

To: Board of Forestry Members
Legislative Emergency Board Members

From: John Griffith, Forest Trust Lands Advisory Committee
Paul Hanneman, Tillamook County Commissioner
Mark McCollister, Oregon Trout
Dave Moskowitz, Wild Salmon Center
Helen Westbrook, Clatsop County Commissioner
Ray Wilkeson, OFIC¹

Re: Report and Recommendations of Salmon Anchor Habitat Strategy Work Group

Date: September 8, 2004

The 2005 Oregon Legislative Assembly provided a budget note in the Department of Forestry's approved biennial budget, directing the formation of a work group to review implementation of the Department's Salmon Anchor Habitat (SAH) strategy for state forest lands on the north coast. As members of that work group, we have participated in a process over the past year with support from Department staff, and with support and facilitation from the Institute for Natural Resources. The product of that effort is the report attached, which includes our recommendations to the Board of Forestry, as directed by the budget note.

To provide a proper context for this report and recommendations, we believe it is important to highlight the other processes and efforts currently underway that will likely influence any decision that the Board may ultimately make as it considers the future of the SAH strategy on state forests. Some of these other processes may result in significant changes to management mandates for these forests, while others will provide analytical information at future dates that was not yet available for the work group to consider during our discussions.

There were several bills introduced during the 2003 legislative session that would have changed the management direction for state forests by changing the definition of the term greatest permanent value (GPV). Senate Bill 430 and House Bill 3632 were the most prominent of these, and received the most discussion. Ultimately, neither bill passed. But the underlying concerns that prompted introduction of these bills remain, and it seems likely that similar legislation will be introduced and debated in the 2005 session.

As we submit this report, Ballot Measure 34 has qualified for the November 2 general election ballot. Commonly referred to as the "50/50" initiative, this measure proposes to change the definition of GPV, and would require the development and approval of a new forest management plan by the Board to meet the standards outlined in the measure.

¹ Mr. Wilkeson represented OFIC on the Work Group. His name is included in this transmittal solely in recognition of his participation in the Group. Due to the pendency of Ballot Measure 34, Mr. Wilkeson and OFIC only support the statements made in Section III. B. 2 of the report recommending that the Board of Forestry not implement the Salmon Anchor Habitat strategy.

Another process underway that could change the context for our recommendations is ongoing discussions between the Department, the Forest Trust Land Advisory Committee, and federal agencies over a possible Habitat Conservation Plan (HCP) for western Oregon state forests that would include coverage for coastal coho and other “at risk” species. The HCP discussions, and their potential to affect the SAH strategy, are further complicated by the uncertainties surrounding the listing decision on coastal coho. During the period that the work group has been in place, coastal coho have been listed as threatened, de-listed, and are again a candidate for being listed.

We also understand that in response to a recent proposal by former Governor Kitzhaber, and subsequent direction from Governor Kulongoski, the Board will be conducting a series of discussions about the forest management plans adopted in 2001. As a result of these discussions, the Board may be considering modification or changes to those plans. The Harvest and Habitat Modeling project that has been underway for over a year will likely provide key information as the Board goes through these discussions and evaluations. The results of this project were not available in time for the work group to consider in formulating this report. However, the improved forest inventory and modeling technology should provide the Board with additional information in the Spring of 2005 that may shed additional light on the costs and benefits of any SAH strategy. In particular, this project promises to provide much better estimates of the potential harvest levels under a variety of management scenarios, and how any specific SAH strategy would affect those harvest levels in the short and long-term.

It is unclear how recent discussions relative to acquiring more state forest lands in eastern Oregon to provide a trust for higher education might affect management direction or decisions on existing state forests. But, this is yet another process that may ultimately come into play as the Board considers our recommendations and how best to proceed.

In summary, the work group was charged with evaluating one piece in a much larger picture of how state forests are managed for multiple benefits over time. The salmon anchor habitat policy cannot be considered in isolation. By its very nature, management for the many resource values present on state forests is complicated and integrated. It is within this context of economic, environmental and social complexity, that we submit our report and recommendations to you. We look forward to further discussions with the Board as you address the many challenges before you.

SALMON ANCHOR HABITAT WORK GROUP
Final Report to the Oregon Board of Forestry
September 2004

i. EXECUTIVE SUMMARY

The 2003 Oregon Legislature directed the Oregon Department of Forestry (ODF) to convene a citizen work group to review and evaluate the ODF Salmon Anchor Habitat Strategy for state forests in northwest Oregon. In November, 2003 ODF contracted with the Institute for Natural Resources (INR) to support the SAH Work Group. INR designed and oversaw a process for the SAH Work Group that facilitated dialogue among interested parties, scientists, land management professionals, and policy makers. The goal was to illuminate the SAH policy, identify issues and develop recommendations while respecting the perspectives held by all parties.

A. Goal and Issue Identification

The SAH Work Group met five times beginning in December 2003. They began work by hearing from Steve Thomas from ODF, Senator Joan Dukes from Astoria, Jim Myron from the Governor's Natural Resources Office and Larry Giustina from the Oregon Board of Forestry offered their perspectives on the SAH Strategy, and on directions the work group should take. INR staff explained the work group process and timeline they had developed. Budget note directions to the work group were discussed.

