

U.S. ARMY CORPS OF ENGINEERS  
NORTH PACIFIC DIVISION

RECORD OF DECISION

COLUMBIA RIVER SYSTEM OPERATION REVIEW  
SELECTION OF A SYSTEM OPERATION STRATEGY

INTRODUCTION

This record documents the decision of the U.S. Army Corps of Engineers (Corps) to implement existing and modified plans related to reservoir regulation and project operation for Dworshak, Lower Granite, Little Goose, Lower Monumental, Ice Harbor, Libby, Albeni Falls, Chief Joseph, McNary, John Day, The Dalles and Bonneville projects. The Corps selects the System Operation Strategy (SOS) Preferred Alternative (PA) as described in the Columbia River System Operation Review (SOR) Final Environmental Impact Statement and as modified in this Record of Decision.

This record adopts, incorporates and reaffirms the Record of Decision (ROD) on "Reservoir Regulation and Project Operation, 1995 and Future Years" signed by the North Pacific Division Engineer on March 10, 1995. That ROD documented the Corps' decision to implement measures in the Biological Opinion on "Reinitiation of Consultation 1994-1998 Operation of the Federal Columbia River Power System and Juvenile Fish Transportation Program in 1995 and Future Years" issued by the National Marine Fisheries Service (NMFS) on March 2, 1995, and the United States Fish and Wildlife Service (USFWS) Biological Opinion on four Snake River snails and the Kootenai River white sturgeon dated March 1, 1995. The Corps intends to take action in accordance with that ROD and those Biological Opinions, continuing coordination with NMFS and USFWS and consultation, as may be required, to meet the adaptive management approach to Federal Columbia River Power System (FCRPS) reservoir operations.

In addition to selecting this SOS, the Corps will also continue to investigate various system configurations and improvements identified in the NMFS and USFWS 1995 Biological Opinions and the Corps' 1995 ROD which may improve the survival of certain endangered species based on monitoring, evaluation and research

on species survival. These studies and evaluations are separate actions being conducted per the Corps' 1995 ROD and are not included in the system operating strategies.

## BACKGROUND

The Corps projects on the Snake and Columbia Rivers are multiple-purpose projects which were authorized for construction, operation and maintenance variously to serve flood control, power production, navigation, recreation, fish and wildlife, and municipal and industrial water supply. Over the course of years, since their construction and operation, various National Environmental Policy Act documents have been prepared for individual projects, including two environmental impact statements prepared in 1992 and 1993 which analyzed operation of federal projects, primarily to benefit salmon species listed under the Endangered Species Act.

The SOR was conducted jointly by the Corps, Bureau of Reclamation (Reclamation), and Bonneville Power Administration (Bonneville). SOR began in 1990 with a focus on all river and reservoir uses. However, the Endangered Species Act (ESA) began to influence the formulation of alternatives in November 1991, when the first of three Snake River salmon species were listed as threatened or endangered. In September, 1994, the USFWS listed the Kootenai River white sturgeon as endangered. The SOR began to focus on the role system operations could play in salmon and sturgeon recovery while meeting other project purposes.

In general, there were four actions intended from the SOR. They were to 1) develop and implement a coordinated system operating strategy for managing the multiple uses of the Federal Columbia River Power System, 2) provide interested parties with a continuing long-term role in system planning and operations through a Columbia River Regional Forum, 3) renegotiate and renew the Pacific Northwest Coordination Agreement (PNCA), and 4) renew current agreements or develop new Canadian Entitlement Allocation Agreements (CEAA). This ROD applies solely to the first of these four actions, selection of a system operation strategy (SOS). Separate RODs are being prepared for the PNCA and CEAA actions. These RODs will also rely upon the SOR FEIS documentation. No action is currently planned for the Regional Forum as other venues are currently in place, such as the Technical Management Team (TMT) the Implementation Team (IT), and the Northwest Power Planning Council's Fish and Wildlife Program amendment process.

