

November 15, 2004

County Councilmember John Koster
Snohomish County Council
3000 Rockefeller
M/S 609
Everett, WA 98201

Dear Councilmember Koster,

Thank you very much for your recent comments on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. We have included responses to your comments and questions below.

General Comments:

Comment: A key challenge that lies ahead is the coordination of the 14 local watershed plans. I would be interested in learning your view of the mechanism by which the 14 plans will be processed, and what the outcome of the process is to be.

Response: As you are aware, fourteen watersheds throughout Puget Sound are participating in the Shared Strategy process to identify actions to recover salmon and obtain the commitments needed to achieve this goal. Individual watershed groups, such as the SIRC, are developing the technical and policy recommendations and implementation plans for their watershed. These plans are submitted to the Shared Strategy as local chapters in what will eventually become the regional salmon recovery plan for all of Puget Sound.

This summer, the Shared Strategy provided policy and technical feedback to the individual watersheds. Beginning this fall, the local watershed groups will work to revise their draft plans for final submittal in the spring of 2005. These revisions will incorporate comments received from stakeholders and the public, and will identify actions and commitments for habitat, harvest, and hatchery management to achieve local watershed goals. Meanwhile, the Shared Strategy is beginning the work of integrating science and social policy into regional implementation scenarios for recovery, based on the content of the local watershed chapters. Habitat, hatchery, and harvest management recommendations will complement each other to restore naturally sustainable salmon populations to harvestable levels.

A regional consensus process will ensure that the final salmon recovery plan for Puget Sound ultimately reflects local needs and priorities while meeting ESA

requirements. The Shared Strategy is on schedule to deliver the final regional salmon recovery plan by June 2005.

Comment: Similarly, I am interested in understanding how SIRC envisions coordination & cooperation of the various jurisdictions with the watershed.

Response: The SIRC currently includes 25 members that represent local municipalities, tribes, state and federal government agencies, agricultural and forestry interests, the flood control district, environmental groups, and citizens. The focus of the SIRC is collaborative watershed-based decision-making and coordination. The Chinook Salmon Recovery Plan will identify the necessary commitments from each of these organizations to achieve the recovery goals. Each individual member of the SIRC will have the option of adopting all or part of the Plan and will prepare a written statement of commitment, to be provided to the Shared Strategy in the final plan. The SIRC will continue to work at a watershed scale, as it has since the early 1990's, to encourage cooperation and coordination among the watershed's jurisdictions and stakeholders to meet these commitments and achieve the collective vision for Chinook recovery in the Stillaguamish.

Comment: Also, I am wondering what is to happen following the 10 year planning horizon that is contained in the plan.

Response: Within the Stillaguamish watershed, the long-term goal is to restore viable populations of Chinook salmon to a level where natural population production is healthy enough to support recreational and commercial fisheries. To accomplish this, the SIRC supports restoring the watershed to a Properly Functioning Condition (PFC). The initial 10-year strategy will begin the recovery process by reaching approximately 30% of PFC. Beyond the initial 10-year recovery strategy and implementation of its recommended actions, an adaptive management approach will be used to determine the necessary actions to achieve the remaining 70% of PFC and long-term Chinook recovery objectives. The health and viability of the Stillaguamish Chinook populations will be judged by the Viable Salmonid Population (VSP) parameters described in the plan and ongoing progress toward reaching the Shared Strategy recovery planning targets. Necessary long-term strategies and actions for habitat, harvest, and hatchery management will be adopted as appropriate.

Specific Comments

Page 1: What does it mean to provide "guidance to local stakeholders..." to protect salmon in the watershed? To what extent will these recommendations become requirements for funding, permitting, etc.? Some clarification of intent is called for here.

Response: Technical experts within and outside the watershed have developed a sound technical basis for beginning the long-term recovery process. The proposed guidance consists of a series of recommendations for interested parties on how and where the SIRC believes Chinook salmon recovery should occur first. The SIRC does not intend for these recommendations to necessarily become requirements, but potential habitat restoration projects could score higher for funding and implementation if they follow geographic priority criteria.

The current WDFW streamlined hydraulic permitting process for habitat projects is based on benefit to fish. This process will not be affected by the recommendations included in this plan. Examples of habitat improvements include: the old channel reverse tide gate for improving water quality, Pilchuck tree farm fish passage projects, Banksavers riparian work on Portage Creek and other streams, Conservation District farm BMP programs, the riparian work of the Stillaguamish Steward on Church Creek, and placement of log jams to protect DNR's C-post bridge and create pool habitat.

Page 35: In the section on Harvest the report states "Chinook Salmon ... are vulnerable to harvest", and "Due to high harvest rates and ongoing watershed disturbances ... Stillaguamish Chinook ... exhibited declines in abundance and were ultimately listed as Threatened under the ESA in 1999." Notwithstanding these factual notes, the fundamental presumption underlying the recovery plan is that the problem is one of habitat, not harvest. Yet for the recovery plan to be effective, the remedy must be properly ordered to the cause. Indeed the remedial focus would be far different if the problem were harvest rather than habitat. This question calls for careful research, and the avoidance of presumption.

Response: Historic exploitation rates of Stillaguamish Chinook reached levels of 60-75%. Currently the Co-managers have set the rate at 25% and have averaged that rate since 1996. The Stillaguamish Tribe has released 250,000 Chinook juveniles each year since the mid-1980's and have not fished for them during that same time frame. Since the Stillaguamish Chinook is a weak stock indicator for the U.S./Canada Treaty negotiations, fisheries from Alaska, Canada, and the western U.S. are regulated by interception of this population. Incidental take is currently the majority of Stillaguamish Chinook harvest. In order to reduce harvest much more, all fisheries from Alaska to Puget Sound would have to shut down while Stillaguamish Chinook were migrating through.

