



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
West Coast Region  
1201 NE Lloyd Boulevard, Suite 1100  
Portland, Oregon 97232-1274

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Refer to NMFS No: WCRO-2021-00121

April 20, 2021

Linda L. Jackson  
Forest Supervisor  
500 N. Mission St. Building 2  
McCall, ID 83638

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, NLAA Determination Concurrence, and Magnuson-Stevens Fishery Conservation for the Payette National Forest Outfitters and Guides Operations, Valley County, Idaho.

Dear Ms. Jackson:

Thank you for your letter of January 28, 2021, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Payette National Forest (PNF) Outfitters and Guides Operations. NMFS conducted this consultation in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016). Thank you, also, for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1855(b)) for this action.

In this biological opinion (opinion), NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon or Snake River Basin steelhead. NMFS also concurs with the PNF's "not likely to adversely affect" determination for Snake River fall Chinook salmon, Snake River sockeye salmon, and designated critical habitats for Snake River fall Chinook salmon, Snake River sockeye salmon, Snake River spring/summer Chinook salmon, and Snake River Basin steelhead. Rationale for our conclusions is provided in the attached opinion.

As required by section 7 of the ESA, NMFS provides an incidental take statement (ITS) with the opinion. The ITS includes reasonable and prudent measures (RPM) NMFS considers necessary or appropriate to minimize the impact of incidental take associated with this action. The take statement sets forth nondiscretionary terms and conditions, including reporting requirements, that the PNF, and any permittee who performs any portion of the action must comply with to carry out the RPM. Incidental take from actions that meet these terms and conditions will be exempt from the ESA take prohibition.



NMFS also reviewed the likely effects of the proposed action on EFH, pursuant to section 305(b) of the MSA (16 U.S.C. 1855(b)). In this case, NMFS concluded the action would not adversely affect EFH. Thus, consultation under the MSA is not required for this action.

Please contact Johnna Sandow, Fish Biologist, in the NMFS Snake Basin Office at 208-378-5737 or at johnna.sandow@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael P. Tehan".

Michael P. Tehan  
Assistant Regional Administrator  
Interior Columbia Basin Office

Enclosure

cc: J. Galloway—PNF  
K. Hendricks--USFWS  
M. Lopez – NPT  
C. Colter—SBT  
W. Keller—NPT  
C. Nalder--PNF

**Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and NLAA  
Determination Concurrence**

Payette National Forest Outfitters and Guides Operations

NMFS Consultation Number: WCRO-2021-00121

Action Agency: Payette National Forest

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely To Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Snake River steelhead ( <i>Oncorhynchus mykiss</i> )	Threatened	Yes	No	No	N/A
Snake River spring/summer Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	Threatened	Yes	No	No	N/A
Snake River fall Chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	Threatened	No	N/A	No	N/A
Snake River sockeye salmon ( <i>Oncorhynchus nerka</i> )	Endangered	No	N/A		

**Consultation Conducted By:** National Marine Fisheries Service, West Coast Region

Issued By:   
Michael P. Tehan  
Assistant Regional Administrator

Date: April 20, 2021

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## ACRONYMS

ACRONYM	DEFINITION
AM	Animal Months
ATV	All-Terrain Vehicle
BA	Biological Assessment
BNF	Boise National Forest
CFR	Code of Federal Regulations
DPS	Distinct Population Segment
DQA	Data Quality Act
EFSFSR	East Fork South Fork Salmon River
ESA	Endangered Species Act
ESU	Evolutionarily Significant Units
FA	Functioning Appropriately
FAR	Functioning At Risk
FR	Federal Register
Frank Church	Frank Church-River of No Return Wilderness
FUR	Functioning At Unacceptable Risk
HUC	Hydrologic Unit Code
ICTRT	Interior Columbia Technical Recovery Team
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IOGLB	Idaho Outfitters and Guides Licensing Board
ISAB	Independent Scientific Advisory Board
ITS	Incidental Take Statement
LAA	Likely to Adversely Affect
LRMP	Land and Resource Management Plan
LRMP Matrix	LRMP Matrix of Pathways and Watershed Condition Indicators
LSR	Little Salmon River
MFSR	Middle Fork Salmon River
MFT	MFSR Tributaries
MOSS	McCall Outdoor Science School
MPG	Major Population Group
MSSE	Main Salmon Southeast
MSSW	Main Salmon Southwest
NFS	National Forest System
NLAA	Not Likely to Adversely Affect
NMFS	National Marine Fisheries
NOAA	National Oceanic and Atmospheric Administration
NPT	Nez Perce Tribe
NWFSC	Northwest Fisheries Science Center



<b>ACRONYM</b>	<b>DEFINITION</b>
OG	Outfitter and Guides
opinion	Biological Opinion
PBF	Physical and biological features
PCE	Primary Constituent Element
PNF	Payette National Forest
RCA	Riparian Conservation Area
RD	Ranger District
RPM	Reasonable and Prudent Measures
SFSR	South Fork Salmon River
SRB	Snake River Basin
SRS	Snake River spring/summer
SUP	Special Use Permit
USGCRP	U.S. Global Change Research Program
VSP	Viable Salmonid Population
WCI	Watershed Condition Indicator

## **1. INTRODUCTION**

This introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3, below.

