

17. Columbia River Spring Chinook Historical Briefing

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“GREEN SHEET”

Meeting dates: December 4-5, 2009, Commission Meeting

Agenda item # 17. Columbia River Spring Chinook Historical Briefing

Staff Contact: Cindy LeFleur, Columbia River Policy Coordinator,
Intergovernmental Resource Management Program

Presenter(s): Cindy LeFleur, Columbia River Policy Coordinator,
Intergovernmental Resource Management Program
Guy Norman, Region 5 Director, Director’s Office

Background:

Columbia River spring Chinook fisheries are comprised of lower river stocks returning to Washington tributaries below Bonneville Dam and the Willamette River in Oregon, and upriver stocks destined for areas above Bonneville Dam. The upriver run includes hatchery and wild fish. Two components of the wild upriver run are listed under the Endangered Species Act (ESA), Snake River spring/summer Chinook and Upper Columbia spring Chinook. These ESA-listed stocks are protected by the management agreement from *United States v Oregon* and ESA limits. The parties to *United States v Oregon* developed a conservation-based fish management plan beginning in 1978 to protect, rebuild, and enhance Upper Columbia River fish runs, and since have developed multi-year management plans incorporating the same principles.

The parties to *United States v Oregon* recently completed a new plan covering harvest and production of upriver stocks. This agreement, titled “2008-2017 *United States v Oregon* Management Agreement (Agreement) for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon” provides specific fishery management constraints for upriver spring Chinook. The Agreement defines treaty Indian and non-Indian fishery allocation of available ESA impacts in the Columbia River, based on forecasted run size and the sliding scale harvest rate schedule defined in the Agreement. The sliding scale harvest schedule provides limited opportunities at the smallest run sizes and increased opportunities at larger run sizes. This harvest rate schedule provides a sound basis for recovery objectives encompassed in the Endangered Species Act Section 7(a)(2) Consultation - Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation – consultation on Treaty Indian and Non-Indian Fisheries in the Columbia River Basin subject to the 2008-2017 *United States v Oregon* Management Agreement, and provides for non-Indian and treaty Indian fisheries to harvest abundant hatchery fish, while providing protection to ESA-listed stocks, and provides additional protection when the runs are at low levels.

The non-Indian allocation of impacts on ESA-listed upriver spring Chinook ranges from a low of 0.5 percent to a high of 2.7 percent. The states agreed to these low levels of allowable impacts on the presumption that mark-selective fishing techniques could be employed in commercial and sport fisheries, thereby providing access to considerable numbers of hatchery spring Chinook. Fisheries are managed conservatively within these strict limits.

Fisheries

Indian tribes harvested upriver spring Chinook for many centuries before Europeans arrived in the Columbia Basin. Fishing occurred at several locations, with the fishery at Celilo Falls being the largest. Each year’s arrival of the first upriver spring Chinook was an event of great spiritual and ceremonial significance. Commercial fishing by non-Indians began in about 1866, after salmon canning techniques were advanced. Sport fishing for spring Chinook began

during the early 20th century and gained popularity after World War II. Sport seasons were open the entire year but prior to World War II most recreational fisheries were focused in the tributaries.

Historic non-Indian spring Chinook fisheries in the main-stem Columbia River occurred February through May and harvested spring Chinook destined for every sub-basin. Commercial seasons were structured to target Willamette and other lower river stocks February through March and upriver stocks during May. Mid-March through late-April was generally closed to commercial fishing to provide escapement during the peak of the run. Non-Indian fisheries targeting upriver spring Chinook largely ended in 1977 when the runs declined. During 1978-2000, the commercial seasons closed in late February or early March and sport seasons typically ended by the end of March to minimize impacts to upriver spring Chinook.

Beginning in 2001, spring Chinook fisheries were re-initiated in the Columbia River in times and areas that were previously not available, providing increased opportunities for sport and commercial fisheries. Because of record-high returns and the implementation of mass marking, non-treaty fishing for spring Chinook using mark-selective fishing techniques to target hatchery fish was initiated. Fisheries were extended into the spring season for the first time since 1977.

Columbia River spring Chinook are a high value fish to sport and commercial fisheries. Interest in the sport fishery is tremendous as reflected in the large number of angler trips generated. Angler trips have averaged 129,000 since 2002. The spring Chinook fishery is the first to occur in the river and begins the annual salmon fishing season. The commercial fishery receives the highest price for spring Chinook, in recent years averaging \$7-\$10 per pound.