Poaching is an illegal source of direct Chinook mortality in the Stillaguamish. It is certain that poachers are more successful snagging fish in shallow pools that are lacking physical cover and historical logjams that supported populations of Chinook in the past.

Page 36: The negative stance taken toward hatchery fish seems inadequately founded and possibly inconsistent with the purpose of the plan. The concluding

paragraph on p. 37 of the “Hatchery” discussion that begins on p. 36 contains for its operative verbs “can have” and “may”, rather than “does have” or “does”, appears to suggest conclusions that the literature doesn’t actually support. Moreover, employment of the word “theoretically” in the concluding comment “increased hatchery production theoretically makes more fish available for harvest, resulting in increased harvest pressure on wild salmon” has the probably unintended effect of downgrading the factual to the hypothetical. It is an arithmetic fact, not an hypothesis, that production of hatchery fish increases the number of fish available for harvest. I suggest rewriting this section to be consistent with the discussion on page 1 reflecting that the purpose of helping salmon populations recover to sustainable and harvestable levels is to assure a continuing and reliable abundant food supply for humankind.

Response: Many factors affect the ability of hatchery fish to provide potential harvest for human consumption or to return to spawn, providing sustainability and ecological values. Hatchery fish are vulnerable to predation, ocean conditions, toxic compounds, human-caused obstructions, water quality problems, and numerous other threats. Releasing more fish may or may not provide more opportunity for harvest. The SIRC is not advocating eliminating hatchery practices in the Stillaguamish at least until the habitat needed to sustain Chinook populations over time is improved. It should also be noted that humans are not the only life that rely on the returning salmon for food and nutrients.

Page 44: Who owns the 8,000 acres of riparian area that would be “...planted, restored, maintained and protected..” to achieve recovery? If these are private holdings, how will the landowners be compensated? Is that cost included in the cost estimates?

Response: The Stillaguamish watershed still maintains 72% of its land area in forestry land uses. The majority of the forest land is under the jurisdiction of the USFS Northwest Forest Plan for federal lands, the DNR Habitat Conservation Plan for state lands and the Fish and Forest Rules for private lands. Buffers regulated under the above management agencies will provide a large part of the 8,000 acres needed for PFC in the watershed. Other portions of the riparian zone throughout the Stillaguamish watershed are in public ownership under the jurisdiction of Snohomish County, WDFW, the cities of Arlington, Stanwood, Granite Falls, and Darrington, and the Stillaguamish and Tulalip Tribes. The Tribes, County, and Conservation District have worked with numerous private landowners to install and maintain voluntary buffers of varying widths. Private landowners can also enroll in programs such as the Conservation Reserve Enhancement Program (CREP) to be compensated for taking land out of production for buffers.

Snohomish County and cities in the watershed have existing critical area regulations that protect functioning riparian habitats for a variety of reasons including Chinook salmon recovery. Neither the county or the cities currently

compensate landowners for protecting those areas according to existing land-use codes. This is similar to the utility easements that local governments require without compensation to landowners for limiting use on a specific area of their property. The SIRC has always supported identifying other compatible economic uses of the riparian areas.

Page 43 – 45: Who sits on the STAG (Stillaguamish Technical Advisory Group)? How did they reach their conclusions for each of the habitat limiting factors (e.g. 80% of historic estuarine and nearshore habitat must be accessible and usable for properly functioning conditions; 80 pieces of LWD/mile must be added to the mainstem for PFC; no more than 10% of streambanks in any reach may be hardened for PFC)

Response: The STAG is made up of scientists from several agencies throughout the watershed. The group consists of representatives from the Tribes, Snohomish County, WDFW, USFS, Arlington, and the Conservation District.

Many of the quantitative measurements used in PFC are based on research done in habitats that are still functioning around the world. Alaska, Russia, British Columbia and areas within U.S. National Parks have been used as reference sites for properly functioning conditions. More references can be obtained if necessary.

Restoration to 100% of historic conditions is not likely considering the increasing human pressures on the natural environment. It is important to recognize that the data and recommendations of this plan will be subjected to technical scrutiny from a group of state, federal and tribal biologists. They may also question these numbers and could ask to raise them. The SIRC is open to any technical arguments that support other alternatives.

Page 44: Does the recovery plan recommend *removal* of the 4.1 miles of existing protected bank that represents the gap between current conditions and the 10% target? How is this better for fish than *preventing* bank erosion that can add sediments, toxic chemicals and other debris into the river? It would seem that bank protection could be a significant part of the overall remedy.

Response: The goal of this plan is to restore habitat to PFC over the next few decades. In the North and South Fork, the removal of 4.1 miles of bank armoring would restore these stream reaches to the 10% target. Bank erosion has been a natural part of the evolution of river valleys for millions of years. Bank erosion and sediment input from the upper watershed is what made the lower river floodplain so fertile for agriculture. It is only since the floodplain was developed that the need for bank protection was created. Bank stabilization practices contribute to increases in streamflow velocity and energy that can lead to more destructive and costly bank failures. The traditional method of dumping tons of

large rock onto stream banks has been devastating to Chinook habitat, and in many cases has failed several times, costing tax-payers millions of dollars.

There are many types of bank protection that can protect both property and lives and not eliminate habitat for ESA-listed fish. Many examples of fish-friendly bank protection can be documented including 8 large engineered log jams in the North Fork Stillaguamish. If bank stabilization is stopping available side channel flood relief and juvenile Chinook flood refuge, and improved approaches are acceptable to the current landowners, bank armoring removal is recommended.

Page 45: In the discussion of sediments and the problem of landslides and unstable banks, the plan states “It is unknown to what degree the attenuation of these sources will lead to properly functioning conditions”? Does the SIRC envision recommending attenuation even though the results are unknown?

