 sq ft. That is not 4 per under any stretch of the meaning of the words. Often they allow huge portions of the wetlands to also be destroyed calling it "compensatory mitigation" where the wetlands are actually destroyed then re-built later, resulting in a total loss of function.

You already know this, my question is, why is OFM doing this to our county, and why do you keep releasing manuals and procedures that cannot be implemented or will not be enacted and used and then refuse to see to it's implementation?

From: Tim Trohimovich

Subject: [wagroma] FW: Using the Wetland Rating System in Compensatory Mitigation

From: Hruby, Tom

To: WETLANDS-INFORMATION@LISTSERV.WA.GOV

Subject: Using the Wetland Rating System in Compensatory Mitigation

Hello,

We have just completed a focus sheet that describes the constraints inherent in the Washington State Wetland Rating Systems when used for estimating changes in functions.

The rating systems for eastern and western Washington were developed to categorize wetlands in the state based on their sensitivity to disturbance, their rarity, the difficulties in replacing them, and a characterization of how well they function. An intermediate step in the categorization requires users to calculate a numeric score for each of three groups of functions (improving water quality, hydrologic, and habitat). As a result, there is interest in using these intermediate scores to estimate changes in functions that can occur from impacts, restoration or compensatory mitigation. There are, however, several major constraints in trying to use the scores for these purposes. These constraints are described in the focus sheet. I am attaching a pdf file of the sheet and it will also be available in the next few days on our web. Please contact me if you have any questions.

<<Focus Sheet - Using Rating System in Mitigation 3-18-08.pdf>>

Feel free to forward this information to other interested parties.
Thanks.

From: Peter Beaulieu

Date: 04/22/2008

Comment: The following suggestions are somewhat of a patchwork rather than comprehensive, and do not duplicate points already made in the Partnership's five initial draft topic papers. They consist mostly of one retiree's reminiscences (!) of specific examples possibly helpful to the Partnership in its new work, and hopefully carry forward the dedicated work of many who have come before. (The Partnership is to be specifically commended in its enabling statute and personnel connections for building directly on the sustained efforts of the Puget Sound Action Team.)

Overall, the content of the Partnership's draft papers, their content and tone, and the reader friendly structure for response are all to be most highly commended. This is good work, and even a pleasure to read.

Thank you for this early opportunity to contribute.

THE BASELINE PROBLEM STATEMENT

Find opportunities to tie pollutants to large scale or widespread chosen practices, when this is more instructive than a less direct tie to demographics. (The governing state statute is the Growth Management Act of 1991, which mandates “management” rather than an abstract ceiling.)

Examples:

- The Water Quality paper reports that in recent years polynucleated aromatic hydrocarbons (PAHs) have increased. PAH deposition rates dropped precipitously in the 1950s as coal burning was replaced with other home heating systems. The recent increase (still far below historic levels?) must be presented in this larger context, and then traced to correctible sources.
- As a second example, the Interstate 405 Corridor Program and the earlier I-90 bridge crossing claim a net decrease in runoff even as transportation capacity is increased. This outcome is due to design improvements such as culvert improvements for both old and new facilities (case study for retrofit discussion, pp. 16, 29). The cleanup burden must not be placed fully on the incremental increase in Sound area activity (a case study is the rate structure attached to the Brightwater Wastewater Treatment Plant proposal in King/Snohomish County. A balance was attempted between the financing of new treatment capacity and stormwater runoff.).

What is the more researched and current timeline information for various deposition rates (not only levels in the water column)? In 1983 the deposition rates for Puget Sound as a whole (not for localized sites) for several contaminants were reported to have declined in recent years.

Examples (affects p. 32):

- hydrocarbons reduced by 50 percent since 1950,
- Chlorinated compounds by 30 to 50 percent since 1960,
- Mercury by 20 percent since 1960 (The Habitat – Species Diversity paper reports that airborne mercury is on the rise due to emissions in Asia, p. 5),
- Arsenic by 15 percent since 1960 (Tacoma Asarco Plant closure);
- Lead by 10 percent since 1960.
- Holding constant in 1983 were silver, copper, cadmium.

STRATEGY: OVERALL

Further develop the insight that optimum ecological restoration is not the same as homogeneous protection at all geographic scales. That is to say, it is a smart move to protect the most valuable and vulnerable areas (equivalent examples: Mountain to Sound Greenway, rainforest preserves established in the Amazon rainforests, and even National Parks).