## **SYSTEM OPERATION STRATEGY (SOS) PREFERRED ALTERNATIVE (PA)**

The SOS PA in the SOR Final Environment Impact Statement (FEIS) represents the operation recommended by NMFS and USFWS in their Biological Opinions issued on March 2, 1995, and March 1, 1995, respectively. SOS PA is intended to support recovery of ESA-listed species by storing water during the fall and winter in an attempt to meet spring and summer fish flow objectives. The system would be operated to achieve a high confidence of refill to flood control elevations by April 15 of each year, and to use this water for fish flow augmentation. For listed salmon species, spring flow objectives are established at Lower Granite Dam on the Snake River and McNary Dam on the Columbia River based on runoff forecasts. For the summer, a similar sliding scale flow objective is set at Lower Granite and a fixed flow objective is set at McNary. Summer draft targets were identified at Hungry Horse, Libby, Grand Coulee and Dworshak projects in an attempt to meet the flow objectives for juvenile salmon migration. Libby is also operated to provide flows for the Kootenai River white sturgeon. Lower Snake River projects are operated near minimum operating pool (MOP) during spring and summer. John Day is to be operated at MOP year-round except for flood control. Specific spill percentages are established at run-of-river projects to achieve 80-percent Fish Passage Efficiency (FPE) limited by total dissolved gas levels. Juvenile salmon are transported at all Snake River collector projects in the spring and summer, and only in the summer at McNary Dam.

## **PUBLIC AND AGENCY INVOLVEMENT**

The SOR agencies held numerous public meetings across the region at different points in the review to get people involved and listen to their views. The technical work groups that conducted the SOR analysis included members of other Federal and state agencies, Tribes, and public and interest group representatives.

In 1990 about 800 people attended scoping meetings the SOR team held around the region to explain what the SOR was and to gather comments on the scope of the study. In September 1992, nearly 500 people attended 14 mid-point meetings to learn about and comment on the strategies being considered. Over 500 people turned out to comment on the Draft EIS at public meetings held around the region in the fall of 1994.

Meetings were held in Boise, Lewiston, and Sandpoint, Idaho; Kalispell and Libby, Montana; Grand Coulee, Pasco, and Seattle,

Washington; and Portland, Oregon. The SOR agencies received 214 written comments on the Draft EIS. The Final EIS was released to the public on December 19, 1995, and several written comments were received.

The SOR team also put together a variety of publications to educate the public about how system operations along the Columbia River actually work. A newsletter was mailed to over 5,000 homes and businesses regularly over the six-year life of the SOR to inform people about new developments in the study and to present information on river management issues.

#### **SECTION 7 CONSULTATION**

Fourteen system operation strategies in the SOR Draft EIS were provided to NMFS and USFWS in the 1995 Supplemental Biological Assessment as part of the reinitiation of consultation on the 1994-1998 proposed operations. As a result of this consultation, NMFS and USFWS issued separate Biological Opinions which addressed the effects of the FCRPS operation upon listed species within their jurisdiction.

The USFWS in the March 1, 1995, Biological Opinion on the Kootenai River white sturgeon recommended a Reasonable and Prudent Alternative (RPA). The USFWS adopted the non-jeopardy Biological Opinion dated July 27, 1994, on the bald eagle, Lake Roosevelt population, and concurred that the action is not likely to adversely affect the endangered gray wolf, threatened grizzly bear, and the endangered peregrine falcon. The USFWS also issued a non-jeopardy Biological Opinion on Snake River snails.

NMFS in their March 2, 1995, Biological Opinion also recommended a RPA and concluded that the RPA does not jeopardize the continued existence of the spring/summer and fall Chinook, and does not reduce appreciably the likelihood of survival and recovery of the Snake River sockeye salmon.

The Corps continues to coordinate with NMFS and USFWS on operations. Under the adaptive management concept, operations are adjusted in-season as well as year-to-year as scientific information is collected and evaluated. Several regional forums have been established to facilitate making operational recommendations to the Corps.

A Technical Management Team (TMT) makes recommendations to the Corps and Reclamation on weekly management of river operations

related to flows, spill and transport. The Implementation Team (IT) coordinates activities of federal, state and tribal sovereigns for implementation of regional plans to restore anadromous fish and addresses weekly issues raised by the TMT. The Executive Committee oversees implementation activities and, if the IT can not resolve an issue, makes final recommendation to the Corps and Reclamation on operational changes. All forums consist of representation from Federal, state, tribal and regional agencies.

Through the TMT discussions, the Corps can make adjustments in project releases, spill and juvenile transportation for salmon. In addition, the Corps is continuing to coordinate with USFWS on operational guidelines for the Kootenai River white sturgeon through the TMT process. The status of continuing coordination efforts is discussed in the selected SOS paragraphs below. The Corps will continue to work with both NMFS and USFWS to evaluate operations recognizing the annual variation in precipitation, runoff, and biological requirements of all affected species, and make appropriate adjustments.