The two large deep-seated glacial landslides described in the plan are and have been two of the largest contributors of sediment to the watershed. The impact to the aquatic environment downstream of these two slides is devastating. The Stillaguamish Flood Control District constantly deals with tons of fine sediment in the lower river plugging tide gates and causing continuous maintenance issues. Marysville is spending a million dollars to install a sediment treatment plant to treat water from the Stillaguamish before piping it out to their customers. The older generations of fisherman are also very familiar with the impacts of sediments and would appreciate any increase in the number of days the river is fishable.

The attenuation of the sediment supply will not be 100%. By remediating the two slides, millions of tons of fine sediment will not be transported immediately downstream to Port Susan.

Page 45: If unstable banks are a problem, how does the goal of reducing sediments in the spawning areas correspond with the goals to limit bank protection efforts? Again, it would seem that bank protection would be part of the remedy for reducing sedimentation due to unstable banks.

Response: A decade of research in the Stillaguamish has shown the majority of sediment entering the Stillaguamish watershed is from landslide activity. Of the 1,080 landslides documented in the watershed, 75% were associated with forest practices (52% clearcut and 23% road-related). Efforts are underway to address human-caused landslide activity by reducing harvest and road building on steep unstable slopes.

The natural dynamics of a watershed are dependent on a natural rate of stream meandering for recruitment of large woody debris (LWD), sediment management for spawning gravels, and side channel habitat development. Although the river will never be allowed to go wild, these dynamics are necessary at a certain level

for natural watershed processes to be restored. Fish-friendly bank protection can be applied to areas where necessary.

Page 45: Is it a realistic goal to maintain immature forest levels in the subbasin at a level below 12%? How does this correspond with existing land uses? Will the plan propose changes in land use regulation? Is there a plan to compensate voluntary landowners for participating?

Response: The 12% figure came from the USFS Hydrologic Cumulative Effects as part of the Mt. Baker Snoqualmie Forest Plan. The USFS scientists witnessed a negative change in hydrology when more than 12% of a sub-basin was in an immature state. In the North Fork Stillaguamish, there is an increasing trend of peak-flow occurrences. Between climate and land use, there are few other factors affecting the upper watershed. As stated earlier, land use in the Stillaguamish watershed is 72% forestry. The plan to date has not proposed any new land use regulations. There are federal and state programs to compensate landowners for leaving trees. The sustainability of harvest is tied to both the hydrological function as well as sustainable economics. Excessive harvest in the short-term will not leave enough timber to harvest in the future. A balance must be achieved that supports harvest as well as processing. Protecting the watershed function and sustainable forestry can be mutually beneficial if the right strategy is adopted.

Page 45: What is the “optimum” level for instream flows, how is that defined, and how will that be achieved? Also, how does the “optimum” level differ from the “minimum” level to ensure recover goals? (Is “optimum” being used here as though synonymous with “minimum”?) Also, who will determine what this optimum (minimum?) level is, and upon what basis?

Response: It is recognized by all interests that there is a limited amount of water available during the low flow periods between July and October. The Washington Department of Ecology is currently in the process of establishing an instream flow rule for the Stillaguamish. Instream flows are set based on salmonid needs for juvenile rearing, adult spawning, and occasionally adult holding. To determine optimal flows for rearing, spawning and holding an Instream Flow study needs to be done on the river in question. With the study results, a determination can be made on how much flow would provide optimum habitat for the priority species/life stage during a particular time of the year. For example, flows will be set in the river from late August to October to provide optimum habitat for Chinook spawning in the North Fork Stillaguamish. The Stillaguamish Instream Flow Rule attempted to provide at least 90% of available habitat for each priority species/life stage whenever possible. Representatives from Washington Department of Ecology, Washington Department of Fish & Wildlife, Tulalip and Stillaguamish Tribes negotiated instream flow levels based on an Instream Flow Incremental Methodology (IFIM) study. Historical flow conditions are also taken into consideration when setting instream flows.

Although instream flows are optimum spawning and rearing flows, these flows are not necessarily optimum for the species in question. Salmon need a wide range of flows to provide adequate habitat and survival, but only rearing, spawning, and to a lesser extent, holding flows are set. This is mainly due to lack of science in determining what range of flows will provide optimum habitat for priority species during all life stages and habitat variables. A wider range of flows generally means that periods of higher flows are necessary for salmon migration and habitat formation. At a minimum, salmon need flows for rearing and spawning, but optimally, a wide range of flows is needed to continually provide protection of higher flows that help in salmon migration and habitat formation.

Instream flows will not necessarily be achieved. This is because instream flows are a water right regulated by Washington State and are junior water rights to senior water rights already withdrawing water from the river. However, the instream flow rule is intended to protect fish from future water withdrawals. The SIRC and its members are following the instream flow setting process and expect that compromises between various interests will be found. Significant economic needs in the watershed are dependent on leaving an appropriate amount of water flowing in the river during the low flow periods. In regards to optimum flows, there are significant problems for both fish and human uses as a result of more frequent higher peak flows. The SIRC's recommended solutions to address flow provide relief to both the low flow and peak flow conditions.

Page 47 - "Community": Are "economic values" the same as economic vitality?

Response: Economic vitality must include the viability of not only farming and forestry, but fishing as well. The Tribes' economic and cultural livelihood is at stake. True vitality should include these three F's as well as a healthy natural community to sustain them.

The dairy industry is a good example, as it has been clear that the price the dairyman was getting paid for milk had nothing to do with implementing farm plans, but yet was a clear component of dairies closing. The Arlington School District can afford to build a performing arts center and other school projects as a result of logging land gifted to them years ago. It should be recognized that these dollars are not shown as grants or taxes, yet the "value" of those resources are building projects.

Page 47 "Landownership": Is there a plan to compensate landowners? What if they don't want to participate? Is there a plan to compel landowner participation?

