FISHERIES MANAGEMENT AND EVALUATION PLAN
Submitted Under ESA Section 4(d)

IDFG Recreational Fisheries for Spring/Summer Chinook Salmon

Prepared by
Idaho Department of Fish and Game

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Title.

Fishery Management and Evaluation Plan for the State of Idaho Snake River Spring/Summer Chinook ESU Anadromous Fish Species Sport Fishing Program

Responsible Management Agency.

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The Idaho Department of Fish and Game (Department) was issued a Section 10 Permit 844 by the National Marine Fisheries Service (NMFS, or NOAA Fisheries) on May 20, 1993. The purpose of Permit 844 was to allow the incidental take of Snake River salmon and steelhead listed under the Endangered Species Act (ESA) as a result of sport fishing programs in Idaho under the authority of the Department. These programs include: 1) fisheries for resident species managed under the state's General Fishing Regulations, 2) fisheries for anadromous spring/summer Chinook salmon (*Oncorhynchus tshawytscha*) managed under the state's Anadromous Salmon Fishing Regulations, and 3) fisheries for summer steelhead (*O. mykiss*) managed under the state's Steelhead Fishing Regulations. The permit covered the incidental take of listed Snake River sockeye salmon (*O. nerka*, Endangered November 1991), spring/summer Chinook and fall Chinook salmon (*O. tshawytscha*, Threatened, April 1992) and summer steelhead (*O. mykiss*, Threatened, August, 1997). Modification 5 of Permit 844 expired April 30, 1998. Subsequently Permit 1150 was issued to the Department on May 28, 1999 to replace Permit 844. Permit 1150 expired on December 31, 1999. Permit 1233 was issued on May 26, 2000 to replace Permit 1150. Permit 1233 was modified on December 6, 2002 and expired on December 31, 2004. Permit 1481 was issued on March 10, 2005 to replace Permit 1233 and expired May 31, 2010. An application was submitted December 31, 2009 to extend incidental mortality take authorization in Permit 1481 for Departmental recreational fisheries for a one year period (June 1, 2010 to May 31, 2011).

The Department submitted FMEPs in October 1997, June 1998, February 2001 and February 2002 addressing impacts to steelhead.

This FMEP is one of three being submitted by the Department for authorization of incidental take of listed salmon and steelhead under the ESA in Idaho recreational fisheries. The Department's Recreational Steelhead and Fall Salmon Fisheries FMEP and General Fishing Rules FMEP are hereby incorporated by reference.

SECTION 1. FISHERIES MANAGEMENT

1.1) General objectives of the FMEP.

The objective of this FMEP is to harvest adipose-clipped, hatchery-origin Snake River spring/summer (SRSS) Chinook in a manner that does not jeopardize the survival and recovery of the listed SRSS Chinook ESU or other listed anadromous species (SR steelhead, SR fall Chinook, SR sockeye). Fishing areas addressed in this FMEP include the mainstem Snake River, Lower Salmon River, Little Salmon River, South Fork Salmon River, Upper Salmon River and Clearwater River.

1.1.1) List of the "Performance Indicators" for the management objectives.

Performance Indicators (by fishery):

- total fishing effort and fishing opportunity (number of anglers, hours fished, days of opportunity, number of river miles open)
- harvest by fishery of adipose-clipped hatchery SRSS Chinook adults and jacks;
- numbers of caught and released adipose-clipped hatchery SRSS Chinook adults and jacks;
- numbers of caught and released adipose-intact natural and hatchery SRSS Chinook adults and jacks;
- estimated encounters and encounter rate of listed unclipped (adipose intact) SRSS Chinook adults;
- estimated total mortality and mortality rate of listed unclipped SRSS Chinook adults;
- estimated encounters and encounter rate of listed unclipped SR steelhead, SR fall Chinook and SR sockeye adults;
- estimated total mortality and mortality rate of listed unclipped SR steelhead, SR fall Chinook and SR sockeye adults;

1.1.2) Description of the relationship and consistency of harvest management with artificial propagation programs.

The relationship and consistency of the Department's harvest management with artificial propagation programs are described in the Idaho Department of Fish and Game Fisheries Management Plan, 2007-2012 (IDFG 2007). Department harvest objectives and artificial propagation strategies (IDFG 2007) are compatible with conserving and recovering listed salmon and steelhead:

> Idaho's anadromous fish hatcheries were built as mitigation for lost production and survival due to hydroelectric development. Management of salmon and steelhead hatcheries is focused on

producing juvenile and adult fish to provide harvest opportunity and to enhance natural production, through activities such as supplementation.

Hatchery fisheries are sustained by some degree of artificial production, generally for several generations. They are released from hatcheries primarily as smolts and return as adults for spawning and subsequent artificial production of their progeny. The primary objective is to provide harvest opportunity. Fisheries can be offered when enough hatchery adults, surplus to broodstock needs, return and when mortality of non-target stocks are minimal. Genetic material or behavior among hatchery returns may be different than wild/natural salmon and steelhead due to adaptation to the hatchery environment. Of the fishery management classifications (see Part 2 Drainage Management), "anadromous" refers to management which targets harvest opportunity on hatchery-origin fish while protecting wild and natural fish.

Department-approved evaluation studies will continue to direct the use of hatchery fish to preserve and rebuild natural stocks. Evaluation and implementation of supplementation programs targeting natural fish populations will be regionally coordinated. The Idaho Supplementation Studies (ISS) for Chinook salmon currently encompasses several tributaries and hatcheries. This study will be completed during this planning period and results will guide continuing supplementation actions in concert with information from other studies. New efforts using hatchery production to sustain and rebuild natural steelhead numbers are being initiated. Although there has been short-term increase of spawners in many supplementation cases, there are also examples of little or no change. Rebuilding runs only through supplementation or other artificial production mechanisms is unlikely if life cycle survival is less than needed for spawner replacement. The Department will continue to carefully assess the risks of using hatchery fish over the long-term to bolster numbers of fish in the natural environment.

The Department's anadromous hatchery program will: (1) strive to produce juvenile fish that maximize survival to adulthood through disease control, fish culture practices, and release strategies; and (2) provide fish at various life stages that can be utilized for harvest, supplementation, reintroduction, and research purposes. A continuing role will be to help preserve salmon and steelhead populations on the verge of extinction until life cycle survival permits rebuilding. The Department will continue to develop hatchery practices for use with natural broodstocks to produce returning progeny suitable for subsequent natural production. We will also continue to mark hatchery smolts prior to release to maximize hatchery selective fishery opportunities and to easily identify hatchery fish to maximize broodstock management options.

Hatchery Genetic and Management Plans (HGMPs) are being prepared for all hatchery programs. The HGMPs will consider and incorporate as appropriate the recommendations of the Hatchery Review Team (HRT) and Hatchery Scientific Review Group (HSRG).

1.1.3) General description of the relationship between the FMEP objectives and Federal tribal trust obligations. (This will be further addressed in section 4).

The Department's Fisheries Management Plan, 2007-2012 (IDFG 2007) states that Indian treaty rights will be recognized in the management of fish and wildlife. The Department routinely coordinates at a policy and technical level with affected Tribes in management of the

Department's anadromous fisheries through participation in the U.S. v Oregon process, meetings with the Nez Perce Tribal Executive Council and the Shoshone-Bannock Business Council, meetings and informal phone conferences with tribal fisheries staff, and Annual Operating Plan meetings regarding harvest sharing, ESA take and other management issues for hatchery and fisheries programs. The Department similarly coordinates with those Federal agencies with direct tribal trust obligations (Fish and Wildlife Service, NOAA Fisheries) through such avenues as U.S. v. Oregon, ESA permitting, the Lower Snake River Compensation Plan and other coordination activities.

1.2) Fishery management area(s).

1.2.1) Description of the geographic boundaries of the management area of this FMEP.

Fishery management units addressed in this FMEP include the mainstem Snake River, Lower Salmon River, Little Salmon River, South Fork Salmon River, Upper Salmon River and Clearwater River (Figure 1). Geographic boundaries of the fishery management areas (FMAs) are:

Mainstem Snake River: The Department plans to propose fisheries on hatchery spring/summer Chinook in the mainstem Snake River from the confluence of the Clearwater River upstream to Hells Canyon Dam. Annual fisheries proposals may include time/area regulations within this management area to target specific hatchery runs, and to minimize take of listed natural-origin salmon. Boundaries defining subsections within the management area would be similar to those used under Permit 1481, including: mouth of the Salmon River and Dug Bar (upstream of the Imnaha River mouth).

Lower Salmon River: The Department plans to propose fisheries on hatchery spring/summer Chinook in the lower mainstem Salmon River from a posted boundary approximately 200 yards downstream from the Rice Creek Bridge upstream to the Vinegar Creek Boat ramp. Annual fisheries proposals may include time/area regulations within this management area to target specific hatchery runs, and to minimize take of listed natural-origin salmon. Boundaries defining subsections within the management area would be similar to those used under Permit 1481, including: US Highway 95 Time Zone Bridge, mouth of the Little Salmon River, and mouth of Short's Creek.

Little Salmon River: The Department plans to propose fisheries on hatchery spring Chinook in the Little Salmon River from the mouth to the US Highway 95 Bridge near Smokey Boulder Road. Annual fisheries proposals may include time/area regulations within this management area to target a specific hatchery run, and to minimize take of listed natural-origin salmon. Boundaries defining subsections within the management area would be similar to those used under Permit 1481, including: a posted boundary 200 yards upstream of the mouth of Rapid River.

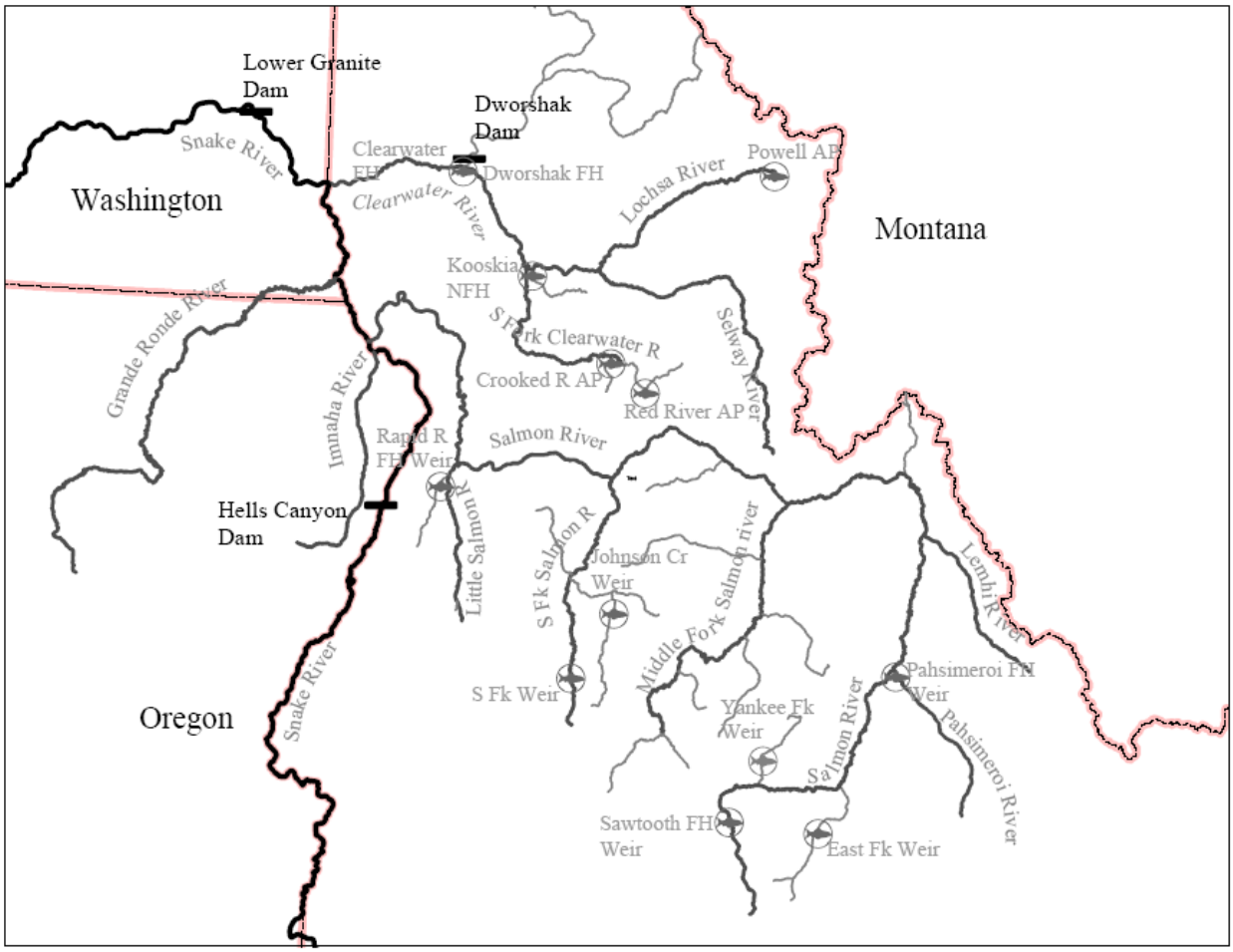

Figure 1. Idaho spring/summer Chinook Fishery Management Areas (FMAs).

South Fork Salmon River: The Department plans to propose fisheries on hatchery summer Chinook in the South Fork Salmon River from the mouth of the South Fork Salmon River upstream to a posted boundary 100 yards downstream of the McCall Hatchery weir. Annual fisheries proposals may include time/area regulations within this management area to target a specific hatchery run, and to minimize take of listed natural-origin salmon. Boundaries defining subsections within the management area would include the mouth of the Secesh River, mouth of the East Fork South Fork Salmon River and other boundaries previously used under Permit 1481.

Upper Salmon River: The Department plans to propose fisheries on hatchery spring/summer Chinook in the upper mainstem Salmon River from the confluence of the Middle Fork Salmon River upstream to a posted boundary 100 yards downstream of the Sawtooth Hatchery weir. Annual fisheries proposals may include time/area regulations within this management area to target specific hatchery runs, and to minimize take of listed natural-origin salmon. Boundaries defining subsections within the management area would be similar to those used under Permit 1481, which included: mouth of Pahsimeroi River, mouth of East Fork Salmon River, Highway

75 Bridge near Clayton, mouth of Yankee Fork, mouth of Valley Creek. Additional boundaries may include mouth of North Fork Salmon River, mouth of Lemhi River or locations near these river mouths. In 2009 and 2010, the lower boundary of this management area was the Highway 95 bridge in the town of Salmon, ID (approximately 0.75 miles upstream of the mouth of the Lemhi River).

Clearwater River: The Department plans to propose fisheries on hatchery spring/summer Chinook in the mainstem Clearwater River, North Fork Clearwater River, South Fork Clearwater River and the Lochsa River. Annual fisheries proposals may include time/area regulations within this management area to target specific hatchery runs. No listed natural-origin SRSS Chinook salmon inhabit the Clearwater River.