In July 1996, NMFS proposed several Snake River and Columbia River Basin steelhead stocks for listing as threatened and endangered. The Corps will coordinate with NMFS on the proposed listings. The Corps may modify the selected SOS after evaluating effects on the proposed steelhead stocks and considering the recommendations of the TMT.

#### **RESPONSE TO COMMENTS ON THE SOR FINAL EIS**

Seven letters commenting on the SOR Final EIS were received. In addition, the Corps has continued to coordinate with the regional entities, NMFS and USFWS on system operating strategies. In evaluating the comments and regional discussions, the Corps has identified the following new information or continuing unresolved issues: cultural resources, dissolved gas levels, water temperature control, baseline data and monitoring, Columbia River Treaty, and preferred reservoir operations.

#### **Cultural Resources**

Fluctuating water levels and associated shoreline erosion have the potential to adversely affect significant cultural resources at all Federal reservoirs in the FCRPS. The National Historic Preservation Act requires Federal agencies to take into account these adverse effects and to formulate treatments to address

them. The Confederated Tribes of the Colville Reservation expressed concern regarding fulfillment of agency commitments to formulate such treatments and to carry out cultural resource management activities in cooperation with the Tribes.

The Corps, Reclamation, and Bonneville, are currently in the process of cooperatively preparing and consummating a Programmatic Agreement with the President's Advisory Council on Historic Preservation, the involved State Historic Preservation Officers, other affected agencies, and Federally recognized Tribes in the Columbia River Basin.

Pursuant to the Programmatic Agreement, the Corps, along with other Federal agencies, will develop individual Historic Preservation Management Plans (HPMP) for each reservoir which will identify significant cultural resources, the approaches to resource protection, preservation and treatment, the framework for research designs for data recovery where data recovery is the preferred treatment, plans for site monitoring, plans for public education and interpretation of cultural materials, and plans for the long-term curation of recovered artifacts and information.

The HPMPs will be developed through consultation with affected Tribes and other interested parties, and will also address issues required by other relevant legislation, including enforcement of the Archeological Resources Protection Act, provisions of the Native American Graves Protection and Repatriation Act, and the American Indian Religious Freedom Act.

#### **Dissolved Gas Levels**

The Environmental Protection Agency (EPA) commented that a fish passage spill program, operated in accordance with the short-term modification/variance request by NMFS, benefits salmon recovery. However, EPA contends that any violation of the total dissolved gas (TDG) standard represents an increment of biological risk to salmonids and that a long-term solution to minimize elevated TDG levels from spill operations is warranted. EPA further stated that if consideration is given to a change in the TDG standard for the Columbia and Snake Rivers, it would constitute a site specific standard which is a formal change to state water quality standards. Such a decision to adopt a site specific standard would need to be developed based on a scientifically credible and defensible basis, and submitted to EPA for approval after public participation and formal adoption by the state or tribe.

The Corps is closely monitoring dissolved gas levels above and below each of its mainstream Columbia and Snake Rivers projects on a real-time basis. Starting in 1996, each of the Corps districts is responsible for collecting that information at their respective projects, thus allowing a quicker response time for maintenance and repair purposes. Quality control measures have been developed and implemented to ensure timeliness, consistency and reliability of the monitoring. Based on real-time field data, change to spill and other reservoir operations can be made quickly to prevent and/or correct excessively high dissolved gas conditions.

The Corps is also concerned about dissolved gas levels due to the fish passage spill program as well as involuntary spill due to high flows or limited powerhouse capacity. The Corps is conducting a Dissolved Gas Abatement Study, for which Phase I has been completed, to address long-term measures to reduce gas levels and their effects on salmon. The Corps has also recognized the need to include a Dissolved Gas Management Appendix to the Annual Water Management Plan. In the near-term, the Corps will provide fish passage spill subject to the following conditions: 1) spill requests which would exceed state water quality standards will be coordinated with the appropriate state agencies, 2) a comprehensive monitoring and evaluation program is operational, and 3) spill at the lower Snake and Columbia River projects would not exceed criteria identified in NMFS Biological Opinion. The Corps agrees with EPA that a long-term solution that minimizes elevated TDG levels is appropriate. To that end, the Corps will continue to coordinate with EPA, NMFS, states, and tribes as appropriate.

