

SECTION 5

SALMON HARVEST

INTRODUCTION

Because of the critical status of some salmon stocks and the need to realize the benefits of changes in hydro-system operations, the number of salmon harvested must be further limited to allow a sufficient number of adult fish to return to spawn. Those salmon that return, called the escapement, must do so in large enough numbers to rebuild the populations, not just to sustain current low numbers.

Control of harvest, therefore, is a critical component in building a long-term, sustained increase in runs. That simple concept is the only thing that is simple about harvest. Harvest control is complicated by the fact that regulations fall under a number of jurisdictions, that there is a mixed-stock fishery, and that the demand for salmon to harvest generally exceeds the supply.

Harvest has been shaped by decades of negotiations between the United States and Canada, and by extensive litigation that has involved ocean and inriver fisheries and treaty and non-treaty fisheries.

A 1985 treaty between the United States and Canada provides for international management of stocks that migrate through waters of both nations. The Pacific Salmon Commission, formed under the treaty, makes recommendations to both nations on the conduct of salmon fisheries. The treaty cut back interceptions of salmon returning to Northwest rivers. Stocks of chinook salmon, particularly upper river bright fall chinook from the Columbia River, benefited from the overall cap on chinook harvested in Canadian and Alaskan fisheries. Importantly, the interception of Columbia River salmon by British Columbia is directly related to the interception of salmon of Canadian origin in U.S. fisheries (Alaska and Washington). Further reductions in the Canadian interception of Columbia River stocks may require northern Washington fishermen to reduce their harvest of Fraser River sockeye, for example. Parties to the treaty will meet in 1993 to discuss revisions. This will provide

an opportunity to further reduce the interceptions of weak stocks of Columbia River chinook salmon.

The Pacific Fishery Management Council manages salmon fisheries from three to 200 miles off the coast. State regulations that extend to three miles offshore must be consistent with Pacific Fishery Management Council regulations. Since 1980, ocean commercial and recreational fisheries have been constrained in both season length and allowable harvest, compared to earlier years. Salmon seasons off Alaska are regulated by the State of Alaska, but must be consistent with Pacific Salmon Commission recommendations.

The Columbia River Fish Management Plan, developed as part of the agreement reached under U.S. v. Oregon, established a process that the Columbia River Treaty tribes and state management agencies use to regulate tribal and non-tribal fisheries in the river. The state of Idaho and the Shoshone-Bannock Tribes are not signatories to this agreement. The plan sets specific goals, timetables and methods for cooperative management of salmon and steelhead stocks, including both natural and hatchery fish production and allocation of harvests.

The Columbia River Compact is the forum used to set commercial fishing regulations in the river. Congress ratified the agreement between Oregon and Washington for the regulation, preservation and protection of fish in waters over which the states share jurisdiction. The state of Idaho is not a member of this compact, nor are the Indian tribes. While the individual states set their own sport fishing regulations for the river, these regulations must complement previous agreements for conservation and allocation for other fisheries.

All the tribal governments involved in salmon and steelhead harvest have regulations to control and manage the harvest in tribal commercial, ceremonial and subsistence fisheries. These regulations are coordinated with state regulations.

In this harvest section, the Council makes no claim to regulatory authority. It clearly recognizes the fishery managers' jurisdiction and tribal treaty rights, and no measure is intended to affect or modify these rights. The Council also acknowledges that there has been substantial progress in harvest management over several decades and that declines in harvest levels have come at considerable economic cost to tribal, coastal and inland communities.

Nevertheless, additional measures are necessary if the region is to meet its long-term goal of biological diversity by rebuilding weak runs, and if it is to provide sustainable and adequate harvest levels for tribal, sport and commercial fisheries.

One of the major challenges harvest managers face is that the fisheries in both the ocean and mainstem Columbia River are mostly mixed-stock fisheries (see Section 5.3 for additional discussion of mixed-stock fisheries).