Fishery Management

Fishery management decisions must be conservative to ensure the ESA limits are not exceeded, and because fisheries in the Columbia River are jointly managed with the state of Oregon, requiring coordination in order to have concurrent regulations. Decisions regarding season length and catch expectations are built upon preseason forecasts of abundance and recent year catch rates. In-season management decisions are based on actual fishery catches and by monitoring dam counts to update the run sizes. Modifications to the preseason fishing schedules must often be made because of differences from the preseason expectations in catch rates, dam counts or environmental factors. These modifications are necessary to ensure that 1) combined non-Indian fisheries do not exceed the ESA limit, 2) fisheries below Bonneville Dam do not preclude other non-Indian fisheries to occur, and 3) non-Indian fisheries do not constrain treaty Indian fisheries above Bonneville Dam. These variations from preseason fishing plans can be very frustrating to the sport and commercial fishers, who make plans based on the preseason expectations. Moreover, management is complicated by the inability to accurately update the in-season run size until early May, after much of the prime fishing season has passed.

Despite these challenges, diverse opportunities exist for upriver spring Chinook fisheries. The sport fishery allocation includes mainstem Columbia River, mainstem Snake River, Ringold area, and the Wanapum tribal fishery. The commercial fishery allocation includes mainstem Columbia River, select areas (Deep River, Youngs Bay, Blind Slough, ~~Tongue and Tongue~~ Point) and other miscellaneous fisheries (shad fishery). All of these fisheries are conducted to provide opportunities throughout the Columbia River basin to harvest hatchery spring Chinook.

Previous Commission Decisions

Until 2002, non-Indian sport and commercial catch of upriver spring Chinook had never been formally allocated, although *United States v Oregon* agreements limited seasons for sport and

commercial fisheries which resulted in relatively balanced impacts to upriver spring Chinook. Because both fisheries are limited by the incidental mortality rate on ESA-listed spring Chinook, the departments of Washington and Oregon fish and wildlife asked the respective Commissions for a policy to share the conservation burden and allocate the impact rate to provide both fisheries with access to the harvestable hatchery spring Chinook. The Commissions have provided policy guidance since 2002. The current policy C-3617 titled “Mainstem Columbia River Spring Chinook Management and Allocation for Non-Indian Fisheries, 2009-2013” includes Guiding Principles and Fisheries Management Objectives (Attachment 1) and provides allocation of ESA impacts to sport and commercial fisheries based on a matrix that changes as run sizes change.

New Management Constraints – Catch Balancing

Under the Agreement, the catch (harvest and release mortality) of upriver destined spring Chinook in non-treaty fisheries is expected to roughly match the catch in the treaty Indian fishery. The parties agreed to an allocation of ESA impacts to achieve the catch balance expectation. The Agreement requires the parties to review catches annually and consider modifications if the catch balance expectations are widely divergent from actual results. During 2008 and 2009, the first two years of the Agreement, the non-treaty fisheries exceeded the treaty Indian catch by several thousand fish in both years. The divergence in catch was primarily associated with a higher than expected percentage of the upriver spring Chinook marked, enabling the non-treaty fisheries to retain more hatchery fish than expected in sport and commercial mark-selective fisheries. The parties to *United States v Oregon* met in 2009 to review the catch imbalance and agreed to some new management guidelines for 2010 fisheries to provide more certainty of meeting the intent of the catch balance provision. The parties agreed to the following management guidelines:

1. Non-treaty fisheries will be designed to meet the intent of catch balancing as represented by columns D and F in Table A1 (Attachment 2), and managed to stay within both the ESA impact rate and the mortality guidelines.
2. In 2010, 2011, and 2012, the states will manage non-treaty fishing within guidelines for a run-size that is at least 30 percent less than forecast, prior to the first in-season run size update.
3. If, in 2010, the non-treaty fishery exceeds the mortality guidelines by 5 percent or 1,000 fish, whichever is greater, then, in 2011 the states will increase the buffer above 30 percent. The buffer could be increased up to 40 percent in 2011 if the parties agree that level of increase is necessary to address the cause of divergence in 2010.
4. If in-season management factors indicate that re-distribution of unused ESA impacts would better meet the mutual objectives of the parties, unused ESA impacts may be, by agreement of the parties, transferred between non-treaty and treaty fisheries.

These new fishery management guidelines are expected to be more constraining for non-treaty fisheries than the ESA guidelines that are in place. The result will be a closer balance of total upriver spring Chinook catch and mortality in treaty Indian and non-treaty fisheries, and there will likely be ESA impacts that remain unused by the non-treaty fisheries.

The directors of the three state agencies {Idaho Department of Fish and Game (IDFG), Oregon Department of Fish and Wildlife (ODFW) and Washington Department of Fish and Wildlife (WDFW)} met in Idaho to discuss spring Chinook management. The directors agreed that the *United States v Oregon* catch balancing modification should address the early-timed Idaho hatchery fish harvest issue raised by the Idaho Commission. The directors also agreed to send a letter to the three commissions indicating that the managers and technical staff of the three

states will further coordinate the 2010 spring Chinook pre-season planning process as well as technical assessment of harvest of particular hatchery stocks in the lower Columbia fisheries.

Policy issue(s) you are bringing to the Commission for consideration:

Department staff will provide recommendations to the Commission in January on how to incorporate the catch balance provisions of *United States v Oregon* into the current policy.