### **Water Temperature**

According to EPA, water temperature standards are being violated, and elevated water temperatures are considered to be a primary limiting factor for fisheries restoration. EPA commented on three issues related to water temperature. First, cold water releases from Dworshak and other deep reservoirs should be considered. Second, passage of juveniles through the warm water forebays as quickly as possible is needed, Third, cooler water needs to be provided for fish ladders.

Water temperatures and the effects of cool water releases from Dworshak and other projects were addressed in the SOR FEIS. NMFS has considered the temperature effects of the preferred alternative in its Biological Opinion. NMFS prioritized releases

of water for juveniles in the summer over releases in late summer for adults. NMFS also stated that when possible, release of cool water in August and September should be considered. The Corps, based on its familiarity and understanding of the Biological Opinion and the currently-available scientific uncertainty, has decided that water releases should be prioritized for juveniles and will consider releasing water from Dworshak based on the recommendations of the TMT.

Reducing the delay of juveniles in the forebay is one potential benefit of surface bypass collection technology. The Corps is evaluating this technology as identified in the NMFS Biological Opinion and the Corps' March 10, 1995, ROD on "Reservoir Regulation and Project Operation, 1995 and Future Years".

NMFS also requested the Corps to investigate water temperature control in adult ladders as specified in its Biological Opinion. The Corps is investigating water temperature control by collecting additional ladder water temperature data and evaluating various engineering corrective actions. The Corps will coordinate with EPA on their concerns on water temperatures as appropriate.

#### **Baseline Data and Monitoring**

EPA indicated the need for collection of baseline data to assess water quality, sediment and biological effects of proposed operational measures and in particular, drawdown actions.

The Corps currently monitors dissolved gas, water temperature, and turbidity at all of its mainstream Columbia and Snake River projects. Regarding the effects of drawdown actions, the Corps has initiated a Lower Snake River Juvenile Salmon Migration Feasibility Study and NEPA documentation on drawdown alternatives of the lower Snake River projects to spillway crest and natural river levels. Included in that study will be data collection and assessment of water quality, sediment and biological effects of drawdowns.

#### **Columbia River Treaty**

Prior to signing the 10 March 1995 ROD, the Chair of the Canadian Entity, by letters, and the Canadian Government, by diplomatic note, expressed concerns to the U.S. Entity and the U.S. Government respectively on the operation of Libby Dam to provide for sturgeon spawning in the Kootenai River below Libby. Since

that time, the Canadian Government has sent additional diplomatic notes to the U.S. Government on the operation of Libby for sturgeon again expressing their concern over the effects of the operation on downstream power generation in Canada and their belief the operation of Libby for Kootenai River White Sturgeon under the ESA is inconsistent with the Columbia River Treaty. At the present time, the matter is under consideration by the U.S. Department of State.

#### **PREFERRED SYSTEM OPERATING STRATEGIES**

During the completion and subsequent to the distribution of the SOR Final EIS, a variety of SOS have been proposed by different entities. These various strategies have been discussed in regional forums such as the TMT and Implementation Team meetings. The Corps will continue to coordinate with NMFS, USEWS, NPPC, states, Tribes and other interested parties on a preferred SOS. The Corps will utilize information developed in the SOR as well as new technical information being collected in making a decision on revising, modifying, or changing the SOS. Three specific operations which differ from SOS PA are discussed below.

#### **Sturgeon**

The USFWS, in an April 19, 1996 letter, identified operational guidelines for sturgeon below Libby Dam for 1996. It was indicated that these operational guidelines could also be used for future years. In July 1996, the USFWS released a draft Recovery Plan for public review and comment. The draft Recovery Plan proposed flow objectives based on annual runoff conditions. The Corps will continue to coordinate with USFWS as additional biological information is obtained and may adjust selected SOS operation of Libby for sturgeon as discussed below.

#### **Albeni Falls**

The NPPC's Fish and Wildlife Program requests that the Corps operate Lake Pend Oreille at higher winter elevations for a three-year test of effects on shoreline spawning of kokanee. In a letter dated December 7, 1995, to NPPC, the Corps indicated its intent to implement the test starting in the winter of 1996 and identified several requirements which needed to be addressed prior to the test. The Corps is continuing to work with NPPC and other interested parties to conduct the three-year test.