### **1.1. Background**

National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 U. S. C. 1531 et seq.), and implementing regulations at 50 CFR 402, as amended.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within 2 weeks at the NOAA Library Institutional Repository [<https://repository.library.noaa.gov/welcome>]. A complete record of this consultation is on file at the Snake River Basin Office, Boise Idaho.

### **1.2. Consultation History**

Payette National Forest (PNF) originally presented the PNF Outfitter and Guide Operations to the Level 1 Team on December 18, 2018. The first draft of the biological assessment (BA) was submitted to the Level 1 Team on August 17, 2020. NMFS provided comments on the first draft on September 22, 2020. Based on NMFS' comments, details about the proposed action and effects of the action were discussed at the October 21, 2020 Level 1 meeting, with follow up discussion at the November 16, 2020 Level 1 meeting. A second draft of the BA was presented to the Level 1 Team at the November 16, 2020 meeting. NMFS provided comments on December 1, 2020. Based on NMFS' comments, a third draft BA was presented to NMFS on December 3 and discussed at the December 9, 2020 Level 1 meeting. NMFS provided more feedback and comments on December 17, 2020. A fourth draft BA was submitted to NMFS on January 7, 2021, and was discussed at the January 13, 2021 Level 1 meeting. NMFS and the PNF agreed the BA could be finalized and the consultation initiation request was submitted. NMFS received a letter requesting formal consultation on January 27, 2021, and initiation of formal consultation was started on that date.

The PNF determined that the action as proposed is: (1) Likely to adversely affect (LAA) Snake River spring/summer (SRS) Chinook salmon and Snake River Basin (SRB) steelhead; (2) not likely to adversely affect (NLAA) Snake River fall Chinook salmon and Snake River sockeye salmon; and (3) NLAA designated critical habitats for SRS Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and SRB steelhead.

A copy of the proposed action and terms and conditions sections of the draft opinion were provided to the PNF, Nez Perce Tribe (NPT), and Shoshone Bannock Tribes on March 02, 2021. The PNF provided comments to NMFS on March 3, 2021. In response, NMFS revised the proposed conservation recommendations and provided the updated language to the NPT on March 4, 2021 following a quarterly coordination meeting. Comments were received from the

NPT on March 8. NMFS revised the opinion to better address the concerns raised by the NPT and shared the updated text with the NPT on March 10. A complete record of this consultation is on file at the Snake Basin Office in Boise, Idaho.

### **1.3. Proposed Federal Action**

Under the ESA, “action” means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies (50 CFR 402.02). The PNF is proposing to renew existing special use permits (SUP) authorizing priority use outfitting for 17 land-based outfitters licensed by the Idaho Outfitters and Guides Licensing Board (IOGLB). Each permit contains terms and conditions, and requires a detailed plan of operations. Each SUP may be issued for up to a 10-year period.

Activities, for which these outfitters are licensed include big game hunting, predator hunting, fishing, pack trips, progressive pack trips, hiking/backpacking, trail rides, ski touring, climbing/mountaineering, snowmobiling, photography, and mountain biking. Twenty-seven assigned campsites are included as part of some outfitter operating areas to support guided activities, as are the trails and roads accessing the areas. Assigned campsites used by the outfitters are usually less than two acres each. Improvements to campsites may include temporary corrals, shower tents, equipment tents, guide tents, cook tents, guest tents, fire pits, and latrines.

Outfitter and guide (OG) operations can change frequently and be long lasting. If OG operations change, permits can be modified, or new permits issued. These can be a result of OG businesses being sold, split, combined, etc. If any of these things occur, permit numbers and permit area numbers may change.

Prior to modifying (defined as an increase in permitted use or increase in permitted area) or issuing a new permit, the PNF will review any proposed changes to OG operations to document similarities/differences between existing and proposed actions and to provide the necessary rationale/analysis as to whether or not to reinitiate consultation. The PNF will submit this documentation to the Level 1 Team for review and approval.

Prior to approving non-system trails for use, the PNF will ensure negative resource impacts to threatened and endangered species will be avoided.

Proposed activities will be conducted on the PNF within areas licensed by the IOGLB. The activities conducted by each of the 17 OG operations, which are up for permit reissuance, the watershed, in which the activities will occur, whether these areas are within wilderness, the number of assigned camps, and whether or not there are associated stock grazing authorizations, are identified in Table 1.

Table 1. Outfitter and guide operations, watershed(s), in which they will operate, number of assigned camps, and activities they have proposed for permitting on the Payette National Forest (PNF).