A discussion on the potential impacts to listed steelhead and fall Chinook is included in section 1.4.1.

1.2.2) Description of the time periods in which fisheries occur within the management area.

Recreational fisheries targeting hatchery spring/summer Chinook will close no later than August 10. This closure date occurs before Snake River steelhead or Snake River fall Chinook begin to enter Idaho, ensuring that take of these listed species will be minimized. Previous experience with recreational Chinook fisheries indicates that it is unlikely that the season would last until this closing date, because, typically, the State's harvest share is met or ESA take becomes constraining before this date.

Mainstem Snake River: The Department plans to propose fisheries on hatchery spring/summer Chinook beginning about the second to third week of April and ending when harvest share objectives have been met or ESA take becomes constraining, but no later than August 10. The Department and the Oregon Department of Fish and Wildlife may jointly propose fisheries on the Snake River where it forms a boundary between Idaho and Oregon. The Department and the Washington Department of Fish and Wildlife may jointly propose fisheries on the Snake River where it forms a boundary between Idaho and Washington. Joint fishery proposals will be coordinated to adopt reciprocal regulations between States.

Lower Salmon River: The Department plans to propose fisheries on hatchery spring/summer Chinook in two time frames in this management area to target different hatchery runs. The first time frame would begin about the second to third week of April and end when Rapid River Hatchery harvest share objectives have been met or ESA take becomes constraining, but no later than August 10. The second time frame would begin about the second to third week of June and end when McCall Hatchery harvest share objectives have been met or ESA take becomes constraining, but no later than August 10.

Little Salmon River: The Department plans to propose fisheries on Rapid River hatchery spring Chinook beginning about the second to third week of April and ending when harvest share objectives have been met or ESA take becomes constraining, but no later than August 10.

South Fork Salmon River: The Department plans to propose fisheries on McCall hatchery summer Chinook beginning about the second to third week of June and ending when harvest share objectives have been met or ESA take becomes constraining, but no later than August 10.

Upper Salmon River: The Department plans to propose fisheries on Pahsimeroi hatchery summer Chinook and Sawtooth hatchery spring Chinook beginning about the second to third week of June and ending when harvest share objectives have been met or ESA take becomes constraining, but no later than August 10.

Clearwater River: The Department plans to propose fisheries on hatchery spring/summer Chinook beginning about the second to third week of April and ending when harvest share objectives have been met, but no later than August 10.

1.3) Listed salmon and steelhead affected within the Fishery Management Area specified in section 1.2.

Listed Snake River spring/summer (SRSS) Chinook salmon populations that may be affected by Idaho recreational fisheries targeting hatchery spring/summer Chinook in one or more FMAs are identified in Table 1. Only hatchery salmon with a clipped adipose fin (as evidenced by a healed scar) may be kept in Idaho recreational fisheries. Incidental mortality impacts occur from catch and release of listed unclipped SRSS Chinook in fisheries targeting adipose clipped hatchery Chinook.

Listed SR steelhead and SR fall Chinook salmon are not expected to be affected by Idaho recreational fisheries targeting hatchery spring/summer Chinook because their run timing across Lower Granite Dam does not begin until after SRSS Chinook fisheries are closed. Sockeye adults typically return to the Snake River basin from July through September, primarily in July and August to spawn in lakes or return to hatchery weirs in the headwaters of the Salmon River. Retention of sockeye is not legal in Idaho recreational fisheries. The Department plans to phase out use of the adipose fin clip for hatchery sockeye as early as brood year (BY) 2010, eliminating any possibility that an angler could mistakenly keep a sockeye in a fishery targeting adipose-clipped hatchery Chinook. The BY 2008 smolt release group was not adipose-clipped; a portion of the BY 2009 smolt release was adipose-clipped for an evaluation. Sockeye adults are not commonly caught in the tributary areas and none have been reported in Idaho fisheries since the 1970s. The Department will make use of its in-season monitoring information to determine whether sockeye are encountered in the fisheries.

Table 1. Extant Snake River spring/summer Chinook ESU populations, organized by Major Population Groups (ICTRT 2007), which may be affected by one or more fisheries targeting hatchery SRSS Chinook.

Major Population Group	Population	Population Acronym	Spring or Summer Run
Lower Snake	Tucannon	SRTUC	Spring
Grande Ronde/ Imnaha R.	Wenaha R.	GRWEN	Spring
	Lostine/Wallowa R.	GRLOS	Spring
	Minam R.	GRMIN	Spring
	Catherine Cr.	GRCAT	Spring
	Upper Grande Ronde R.	GRUMA	Spring
	Imnaha R. Mainstem	IRMAI	Spring/Summer
South Fork Salmon R.	Little Salmon R.	SFLSR	Spring/Summer
	South Fork Mainstem	SFMAI	Summer
	Secesh R.	SFSEC	Summer
	East Fk/Johnson Cr.	SFEFS	Summer
Middle Fork Salmon R.	Chamberlain Cr.	MFCHA	Spring
	Big Cr.	MFBIG	Spring/Summer
	Lower Mainstem MF	MFLMA	Spring/Summer
	Loon Cr.	MFLOO	Spring/Summer
	Camas Cr.	MFCAM	Spring
	Upper Mainstem MF	MFUMA	Spring
	Sulphur Cr.	MFSUL	Spring
	Marsh Cr.	MFMAR	Spring
	Bear Valley Cr.	MFBEA	Spring
Upper Salmon	Panther Cr.	SRPAN	Spring
	North Fork Salmon R.	SRNFS	Spring
	Lemhi R.	SRLEM	Spring
	Pahsimeroi R.	SRPAH	Summer
	Lower Mainstem	SRLMA	Spring/Summer
	Upper Salmon East Fk	SREFS	Spring/Summer
	Yankee Fork	SRYFS	Spring
	Valley Cr.	SRVAL	Spring/Summer
	Upper Salmon Mainstem	SRUMA	Spring

Mainstem Snake River: Fisheries targeting hatchery spring/summer Chinook in this FMA may affect listed SRSS Chinook. Recreational anglers in fisheries downstream of the Imnaha River catch and release ESA-listed SRSS Chinook from 4 MPGs containing 27 extant populations (all populations identified in Table 1.a), as well as from 6 unlisted Clearwater River populations and strays from the Tucannon River. No extant populations originate from spawning areas upstream of the Imnaha River on the mainstem Snake River. Recreational anglers in fisheries upstream of the Imnaha River may catch and release a few natural origin fish from small tributaries in Hells Canyon (or possibly a few stray or "dip-in" fish from any population). No encounter of SR sockeye, SR fall Chinook, or SR steelhead is likely in this fishery.

Lower Salmon River: Fisheries targeting hatchery spring/summer Chinook in this FMA may affect listed SRSS Chinook. Fisheries focused downstream of the Little Salmon River beginning in April primarily target Rapid River hatchery Chinook and recreational anglers catch and release ESA-listed SRSS Chinook from 3 MPGs (South Fork Salmon, Middle Fork Salmon, Upper Salmon) containing 21 extant populations (Table 1.a). Fisheries focused upstream of the Little Salmon River beginning in June primarily target McCall Hatchery Chinook and recreational anglers catch and release the same populations except for SRLSR (Table 1.a). Because of fishery timing differences when targeting either Rapid River Hatchery (spring run) or McCall Hatchery (summer run), the relative mix of listed populations encountered is expected to differ. No encounter of SR sockeye, SR fall Chinook or SR steelhead is likely in this fishery.

Little Salmon River: Fisheries targeting hatchery spring Chinook in this FMA may affect listed SRSS Chinook. Fisheries in the Little Salmon River target Rapid River hatchery spring Chinook and recreational anglers catch and release ESA-listed SRSS Chinook from a portion of the SRLSR population (South Fork Salmon MPG). The SRLSR population spawns in the Little Salmon River and tributaries as well as in Salmon River tributaries downstream of the Little Salmon River (Whitebird Cr., Slate Cr.). No encounter of SR sockeye, SR fall Chinook or SR steelhead is likely in this fishery.

South Fork Salmon River: Fisheries in the South Fork Salmon River FMA target McCall hatchery summer Chinook. Recreational anglers catch and release ESA-listed SRSS Chinook from the SFMAI population (South Fork Salmon MPG), and when the lower mainstem South Fork Fishery is opened, the SFMAI, SFEFS and SFSEC populations. No encounter of SR sockeye, SR fall Chinook or SR steelhead is likely in this fishery.

Upper Salmon River: Fisheries targeting hatchery spring/summer Chinook in this FMA may affect listed SRSS Chinook. Fisheries target Pahsimeroi River hatchery summer Chinook and Sawtooth Hatchery spring Chinook, and recreational anglers catch and release ESA-listed SRSS Chinook from 1 MPG (Upper Salmon) and up to 9 populations (SRPAN, SRNFS, SRLEM, SRPAH, SRLMA, SREFS, SRYFS, SRVAL, and SRUMA), depending on time/area management. The ICTRT considered the Panther Creek (SRPAN) population to be extirpated; however, because some spawning now occurs in Panther Creek, FMEP fishery planning and implementation will also account for natural spawners for this population. Limited encounters of sockeye may occur in this fishery as sockeye abundance increases. No encounter of SR fall Chinook or SR steelhead is likely in this fishery.

Clearwater River: Fisheries targeting hatchery spring/summer Chinook in this FMA do not affect listed SRSS Chinook. No encounter of SR sockeye, SR fall Chinook or SR steelhead is likely in this fishery.

1.3.1) Description of "critical" and "viable" thresholds for each population (or management unit) consistent with the concepts in the technical document

"Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units."

The FMEP definitions of viable thresholds and critical thresholds are based on and consistent with the Interior Columbia Technical Recovery Team's (ICTRT) application of the guidance in "Viable Salmonid Populations and Recovery of Evolutionarily Significant Units" Technical Memorandum NMFS-NWFSC-42 June 2000 (McElhany et al. 2000). The ICTRT (2007) estimated demographic extinction risk for listed Interior Columbia Basin salmon and steelhead populations. The ICTRT population level viability criteria were expressed relative to an acceptable risk level of a 5% probability of extinction in a 100-year period. This level of risk is consistent with VSP guidelines and the conservation literature (McElhany et al. 2000; NRC 1995). In addition, the ICTRT noted that NOAA Fisheries has given previous policy guidance that a 5% risk of extinction over a 100-year period is an appropriate benchmark for population level risk assessment, at least for initial exploration. The ICTRT expressed risk relative to a 100 year time frame for several reasons; 1) it incorporates sensitivities to multiyear patterns/variations in environmental influences, 2) it is an appropriate time frame for considering recovery strategies that include habitat restoration actions that may take considerable time to result in survival improvements and 3) a 100 year time frame subsumes short time frame risks. Under historical conditions, most populations within the region would have been rated as very low risk relative to the 5% viability curve. At the population level, recovery strategies should be targeted to achieving combinations of abundance and productivity above the 5% viability curve threshold. Alternative risk levels and time frames may be useful in assessing population status when considering short term effects of actions. Viability of the ESU ultimately depends on viability of its component MPGs. Not all populations in an MPG need to be viable to meet MPG viability criteria (ICTRT 2007), however, it would be risky to allow the status of any population to degrade.

The ICTRT (2007) further established minimum thresholds for abundance based on the following rationale:

> "We have incorporated minimum thresholds for abundance into viability curves for application to Interior Columbia populations. Minimum abundance thresholds applied to the viability curves were based on the demographic and genetic rationale provided by McElhany et al. (2000) and reflect estimates of the relative amount of historical spawning and rearing habitat associated with each population. A minimum threshold value at or above 1.0 should also be applied to the population productivity parameter. Given a very high starting abundance, the relatively simple population model used to generate viability curves can, in some circumstances, project relatively low probabilities of extinction for average productivities below 1.0. In those cases the population would, by definition, be in long-term decline."
>
> "We incorporated a minimum abundance threshold of 500 spawners into the viability curves for populations in the Basic size category based on genetic and demographic considerations. Populations with fewer than 500 individuals are at higher risk for inbreeding depression and a variety of other genetic concerns (McElhany et al. 2000 and McClure et al. 2003 discuss this topic further). A minimum abundance of 500 spawners would appear adequate for compensatory processes to operate and to maintain within-population spatial structure for smaller Interior Columbia Basin salmon populations. However, for populations that cover big geographic areas

> with larger intrinsic potential, the ICTRT concluded higher minimum abundance levels were necessary to meet the full range of VSP criteria."
>
> "Incrementally higher spawning abundance thresholds were established for the remaining three population size categories.. . We set thresholds for the two larger size categories (Large and Very Large) so that the expected average abundance at threshold levels was equivalent to approximately ½ of the density associated with achieving 500 spawners for a median sized population within the Basic category. Threshold levels for application to populations in the intermediate group were set so as to achieve median spawner densities at approximately half the range between the median population size for Basic and Large population groups. This density level represents a balance between using 500 as a minimum population abundance threshold regardless of the amount of spawning habitat and setting a population level threshold proportional to the amount of potential spawning habitat. Increased thresholds for larger populations promote achieving the full range of abundance objectives including utilization of multiple spawning areas, avoiding problems associated with low population densities (e.g., Allee effects) and maintaining populations at levels where compensatory processes are functional. Setting the minimum abundance threshold in strict proportion to the estimated amount of potential spawning habitat implied unrealistic precision for each specific population and resulted in very high minimum abundance levels for larger populations."

Following the ICTRT (2007) rationale for Minimum Abundance Thresholds (MAT), a Viable Threshold must equal at least 500 spawners for a Basic population, with larger thresholds needed for Intermediate, Large and Very Large populations. The Department defines the FMEP Viable Threshold as the ICTRT (2007) minimum abundance threshold. The ICTRT based the population size categories on intrinsic potential (IP) of historically available habitat, and then proportionately increased the minimum abundance thresholds for larger populations to meet VSP objectives of maintaining spatial structure and compensatory processes. However, the quantity of habitat is currently greatly reduced from historic potential for two populations (Lemhi River, Pahsimeroi River), and not likely to be restored in the 5-year review schedule of the FMEP. Meeting the objectives of achieving or maintaining compensatory processes and spatial structure of accessible habitat in a 5-year time frame would be based appropriately on the population's current potential. For FMEP management purposes, the SRLEM population was rated large (MAT = 1,000) and SRPAH was rated basic size (MAT = 500). In addition, we assumed that the extirpated SRPAN population would function as a basic population with MAT of 500 spawners during the FMEP. These values reflect current conditions in these watersheds. Fishing pressure on these three populations with adjusted management thresholds is through mainstem Salmon River fisheries, and therefore not specifically directed at the individual populations. By applying these thresholds to these populations, it allows the potential to remove additional hatchery-origin fish migrating upstream to Sawtooth and Pahsimeroi hatcheries that are proportionally more numerous than natural-origin returns.