Puget Sound examples (finer grained, but from within our urban region):

- The approach used for offsite mitigation in the Cross-Base Highway Corridor Program might offer a kind of template. The documented strategy included identification of redundant candidate project areas offsite (each with unknown availability), and for each investigates public and private long-term management options, etc.
- The incorporation of an Environmental Program into the Record of Decision for the I-405 Corridor Program (making such actions obligatory), and which selects (with directly involved water resource agencies) cost-effective mitigation sites for runoff volumes from within entire sub-basins of the WRIAs, rather than only from within the project corridor. (The transportation Corridor and sub-basin maps – in the Green and Cedar WRIAs -- are superimposed. In its complexity and size – 240 square miles – the I-405 Corridor is conceptually equivalent to a WRIA plan. The transportation and WRIA fiefdoms worked together.)
- Supporting the proposal for protection of pristine areas (Water Quality paper), is the example of Seattle Water Department consolidation of Cedar River Watershed ownership. This was done over two decades of trading property inholdings for acreage at other locations in the Cascades (and as originally proposed in the 1983 Comprehensive Water Supply Plan, another good model of complex resource management.)
- On the two-way relationship between water resources and land use, notice that the Snohomish Valley is protected by the urban growth boundary, while the earlier Green River Valley is not. Much of the difference turns on a seemingly technical detail, the fact that under federal guidelines urban development in the flood plane counted as a project benefit in the 1950s (hence the Kent-Auburn warehouse and Boeing complex), but not for any proposed dam on the Snohomish tributaries as under the Snohomish Basin Mediated Agreement (hence dairies and cattle pads).

STRATEGY: GEOGRAPHIC FRAMEWORK

Thinking backwards from implementation options to the way we frame the Puget Sound problem statement at the start, how might we begin early to cross-connect problem formulations to real implementation options? How can we think right-brained about the total package?

- Without muddling the more linear and legitimate Partnership approach, develop flexible technical capabilities, i.e., provide a standardized GIS capacity, a shared ecosystem map overlay system displaying (a) the Puget Sound Basin, (b) the Water Resource Inventory Areas (WRIA) boundaries and plans, and where available (c) 1960, 2000 and 2040 data sets (e.g., now available Puget Sound Regional Council maps), etc.
- For each sub-basin; the Geographic Information System (GIS) capability must be transparent to GIS for Water Resource Inventory Areas (WRIAs), to local land use GIS as well as habitat GIS (which is already proposed in the Habitat paper, P.20), and to stormwater (Water Quality, p. 30).
- The logic of realistic and effective implementation requires that the Sound be treated equally as a basin unit and as a collage of sub-basins, rather than as a unity nuanced only a bit with local detail. Specifically, priorities and an action agenda must be decisively developed in two distinct categories: overall, and sub-basin with some shared elements. The layered look is in. For example, and affecting both categories, what do we know about tidal circulation patterns and basin and sub-basin flushing cycle?
- The purpose for GIS compatibility and transparency is twofold: technical analysis and integration as already proposed, but also layered visibility of interrelated issues for the direct attention policy boards otherwise confined to their fragmented agency mandates and “radar scopes”. An excellent display would be a view of future land uses, showing those small sub-basins where future growth will violate the general thresholds of more than 12 percent impervious surface, or less than 65 percent forest cover (p. 8).
- This reader believes that the regional agenda must consist mostly of a fabric of sub-regional actions. GIS transparency is encouraged, for example, to help ensure integration of land use and water resources planning (p. 31), however this technical tool must not take on a life of its own, obscuring critical caution contained in the Water Quality text, namely, that pollutant runoff is highly variable within land use classifications (p. 7). A focus on gusty and clear performance measures is probably more consistent with the state Growth Management Act and more to the point than a population lid as seems to be implied in the Habitat paper (pp. 63, 65).

More rumination:

- Develop a map strategy. Replace or greatly supplement the King County pre- and post-1990 Map in two ways (Water Quality paper). The suggestion here is to move in the same direction, but in a more informative and comprehensive way. Why only King County, and why pre- and post- 1990? First, use the Puget Sound Regional Council maps for the four-county sub-region for 1960, 2000 and 2040, supplementing these as possible for the remainder of the Puget Sound basin. Second, superimpose the pre- and post-map onto the mosaic of WRIA basins. A technically consistent and shared map strategy might or might not imply a centralized control of maps and information (as is proposed in the Habitat paper).
- Superimpose the Conservation Trust Map (Habitat paper) onto a mosaic of WRIA maps and onto a jurisdictional map. This will give a better look at natural systems and at local government implementation aspects.
- Systematize the maps. We are challenged by the fact that Puget Sound basin activities were superimposed on a standard composite of WRIA boundaries (not yet labeled as such) in all of the topical volumes of the federal/state mult-agency Puget Sound and Adjacent Water Study (PSAWS), completed in 1971 and in the days prior to GIS(!). With this basinwide context, additional WRIA level maps can then be lifted out for sub-basin attention without fragmenting the unified effort. This split-level approach has been done before.
- Marine mapping. Show what we can about Puget Sound tidal behavior and sedimentation issues. A very preliminary effort is provided by the 1983 Puget Sound Water Quality Conference (see footnote 3, Proceedings, above). Of ten outgoing tidal units heading north from Seattle, seven reverse with the next tide to return from a point south of Port Townsend, with six of these then continuing so far south as to mostly encircle Vashon Island clockwise (four units), or to move south even through the Tacoma Narrows (two units). Supports Water Quality paper, p. 33).

HABITAT – SPECIES DIVERSITY PAPER

I have no detailed input at this time to the institutional recommendations posed in the Habitat– Species Diversity paper. But, I do suggest that the boldness of centralized control, if warranted (as it might be), must be strategic rather than blanket, and nevertheless find a way to truly share the spotlight, share the credit, and structure itself as a convincingly collaborative Puget Sound initiative, e.g., project-level co-sponsorships. (Co-sponsorship

assures co-operation, in spades; it also inoculates against unilateral budget triage along the way.) An annual awards program for stellar actions worthy of replication, large and small, also might help keep the initiative visible by routinely fostering community stewardship and cumulative small steps serving our common heritage and responsibility. It might be that centralization – the CEO model – might best be applied to strategically selected elements of a broader and collaborative political and community chemistry.

Are there at least one or two opportunities for bio-manipulation toward good results in either the Sound or the tributary basins? A possible example is the story of Lake Washington cleanup, a training wheel exercise compared now to the needs of the entire Puget Sound basin. The lesson here is that in complex situations, some properly conceived engineering actions can actually improve the ecosystem.

- Finding: In the 1970s Lake clarity improved twice as much as was predicted from proposed engineering solutions (the later interception and diversion of sewage local outfalls by Municipality of Metropolitan Seattle) and is traced in part to channel dredging and the resulting improvements to spawning and survival conditions for smelt (!) in the Cedar River. Read on...
- Partial explanation: As shown by science, perturbations in the food chain – not only pipes and mortar – accounted for half of the reduction in algae growth in the Lake. Augmenting the documented channel modifications, and not suspected in the Edmondson article, is the concurrent and additional benefit of enhanced streamflows. This enhancement was due to development of the adjacent South Tolt River Watershed as a conjunctively operated water supply source. (When I detailed the timing and magnitude of this serendipity action to him, Edmondson was intrigued, but scientific conclusiveness was not pursued.) Bio-manipulation might merit a line in the Water Quality paper 28. (Edmondson is cited on p. 11).
- Land Use Connection. As a major point to be carried into the Land Use paper, we should flag the benefit of habitat corridors in urban areas (I think I did see this in one of the papers), linking small and otherwise fragmented habitat areas together into more viable systems. An object lesson on why cost-effective habitat alternatives are sometimes needed – off-site mitigation – is provided in the Corridor Plan for the Cross-Base Highway in Pierce County. The habitat corridor approach involved a bizarre structural squirrel bridge (gasp!) over the proposed highway, at great cost. It looked like the Aurora Boulevard pedestrian overpasses linking the Seattle Zoo to the lower

parkland south of Greenlake). This was to protect stands of mature oak trees south of the McCord runways, which however took root only after the site was cleared for runway use a recent fifty or sixty years ago. (Further, the troublesome demise of Western Gray Squirrel populations is traced largely to the introduction of the more aggressive Eastern Gray Squirrels).

- Resilience. The paper refers to “resilient” ecosystems (p. 7). This discussion should be expanded slightly to explain that species are resilient, rather than fragile, but that this resilience does have boundaries. Part of the research and management effort is to understand and preserve these boundary conditions.

- An Object Lesson. The plight of the elusive Beller’s ground beetle is noted (p.2). Note well the following....In the early 1980s the Mediated Agreement for the Snohomish Basin (the first large scale national mediation in the United States, convened under Governor Evans) was stalled because the keystone element, a proposed dam on the North Fork of the Snoqualmie River, stumbled across the possibly endangered Beller’s ground beetle. The upshot of all this was that the single find of such a beetle was due to the fact that some wandering explorer picked one up, and not necessarily that this was the only one around. A beetle in a bottle equals the sum total of data available.

