



March 28, 2000

Department of the Army
 Walla Walla District
 Corps of Engineers
 201 North Third Avenue
 Walla Walla, WA 99362-1876

ATTENTION: Lower Snake River Study

The Northwest Food Processors Association is a regional trade association representing the fruit, vegetable and specialty processing food industry in Idaho, Washington, and Oregon. Food processing is the largest manufacturing employment sector in the State of Idaho and the second largest manufacturing employment sector in both Washington and Oregon. Food processors in the region operate 247 processing plants, employ over 50,000 individuals and realize over \$6 billion dollars in annual sales.

Food processors have a critical interest in the future of the Columbia/Snake system. Irrigation water is essential to the region's incredibly productive agricultural economy. Processors also utilize the transportation system, which allows for low cost shipping of products bound for Asian export markets. Availability of hydropower is also a critical issue for food processors.

Salmon recovery in the Columbia/Snake system is at a crossroads. Listed stocks continue to falter, while the region argues over enormously expensive and impractical recovery measures. The citizens of the region are becoming impatient. It is time for a true recovery plan. It is time for reason and common sense to merge with science, and produce a plan that can be implemented immediately.

We are very disappointed that the Corps chose to publish the Lower Snake study without a preferred alternative. Now, we will all have to endure another round of hearings and seemingly endless public debate when the second draft EIS is published. All this, while the region waits for solutions. NWFPFA believes science and economics of this issue lead to a very clear preferred alternative.

Outlined below are the overarching recovery principles upon which this document is formulated. Following the recovery principles is a summary of our recommendations for a preferred alternative.

Principles for Recovery

- No single management action will result in recovery
- Implement actions that offer the greatest and most immediate return
- Strategies are viable only if they can be implemented in a reasonable time frame
- Local planning and implementation, through incentives, is more effective than regulatory action
- Science will inform but not make the final decisions

Critical Issue: Flow Augmentation In the Lower Snake**Recommended Actions:**

1. Eliminate current NMFS spring/summer flow targets.
2. Eliminate flow augmentation from the Upper Snake.
3. Protect resident species when developing any flow program.
4. Utilize current Snake River spring/summer flow to generate revenues dedicated to funding habitat improvements.

Issue Overview and Discussion:

Flow augmentation does not work, yet it is the primary strategy to mitigate for the effects of impoundment. The flow program is the most expensive program currently being implemented, yet it is based on a set of totally flawed assumptions. The Hydropower Appendix of the All-H paper states the following:

Flow augmentation, or use of water from storage reservoirs to augment natural streamflows, is one of the primary strategies to mitigate the effects of impoundments and the regulated hydrograph on juvenile passage.

Flow augmentation from storage reservoirs is intended to reduce the fishes' travel time to more closely approximate that of pre-dam conditions. The hypothesis is that increased water velocities resulting from higher flow rates will decrease juvenile fish travel time, resulting in reduced freshwater residence and earlier arrival at the estuary.

The flow program doesn't work because increasing flow in the Lower Snake River has virtually no effect on travel time and thereby offers absolutely no benefit to spring migrants. Recent work by Karl Dreher, ID. Dept. of Water Resources, shows that adding 1 MAF annually to existing flows results in less than a 0.1 mile per hour increase in velocity through the Lower Snake reservoirs.

Even if flow did increase travel time, that benefit would be targeted solely to spring/summer Chinook. Benefits to fall Chinook from increases in travel time are not clear and may not exist. In the Hydropower Appendix of the All-H paper, the following summary statement is made:

The relationship between flow and fish travel time is somewhat weaker for summer migrants (e.g., fall Chinook) than observed for spring migrants. Fall Chinook have a more complex migratory behavior than spring migrants, with fish size, feeding, and rearing all affecting their migration.

The science shows that flow may benefit fall Chinook smolt in the free flowing sections of the Lower Snake, however, any potential benefit is outweighed by the risk of increasing summer temperatures in the river.

Additionally, the current NMFS flow targets for the Lower Snake would require more water for flow augmentation in a low water year than is physically present in the entire Snake River Basin. The flow targets are not based on science or hydrological reality, and they need to be eliminated.