At the following meetings the Work Group heard from various interested parties, visited several Tillamook State Forest sites, where ODF staff showed how the SAH Strategy would be implemented, and reviewed the budget note. The Work Group identified an initial list of issues and questions associated with the SAH Strategy that they thought needed to be addressed, and individuals they wished to hear comment on these categories of issues and questions:

- *salmonid status, science, protection and recovery*
- *regulatory & legal assurances & considerations, policy questions*
- *silvicultural issues and strategies*
- *monitoring*
- *perceived costs & benefits of SAHs, economic and social values*

B. The Work Group Process

At two meetings, the Work Group heard from individuals they identified as providing important information about the SAH (see Appendix E for a list of specialists who met with the Work Group). These specialists provided scientific, economic, historical, legal, and cultural information about management of the Tillamook and Clatsop Forests. A group of 14 specialists identified by the Work Group addressed the questions formulated by the group at a public meeting in June 2004. Emphasis at the conference was placed on allowing time for dialogue between the experts and SAH Work Group members to ensure that all concerns were aired and opportunities to benefit from the experts' scientific and legal knowledge were maximized. Considerable interdisciplinary dialogue occurred among the SAH Work Group and the experts. SAH Work Group members then considered the expert presentations and discussions, and began drafting their final issues and recommendations, which were discussed and revised. This draft was reviewed by individual panelists and the entire Work Group.

C. Recommendations

After much conversation among ourselves, others involved in the issue, specialists, and staff from the ODF, we are unable to reach a consensus about recommendations regarding the SAH strategy. Some of us believe that there are compelling science and policy arguments for continued implementation of the SAH Strategy. Others of us do not believe this. To that end, the Work Group provides arguments for both implementing and not implementing the SAH Strategy with details provided below. In addition, the Work Group provides recommendations for improving the SAH strategy as currently designed.

I. INTRODUCTION

The 2003 Oregon Legislature directed the Oregon Department of Forestry (ODF) to convene a work group to review and evaluate the ODF Salmon Anchor Habitat Strategy for state forests in northwest Oregon, and to report on their findings to the Emergency Board no later than September 2004. A copy of the Budget Note from the legislature is attached as Appendix A. In response, the Salmon Anchor Habitat (SAH) Work Group was organized by ODF, began working in December, 2003 and concluded its work in August, 2004 (Work Group members and staff are listed in Appendix B).

This report documents the activities of the SAH Work Group and reports on its findings. The first section summarizes the SAH Strategy and Work Group process. The second section describes the critical issues and questions the group identified. Our recommendations to the Oregon Board of Forestry are provided in the final section.

II. BACKGROUND

A. The Salmon Anchor Habitat Strategy

More diverse and functional riparian habitats may take many decades to create in Northwestern Oregon State Forests. At the time the Northwest Oregon State Forests Management Plan was adopted in January 2001, a salmon anchor habitat strategy was considered to be an important adaptive management strategy. The concept of providing a higher level of protection to existing key habitats areas until monitoring shows that the landscape management and aquatic and riparian strategies of the plan are providing for properly functioning aquatic habitats, was raised during two separate scientific reviews of draft forest management plan strategies. The report of the Independent Multidisciplinary Science Team (IMST 1999), while generally complimentary of the overall strategic approach described in the plan, recommended modifying the plan to include “the immediate protection of all existing core habitat while implementation occurs...” This same concept was also raised by participants in an Independent Scientific Review of the aquatic and riparian strategies that was conducted by OSU. The adopted management plan included language directing ODF to develop and implement an anchor habitat strategy for salmon. The Plan stated that anchor habitats will be subject to alternative management standards for the initial implementation period while more comprehensive watershed assessments are completed. The specific strategy, including designated SAH basins and management standards, was described and

approved by the State Forester, in the 2003 Implementation Plans for Northwest and Southwest Oregon Forest Management Plans (IP, ODF 2003).

The current SAH Strategy includes seventeen watersheds. Fifteen were identified via collaboration between ODF and Oregon Department of Fish and Wildlife (ODFW), with two additional watersheds added after discussions with salmon stakeholders. Abundance of spawning adult salmon was the primary selection factor for ten watersheds, habitat quality was the primary factor for three watersheds, and professional judgment was the primary factor for four watersheds. Appendix C describes the selected watersheds. For the initial Forest Management Plan (FMP) implementation period, alternative management standards would apply in SAHs pending more comprehensive watershed assessments but harvest activities will occur in most SAH basins at nearly the level anticipated under standard FMP prescriptions. . The SAH Strategy is intended to apply for a 10-year period (July 1, 2003- June 30, 2013).

B. The Salmon Anchor Habitat Work Group Process

In November, 2003 ODF contracted with the Institute for Natural Resources (INR) at Oregon State University for products and services to support the SAH Work Group process, including meeting planning and facilitation, an initial briefing report to the work group (attached as Appendix D), an annotated bibliography of relevant literature (available at <http://inr.oregonstate.edu/>), recruitment of additional input from interested parties, organization and supervision of an expert panel to advise the work group, and completion of draft and final reports. The process was designed to facilitate dialogue among interested parties, scientists, land management professionals, and policy makers toward the goal of illuminating the SAH policy and issues while validating questions and perspectives held by all parties.