Response: The plan is currently focused on voluntary restoration actions, with recommendations for enforcement of existing laws. It is believed by the SIRC that voluntary actions alone will not turn the Chinook trajectory around. In most

cases, enforcing existing rules and regulations would dramatically improve habitat throughout the Stillaguamish. SIRC members have a variety of programs to encourage participation such as the Conservation District (CREP, WRP, EQIP, etc) and DNR (forestry stewardship programs). At this point, we have more landowners willing to participate than we have money to fund projects.

Question: Are jurisdictions within the watershed required to adopt any/all elements of the plan? What if they opt out of all or portions of it?

Response: No, this is a voluntary plan at this time. All participating jurisdictions and stakeholders have the option to adopt the whole plan, endorse specific recommendations, or not support the plan. At this time, all of the jurisdictions participating in the SIRC are working together to restore salmon. Many citizens and taxpayers support the strategies outlined in the plan. Once the stakeholders adopt and commit to the plan's recommendations, the groups necessary to implement the actions are ready to do the necessary work to recover Chinook.

The SIRC may ask for letters from participating jurisdictions and stakeholder organizations to describe their level of commitment to the plan's recommendations. These letters will be included in the final plan, as the original SIRC plan, adopted in 1990, did. This approach allows each participating entity to clearly state their individual policy stance and level of commitment, as well as clearly identifying to NOAA Fisheries those jurisdictions that are fulfilling their responsibility towards Chinook salmon recovery.

Action Plan (pages 57-65)

Question: Is there a plan for sequencing (prioritizing) the proposed actions? Are some actions required to be completed before others can be implemented?

Response: Most of the funding for salmon restoration comes from the Salmon Recovery Funding Board (SRFB). Each year the SIRC submits a prioritized list of projects to the SRFB for funding. Projects are ranked by criteria linked to the overall watershed strategy for salmon recovery. Some projects will be implemented first in order for following projects to be effective (e.g. reduce upstream sediment sources before creating downstream spawning habitat). However, individual projects identified by the community, such as the Steelhead Haven landslide, are placed higher on the list if they have the potential to solve a wider variety of problems (fish, fishing, and farming).

Question: For riparian projects (page 59) does "restore" include the removal of dikes, roads, etc. as discussed on page 58?

Response: As stated earlier, much of the proposed riparian restoration will occur on forest land in the upper watershed where bank hardening is less of an

issue. The SIRC recently submitted a project to the SRFB to restore riparian habitat, create in-channel complexity with wood, and relocate the USFS mainline road away from the active channel. Dike or road removal is not a mandatory component of all riparian restoration, but is a tool that will be used when applicable. There are also different applications between trees on dikes versus armored banks. Trees can threaten the integrity of a dike, but vegetation can help stabilize armored banks. The SIRC has asked Twin City foods about the future potential to setback sea dikes to restore estuary function. They are open to discussing the concept.

Question: Same question for estuary projects (page 60).

Response: The highest ranked project for the SRFB this round is the removal of dikes on Leque Island to restore estuary habitat. The property is owned by the WDFW and is used currently as waterfowl habitat. The SIRC is supportive of efforts by landowners, especially public entities, that are willing to remove dikes, levees, or roads to restore riparian habitat. Franklin Hansen, a lower Stillaguamish SIRC representative, has repeatedly recommended that the Nature Conservancy remove the dikes in the estuary portion of the watershed.

Question: Sediment projects (page 64) – what does “treatment” of forest roads include?

Response: Treatment means everything from storm-proofing to total road obliteration, where the entire road prism is removed. In most cases, culverts are replaced, upgraded, or removed, side-cast material is pulled back, and ditches are maintained to carry water to the next natural channel. Many forest roads were built by old standards and are brought up to current standards. Sediment reduction and transport of water to natural channels is the primary objective. Installation of numerous cross drains is in many cases the solution to sediment and water problems. The forest companies have recognized that, at a minimum, removing culverts actually saves roads from being completely washed out in the absence of ongoing maintenance. Forest road removal also has been a part of an effort to reduce dumping in forestlands, as well as illegal propagation and poaching.

Question: Habitat project costs (page 65) – does this include costs of land acquisition and/or compensation to willing landowners that participate?

Response: These costs can be included if necessary. As stated earlier, most salmon recovery funding comes from the SRFB. They do allow for conservation easements and fee-simple purchases as part of projects. The CREP program pays farmers for cropland taken out of production while a buffer is planted to restore the riparian zone. The Stillaguamish Tribe and Flood Control District worked jointly on a project to improve water quality in the Old Channel and, at the same time, plant varying width buffers on the 8 miles of channel. The costs

outlined on page 65 can include acquisition or compensation, depending on the wants of the public or private landowner.

Many of the landowners in the Stillaguamish valley value the forests, streams and wildlife and want to participate in the restoration process, but compensation will be considered when appropriate.

Thank you for your interest and your thoughtful comments on the draft Stillaguamish Chinook Salmon Recovery Plan. Yours and other comments will be addressed in the final revisions to the plan, to be submitted to the Shared Strategy next spring. Please do not hesitate to contact us with any additional comments or questions.

Sincerely,

Bill Blake
SIRC Chair

Pat Stevenson
SIRC Vice-Chair

Stillaguamish Implementation Review Committee (SIRC)

SIRC MEMBERS

City of Arlington

Bill Blake, Chair

City of Stanwood

Stephanie Cleveland

Clean Water District Board

Orin Barlund

Federation of Fly Fishers

Brian Simonseth

Mainstem Stillaguamish

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Jim O'Neill

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Sally Lawrence

Washington Dept. of Fish & Wildlife

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Washington Dept. of Natural Resources

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Ned Zaugg

March 25, 2005

Mr. Craig Ladiser, Director
Snohomish County Planning and Development Services
3000 Rockefeller
M/S 604
Everett, WA 98201

Dear Mr. Ladiser,

Thank you very much for the comments submitted by your department on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. We have included responses to your comments and questions below.