The ICTRT (2007) viability curves describe the combination of productivity and abundance that just meet a given risk (1%, 5% or 25%) of extinction in a 100-year period (given the variance, autocorrelation and age structure of the population). Because of the uncertainty in estimating actual extinction risk, a quasi-extinction threshold (QET) was defined for use in the Population Viability Analyses modeling. The ICTRT (2007) implemented a QET of 50 spawners per year over a consecutive four-year period in generating viability curves for application to Interior Columbia basin ESU populations. Four consecutive years represents [close to] a full brood cycle

of adult (mature male and female spawners). A quasi-extinction threshold is defined as "the minimum number of individuals below which the population is likely to be critically and immediately imperiled" (Morris & Doaks, 2002; Ginsburg et al. 1982). The ICTRT selected 50 as a QET based on four considerations; consistency with theoretical analyses of increasing demographic risks at low abundance, uncertainty regarding low abundance productivity of Interior Columbia ESU populations due to the paucity of escapements less than 50 spawners in the historical record, sensitivity analyses indicating that the probability of multiple very low escapements increases substantially as the QET approaches 1 spawner per year, and consistency with applications by the Puget Sound and the Lower Columbia/Willamette TRTs (McElhany et al. 2003, 2006; Puget Sound TRT, 2000).

McElhaney et al. (2000) provide four critical population size guidelines. Population abundance would be critically low: 1) if depensatory processes are likely to reduce it below replacement; 2) if it is at risk from inbreeding depression or fixation of deleterious mutations; and 3) when productivity variation becomes a substantial source of risk. The 4th guideline is that population status evaluations should take uncertainty regarding abundance into account. A QET of 50 for four consecutive years meets the first three guidelines for a Critical Threshold definition, but an additional uncertainty buffer is appropriate for fisheries management application. The Department proposes to use 30% of the Viable Threshold (or MAT) to define a Critical Threshold for the FMEP, with only very conservative fisheries impacts allowed below the Critical Threshold. A Critical Threshold of 30% MAT is equivalent to 150 spawners for small populations and 300 spawners for large populations, similar to recommendations of the Biological Requirements Workgroup (BRWG 1994).

Abundance-based, sliding-scale allowable total mortality criteria are defined in Section 1.4 for the different management areas with appropriate buffers to be consistent with achieving the Viable Threshold while avoiding critically low abundance for listed natural spring/summer Chinook populations while implementing Department recreational fisheries on adipose-clipped hatchery Chinook salmon.

1.3.2) Description of the current status of each population (or management unit) relative to its "Viable Salmonid Population thresholds" described above. Include abundance and/or escapement estimates for as many years as possible.

All SRSS Chinook populations in the Salmon River are at high risk (ICTRT 2007 and NMFS 2007). Current geometric mean abundance and productivity estimates for all populations are well below the viability curve for the 5% risk of extinction (Table 2a; ICTRT 2007 and NMFS 2007); the observed survival gap ranged from 32% (SFMAI) to 225% (SRYFS). Recent annual abundance has ranged from very low to above the Viable Threshold in some years for some populations. Risk ratings for spatial structure and diversity (SSD) were low to moderate for all but four Salmon River SSRS Chinook populations (ICTRT 2007). SSD risk was rated high for SRPAH, SREFS, SRYFS and SRVAL in the Upper Salmon MPG.

Table 2a. List of Idaho natural ESA-listed SRSS Chinook populations, VSP thresholds, recent abundance and productivity, observed A/P Gap (5% risk), and associated hatchery stocks.

MPG, Population	Quasi Extinction Threshold (4 year)	Critical Threshold (30% MAT)	Viable Threshold (MAT)	Recent 10-year Abundance **	10-year Abundance Range**	10-year Hatchery Fraction**	20-year Productivity **	Observed A/P Gap (5% risk)**	Associated Hatchery Stocks	Hatchery stock essential for recovery? (Y or N)
South Fork Salmon MPG										
Little Salmon R.	50	225	750	NA	NA	NA	NA	NA	Rapid River hatchery spring Chinook	N
South Fork Mainstem	50	300	1000	601	112-1873	38%	1.2	0.32	McCall hatchery summer Chinook	Y
Secesh R.	50	225	750	403	96-1228	4%	1.21	0.45	--	--
East Fk/Johnson Cr.	50	300	1000	195	20-579	10%	0.97	1.33	Johnson Creek supplementation	Y
Middle Fork Salmon MPG										
Chamberlain Cr.	50	225	750	225	NA	0%	NA	NA	--	--
Big Cr.	50	300	1000	90	5-662	0%	1.22	1.34	--	--
Lower Mainstem MF	50	150	500	NA	NA	NA	NA	NA	--	--
Loon Cr.	50	150	500	51	0-611	0%	1.05	1.08	--	--
Camas Cr.	50	150	500	28	0-261	0%	0.83	1.66	--	--
Upper Mainstem MF	50	225	750	NA	NA	NA	NA	NA	--	--
Sulphur Cr.	50	150	500	21	0-178	0%	1.05	1.40	--	--
Marsh Cr.	50	150	500	42	0-599	0%	1.01	1.19	--	--
Bear Valley Cr.	50	225	750	182	15-1233	0%	1.45	0.65	--	--
Upper Salmon MPG										
Panther Cr.	50	150	500*	NA	NA	NA	NA	NA		
North Fork Salmon R.	50	150	500	NA	NA	NA	NA	NA	--	--
Lemhi R.	50	300	1000*	79	10-582	0%	1.07	1.09	--	--
Pahsimeroi R.	50	150	500*	127	45-316	42%	0.54	1.93	Pahsimeroi hatchery summer Chinook	Y
Lower Mainstem	50	600	2000	103	37-378	0%	1.22	1.36	--	--
Upper Salmon East Fk	50	300	1000	148	9-598	8%	1.07	0.82	--	--
Yankee Fork	50	150	500	13	0-153	0%	0.68	2.25	Yankee Fork supplementation	Y
Valley Cr.	50	150	500	34	0-292	0%	1.07	1.07	--	--
Upper Salmon Mainstem	50	300	1000	246	91-567	25%	1.51	0.44	Sawtooth hatchery spring Chinook	Y

*FMEP viable threshold differs from ICTRT (2007) ratings to account for current intrinsic potential.

**ICTRT (2007)

Recreational anglers in fisheries downstream of the Imnaha River catch and release ESA-listed SRSS Chinook from four listed MPGs, as well as from 6 unlisted Clearwater River populations. For FMEP management purposes, MATs and Critical Thresholds are defined for all listed and unlisted populations upstream of Lower Granite Dam in Table 2b. In addition, listed Tucannon River spring Chinook may stray above LGR and be affected by fisheries in the reach between the Imnaha and the WA/ID border.

Table 2b. Natural ESA-listed and unlisted SRSS Chinook populations upstream of Lower Granite Dam, and current Minimum Abundance, Critical and Quasi-Extinction Thresholds.

Major Population Group	Population	ICTRT 2007 Weighted Area Category (historic)	Minimum Abundance Threshold (MAT)	Critical Threshold (30% MAT)	Quasi Extinction Threshold (QET)
Grande Ronde/	Wenaha R.	Intermediate	750	225	50
Imnaha R.	Lostine/Wallowa R.	Large	1000	300	50
	Minam R.	Intermediate	750	225	50
	Catherine Cr.	Large	1000	300	50
	Upper Grande Ronde R.	Large	1000	300	50
	Imnaha R. Mainstem	Intermediate	750	225	50
South Fork	Little Salmon R.	Inter. (Basic)	750	225	50
Salmon R.	South Fork Mainstem	Large	1000	300	50
	Secesh R.	Intermediate	750	225	50
	East Fk/Johnson Cr.	Large	1000	300	50
Middle Fork	Chamberlain Cr.	Inter. (Basic)	750	225	50
Salmon R.	Big Cr.	Large	1000	300	50
	Lower Mainstem MF	Basic	500	150	50
	Loon Cr.	Basic	500	150	50
	Camas Cr.	Basic	500	150	50
	Upper Mainstem MF	Intermediate	750	225	50
	Sulphur Cr.	Basic	500	150	50
	Marsh Cr.	Basic	500	150	50
	Bear Valley Cr.	Intermediate	750	225	50
Upper Salmon	Panther Cr.*	Basic	500	150	50
	N Fk Salmon R.	Basic	500	150	50
	Lemhi R.*(current)	Large	1000	300	50
	Pahsimeroi R. * current)	Basic	500	150	50
	Lower Mainstem	Very Large	2000	600	50
	Upper Salmon East Fk	Large	1000	300	50
	Yankee Fork	Basic	500	150	50
	Valley Cr.	Basic	500	150	50
	Upper Salmon Mainstem	Large	1000	300	50
Clearwater **	Lolo Cr **	Basic **	500	150	50
(non-ESA -	Lochsa **	Large **	1000	300	50
IDFG assumed	Upper S Fk Clearwater **	Large **	1000	300	50
current	Meadow Cr **	Basic **	500	150	50
population sizes)	Moose Cr **	Basic **	500	150	50
	Upper Selway **	Large **	1000	300	50

* scaled to IC-TRT current Intrinsic Potential for Panther, Lemhi & Pahsimeroi populations.

** Size categories and MATs based on IC-TRT current IP.

Endangered SR sockeye salmon are at high risk (ICTRT 2007). The ICTRT (2007) defined minimum abundance thresholds of 1,000 for the Redfish and Alturas Lake populations (intermediate category), and at 500 for populations in the smallest historical size category (e.g., Pettit Lake and Stanley Lake). Currently, residual sockeye occur in Redfish, Alturas and Pettit lakes, with a conservation hatchery program releasing hatchery-reared fish into the three lakes. The Department plans to transition from a gene conservation program to a species recovery

program by producing 500,000 to 1,000,000 smolts annually. Successful implementation will return substantially more adults and reduce the current high-risk status to sockeye abundance and productivity. Likelihood of sockeye catch and release encounters in the Upper Salmon FMA Chinook fishery will also increase as sockeye populations are rebuilt. Critical Thresholds based on a 30%MAT criterion would be 300 adult sockeye for Redfish and Alturas Lake populations and 150 for the Pettit Lake, or 750 for the three lakes (until reintroduction begins in other Stanley Basin lakes).

Details on current status assessments, including recent abundance and productivity estimates and spatial structure and diversity ratings can be found at the Idaho Salmon Recovery website: http://www.idahosalmonrecovery.net

1.4) Harvest Regime

1.4.1) Provide escapement objectives and/or maximum exploitation rates for each population (or management unit) based on its status.

The Department has implemented mark-selective retention fisheries on adipose-clipped hatchery spring/summer Chinook within ESA incidental take and mortality quotas in these management units for several years, most recently under the Section 10 Permit 1481. Permit 1481 defines the maximum incidental mortality rate for IDFG recreational fisheries as a percentage of the natural origin adults passing over Lower Granite Dam, which ranges from 0% to 2% depending on run-size (Table 3a). At all run sizes, an additional 8 naturally produced Snake River spring/summer Chinook salmon may be killed incidental to the terminal fishery in the Little Salmon River.

For planning purposes, the Department typically applies up to 50% of the ESA incidental mortality impacts to sport harvest to allow for tribal impacts of at least 50%, however, annual fishery implementation will follow the guidelines outlined in section 3.5 of this FMEP.

Table 3a. Permit 1481 sliding scale for IDFG recreational fishing impacts on natural adult spring/summer Chinook in the Snake River Basin (excluding the South Fork Salmon River) compared to pooled minimum abundance thresholds (MATs) above Lower Granite Dam. An additional 8 incidental mortalities are allowed in the Little Salmon River at all run-sizes.

Lower Granite Dam Predicted Return of Naturally Produced Listed Spring/Summer Chinook	Proposed Maximum Percent of Naturally Produced Run Mortality for IDFG Recreational Fishery	Range of Potential Incidental Mortalities (number of fish)	Estimated Total Take (catch and release)	Lower bound as % pooled MAT above LGR (26,500)
<4,000*	0%	0	0	0%
4,001 to 6,400	0.25%	10-16	100-160	15%
6,401 to 14,250	0.5%	32-71	320-710	24%
14,251 to 21,400	0.75%	107-161	1,070-1,610	54%
21,401 to 28,500	1.0%	214-285	2,140-2,850	81%
28,501 to 35,600	1.50%	428-534	4,280-5,340	108%
>35,601	2.0%	>712	>7,120	134%
*At these low run sizes, fisheries are restricted to terminal areas				

Lower Salmon River Mainstem and Little Salmon River

For these fishery management areas, the Department proposes to continue to use the range of incidental mortality impacts defined in Permit 1481 for recreational fisheries with modifications to the sliding scale to better represent natural run size relative to MATs affected by the fisheries. The sum of MATs upstream of Lower Granite Dam is 26,500 and the sum of QETs is 1,700 (Table 2b), including the unlisted Clearwater River spring/summer Chinook populations' estimated MAT sum (4,500) and QET sum (300). The sum of MATs for the Salmon River Basin affected by fisheries in these management areas is 16,750 and the sum of QETs is 1,100 (Table 2b). The Department's proposed incidental mortality sliding scale for mainstem fisheries (Lower Salmon River) based on pooled MATs is shown in Table 3b. The Department proposes to continue the provision for an additional 8 incidental mortalities at all run sizes within the Little Salmon River targeting Rapid River Hatchery returns, consistent with Permit 1481 because of high proportions of Rapid River hatchery returns. This provides managers an opportunity to use harvest as the management tool to remove additional hatchery-origin fish in this system, which is predominately driven by hatchery-origin returns. If incidental mortality exceeds 8 natural adults in the Little Salmon River fishery in a year, any exceedance will be applied against the Lower Salmon mortality schedule.

Table 3b. Proposed sliding scale for IDFG recreational fishing impacts on natural adult spring/summer Chinook in the Lower Salmon River Basin (mainstem Lower Salmon and Little Salmon) based on pooled minimum abundance thresholds (MAT). An additional 8 allowable incidental mortalities of natural adult spring/summer Chinook are proposed in the Little Salmon River at all run sizes.

Salmon River Predicted Return of Naturally Produced Listed Spring/Summer Chinook	Proposed Maximum Percent of Naturally Produced Run Mortality for Lower Salmon River Basin Fishery	Range of Potential Incidental Mortalities (number of fish)	Estimated Total Take (catch and release)	Lower bound as % pooled Salmon River MAT (16,750)	Lower bound as % pooled Salmon River QET (1,100)
<2,505*	0%	0	0	--	--
2,513 to 5,024	0.25%	7-13	63-126	15%	228%
5,025 to 8,374	0.5%	25-42	251-419	30%	457%
8,375 to 12,562	0.75%	63-94	628-942	50%	761%
12,563 to 16,749	1.0%	126-168	1,256-1,675	75%	1142%
16,750 to 22,612	1.50%	251-339	2,513-3,392	100%	1523%
>22,613	2.0%	>452	>4,523	135%	2056%
*At these low run sizes, Lower Salmon River Basin fisheries are restricted to the Little Salmon River.					