## John Day

The SOS PA included operation of John Day at minimum operating pool. As specified in the NMFS Biological Opinion, operation of John Day at MOP would occur after appropriate mitigation measures are assured. The Corps, in its March 10, 1995 ROD on "Reservoir Regulation and Project Operation, 1995 and Future Years", stated John Day would be operated near the lowest elevation possible that does not significantly impact irrigation until appropriate mitigation was identified and assured. Without additional authority, the Corps can not completely mitigate for impacts that may be caused by operation at MOP. The 1995 ROD further states that the Corps would continue to work with NMFS and the region to complete the necessary steps, including determination of appropriate mitigation, NEPA documentation, and Congressional authorization and appropriation, to implement this particular RPA measure.

The Corps, in receiving its Fiscal Year 1996 appropriation in November 1995 for work on the Columbia River Fish Mitigation Project, was instructed by a Committee of Congress to defer further work on drawdown at John Day pending providing the committee with scientific justification for this measure. The Corps in a letter dated November 28, 1995, to NMFS requested that NMFS assume the lead role in developing the scientific justification. NMFS responded in a letter dated March 5, 1996, that it is reviewing the benefits of this measure and would provide the information by spring 1996. The Corps has received this scientific information from NMFS and has provided it to Corps Headquarters for transmittal to Congress. Until new instructions are received from Congress, the Corps will continue to operate John Day near elevation 262.5 feet and work with NMFS, NPPC and other regional interests on potential modification of the operation of John Day.

### SELECTED SYSTEM OPERATION STRATEGY

This selected system operation strategy (SOS) supports recovery of ESA-listed species as outlined in the NMFS and USFWS Biological Opinions, specifically the Reasonable and Prudent Alternative and the Incidental Take Statement contained in these documents. Further, it is consistent with the Juvenile Fish Transportation Program contained in a Section 10 permit issued to the Corps for that activity by NMFS.

The selected SOS adopts the adaptive management approach of the

then to reduce releases to achieve 11 kcfs at Bonners Ferry for 21 days. In a letter dated April 19, 1996, USFWS identified operational guidelines for Kootenai River white sturgeon in 1996 that are different from the March 1, 1995, Biological Opinion based upon monitoring and study results to date. The Corps' operation of Libby in 1996 was primarily for flood control due to expected high runoff conditions and considered in-season adjustments to attempt to meet the proposed operational guidelines. In the July 1996 draft Recovery Plan for sturgeon, a tiered approach for those flows based on annual runoff is proposed. This approach would call for no flow augmentation in low water years and increasing flow objectives in medium and higher water years. The Corps will continue to participate with USFWS and NMFS in evaluating USFWS proposed operational guidelines for sturgeon in 1997 and future years, as well as for other affected species. The Corps may adopt different operations for storage based upon these discussions and the final Recovery Plan.

The Corps recognizes the scientific debate concerning these opinions and the various regional views. Based on continued coordination with NMFS, USFWS, NPPC, states and Tribes, the Corps may adopt changes in the above flow objectives.

### **Spill**

The Corps is prepared to provide spill at Dworshak in an attempt to meet downstream flow objectives, and spill to achieve 80 percent fish passage efficiency (FPE) at Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville, subject to the following conditions: 1) spill requests which would exceed state water quality standards will be coordinated with the appropriate state agencies, 2) a comprehensive physical and biological monitoring and evaluation program is operational, and 3) spill at the lower Snake and Columbia River projects would not exceed criteria identified in NMFS Biological Opinion. While it is the Corps' spill management goal to minimize operations that cause high levels of TDG, it is difficult to manage to an exact level with all of the variables in the system. The Corps will monitor the TDG levels and may make spill volume adjustments in an effort to provide more favorable passage conditions for the listed juvenile and adult Snake River salmon species. These adjustments may occur if evidence of gas bubble disease is observed in fish, or if excessive dissolved gas levels occur. Spill may also need to be temporarily adjusted to support approved research or emergencies.