Comment:

The Stillaguamish Watershed Chinook Salmon Recovery Plan does not include a description of the economic impact and benefit of a healthy Chinook salmon recovery effort. Such a discussion could help build support for the local commitments that will be needed for the recovery plan to be effective. The economic significance of the commercial and sport fishery in Snohomish County along with the attractive natural environment for bringing talented companies and employees to Snohomish County is not mentioned.

The Snohomish County General Policy Plan (GPP) does include a reference to the commercial and recreational value of healthy salmon populations. The County GPP states that "Snohomish County's commercial and sport fishing industries rely on the 44 stocks of salmon and steelhead that are produced in local watersheds. The beauty and value of local waters also are important reasons people choose to live here" (NE-3). This quote is actually from the Natural Environment section of the GPP and not the economic development section.

Both the Chinook recovery plan and the County GPP could be more direct in discussing the positive economic benefits of a healthy Chinook salmon stock on the local and regional economy.

Response: At this time, a generalized economic impact analysis of the Stillaguamish Watershed Chinook Salmon Recovery Plan has not been conducted. A general economic impact analysis for salmon recovery would be most reliable when done on a larger-than-watershed scale (for example, a Puget Sound-wide analysis). Economic data is more available and accurate at the regional level, in addition to the fact that secondary economic impacts are not usually captured at the local (i.e. Stillaguamish) level. For a Stillaguamish-specific economic analysis to be accurate, these secondary effects would have to be measured.

It is true that significantly larger salmon populations could potentially bring positive economic benefit to the county. However, the projected increase in salmon populations is not significant in the initial 10-year timeframe of the Stillaguamish Watershed Chinook Salmon Recovery Plan. Whether or not these additional fish would be available for harvest would be a matter of policy, not economics, at that time. Even assuming that policy did allow their harvest, the economic significance for commercial or sport fishing would be small, due to the small population size. Over a longer time horizon of 100 years, populations might regain sufficient robustness to withstand significant harvest and create a significant economic benefit. However, economic projections over such a long time period are not reliable.

The attractive natural environment is a factor which draws many people to live in the Pacific Northwest region. According to state projections, the population of Snohomish County is expected to grow from its current level of 639,400 to 930,000 by the year 2025 (an increase of 45% in twenty years).¹ While this population increase will bring new businesses and jobs to the county, it will also have an associated infrastructure cost to support these new inhabitants, as well as an environmental impact cost which could actually have a negative impact on salmon population recovery.

Some localized economic analyses of land protection measures associated with salmon recovery programs have been completed in the region, which detail micro- and macro-economic impacts to farming communities and enterprises.² A regional economic analysis of Skagit County's proposed riparian protection program in 2003 showed reduced agricultural production as a result of the program, accompanied by a decline in farm proprietor and labor income, as well as a decrease in farm related jobs. No significant benefit to the salmon fishing industry resulted from the program.³ An economic analysis of farm buffers in the Stillaguamish basin showed that while buffers can have a negative impact on the farm enterprise, this is not always the case. The net impact depended highly on the type of farm, its size, and the availability of buffer cost share programs.⁴

¹ Snohomish County Planning and Development Services

² It should be noted that these were not comprehensive studies of all salmon recovery efforts.

³ Final Programmatic Environmental Impact Statement, Planning and Permit Center, Skagit County, WA, June 12, 2003.

⁴ Economics of Riparian Restoration on Selected Stillaguamish Farms, Final Project Report, April 20, 2004, Resource Consulting, Arlington, WA. http://www.snohomishcd.org/Final%20Buffers/Stillaguamish_Buffers.pdf

Comment:

Pg. 14 -- Factors Affecting Chinook Populations - Population and Land Use: As depicted in Figure 4, the Future Land Use taken from the Comprehensive Plan does not anticipate to significantly alter or plan for major population increases in this watershed. Nominal population increases are expected surrounding the Arlington UGA and the Stanwood UGA and a small commercial expansion in the vicinity of Darrington to increase employment opportunities in that community. Please make sure that this plan dovetails with the City of Arlington's plans for NPDES and ESA compliance.

Response: This will be discussed and confirmed with the City of Arlington when commitments to this Plan are made.

Comment:

Page 17 -- Factors Affecting Chinook Populations – Forestry: The Stillaguamish Watershed Chinook Salmon Recovery Plan does not emphasize that the same forestry related solutions needed for Chinook recovery would also have a positive effect on flooding in the lower reaches of the river basin. Retention/creation of mature forest and its impact on seasonal flow is a big positive related to flooding and should be highlighted as an additional benefit. The adopted Stillaguamish River Comprehensive Flood Hazard Management Plan includes specific information on the costs of flooding and the large cost of the range of projects needed to handle flood waters in the basin. Some of the language and costs listed in the flooding plan help make the argument that changes in forest practices that would help reduce peak flooding also help improve Chinook habitat. Showing the benefits of changes in forest practices for both flooding and Chinook recovery could help build support for the plan and gain commitments to help with the recovery effort.

Response: The SIRC agrees that the multiple benefits of improved forest practices should be explained beyond the relationship between watershed hydrology and fish. Your comment has been incorporated into the Final Plan.

Comment:

Pg. 18 and 21 -- Factors Affecting Chinook Populations – Forestry: The Snohomish County General Policy Plan contains sections on forestry, GPP Goal LU-8. Forestry goals and policies in the County GPP do not include a goal or policy to conduct forest practices in a manner that are consistent with the draft Chinook recovery plan. Forestry policies that would be consistent with the direction of the Chinook recovery plan would include encouraging the growth and retention of mature forests, limiting erosion from forest road construction, encouraging efforts to limit the impact of landslides on sedimentation of rivers and making efforts to control peak water runoff from clear cut logging operations.