- (Continued) Further research disclosed that staff at the national level responsible for sorting through this sort of thing consisted of only two people. As chair of Seattle’s interagency and public-private Comprehensive Water Supply Plan Advisory Committee (1983-5, or so) I recall debating whether local funds should be used to help support additional staff people at the federal level to clean out the in-basket. One can only hope that there are not other such species regarded as endangered possible because of incomplete paperwork. This was in the 1980s. One would think that after a quarter of a century the National Fish and Wildlife in-basket would be cleaned out (!). The gap between data and information should never be underestimated. The data say(s) “here’s a beetle;” the information says we should light some more lamp posts before in-basket paralysis (quite different from analysis paralysis) becomes a default policy. This caution toward data (all bow, please) applies in at least a limited way to the goal of “identify(ing) the most immediate needs for species, conservation and recovery” (p. 5).

(Continued) The Partnership proposes an ecosystem planning approach. Are there tensions between this approach and the occasionally problematic listing of species (the Beller’s beetle) under the current wording of the Endangered Species Act (ESA)? What would a hybrid and mutually

consistent program look like?

- **Invasive Species.** In the remarks on invasive species (p. 7) the paper does not mention the Eurasian Water Milfoil invasion and proliferation that began in the late 1970s. The Section 208 (National Water Quality Act) effort of the Municipality of Metropolitan Seattle spent considerable time on this at the time new threat. Here's the scoop....The Milfoil was probably imported from southeastern states by migratory birds, or perhaps attached to boats. It is my distinct memory that a local figure, a proprietor of commercial parking lot fame, noticed this stuff around his dock on Lake Washington and ripped it all out, chopped it up, and then disposed of it in the Lake. Milfoil segments are capable of re-rooting, separately, and so, there you have it. Perhaps a lesson here about ecosystem surprises and best management practices.

- **Fine tune Tables S1-1 and 2, and the text.** Distinguish between “levies” and setback levies as are installed in the Snohomish Basin. Distinguish between “culverts” and culvert retrofits that can yield net benefits. The ambiguity of dredging in some cases might also be noted (see my comments on Edmondson and the Cedar River). With regard to “dams” we should note the likely Sound-wide significance to habitat of removing (retrofit big time) the Elwa Dam near Port Angeles. The Hood Canal entries should recognize the decisive impact of low tidal circulation, not simply the shoreline activities. In the discussion of impervious surfaces, refer to the threshold reported elsewhere in the papers (12 percent impervious surface), and like wise for forest removal (threshold of less than 65 percent coverage). In the text (p. 35), it was the small and industrial Cuyahoga River in Cincinnati that caught fire, not the Ohio River. On page 43 it might be useful to distinguish NEPA and SEPA, the latter goes so far as to assert environmental rights, and procedurally the former considers new alternatives up until the final point of decision (no earlier cutoff). On page 58 the national trend of 80 percent net loss in wetlands since passage of the Clean Water Act is deceptive. In our region, much of the loss is in the filled and industrialized lower Duwamish, dating from the turn of the last century.

- **Steps toward management at the ecosystem scale (p. 35)** can learn from the I-405 Corridor Program experience (Department of Transportation). Two features were (1) the use of interagency consensus points and, therefore, (2) the early engagement of resource management permitting agencies at an early stage. That is, the permit focus of these agencies was broken open by their participation in earlier and corridor-wide framing of issues and solutions, within which project-level permits might be given more meaningful and less myopic review. A third essential feature of the Corridor

Program was (3) its joint planning structure; it was an interagency effort precisely because the various agencies have separate mandates and the potential for downstream vetoes.

(Continued) Also related to ecosystem approaches, the introduction of “adaptive management” might be expanded slightly to note the value of having a portfolio of corrective actions to choose from and, second, the explicit recognition that as we learn more commitments to past actions can legitimately be replaced (in some instances), not simply dog-piled with additional requirements. The pioneering entity for adaptive management, the Pacific Northwest Power and Planning Council, (I believe) follows this philosophy.