Public involvement process used and what you learned:

Department staff met with the Columbia River Recreational Advisory Group and the Columbia River Commercial Advisory Group on October 13 and 15, 2009, respectively. Public meetings are scheduled for November 5, 2009, in Vancouver, Washington and November 10, 2009, in Astoria, Oregon. Additional Columbia River Advisory Group meetings are scheduled for November 18 and 19, 2009.

Action requested:

None. Briefing only.

Draft motion language:

N/A

Justification for Commission action:

N/A

Communications Plan:

A WDFW-ODFW joint staff report will be distributed in January 2010 that details spring Chinook stock status, review of fisheries, and recommendations for future fisheries. A Columbia River Compact meeting will be held in mid-February to set Columbia River spring Chinook fisheries.

Form revised 10/16/2008 - sdy

**FISH AND WILDLIFE COMMISSION
POLICY DECISION**

**POLICY TITLE: Mainstem Columbia River
Spring Chinook Management and
Allocation for Non-Indian Fisheries, 2009-2013**

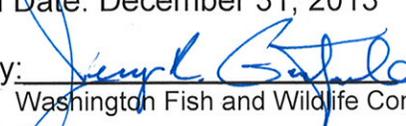
POLICY NUMBER: C-3617

Supersedes: C-3617, 2008

Effective Date: January 1, 2009

Termination Date: December 31, 2013

See Also: Attachment 1, and C-3618

Approved by: 
Washington Fish and Wildlife Commission

Discussion: *This policy is similar to Policy C-3617 for 2008, with changes associated with discussion of the Columbia River Fish Working Group (CRFWG). Attachment #1 from Policy C-3617 for 2008 is replaced with recommendations from the CRFWG as amended by the Washington Fish and Wildlife Commission decision of January 16, 2009.*

Policy:

Guiding Principles

- The Department serves as the trustee of this public resource and as such is responsible and accountable for sustainable fisheries.
- Conservation and recovery are the highest priorities and will take precedence in managing the resource.
- The Department will comply with the provisions of the *U.S. v Oregon* Management Agreement for upriver spring Chinook.
- Tradeoffs between current harvest benefits and long-term stock well-being will be resolved in favor of the long-term stock well-being.
- The Department must be consistent with prescribed recovery measures in National Marine Fisheries Service Biological Opinions, and safeguard the health and viability of all salmon stocks as a precondition for harvest.
- Manage harvest to meet hatchery goals.
- The Department must meet conservation requirements for wild spring Chinook and wild winter steelhead, including populations listed under the federal Endangered Species Act.
- The Department will manage harvest consistent with the applicable recovery management objectives.

Selective Fishery and Enforcement Guidelines

- All fishers will comply with selective fisheries rules and standards.
- The Department will continue to make improvements in the selectivity of recreational and commercial fishery gear through research and feasibility studies.
- The Department will develop and implement a strategy for public communications and outreach on compliance issues.
- The Department will continue to pursue strategies to enhance enforcement efforts and successful prosecution through the use of observer programs, increased enforcement presence, and cooperative work with local prosecutors.
- The Commission expects recreational and commercial fishing sectors to demonstrate responsibility for continuous learning and skills development for selective harvest practices.

Columbia River Fish Working Group (CRFWG)

- The Commission supports the CRFWG Phase I process to develop short-term recommendations regarding sport/commercial allocation of spring and summer Chinook.
- The Commission supports the CRFWG Phase II process to develop long-term fishery management plans and strategies to assist in recovery of Columbia River salmon and steelhead resources.

Fisheries Management Objectives

- The Department will manage the mainstem Columbia River spring Chinook fisheries to limit the wild winter steelhead impact to less than 2%.
- The Department will exercise in-season management flexibility to utilize the non-Indian upriver spring Chinook impact allocation to meet the objectives of both fisheries, i.e., upriver impact sharing adjustments in response to in-season information pertaining to catch and run size.
- The Department will recognize the economic benefits of recreational and commercial fisheries in the Columbia River and associated value of the early portions of the fisheries.
- The Department will provide for sport fisheries throughout the Columbia River downstream of McNary Dam, sport/tribal fisheries in the Snake River and upper Columbia River, and commercial and sport fisheries in select areas, as well as in the mainstem below Bonneville Dam.
- The Department will ensure broad geographic distribution of the sport fishing opportunity in the main-stem Columbia River.
- Harvestable Lower Columbia River spring Chinook should provide opportunity to areas below the Willamette River.
- Extend sport fishing opportunity as far into April as possible downstream of Bonneville Dam, with a high probability of an uninterrupted 45-day season March-April.

Delegation of Authority

The Washington Fish and Wildlife Commission delegates the authority to the Director, through the Columbia River Compact process, to set seasons for sport and commercial fisheries in the Columbia River consistent with Policy C-3617, and to adopt permanent and emergency regulations to implement these fisheries. The Director shall work with the Oregon Department of Fish and Wildlife to achieve implementation of this Commission action in a manner that results in concurrent regulations between the two states. The Director shall consult with the Commission if it becomes necessary to deviate from the Commission's Policy to achieve concurrent regulations with Oregon.