RPAs. Under this approach, operations may be modified in-season and/or year-to-year based upon new scientific information or to support studies for long-term configuration changes. A Technical Management Team will make in-season recommendations to the Corps based on runoff conditions, fish migration and other factors. There are also various regional forums, such as the Implementation Team, where system operations are proposed and discussed. The Corps will continue to coordinate with NMFS, USFWS, the Northwest Power Planning Council (NPPC), states, and Tribes on newly proposed reservoir operations. In coordination with these groups, the Corps may need to change operations for flood control, emergencies, approved research, or other project uses. The Corps relies upon existing authority and information in the SOR FEIS to evaluate such new operations, and to adjust the SOS in coordination with NMFS and USFWS. The Corps supports the decisions made by Bonneville and Reclamation on their actions as a result of the coordinated consultations and evaluations accomplished during the SOR process. The Corps will continue to operate the FCRPS projects for multiple-uses including flood control, navigation, recreation, fish and wildlife, hydropower production, municipal and industrial water supply, irrigation, and to meet other project uses.

### **Flow Objectives**

The Corps will operate Dworshak and Libby Reservoirs in an attempt to meet flow objectives identified for Snake River salmon stocks and the Kootenai River white sturgeon.

For Snake River salmon, the seasonal average flow objectives range from 85 to 100 kcfs from April 10 to June 20 and 50 to 55 kcfs from June 21 to August 31 in the lower Snake River measured at Lower Granite, and 220 to 260 kcfs from April 20 to June 30 and 200 kcfs from July 1 to August 31 in the lower Columbia River measured at McNary. The flow objective in any year would be determined using a sliding scale based on forecasted runoff as specified in the Biological Opinion.

As specified in the Biological Opinion for the Kootenai River white sturgeon, the flow objectives are to increase flows at Bonners Ferry beginning April 15 to achieve 15 kcfs on May 1, maintain 15 kcfs from May 1 to the date of initial sturgeon spawning or June 1, then to release the maximum discharge possible using full powerhouse capacity and spilling to the maximum possible without exceeding TDG standards for up to 42 days to achieve a 35 kcfs flow objective at Bonners Ferry, and

### **Flood Control Transfer**

The Corps will temporarily shift Dworshak system flood control requirements starting with the initial April-to-July forecast prepared on 1 January, if the April forecast predicts runoff at Dworshak of 3.0 MAF or less and if space is available at Grand Coulee. If necessary, the flood control space will be returned to Dworshak by 30 April. The Corps will temporarily transfer system flood control requirements for Brownlee to Grand Coulee, subject to the availability of space at Grand Coulee.

### **Smolt Transport**

The Corps will transport smolts in accordance with NMFS Section 10 Permit #895, or in accordance with an amended permit which would be expected to be consistent with the RPA.

### **Project Operations**

The Corps' in-season decisions on shaping (timing and amount) of releases for both salmon and sturgeon, spill and transport will be based on recommendations of the TMT, which will monitor and evaluate the shaping of available water based on real time flow and biological information throughout the fish passage season. In coordination with NMFS and USFWS, the Corps may operate differently for approved research, flood control, emergency power needs, or multiple-purpose operations for other project uses. Unless the Corps determines that additional water from Dworshak and/or Libby Reservoirs should be released in an attempt to meet flow objectives, the Corps will operate as discussed below.

### **Dworshak Operation**

The Corps plans to maintain 1.5 kcfs minimum discharge at Dworshak from September through April to enhance the probability of being on the flood control rule curve by April, unless higher discharges are required to stay on the flood control rule curve or for short-term power requirements. The Corps plans to operate Dworshak Reservoir to be no higher than a 1,558-foot maximum elevation on December 15 (winter flood control draft maximum elevation). Dworshak may be drafted as low as elevation 1520 by August 31 to meet salmon flow objectives.

### **Libby Operation**

The Corps plans to operate Libby Dam during fall and winter in an attempt to meet a 75 percent level of confidence of being at the flood control requirement on April 15, while meeting the project and system minimum flow and flood control requirements. The Corps will operate Libby Dam in an attempt to meet the sturgeon flow requirements consistent with existing treaties and laws, and will reduce releases if monitoring identifies potential adverse effects of flooding and/or bank erosion, or if requested to reduce releases by USFWS. If the operation for sturgeon results in Lake Kootenai being above elevation 2439 on August 31, the Corps may, if necessary, lower Libby Reservoir to elevation 2439 by August 31 to meet salmon flow objectives without spilling at Libby.