It is difficult to understand, in light of the information presented in NMFS own science discussion, why the federal agencies continue to rely on this failed recovery measure. The agencies seem to have an irrational attachment to flow. This is again demonstrated in the totally erroneous

conclusions drawn at the end of the flow augmentation discussion of the Hydropower Appendix to the All-H Paper. The conclusions stated are:

In summary, research suggests that the spring flow objectives outlined above are reasonable. Flow augmentation does not restore historic flow conditions, but survival rates for juvenile spring/summer Chinook passing eight dams approach the levels observed for fish passing four dams. This suggests that flow management coupled with other passage measures has had a positive effect on juvenile survival.

NMFS own science suggests exactly the opposite conclusion. While juvenile survival in the Lower Snake is at an all time high, flow augmentation has made no contribution to that survival. In fact, the Hydropower Appendix of the All-H paper makes the following statement:

Recent NMFS research has not demonstrated a relationship between flow and survival for spring migrants through Snake River reaches.

Eliminating flow augmentation creates an opportunity to provide significant funding for needed improvements in habitat. By generating power at peak demand times, instead of using the water for flow augmentation, a large amount of capital can be created.

We are recommending that a dedicated habitat improvement fund, managed by the Northwest Power Planning Council, be established with these revenues. This fund would be dedicated to habitat and estuary improvement projects and would not be managed by CBFWA. Conservative estimates by Bonneville Power indicate the value of this power to be \$50 million.

Critical Issue: Dam Breaching

Recommended Actions:

1. Defer study and discussion of dam breaching indefinitely.
2. Pursue a balanced plan that continues to improve hydro operations, restores habitat, limits harvest and refocuses hatchery operations.

Issue Overview and Discussion:

Dam breaching is not a silver bullet and does not come close to returning enough benefit to justify the staggering cost. NMFS research shows that the benefits of dam breaching are minimal, will take many years to realize and even then the benefits are speculative. The Anadromous Fish Appendix of the Corps EIS states:

CRI analyses suggest that no single management action is likely to result in sufficiently improved demography for spring/summer Chinook salmon. For dam breaching alone to recover spring/summer Chinook salmon, it would have to produce improvements in estuarine and early ocean survival as high as 80 to 100 percent, as well as an approximate 30 percent improvement in survival during upstream migration.

In fact, the CRI analysis indicates the most effective way to help Snake River stocks is to aggressively pursue actions that improve survival in the first year of life and during their time in the estuary and entry into the ocean. The Anadromous Fish Appendix states:

On a more optimistic note, the CRI analyses suggest that a combination of improvements spread throughout the life cycle, and attained by a mixture of different management actions, could promote adequate annual population growth for spring/summer Chinook salmon. Numerical experiments that correspond to manipulations of "current demography" indicate that small improvements in estuarine and early ocean survival or in the survival of newly born fish, will yield the greatest rewards in terms of enhanced population growth.

The theoretical benefits of dam breaching are different for fall Chinook and spring/summer Chinook. For fall Chinook, harvest reductions or moratoriums appear to have the same benefit as dam breaching, at a fraction of the overall cost. Fall Chinook would also benefit, in a breach scenario, with increased spawning habitat. However, breaching the lower four Snake dams would restore only 7% of the historical fall Chinook habitat; 90% of that habitat would remain unavailable.

Benefits of dam breaching for spring/summer Chinook are even more speculative. The only way to show any benefit to this stock from breaching is to manipulate the "D" value of the latent mortality calculation. This is clearly outlined in the Anadromous Fish Appendix of the Corps EIS:

For spring/summer Chinook salmon, there is no silver bullet that is likely to adequately reduce extinction risks. For dam breaching alone to recover spring/summer Chinook salmon, very optimistic scenarios would need to be assumed about how much survival below Bonneville Dam could be improved due to the elimination of latent mortality not measured during inriver downstream and upstream migration.