Allocation of Upriver Spring Chinook Impacts and Fishery Management Plan

The Commission adopts the recommendations of the CRFWG, and except the commercial buffer is reduced by 10% (e.g., 50% to 40%), and except there would be up to 10% flexibility in the recreational buffer in order to meet management objectives.

2. Problems:

- a. The primary constraint on sport and commercial mainstem spring Chinook fisheries is low numbers and survival of wild and hatchery fish caused by life-cycle mortalities including, but not limited to, the Columbia River hydropower system, habitat degradation, predation and hatchery practices. Reduced hatchery returns constrain fisheries directly; reduced ESA-listed fish returns constrain fisheries by severely limiting access to hatchery fish because of incidental impacts on ESA-listed fish.
- b. Pre-season forecasts of run size are uncertain and run timing is variable, making it difficult to confidently structure fisheries during March and April.
- c. Allocation of the approximate 2% listed-fish impact between sport and commercial fisheries is highly contentious and affects the structure of the fishery. Allocating ESA impacts without commonly endorsed fishery management objectives perpetuates controversy, and pits legitimate fishery interests against each other. This is because an allocation-based focus is a "zero-sum" debate; when one side gains, the other loses.
- d. Complexity of the fisheries and regulatory constraints complicate efforts to explain how management effectively meets fisheries objectives and conservation responsibilities.

3. Objectives and Priorities:

a. Near Term (2009-2013)

- i. Mainstem sport fisheries:
 - (a) Downstream from Bonneville Dam:
 - Before the run-size update: A high likelihood that the fishery will remain open for at least 45 days in March and April.
 - After the run-size update: If impacts remain, harvest opportunity through May.
 - (b) Upstream from Bonneville Dam: A high likelihood that the fisheries in the mainstem Columbia and Snake rivers will not be subject to emergency closures.
- ii. Select Area commercial fishery: Harvest levels at least similar to those in recent years.
- iii. Mainstem commercial fishery:
 - Before the run-size update: Harvest opportunity in March and April.
 - After the run-size update: If impacts remain, maximum harvest opportunity in May given available impacts and consistent with other fishery management objectives.

b. Long Term (2014-2018)

- i. Mainstem sport fisheries: Certainty in when, where, and how long fisheries are open.
- ii. Select Area commercial fishery: Relatively stable harvest of approximately 12,000 or more spring Chinook per year in Select Areas (represents

approximately the total Select Area and mainstem spring Chinook commercial fishery in the recent past).

- iii. Mainstem commercial fishery: Harvest opportunity in March and April and, if impacts remain, after the run-size update.

4. Managing Uncertainty in Run Size Forecasts and Fisheries Performance

a. In general:

- i. To account for uncertainties in the information used to plan and implement fisheries, a management buffer in fishery structure will be established and applied to fisheries occurring prior to the run size update (primarily in March and April).
- ii. Fisheries managers will use the in-season run size update provided by the *U.S. v. Oregon* Technical Advisory Committee (TAC).
- iii. The buffer is intended to be sufficient to cover potential run-size forecasting error and ensure compliance with ESA requirements and *U.S. v. Oregon* allocation provisions.

- b. **Near Term**: The buffer will be approximately 35% of the allowable impacts and will be allocated as described below in Table 1. The share of the buffer allocated to the sport and commercial fisheries will vary as a function of the proportion of impacts assigned to each fishery. When the sport fishery share is $> 65\%$, each fishery's contribution to the buffer will be approximately 35% of its assigned impacts. When the sport fishery share is $\leq 65\%$, the sport fishery's contribution to the buffer will be approximately 25% of its assigned impacts, and the commercial fishery's share will be approximately 50% of its assigned impacts.

To minimize the likelihood of emergency closures of the sport fishery downstream from Bonneville Dam prior to the run-size update, up to 5% of the impacts assigned for use by the sport fishery, but held in reserve as the buffer, may be used to achieve the scheduled season.

- c. **Long Term**: The buffer may be less than that used in the near term as improvements are made to run size forecasting ability.

5. Solutions:

a. Near Term:

- i. Sharing the available impacts among the sport and commercial fisheries: Total available impacts, as determined by the *U.S. v. Oregon* harvest schedule, will be shared as described in Table 1. The share assigned to each fishery will vary as a function of the run size of upper Columbia River and Willamette spring Chinook. The sharing formula represents the high priority placed on providing a high likelihood that the sport fishery downstream from Bonneville Dam will remain open for at least 45 days in March and April.

