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**TESTIMONY**  
**COLUMBIA BASIN DEVELOPMENT LEAGUE**  
prepared and given by  
**Alice Parker, Executive Secretary**

**U.S. Army Corp of Engineers Draft Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement with Federal Caucus Conservation of Columbia Basin Fish "All-H Paper**

I am Alice Parker, the Executive Secretary for the Columbia Basin Development League. My husband (Ivan) and I are retired farmers at Royal City and still reside on the farm on the Royal Slope, a part of the Quincy Columbia Basin Irrigation District.

Our membership is comprised of individuals, businesses and entities who have interest in the Columbia Basin Project. We have an invested interest in any policy impacting the Columbia /Snake River System.

We are very concerned with proposed policy that addresses flow targets and flow augmentation. The Bureau of Reclamation's administrative moratorium is enforcing on the Columbia Basin Project and elsewhere in the region, that prohibits the use of already certificated and permitted water. This water would serve additional agricultural, municipal/industrial and other project water uses. This water is already authorized by existing contractual authorities therefore the moratorium should be ended. The need for that moratorium is based on excessive flow augmentation allocations that are hydrologically unachievable and biologically unnecessary.

The annual quantity of water allocated to Columbia River flow augmentation should be reduced to 4 million acre feet or less. Serious consideration should be given to utilizing this water only, for late summer and/or early fall flow augmentation. There is no significant evidence that spring and early summer flow augmentation is providing any biological benefit. I am attaching a document ("The Columbia-Snake River Flow

"Targets/Augmentation Program") prepared by Darryl Olsen, Ph.D. a Regional Planner/Regional Economist; and Research Biologists James Anderson, Ph.D.; Richard Zabel, Ph.D.; John Pizzimenti, Ph.D. and Kevin Malone, M.S. This White Paper shows evidence that flow augmentation is hydrologically unachievable and biologically unnecessary. The report reaffirms the concern the Columbia Basin Development League has regarding flow targets/augmentation. Please consider the findings in this report.

Just last week a lawsuit was filed in U.S. District Court under the Endangered Species Act. The lawsuit contends that the U.S. Army Corp of Engineers and the U.S. Bureau of Reclamation have failed to meet minimum flows set by the National Marine Fisheries. While there is no significant evidence that spring and summer flow augmentation is necessary, some insist on filing lawsuits. These people are wasting valuable time and money which could be better spent on improving conditions for salmon survival. I question the motive in such lawsuits. Is it for the protection or enhancement of salmon or is it just control? When science doesn't show it will be beneficial then I have to think that it is control of water and land. As the old saying goes "Whiskey is for drinking and water is for fighting."

We hear so much about Tribal Treaties and how they must be honored. What about contracts and agreements the Federal Government and Agencies have with individuals and entities? The Columbia Basin Project has a contract with the Federal Government with an amount of water which is already certificated and permitted to serve additional agricultural, municipal/industrial and other project water uses? Currently that water is being prohibited from being used. What good is a contract if it is not honored whether it is with the tribes or other parties? I think it is time that we all have a level playing field. If sacrifices are to be made then they must be made by all.

The Columbia - Snake River Irrigators Association and the Eastern Oregon Irrigators Association have prepared a paper summarizing their comments on the issues being addressing today. I have attached their comments and request that you consider them. Their comments and proposals are based on science and are workable solutions. Just what we need to have an honest effort for salmon recovery in the Northwest.

Thank You for giving us the opportunity to comment on the Federal Caucus reports.

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***The Columbia-Snake River  
Flow Targets/Augmentation Program***

***A White Paper Review  
With Recommendations For Decision Makers***

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Eastern Oregon Irrigators Association  
Idaho Water Users Association  
Northwest Irrigation Utilities  
Washington State Water Resources Association

***February 1998***

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*The Columbia-Snake River  
Flow Targets/Augmentation Program*

*A White Paper Review  
With Recommendations For Decision Makers*

*Executive Summary*

1.0. *A White Paper Review.*

- This white paper examines the Columbia-Snake River flow targets/augmentation program, and its implications for important water management actions within the Pacific Northwest.
- Evaluations of hydrologic, biological, and economic data indicate that the existing NMFS water policy and flow targets/augmentation program needs to be reassessed and changed.