(Afterthought). Regarding wetlands designations, here’s an anomaly to think about. Under the FAST Corridor Program (Freight Action Strategy), a systemic and largely successful approach was attempted to dealing with the intersection of marine port rail container traffic and the constricted urban setting with so many at-grade rail crossings. In the dozen or so projects selected, the environmental work was assigned to the free-standing (but systemic) grade-separation projects (ranging downward in cost from \$150 million). In the Kent Valley we encountered a project that got stuck for budgetary reasons, and then found that the cleared site had earned inflexible wetland status due to seasonal ponding in successive years. A “wetland”?

The project had to start over at a less optimum location. The incremental cost increase would have been sufficient to support the Partnership for several years. Part of the “problem statement” for the Partnership will be to step out its own process in order to touch bases with reality on things like this. One of the consistencies in fragmented decision making is to remain ever “penny wise and pound foolish”.

From: Don Russell

Date: 04/22/2008

Comment: The recent article appearing in The News Tribune about the placement of 27 root wads along the shores of Spanaway Lake (only one of which is entirely immersed in the lake) to "restore the shoreline and protect salmon" inspired me to write a paper titled Pierce County's Faith Based Chambers-Clover Creek Watershed Recovery Program. A tenet of this faith appears to be that if you can keep surface water runoff on the surface in the midstem Clover Creek drainage channel, the salmon will return.

A copy of that paper is attached. Enjoy.

PIERCE COUNTY'S FAITH BASED CHAMBERS-CLOVER CREEK WATERSHED SALMON RECOVERY PROGRAM

Preface

This paper describes the origins and current existence of Pierce County's faith based Chambers-Clover Creek watershed salmon recovery program.

Historical Backdrop

Up until the mid 1850s there were substantial runs of chinook, coho, sockeye salmon and steelhead (sea run rainbow trout) in the Chambers-Clover Creek watershed. By the late 1800s these runs had been significantly diminished as a result of dam building activities and the draining and filling of wetlands that served as dry season refuges for salmon smolts and steelhead. By 1940 almost all salmon runs had ceased in the Clover Creek above Lake Steilacoom as the upper Clover Creek reaches were modified and drainage ditches were dug to convey surface water runoff from the Parkland, Spanaway and Midland areas. In the 1960s the perennial Clover Creek stream reach that flowed through PLU was diverted to a dug drainage channel that paralleled Tule Lake Road. As a result of loss of water in the reach of Clover Creek from 136th St S to the wetlands located between Spanaway Loop Road and McChord AFB the entire relocated streambed was asphalt lined. This had several effects. The surface water runoff carrying capacity of the modified channel was enhanced and the asphalt lining prevented weed growth in the channel thereby reducing flooding and drainage channel maintenance costs. By this time no salmon could reach the Parkland area (except during 1996-97 groundwater flooding).

On to this scene came the Clover Creek Council comprised of a few dedicated individuals who vowed to restore salmon runs to the Clover Creek system above Lake Steilacoom. Unfortunately they subscribed to the notion that was promulgated by DOE's 1986 publication titled: Intermittent Flow on Clover Creek: Causes and Possible Solutions. This publication attributed intermittent flow to "disturbance of natural stream bed seals" and advocated sealing losing reaches of Clover Creek as a remedy. The Council accepted "sealing the stream bed" as one of the tenets of its faith and decided that all that was necessary to restore salmon runs in this drainage ditch was to place large rocks, gravel and large woody debris on top of the asphalt and plant shade trees all along its banks. They also realized that for salmon to reach this "restored" reach they would have to construct fish ladders in the lower portion of Clover Creek to allow salmon passage over the physical barriers

that existed above Lake Steilacoom. At first these ladders were constructed of wood. Eventually the Council was instrumental in convincing the Pierce Conservation District and the City of Lakewood to construct permanent fish ladders and weirs in the area immediately above Lake Steilacoom so salmon could access the “restored” asphalt lined Parkland portions of Clover Creek.

The Council became concerned about a continual loss (due to infiltration) of mainstem Clover Creek water between 136th St and 138th St S and, according to one tenet of its faith, began a long term effort to seal this portion of the creek with bentonite.

Recent Manifestations of the Faith Based Approach

Pierce County’s 136th St and B St S Clover Creek Flood Plain Restoration Project removed the artificial asphalt seal in the portion of the North Fork just above its confluence with the mainstem and replaced it with a “natural seal”, i.e., clay. They rerouted mainstem Clover Creek from 136th St S to its junction with the North Fork and lined its bed with the same “natural seal” material, all at considerable cost. Because of a continual loss of surface water due to infiltration above 136th St S, a group of volunteers sealed the stream bed with clay from just below 138th St S to the 136th St sealed portion of the completed Phase Two Restoration project. The intent of all this streambed sealing with clay was to prevent surface water loss due to infiltration and thereby allow surface water flowing from the North Fork and mainstem Clover Creek to reach the asphalt lined portion of the Clover Creek drainage ditch located west of A St S.