Another difficult and related problem is that there are more demands for salmon for harvest than there are harvestable fish. The fishing power of commercial fleets is much larger than necessary to take the harvestable surplus of salmon each year. The recreational fishery also has grown over the years and is capable of harvesting large numbers of salmon. The large demand for salmon to harvest puts a great deal of pressure on the management systems to deliver the maximum number of fish for harvest. Inadequate information and budgets, and the variable nature of the salmon, the environment and the fishing fleets, all make it extremely difficult to precisely manage harvest impacts on weak stocks.

In the Columbia River Basin, the problem associated with mixed-stock fisheries results, at least in part, from operation of an increasing number of hatcheries. The mixed-stock fishery problem cannot be resolved without implementing a harvest management program that coordinates harvest of production from different areas and also is consistent with both hatchery and natural production. The solution also requires the development and implementation of complementary programs to increase the productivity and survival of wild and naturally spawning stocks throughout their life cycle. It is the Council's belief that progress in improved stock identification and in technology that permits selective fisheries has the potential for allowing greater harvest of strong stocks and greater protection of weak ones. Regional fisheries interests are particularly urged to press for additional gains in both areas.

The Council has developed measures in this section that call for:

- Development of a program that will help fishery managers identify weak stocks so that these stocks can be afforded better protection in mixed-stock fisheries.
- Ongoing review and revision of sport and commercial fishing regulations in areas where weak stocks are found.
- More complete accounting of salmon harvest in general and, in particular, as a by-catch in fisheries for other species.
- Improved law enforcement to reduce illegal taking of salmon and public education programs concerning the impacts of illegal or wasteful fisheries.
- Development of marking and alternative capture technology that will allow unmarked wild and naturally spawning salmon to be released safely.
- Development of terminal harvest opportunities in the Columbia River and tributaries to allow harvest of stronger stocks while minimizing impacts on weak ones.

The Council believes the measures in this section can and should be implemented by the Pacific Salmon Commission, Pacific Fishery Management Council, Columbia River Compact, and other existing state and tribal management entities.

The Council also believes that the state of Idaho and the appropriate Columbia River Basin tribes, if they believe their membership appropriate, should be included in the Columbia River Compact.

5.1 HARVEST GOALS, OBJECTIVES AND REBUILDING SCHEDULES

5.1A Management Goals and Escapement Objectives

Fishery Managers

1. Expedite the development and/or re-evaluation of management goals⁵ and spawning escapement objectives⁶ (see Section 2). Harvest should be managed to meet rebuilding targets, recognizing the statistical quality of the run forecast and the uncertainties associated with escapement objectives. Failure to
 5. Management goals specify the management intent for the stock and the number of fish needed to fulfill this intent. Management goals also define the population management units that may be evolutionarily significant units, stocks, or collections of stocks.
 6. Escapement objectives specify the number of fish, either as a single number or a range, required to spawn to fulfill the biological requirements of the population management unit and achieve the management goal over the long term. Escapement objectives should incorporate the concepts of minimum viable population and effective population size, and accommodate the uncertainty and variability in biological productivity and environmental conditions.

establish and manage for spawning escapement objectives could jeopardize Council support for future funding of production and habitat measures in the Council's program.

5.1B Rebuilding Schedules

Fishery Managers

1. Develop and/or review and revise as necessary escapement objectives and rebuilding schedules as stated in Sections 2 and 5.1A1. Harvest managers should especially consider how existing harvest management and legal agreements can be modified to assist with achievement of the rebuilding targets. The development of rebuilding schedules for weak stocks will require the identification and annual achievement of survival targets at a number of stages throughout the life cycle of specific weak stocks.

All Parties

2. Assist in the development of rebuilding schedules that consider all sources of mortality.

5.1C Consultation

Fishery Managers

1. Consult with the Council during April of each year on the consistency of harvest management with the rebuilding schedules and escapement objectives of the fish and wildlife program. The consultation will address:
 - a. the extent to which harvest rates, escapement objectives and management goals were achieved during the previous year's harvest season;
 - b. the extent to which proposed regulations for the coming season are expected to achieve harvest rates, escapement objectives and management goals; and
 - c. a status report on management goals, escapement objectives and rebuilding schedules for weak stocks.