Delayed mortality is a theoretical concept that tries to explain potential survival differences between transported and in-river fish. To justify a breach decision biologically would require the presence of significant latent mortality. The All-H paper Hydropower Appendix states:

Before these fish return to spawn, they may suffer additional mortality that exceeds what would have occurred if they were not barged. This mortality is termed differential delayed transportation mortality (measured by the "D-value"). This is one of the most important parameters with regard to deciding upon the role of juvenile fish transportation in salmon recovery and assessing the potential benefit of dam breaching.

NMFS own data argues against latent mortality. The All-H Hydropower Appendix contains the following statements:

Breaching the Lower Snake River may be considered if experimental Management results find the level of delayed mortality associated with transported fish is significant, particularly if transported survival is less than estimated natural river survival levels.

Overall, direct survival of transported migrants is high, estimated at greater than 98 percent. Behavior and survival of transported fish following release below Bonneville Dam is similar to that of in-river migrants. Some people believe that indirect mortality of transported fish is high (i.e., many of the fish that survived during transportation die later; delayed transportation mortality), but this is a subject of ongoing research. Some have also suggested that fish that migrate in-river and are undetected at dams return at higher rates than

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cont. | *those that were transported. While some differences in SARs exist between transported and undetected in-river migrants, no significant differences have been observed.* (emphasis added)

Since survival of in-river and transported migrants is "similar," and since NMFS sees "no significant difference" in the SAR's of transported and undetected in-river migrants, then there is absolutely no evidence of latent mortality. Without latent mortality, there is no biological justification for breaching the Lower Snake River dams, even without considering the enormous costs.

Additional factors argue strongly against breaching the lower four Snake River dams.

4 | The Corps of Engineers estimates that 50-75 million cubic yards of sediment will be released into the river when the dams are breached. The majority of this sediment will be deposited in Lake Wallula. This means that all of this sediment will pass through the Hanford Reach, which is the spawning ground for the healthiest fall Chinook stock in the system.

5 | In December of 1999, the Northwest Power Planning Council issued a report that estimates the need for 3000 MW of new electric power production by the year 2003. The four lower Snake dams produce 1,195 MW of power for the Bonneville system. Breaching these dams would increase the projected regional power deficit by 40%.

In summary, breaching four dams on the Lower Snake River is not a viable option and should not be pursued.

Critical Issue: Habitat Protection and Restoration

Recommended Actions:

1. Target habitat actions that will be immediately productive.
2. Focus on survival improvements in the estuary and first year of life.
3. Develop incentives for private land owners. Create funding through changes in the flow augmentation program. (Outlined in section on flow augmentation.)
4. Recognize and focus research on the role of ocean conditions.

Issue Overview and Discussion:

The All-H paper does not have a viable habitat plan outlined. Coordination of various federal functions does not constitute a habitat protection and restoration plan. Current science indicates that significant improvements in SAR's can be realized through aggressive management of estuarine mortality, particularly predation.

6 | Predation by the Northern Pikeminnow is estimated at 16.4 million smolts annually. Recent avian predation studies show that the estimated total consumption of juvenile salmonids by fish-eating colonial waterbirds in the Columbia River estuary was 16.7 million smolts or 18% of those smolts that reached the estuary in 1998. Pinnepeds are also known to be significant predators, however, accurate estimates of their consumption is not available.

The total mortality caused by just the Pikeminnow and the colonial waterbirds amounts to 33.1 million smolts per year, or a staggering 36% of the total number of smolt that actually reach the estuary.

In a recent letter to Trout Unlimited, NMFS states:

Clearly there is enormous mortality during both the first-year (freshwater rearing) and estuarine and early-ocean phases. Comparing the effects of a ten percent reduction in mortality on population growth rate across all life stages indicates that reducing mortality during these two early stages leads to a ten-fold larger increase in growth rate than that obtained by reducing mortality at other life stages.

Decreasing smolt predation is one of the most significant "big bang" improvements left in the system. It can be done with reasonable cost and will return a ten fold benefit over other, more costly options.

Ocean conditions and its effect on smolt survival and return is another critical issue that is given only lip service. It is entirely possible that the effects of the ocean may be so great that they completely mask the impacts of the other four "H's."