Response: The SIRC (including representatives from Snohomish County) encourage revisions to the General Policy Plan to include forestry policies that are consistent with meeting habitat protection and salmon recovery objectives. Your comment has been incorporated into the Final Plan.

Comment:

Pg. 18 -- Factors Affecting Chinook Populations - Agriculture: The negative impacts of agriculture on fisheries and fisheries recovery are described. Why is the conversion of agricultural use to some other use such as rural residential considered more damaging to fisheries? If agricultural use, with its negative impacts, is preferable to rural or urban residential use, then a discussion of the benefits of agricultural use could help build support in the agricultural community.

Response: The permanence of change resulting from agricultural to residential conversion has significant long-term impacts. The potential impacts from agriculture can be reduced by stewardship activities initiated by willing landowners. The SIRC has strong support from the agricultural community as a result of ongoing recognition of the benefits and value of agriculture in the Stillaguamish watershed. The ongoing viability of local agriculture is vital to salmon recovery as well as to the regional economy. The SIRC will continue to develop a collaborative and coordinated approaches to watershed protection and restoration that include the interests of local farmers.

Comment:

Pg. 18-19 -- Factors Affecting Chinook Populations - Urban/Rural Land Use: This plan section describes the contribution of rural and urban land conversion on declining salmon populations. There is a statement that the “conversion of agricultural land to rural residential uses will limit the effectiveness of ongoing salmon recovery efforts throughout the watershed.” This is not well explained.

Response: As evidenced in other southern Puget Sound watersheds, conversion of agricultural land to urban uses results in loss of floodplain functions, channel migration, and other wildlife habitats, as well as a transition from biologically-based water quality problems to chemical pollution. The permanence of this type of conversion contributes to a wide range of impacts that goes far beyond impacts to salmon.

Comment:

Pp. 63-64 – Sediment Project Types: It is clear that several large landslides in the vicinity of Steelhead Haven, the old Deer Creek Slide on the north fork and north of Gold Basin on the south fork, as well as the extreme channel migration at Chatham Acres on the north fork and at Robe Valley on the south fork has caused extensive downstream sedimentation and loss of habitat. Landslide repairs most likely will require grading permits and engineering review to complete this work. If public roads are intended to be de-commissioned, please coordinate this plan with the Department of

Public Works or the Forest Service depending on the nature of the roadway. Please explain the nature of the treatment intended for road de-commissioning projects. (Does this mean they will be re-vegetated or planted to become forest again?) (Will access to other private parcels be impaired by this proposal?)

Response: Responsible agencies have standards for different types of road de-commissioning projects, which may include re-vegetation, based on existing conditions. The SIRC supports coordination among the appropriate agencies and stakeholders to ensure project success and to prevent any access or easement problems.

Comment:

Pg. 77 -- Policy and Regulatory Issues – Land Use Regulations: Currently, the Snohomish Shoreline Master Program, the Critical Areas Code and the overall County GPP are under review and update. As suggested on page 77, the SIRC could recommend changes to the Snohomish County draft GPP, Shoreline Master Plan and Critical Areas Code updates to assure that goals, policies and objectives along with code requirements are included that are consistent with the Chinook Salmon Recovery Plan.

Response: The SIRC is monitoring development of these products, and will review and provide input on the drafts during the appropriate comment periods. The SIRC encourages your department to consider the contents of the Stillaguamish Watershed Chinook Salmon Recovery Plan in drafting these new County policies and regulations.

Thank you for your interest and your thoughtful comments on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. All comments received will be addressed in the final revisions to the Plan, to be submitted to the Shared Strategy for Puget Sound. Please do not hesitate to contact us with any additional comments or questions.

Sincerely,

Bill Blake
SIRC Chair

Pat Stevenson
SIRC Vice-Chair

Stillaguamish Implementation Review Committee (SIRC)

SIRC MEMBERS

City of Arlington
Bill Blake, Chair

City of Stanwood
Stephanie Cleveland

Clean Water District Board
Orin Barlund

Federation of Fly Fishers
Brian Simonseth

Mainstem Stillaguamish
Carolyn Henri

North Fork Stillaguamish
Jim O'Neill

Pilchuck Audubon Society
Linda Detchemendy

Snohomish Conservation District
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Snohomish County Council
John Koster

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Sonny Gohrman

Snohomish County Planning & Development Services
Larry Adamson

South Fork Stillaguamish
Kristen Jagelski

Stillaguamish Flood Control District
Chuck Hazleton

Stillaguamish Grange
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Ann Boyce

Twin City Foods
Mick Lovgreen

Tulalip Tribes
Kurt Nelson

US Forest Service
Karen Chang

Washington Dairy Federation
Jean Oien

Washington Dept. of Ecology
Sally Lawrence

Washington Dept. of Fish & Wildlife
Mike Chamblin

Washington Dept. of Natural Resources
Stacie Watne

Washington Farm Forestry Association
Duane Weston

WSU Cooperative Extension
Ned Zaugg

March 25, 2005

Ms. Sally Lawrence
Washington Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

Dear Ms. Lawrence,

Thank you very much for your comments on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. We have included responses to your comments and questions below.

Comment:

Pg. 23 -- Habitat Limiting Factors – Riparian Areas:
Re: Armored banks in mainstem Stillaguamish: the Corps of Engineers maintains (i.e. cuts vegetation on revetments along) ~ 15 miles of river channel. This maintenance prevents establishment of mature riparian buffer needed to prevent stream heating, and armoring disconnects the river from its floodplain hydrologically.

Response: Armored banks and dikes are two different things and can be managed differently. There is a risk of letting vegetation grow too big on dikes which may lead to failure, especially the “piping” that occurs when roots get big - the tree eventually dies, the roots rot, and a pipe is created that water can run through and weaken the dike. An armored bank would actually be enhanced by the stability of continued generations of trees as there are stable background soils.