To account for a range of perspectives, ODF solicited representatives from Tillamook and Clatsop Counties, the Forest Trust Lands Advisory Committee, Oregon Forest Industries Council, Oregon Trout and the Wild Salmon Center to participate as core members of the Work Group. Representatives from ODF and ODFW also participated. The Work Group developed questions regarding the SAH Strategy, and helped identify people to address them. Opportunities were provided for the Group to interact with additional interested parties, and receive issue-specific written and verbal feedback on their questions from natural resource management specialists identified by group members. A list of the people who presented information to the SAH is included in Appendix E. INR assisted with professional facilitation, advisement, writing and

support services during the entire process. The Group worked to frame problems, identify issues, interact with specialists to sort and prioritize information, move toward consensus where they could, and identify which issues remain controversial. This final written report documents the conclusions and recommendations developed during the SAH Work Group process.

C. SAH Work Group Goal and Objective

The SAH Work Group met five times, including a 2-day conference in June, 2004. A summary of the group meetings is attached as Appendix F. The SAH Workgroup developed a project goal and set of objectives to help create an agreed upon work plan to meet the charge of the budget note. The objective of the SAH Work Group was to:

Identify and clarify issues raised by a full range of stakeholders about implementation of the SAH strategy developed by the Oregon Department of Forestry, and to provide a report from the Work Group summarizing current scientific information, areas of uncertainty and any implementation recommendations to the Oregon State Legislature, the Oregon Board of Forestry, and the Oregon Department of Forestry.

III. ISSUES AND RECOMMENDATIONS

In June, 2004, the Salmon Anchor Habitat (SAH) Work Group met in Tillamook to discuss our questions about the SAH Strategy with a group of specialists from agencies, universities, and non-governmental organizations. (The list of specialists and initial questions is attached as Appendix E.) From these discussions we identified issues and recommendations for the Oregon Board of Forestry (BOF) to consider, as requested by the Budget Note.

If there was one consistent theme in our discussions, it was the difficulty of balancing protection and restoration of salmonid habitats with timber harvesting given what can be determined from a hard look at the available scientific literature, silvicultural modeling and legal requirements. After discussions among work group members, and with ODF staff and specialists from around the state we can make the following statements about the implementation of the SAH strategy:

- The weight of the scientific evidence proves that reserve-based management regimes protect and restore salmon and salmon habitat, although there is little direct evidence related to the ecological effects and benefits specifically related to SAHs in terms of how much and in what ways salmon and their habitats benefit.
- The degree to which ecological change in SAH watersheds could be detected through monitoring over a 10-year period may be small, given that many ecological changes may take decades to unfold.
- Scientific understanding of swiss needle cast (SNC) and the effect of treatments on stands with different rates of infection does not support a broadly applied single prescription.
- The short- and long-term economic impacts associated with SAHs, especially differential revenue impacts on the counties and the statewide K-12 school system, can be estimated to a certain degree by modeling different scenarios.
- Non-timber economic benefits associated with SAHs are difficult to measure and hard to value.
- The status of the Oregon coast coho under the Endangered Species Act has changed due to judicial and federal administrative decisions. Whether or not coho are listed, ODF must decide how to manage state forests under the Oregon Plan and in the context of possible listing.
- Some group members expressed concern that the SAH Strategy might affect future regulations for private forestland in Oregon.

Work Group members differ about the role of state forests, what weights should be given to specific forest management goals, and in our underlying values. These differences affect how we individually evaluate the statements described above. Several specific issues and considerations emerged that we propose as a group that the BOF consider as it reviews the SAH strategy. We note in each description below where there is lack of agreement among Work Group members about the issue.

A. Issues

1. Salmon status, science, protection, recovery

a. Fishery management agency focus has shifted from maintaining salmon stocks with hatchery fish to protecting wild fish and their habitats.

b. Focus has shifted from the most highly threatened stocks to remaining relatively healthy stocks. Although historically lowland habitats were centers for coho productivity, upper watershed core areas are presently the center of coho productivity and are safeguards against future declines in coho productivity. Uplands cannot replace historically more productive lowland habitats. Efforts to protect relatively healthy salmon stocks and habitat may be more cost-effective and successful than efforts to recover highly damaged habitat and highly threatened stocks.

c. Under natural conditions, salmon numbers vary greatly over time in response to environmental changes. Ocean conditions for salmon fluctuate in quality over 20-30 year periods. Freshwater habitats in a given basin fluctuate in quality over periods of ~1-300 years in response to disturbances (e.g. landslides, flooding, fire and disease).

d. Freshwater and estuarine habitats buffer salmon productivity and survival of stocks during poor ocean conditions. Coho survival may be ~1% during poor ocean conditions, and ~12% when ocean conditions are good. Humans have little control over decadal-scale shifts in ocean currents, but considerably more control over fresh water habitat conditions. Freshwater habitat is particularly important on the Oregon North Coast.

e. Large wood delivery to fish-bearing streams is a key component of salmon productivity and must be addressed in any restoration strategy. In general, 10% of land area supplies 90% of large wood to streams. New analytical tools (e.g. CLAMS) may be better able to identify specific areas with capacity to contribute large wood. An important consideration is the location of existing larger, older stands in areas geologically prone to deliver wood and sediment to streams.

f. Implementation of the SAH Strategy should be done on a site specific basis. While SAH management standards are basin-wide averages, implementation at the site level should vary depending on specific limiting factors such as SNC infestation.