Mainstem Snake River

In addition to the Department authorized fisheries, the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, and potentially treaty tribes may propose fisheries in the mainstem Snake River between the mouth of the Clearwater River and Hells Canyon Dam. As noted above, fisheries downstream of the major tributaries (Imnaha, Salmon, Grande Ronde) would encounter listed adults bound for all populations upstream of Lower Granite Dam (and Tucannon River strays). In contrast, mainstem Snake River fisheries between Dug Bar (upstream of the Imnaha River) and Hells Canyon Dam would likely intercept only a few natural origin fish from small tributaries in Hells Canyon or possibly strays or "dip in" fish from other populations. Based on co-manager discussions in the Snake Basin Harvest Forum, a conservative allowable mortality schedule is appropriate for the mainstem Snake River below the Imnaha River, whereas fewer constraints appear necessary between Dug Bar and Hells Canyon Dam. The Department proposes for this FMEP an additional 8 incidental mortalities at all run sizes within the Dug Bar to Hells Canyon Dam reach targeting hatchery returns to Hells Canyon Dam, similar to the provision for the Little Salmon River. This provides managers an opportunity to use harvest as the management tool to remove additional hatchery-origin fish in this system, which is predominately driven by hatchery-origin returns. The Department will continue to work within the Snake Basin Harvest Forum to develop an allowable mortality schedule for the mainstem Snake River downstream of the Imnaha River to the Clearwater River.

A comparison of the allowable incidental mortality rate schedule for Idaho recreational fisheries under Permit 1481 and the proposed mainstem mortality schedule is shown in Figure 2a. Allowable mortality rates for the proposed schedule are very similar to that authorized under Permit 1481. The mortality rate schedules are based on the %MAT for the populations affected by each fishery (pooled Salmon River vs. pooled above Lower Granite Dam). The allowable incidental total mortality for Idaho recreational fisheries under Permit 1481 and the proposed mainstem mortality schedule are compared in Figure 2b. The proposed total mortality schedule is slightly more conservative than Permit 1481 across the range of run sizes. Actual take has been less than allowable take under Permit 1481 in all years (Section 2.1.3). The incidental mortality accrued in the Lower Salmon mainstem fishery will be subtracted from the State's allowable mortality in upstream tributary fisheries (South Fork Salmon and Upper Salmon Rivers).

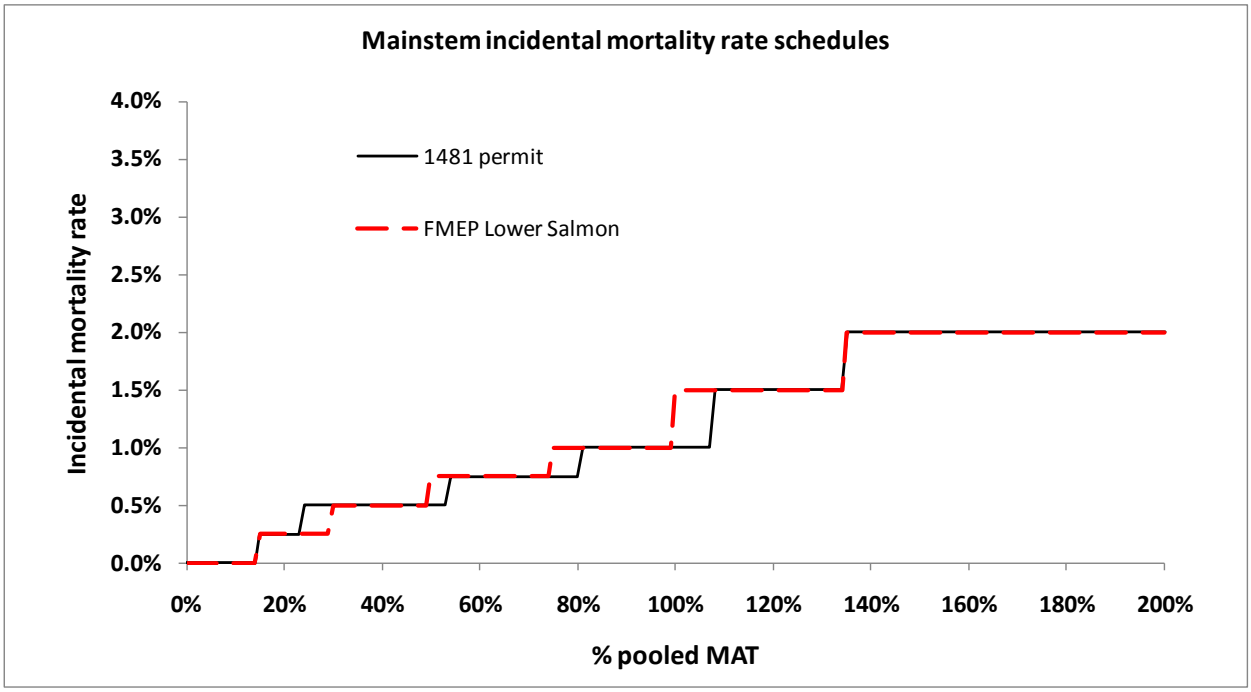

Figure 2a. Comparison of allowable incidental mortality rate of natural adult SRSS Chinook for Department recreational fisheries under Permit 1481 (light solid line) and proposed sliding scale for the mainstem Lower Salmon River fishery.

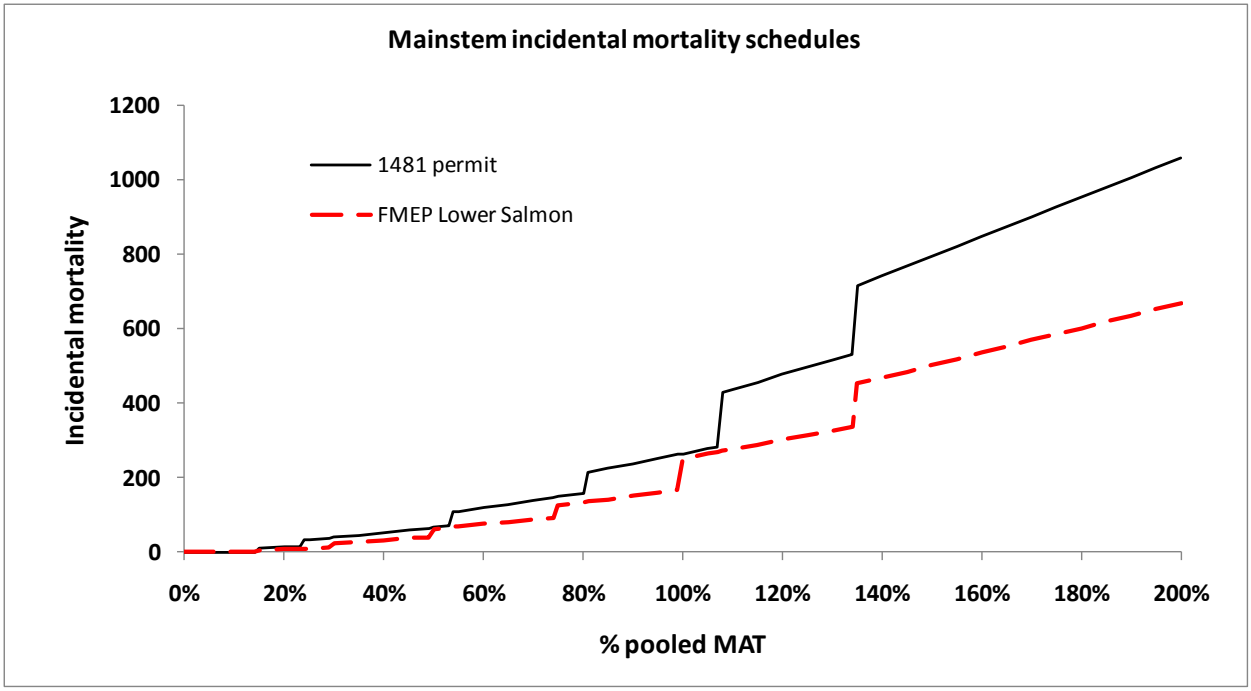

Figure 2b. Comparison of allowable total incidental mortality of natural adult SRSS Chinook for Department recreational fisheries under Permit 1481 and proposed sliding scale for the mainstem Lower Salmon River fishery.

South Fork Salmon River

The Department has implemented mark-selective retention fisheries on adipose-clipped hatchery summer Chinook raised at McCall hatchery within ESA incidental take and mortality limits in the South Fork Salmon River under the authority of Section 10 Permit 1481. On the South Fork Salmon River, the annual total mortality limits for combined Tribal and non-Tribal fisheries have been determined according to NMFS' 2000 Biological Opinion on Impacts of Treaty Indian and Non-Indian Fisheries in the Snake River Basin. The Department recreational fishery has been operated in compliance with allowable total mortality limits each year, using no more than 50% of allowable total mortality. NMFS (2000) based allowable mortality of natural origin adults in the South Fork Salmon River on sliding scales of abundance for spawners returning to the Stolle Meadows index area (IDFG redd count index area NS-26) and the Poverty Flats index area (NS-28 and NS-29). Recreational fisheries impacts to natural-origin adults destined for NS-27 (stream reach between Poverty Flats and Stolle Meadows) have been dealt with under the general framework of Permit 1481.

The Department proposes for this FMEP to modify the allowable total mortality framework defined in the NMFS 2000 Biological Opinion to be more consistent with current Recovery Planning. The NMFS 2000 framework defined the Stolle Meadows and Poverty Flats spawning areas as independent populations, based on recommendations of the Biological Requirements Workgroup (BRWG 1994), and the thresholds were developed to be consistent with interim survival and recovery thresholds in place at that time. Subsequent Recovery Planning has

defined these two areas as components of two Major Spawning Areas (MaSA) of a single population (SFMAI), consistent with ICTRT (2007). Current Recovery Planning partitions index area NS-27 just downstream of Dollar Creek into the two MaSAs described above.

The Department proposes to manage the South Fork Salmon River fishery using time/area management to target the State's harvest share of South Fork Salmon River hatchery summer Chinook and using an abundance-based sliding scale for allowable total mortality impacts on listed natural populations of SRSS Chinook in the South Fork Salmon River FMA. Proposed allowable total mortality impacts are for Tribal fisheries and the Department's recreational fishery combined.

Boundaries for proposed recreational fisheries may vary depending on adult run size projections of natural and hatchery adults. The sliding scale of allowable total mortality impacts would be applied against the expected aggregate adult run size of natural populations as a percentage of the pooled Minimum Abundance Thresholds (MATs) of affected populations in the recreational fishery. For example, a recreational fishery with a lower boundary at the mouth of the South Fork Salmon River would encounter natural-origin adult Chinook from three populations, with an aggregate MAT sum of 2,750 (Table 4). A recreational fishery with a lower boundary just upstream of the Secesh River would encounter natural-origin adults from SFMAI and SFEFS with an aggregate MAT sum of 2,000. A recreational fishery with a lower boundary just upstream of the East Fork South Fork Salmon River would encounter natural-origin adults from SFMAI with an MAT of 1,000. A recreational fishery with a lower boundary near Goat Creek would encounter natural-origin adults from one MaSA of the SFMAI population.

Table 4. Size categories and minimum abundance thresholds (MAT) proposed for ICTRT for natural populations of SRSS Chinook in the South Fork Salmon FMA, and sum of MATs upstream of alternative lower fishery boundaries.

Upper Salmon River MPG	Population Size Category	Viable Threshold (Minimum Abundance Threshold)	Lower Fishery Boundary	Sum of MATs*
SFMAI	Large	1,000	mouth of SFSR	2,750
SFSEC	Intermed.	750	above Secesh	2,000
SFEFS	Large	1,000	above EFSFSR	1,000
	Total	2,750	below Dollar Cr	500

*2 MaSAs in SFMAI with boundary below Dollar Creek

The South Fork Salmon River Mitigation Hatchery Program (McCall) does not currently have a supplementation component, although hatchery-origin adults spawn below the South Fork Salmon River weir. The last releases of supplementation smolts from the Idaho Supplementation Studies (ISS) were from brood year 2002, which returned 3-ocean adults in 2007. An integrated broodstock program was initiated in 2010, which will return the first 2-ocean supplementation adults in 2014.

Under the current South Fork Salmon River hatchery management, the Department proposes an allowable total (Tribal and non-Tribal) mortality sliding scale similar to the allowable total

mortality impacts proposed for other Snake River Basin tributary fisheries inside and outside Idaho (SBT 2008; NPT 2009; ODFW 2009). The Department commits to using no more than half of the allowable total mortality impacts to access the State's harvest share of hatchery fish, consistent with management under the NMFS 2000 Biological Opinion. The Department will coordinate preseason and inseason with the Tribes and NOAA. Any estimated incidental mortality in Idaho mainstem recreational fisheries of adult salmon destined for the South Fork Salmon River FMA will be subtracted from the expected run-size to the populations in that FMA and from the State's allowable mortality within the FMA.

The proposed framework for allowable total mortality under the current South Fork Salmon River hatchery management strategy, which does not currently return supplementation adults to the SFMAI population, is shown in Table 5a. For an expected run size less than or equal to 30% of the pooled MAT, no recreational fishery would occur within the FMA; Tribes propose a harvest of up to three adult Chinook per population (Table 5a). Allowable total mortality would increase in steps up to 8% for an expected run size between 75% and 108% of the pooled MAT. At expected run sizes greater than 108% pooled MAT, an additional 35% total mortality rate would be allowed on the margin greater than 108% of the pooled MAT. Department recreational fisheries will be managed within the allowable total mortality framework. The Department will develop annual fishing plans to access the State's harvest share of adipose clipped hatchery Chinook based on conducting fisheries within 50% of the allowable total mortality impacts at each step above 30% MAT. The State is not proposing to fish beyond 50% of total mortality impacts.

Table 5a. Proposed allowable total mortality rate (combined Tribal and non-Tribal fisheries), incidental mortality rate for recreational fishery and mortality rate for Tribal fisheries, of spring/summer Chinook in unsupplemented populations, South Fork Salmon River FMA .

% MAT Sum		Allowable Total Mortality Rate	Recreational Fishery Incidental Mortality Rate	Tribal Mortality Rate**
Lower	Upper			
	30%	0%	0%*	--
30.1%	50%	3%	1.5%	1.5%
50.1%	75%	5%	2.5%	2.5%
75.1%	108%	8%	4%	4%
108.1%		35% of margin	17.5% of margin	17.5% of margin

*Below 30% MAT, no recreational mortality impacts requested within Fisheries Management Area.
**Tribal Mortality Rate is actually defined in Tribal Resource Management Plans and is included here for reference.