- ii. Sharing the impacts assigned to the mainstem sport fisheries: Seventy-five percent (75%) of the impacts allocated to the sport fisheries for use prior to the run-size update will be assigned to the sport fishery downstream from Bonneville Dam. Twenty-five percent (25%) will be assigned and reserved for the sport fishery upstream from Bonneville Dam. Providing a full sport fishery upstream from Bonneville Dam will be the highest sport fishery priority after the run-size update, however, if under certain forecasted run sizes, less than 25% of the impacts available are needed to achieve this objective, the “surplus” can be used to provide additional sport or commercial fishing opportunity downstream from Bonneville Dam.

Table 1. Percent of total available impacts, as determined by the *U.S. v. Oregon* harvest schedule, assigned to sport and commercial fisheries at different run sizes for upper Columbia and Willamette spring Chinook. The base case represents range of run sizes that most frequently have occurred in the recent past.

Run Size of Upriver Columbia Spring Chinook	Run Size of Willamette Spring Chinook	
	Low (<50,000)	High (>50,000)
Very Low (<33,000)	Share = 85/15%	Share = 75/25%
	Buffer = 35% of sport fishery impact + 35% of commercial fishery impact	Buffer = 35% of sport fishery impact + 35% of commercial fishery impact
Low (33,000 – 55,000)	Share = 75/25%	Share = 70/30%
	Buffer = 35% of sport fishery impact + 35% of commercial fishery impact	Buffer = 35% of sport fishery impact + 35% of commercial fishery impact
Medium-High (55,000 – 271,000)	Share = 70/30%	Share = 65/35% (base)
	Buffer = 35% of sport fishery impact + 35% of commercial fishery impact	Buffer = 25% of sport fishery impact + 50% of commercial fishery impact
Very High (>271,000)	Share = 60/40%	Share = 55/45%
	Buffer = 25% of sport fishery impact + 50% of commercial fishery impact	Buffer = 25% of sport fishery impact + 50% of commercial fishery impact

- iii. Select Area commercial fishery: Commercial fisheries in the select areas will be allocated an impact level of 0.15% for use prior to the run size update. This will enable the fisheries to be managed similarly to recent years.
- iv. Sharing the impacts available after the run-size update (post-update): The impacts remaining after the run-size update will be allocated so that the sport/commercial share of the total available impacts is approximately equal to that defined in Table 1 for the updated run size of upper Columbia and Willamette spring Chinook. If the level of post-update impacts available to a fishery, based on Table 1, exceeds that necessary to meet its objectives, the balance will be reallocated to those fisheries that can use it.

Appendix Tables 1-3 estimate the performance of fisheries under the near-term management strategy described above. The Commissions will periodically review the performance of the near-term management plan with respect to achieving the fishery objectives in Section 3. The Commissions may consider modifications of the near-term plan prior to 2014 if they determine that its fishery objectives are not being met.

b. Long Term:

i. In general:

- (a) Continue leadership promoting improved life-cycle survival of spring Chinook, including improvements to the Columbia River hydropower system, habitat, predation management, and hatchery practices. Encourage *all* fish and fishing groups work together to promote these improvements.
- (b) Provide additional resources to ensure conservation effectiveness of spring Chinook fishery management, including enhanced monitoring, improved run size forecasting ability, and improved estimation of catch.
- (c) Amend the Willamette River Fishery Management Plan specifically to address reduced hatchery broodstock requirements based on fish health improvements.
- (d) Continue moving away from allocation-based fishery management to objective-based fishery management. This shift allows solutions that may improve *both* fisheries, rather than improving one fishery at the expense of another. This approach will require both sides to concede some ground on their stated positions in order to gain actual improvements in their fisheries. It will also require investment of additional resources in commercial fishery infrastructure and several years' patience to implement changes.
- (e) Maintain hatchery production and funding at levels that ensure viable commercial and sport fisheries. Ensure these fisheries have the capacity to harvest sufficient numbers of hatchery fish to meet hatchery reform provisions.
- (f) Ensure that funding is secured for implementation of programs necessary to meet long-term fishery management objectives.
- (g) Seek support and commitments from all fishery sectors regarding long-term fishery management plans.

ii. Mainstem sport fishery:

- (a) Stabilize fishing seasons. Provide fishing opportunity in April consistent with conservation and other management objectives.
- (b) Provide opportunity throughout the lower Columbia River.
- (c) Use sport advisory groups and surveys to consider tradeoffs and shape the fishery.
- (d) Utilize days per week and other fishery management tools to help meet objectives and priorities.
- (e) Base pre-season structure of the fishery on conservative assumptions (e.g., catch rates, effort) to minimize chance of not meeting objectives.
- (f) Continue to provide opportunities and resources to further develop selective sport fishing techniques with a goal of reducing mortality of listed fish and increasing access to hatchery fish.
- (g) Allocate some proportion of the buffer to the sport fishery

iii. Select Area commercial fishery:

- (a) Provide impacts necessary for Select Area commercial fisheries as top priority. Assume at least 10% of allowed non-tribal impacts will be required (minimum of 0.20% on average).
- (b) Increase number and priority of smolt releases in Select Areas (up to 1M smolts reprogrammed from other areas e.g. Willamette River);
- (c) Provide the infrastructure to support these additional fish (e.g., additional net pens, trucking costs, hatchery rearing space, and personnel);
- (d) Pursue opportunities to liberalize regulations of Select Area fisheries (e.g. expanding boundaries in late winter). This will require additional impacts allocated to Select Area fisheries.
- (e) Develop new select areas in Washington and Oregon with reciprocity. This will require additional impacts allocated to Select Area fisheries.
- (f) Utilize cost-effective area, timing and gear options to maximize harvest and minimize impacts, as necessary.

iv. Mainstem commercial fishery:

- (a) Incrementally reduce the impact allocated to the mainstem commercial fishery when run sizes are low and incrementally increase it as run sizes increase.
- (b) Continue to provide opportunities and resources to further develop selective commercial fishing techniques with a goal of reducing mortality of listed fish and increasing access to hatchery fish.
- (c) Define commercial fishery contribution to the buffer as follows:
 - Do not include Select Areas fisheries in the buffer.
 - Determine impacts for mainstem commercial fishery based on sliding scale preseason forecast.
 - Allocate some proportion of the buffer to the mainstem commercial fishery.

Appendix
 Recommendations for CHS Fishery Management
 Working Draft - Final (11-25-08)

Hindcasts of the relative performance of sport and commercial spring Chinook fisheries in the Columbia River prior to the run-size update under the near-term fisheries management plan

Table 1. Allowable impacts assigned to and estimated numbers of upriver spring Chinook harvested by sport and commercial fisheries before the run-size forecast is updated (pre-update) for run sizes forecast in 1999-2008, and for a hypothetical run-size forecast with a low Willamette return. Total allowable impacts equal those allowed under the U.S. v Oregon harvest rate schedule. The share of total allowable impacts assigned to sport and commercial fisheries was determined using a matrix based on run sizes of upriver Columbia and Willamette spring Chinook. For the period before the run-size forecast is updated, sport fisheries are managed not to exceed 65-75% of their total allowable impacts and commercial fisheries are managed not to exceed 50-65% of their total allowable impacts, depending on their share of those impacts. As a result, approximately thirty-five percent of the total impacts allowed under U.S. v. Oregon are held in reserve as a "buffer" until the run-size forecast is updated to account for uncertainty. An impact level of 0.15%, is assigned to select area fisheries. Sport fisheries include areas downstream and upstream of Bonneville Dam. Harvest estimates assume the mainstream commercial fishery uses tangle-net gear.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average (1999-2008)	Hypothetical w/ low Willamette run size
Forecasted run size	24,600	134,000	364,600	333,700	145,400	360,700	254,100	88,400	78,500	269,300	225,411	300,000
Total allowable impact	0.500%	1.700%	2.300%	2.300%	1.900%	2.300%	2.000%	1.600%	1.500%	2.000%	2.000%	2.200%
Sport/commercial fishery shares of total allowable impact	75/25%	65/35%	55/45%	55/45%	65/35%	55/45%	65/35%	65/35%	65/35%	65/35%	65/35%	60/40%
Pre-update sport fishery impact (65-75% of its share of total allowable, depending on run size)	0.175%	0.829%	0.949%	0.949%	0.926%	0.949%	0.975%	0.780%	0.731%	0.975%	0.975%	0.990%
Pre-update commercial fisheries impact (50-65% of its share of total allowable depending on run size)	0.150%	0.298%	0.518%	0.518%	0.333%	0.518%	0.350%	0.280%	0.263%	0.350%	0.350%	0.440%
Pre-update commercial fisheries impact assigned to Select Area and winter sturgeon fisheries	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%	0.150%
Pre-update commercial fisheries impact assigned to mainstream salmon fisheries	0.000%	0.148%	0.368%	0.368%	0.188%	0.368%	0.200%	0.130%	0.113%	0.200%	0.200%	0.290%
Pre-update sport fishery harvest of upriver fish (assuming 76% mark rate)	325	8,329	25,944	23,745	10,101	25,666	18,581	5,171	4,305	19,693	16,483	22,275
Pre-update select area fishery harvest of upriver fish	37	201	547	501	218	541	381	133	118	404	338	450
Pre-update mainstream commercial fishery harvest of upriver fish (assuming 75% mark rate)	0	1,008	6,836	6,257	1,354	6,763	2,593	586	451	2,748	2,300	4,439

^a Under this very low forecasted run size, the 0.15% impact level assigned to commercial fisheries in the select areas is more than 25% of the available impact. This means the mainstream commercial fishery would not be assigned any pre-update impacts, and the sport fishery impact = (total allowable impact) x (0.65) - (0.15).