A more recent example of the “seal” tenet of Pierce County’s faith based salmon restoration project is “restoration” of a portion of the Clover Creek drainage ditch located on the Parkland Prairie Reserve. Here the intent is to divert surface water runoff into an engineered simulated stream that features meanders and large woody debris, and true to the tenet, incorporates a sealed (clay) low flow channel.

Situational Reality

The salmonids that once inhabited the Chambers-Clover Creek watershed evolved in an environment where groundwater discharge was the dominant determinant of their success. Groundwater discharge was the source of water in Clover Creek, its tributaries, wetlands and lakes. Groundwater flooding provided the means for salmonid to migrate between discrete and dry season disconnected water bodies that served as their spawning beds in the fall and rearing habitats during the dry season. The connectivity of streams, wetlands and lakes with underlying shallow aquifer groundwater was important in

many ways. In the fall groundwater (flooding) discharging up through streambeds, and wetland and lake bottoms dislodged accumulated silt and sediments thereby preparing these gravel substrates for salmon spawning activities. Continued groundwater discharge up through gravel nesting areas provided the dissolved oxygen and water chemistry required to maintain viability of salmonid eggs. Upon hatching salmon young found ample macroinvertebrates to feed upon. The cold, oxygenated groundwater discharged into discrete wetlands and lakes provided the rearing habitat for smolt over the dry season. Groundwater flooding in the following year allowed the smolt to migrate over otherwise dry streambeds and land surfaces downstream to Puget Sound. Almost all of this natural condition and groundwater functioning has been lost in the heavily urbanized Clover Creek Basin.

What we now have instead is groundwater that is disconnected from streams and wetlands, lower lake levels and diminished groundwater flow through. Exacerbating this condition is that the shallow aquifer that does discharge into our streams, wetlands and lakes is now polluted with nutrients as a result of current surface water and human waste management practices. The Folly of a Faith Based Approach to Pierce County's Salmon Recovery Program

Millions of dollars are being spent on trying to keep polluted surface water runoff on the surface in Clover Creek drainage ditch rather than to treat it in managed wetlands and drainage ditches and ponds (by allowing vegetation to assimilate nutrients, organics and heavy metals during the growing season and then remove these sequestered pollutants from the system by harvesting and removing vegetation each fall) and allowing the cleansed surface water to infiltrate to recharge the depleted and underlying shallow aquifer. Sealing a streambed is a contradiction of the natural scheme of things in a glacial flood plain setting.

The entire North Fork and mainstem of Clover Creek from 138 th St S to the sediment laden wetland located between Spanaway Loop Road and McChord AFT has been engineered as a surface water runoff drainage system. Therefore it should be managed to treat and infiltrate as much of this surface water runoff as possible so it doesn't pollute what little remains of lower (McChord and below) Clover Creek's groundwater discharge dominated flow. As a surface water drainage system this reach of Clover Creek is inhospitable to salmon and, at this late date, very little can be done to make it so. Surface water runoff chemistry is antithetical to salmon survival.

Fortunately there are reaches of the Clover Creek and tributaries that could

be managed as salmonid sanctuaries. These reaches include lower Clover Creek from Lake Steilacoom to McChord AFB, Morey Pond, Morey Creek, Spanaway Creek, Spanaway Lake, upper Morey Creek (aka Coffee Creek) and, possibly, Tule Lake. However even here there are formidable barriers to overcome. First and foremost is the degraded and polluted condition of Spanaway Lake. This Lake is a producer of cyanobacteria toxins that render much of Spanaway Creek, Tule Lake, and parts of Morey Creek inhospitable to salmon, wildlife and people. This is not a natural condition. It was brought about by reliance on on-site septic systems by residents living around and upgradient (via groundwater flow) of the lake and exacerbated by surface water management practices.

Other obstacles to over in order to restore salmon runs in this corridor will be (1) removal of salmon migration route blockages, i.e., Morey Pond dam and invasive species, (2) identifying and managing off stream groundwater fed salmon smolt refuges along the corridor, (3) the summer and fall cooling of Spanaway Creek water by withdrawing supplemental cold water from sufficient depth in Spanaway Lake to augment the warm water flowing from its surface, and (4) managing the shallow aquifer level in the vicinity of the marshes adjacent to McChord AFB so as to assure minimum base flow in lower Clover Creek and adequate flushing action in Lake Steilacoom.