Some form of integrated hatchery and natural broodstock management is likely in the future for the South Fork Salmon River Mitigation Hatchery Program (McCall) when HGMPs are finalized. Under the HGMPs the Department anticipates a portion of the natural adults returning to the South Fork Salmon River weir will be removed for hatchery broodstock and a portion of

supplementation adults will be passed over the weir to spawn. Supplementation adults would not be adipose clipped but would have other identifying marks or tags (e.g., CWT).

There are harvest framework schedules that apply to natural-origin and supplemented populations. The supplemented population framework will be used under the following circumstances: 1) there has been a juvenile or adult release program designed to supplement natural production; 2) returns from the supplementation program include 4 and 5 year-old fish; and 3) co-managers have the ability to forecast the returning number of fish from the supplementation program.

Under a future supplementation strategy, the Department proposes a modified allowable total (Tribal and non-Tribal) mortality sliding scale. Calculation of allowable total mortality for the SFMAI population would be based on the expected numbers of natural and supplementation adults passed above the weir to spawn plus the expected natural and supplementation adults spawning below the weir.

The proposed framework for allowable total mortality under a future South Fork Salmon River Hatchery supplementation management strategy is shown in Table 5b. The supplementation framework would apply only to those populations with returning supplementation adults. Department recreational fisheries will be managed within the allowable total mortality framework. The Department will develop annual fishing plans to access the State's harvest share of adipose clipped hatchery Chinook based on conducting fisheries within 50% of the allowable total mortality impacts at each step above 30% MAT under the un-supplemented strategy. The planned upper limit of incidental mortality rate in Department recreational fisheries would be the same under the supplementation strategy (Table 5b) as under the un-supplemented strategy (Table 5a), but in the supplementation strategy, the State proposal would use less than 50% of the allowable total. For an expected run size less than or equal to 30% of the pooled MAT, no recreational fishery would occur within the FMA. Allowable total mortality would increase in steps up to 12% for an expected run size between 75% and 108% of the pooled MAT. At expected run sizes greater than 108% pooled MAT, an additional 42% total mortality rate would be allowed on the margin greater than 108% of the MAT. The Department's recreational fisheries would be planned and managed to the same incidental mortality rates as in the case of an un-supplemented strategy for run sizes less than or equal to 108% MAT. For example, under a supplementation strategy and an expected run size of 100% MAT, the Department's planned incidental mortality in recreational fisheries would be no more than 4% of expected run size.

Table 5b.Proposed allowable total mortality rate (combined Tribal and non-Tribal fisheries), incidental mortality rate for recreational fishery and mortality rate for Tribal fisheries, of spring/summer Chinook in populations with returning supplementation adults, South Fork Salmon River FMA.

% MAT Sum		Allowable Total Mortality Rate	Recreational Fishery Incidental Mortality Rate*	Tribal Mortality Rate***
Lower	Upper			
	30%	1%	0%**	1%
30.1%	50%	4%	1.5%	2.5%
50.1%	75%	9%	2.5%	6.5%
75.1%	108%	12%	4%	8%
108.1%		42% of margin	21% of margin	21% of margin

*Recreational fishery is managed to same incidental mortality rates as for unsupplemented populations (up to 108% MAT).
**Below 30% MAT, no recreational mortality impacts requested within Fisheries Management Area.
***Tribal Mortality Rate is actually defined in Tribal Resource Management Plans and is included here for reference.

Upper Salmon River

The Department has implemented mark-selective retention fisheries on adipose-clipped hatchery spring/summer Chinook within ESA incidental take and mortality limits in this management unit (upstream of the Lemhi River) in three years, under the Section 10 Permit 1481. Fishery boundaries have varied to target the State's harvest share of the Pahsimeroi Hatchery summer Chinook (2005), the Sawtooth Hatchery spring Chinook (2008), or both (2009). Depending on the hatchery stock(s) targeted and fishery boundaries (upstream of the North Fork Salmon River), recreational anglers may catch and release SRSS Chinook from one up to 7 populations (Table 1).

The Department proposes to manage the Upper Salmon River fishery using time/area management to target the State's harvest share of Sawtooth Hatchery spring Chinook and Pahsimeroi Hatchery summer Chinook and using an abundance-based sliding scale for allowable total mortality impacts on listed natural populations of SRSS Chinook in the Upper Salmon River FMA. Proposed allowable total mortality impacts are for Tribal fisheries and the Department's recreational fishery combined.

Boundaries for proposed recreational fisheries will vary depending on adult run projections of natural and hatchery adult Chinook. The sliding scale of allowable total mortality impacts would be applied against the expected aggregate adult run size of natural populations as a percentage of the pooled MATs of affected populations in the recreational fishery. For example, a recreational fishery with a lower boundary just upstream of the Middle Fork Salmon River would encounter adult Chinook from 9 populations with an aggregate MAT sum of 7,500 (Table 6). A recreational fishery with a lower boundary just upstream of the Lemhi River would encounter natural-origin adult Chinook from 6 upper Salmon River populations, with an aggregate MAT sum of 5,500 (Table 6). A recreational fishery with a lower boundary just upstream of the East

Fork Salmon River would encounter natural-origin adult Chinook from SRYFS, SRVAL and SRUMA and 2 out of 3 Major Spawning Areas of the SRLMA population, with an aggregate MAT sum of 3,333 (Table 6).

Table 6. Size categories and minimum abundance thresholds (MAT) proposed for ICTRT for natural populations of SRSS Chinook in the Upper Salmon River FMA, and sum of MATs upstream of alternative lower fishery boundaries.

Upper Salmon River MPG	Population Size Category	Viable Threshold (Minimum Abundance Threshold)	Lower Fishery Boundary	Sum of MATs***
SRPAN	Basic	500	above MF Salmon	7,500
SRNFS	Basic	500	above Panther	7,000
SRLEM	Large**	1,000	above North Fork	6,500
SRPAH	Basic**	500	above Lemhi	5,500
SRLMA	Very Large***	2,000	above Pahsimeroi	5,000
SREFS	Large	1,000	above East Fork	3,333
SRYFS	Basic	500	above Yankee Fork	2,167
SRVAL	Basic	500	above Valley Creek	1,000
SRUMA	Large	1,000		
	MPG Total	7,500		

*FMEP MAT for management; IC-TRT classified as extirpated.

**FMEP MAT reduced to account for current IP.

***3 MaSAs in SRLMA upstream of Pahsimeroi, 2 MaSAs upstream of East Fork Salmon River, 1 MaSA upstream of Yankee Fork

Sawtooth Hatchery and Pahsimeroi Hatchery do not currently have a supplementation component, although hatchery-origin adults spawn below the Sawtooth Hatchery weir. The last releases of supplementation smolts from the Idaho Supplementation Studies (ISS) for both populations were from brood year 2002, which returned 3-ocean adults in 2007. An integrated broodstock program was initiated in 2010, which will return the first 2-ocean adults in 2014.

Under the current hatchery management for Sawtooth and Pahsimeroi, the Department proposes an allowable total (Tribal and non-Tribal) mortality sliding scale similar to the allowable total mortality impacts proposed for other Snake River Basin tributary fisheries inside and outside Idaho (SBT 2008; NPT 2009; ODFW 2009). The Department commits to using no more than half of the total mortality impacts to access the State's harvest share of hatchery fish. The Department will coordinate preseason and inseason with the Tribes and NOAA. Any estimated incidental mortality in Idaho mainstem recreational fisheries of adult salmon destined for the Upper Salmon River FMA will be subtracted from the expected run-size to the populations in that FMA and from the State's allowable mortality within the FMA.

The proposed framework for allowable total mortality under the current Sawtooth and Pahsimeroi Hatchery management strategy, which do not currently return supplementation adults

to the SRUMA and SRPAH populations, is shown in Table 7a. For an expected run size less than or equal to 30% of the pooled MAT, no recreational fishery would occur within the FMA; Tribes propose a harvest of up to three adult Chinook per population (Table 7a). Allowable total mortality would increase in steps up to 8% for an expected run size between 75% and 108% of the pooled MAT. At expected run sizes greater than 108% pooled MAT, an additional 35% total mortality rate would be allowed on the margin greater than 108% of the pooled MAT. Department recreational fisheries will be managed within the allowable total mortality framework. The Department will develop annual fishing plans to access the State's harvest share of adipose clipped hatchery Chinook based on conducting fisheries within 50% of the allowable total mortality impacts at each step above 30% MAT. The State is not proposing to fish beyond 50% of the total mortality impacts.

Table 7a. Proposed allowable total mortality rate (combined Tribal and non-Tribal fisheries), incidental mortality rate for recreational fishery and mortality rate for Tribal fisheries, of spring/summer Chinook in unsupplemented populations, Upper Salmon River FMA .

% MAT Sum		Allowable Total Mortality Rate	Recreational Fishery Incidental Mortality Rate	Tribal Mortality Rate**
Lower	Upper			
	30%	0%	0%*	--*
30.1%	50%	3%	1.5%	1.5%
50.1%	75%	5%	2.5%	2.5%
75.1%	108%	8%	4%	4%
108.1%		35% of margin	17.5% of margin	17.5% of margin

*Below 30% MAT, no recreational mortality impacts allowed within Fisheries Management Area.
**Tribal Mortality Rate is actually defined in Tribal Resource Management Plans and is included here for reference.

Some form of integrated hatchery and natural broodstock management is likely in the future for Pahsimeroi and Sawtooth hatcheries (and likely also for the Yankee Fork program) when HGMPs are finalized. Under the HGMPs the Department anticipates a portion of the natural adults returning to the Pahsimeroi and Sawtooth hatchery (and Yankee Fork) weirs will be removed for hatchery broodstock and a portion of supplementation adults will be passed over the weirs to spawn. Supplementation adults would not be adipose clipped but would have other identifying marks or tags (e.g., CWT).

There are harvest framework schedules that apply to natural-origin and supplemented populations. The supplemented population framework will be used under the following circumstances: 1) there has been a juvenile or adult release program designed to supplement natural production; 2) returns from the supplementation program include 4 and 5 year-old fish; and 3) co-managers have the ability to forecast the returning number of fish from the supplementation program.

Under a future supplementation strategy, the Department proposes a modified allowable total mortality sliding scale. Calculation of allowable total mortality for the SRPAH and SRUMA (and likely SRYFS) populations would be based on the expected numbers of natural and supplementation adults passed above the respective weirs to spawn plus the expected natural and supplementation adults spawning below the respective weirs.

The proposed framework for allowable total mortality under a future Sawtooth and Pahsimeroi Hatchery supplementation management strategy is shown in Table 7b. The supplementation framework would apply only to those populations with returning supplementation adults. Department recreational fisheries will be managed within the allowable total mortality framework. The Department will develop annual fishing plans to access the State's harvest share of adipose clipped hatchery Chinook based on conducting fisheries within of the allowable total mortality impacts at each step above 30% MAT under the un-supplemented strategy. The planned upper limit of incidental mortality in Department recreational fisheries would be the same under the supplementation strategy (Table 7a) as under the un-supplemented strategy (Table 7a), but in the supplementation strategy, the State proposal would use less than 50% of the allowable total. For an expected run size less than or equal to 30% of the pooled MAT, no recreational fishery would occur within the FMA. Allowable total mortality would increase in steps up to 12% for an expected run size between 75% and 108% of the pooled MAT. At expected run sizes greater than 108% pooled MAT, an additional 35% total mortality rate would be allowed on the margin greater than 108% of the MAT. The Department's recreational fisheries would be planned and managed to the same incidental mortality rates as in the case of an un-supplemented strategy for run sizes less than or equal to 108% MAT. For example, under a supplementation strategy and an expected run size of 100% MAT, the Department's planned incidental mortality in recreational fisheries would be no more than 4% of expected run size.

Table 7b. Proposed allowable total mortality rate (combined Tribal and non-Tribal fisheries), incidental mortality rate for recreational fishery and mortality rate for Tribal fisheries, of spring/summer Chinook in populations with returning supplementation adults, upper Salmon River FMA.

% MAT Sum		Allowable Total Mortality Rate	Recreational Fishery Incidental Mortality Rate*	Tribal Mortality Rate***
Lower	Upper			
	30%	1%	0%**	1%
30.1%	50%	4%	1.5%	2.5%
50.1%	75%	9%	2.5%	6.5%
75.1%	108%	12%	4%	8%
108.1%		42% of margin	21% of margin	21% of margin

*Recreational fishery is managed to same incidental mortality rates as for unsupplemented populations (up to 108% MAT).

**Below 30% MAT, no recreational mortality impacts allowed within Fisheries Management Area.

***Tribal Mortality Rate is actually defined in Tribal Resource Management Plans and is included here for reference.

Incidental mortality of Snake River sockeye from catch and release of sockeye in Department recreational Chinook fisheries is expected to be very low. A small number of anadromous (one-salt and older) sockeye encounters may occur in recreational fisheries in the Upper Salmon FMA. The Department proposes an allowable incidental mortality of one anadromous sockeye in all Department spring/summer Chinook fisheries for the expected sockeye spawner abundance (natural and supplementation spawners combined) of up to 30% of the pooled MAT for extant sockeye populations, from the catch and release of up to 10 anadromous sockeye (at 10% catch and release mortality). The 30% MAT sum criterion for Redfish, Alturas and Pettit Lakes combined is 750 (see Section 1.3.2). Larger allowable incidental mortality limits would be appropriate as the sockeye hatchery program expands and populations are rebuilt, and may be proposed as a future modification to this FMEP.

Incidental mortality of adult SR steelhead and SR fall Chinook is expected to be zero or very low in all recreational spring/summer Chinook recreational fisheries for all FMAs, including the Clearwater River. Department recreational spring/summer Chinook fisheries close when harvest share objectives have been met or ESA take becomes constraining, but no later than August 10 (Section 1.2.2); generally, no SR fall Chinook and few SR steelhead adults have entered Idaho waters by early August. The prohibition of harvest on adipose-intact Chinook and steelhead further reduces the possibility of incidental mortality of natural and supplementation adults. No incidental encounters of SR steelhead and fall Chinook have been reported in the Department's spring/summer Chinook harvest monitoring program.

1.4.2) Description of how the fisheries will be managed to conserve the weakest population or management unit.

Department proposed fisheries target adipose-clipped hatchery populations in excess of broodstock needs, consistent with Congressionally-mandated mitigation goals of the federal and private (Idaho Power Company) hatcheries, Treaty and non-Treaty harvest sharing and ESA limitations on allowable incidental mortality of natural origin SRSS Chinook.