2.0. *The Emerging NMFS Water Policy.*

- Through its flow targets/augmentation program, the NMFS is developing a water policy within the Columbia River Basin drainage of "zero net loss."
- The NMFS policy calls for no further water withdrawals from the Columbia-Snake River mainstems, tributaries to the main river system, and related groundwater sources; and it directs federal and state agencies to review the impacts of existing water withdrawals on its flow targets program.
- The NMFS policy challenges state authority to grant *future* water rights for municipal, industrial, or irrigation uses. By calling for a "review" of existing water withdrawals, the policy postures toward challenging *existing* state-granted water rights.
- Under the NMFS water policy, future (new) water allocations from within the Columbia River Basin drainage are to be used solely for instream fish flows.

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### 3.0. NMFS Water Policy Justification, Flow Targets and Augmentation.

- The NMFS flow targets/augmentation program follows on the development of the fish flow augmentation program devised by the Northwest Power Planning Council during the 1983-1994 period.
- An initial "water budget" requested by the Council amounted to about 3.75 million acre-feet (MAF), but has grown with the preparation of each new Council Fish and Wildlife Program; the NMFS 1995 BIOP now calls for as much as 13-16 MAF for dedicated flow enhancement.
- The highest level of flow augmentation produced about 10.6 MAF, occurred during the 1994 drought water-year; about 0.8 MAF was released from the Brownlee Project and above, about 1.9 MAF was released from Dworshak Reservoir, with the remaining water being released from upstream Columbia system reservoirs.
- In the 1994 low water-year, about 0.5 MAF was provided from the Brownlee Project and above during the *summer period*; and about 1.0 MAF came from Dworshak Reservoir.
- Within the NMFS flow augmentation program, the "flow targets" serve as operational guides for in-season water management, determining when to use available water for flow augmentation.

### 4.0. River System Hydro Regulation Studies and the Flow Targets.

- The USBR hydro regulation studies demonstrate that the NMFS flow targets cannot be met in all months (affecting seasonal averages), during low or average water-years, because they require more water than the hydrologic system can provide--with or without the effects of net irrigation depletions from the Snake-Columbia River Basin.
- During low and average water years for the summer flow augmentation period, the NMFS flow targets exceed water levels that would be available under natural river system conditions, with or without the effects of net irrigation withdrawals.
- During a drought year, net irrigation depletions represent large volumes of water for the months of July and August. But the net irrigation depletions *are not* the primary reason why the NMFS flow targets cannot be met; the problem rests with the flow targets themselves--the targets are well beyond the Basin's hydrologic capability.
- The annual natural run-off within the Basin is highly variable; the yearly net variation in flows for a 50-year water record substantially exceeds or overshadows net irrigation withdrawals, measured at McNary Dam.

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- Given the hydrological capabilities of the river system, the NMFS summer flow targets of 200 kcfs (Columbia River) and 50-55 kcfs (Snake River) cannot be met during low water conditions, even with the complete elimination of all irrigation depletions. Basin hydrology limits summer flows to well below the NMFS target level.