The SIRC's expectation is that NOAA Fisheries and USFWS will work with the Corps of Engineers to develop a Puget Sound-wide strategy for this common problem. We will also continue to find planting niches or dike removal sites such as the old channels and Smokes farm projects.

Comment:

Pg. 44 -- Properly Functioning Conditions – Floodplain: Recommendation is no more than 10% hardened. The “gap between current conditions and achieving this ...is 4.1 miles of existing hardened bank”. The actual mileage is not clear. Recommend including a small table showing existing mileage of stream that is hardened, for North and South Forks and lower mainstem.

Response: The actual mileage of hardened bank in Chinook-bearing reaches throughout the watershed is shown in Table 4 on page 28. Properly Functioning Conditions for floodplain habitat is described on page 44 as no more than 10% of hardened streambanks in any subbasin. The total mileage of hardened bank in the North and South Forks of the Stillaguamish from Table 4 is 13.4 miles, while the total mileage of bank length in these areas is 92.8 miles. 10% hardened banks to achieve Properly Functioning Conditions in the North and South Forks would be a total of 9.3 miles. The gap between PFC and existing conditions is therefore 4.1 miles of hardened banks to be removed.

Comment:

Pg. 61 -- Approved Estuary Projects: #3 attempts to create 120 estuary acres by placement of 10 delta log jams. I have asked several times in SIRC meetings for detailed information on this proposal and have never gotten any information. The map in Figure 9 is not detailed at all regarding location of the proposed delta log jams. My feeling is this is not a well thought out proposal. A good proposal would require thorough understanding of Port Susan marine water dynamics and sedimentation processes. Note that on page 34 of this document, “Filling of Tidal Lands” has a “negative effect on sediment transport and tidal exchange, which leads to alterations in the physical and biological habitat features...” How would this proposal avoid those negative effects? Why would the sediment-trapping role of logjams not simply speed up the already rapid process of filling in Port Susan by the excessive sediment load carried by the river?

Response: The original conceptual design for this project was included in the Stillaguamish Ecosystem Restoration Feasibility Design Study completed by the U.S. Army Corps of Engineers in 2000. Delta log jams have sediment routing functions that also form deep pools by providing hard points for the sediments and hydrodynamics to react with. The Tulalip Tribes are seeking funding to conduct a feasibility analysis of this type of estuary habitat restoration project.

Thank you for your interest and your thoughtful comments on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. All of the comments received will be addressed in the final revisions to the Plan, to be submitted to the Shared Strategy for Puget Sound. Please do not hesitate to contact us with any additional comments or questions.

Sincerely,

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Stacie Watne

Washington Farm Forestry Association
Duane Weston

WSU Cooperative Extension
Ned Zaugg

March 25, 2005

Ms. Joan Lee, Director
Snohomish County Public Works
Surface Water Management Division
2731 Wetmore Ave., Suite 300
Everett, WA 98201-3581

Dear Ms. Lee,

Thank you very much for the comments submitted by your division on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. We have included responses to your comments and questions below.

Comment:

Figure 2 -- Chinook Distribution: Do fish actually stop migrating up Pilchuck Creek and the NF Stilly at the county line? If so, what factors limit their migration?

Response: Both Pilchuck Creek and the upper North Fork have natural barriers near the county line which prevent all fish species from accessing the headwaters.

Comment:

Pg. 12 -- Bull Trout: How much do bull trout overlap with Chinook? Do bull trout migrate out into the sound?

Response: The range of Chinook habitat in the Stillaguamish watershed is also used by bull trout. Many bull trout use Puget Sound and its nearshore areas. There are also resident freshwater populations of bull trout in the watershed. According to the latest information available, many bull trout migrate annually. They leave the estuaries during the warm summer and early fall months.

Comment:

Pg. 21-22 -- Forestry Policies and Regulations: Discussion of the Habitat Conservation Plan includes limits on timber harvesting, road building in the rain on snow zones. Clarify what the "Rain on Snow Zone" is and why land management should differ from other areas, such as low lands, or high elevations.

Response: The "rain on snow zone" is the area between 1,000 and 3,000 feet in elevation (also referred to as the "warm snow zone") which receives frequent snow build-up that melts shortly thereafter. It has been shown (Satturlund 1992) that forest management in the snowpack zone can be designed to improve or maintain desirable snowmelt hydrographs.

Comment:

Pg. 24 -- Habitat Limiting Factors – Riparian Areas: Text preceding Table 1 is confusing. Where is the "lower floodplain"? Also, text mentions that 52% of riparian buffer is forested, but 52% doesn't show anywhere in the table.

Response: In this context, the "lower floodplain" is referring to the area below the freeway. 52% is a basin-wide value for nearstream forested riparian cover.

Comment:

Pg. 40 -- Planning Targets for Independent Populations: Why do you show/explain population curves, but not show actual curves for the Stilly?

Response: Figure 6 is intended to illustrate the conceptual relationship between the number of progeny (fish in the next generation) that are produced by current spawning fish. Actual population performance curves for the Stillaguamish, showing historic, current, and anticipated population performance resulting from the recovery plan actions, are on page 74.

Comment:

Pg. 41 -- Viable Salmon Populations – Productivity: The discussion on productivity / growth rate is confusing. In the first sentence the terms are defined to be equivalent, but subsequent sentences show they are not exactly the same thing.

Response: Productivity and growth rate are equivalent terms used to indicate the ability of a population to persist over time. NMFS 2000 explains these concepts in more detail.

Comment:

Pg. 44 -- Properly Functioning Conditions – Floodplain: The gap... is (removal of?) 4.1 miles of existing hardened bank? Also might mention percentage of hardened bank on lower Stilly (> 50%).