Appendix
 Recommendations for CHS Fishery Management
 Working Draft - Final (11-25-08)

Hindcasts of the relative performance of sport and commercial spring Chinook fisheries in the Columbia River after the run-size update under the near-term fisheries management plan

Table 2. Allowable impacts assigned to and estimated numbers of upriver spring Chinook harvested by sport and commercial fisheries after the run-size forecast is updated (post-update) for run sizes occurring in 1999-2008, and for a hypothetical run-size forecast with a low Willamette return. These impacts equal those allowed under the U.S. v Oregon harvest rate schedule for the final run size minus the impact used before the run size update adjusted for the difference between pre- and post-update run size. Available post-update impacts are shared between the sport and commercial fisheries so that the final percent of impacts used by each fishery approximates that in the matrix for the final upriver Columbia spring Chinook run size. None of the commercial share of the post-update impacts needs to be assigned to select area fisheries because their season is over. Sport fisheries include areas downstream and upstream of Bonneville Dam. Harvest estimates assume the mainstem commercial fishery uses large-mesh gear.

Year	1999	2000	2001	2002	2003	2004 ^a	2005 ^a	2006	2007	2008 ^a	Average (1999-2008)	Hypothetical w/ low Willamette run size
Final run size	38,700	178,600	416,500	295,100	208,900	193,400	106,900	132,100	86,200	178,700	199,600	300,000
Total allowable impact	1,000%	1,900%	2,500%	2,200%	1,900%	1,900%	1,600%	1,700%	1,600%	1,900%	1,900%	2,200%
Sport/commercial fishery shares of total allowable impact	70/30%	65/35%	55/45%	55/45%	65/35%	65/35%	65/35%	65/35%	65/35%	65/35%	65/35%	60/40%
Post-update allowable impact (total minus impact used before the run-size update, adjusted for difference in pre- and post-update run size)	0.793%	1.055%	1.216%	0.542%	1.024%	0%	0%	0.991%	0.695%	0%	0.404%	0.770%
Post-update sport fishery impact (adjusted so overall share approximates that in matrix)	0.568%	0.613%	0.544%	0.137%	0.590%	0%	0%	0.563%	0.374%	0%	0.134%	0.330%
Post-update commercial fisheries impact (adjusted so overall share approximates that in matrix)	0.205%	0.442%	0.672%	0.405%	0.434%	0%	0%	0.408%	0.321%	0%	0.270%	0.440%
Post-update sport fishery harvest of upriver fish (assuming 75% mark rate and sport fishery uses all its impacts)	1,707	8,214	17,008	3,035	9,249	0	0	5,776	2,418	0	2,005	7,425
Post-update mainstem commercial fishery harvest of upriver fish (assuming 75% mark rate and commercial fishery uses all its impacts)	149	1,479	5,248	2,240	1,698	0	0	1,010	519	0	1,010	2,475

a: final run size and total allowable impact were less than forecasted and impacts used by the fisheries pre-update would have exceeded those allowed under the final run size. As a result, no impacts would be available for fisheries post-update.

Appendix
 Recommendations for CHS Fishery Management
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Hindcasts of the relative performance of sport and commercial spring Chinook fisheries in the Columbia River overall under the near-term fisheries management plan

Table 3. Summary of allowable impacts assigned to and estimated numbers of upriver spring Chinook harvested by sport and commercial fisheries for run sizes occurring in 1999-2008, and for a hypothetical run-size forecast with a low Willamette return. Assumes fisheries are able to use all the impacts assigned to them. Total allowable impacts equal those allowed under the U.S. v Oregon harvest rate schedule for the final run size. Sport fisheries include areas downstream and upstream of Bonneville Dam. Commercial fisheries include select areas.

Year	1999	2000	2001	2002	2003	2004 ^a	2005 ^a	2006	2007	2008 ^a	Average (1999-2008)	Hypothetical w/ low Willamette run size
Forecasted run size	24,600	134,000	364,600	333,700	145,400	360,700	254,100	88,400	78,500	269,300	225,411	300,000
Final run size	38,700	178,600	416,500	295,100	208,900	193,400	106,900	132,100	86,200	178,700	199,600	300,000
Total allowable impact	1,000%	1,900%	2,500%	2,200%	1,900%	1,900%	1,600%	1,700%	1,600%	1,900%	1,900%	2,200%
Total sport fishery harvest of upriver fish (assuming 75% mark rate and sport fishery uses all its impacts)	2,032	16,543	42,952	26,780	19,349	25,666	18,581	10,948	6,724	19,693	18,488	29,700
Projected closing date for sport fishery downstream from Bonneville Dam pre-update (assumes open 7 days/week)	23-Mar	8-Apr	15-Apr	15-Apr	9-Apr	29-Apr	14-May	6-Apr	8-Apr	23-Apr	15-Apr	16-Apr
Projected closing date for sport fishery downstream from Bonneville Dam pre-update (assumes open 3 days/week)	28-Mar	16-Apr	2 May	7 May	16-Apr	14-May	14-May	12-Apr	16-Apr	14-May	9-May	14-May
Total commercial fishery harvest of upriver fish (assuming 75% mark rate and commercial fishery uses all its impacts)	185	2,689	12,631	8,997	3,270	7,304	2,974	1,729	1,087	3,152	3,648	7,364
Total sport fisheries impact	0.700%	1.235%	1.375%	1.210%	1.235%	1.769%	2.318%	1.105%	1.040%	1.469%	1.235%	1.320%
Total commercial fisheries impact	0.300%	0.665%	1.125%	0.990%	0.665%	0.965%	0.832%	0.595%	0.560%	0.527%	0.665%	0.880%
Final sport fisheries share of allowable impacts	70%	65%	55%	55%	65%	65%	74%	65%	65%	74%	65%	60%
Final commercial fisheries share of allowable impacts	30%	35%	45%	45%	35%	35%	26%	35%	35%	26%	35%	40%