5.0. *Biological Basis for Flow Targets/Augmentation.*

- Largely based on historical data depicting year-to-year flow and juvenile fish survival relationships, it has been assumed that flow augmentation could be used to increase flows during low water-year conditions, in an attempt to produce survival rates observed in high water years.
- Data collected for spring migrants since 1992 (1993-1997 data sets) indicate that the *within year relationship* between different flow regimes and fish survival through the hydro system corridor is weak. This means that attempts to use flow augmentation to improve spring migrant survival will provide very little or limited benefits.
- The year-to-year correlations between flow and survival—reflecting vastly different flow levels between years—support the hypothesis that ecological factors associated with drought conditions are principally responsible for fish survival.
- The year-to-year observations move toward the conclusion that better water-year conditions, in general, provide for greater fish survival than drought conditions.
- The flow-survival data collected on fall chinook is more variable and less well defined than for spring migrants. Given the existing data, flow is one variable correlated with survival, in some cases, but it has less predictive capability than other variables (such as migration timing and fish size through the upper river system). Also, some relationships, such as observed numbers of marked fish detections between years, are inconsistent among years (although dam-smolt collection operations may have been different among years, making detection comparisons difficult).
- Snake River summer flow augmentation is being used to enhance the transportation collection efficiency for fall chinook. But flow augmentation is not the only method available to increase collection efficiency. Structural changes at the projects, such as the current installation of double-length screens and/or surface collector technology, may be able to achieve the same goal and provide benefits for spring migrants, as well.
- During the summer period, Lower Snake River water temperatures can and do exceed levels that negatively affect migrating juveniles and adults. The use of some flow augmentation (from Dworshak Reservoir) to improve migration conditions should continue to be reviewed; and the biological benefits and costs should be better understood.

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- Because of the uncertainty surrounding the effects of flow augmentation on overall fall chinook survival, it is difficult to support either an increase or decrease in the amount of storage currently being used for flow augmentation (1.5 MAF) to protect summer migrants, for a drought year like 1994. *But resource managers should be cautious in making conclusions about the benefits gained from this flow regime, because shaping flows within a drought year will not produce the benefits fish receive under a high water-year.*

#### 6.0. *Economic Trade-offs of Flow Augmentation.*

- Using sport and commercial fisheries values and fish abundance estimates for the 1987-1991 period (relatively high catch period), the annual direct net value of the upriver (above Bonneville Dam) salmon and steelhead contributions to ocean and inriver fisheries is about \$25 million. It is acknowledged (and has been measured) that salmon do retain an existence value that exceeds their direct commercial or use value.
- Applying some favorable economic and biological assumptions to the benefits of flow augmentation, the annual direct net economic value of the upriver contributions to commercial and sport fisheries is about \$2.25 million per one million acre-feet of water used for flow augmentation--representing a *future value* estimate over 10 life-cycles (1995S).
- Flow augmentation causes economic impacts to hydroelectric power operations and could create future economic impacts to irrigated agriculture. For one million acre-feet of flow augmentation, the cost to hydro power operations is estimated to be about \$8-10 million (BPA system costs). For Basin irrigated agriculture, the direct net value of one million acre-feet of water is estimated to be about \$40-70 million; one estimate for the Upper Snake River Basin suggests about \$49 million per one million acre-feet of water provided for flow augmentation (includes hydropower benefits).
- Both economic trade-off analyses and cost-effectiveness analyses strongly support the position that *any flow augmentation program should be optimized to maximize fish benefits for the costs incurred to other water resource sectors.*

#### 7.0 *Recommendations for Decision Makers.*

##### 7.1 *The NMFS Water Policy.*

- Decision makers should be fully aware of the emerging NMFS water policy and its implications for state water management.

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- The NMFS water policy--bred from the flow targets/augmentation program--directs that all future (new) water allocations from the Columbia River Basin drainage area should be used solely for fish protection.
  - The NMFS water policy is a single-purpose, resource use strategy that subjugates new water withdrawals for other types of social and economic activity or growth within the Basin. The policy is one-dimensional in nature, and it directly or indirectly challenges state legislative authority to govern water management.
  - The NMFS senior management, working with state water resource managers, should reevaluate and change this policy to better reach the needs of biological and economic optimization.

### 7.2 *Review and Restructure the Flow Targets/Augmentation Program.*

- The existing data and analyses strongly suggest that the correlation between incremental flow increases and juvenile spring migrant survival is relatively inelastic, or that the survival benefits are small.
- The existing data suggest that estimated river system flow benefits--though limited--favor the fall chinook. But there is considerable uncertainty surrounding the effects of flow augmentation on overall survival. This includes factors related to direct inriver survival benefits, migration timing, inter-year detection differences, and the use of flow to increase transport collection efficiency.
- It is more clear that flow augmentation is a measure providing marginal survival benefits and has limited effectiveness as a recovery measure.
- In contrast to some of the biological impacts, the economic trade-offs of flow augmentation are more predictable. Flow augmentation does increase costs to the hydropower system, and it could create significant costs to the irrigation (and other) sectors.

