

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REPORT ON 2018 SALMON MANAGEMENT MEASURES

The California Department of Fish and Wildlife (CDFW) is submitting this informational report following agency review of the analysis of the three alternatives¹ (hereafter “Pre II”), and after considering state regulatory processes in progress for California’s inland salmon fisheries in the Central Valley. As outlined in the situation summary, any agreements by outside parties that need to be incorporated into the Council’s management recommendations must be presented to the Council prior to adoption of the tentative options, which is the action to be taken under this agenda item. Throughout this report, all references to numbers of fish are to adult fish only (i.e., age-3 and older).

In years when Sacramento River fall Chinook (SRFC) stock abundance is high enough to avoid a need to constrain fisheries, California’s inland salmon fisheries that target SRFC are presumed to operate at their full potential in the ocean season modeling process. In these circumstances, the current-year inland harvest projection is generated by applying a ratio estimator-derived average of past inland harvest rates (the fraction of the river run that is harvested). Over time, this average rate has approximated 14-15 percent. Since 2010, stock forecasts have been sufficiently high to avoid the need to constrain inland SRFC harvest.

However, in the process of developing the three 2018 alternatives at the March meeting, it became clear to CDFW, the Salmon Technical Team (STT), and the Salmon Advisory Subpanel (SAS) that unlike most years, it would be necessary to specify an ocean/inland sharing arrangement for the limited SRFC available for harvest in 2018.

SRFC is a constraining stock this year both due to the low stock abundance forecast and the need to comply with additional National Marine Fisheries Service (NMFS) guidance prescribed for 2018 (Agenda item E.3.b, Supplemental NMFS Report 1, March 2018 PFMC meeting). In response to SRFC attaining ‘overfished’ status as defined in Section 3.1 of the Pacific Coast Salmon Fishery Management Plan, NMFS is requiring proactive steps be taken toward rebuilding in 2018. Specifically, NMFS requires the Council design this year’s management measures in a manner such that projected escapement is “around the upper end of the SRFC conservation objective range.” Consequently, the Council decided the three alternatives would reflect three different projected escapement levels, all at the upper end of the 122,000-180,000 SRFC goal range. Each of the three alternatives requires substantial cuts in ocean fishing opportunity for sport and commercial fisheries off California south of Horse Mountain and in-river recreational fisheries in the Sacramento River to achieve these heightened projected escapement levels.

In the course of providing Council guidance under Agenda item E.4 at the March meeting, CDFW specified that the STT hardwire an ocean/inland sharing arrangement of the available SRFC harvest that would set aside 15 percent of the total for inland fisheries in each of the three alternatives. This guidance was approved by the Council, modeled by the STT, and used

¹ Pacific Fishery Management Council. 2018. *Preseason Report II: Proposed Alternatives and Environmental Assessment Part 2 for 2018 Ocean Salmon Fishery Regulations*. (Document prepared for the Council and its advisory entities.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384.

by the SAS in developing the ocean alternatives, as described in the Pre II analytical document now available for public review. Of note, Council Chair Anderson asked CDFW to confirm that this guidance was within the Council's scope, given implications for management of the state's inland fisheries. Mr. Kormos affirmatively replied that CDFW had arrived at this decision only after consulting with the Department's inland fishery leadership during the March meeting to determine an equitable harvest sharing arrangement for use only in 2018 management, without setting a precedent for use in future years.

The inland fishery catch projections are outlined in Pre II, Table 5, page 52, and replicated below (Table 1). The projections, which correspond to Alternatives I, II, and III, range from least to most conservative, and equate to approximately 11,800, 9,700, and 7,400 fish, respectively. These inland fishery projections reflect the outcome of the Council guidance to set the in-river share of the allowable harvest at 15 percent of the total harvest.

Central Valley fisheries have been relatively successful the past two seasons (Table 2) despite poor SRFC abundance forecasts, with estimated catches exceeding 23,000 fish in each of these years (Table 2). Also of note, the proportion of inland harvest compared to total harvest has been at the highest levels on record the past two years, attaining 20.6 percent in 2016 and 26.2 percent in 2017 (Table 2). Combined ocean and inland harvests in these two years outperformed expectations, while unfortunately, escapement under-performed expectations, as escapement not only fell substantially below the bottom end of the goal range (122,000), but also fell below the minimum stock size threshold (91,500). Catches from these two years reflect a trend toward a greater portion of harvest coming from the inland fisheries since the late 1990s, and especially since the SRFC collapse that spanned 2008-2010 (Table 2).