#### **Albeni Falls Operation**

The Corps will operate Albeni Falls during fall and winter in an attempt to meet a 90 percent level of confidence of being at the April 15 flood control elevation while meeting the project and system minimum flow and flood control requirements. Beginning in the fall of 1996, the Corps intends to operate Albeni Falls above elevation 2055 during the winter for a three year test to evaluate potential reservoir level improvements for kokanee spawning and production. Summer operation would be within the normal summer operating range.

#### **Chief Joseph Operations**

Reservoir operation during the winter months, October 21 through February 14, is from elevation 956 feet to 930 feet. During goose nesting season, February 15 through May 15, the reservoir lower limit is elevation 950 feet. During the summer months, May 16 through October 20, the reservoir will be operated between elevations 950 and 956 feet.

#### **Lower Snake River Projects**

The Corps plans to operate Lower Granite, Little Goose, Lower Monumental and Ice Harbor within a one-foot range above MOP from April 10 until adult fall Chinook salmon begin entering the lower Snake River as determined by the TMT. Lower Granite would be filled after November 15 and all four lower Snake projects would be operated within their normal operating range for the remainder of the water year.

## **Lower Columbia River Projects**

The Corps will operate Bonneville, The Dalles and McNary Reservoirs in their normal operating range. The Corps plans to operate John Day within a one-and-a-half foot range above elevation 262.5, which should not significantly impact irrigation, from April 20 to September 30 each year. Operation near elevation 262.5 feet at John Day will be maintained as long as possible without adversely affecting irrigators. The pool will be raised if irrigation pumping problems occur, except when flood control or other operations require. During fall and winter, the Corps will operate all four lower Columbia River projects within their normal operating range.

### **TECHNICAL MANAGEMENT TEAM**

The Corps will coordinate with the other Federal, state, and tribal representatives in the TMT process and consider TMT recommendations in making final decisions on the operation of Corps projects. Operations described in this ROD may be modified on a case-by-case basis if recommended by the TMT.

### **ENVIRONMENTAL REQUIREMENTS**

The selected SOS, as documented in this ROD and implemented by the Corps, will be in compliance with requirements related to water, air, and land resources; ESA; and fish and wildlife. Since improving conditions for anadromous fish is the objective of the selected SOS, no formal mitigation measures are proposed. The Corps will continue its monitoring and evaluation programs and studies as outlined in the RPA and the incidental take statement in the Biological Opinions so that a decision on a long-term strategy can be made. The Corps will continue to coordinate and consult, as appropriate, with NMFS and USFWS.

The Corps will also continue to meet its responsibilities under the Pacific Northwest Electric Power Planning and Conservation Act through its consideration of the Northwest Power Planning Council's (NPPC) Fish and Wildlife Program. Where the requirements of the Biological Opinion and the NPPC Program are not consistent, the Corps will continue its dialogue with the NPPC.

### **CONTINUING ACTIONS**

In addition to selection of the SOS in this ROD, there are several actions requested in the Biological Opinions which are continuing in the region and may require the Corps to modify its operations in the future.

#### **System Configuration Studies**

The Corps is continuing work on system configuration studies and other system improvements identified in the NMFS and USFWS Biological Opinions. System configuration studies are evaluating structural modifications that could be made to Federal projects on the lower Snake and Columbia Rivers to improve juvenile salmon migration. An EIS examining various drawdown scenarios and surface bypass technology for the four lower Snake river projects is being prepared and is scheduled to be completed in 1999. The Corps is also undertaking several immediate and intermediate actions to improve juvenile and adult survival in the near term. As appropriate, the SOS may need to be modified to permit collection of information on long-term strategies or to support implementation of immediate and intermediate actions. In a letter dated April 24, 1996, the Corps agreed with NMFS on a Framework for Implementing and Modifying Actions in the 1995 FCRPS Biological Opinion. With regard to SOS, this framework provides a mechanism to evaluate changes in operation to support the testing, construction or installation of various short-term system improvements and evaluation of long-term alternatives being considered under the System Configuration Study as recommended in the NMFS Biological Opinion.

#### **System Flood Control**

In response to elements of the NPPC Fish and Wildlife Program and the NMFS Biological Opinion, the Corps is conducting a review of system flood control operations to determine if flood control criteria can be relaxed to permit further releases of stored water for endangered salmon and sturgeon in the spring and summer migration periods without unduly increasing risk of flooding in the basin. The review will examine impacts from potential revised target flood flows at the Dalles, Oregon. Flood control effects of implementation of sturgeon flow objectives of integrated rule curves at Libby Reservoir are also being evaluated as requested in the USFWS Biological Opinion. Preliminary flood control evaluations are continuing and a report is being prepared.