Given the data and analyses presented within this paper, the following review and changes are suggested for the flow augmentation program.

#### Optimization Review:

- The flow targets/augmentation program would benefit from a detailed technical review that focuses on the *optimization of water use; its source, delivery timing, temperature effects, and a clear identification of the biological or physical attributes to be targeted. This also includes applying principles of cost-effectiveness, to compare the biological benefits gained for the costs incurred.*

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- > The existing flow augmentation program does not optimize water use for either survival benefits (benefit per unit of flow) or economic costs (benefit per dollar cost) to the river system.

A flow augmentation program that better reflects a step toward optimization of the existing water resources is summarized below.

Low Water Conditions, Snake River System:

- > For the summer period (July-August), provide for experimentation a *maximum of 0.5 MAF* from the Brownlee Project and above consistent with state law and obtained from willing sellers or lessors; and a *maximum of 1.0 MAF* from Dworshak to be used for fall chinook migration and/or adult temperature control. Data to review this experimental regime would be collected through 1999, consistent with the existing NMFS decision-making process.

Low Water Conditions, Columbia River System:

- > Direct flow augmentation releases solely for the fall chinook migration. For the summer period (July-August), provide for experimentation *0-4.0 MAF*, as *recommended jointly by federal and state fish and water resources managers.*

Average Water Conditions, Snake River System:

- > For the summer period (July-August), provide for experimentation a *maximum of 0.5 MAF* from the Brownlee Project and above consistent with state law and obtained from willing sellers or lessors; and a *maximum of 1.0 MAF* from Dworshak to be used for fall chinook migration and/or adult temperature control. Data to review this experimental regime would be collected through 1999, consistent with the existing NMFS decision-making process.

Average Water Conditions for the Columbia River System:

- > Direct flow augmentation releases solely for the fall chinook migration. For the summer period (July-August), provide for experimentation *0-4.0 MAF*, as *recommended jointly by federal and state fish and water resources managers.*

The Restructured Flow Augmentation Program:

- > The above restructuring of the flow augmentation program would have the greatest deviation from the existing program by eliminating the current spring flow augmentation regime.

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- During the summer period, the restructured program would limit flow augmentation in the Snake River Basin to a level not to exceed operations that occurred in the summer of 1994 (drought conditions).
  - Without a better technical justification for the summer flow augmentation, *resource managers should refrain from taking actions to increase this flow augmentation regime.*
  - It is equally important that adequate data be obtained and appropriate analyses undertaken in order to optimize and provide a supportable technical justification for the current summer flow augmentation program.

### 7.3. *Future Considerations for Flow Augmentation Management and Evaluations.*

It appears that using flow augmentation within a single season is not an effective recovery tool for spring chinook migration within the mainstem. What is less clear is whether mainstem flow augmentation is an effective management tool for fall chinook within the mainstem; or how flow augmentation can or should be used to improve survival within tributaries. Given these latter uncertainties and issues beyond the scope of this paper, the following recommendations are provided.

- In the case of Snake River fall chinook, the existing data on collection efficiency (FGE) and its relationship to flow is difficult to interpret. The need exists to establish data that verifies the interaction between flow augmentation and structural improvements to FGE, and cost-effectiveness analysis should be used to assess risk and economic trade-offs.
- Resource managers may want to give consideration to changing the focus of flow augmentation efforts away from mainstem actions to improving habitat conditions within some tributaries. The NMFS Recovery Plan should better recognize this factor by taking into account criteria for demonstrating real biological benefits, prioritizing major production tributaries, and measuring the cost-effectiveness and benefit-cost of tributary flow enhancement actions.
- *Direct actions to implement flow augmentation measures should defer to the existing authority of state water rights and should allow for "locally developed" solutions within specific watersheds.* This could include an implementation of efficiency measures, water transfers, and the development of new water storage projects to benefit both fish and economic interests.