The incidental mortality of ESA listed SRSS Chinook in Department proposed fisheries is based on a sliding scale for each management unit, wherein the allowable incidental mortality rate is very conservative for small run sizes of natural-origin SRSS Chinook and less restrictive as run sizes increase (see 1.4.1). At critically low natural-origin run-sizes (<30% of pooled MAT), the Lower Salmon River mainstem fishery will be very conservative allowing only 0.25% incidental mortality impact (<20 mortalities). No Department tributary fisheries will be proposed at critically low run sizes (<30% of pooled MAT) except in the Little Salmon River targeting Rapid River hatchery Chinook. For example in the Upper Salmon River FMA, with a lower fishery boundary upstream of the Lemhi River, anglers would catch and release natural SRSS Chinook from 6 populations. The proposed sliding scale would not allow any non-Tribal impacts within the FMA until expected escapement exceeds 30% of the pooled MAT for these populations (1,650). Similarly, for the South Fork Salmon River FMA, with a lower fishery boundary at the mouth of the South Fork Salmon River, anglers would catch and release natural SRSS Chinook from 3 populations. The proposed sliding scale would not allow any non-Tribal impacts within the FMA until expected escapement exceeds 30% of the pooled MAT for these populations (825).

The proposed incidental mortality sliding scale in mainstem fishery management areas that intercept multiple ESA-listed MPGs and populations is more conservative ($\leq$ 2% maximum incidental mortality rate in Lower Salmon River) than sliding scales in the terminal FMAs (South Fork Salmon River, Upper Salmon River) that catch natural fish from fewer populations and a single MPG. This framework reduces incidental mortality impacts in the mixed stock FMAs. When Department fisheries are implemented in terminal FMAs, estimated incidental mortality in Department mainstem Salmon River fisheries of fish destined for the FMAs will be subtracted from the Department's share of the allowable total mortality in the terminal FMAs. This integration ensures that the average mortality for populations outside of tributary recreational FMAs would be capped at the allowable mainstem mortality rate ($\leq$2%), and that average mortality of populations within tributary recreational FMAs would be capped at the tributary allowable mortality rate.

Encounters of sockeye in Department recreational spring/summer Chinook fisheries are expected to be rare, and will be monitored through creel surveys and reported inseason to NOAA. The Department proposes to discontinue adipose-clipping of sockeye hatchery smolts, thus ensuring that an angler would not mistakenly keep an adipose-clipped sockeye in the Chinook fisheries.

1.4.3) Demonstrate that the harvest regime is consistent with the conservation and recovery of commingled natural-origin populations in areas where artificially propagated fish predominate.

Department fishing rules state that only hatchery salmon with a clipped adipose fin (as evidenced by a healed scar) may be kept. All salmon with an intact adipose fin must be released back to the water. Proposed allowable mortality rates for Department fisheries are based on sliding scales that are very conservative at low escapements for each management unit (see 1.4.2).

Harvest of adipose-clipped hatchery SRSS Chinook also removes potential hatchery spawners from natural spawning areas; high fractions of hatchery spawners can pose risks to diversity and long-term productivity in the receiving populations (ICTRT 2007). HGMPs are currently under development for Idaho's hatcheries, and will address HRT and HSRG recommendations for integrated hatcheries and managing the proportion of hatchery spawners in natural populations within acceptable levels. Harvest is one tool to manage for an acceptable proportion of hatchery spawners, as well as fulfilling the mandates of the mitigation hatcheries.

1.5) Annual Implementation of the Fisheries

The Department anticipates an implementation framework similar to that previously used under Section 10 Permit 1481. Permit 1481 required fishery proposals to be submitted to NOAA Fisheries for approval under the ESA (e.g., IDFG 2010), and annual reporting of actual harvest of adipose-clipped hatchery adult SRSS Chinook and estimates of incidental mortality of ESA listed SRSS Chinook (e.g., Petrosky 2010). Permit 1481 described the annual approval process as:

> **Anadromous Salmon Fishing Regulations**:
> "These fisheries are subject to annual approval by the Regional Administrator, NMFS-Northwest Region, in the Northwest Region based on projected returns of listed and non-listed, hatchery produced adult salmon to the respective watershed (see Operational Reports and Notification Requirement D.1.). In any year that a Chinook salmon fishery is approved by NMFS, the specifics of the fishery, including season dates, duration, locations, and mitigative activities will be tailored to provide the appropriate level of protection for ESA-listed fish in the watershed. Annual incidental take caps will be determined based on the sliding scale described below in Section A. The fishery will be terminated when quotas are achieved, the authorized mortality level of ESA-listed adult fish is reached, or August 7, whichever occurs first. NMFS-Northwest Region will review the predicted return of non-listed, hatchery-produced, adult salmon as well as the predicted return of ESA-listed hatchery and naturally-produced salmon, the proposed fishing regulations, and incidental take quotas. The IDFG fishery, in conjunction with other fisheries proposed by treaty tribes, must be in compliance with total incidental take limits and harvest sharing agreements for that year."

The Idaho Fish and Game Commission has the authority to set fishing seasons and regulations. Department staff develops season and regulation proposals for Commission consideration based on preseason run size projections of hatchery and natural-origin fish, consistent with meeting hatchery brood stock needs, Tribal/non-Tribal harvest sharing, and ESA requirements. Regulations may change in-season based on updated run-size projections of hatchery and natural runs; seasons may be closed by the Director as necessary. Coordination on fishing proposals, seasons, rules, harvest and ESA take occurs pre-season and in-season with NOAA Fisheries, the Nez Perce Tribe and Shoshone-Bannock Tribes, and other agencies.

SECTION 2. EFFECTS ON ESA-LISTED SALMONIDS

2.1) Description of the biologically-based rationale demonstrating that the fisheries management strategies will not appreciably reduce the likelihood of survival and recovery of the affected ESU(s) in the wild.

Abundance, survival and productivity of SRSS Chinook populations have declined since FCRPS development in the 1970s (Schaller et al. 1999). Most of the survival rate and productivity declines observed in SRSS Chinook since FCRPS development occurred in the smolt-to-adult return (SAR) life stage (Petrosky et al. 2001; Wilson 2003) due largely to a combination of FCRPS impacts and ocean/climatic conditions (Schaller et al. 1999; Deriso et al. 2001, Budy et al 2002; Budy and Schaller 2007; Schaller and Petrosky 2007; Petrosky and Schaller 2010). SARs of natural-origin SRSS Chinook have recently averaged about 1%, ranging from 0.4% to 2.5% (Schaller et al. 2007). Population dynamics of SRSS Chinook populations are driven largely by SARs (out-of-basin factors), and both survival rates and recruitment are correlated among SRSS Chinook natural populations (Schaller et al. 1999; Botsford and Paulsen 2000), as well as among Snake and Columbia River stream-type Chinook populations generally (Deriso et al. 2001; Schaller and Petrosky 2007). SARs are also highly correlated between hatchery and natural-origin SRSS Chinook (Schaller et al. 2007). Therefore, years with large harvest opportunity of hatchery runs tend to have relatively higher abundance of natural-origin SRSS Chinook.

The Department's FMEP recreational fishery management strategies are very conservative when escapements of ESA-listed natural Chinook populations are very low, and allow more mortality impacts at higher escapements. Fishery impacts are not a primary limiting factor for SRSS Chinook abundance and productivity; however, recreational fishery incidental mortality impacts should not appreciably reduce the likelihood of survival and recovery of the affected ESU(s) as efforts are made to improve survival through actions in the other "H's" (hydro, habitat, hatcheries) and in other fisheries. The incidental mortality sliding scale affecting multiple MPGs in the Lower Salmon River allows only 0% to 2% impact on the overall natural run destined for the Salmon River; this is very similar to the scale in Permit 1481, which has previously undergone consultation. The within-MPG allowable total mortality sliding scales proposed for the South Fork Salmon and Upper Salmon MPG are similar in impact rate to that covered in the NMFS (2000) Biological Opinion for the South Fork Salmon. We evaluated the likely response on adult salmon abundance and productivity (observed recruits/spawner) of the FMEP sliding scales for allowable total mortality for fisheries within an MPG.

We modeled the likely effect of the FMEP on adult Chinook spawner abundance and productivity for two populations when subjected to a within-MPG sliding scale for allowable total mortality. Productivity (R/S) is defined here as adult recruits to the spawning grounds per adult spawner. Although the two populations (Marsh and Bear Valley creeks) would not be affected by a within-MPG terminal recreational fishery under this FMEP, they were chosen for

modeling purposes because of relative confidence in the estimates of S and R/S and availability of documented recruitment functions (Schaller and Petrosky 2007) established across a wide range of S. The S and R/S observations for these populations also have not been complicated by hatchery operations. Using the empirical time series of S and R/S in simulating effects of the FMEP also captures the patterns of correlated annual survival rates between populations within this MPG. Data for the two populations Marsh Creek (basic size) and Bear Valley Creek (intermediate size) were developed by Beamesderfer et al. (1997), Schaller et al. (1999), Schaller and Petrosky (2007), ICTRT (2007) and IDFG (unpublished). The time frame, 1980-2007, was selected to be consistent with the Recovery Planning base period (ICTRT 2007). Base model S and R/S were compared to that which would have occurred if the populations were subjected to the FMEP levels of total mortality proposed for the South Fork Salmon River and the upper Salmon River MPGs.

The first step in the simulations was to generate a base model of S and R/S for the two populations, given the observed data and a simplified (constant) brood year age structure. This step was needed to directly compare the population response when implementing an allowable total mortality schedule. The base model with an assumed constant age structure of 33% age-4 and 67% age-5 adult spawners, combined with the observed R/S, mimicked reasonably well the historical picture of observed abundance for both populations (Fig. 3).

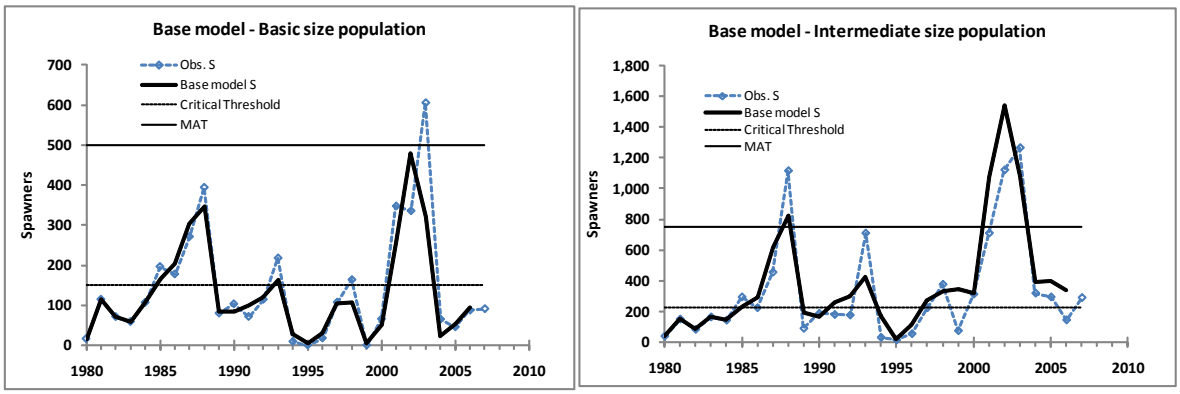

Figure 3. Observed adult spawner abundance (Obs. S) for basic size population (Marsh Creek data set) and intermediate size population (Bear Valley Creek data set), and simulated spawner abundance (Base model S) using constant age structure, 1980-2007.

We then applied the FMEP sliding scale total mortality (Section 1.4.1) to the base model for the two populations individually to simulate likely effects when a single population is subjected to the FMEP sliding scale. The FMEP total mortality sliding scale includes the SBT TRMP proposed tribal harvest of up to 3 fish from a population with expected abundance less than 30% MAT, which we modeled for simplicity as a flat 2% mortality rate. The sliding scale mortality schedule was applied beginning in year 6, and the resulting S and R/S was projected ahead 22 years. Viable thresholds were 500 for the basic-size population and 750 for the intermediate-size population. The expected S was reduced by the allowable total mortality and the R/S was adjusted to account for density dependent compensation from the reduced S. We used the Ricker "*a*" and "*B*" parameters (post-1974) from Schaller and Petrosky (2007): for Marsh Creek, *a* =

0.856 and B = -0.0029, and for Bear Valley Creek, a = 1.211 and B = -0.0016. Thus, estimated number of spawners at maximum production (dome of Ricker curve, 1/-B) for Marsh and Bear Valley creeks was 348 and 677, respectively; estimated (post-1974) replacement (a/-B) was 298 and 754, respectively.

Effects on spawner abundance (S) and productivity (R/S) from independently simulating the FMEP sliding scale on the two populations were small (Table 8). The simulated geometric mean run size (pre-fishery impact) for 1985-2006 for the basic population was 80 (16.1% MAT), and ranged from 4 to 440 (0.8% to 88.0% of MAT). The average total mortality rate in the simulation for the basic size population was 2.9% (range 2.0% to 8.0). The geometric mean S was reduced by five adult spawners from the base case (80) to the FMEP simulation (75) for the basic-size population, and geometric mean R/S increased slightly (from 0.820 to 0.823) due to relaxed density dependence. The simulated geometric mean run size (pre-fishery impact) for 1985-2006 for the intermediate population was 307 (40.9% MAT), and ranged from 22 to 1,403 (4.3% to 281% of MAT). The average total mortality rate in the simulation for the intermediate size population was 5.0% (range 2.0% to 19.4%), based on 1985-2006 spawner abundance estimates. The geometric mean S was reduced by 21 adult spawners from the base case (262) to the FMEP simulation (241) for the intermediate population, and geometric mean R/S increased slightly (from 1.205 to 1.246) due to relaxed density dependence.

Table 8. Base model spawner abundance and R/S, FMEP spawner abundance and R/S and Tribal and Non-Tribal total mortality, modeling FMEP sliding scale for basic and intermediate size populations independently.

	Basic Population					Intermediate Population				
Brood year	Base model S	Base model R/S	FMEP Total Mortality	FMEP S	FMEP R/S	Base model S	Base model R/S	FMEP Total Mortality	FMEP S	FMEP R/S
1980	16	9.33	--	16	9.33	40	5.58	--	40	5.58
1981	115	1.71	--	115	1.71	151	1.70	--	151	1.70
1982	71	3.07	--	71	3.07	84	4.39	--	84	4.39
1983	59	8.08	--	59	8.08	165	6.78	--	165	6.78
1984	107	0.84	--	107	0.84	144	1.62	--	144	1.62
1985	165	0.42	5	160	0.42	236	0.45	7	229	0.44
1986	203	0.57	6	197	0.56	294	0.99	9	285	0.97
1987	303	0.23	15	288	0.23	616	0.31	49	567	0.31
1988	347	0.65	17	330	0.65	825	0.62	70	755	0.63
1989	83	0.49	2	81	0.48	191	1.33	4	186	1.31
1990	85	0.03	2	79	0.03	167	0.12	3	156	0.12
1991	100	0.08	2	94	0.08	259	0.12	7	237	0.12
1992	121	0.66	2	112	0.66	298	0.96	8	268	0.98
1993	164	0.94	3	151	0.95	425	0.60	20	380	0.61
1994	28	0.29	1	26	0.29	177	2.73	3	166	2.72
1995	4	0.76	0	4	0.74	23	2.98	0	21	2.93
1996	31	4.66	1	29	4.61	115	7.09	2	104	7.08
1997	104	4.62	2	95	4.64	276	5.78	8	245	5.89
1998	106	4.51	2	96	4.54	330	4.37	9	296	4.47
1999	7	0.76	0	6	0.74	345	1.05	10	313	1.07
2000	51	1.15	1	45	1.15	316	1.44	9	275	1.49
2001	257	0.16	6	227	0.17	1,074	0.26	120	848	0.33
2002	480	0.42	32	405	0.47	1,543	0.30	272	1131	0.47
2003	322	--	13	280	--	1,084	--	130	867	--
2004	23	--	0	20	--	392	--	11	349	--
2005	53	--	1	46	--	398	--	11	356	--
2006	94	--	1	88	--	342	--	11	352	--
Geomean	80	0.820	2	75	0.823	262	1.205	12	241	1.246

We then applied the FMEP sliding scale for allowable total mortality (Section 1.4.1) to the base model for the two populations jointly to simulate likely effects when multiple populations are subjected to the FMEP sliding scale for pooled populations. The expected S for each population was reduced by the pooled allowable incidental mortality and the R/S was adjusted to account for density dependent compensation from the reduced S. We used the same production function parameters described above.