2. Silvicultural Considerations

a. Prescriptions to aggressively treat Swiss needle cast may be compatible with SAHs if developed and applied on a site-by-site basis, taking SAH goals into account. There is a lack of agreement on this issue. Some work group members are concerned that if SNC-infested stands are not treated aggressively in SAH riparian areas timber volumes may be reduced in later rotations (estimated by ODF to be ~5%). A primary issue is uncertainty about the economic and ecological trade-offs to pursue less aggressive SNC treatment in SAH basins. Others are concerned that over two 10-year cutting cycles, the amount of harvesting to combat SNC may compromise SAH goals. It is not clear whether it is possible to develop site-specific SNC treatments in SAH watersheds that are compatible with the overall BOF direction to treat SNC “quickly and effectively.” According to the SAH Implementation Plan, the SAH strategy does not preclude harvest in riparian areas where disease situations have significantly reduced the likelihood that a riparian management area will promote “properly functioning aquatic habitats.” Portions of riparian areas in SAHs may be harvested to provide for the reestablishment of a healthy forest stand.

b. Some group members believe that for ODF to achieve its goals for SAHs and structure-based management large wood retention requirements need to be extended to smaller order streams and to areas beyond the riparian buffers (e.g., the headwalls). Other group members believe that large wood retention requirements can be met without the SAH strategy.

c. Initial models (Sessions) suggest that implementation of SAHs slightly delays meeting FMP structure goals.

3. Regulatory/Legal Considerations

a. The coho is currently not listed under the ESA but has been recommended for re-listing. The state forests are not obligated to contribute to coho recovery, but, according to NOAA Fisheries, SAHs are conceptually consistent with recovery and could contribute to Oregon’s overall

recovery efforts. When considering salmonid candidates for listing, NOAA will look at state efforts like the Oregon Plan and the FMP, which includes SAHs. If coho are listed, everyone, including ODF, must avoid take. Habitat modification can be construed as a taking and is subject to ESA liability. The two mechanisms to avoid take liability include a Section 4(d) limit, or a Section 10 incidental take permit granted through adoption of a conservation plan (i.e., HCP).

b. The Board of Forestry adopted the FMP as an administrative rule and directed the State Forester to develop implementation plans for each district that show the extent and location of anchor habitat areas for key species of concern. The FMP states that anchor habitat areas are designated sub-watersheds distributed throughout the North Coast areas. The anchor habitat areas “will be subject to alternative management standards for the initial implementation period, while more comprehensive watershed assessments are completed.” The State Forester has delegated authority to modify the management standards applied in SAH areas.

c. Executive Order 99-01 directs the Department of Forestry to include an aquatic conservation strategy with a high likelihood of protecting and restoring properly functioning aquatic habitat for salmonids on state forest lands

d. The counties where state forests are located have a protected, recognizable interest in revenue derived from state forests, but the state is not obligated to provide a certain level of revenue. The counties and ODF have modified the statutory formula over the years through collaborative efforts with the Legislature. The counties’ share of forest revenues provide significant funding for many local governments and, through changes to school funding laws, to the state’s general fund.

4. Monitoring

a. SAHs should be treated as an experiment using a design that looks at SAHs in the landscape context. It is important to be realistic about what can be learned during the 10-year implementation period. Effective monitoring can be done if the ODF is willing to invest adequate resources upfront including pursuit of federally available funds to ensure a rigorous experimental design and implementation, including use of resulting information to change treatments and practices. Effective monitoring has been developed for other elements of the FMP and can be developed for the SAH. The current SAH strategy does not itself lay out the rigorous

experimental design needed to support adaptive management (we recognize that monitoring protocols are still under development).

b. It is important that ODF ensure interagency coordination with DEQ, ODFW, OWEB and relevant federal agencies to develop consistent protocols for collecting information and to avoid duplication of effort.

5. Costs and Benefits, Social and Economic Values

a. The actual impact of short and long-term harvest level changes of SAH vs. no-SAH management scenarios can be modeled, however, SAH plans are still being integrated into the H&H modeling effort. Preliminary modeling suggests that compared to a “no-SAH” scenario, SAHs could be implemented without affecting timber volume outputs. This would involve a policy choice between a 10-year delay in achieving FMP structure goals and a decline in timber outputs in the second decade that achieve structure goals 10-years sooner. Early modeling suggests that it may be possible to achieve multiple forest values, but the relative weight afforded to each involves some tradeoffs in forest structure and habitat goals, timber volume and revenue outputs, and timber even flow goals. There is not agreement among the group about how those values should be weighted, although all agree that this is a policy issue.

b. There are significant non-timber market and non-market values (e.g. recreation opportunities, fish and wildlife, open space) associated with the state forests but they are difficult to quantify under SAH and no-SAH scenarios. This issue is more important to some group members than others. There is concern that because these values are hard to quantify they are given less weight in impact analyses of SAHs.