5.2 HARVEST RATES AND REGIMES

While there is need to reduce harvest to facilitate rebuilding in the short term, there is also an urgency to move forward with salmon marking programs and to develop selective fishing gear and terminal harvest opportunities to increase harvest over the long term while protecting weak stocks of salmon. Fishery managers should look for ways of providing incentives to further reduce harvest and accelerate the shift to selective fish-

eries. This section provides managers with targets, but does not prescribe means to implement. The management agencies should have maximum flexibility to be creative and work with various fishing interests to come up with workable harvest strategies that will meet not only escapement objectives, but also existing and future Indian treaty requirements and non-treaty allocation, economic and social objectives.

Fishery Managers

1. Implement harvest regimes that protect critical brood stock as part of a comprehensive effort to rebuild specific weak runs. Harvest reductions are of particular importance to protect weak stocks currently in the ocean. Manage harvest as outlined here to help meet escapement and management objectives and strive to pass through population gains associated with other elements of this program until rebuilding schedules are met.
2. Document how harvest rates were calculated and develop a standard for expressing harvest rates that can be used for assessing impacts in future fisheries. Select an appropriate base period for the calculation of historical harvest rates as a standard to which future harvest rates can be compared. This information should be made available as part of the unified report called for in this section.

5.2A Sockeye

Manage the fisheries to allow only limited tribal ceremonial and subsistence sockeye harvest below the confluence of the Snake and Columbia rivers to facilitate ongoing emergency efforts to rebuild the Snake River population. Commercial fisheries should not be allowed below the confluence until the Snake River sockeye run is rebuilt to a level where the population could support some incidental harvest without jeopardizing rebuilding efforts. The Council also understands that the U.S. v. Oregon parties are committed to rebuilding, and when appropriate, will use the U.S. v. Oregon Management Plan's emergency modification provisions to assist rebuilding. Relevant parties should consult on the potential to target commercial sockeye fisheries in the Columbia River above the confluence of the Snake River, while respecting tribal treaty rights.

5.2B Fall Chinook

Snake River fall chinook have been harvested at rates too high to allow rebuilding. In the base period 1984-1990, harvest rates were consistently in the range of 70 percent to 77 percent (averaging 74 percent). Fisheries affecting Snake River fall chinook should be managed to provide harvest at a rate no greater than 55 percent in

1992–1995. These fisheries include those falling under the jurisdiction of the Pacific Salmon Commission and Pacific Fishery Management Council, as well as fisheries within the Columbia River Basin.

The Council strongly urges that fisheries affecting Snake River fall chinook be further reduced below the specified 55-percent harvest rate using the measures described below, and calls upon fishery managers to aggressively implement these actions. The Council will closely monitor rebuilding of the runs and harvest constraints to ensure that harvest constraints are contributing their appropriate share to rebuilding.

5.2C Spring Chinook

The Council recognizes the efforts of the fishery managers and harvesters to reduce the catch of upriver spring chinook that began in 1976. Relevant parties should continue to manage the Columbia River harvest of spring chinook according to U.S. v. Oregon. Keep impacts of the non-treaty inriver fisheries at about 4 percent of the upriver run, the 1987–1991 average. Monitor ocean fisheries to ensure that incidental harvest rates remain low, about 2 percent or less of the upriver run.

5.2D Summer Chinook

The Council recognizes that there have been no commercial target fisheries for summer chinook since 1964, and that the tribal ceremonial and subsistence and non-treaty incidental catches of summer chinook have been fewer than 1,000 and 100 fish each year, respectively, since the mid-1980s. Continue to manage for this level of impact until the populations rebuild sufficiently to allow a higher incidental harvest rate. Subsequently, manage the Columbia River harvest of summer chinook according to U.S. v. Oregon.