Looking at the 35-year time series of SRFC river harvest (Table 2), inland fishery catches have averaged 42,500 fish when the 2008-2010 years of no or heavily constrained fishing are removed. In-river catch in the remaining 32 years exceeded the projected catch of approximately 11,800 fish available under Alternative I - the least restrictive of the 2018 alternatives – in all years, and in most years inland catches were 3-5 times this amount (Table 2).

Proposed Management for 2018 SRFC Inland Fisheries

Inland salmon fishery regulations should be consistent with the federal Fishery Management Plan, though the inland fishery is not directly managed in the Council process. Following completion of the federal process, the inland fishery regulations are established by the California Fish and Game Commission (Commission) each spring, after considering recommendations offered by CDFW.

In response to the poor SRFC forecast coupled with the stock attaining 'overfished' status, CDFW plans to recommend the Commission adopt management measures for the Central Valley fishery that are tailored to match the inland harvest projection that results from the final ocean seasons adopted by the Council at the April meeting. CDFW has determined that the management measures available to the Commission for use in 2018 inland fisheries can be expected to keep inland harvests within that projection.

The regulatory process used to adopt California's sport fishing regulations for inland salmon fisheries commences in September each year, with final Commission action coming in April or

May of the following year. The regulations are adopted, reviewed, and filed with the Secretary of State before inland fishing commences in July.

The Commission noticed a range of alternatives for the 2018 Central Valley fishery, including a suite of bag and possession limit alternatives that are area-specific. Because CDFW did not anticipate the impending SRFC stock collapse, this range did not include a number of other measures that might have been used to constrain inland SRFC catches to stay within the federal harvest projections. Such measures might have included reduced open fishing season dates, closed days of the week, or size limits, among others.

Central Valley Chinook salmon regulations specify open season dates, daily bag/possession limits, and gear restrictions that may differ regionally. There are four distinct management zones in the Sacramento Basin that correspond to areas described in California's freshwater sport fishing regulations: the American River, the Feather River, the Upper Sacramento River, and the Lower Sacramento River (Table 3). These management zones also have specific special regulation areas that are defined in the regulations. Considering past catch and effort information from each of these management zones and regulatory areas, CDFW plans to tailor the Commission recommendations regarding areas that are open and closed to harvest so that the inland fishery can be expected to attain but not exceed the inland projection resulting from the Council's final adopted season structure.

Catch-and-release fishing would still be allowed in most areas closed to harvest under the 2018 regulations. CDFW also expects to recommend reducing the daily bag limit from 2 to 1 fish in all areas that will be open to retention fishing in 2018.

Notably, in 2017 the Commission approved a complete closure to all fishing of one of the regulatory areas along the American River (at the Nimbus Basin) starting in March 2018. Historically, this area has been very productive for SRFC harvest, with some of the highest catch and effort levels on record for the Central Valley. Harvest in Nimbus Basin averaged 23 percent of all SRFC adults harvested in the Central Valley from 2011-2017, and reached its highest level of 42 percent in 2017. Despite this inter-annual variability, CDFW expects significant harvest savings as a result of this closure alone.

CDFW recognizes there is uncertainty in catch distribution predictions for the 2018 inland fisheries. However, given recent SRFC distribution trends, CDFW expects that Nimbus Basin on the American River and Thermalito Afterbay Outfall on the Feather River would remain harvest "hotspots" in 2018. Additionally, the adult harvest rate in the Upper Sacramento River management zone is expected to recover to some unknown degree, given a relatively high grilse presence in that zone last year. The 2017 harvest rates by management zone and longer-term averages for the Upper Sacramento River zone reflect variability in catch distribution over time (Table 3). However, the Nimbus Basin fishing closure, and the option to propose no harvest for 2018 in regulatory areas that include the Thermalito Afterbay Outfall and the Barge Hole in the Upper Sacramento River zone, gives CDFW the tools it needs to tailor 2018 Sacramento River fishery management to target the final federal inland harvest projection.