**Columbia-Snake River Irrigators Association  
Eastern Oregon Irrigators Association**

***Summary-Preliminary Comments On:  
Corps Snake River Drawdown EIS  
Federal Agency "All-H" Paper  
John Day Dam Breaching Study-Phase I  
NPPC Framework Review***

**Regional Policy Implications For Salmon Recovery:**

- The federal agencies' ten-year focus on river drawdowns and dam breaching has seriously impaired their credibility and misdirected tens-of-millions of dollars that could have been used for "real" salmon recovery actions and projects. The agencies have failed to make an environmental or economic case for the benefits of dam breaching, much less a case for repeating the "dam" studies. The drawdown/breach issue has been the single greatest impediment to implementing regional salmon recovery measures.
- During the past ten years, the Corps and NMFS have held more than a dozen public meetings in the Columbia Basin region but have not listened to the dominant message: a large majority of the those directly or indirectly affected by the action—including elected officials from the region—do not support dam breaching. The agencies' focus displays poor judgment and no accountability.
- The Northwest Congressional delegation should remove from all federal agency budgets any funding that allows for further review or study of river drawdown or dam breaching measures. Congressional leadership should cut the funding.

**Corps Snake River EIS Preferred Alternative and Comments:**

- The Corps should recommend a preferred alternative for the Final EIS that: 1) eliminates any further review of river drawdown or dam breaching proposals; 2) provides for the continued improvement to dam passage measures, including bypass facilities, turbine upgrades, and fish transport improvements and evaluations; and 3) directs the Corps to prepare a full review of the benefits and costs surrounding the NMFS flow augmentation program within the Snake-Columbia River system—including a review of the potential benefits and costs of the proposed New Water Management Alternative.
- The Corps' review of the PATH and CRI analyses indicate that drawdown/breaching actions would only be more effective than non-breaching

actions if: 1) in-river survival levels are low; 2) transport to in-river (TIR) survival ratios are low; 3) differential delayed transport mortality is high (a low "D Value"); and 4) overall "latent" fish mortality can be attributed to hydro system passage, as opposed to general ocean conditions (ecological factors).

- But the empirical data collected and reviewed by NMFS-UW indicate that: 1) in-river survival conditions are high (>60% survival); 2) the TIR ratios are high (1.5-3.0); 3) the differential delayed transport mortality is low or depends on which river systems are selected for comparison; and 4) ocean conditions are clearly responsible for the overall "latent mortality" that has affected fish survival, not system passage conditions. The available data and analyses for these variables indicate that dam breaching would not improve Snake River spring migrant runs.
- Within the Corps EIS, a careful review of the PATH and CRI modeling work--and a review of their critical assumptions and variables--would suggest that dam breaching will not improve snake river spring and summer chinook survival (or the improvement would be very small). The critical assumptions used within the model analyses can vary greatly depending on the data used--but best available data and analyses would suggest that the dam breaching and existing-improved passage conditions alternatives are approximately equivalent in fish benefits.
- Fall chinook improvements for dam breaching largely depend on the assumptions used to characterize the addition of new spawning habitat within the Lower Snake River Reach--not changes to survival above Lower Granite Dam that would occur within Idaho waters. Any changes to fall chinook survival above Lower Granite Dam would be modest, at best. Fall chinook analyses concerning spawning habitat and fish production in the Lower River are speculative.
- The effects of ocean conditions on salmon survival and recovery within the Corps' EIS review--as expressed within the PATH and CRI analyses--do not appear to be adequately taken into account. Large magnitude changes to fish production within the Columbia River Basin system will be the result of changes to ocean conditions--all other factors are marginal in comparison.
- The Corps' economic analyses for the irrigation, navigation, and recreation sectors should be revisited. It appears that the Corps has underestimated the costs within these sectors to varying degrees. The annual direct net costs should be about \$300 million rather than \$250 million. What this means is that the breaching alternative would provide very few fish benefits (limited to small numbers of fall chinook outside of Idaho), but cost the region \$300 million per year.