a: final run size and total allowable impact were less than forecasted. As a result, no fishing would have occurred post-update and total impacts used by sport and commercial fisheries would have exceeded those allowed. Sport/commercial shares of impacts used approximate that planned pre-update.

Table A1. Spring Management Period Harvest Rate Schedule

Harvest Rate Schedule for Chinook in Spring Management Period							
A	B	C	D	E	F	G	H
Total Upriver Spring and Snake River Summer Chinook Run Size ⁶	Snake River Natural Spring/Summer Chinook Run Size ¹	Treaty Zone 6 Total Harvest Rate ^{2,5}	Treaty Catch Guideline	Non-Treaty Natural Harvest Rate ³	Non-Treaty Mortality Guideline	Total Natural Harvest Rate ⁴	Non-Treaty Natural Limited Harvest Rate ⁴
<27,000	<2,700	5.0%		<0.5%		<5.5%	0.5%
27,000	2,700	5.0%	1,350	0.5%	1,350	5.5%	0.5%
33,000	3,300	5.0%	1,650	1.0%	1,650	6.0%	0.5%
44,000	4,400	6.0%	2,640	1.0%	2,640	7.0%	0.5%
55,000	5,500	7.0%	3,850	1.5%	3,850	8.5%	1.0%
82,000	8,200	7.4%	6,068	1.6%	6,068	9.0%	1.5%
109,000	10,900	8.3%	9,047	1.7%	9,047	10.0%	
141,000	14,100	9.1%	12,831	1.9%	12,831	11.0%	
217,000	21,700	10.0%	21,700	2.0%	21,700	12.0%	
271,000	27,100	10.8%	29,268	2.2%	29,268	13.0%	
326,000	32,600	11.7%	38,142	2.3%	38,142	14.0%	
380,000	38,000	12.5%	47,500	2.5%	47,500	15.0%	
434,000	43,400	13.4%	58,156	2.6%	58,156	16.0%	
488,000	48,800	14.3%	69,784	2.7%	69,784	17.0%	

Footnotes for Table A1.

1. If the Snake River natural spring/summer forecast is less than 10% of the total upriver run size, the allowable mortality rate will be based on the Snake River natural spring/summer Chinook run size. In the event the total forecast is less than 27,000 or the Snake River natural spring/summer forecast is less than 2,700, Oregon and Washington would keep their mortality rate below 0.5% and attempt to keep actual mortalities as close to zero as possible while maintaining minimal fisheries targeting other harvestable runs.

2. Treaty Fisheries include: Zone 6 Ceremonial, subsistence, and commercial fisheries from January 1-June 15. Harvest impacts in the Bonneville Pool tributary fisheries may be included if TAC analysis shows the impacts have increased from the background levels.

3. Non-Treaty Fisheries include: Commercial and recreational fisheries in Zones 1-5 and mainstem recreational fisheries from Bonneville Dam upstream to the Hwy 395 Bridge in the Tri-Cities and commercial and recreation SAFE (Selective Areas Fisheries Evaluation) fisheries from January 1-June 15; Wanapum tribal fisheries, and Snake River mainstem recreational fisheries upstream to the Washington-Idaho border from April through June. Harvest impacts in the Bonneville Pool tributary fisheries may be included if TAC analysis shows the impacts have increased from the background levels.

4. If the Upper Columbia River natural spring Chinook forecast is less than 1,000, then the total allowable mortality for treaty and non-treaty fisheries combined would be restricted to 9% or less. Whenever Upper Columbia River natural fish restrict the total allowable mortality rate to 9% or less, then non-treaty fisheries would transfer 0.5% harvest rate to treaty fisheries. In no event would non-treaty fisheries go below 0.5% harvest rate.

5. The Treaty Tribes and the States of Oregon and Washington may agree to a fishery for the Treaty Tribes below Bonneville Dam not to exceed the harvest rates provided for in this Agreement.

6. If the total in river run is predicted to exceed 380,000, the Parties agree to consider increasing the total allowed harvest rate and to reinstate consultation with NOAA Fisheries if necessary.