In the Corps of Engineers EIS on the Lower Snake Dams, NMFS makes the following comments in the Anadromous Fish Appendix:

There are strong statistical indications that in many salmon stocks, survival and growth are significantly correlated with changes in the Pacific Decadal Oscillation (PDO) index, a composite index of climatic variation that incorporates the average annual coastal temperature, the average annual basin temperature, and snow depth in March. Over the period of reliable data (1946 to present), the greatest anomalies in sea surface temperatures occurred during the decade from 1977 to 1986, coinciding with the onset of low smolt-to-adult return rates for salmon.

These comments support the conclusions of a recently released report by Dr. James Anderson of Washington State University. Dr. Anderson concludes in his publication titled, *Decadal Climate Cycles and Declining Columbia River Salmon*, that three major ocean temperature regime shifts in the last past seventy five years have had significant effects on salmon populations. Dr. Anderson also points out that the effects of poor ocean conditions can mask the effectiveness of salmon recovery measures.

Since the ocean has such significant effects on salmon stocks, and we know so little about those effects, it seems reasonable to focus your research efforts on this issue. It is time to stop researching issues such as breaching and flow augmentation and put the money where it will do some good.

Critical Issue: Harvest Management

Recommended Actions:

1. Implement and enforce the Pacific Salmon Treaty
2. Limit in-river harvest to treaty tribes. Work with tribes to develop terminal fisheries.
3. Develop better information on the impact of ocean fisheries on Columbia River stocks.

Issue Overview and Discussion:

In the early 1900's, serious declines in Columbia/Snake stocks were caused by over harvest. NMFS data shows that the combined ocean and fresh water harvest of spring and summer Chinook was 80-90% up through the late 1930's. While fresh water harvest declined significantly

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during the 1940's, ocean fisheries grew during this period and peaked in the 1970's. Over harvest has historically been the cause of significant reductions in the Columbia/Snake fishery.

Harvest has been significantly curtailed, but with seriously diminished stocks, it remains a key component to a comprehensive All-H plan.

Proposed changes in some tribal fisheries which include the development of terminal fisheries in the tributaries appear to have merit. Reduction in mortality of returning adults from a non-selective in-river fishery would appear to have benefits to weakened stocks. These changes should be combined with proposed changes in hatchery management practices.

In addition, the recently approved Pacific Salmon Treaty must be implemented and enforced. NMFS must develop a much better understanding of the migratory behavior of listed stocks and the impact of Canadian, Alaskan, and Northwest fisheries on those individual stocks.

Critical Issue: Hatchery Management

Recommended Actions:

1. Revise hatchery practices to move toward a conservation model.
2. Implement reforms in hatchery policy and practices recommended by the Northwest Power Planning Council.

The Northwest Food Processors Association strongly believes that Columbia/Snake salmon stocks must be protected and recovered. We also believe that this can be done without compromising the integrity of the Northwest economy. The outlined actions in these comments will optimize salmon stocks while maintaining the critical benefits of the hydropower system.

Critical Issue: Drew Report - Economic Assumptions

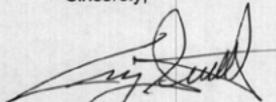
Recommended Actions:

1. Amend the economic assumptions developed by the DREW process.

A critical component of the EIS is the economic impact study prepared by DREW. NWFWA totally concurs with the comments developed by the Oregon Wheat Growers League. These comments outline the significant deficiencies contained in the DREW report. NWFWA has incorporated the Oregon Wheat Growers comments as part of our official statement.

We appreciate this opportunity to comment on this very important issue.

Sincerely,



Craig Smith
Vice President, Environmental Affairs

cc: NWFFPA Board of Directors
NWFFPA Government Affairs Committee
Northwest Congressional Delegation
U.S. Senate, Subcommittee on Fisheries, Wildlife, and Water
U.S. Senate, Subcommittee on Water and Power
U.S. House of Representatives, Committee on Resources
National Marine Fisheries Service
Bonneville Power Administration
U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers, Northwestern Division