Response: Properly Functioning Conditions for floodplain habitat is described on page 44 as no more than 10% of hardened streambanks in any subbasin. The total mileage of hardened bank in the North and South Forks of the Stillaguamish from Table 4 is 13.4 miles, while the total mileage of bank length in these areas is 92.8 miles. 10% hardened banks to achieve Properly Functioning Conditions in the North and South Forks would be a total of 9.3 miles. The gap between PFC and existing conditions is therefore 4.1 miles of hardened banks to be removed.

The June 30, 2004 draft Plan does not include approved floodplain actions to remove existing hardened bank. The approved floodplain projects on p. 63 identify restoration of side channel acreage which may include some removal of existing hardened bank. The Final Plan will include removal of the 4.1 miles of existing hardened bank in the North and South Forks as part of the 10-year habitat restoration strategy. The percentage of hardened bank in the lower Stillaguamish (53%) is described in Table 4 on page 28. Removal of an additional 18 miles of hardened bank in the Lower Stillaguamish will be included in the Final Plan's long-term 11-50 year habitat restoration strategy. The SIRC will look for opportunities to include removal of hardened bank throughout the watershed in other types of projects, such as those addressing flood hazard management. Future outreach and stewardship programs will inform landowners of the benefits of and need for removal of existing hardened banks throughout the watershed.

Comment:

Pg. 45 -- Properly Functioning Conditions – Sediment: What measures / surrogate measures could be used to address sediment sources? What should the recovery target for these measures be?

Response: Measures and projects to address sediment sources and restore natural sediment regimes are described on pp. 63-64. The recovery target is 12% fines.

Comment:

Pg. 45 -- Properly Functioning Conditions – Hydrology: What is current % immature forest cover in sub-basins referenced?

Response: The % of immature forest within the various Stillaguamish subbasins is referenced in Table 6 on page 32.

Comment:

Pg. 45 -- Properly Functioning Conditions – Hydrology: Who sets instream flows? What is the target for recovery?

Response: Instream flows are currently being developed by the Department of Ecology, with input from other watershed stakeholders. Ecology is required by law to protect fish, wildlife, water quality, recreation, and aesthetics in the watershed while also providing water for future human needs. The instream flow rule setting takes into consideration the instream water needs of fish. The proposed Stillaguamish water management rule will set instream flows needed in streams at specific locations and times to protect fish spawning and rearing, among other objectives.

Comment:

Pg: 54-55 -- Integrated Strategy: Fig's 7 & 8 show the same curves. If both habitat and harvest conditions are optimized, shouldn't the population curve rise accordingly? Also, how do the equilibrium abundance targets from Table 7 fit in with this discussion?

Response: Figure 7 shows the current status, recovery target, and historic population numbers for the North Fork Stillaguamish Chinook population. Figure 8 shows how that target will be met by utilizing a low maximum exploitation harvest rate and by improving habitat conditions. The target is the same curve in both figures. Figure 8 demonstrates the effects of the Plan's recommended habitat management and harvest management strategy. Table 7 includes the spawner abundance planning targets that guide the integrated habitat, harvest, and hatchery management strategies for recovery of Stillaguamish Chinook populations.

Comment:

Pg. 57-65 -- Integrated Actions for Recovery (10-Year Strategy): The projects described for riparian, estuary and floodplain areas outline actions to occur on private property. Although this will therefore necessitate and benefit from willing landowners, there are no details in the document about how this cooperation will be achieved. Many of the habitat enhancement activities can be accomplished through voluntary BMPs, such as native vegetation, animal exclusion, invasive weed control, etc., and major capital restoration projects will also rely on landowner participation.

The plan needs to include specific actions to engage the landowners in the Stillaguamish Watershed to encourage and ensure the implementation of the plans. Fostering participation and stewardship by private landowners will provide the foundation for success - whether individual actions are carried out on public or private properties. In order to effectively accomplish this, objectives and approaches to increase willingness of landowners to participate in plan implementation should be detailed and presented within the plan document. Programmatic components should include, at a minimum, public awareness, education, engagement and stewardship as

specified activities. These should be presented with substantive detail so that implementing entities can effectively accomplish the above goals.

Examples of how to present this type of plan content can be found in the Draft Snohomish River Basin Salmon Conservation Plan, section 9.4.

Response: The SIRC is developing a stewardship strategy that will engage watershed stakeholders in implementation activities to ensure the Plan's success.

Comment:

Pg. 83 – Public Education: In the entire one-hundred page plan, the public education, outreach, and stewardship component is just 2 paragraphs long – one of which describes outreach for Plan itself – not recovery actions described by it. There is no description of any public education/stewardship strategy or actions, yet many of the recovery actions described depend in part or in whole upon public support, willing landowners and voluntary actions by citizens. The brief public education paragraph states, “public education and involvement are also necessary components to successfully achieving salmon recovery objectives,” yet fails to justify the statement with any substantive program or goals. In its lack of detail and substance, the public education and outreach component is remarkably inconsistent with other portions of the plan, and there is no real description of stewardship or widespread property owner participation – overlooking a significant opportunity to foster recovery.

Response: Educational components of the Plan will include a variety of tools and will become part of the various stakeholders' commitment to implementation of the Plan. The SIRC agrees that education of impacts on salmon throughout the Stillaguamish watershed will lead to the acceptance of solutions. The SIRC plans on implementing an education program that addresses the needs of the diverse stakeholders in the Stillaguamish watershed.

Thank you for your interest and your thoughtful comments on the draft Stillaguamish Watershed Chinook Salmon Recovery Plan. All comments received will be addressed in the final revisions to the Plan, to be submitted to the Shared Strategy for Puget Sound. Please do not hesitate to contact us with any additional comments or questions.

Sincerely,

Bill Blake
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