B. Recommendations

After much conversation among ourselves, others involved in the issue, specialists, and staff from the ODF, we are unable to reach a consensus about recommendations regarding the SAH strategy. Some of us believe that there are compelling science and policy arguments for continued implementation of the SAH Strategy. Others of us do not believe this. To that end, the Work Group provides arguments for both implementing and not implementing the SAH Strategy with

details provided below. In addition, the Work Group provides recommendations for improving the SAH strategy as currently designed.

This lack of consensus can be attributed to several things, including disagreement about: (1) how existing science should be interpreted; (2) where the “burden of proof” lies regarding scientific evidence that a certain level of riparian protection does or does not benefit salmonids; and (3) the primary purposes for which state forests should be managed. A key roadblock toward achieving consensus was the difficulty of accurately estimating potential market and non-market costs and benefits associated with implementing the SAH Strategy.

1. The Oregon Board of Forestry should continue implementation of the SAH Strategy based on the following findings:

- The clear weight of scientific evidence shows that forest reserves enhance salmon survival and maintain natural stream processes necessary to balance sediment, water and nutrient flows throughout a watershed.²
- Implementing the salmon anchor habitat strategy as envisioned under the FMP will not appreciably reduce the predicted volume of timber, anticipated associated revenues or future forest stand complexity.
- Though difficult to measure and quantify, non-timber benefits will accrue to local and regional communities that are a direct result of the salmon anchor habitats. These include, but are not limited to clean water, flood buffering, sediment control, increased productivity of salmon spawning and rearing, higher recreational and aesthetic value that draws more visitors to the forest surrounding communities, and carbon storage.
- The number of local jobs associated with each million harvested board feet has been dramatically overstated.
- Oregon Department of Fish and Wildlife and Oregon Watershed Enhancement Board staff have definitively stated that the implementation of the salmon anchor habitat strategy can be monitored for its effectiveness in coordination with ODF and other

monitoring efforts. Additionally, expert testimony indicated that federal money is available to monitor SAHs.

- Fully implementing the salmon anchor habitat strategy can only benefit Oregon's efforts to strengthen the Oregon Plan and will positively affect any aquatic conservation plank submitted as part of any multi-species Habitat Conservation Plan.
- The future of the Oregon coast coho, steelhead, fall chinook, cutthroat trout and chum salmon ESA listings are unclear, but further legislative and legal determinations are likely. A logical, prudent management strategy would include management approaches that protect and recover these salmonids to benefit Oregon's economic, sociological, and environmental future and forestall a regression to ESA listing. The SAH prescription would help NOAA in agreeing on the HCP standards for state forest lands.

The Salmon Anchor Habitat strategy accomplishes, or partially accomplishes the following recommendations made by the IMST in their 1999 report "Recovery of Wild Salmonids in Western Oregon Forests:"

- *IMST Recommendation #3. Treat non-fish-bearing streams the same as small, medium, and large fish-bearing streams when determining buffer-width protection. Current rules reduce buffer-width requirements if game fish are not present.*

The Anchor Habitats Proposal applies the same "inner zone" riparian buffer widths to large and medium type N streams as are applied to large and medium Type F streams. (100ft)

- *IMST Recommendation #5. Increase the conifer basal-area requirement and the number-of-trees requirement for RMAs, with increases in these requirements for medium and small streams regardless of fish presence.*

The Anchor Habitat proposal increases basal-area retention for RMAs in medium non-fish bearing streams.

² Please refer to the citations of relevant scientific literature compiled by the Institute for Natural Resources at <http://inr.oregonstate.edu/>.

- *IMST Recommendation #7. Provide enhanced levels of certainty of protection for “core areas”. The term “core area” was used by ODFW in identifying specific areas critically important to the recovery of coho in the original Oregon Plan. This term may be replaced in the future. It is our intention that, regardless of the term used, this recommendation be applied to areas specifically designated by ODFW as critical to achieving the mission of the Oregon Plan and the intention of Executive Order 99-01.*

The Anchor Habitats Proposal directly addresses this recommendation, providing increased buffers, protection against increases in roads, protection on unstable slopes in core areas identified by ODFW.

- *Recommendation #11. Provide for the stabilization of roads not constructed to current standards (including “old roads and railroad grades”) in critical locations. Stabilization means reduction or elimination of the potential for failure. It includes a variety of strategies ranging from removal to abandonment, entirely or of sections, by which specific roads and railroad grades become a much less important source of sediment.*

The SAH proposal prioritizes the inventory of legacy roads in SAH basins and remediation work on legacy roads in SAH basins. Roads in SAH will be high priority for repairs to road-related problems, such as unstable sidecast, drainage problems, and passage barriers.