Effects on spawner abundance (S) and productivity (R/S) from jointly simulating the FMEP total mortality sliding scale on two populations were again small (Table 9). The simulated geometric mean run size (pre-fishery impact) for 1985-2006 for the combined populations was 410 (32.8% of MAT sum), and ranged from 26 to 1,862 (2.1% to 149% of MAT sum). The average total mortality rate for both populations in this simulation was 4.0% (range 2.0% to 15.4%). The geometric mean S was reduced by seven adult spawners from the base case (80) to the FMEP simulation (73) for the basic-size population, and geometric mean R/S increased slightly (from 0.820 to 0.825). The geometric mean S was reduced by 18 adult spawners from the base case (262) to the FMEP simulation (244) for the intermediate-size population, and geometric mean R/S increased slightly (from 1.205 to 1.239). For both populations the modest spawner reductions occurred primarily at the larger escapements approaching MAT or higher (Table 9; Figure 4). The slight increases in R/S occurred despite the simulated fishery removal of some potential spawners (Table 9; Figure 4) because of relaxed density dependence.

As noted above, population dynamics of SRSS Chinook are driven primarily by factors outside the Snake River basin, especially in the FCRPS and ocean/climatic conditions. Modeled effects of the FMEP total mortality sliding scale on overall patterns of S and R/S were small whether applied independently or jointly to the two populations. Reductions in S due to FMEP total mortality were offset to some extent by increases in R/S. Both sets of simulations indicate that the FMEP sliding scale for total mortality had a small effect on abundance and productivity of the natural populations within an MPG, and therefore will not likely appreciably reduce the survival and recovery of the affected ESU.

Table 9. Base model spawner abundance and R/S, FMEP spawner abundance and R/S and Tribal and Non-Tribal total mortality, modeling FMEP sliding scale for basic and intermediate size populations jointly.

	Basic Population					Intermediate Population				
Brood year	Base model S	Base model R/S	FMEP Total Mortality	FMEP S	FMEP R/S	Base model S	Base model R/S	FMEP Total Mortality	FMEP S	FMEP R/S
1980	16	9.33	--	16	9.33	40	5.58	--	40	5.58
1981	115	1.71	--	115	1.71	151	1.70	--	151	1.70
1982	71	3.07	--	71	3.07	84	4.39	--	84	4.39
1983	59	8.08	--	59	8.08	165	6.78	--	165	6.78
1984	107	0.84	--	107	0.84	144	1.62	--	144	1.62
1985	165	0.42	5	160	0.42	236	0.45	7	229	0.44
1986	203	0.57	6	197	0.56	294	0.99	9	285	0.97
1987	303	0.23	15	288	0.23	616	0.31	31	585	0.31
1988	347	0.65	28	320	0.65	825	0.62	66	759	0.63
1989	83	0.49	2	81	0.48	191	1.33	4	186	1.31
1990	85	0.03	2	79	0.03	167	0.12	3	156	0.12
1991	100	0.08	2	94	0.08	259	0.12	5	242	0.12
1992	121	0.66	3	108	0.66	298	0.96	8	273	0.97
1993	164	0.94	5	147	0.96	425	0.60	12	390	0.62
1994	28	0.29	1	26	0.29	177	2.73	3	166	2.72
1995	4	0.76	0	4	0.74	23	2.98	0	21	2.93
1996	31	4.66	1	28	4.62	115	7.09	2	105	7.07
1997	104	4.62	2	93	4.68	276	5.78	5	251	5.89
1998	106	4.51	3	94	4.53	330	4.37	9	300	4.44
1999	7	0.76	0	6	0.74	345	1.05	6	316	1.08
2000	51	1.15	1	43	1.14	316	1.44	9	278	1.48
2001	257	0.16	18	211	0.17	1,074	0.26	79	906	0.32
2002	480	0.42	66	364	0.49	1,543	0.30	221	1211	0.43
2003	322	--	23	263	--	1,084	--	80	925	--
2004	23	--	1	19	--	392	--	11	353	--
2005	53	--	1	44	--	398	--	11	360	--
2006	94	--	2	81	--	342	--	11	354	--
Geomean	80	0.820	3	73	0.825	262	1.205	10	244	1.239

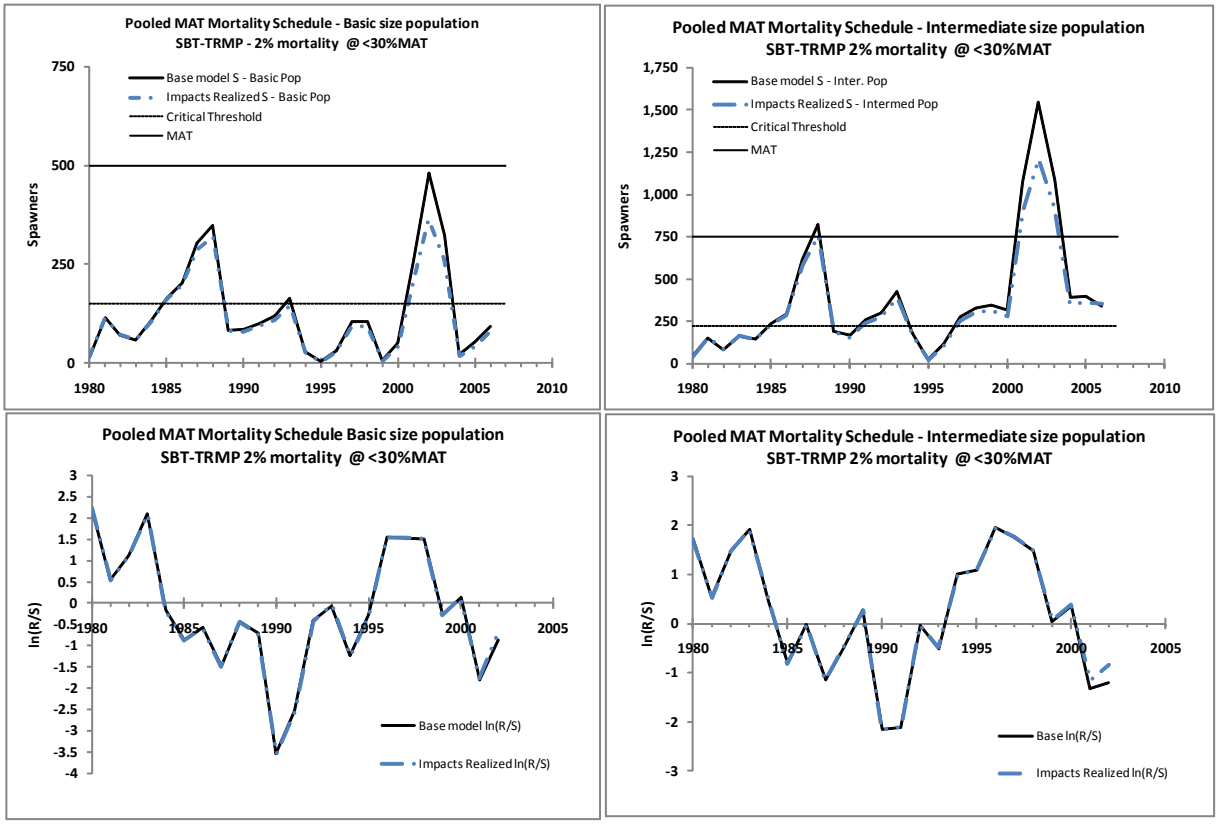

Figure 4. Base model and realized spawner abundance and productivity (ln(R/S) from jointly modeling FMEP total mortality sliding scales for basic and intermediate size populations.

2.1.1) Description of which fisheries affect each population (or management unit).

SRSS Chinook populations which may be affected by fisheries in each of the FMAs are identified in Table 10 (also see Section 1.3). Depending on fishery timing, fishery boundaries and run timing of the natural populations, fisheries may actually encounter fewer of the populations than identified below.

Table 10. SRSS Chinook populations potentially affected by recreational fisheries targeting adipose-clipped hatchery Chinook in seven fishery management areas.

MPG, Population	Clearwater R	Mainstem Snake R below Imnaha R	Mainstem Snake R above Imnaha R	Lower Salmon R	Little Salmon R	South Fork Salmon R	Upper Salmon R
Lower Snake MPG							
Tucannon River		X					
Grande Ronde/Imnaha MPG							
Wenaha R.		X					
Lostine/Wallowa R.		X					
Minam R.		X					
Catherine Cr.		X					
Upper Grande Ronde R.		X					
Imnaha R. Mainstem		X					
South Fork Salmon MPG							
Little Salmon R.		X		X	X		
South Fork Mainstem		X		X		X	
Secesh R.		X		X		X	
East Fk/Johnson Cr.		X		X		X	
Middle Fork Salmon MPG							
Chamberlain Cr.		X		X			
Big Cr.		X		X			
Lower Mainstem MF		X		X			
Loon Cr.		X		X			
Camas Cr.		X		X			
Upper Mainstem MF		X		X			
Sulphur Cr.		X		X			
Marsh Cr.		X		X			
Bear Valley Cr.		X		X			
Upper Salmon MPG							
Panther Cr.		X		X			X
North Fork Salmon R.		X		X			X
Lemhi R.		X		X			X
Pahsimeroi R.		X		X			X
Lower Mainstem		X		X			X
Upper Salmon East Fk		X		X			X
Yankee Fork		X		X			X
Valley Cr.		X		X			X
Upper Salmon Mainstem		X		X			X

2.1.2) Assessment of how the harvest regime will not likely result in changes to the biological characteristics of the affected ESUs.

Mortality from the proposed FMEP would pose low to very low risk to selective change in natural process or selective impacts to biological characteristics of the affected ESU. Selectivity

would occur if an activity resulted in greater mortality on certain segment(s) of a population than others (e.g., early adult run timing, larger sizes, older ages), and if selection intensity and/or heritability of the trait is high (ICTRT 2007). Total mortality under the proposed FMEP is low and not directed at any particular age or size of the run. The Recovery Planning Status Assessments (http://www.idahosalmonrecovery.net) rated the overall effect of all harvest (including Columbia River) and incidental mortality from catch and release (e.g., this proposed FMEP) fisheries as low risk for selectivity.

2.1.3) Comparison of harvest impacts in previous years and the harvest impacts anticipated to occur under the harvest regime in this FMEP.

There is no directed harvest on natural origin SRSS Chinook in Department recreational fisheries. Incidental mortality varies as a function of harvestable adipose-clipped hatchery fish and encounters of natural-origin SRSS Chinook in the fishing areas. Estimated incidental mortality of natural-origin adult SRSS Chinook (not adjusted for mis-clipped hatchery fish) encountered in Idaho recreational fisheries (excluding the South Fork Salmon River) in previous years are shown in Table 11.

Table 11. Estimated incidental mortality of natural spring/summer Chinook salmon encountered by non-tribal spring fisheries (not adjusted for misclips), 2001 through 2009.

Fishery	2001	2002	2003	2004	2005	2006	2007	2008	2009
Upper Snake [1]	1	1	1	1	1	1	1	6	3
Lower Snake	n/a	13	n/a	6	n/a	n/a	n/a	n/a	n/a
Lower Salmon thru about Jun 20	48	17	35	23	11	34	6	16	16
Lower Salmon After about Jun 20	n/a	n/a	n/a	16	n/a	n/a	n/a	n/a	4
Little Salmon	12	16	18	9	10	6	10	8	5
Upper Salmon - Lemhi Pahsimeroi	n/a	n/a	n/a	n/a	7	n/a	n/a	n/a	9
Upper Salmon – Below Sawtooth	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15	54

1/ Prior to 2008 the upper Snake Riuver fishery was not monitored, and incidental mortality was assumed to be very low (1). In 2008, IDFG personnel initiated an access point and roving creel sampling program to estimate effort, harvest, and encounters of un-clipped fish in the fishery

Permit 1481 allowable incidental mortality rate for Idaho recreational fisheries (excluding the South Fork Salmon River) ranges from 0% to 2% depending on run-size (Section 1.4.1). At all run sizes, an additional 8 naturally produced Snake River spring/summer Chinook salmon may be killed incidental to the terminal fishery in the Little Salmon River. The Department has

successfully managed these fisheries to remain under the allowable impacts across a wide range of natural adult Chinook salmon run-sizes (6,903 – 44,572). Estimated annual mortality ranged from 11 to 71 (excluding 8 impacts in the Little Salmon River and including impacts in the South Fork Salmon River section NS-27) (Table 12). We estimate that implementation of recreational fisheries used from 6% to 85% of the annual allowable incidental mortalities during 2001-2009.

Table 12. Lower Granite natural-origin run size of SRSS Chinook, Permit 1481 allowable mortality for Idaho recreational fisheries (excluding the South Fork Salmon River), estimated mortality and % of allowable mortality, 2001-2009. Estimates not adjusted for misclips.

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Lower Granite run-size	44,572	29,872	32,080	20,967	9,862	9,340	6,903	16,542	15,432
Allowable mortality	891	448	481	157	49	47	35	124	116
Actual mortality	53	39	71	47	21	38	11	44	98
% of allowable mortality	5.9%	8.7%	14.8%	29.9%	42.6%	81.4%	31.9%	35.5%	84.7%

Estimated incidental mortality of natural SRSS Chinook encountered in the South Fork Salmon River recreational fisheries in previous years are shown in Table 13. The Department has also managed these fisheries to remain within 50% of the allowable impacts under the NMFS 2000 Biological Opinion for Stolle Meadows (NS-26) and Poverty Flat (NS-28 and NS-29).

Table 13. Estimated incidental mortality of natural spring/summer Chinook salmon encountered by non-tribal South Fork Salmon River fisheries , 2001 through 2009.