Conclusion

To effect meaningful salmon restoration in the Clover Creek Basin will require that the current faith based approach to salmon habitat restoration that is occurring in middle stem Clover Creek and the North Fork be replaced by a science based approach to salmon habitat restoration in the Spanaway Lake to Lake Steilacoom corridor of Clover Creek.

From: James Branson

Date: 04/20/2008

Comment: On Sunday, April 20th, at 5:40 PM, I saw thousands of seagulls mobbing the water in the shipping lanes between Vashon ferry dock and Seahurst Park in Burien. I suppose this could have been a natural phenomenon, but I had never seen anything like it before, having lived by Puget Sound for over thirty years. Could this have been related to the dumping of sewage or garbage from a ship? If so, is this legal? I tried to find someone to contact to report this to, but there doesn't seem to be any Environmental Crimes Hotline. (There should be.) A large freighter passed that spot heading north just before I was the mobbing gulls.

PugetSoundPartnership

our sound, our community, our chance

From: Mike and Liz Fessler

Date: 04/20/2008

Comment: I've been ask by a committee here in Port Ludlow to top trees on my property for my neighbors. I have tired to reason with this ACC committee to understand the nature of my property. First, I live on a bluff with a slope subject to flooding from my neighbors. The bluff, I understand is already saturated with water. The drainage committee has not installed a drain here for our protection. Along with that our sewer line for the entire street runs along this bluff.

Liz and I are shoreline stewards. Can anyone help us with this matter.

From: Glen Hemerick

Date: 04/18/2008

Comment: I am trying to send pictures of two lakes after plankton release. long lake was toxic 2003. free of toxic algae 2004,2005,2006 after plankton release each year. . until 2007 when the wa legislature gave nearly one million dollars to two men to treat long laKE WITH PESTICIDES. i stopped treating long lake. but in 2006 the kitsap county health dpt requested me to release plankton into toxic kitsap lake and into red tide paralytic hood canal. both successful.

From: Art James

Date: 04/16/2008

Comment: Attn: Risk Analysis Team, Topic Forum Habitat Core Group, Funding Core Group

Friends: John Cambalik was kind enough to receive this proposed idea in person and suggested I attention it to your groups with a preface. I'm in Prince William Sound until October. Refer questions to John.

Preface:

The "handle" on the following proposal is a very ambitious public outreach that offers a human memorial product as component in habitat creation, conservation and repair of Puget Sound. The accumulation of these memorial symbols as underwater reef and habitat is a natural for anchoring kelp and cover for a diverse community of life. The "customer" is the subscriber who will participate wholeheartedly because we have provided them with an "enhanced" legacy of environmental responsibility. The

"beneficiary" is nature directly, through an untouchable marine sanctuary, and more broadly supported by an ongoing revenue stream far in excess of operating cost.

If the logic is valid, that by combining the human memorial tradition with habitat creation it is possible to draw unprecedented public support to conservation objectives, then the model can be applied to forest, watershed, estuary, etc. Each different context would require a benign physical component representing the memorial object, the psychological key for each subscriber.

PUGET SOUND MEMORIAL MARINE SANCTUARY

"Habitat creation via subscription." Art James.....3/25/08

PSMMS proposes to create a marine sanctuary within appropriate designated boundaries (to be determined) encompassing an artificial reef comprising the accumulated reef/memorial stones placed there on behalf of paid subscribers. Those subscribers will choose between a Reef Stone with a published identity and GPS location (\$100), and a Memorial Reef Stone incorporating funerary ashes into the stone composition, published identity and GPS location (\$1000).

The sanctuary site and mission will provide:

A unique physical setting additionally regarded as location of human remains.

New habitat and research resource for ongoing efforts to maintain a healthy Puget Sound.

An emblem of human culture, compassion and commitment that every subscriber will identify with their participation.

Self generated revenue mechanism likely exceeding operating cost, providing ongoing funding support to broader ecosystem objectives.

Agenda:

- 1) Legislation creating PUGET SOUND MEMORIAL MARINE SANCTUARY and legal protections in perpetuity.
- 2) Legislation creating an administrative PSMMS entity and functional

hierarchy.