- *Recommendation #13. Retain trees on “high risk slopes” and in likely debris torrent tracks to increase the likelihood that large wood will be transported to streams when landslides and debris torrents occur.*

The SAH proposal seeks to reduce clear cuts on high risk slopes by limiting the total acreage of clearcutting in SAH basins and seeks to increase the likelihood of large wood delivery to streams by avoiding harvest on debris torrent fans. Additionally in six SAH basins where harvest levels exceed 10% the SAH strategy directs the Department to, “Take all reasonable opportunities to enhance large wood recruitment or other aquatic and riparian functions by retaining large trees or extending no harvest buffers in specific areas. Areas to consider include seeps and springs with the riparian management areas (RMA), source areas of perennial streams, stream associated wetlands, inner gorges and stream junctions.” Writing a prescriptive standard for steep slope

protection is not feasible, however the strategy directs the Department to, "...avoid specific High Landslide Hazard Locations that pose the greatest risk to streams."

- *Recommendation #14. Continue to apply the current best management practices (BMP) approach to the management of forest lands with significant landslide potential, and develop a better case history basis for evaluating the effectiveness of BMP in these areas.*

The SAH proposal continues to apply BMPs to the management of steep slopes. Professional judgment will be used in SAH basins to increase buffers in areas where clearcutting could threaten streams.

- *Recommendation #16. ODFW and ODF should develop a collaborative program of monitoring to quantify the linkages between parameters of ecosystem condition and wild salmonid recovery.*

The Anchor Habitats proposal includes placing a priority on the monitoring of identified basins.

- *Recommendation #17. ODFW should complete "core area" designation for all wild salmonids in Oregon and identify high priority protection/restoration areas that are not covered by current "core area" designations. ODFW should work with the Oregon Plan Implementation Team in prioritizing habitat for enhanced levels of protection and/or restoration.*

The Anchor Habitat Proposal identifies 17 priority areas for designation as anchor habitats. They encompass many current ODFW core areas, while adding a significant number of new protected areas for salmonids.

2. *The Oregon Board of Forestry should not implement the SAH Strategy based on the following findings:*

- Despite assurances that harvesting will simply be relocated to other basins or stand and be revenue neutral, ODF has not demonstrated that there will be no revenue impacts and/or long-term harvest reductions.

- There are no scientific data showing that existing Forest Practices Act (FPA) riparian standards do not adequately protect fish habitat and water quality. The FMP standards are already higher than FPA standards. There are opinions citing “concepts” (IMST 1999) that broadening the FPA, as the FMP does and SAH would do further, could fill an alleged shortcoming in the FPA, but science does not support an argument that SAH would be better for fish than the FPA and FMP.
- Current ODF and ODFW monitoring programs should continue and are adequate to provide reliable data about effectiveness of habitat restoration. Further experimentation to learn about SAH parameters should be conducted elsewhere (e.g., Federal land) where there are no impacts on timber harvesting that affects county revenues.
- Continue FMP plan for rapid conversion of SNC as soon as possible. SAHs will delay conversion of some stands with severe SNC and scientific understanding of the impacts is inconclusive. Such a delay would reduce the long-term productivity of State forest lands.
- ODF should suspend pursuit of an HCP for salmonids because the Oregon coast coho has been delisted and/or the time and effort needed to obtain an HCP from NOAA Fisheries is not worth the benefits that would accrue.
- Management actions like SAH tend to stay in place longer than the terms stated at their outsets.
- Additions to forest management at the state level can work their way into the FPA, negatively affecting private forestland owners.
- The FMP was described as a salmon HCP in the long term, and SAH was the ten-year transition from current to FMP conditions. If ODF enacts SAH now, it would not have it to use in negotiating an HCP, if ODF and FTLAC decide to go ahead with an HCP for salmon.
- There is no plausible argument that non-timber benefits would accrue from SAH. No scientific evidence was presented that hinted any more or fewer salmon would result

from SAH. It is not plausible to suspect that tourists would come to the Northwest Oregon Forests to see SAHs.

3. If the Board of Forestry decides to continue with the SAHs, the Work Group suggests consideration of the following *recommendations to improve implementation of the SAH strategy*:
 - ODF should identify a monitoring budget and revenue source up front and initiate research that quantifies the effects of the full range of state forest silviculture treatments on fish and fish habitats in a landscape context.
 - SAH implementation should be treated as an experiment with a rigorous scientific design with specific hypotheses, control basins where no harvesting occurs at all over the 10 year period, and research questions covering the full range of options for habitat parameters and fish production for all species of interest. For example, how does sediment delivery differ between SAH and non-SAH watersheds? Many of the uncertainties noted by the Work Group can be reframed as research questions to be answered through an effective monitoring program.
 - Include riparian buffer protection on intermittent high slide hazard streams with potential to reach streams. Overlay important large wood and sediment source areas identified by Reeves/CLAMS and ODF 1997 slide prediction tools with SAH areas and ensure that these key areas can deliver large wood.
 - SAH implementation may delay conversion of some stands with moderate or severe SNC although scientific understanding of the impacts of these effects is inconclusive. Seek site-specific opportunities to treat SNC that will meet SAH objectives. Designate a SAH “control” basin where SNC is not treated for 10-20 years for comparison with basins in which SNC is actively managed.
 - The BOF should consider ways to make SAHs revenue neutral to counties and local taxing districts. The BOF could revisit the revenue allocation formula between counties and states to take into account the impacts (if any) of the SAH, recognizing the change in revenue results to counties that resulted from past property tax ballot measures.