## **Cultural Resources**

As previously described, the Corps, in cooperation with Reclamation and Bonneville, is currently in the process of preparing a Programmatic Agreement with all interested and affected parties to address long-term protection and preservation of significant cultural resources that are or may be adversely affected by FCRPS operations. Once the Programmatic Agreement is consummated, plans for actions and activities will be carried out over a multiple-year period.

## **REGIONAL COORDINATION**

The Corps notes the various organizations and coordination mechanisms referenced in the Biological Opinions which are established to provide scientific information related to dam and reservoir operations and/or ecosystem management in the Columbia River Basin. Examples include the Salmon Recovery Implementation Team, the Independent Scientific Advisory Board, the Technical Management Team, and Memoranda of Agreement/Understanding signed by various Federal officials. The Corps will continue to participate in these processes through appropriate coordination, consultation, or decision making.

## **RECOVERY PLANS**

The NMFS and USFWS are preparing Recovery Plans for the endangered Snake River salmon stocks and the endangered Kootenai River white sturgeon, respectively. The Corps will cooperate with each agency in the development of Recovery Plans.

The NMFS Biological Opinion states that the Recovery Plan will be the best evidence of the amount of improvement required in each life stage and the measures likely to accomplish that improvement. Consistency with the Recovery Plan will be considered in jeopardy determinations. The USFWS states that the 1996-1998 RPA for sturgeon may change pending the completion of its Recovery Plan for sturgeon. A draft recovery plan for sturgeon, dated July 1996, has been prepared by the USFWS and has been released for public review and comment. The Corps has provided comments on the draft recovery plan to the USFWS and will comply with the final plan to the extent possible.

The Corps recognizes that the system operation strategy described in this Record of Decision may change as a result of the NMFS

Recovery Plan for salmon and the USFWS Recovery Plan for sturgeon.

#### STATEMENT OF DECISION

I have taken into consideration the environmental consequences, the economic costs, and the biological data supporting this action. The selection of the system operation strategy which is consistent with the reasonable and prudent alternative and incidental take statement in the Biological Opinions prepared by NMFS and USFWS will meet Corps responsibilities under the ESA to avoid jeopardy to the Snake River sockeye salmon, the Snake River spring/summer Chinook and fall Chinook salmon, four Snake river snail species, and Kootenai River white sturgeon and will not further adversely affect their critical habitat. Further, it will not reduce appreciably the likelihood of the survival of the Snake River sockeye salmon and will not adversely affect bald eagles, peregrine falcons, grizzly bears, Snake River snails, or gray wolves. The reasonable and prudent alternative recognizes the need to balance the multiple uses of the projects, and it improves in-river conditions for the benefit of the listed Snake River salmon and the Kootenai River white sturgeon while recognizing and minimizing adverse effects on the environment. The selected system operation strategy is identified by NMFS and USFWS as the preferred plan to support recovery of endangered species. This decision is consistent with federal statutes and international treaties relevant to operation of the FCRPS.

I have also taken into account the Northwest Treaty Tribes' fishing rights, the United States trust responsibility to Indian Tribes and its responsibility to act in a manner consistent with this trust responsibility. Actions which the Corps will implement are designed to lead to increased survival and recovery of the listed salmon species with consequent beneficial results to the Treaty Tribes' fishery and benefits to the Northwest Region as a whole. Although there is scientific disagreement, the conclusions in the NMFS and USFWS Biological Opinions take into account the differing scientific opinions and interpretations of available information. The Corps' review of the Biological Opinions and the scientific information available at the time of those opinions, the continuing research and data being developed in accordance with those opinions and the scientific judgment exercised in formulating the opinions, is consistent with its trust responsibilities. In addition, NMFS and USFWS considered the differing scientific (biological) information and applied their expertise to address the effects on other species of

interest to Northwest Tribes.

I hereby approve SOSPA as the selected operating strategy for the Corps of Engineers.

Issued in Portland, Oregon on 20 February 1997. "

A handwritten signature in black ink, appearing to read "R. Griffin".

Robert H. Griffin  
Brigadier General, U.S. Army  
Division Engineer