#### **John Day Dam Breaching Study:**

- The Corps' should not proceed with any additional review of river drawdown or dam breaching alternatives. As the Corps recommends within its John Day Dam

review, no further study (Phase II analysis) should be conducted on a John Day Pool drawdown. The Congressional delegation should remove from proposed agency budgets any funding that would directly or indirectly support drawdown-breaching studies or proposed measures.

- The fish benefits derived from breaching the John Day Dam appear to be highly speculative and represent a mix of trade-offs among different fish stocks. Also, it appears that the John Day analysis tends to underestimate the benefits of transportation and overestimate potential benefits to fish from drawdown measures. In contrast, the economic costs are definitive and high--about \$700 million annually. This is a very high cost, low benefit salmon recovery measure.

#### **The Federal Agencies "All-H" Review:**

- For regional salmon recovery, the federal agencies should direct their efforts toward 4 key actions: 1) improving existing project bypass and fish transportation systems; 2) restructuring the existing NMFS flow augmentation program; 3) improving water management within the region via the New Water Management Alternative; and 4) giving priority to "targeted" salmon recovery measures that will protect tribal fishing rights, such as improving Zone 6 fishing for the tribes.
- The federal agencies "All-H" review does not deal adequately with water management or the NMFS flow augmentation program. Under water management, the federal agencies should adopt the key features of the New Water Management Alternative, calling for: 1) a restructured flow augmentation program; 2) transferring the economic value of the flow augmentation to water projects in the tributaries and watersheds; and 3) improving water transfers/changes and marketing; 4) implementing stakeholder identified water efficiency projects; and 5) involving the tribes in water management projects as equity partners (see attachment).

#### **NPPC Frame Process Results--Fish and Wildlife Program:**

- The NPPC framework process results are in early stages of presentation and review. As such, the critical assumptions used by the staff to assess fish benefits and impacts across the 6 alternatives and within the "strawman" analysis need to be transparent. It appears that very conservative assumptions are being made concerning the benefits to fish from transportation and fish passage improvements (PATH Analysis assumptions?); with higher benefit assumptions in place for flow augmentation and dam removal actions.
- The NPPC should focus on water management needs and adopt the key features of the New Water Management Alternative within the new Fish and Wildlife Program (see attachment, New Water Management Alternative).

## A New Water Management Alternative for the Columbia River Basin

*Water Management Will Be the Key to Future Resource Planning*

### Flow Augmentation Program:

- The existing flow augmentation program is restructured based on biological data and economic impacts. The goal is *optimization*.
- The spring period flow augmentation regime is eliminated. The summer regime is limited to levels that approximate the summer period flow regime that was provided during 1994, a low water-year condition.
- The impacts to Idaho from summer flow augmentation are limited; Upper Snake River Basin withdrawals would be less than under the NMFS 1995 BIOP; impacts to the Upper Columbia Basin (Montana) would be limited.
- Changes to the existing flow augmentation program will create "new" revenues from the hydro power system—presently foregone revenues incurred by BPA.

### New Water Resources Projects for Watersheds and Tributaries:

- Move water management for environmental needs off the mainstem system and into the watersheds and tributaries, to provide measurable results and real benefits.
- Revenues (funding) provided by restructuring the flow augmentation program are used to develop new water resources projects in watersheds and the mainstem tributaries.
  - New Water Storage Projects and Applications.
  - Promotion of Water Transfers/Changes with Local Control.
  - Implementation of Selected Efficiency Measures.

### Tribal Rights and Economic Development:

- Tribal fishing rights are recognized and respected as legitimate *property rights*; recovery measures are implemented that improve or complement tribal rights.
- The tribes are invited to participate in the develop of new water resources projects as *equity partners*. Funding resources gained from the restructured flow augmentation program are used for this purpose.

### State and Private Water Rights, Economic Development:

- State control over water rights and management is retained; private water rights are protected. Community social and economic needs are met through continued access to adequate water resources.