Fishery	2001	2002	2003	2004	2005	2006	2007	2008	2009
Poverty Flat (NS-28 & 29)	0	0	0	0	0	0	0	3	7
NS-27	0	0	25	0	0	3	2	7	12
Stolle Meadows (NS-26)	290	321	295	45	9	10	5	8	11

Anticipated incidental mortality of natural origin SRSS Chinook in Department recreational fisheries under this FMEP will be similar to that in Permit 1481 for the mainstem Snake River, the Little Salmon River and lower mainstem Salmon River, given a similar range of run-sizes.

Under the FMEP sliding scale, no recreational fishery will be proposed in the upper Salmon River when projected numbers of natural-origin and supplementation adult SRSS Chinook spawners in the affected portion of that MPG are 30% or less of the pooled MAT (Section 1.4.1); recreational fishing was not expressly prohibited at these levels under Permit 1481. The FMEP sliding scale allows more mortality from fisheries within an MPG when escapements are

projected to approach or exceed the Viable Threshold. Model simulations (Section 2.1) demonstrated that the proposed sliding scale of allowable total mortality did not appreciably affect the ability of a population to achieve the Viable Threshold, or increase the risk of abundance dropping below the Critical Thresholds.

The FMEP proposed allowable total mortality rates for natural populations and supplementation strategies for the South Fork Salmon River FMA were based on the sliding scales established under the NMFS (2000) Biological Opinion for the Stolle Meadows (supplemented) and Poverty Flat (natural) spawning areas. The primary differences between the FMEP proposed harvest regime and past harvest impacts relate to definitions of population structure and thresholds. The FMEP uses the ICTRT (2007) population definition for of a single intermediate sized population (SFMAI) consisting of two MaSAs, whereas, previously, NMFS (2000) used the BRWG population definition of two independent populations (Stolle and Poverty). The ICTRT (2007) established a minimum abundance threshold for intermediate populations of 1,000 spawners, whereas, previously, NMFS (2000) used recovery thresholds of 690 for Stolle and 850 for Poverty. Although the same total mortality rate schedules were used for the FMEP, the different definitions of population structure and thresholds result in slightly higher allowable total mortality impacts at the same spawning escapement levels. However, as noted above, model simulations (Section 2.1) demonstrated that the proposed sliding scale of allowable total mortality did not appreciably affect the ability of a population to achieve the Viable Threshold, or increase the risk of abundance dropping below the Critical Thresholds.

2.1.4) Description of additional fishery impacts not addressed within this FMEP for the listed ESUs specified in section 1.3. Account for harvest impacts in previous year and the impacts expected in the future.

SRSS Chinook are harvested or subject to incidental mortality in fisheries outside Idaho, primarily in the mainstem Columbia River. SRSS Chinook are rarely caught in ocean fisheries, and are therefore not subject to management by the Pacific Fisheries Management Council (PFMC 2003). Whatever small amount of ocean harvest occurred in the past is incorporated into the base model runs through use of observed spawners and recruits to the spawning grounds.

Harvest impacts, including incidental mortality, of adult SRSS Chinook in the mainstem Columbia River are managed under the framework of *U.S. v. Oregon* 2008-2017 Management Agreement (US v. OR 2008). The spring management period harvest rate schedule for Treaty Zone 6 and Non-Treaty Zone 1-5 is triggered primarily by total upriver spring Chinook (including Snake River summer Chinook) and SRSS natural run size. During 1980 to 2007, harvest rate impacts averaged 8.3% and ranged from 3.4% in 1980 to 14.6% in 2001 (TAC 2008). Harvest impacts in the mainstem Columbia River during 1980-2007 are built into the base model runs through use of the observed spawners and recruits to the spawning grounds. Under the 2008-2017 Management Agreement allowable total harvest impacts on natural SRSS Chinook will range from <5.5% to 17%, depending on run size. The spring management period harvest rate schedule under the 2008-2017 Management Agreement is shown as Table A1 below.

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In addition to the allowable total mortality described for the FMEP, SRSS Chinook may be subject to mortality in Washington and Oregon recreational and Tribal tributary fisheries and fisheries in the Snake River upstream and downstream of Lower Granite Dam.

Excerpted from US v. OR (2008):

Table A1. Spring Management Period Harvest Rate Schedule

Harvest Rate Schedule for Chinook in Spring Management Period

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]	Non-Treaty Natural Harvest Rate [3]	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%	0.5%	5.5%	0.5%
33,000	3,300	5.0%	1.0%	6.0%	0.5%
44,000	4,400	6.0%	1.0%	7.0%	0.5%
55,000	5,500	7.0%	1.5%	8.5%	1.0%
82,000	8,200	7.4%	1.6%	9.0%	1.5%
109,000	10,900	8.3%	1.7%	10.0%	
141,000	14,100	9.1%	1.9%	11.0%	
217,000	21,700	10.0%	2.0%	12.0%	
271,000	27,100	10.8%	2.2%	13.0%	
326,000	32,600	11.7%	2.3%	14.0%	
380,000	38,000	12.5%	2.5%	15.0%	
434,000	43,400	13.4%	2.6%	16.0%	
488,000	48,800	14.3%	2.7%	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 reinitiate consultation with NOAA Fisheries if necessary.

SECTION 3. MONITORING AND EVALUATION

3.1) Description of the specific monitoring of the "Performance Indicators" listed in section 1.1.3.

The Department proposes to continue the monitoring programs to estimate the harvest, effort and incidental mortality of listed salmon and steelhead, which are are routinely conducted pursuant to existing permits. Specifically:

- The kokanee fishery on Redfish Lake is monitored and reported each year pursuant to Permit #1481. We anticipate the same monitoring and reporting to continue under the general fishing rules FMEP.
- The SRSS Chinook fisheries are monitored pursuant to Permit 1481using a combination of roving creel surveys and check stations. These surveys provide estimates of total effort (number of angler, hours fished) and catch (harvest of adipose-clipped adults and jacks, numbers of adipose-clipped hatchery fish and adipose-intact adults and jacks caught and released). Encounters rates for natural and hatchery-origin adult SRSS Chinook are calculated from the estimated catch (including released fish, encounters) divided by estimated run size passing through a fishery (see Section 3.2). Mortality rate of caught and released adults in Permit 1481 was assumed to be 10% based on literature review. Monitoring was sufficient to determine whether other listed anadromous species (steelhead or sockeye salmon) are being encountered in specific fisheries. We anticipate the same monitoring and reporting to continue under this FMEP.
- The steelhead fishery was monitored using a roving creel survey and a telephone survey. We anticipate the same monitoring and reporting to continue under the steelhead/fall salmon fishing FMEP.
- While there was no annual monitoring of the resident fish fishery in the state's anadromous fish waters, past creel surveys have documented the low level of incidental encounters of listed salmon and steelhead.

Funding is available to the Department to implement monitoring programs, and minimize and mitigate impacts through; 1) the sale of fishing licenses, 2) Lower Snake River Compensation Plan, 3) contracts with the Idaho Power Company and, 4) the Dingle/Johnson Program.

3.2) Description of other monitoring and evaluation not included in the Performance Indicators (section 3.1) which provides additional information useful for fisheries management.

SRSS Chinook redd counts and age structure information from carcass sampling allow for apportionment of the natural run of SRSS Chinook into populations or management units for preseason planning and in-season management. Dam counts and trap sampling at LGR for adipose-clipped and unclipped Chinook adults and jacks allows for in-season update of natural run size. Returning PIT tagged hatchery adult and jack Chinook allows for in-season updates on

specific hatchery adult run-sizes as they are detected at main stem dams. Genetic Stock Identification sampling of adult Chinook at Lower Granite Dam (initiated in 2009) may provide in-season stock composition estimates of natural and hatchery populations in future years. Hatchery trap information is useful for tracking the run in-season. Sampling of mis-clipped smolts at the hatcheries provides a basis for partitioning natural-origin adult from the total adipose-intact adults that were caught and released. Harvest monitoring by Nez Perce Tribe and Shoshone-Bannock Tribes are used in-season to track progress toward achieving Tribal and non-Tribal harvest shares.

3.3) Public Outreach

Statutes that govern operation of the Department of Fish and Game may be accessed at http://www3.state.id.us/idstat/TOC/36FTOC.html Fishing rules adopted by the Commission may be accessed at http://fishandgame.idaho.gov/cms/fish/rules/ In general, fishing regulations limit not only harvest, but also disturbance of fish, particularly adult spawners. Gear restrictions, such as use of barbless hooks help minimize mortality when non-targeted species are caught and released. Some examples of the specialized rules that have been adopted to minimize impacts include:

1. It is unlawful to take or attempt to take adult or juvenile anadromous sockeye salmon.
2. It is unlawful to harass any Chinook or sockeye by shooting at it, striking it, building an obstruction, or chasing it up or downstream in any manner.
3. It is unlawful to deposit, throw, place, allow or cause to pass any of the waters of this state any deleterious drugs, toxicants, chemicals, poisonous substances, explosives, electrical current, or other material which may tend to destroy, kill, disable, or drive away fish.
4. It is unlawful to catch, attempt to catch, or kill any species of fish whatever in any of the streams, rivers, lakes, reservoirs or waters of this state with any seine, net, spear, snag hook, weir, fence, basket, trap, gillnet, dip net, trammel net or any other contrivance,
5. Restrictive regulations have been adopted for most anadromous waters, especially key production areas. These include for example Wild Trout management (e.g., 2 trout limit) and Restrictive Special Rules (e.g., Catch-and-Release, barbless hooks, artificial flies and lures only, i.e., no bait). On the Middle Fork Salmon River and other streams no trout may be retained.
6. The August 7 closure date of the fishery in Redfish Lake reduces the possibility of incidentally catching listed *O. nerka* (residual sockeye) by curtailing fishing when most kokanee adults have ascended spawning streams and listed *O. nerka* remain in the lake. Disturbance of sockeye on redds due to fishing activities is precluded by closure of the fishery prior to the onset of spawning, which occurs in October.
7. Taking or attempting to take a fish by use of a hook or lure in any manner or method other than enticing or attracting a fish to strike with, and become hooked in, its mouth or jaw. Game fish which are hooked other than in the mouth or jaw must be released immediately. Snag fishing is illegal except where allowed by special rule.

The Department dedicates a substantial amount of time and effort to inform anglers and non-anglers regarding the conservation of native fishes. Subjects include fishing seasons and rules, fish identification, management rationale, and major threats to populations. We use printed material, regulation pamphlets, news releases, and signs at specific locations. We use radio and television contacts including call-in radio shows. We host public meetings and give presentations to schools, and a variety of sportsman's organizations and local civic groups. The high degree of compliance with fishing rules, particularly the adipose-clip rule for salmon and steelhead show that anglers understand and are willing to comply with these regulations. Illegal take of adult salmon and steelhead has been minimal.

3.4) Enforcement

The Department maintains law enforcement staff in each regional office. Staff is assigned patrol duties on a priority basis. Law enforcement staff patrol the recreational fisheries both in uniform, and in plain clothes. In addition Department biological staff is authorized to enforce fishing regulations. The combined presence of enforcement officers and biological staff conducting creel surveys provides excellent monitoring.

The Department maintains a proactive public education program to enhance the protection of listed fish, and to ensure compliance with protective regulations. The activities are summarized below:

1) An aquatic education program for school age children.
2) Publication of information on Idaho's threatened and endangered species, including where they may be encountered, and species identification guides in our Fishing Season and Rules.
3) Discussions with anglers on these subjects when fishing, when at check stations, and other times and places.
4) Regional activities include posting of signs, issuing news releases, and participating in radio programs.

The low incidence of serious violations that would adversely impact listed fish confirms that both the public education and enforcement activities conducted by the Department work effectively. In addition to law enforcement measures taken, creel survey crews and check station operations, our Citizens Against Poaching program provide a significant deterrent to deliberate illegal take of listed species.

3.5) Schedule and process for reviewing and modifying fisheries management.

3.5.1) Description of the process and schedule that will be used on a regular basis (e.g. annually) to evaluate the fisheries, and revise management assumptions and targets if necessary.

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The Department proposes the following process and schedule: The Department will provide the annual SRSS Chinook fishery proposals to NOAA Fisheries by March 15 for the spring fishery and May 15 for the South Fork Salmon River and Upper Salmon River fisheries. Proposals will be developed consistent with FMEP objectives and incidental mortality sliding scales, and with the preseason projections of natural and hatchery run sizes. The Department will provide the Idaho Fish and Game Commission with fishery proposals and options, and the Commission will authorize annual salmon seasons and regulations. The Department will revise preseason proposals as necessary consistent with the in-season updated projections and manage the fishery consistent with the FMEP framework. The Department will close a season prior to the August 10 closure date if harvest share objectives are reached or ESA take becomes constraining. The Department will provide NOAA Fisheries with annual reports on April 15 of the following year.

The Department will coordinate with NOAA Fisheries, and other State and Tribal fishery managers to develop and implement:

1) A process to come up with pre-season forecasts by population that all co-managers agree on each year (all co-managers using the same numbers)
2) Allowable ESA impacts and year-specific fishery plans
    a) A process by which the co-managers agree on the year-specific allowable ESA take limit by population using the appropriate Harvest Rate schedules
    b) Each co-manager develops year-specific Fishery Implementation Plan (FIP) that is shared with co-managers and NOAA Fisheries
    c) Co-managers will strive to resolve foreseeable inconsistencies before adopting year-specific FIPs
3) In-season forecast and FIP updates
    a) A process for updating population-specific forecasts in-season each year (as needed)
    b) A process for adjusting FIPs each year as needed based on in-season forecasts updates
4) A process by which all co-managers report periodically ESA impacts to each other and to NOAA Fisheries
5) A commitment for a process to curtail fisheries when total population-specific ESA-impacts are achieved
6) Post-season summary and co-manager consultation
    a) Harvest and ESA impact information
    b) Trapping data
    c) Redd count data
    d) Develop methodologies for coming up with agreed escapement estimates
    e) Other data as determined necessary
7) Post-season report to NOAA Fisheries

3.5.2) Description of the process and schedule that will occur every X years to evaluate whether the FMEP is accomplishing the stated objectives. The conditions under which revisions to the FMEP will be made and how the revisions will likely be accomplished should be included.

The Department proposes a five-year review schedule to evaluate whether the FMEP is accomplishing the stated objectives. The FMEP may be revised or modified accordingly to accommodate recommendations from Recovery Plans, harvest management plans, hatchery production and management plans, Biological Opinions, or other appropriate mechanisms. The Department expects written notification by NOAA Fisheries of new information or policies related to the FMEP, and the Department in consultation with NOAA Fisheries will propose appropriate modifications to this FMEP.

SECTION 4. CONSISTENCY OF FMEP WITH PLANS AND CONDITIONS SET WITHIN ANY FEDERAL COURT PROCEEDINGS

The State of Idaho is party to the U.S. v. Oregon process and is affected by the 2008-2017 Management Agreement. Development of this FMEP is consistent with the expectations defined in the 2008-2017 U.S. v. Oregon Management Agreement.

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