5.2E Voluntary Harvest Reduction For All Fisheries

Fish Bank Program

Bonneville, Fishery Managers and Commercial Fishers

1. Design and implement a "fish bank" program (similar to a farm bank where farmers are paid not to farm) to temporarily reduce harvest by leasing available fishing permits and/or licenses.

Fishery Managers

2. Reduce harvest level proportionately from that achieved under Sections 5.2A–5.2D, above. To determine the level of reduction, use historical catch over

a specific time or other criteria as the managers deem effective, feasible and fair (for example, use the average documented landings for the previous five-year period).

Bonneville

3. Develop a compensation plan including criteria for qualifying for and continuing in the program. Continue the program through 1995. Review its effectiveness annually with the Council.
4. Fund the planning and implementation of the program, upon Council approval.

5.3 HARVEST ALTERNATIVES

One of the major challenges harvest managers face is that there are mostly mixed-stock fisheries in the mainstem Columbia River, as well as in the ocean. This means fishers harvest a mixture of hatchery-produced and naturally produced stocks from many different areas of origin. Because juvenile salmon survival is usually greater among hatchery-produced fish, these stocks generally can withstand a higher harvest rate than most naturally produced fish. However, fishers in mixed-stock fisheries are generally unable to harvest specific stocks selectively. Thus, naturally produced stocks and weaker (fewer individuals in the population) hatchery stocks are often harvested at rates appropriate for stronger stocks. The result is over-fishing of weaker stocks.

In order to allow harvest of stronger stocks, some incidental take of weaker stocks is inevitable in most fisheries. Fishery managers use the best available data to estimate incidental harvest under different fishing regimes. Fishing seasons and quotas are then set on the basis of acceptable impacts on weaker stocks.

To speed the rate at which weak stocks rebuild and to provide opportunities to harvest stronger stocks over the long term in the Columbia River, it is essential that development and evaluation of live-catch fishing technologies and known-stock fisheries be started immediately. Opportunities for selective harvest in ocean fisheries are more limited and will depend on better knowledge of the distribution of various stocks in the ocean (see Section 5.4).

5.3A Harvest Planning

Bonneville

1. Fund the fishery managers and fishers to develop and implement plans to evaluate the feasibility of live-catch fishing technologies and known-stock fisheries by 1995. Include a detailed analysis of alternative incentives to encourage known-stock fish-

eries, including direct subsidies for known-stock fisheries in lieu of—not in addition to—mixed-stock harvest in the mainstem Columbia River. Consult with the Council prior to implementation and annually on progress.

5.3B Development of Alternative Capture Technologies

This measure develops and evaluates capture technologies to increase harvest of abundant fish stocks and minimize effects on depleted salmon stocks. The gear should minimize mortality of fish that are to be released.

Bonneville

1. Fund pilot projects to demonstrate the feasibility of various methods to selectively harvest abundant stocks while conserving weak stocks. This effort should provide for participation by harvesters in the development of new methods and address such questions as public acceptance of the proposed technology, number and location of possible fishing sites, legislative changes needed to apply the proposed technology and harvester selection for participation in the fishery.

5.3C Terminal Harvest Fisheries in the Columbia River and Tributaries

This measure calls for identification and development of terminal fishing opportunities to harvest abundant stocks while minimizing the incidental harvest of weak stocks.

Bonneville

1. Fund a study to evaluate potential terminal fishery sites and opportunities. This study should include: general requirements for developing those sites (e.g., construction of acclimation/release facilities for hatchery smolts so that adult salmon would return to the area for harvest); the potential number of harvesters that might be accommodated; type of gear to be used; and other relevant information needed to determine the feasibility and magnitude of the program.

5.4 STOCK IDENTIFICATION

5.4A Expand Genetic Stock Identification Sampling

Fishery Managers

1. Develop and implement an expanded genetic stock identification program for monitoring inriver and ocean fisheries. Review the proposed program with the Council by January 31, 1993, prior to implementation.