IV. SUMMARY AND CONCLUSIONS

As described above, Work Group members brought multiple perspectives, experiences, and needs to the assignment from the Legislature. Working together for several months, we learned about the science, economics, and legal aspects of the SAH strategy. We'd like to thank all those who contributed their expertise to the Work Group process, especially those who did so without recompense. While we found many things we could agree upon, ultimately our differences led us to interpret the available data in divergent ways.

For example, while the preponderance of existing scientific evidence suggests that current reserve-based management regimes protect and restore salmon and salmon habitat in general, there is little direct evidence related to the ecological effects and benefits specifically related to SAHs in terms of how much and in what ways salmon and their habitats benefit. And, while the current SAH strategy does not appreciably reduce timber volumes, anticipated associated revenues or future stand complexity, questions remain about equity in the *distribution* of impacts and ways to monitor the effectiveness of the strategy. Concern also remains among some Work Group members that the SAH could be extended in length and/or to other landscapes (i.e., private lands) at some time in the future.

We believe that the Work Group has identified a suite of important issues that the Board of Forestry should consider as it re-examines the SAH strategy. Thank you for this opportunity to serve the state of Oregon and assist in ensuring that the management strategies for the Oregon Northwest Forests not only meet statutory requirements but also the social goals Oregonians have for their forests.

REFERENCES CITED

Independent Multi-disciplinary Science Team. 1999. "Recovery of Wild Salmonids in Western Oregon Forests."

Oregon Department of Forestry. 2001. Northwest Oregon State Forests Management Plan, Final Plan. Salem, OR: Oregon Department of Forestry.

Oregon Department of Forestry. 2003. Implementation Plans for Northwest and Southwest Oregon Forest Management Plans. Salem, OR: Oregon Department of Forestry.

APPENDIX A: BUDGET NOTE TEXT

Prior to setting aside any lands for Salmon Anchor Habitat, the Department of Forestry is directed to form a work group of constituents including counties and regulated industry to review the implementation plan for salmon anchor habitat (SAH) strategies. The group will review such things as impacts of listing decisions by NOAA-Fisheries, State of Oregon Endangered Species Act (ESA), assurances efforts, monitoring implementation of the strategies in each basin, monitoring impacts of SAH on harvest activity through the harvest level work plan. The group will identify issues and make recommendations for necessary changes to the SAH strategies to the Board of Forestry. The Department is directed to report on the activities on the work group and its recommendations, accompanied by scientific evidence, to the Emergency Board no later than September 2004.

APPENDIX B: SAH WORK GROUP MEMBERS AND STAFF

Work Group Members:

John Griffiths	Forest Trust Lands Advisory Committee
Paul Hanneman	Tillamook County Commissioner
Mark McCollister	Oregon Trout
Dave Moskowitz	Wild Salmon Center
Helen Westbrook	Clatsop County Commissioner
Ray Wilkeson	Oregon Forest Industry Council

Agency Staff:

Jeff Foreman	Oregon Department of Forestry
Jon Germond	Oregon Department of Fish and Wildlife
Ross Holloway	Oregon Department of Forestry
Steve Thomas	Oregon Department of Forestry
Cassandra Webber	Oregon Department of Forestry

Institute for Natural Resources:

Gail Achterman	Project Coordinator
Jeff Behan	Policy Analyst
Denise Lach	Facilitator

APPENDIX C: SAH POLICY REVIEW PAPER

APPENDIX D: SAH WATERSHEDS

List of SAHs with reason (spawning, habitat, or professional judgment) for selection and species with consistently high numbers of spawning adults present.

Watershed/Drainage	Spawning	Habitat	Professional Judgment	Species¹
<i>Nehalem River</i>				
Foley Creek	X			Chum
Cook Creek			X	StW, ChF
S. Fk Salmonberry R.	X			StW
Upper N. Fk. Nehalem R.	X	X	X	Co, ChF
Buster Creek		X		
Fishhawk Lake Creek	X	X		Co
Lousignont Creek	X			Co
Coal Creek			X	Co, StW, Chum
Upper Rock Creek		X		Co
<i>Kilchis River</i>				
Middle Kilchis River	X			Chum, ChF
<i>Wilson River</i>				
Little North Fk. Wilson R.	X	X		Chum, ChF
Cedar/Ben Smith Creek	X			ChF, Co
Devil's Lake Fk. Wilson R.	X	X		Co
<i>Trask River</i>				
East Fk. S. Fk. Trask R.		X	X	Co
Elkhorn Creek	X		X	ChF, Co
Miami River			X	Chum, Co, StW, ChF

¹Chum = chum, StW = winter steelhead, ChF = fall Chinook, Co = coho.