Public Comment on 2018 Inland Salmon Commission Regulations

The Commission's proposed regulatory action on Central Valley inland salmon fisheries and the noticed range of alternatives can be found here:

<http://www.fgc.ca.gov/regulations/2018/#cv>

The Commission will hold a teleconference hearing to adopt the inland fishery regulations on April 12 at 3pm. Locations where oral comment can be provided, and additional information on this meeting may be found here:

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=155576&inline>

Written comments on the Commission's proposed 2018 inland fishery management measures must be received by noon on April 6, and can be submitted:

- via e-mail to fgc@fgc.ca.gov
- via fax to (916) 653-5040
- via mail to California Fish and Game Commission, 1416 Ninth Street, Room 1320, Sacramento, CA 95814

If offering written comments during testimony at the teleconference hearing, please bring at least two copies.

Additional CDFW inland fishery management points of contact:

Dr. Rob Titus - Fisheries Branch

Rob.Titus@wildlife.ca.gov

Jonathan Nelson

Jonathan.Nelson@wildlife.ca.gov

Table 1. Projected ocean and inland harvest of Sacramento River fall Chinook under the three season alternatives.

<i>Alternative I Harvest Projections</i>				
<i>Spawner Escapement Objective: 151,100</i>				
	<u>Recreational</u>	<u>Commercial</u>	<u>Total Ocean</u>	<u>Inland</u>
Oregon	1,176	12,156	13,332	-
California	21,126	32,098	53,224	11,765
	22,302	44,254		<i>(15% of total harvest)</i>
<i>Alternative II Harvest Projections</i>				
<i>Spawner Escapement Objective: 164,900</i>				
	<u>Recreational</u>	<u>Commercial</u>	<u>Total Ocean</u>	<u>Inland</u>
Oregon	985	9,786	10,771	-
California	17,994	26,068	44,062	9,665
	18,979	35,854		<i>(15% of total harvest)</i>
<i>Alternative III Harvest Projections</i>				
<i>Spawner Escapement Objective: 180,100</i>				
	<u>Recreational</u>	<u>Commercial</u>	<u>Total Ocean</u>	<u>Inland</u>
Oregon	481	8,436	8,917	-
California	13,563	19,444	33,007	7,415
	14,044	27,880		<i>(15% of total harvest)</i>

Table 2. Historical harvest and spawning escapement for adult Sacramento River fall Chinook (SRFC) in thousands of fish.