Bonneville and Fishery Managers

2. Share the cost of expanding the program to achieve the desired level of information needed.

5.4B Improve Genetic Stock Identification Data Base

Fishery Managers

1. Determine the need for further development of a genetic stock identification data base for Columbia River stocks. Evaluate the potential for using DNA "fingerprinting" and other methods to identify chinook, coho, chum, sockeye and steelhead stocks in the Columbia River Basin. Review findings and recommendations with the Council by January 31, 1993.

Bonneville

2. Fund the genetic stock identification program upon Council approval.

5.4C Increase Sample Rate of Harvest

Fishery Managers

1. Develop expanded marking and catch sampling programs as required for ocean and inriver fisheries where Columbia River weak stocks are caught. Review with the Council as quickly as possible the magnitude and cost-effectiveness of any expansion in the existing marking and catch sampling programs prior to implementation.

Bonneville and Fishery Managers

2. Share the cost of expanding marking and sampling programs to achieve the desired level and precision of additional coverage.

5.5 OTHER HARVEST MEASURES

5.5A Review Sport Fishing Regulations

State Fishery Agencies

1. Re-examine sport fishing regulations, including trout fishing regulations, in weak stock areas and adopt catch-and-release regulations, closures or other measures as needed to protect depressed populations. Complete the review of needed changes in sport fishing regulations with the Council before the 1993 sport angling season.

5.5B Accounting for Incidental Harvest of Salmon

Pacific Fishery Management Council and North Pacific Fishery Management Council

1. Report to the Northwest Power Planning Council on the incidental harvest of Columbia River salmon in other fisheries under their respective jurisdictions. Review with the Power Council the magnitude of the interceptions and potential for limiting or reducing such interceptions, including the use of guidelines for incidental harvest in those fisheries. Incidental catches should be estimated, and the number of salmon caught applied toward the appropriate salmon harvest quota.

5.5C Law Enforcement and Public Education on Impacts of Illegal or Wasteful Fisheries

High Seas Drift-Net Fisheries

Tribal, State and Federal Government Agencies, Including the Departments of State and Commerce, as well as Other Public and Private Parties

1. Use all available authorities to put a rapid end to all high seas drift-net fisheries. The Council commends Congress for its prompt ratification of the United Nations resolution calling for an immediate, general abandonment of drift netting.

Illegal Domestic Ocean and River Harvest

Bonneville and Appropriate Tribal, State and Federal Enforcement Agencies

2. Develop and implement an expanded enforcement program to provide additional protection to Columbia River salmon and steelhead with an emphasis on weak stocks throughout their life cycle. The program should include an educational component for the public. Fund the needed program, and review accomplishments and scope of the program annually with the Council.

5.5D Voluntary Commercial Fishing Permit Buy-Back Program

Washington, Oregon, Bonneville and Regional Utilities

1. Develop and fund a voluntary commercial fishing permit buy-back program for non-treaty Columbia River commercial fisheries. The program should be limited to two to four years. The goals of the program are generally to: a) reduce fishing capacity on the river; b) respond to dislocations resulting from more restrictive harvest regulation; c) encourage shifting to selective and/or terminal harvest practices employing improved marking and selective harvest technologies as they are identified and become available; and d) promote sound management, conservation and protection of the resource. Oregon and Washington should retire any permits bought out under this program, and no substitute permits should be issued in their stead.

5.5E Inclusion of Idaho and Indian Tribes in Columbia River Compact

States and Congress

1. Enact legislation to include Idaho and appropriate Columbia River Basin tribes, if they deem their membership appropriate, in the Columbia River Compact.

5.5F Unified Reporting of Harvest Data

Reporting of commercial and sport salmon harvest, as well as dam passage information and spawning surveys, is scattered among a variety of jurisdictions. This information is needed by the Council, all of the involved agencies and tribes, and the public, all of whom must expand substantial effort to gather the information each year.

National Marine Fisheries Service

1. Prepare and circulate a unified report by June 1 of each year on harvest and escapement of various salmon and steelhead stocks in the Columbia Basin.

Idaho

2. Report to the Council by March of each year the number and species of anadromous fish harvested whether hatchery, wild and naturally spawning.