- 3) Engage existing agencies and regulatory science to perform;
 - a. site review and selection.
 - b. material science for cast stone composition and methodologies supporting ongoing reef-building requirement.
 - c. formulate research and objectives provided by new reef habitat, and attendant physical restrictions on both public and research activities on site.

4) Assemble business model offering reef/memorial stone subscription to global audience through traditional and e-commerce methods, including the letting of contracts to private industry for the manufacture of reef/memorial stones, their transport to and distribution at the PSMMS reef site, certain marketing, communications and other expertise as needed. *Include stringent documentation protocol (video) at both the reef/memorial stone manufacture site and at the distribution (reef) site to ensure product legitimacy.

Summary:

PSMMS is an elegant idea. It brings immediate benefit by reef building and habitat creation. With the memorializing of our ancestors within a designated marine sanctuary we give homage to Puget Sound and by that act achieve a compelling public outreach objective. The marketplace, given a choice of living or memorial product and a demographic age-weighted toward the grave, bodes well for revenue generation and long term support for a healthy Puget Sound.

PSMMS will likely support efforts and objectives beneficial to Puget Sound far in excess of it's own operating cost. There is no foreseeable end date to that benefit. Please recommend PSMMS.

I wish to be PSMMS's first subscriber and here offer my order for both a Reef Stone and Memorial Reef Stone.

PSMMS.....Notes

"It is by accrual that we have harmed our natural inheritance, and an accumulation of good will that will repair it. How fitting is a thriving habitat constructed from our remains, toward that goal?" Art James.....3/25/08

Site Selection:

The sanctuary should be sited away from busy marine traffic, areas

commonly used for commercial or sport fishing activity, and known sources of pollution.

Site markers (navigational buoys) should be visible from some point of land accessible by automobile, to facilitate those paying respect to the human memorial contained there (quarter to half mile to at least one marker). Consideration should be given to this aspect projecting well into the future (200 years) as it relates to growth and development that might impede automobile access, parking, etc. (consider existing public venue).

Sanctuary dimensions should conservatively exceed the projected lateral dimensions of the reef (two million cubic feet of jumbled reef material) by sufficient buffer to protect marine life, and sufficient vertical depth to attract diverse life forms. Water depth should sustain kelp forest.

Reef/Memorial Stone Shape And Composition:

Reef/memorial stones need to identify a subscriber (surface indentation) as part of the manufacturing process. Stone shape should be easy to reproduce ((not exceeding one cubic foot), have characteristics advantageous to transport, deployment, and collective accumulation as marine habitat.

Stone composition should be utilitarian and environmentally benign (concrete?), but permanent (consider recycled materials where possible).

Memorial:

The Memorial Reef Stone contains incorporated funerary remains. It's implicit character is consistent with common memorial traditions. This includes a respectable identification, documentation and process protocol. These are best maintained using existing technologies, also including video at manufacture and distribution sites. A video record and archive will replace the public's physical presence in process and ceremony. The reading of name, dates and site location at distribution will comprise the memorial ceremony.

Reef Building:

Reef configuration might benefit from initial base layer of large material (contruction debis, rip-rap, culvert, other) on which the reef/memorial stones would be piled. This would invite the most diverse animal population.

The reef's linear configuration should interrupt the normal direction and velocity of tidal flow and thereby give cover and haven to diverse life forms. This detail might be repeated multiple times with parallel reef lines

perpendicular to current flow).

Manufacture And Deployment:

Manufacture and deployment of reef/memorial stones will be conducted by private contract. Cost and efficiency will result in batch-processing as well as deployment. Careful documentation will protect brand equity by respecting "memorial" tradition.

Outreach:

The spirit of PSMMS combines multiple human inclinations, some selfish, to achieve an unselfish objective. Subscribers will choose a Reef Stone because they sympathize with the goals of the Puget Sound Partnership, want their name attached to a worthy cause, like the idea of participating before their death, find this form of participation easier than changing their consumer behavior in solving environmental problems, guilt, or because it makes a unique gift for friend or family member.

A Memorial Reef Stone will also be chosen for multiple reasons, but certainly for the idea of a permanent physical inclusion in the Reef's thriving family of life. Death engenders life, an immutable law of nature.

Revenue/Funding - Long Term:

If, as expected, PSMMS becomes a net-positive revenue stream, those monies would be exclusively applied to additional habitat creation. Some fixed rate of limitation would be placed on admin/operational overhead.

* Let all considerations supporting PSMMS subordinate their operational designs and objectives to the spirit of marine habitat creation. Our human part in this process is just a mechanism to facilitate a thriving marine environment.