**APPENDIX E:
SPECIALISTS PRESENTING TO THE SAH WORK GROUP**

Dewberry, Charlie	Consulting Ecologist
Dukes, Joan	Oregon Senator, Astoria (D)
Furfey, Rosemary	NOAA Fisheries
Guistina, Larry	Oregon Board of Forestry
Haynes, Richard	Oregon State University, Forest Resources
Ivanoff, Dave	Hampton Associates
Kanaskie, Alan	Oregon Department of Forestry
Levesque, Paul	Tillamook County Historian
Moore, Kelly	Oregon Watershed Enhancement Board
Myron, Jim	Governor's Natural Resources Office
Paulsen, Steve	US Environmental Protection Agency
Radke, Hans	The Research Group
Radosevich, Steve	Oregon State University, Forest Science
Reese, Bob	Fishing Guide
Reeves, Gordon	US Forest Service, PNW Research Station
Rosenburger, Randy	Oregon State University, Forest Resources
Ruder, Phil	Pacific University, Economics
Sessions, John	Oregon State University, Forest Engineering
Sherman, Joyce	Oregon Steelheaders
Souder, Jon	Policy Consultant
Whitlock, Ian	Oregon Department of Justice

APPENDIX F: SAH WORKING GROUP MEETING SUMMARY

Meeting 1: 12/12/03, Forest Grove, Oregon

Introductions; explanation of the process, schedule, and communication policy; distribution of background information; and testimony from invited guests:

Joan Dukes, D-Astoria

Larry Guistina, Oregon Board of Forestry

Jim Myron, Governor's Natural Resources Office

Meeting 2: 2/17-18/04, Tillamook, Oregon

Briefing on the development of the SAH strategy from ODF staff; develop initial list of policy issues and specialist questions; identify background speakers for next session; and field tour of SAH sites in the Tillamook Forest.

Meeting 3: 3/17/04, Forest Grove, Oregon

Hear from background speakers (see list below); finalize list of issues and specialists for June conference; and draft agenda for June conference.

Dave Ivanoff, Hampton Associates

Paul Levesque, Tillamook County Historian

Phil Ruder, Pacific University, Economics Department

Joyce Sherman, Oregon Steelheaders

Ian Whitlock, Oregon Department of Justice

Meeting 4: 6/25-26/04, Tillamook, Oregon

Working Group hears from and questions 14 specialists (see Appendix G for list of speakers) on issues they have identified as important to understanding the SAH strategy (day 1) and begins drafting final report (day 2).

Meeting 5: 7/27/04, Forest Grove, Oregon

Reviews, critiques, and reconciles final report draft.

Meeting 6: 8/23/04, telephone conference

Approves final report language prior to delivering to ODF and plans for presentation to the Board of Forestry.

APPENDIX G:

LIST OF EXPERTS AND WRITTEN RESPONSE TOPICS

Fourteen science and policy experts provided written documentation and oral presentations in response to questions developed by the Salmon Anchor Habitat (SAH) Work Group. Several experts responded to more than one question. Some experts chose to focus their responses on one specific question at a time; while others chose to holistically address several of the questions within a single narrative.

The following list contains the 14 expert's names, and topics covered by their written responses. Panel discussions at the June 24, 2004 SAH Conference were based on the written responses, which were reviewed by the SAH Work Group prior to the conference.

Salmonid status, science, protection, recovery

Dr. Gordon Reeves, USDA Forest Service PNW Research Station

- Historic trends & cycles of North Coast salmonid populations
- Issues with Defining "Properly Functioning Aquatic Habitats"
- Scientific Basis of the Salmon Anchor Habitat Strategy

Dr. Charley Dewberry, Gutenberg College

- Why Focus on Healthy Salmon Stocks?
- Properly Functioning Aquatic Habitats and Limitations in North Coast Forests
- Applying Metapopulation Theory to Salmonids
- Scientific Basis of the Salmon Anchor Habitat Strategy

Regulatory and Legal Assurances and Considerations

Rosemary Furfey, NOAA Fisheries

- Relationships Among Salmon Anchor Habitats, ESA and the Oregon Plan

Ian Whitlock, Oregon Department of Justice

- State Perspectives on Salmon Anchor Habitat and Oregon Plan

Dr. Jon Souder

- Legal Relationships Between Forest Trust Counties and Oregon in Relation to Management of State Forest Lands

Monitoring

Kelly Moore, Oregon Watershed Enhancement Board

Dr. Phil Larsen, US Environmental Protection Agency

- Approaches and Timeframe for Monitoring SAH Effectiveness

Perceived Costs and Benefits, Economic and Social Values

John Sessions, OSU Forest Engineering, and Pam Overhulser, ODF

- Effects of Salmon Anchor Habitats on Timber Harvests

Hans Radke, The Research Group, OSU Agriculture and Resource Economics

- Impacts to Counties, Market and Non-market Values of SAHs

Randy Rosenberger, OSU Forest Resources

- Considerations and Concepts of Non-Market Economic Valuation

Richard Haynes, USFS PNW Research Station

- Timber Harvest/Job Relationships, Fiscal Considerations of Longer Rotations

Silviculture Issues and Strategies

Alan Kanaski, ODF Research

- Swiss Needle Cast: Ecology and Silvicultural Treatment Alternatives

Steve Radosevich, OSU Forest Science

- Longer Tree Rotation/Timber Volume Relationships

Pam Overhulser, ODF

- ODF Inventory Methods for Tillamook and Clatsop State Forests