Year	SRFC Ocean Harvest South of Cape Falcon				Sacramento		Percent	Spawning Escapement		
	Troll	Sport	Non-Ret	Total	River Harvest	Total Harvest	River Harvest	Natural	Hatchery	Total
1983	246.6	86.3	0.0	332.9	18.0	350.9	5.1%	91.4	18.8	110.2
1984	266.2	87.0	0.0	353.1	25.9	379.1	6.8%	119.5	39.5	159.0
1985	355.5	158.9	0.0	514.4	39.1	553.4	7.1%	209.5	29.9	239.3
1986	619.0	137.5	0.0	756.4	39.2	795.6	4.9%	216.3	23.8	240.1
1987	686.1	173.1	0.0	859.2	31.8	891.0	3.6%	174.8	20.3	195.1
1988	1,163.2	188.3	0.0	1,351.5	37.1	1,388.7	2.7%	198.0	29.5	227.5
1989	602.8	157.1	0.0	759.9	24.9	784.8	3.2%	126.7	25.9	152.6
1990	507.3	150.4	0.0	657.8	17.2	674.9	2.5%	83.2	21.9	105.1
1991	300.1	89.6	0.0	389.7	26.0	415.7	6.3%	91.4	27.5	118.9
1992	233.3	69.4	0.0	302.8	13.3	316.1	4.2%	59.5	22.1	81.5
1993	342.8	115.3	0.0	458.1	27.7	485.8	5.7%	110.6	26.8	137.4
1994	303.5	168.8	0.0	472.3	28.9	501.2	5.8%	133.0	32.6	165.6
1995	730.7	390.4	0.0	1,121.0	48.2	1,169.2	4.1%	253.5	41.8	295.3
1996	426.8	157.0	0.0	583.8	49.2	633.1	7.8%	267.1	34.6	301.6
1997	579.7	210.3	0.0	790.0	56.3	846.3	6.6%	279.6	65.2	344.8
1998	292.3	114.0	0.0	406.3	69.8	476.1	14.7%	168.1	77.8	245.9
1999	289.1	76.2	0.0	365.3	68.9	434.2	15.9%	353.7	46.1	399.8
2000	421.8	152.8	0.0	574.6	59.5	634.1	9.4%	369.2	48.3	417.5
2001	284.4	93.4	0.0	377.9	97.4	475.3	20.5%	537.4	59.4	596.8
2002	447.7	184.0	0.0	631.7	89.2	720.9	12.4%	682.7	87.2	769.9
2003	501.6	106.4	0.0	608.0	85.4	693.3	12.3%	413.4	109.6	523.0
2004	621.8	212.6	0.0	834.5	46.8	881.3	5.3%	203.5	83.4	286.9
2005	367.9	127.0	0.0	494.9	64.6	559.5	11.5%	210.7	185.3	396.0
2006	149.9	107.7	0.0	257.7	44.9	302.5	14.8%	195.1	79.9	275.0
2007	120.0	32.0	0.0	152.0	14.3	166.3	8.6%	70.0	21.4	91.4
2008	3.2	0.9	0.0	4.1	0.1	4.3	3.2%	46.9	18.5	65.4
2009	0.0	0.2	0.1	0.3	0.0	0.3	0.0%	23.3	17.5	40.9
2010	11.2	11.4	0.3	22.8	2.5	25.3	9.8%	84.6	39.7	124.3
2011	46.6	22.8	0.0	69.4	17.4	86.8	20.0%	76.5	42.9	119.3
2012	182.9	93.3	0.3	276.5	62.2	338.7	18.4%	163.2	122.3	285.4
2013	290.7	114.4	0.0	405.1	55.5	460.6	12.0%	301.5	104.7	406.2
2014	240.5	62.4	0.0	302.9	35.7	338.6	10.6%	167.7	44.7	212.5
2015	100.0	24.4	0.0	124.4	16.9	141.3	11.9%	73.2	39.8	112.9
2016	62.9	28.9	0.0	91.8	23.9	115.6	20.6%	53.9	35.8	89.7
2017	38.8	31.7	0.0	70.5	25.0	95.4	26.2%	17.5	27.0	44.6

Source: Table II-1 in Preseason Report I²

² Pacific Fishery Management Council. 2018. *Preseason Report I: Stock Abundance Analysis and Environmental Assessment Part 1 for 2018 Ocean Salmon Fishery Regulations*. (Document prepared for the Council and its advisory entities.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384.

Table 3. Chinook Salmon sport fishery management zones in the Sacramento Basin with the percent contribution of adult harvest in each zone in 2017. Sub-zones, and their respective contribution to total adult harvest, are also indicated as fishing areas that will either be closed to all fishing in 2018 (e.g., Nimbus Basin on the American River) or that can be proposed for zero harvest to meet a specified inland harvest target. Reference is provided to the Special Regulations area within which each sub-zone is included. CDFW anticipates that the harvest distribution in 2018 would be similar to that observed in 2017 if there were no harvest closures. The one exception is the Upper Sacramento River management zone, which had an exceptionally low harvest contribution rate in 2016 and 2017, but which is expected to improve to some degree in 2018. Mean harvest contribution rates prior to 2016 for the Upper Sacramento River zone, and its associated Barge Hole sub-zone, are provided for reference.

Management Zone	Total Harvest Contribution	Sub-Zone (Contribution)	Sub-Zone Special Regulations Area
American River	45%	Nimbus Basin (42%) Upper American River (<3%)	(5)(A) Included within (5)(B)
Feather River	30%	Thermalito Outfall (23%)	Included within (68)(D)
Lower Sacramento	23%		
Upper Sacramento	2% (35% mean 2011-15)	Barge Hole at Battle Creek (1%) (11% average during 2014-15)	Included within (156.5)(C)