<b>Outfitter (Special Use Permit Expiration Date)</b>	<b>Watershed<sup>1</sup></b>	<b>Wilderness / Non-Wilderness</b>	<b>Assigned Sites on PNF</b>	<b>Stock Grazing</b>	<b>Big Game Hunting</b>	<b>Predator Hunting</b>	<b>Incidental Fishing</b>	<b>Pack Trips/ Progressive Travel</b>	<b>Hiking/Backpacking</b>	<b>Trail Rides</b>	<b>Ski Touring</b>	<b>Photography</b>	<b>Research / Educational Trips</b>	<b>Mountain Biking</b>	<b>Fishing</b>	<b>Powerboating</b>
Bitterroot Outfitters (9/1/24)	Chamberlain Cr. Big Squaw Cr. – Salmon R.	W	4	X		X	X	X								
Mile High Outfitters, Inc. (4/30/28)	Lower Big Cr. Middle Big Cr. Chamberlain Cr. Cottonwood Cr. – Salmon R.	W	7	X	X	X	X	X	X	X		X			X	
Mackay Bar Outfitters and Guest Ranch (12/31/26)	Lower SFSR Sheep Cr. – Salmon R. Big Mallard Cr. – Salmon R. Big Squaw Cr. – Salmon R. Chamberlain Cr.	W	1		X	X	X	X	X						X	X
Idaho Wilderness Company (4/1/21)	Rush Cr. Lower Big Cr. Monumental Cr.	W	7	X	X	X	X	X							X	
Elk Springs Outfitters (4/1/26)	Lower EFSFSR Upper EFSFSR Monumental Cr. Marble Cr. Secesh R. Upper SFSR Lower SFSR	NW	4	X	X	X	X	X	X	X		X		X		

<b>Outfitter (Special Use Permit Expiration Date)</b>	<b>Watershed<sup>1</sup></b>	<b>Wilderness / Non-Wilderness</b>	<b>Assigned Sites on PNF</b>	<b>Stock Grazing</b>	<b>Big Game Hunting</b>	<b>Predator Hunting</b>	<b>Incidental Fishing</b>	<b>Pack Trips/ Progressive Travel</b>	<b>Hiking/Backpacking</b>	<b>Trail Rides</b>	<b>Ski Touring</b>	<b>Photography</b>	<b>Research / Educational Trips</b>	<b>Mountain Biking</b>	<b>Fishing</b>	<b>Powerboating</b>
Flying Resort Ranches, Inc. (12/31/26)	Chamberlain Cr. Big Squaw Cr. – Salmon R. Middle Big Cr. Lower Big Cr. Cottonwood Cr. – Salmon R. Rush Cr.	W	2	X	X	X	X	X	X	X						
Buckhorn Outfitters (4/24/27)	Lower SFSR Upper SFSR Secesh R.	NW		X	X	X	X	X	X							
Elk Cr. Outfitters (6/1/23)	Upper Big Cr.	W NW	3	X	X	X	X	X		X		X		X		
The Last Resort, Colby Blair (12/31/29)	Lower EFSFSR Upper EFSFSR Upper SFSR Johnson Cr. <sup>2</sup> Indian Cr. <sup>3</sup>	W NW		X			X	X		X					X	
Taylor Ranch Wilderness Research Station (12/31/25)	Warren Cr. Sheep Cr. – Salmon R. Lower SFSR Upper EFSFSR Big Mallard Cr. – Salmon R. Big Squaw Cr. – Salmon R. Chamberlain Cr. Cottonwood Cr. – Salmon R. Middle Big Cr. Lower Big Cr. Upper Big Cr. Rush Cr. Monumental Cr. Marble Cr.	W								X			X			

<b>Outfitter (Special Use Permit Expiration Date)</b>	<b>Watershed<sup>1</sup></b>	<b>Wilderness / Non-Wilderness</b>	<b>Assigned Sites on PNF</b>	<b>Stock Grazing</b>	<b>Big Game Hunting</b>	<b>Predator Hunting</b>	<b>Incidental Fishing</b>	<b>Pack Trips/ Progressive Travel</b>	<b>Hiking/Backpacking</b>	<b>Trail Rides</b>	<b>Ski Touring</b>	<b>Photography</b>	<b>Research / Educational Trips</b>	<b>Mountain Biking</b>	<b>Fishing</b>	<b>Powerboating</b>
McCall Outdoor Science School (4/1/28)	All watersheds within the PNF	W NW							X				X			
Payette Powder Guides (1/31/24)	Secesh R. Warren Cr. Lower SFSR Upper Big Cr. Upper EFSFSR	NW	1								X			X		
McCall Angler (1/10/20)	Upper Little Salmon R.	NW													X	
Idaho Angler McCall (5/12/26)	Secesh R. Upper SFSR	NW							X						X	
Pony Cr. Outfitters (12/31/27)	Secesh R. Lower SFSR Warren Cr.	NW	2		X	X										
Rugged Ridge Outfitters (12/31/27)	Warren Cr. Sheep Cr. – Salmon R. Lower SFSR	NW	4		X	X										
Lockey U Outfitters (12/31/26)	Lower Little Salmon R. Hazard Cr. Partridge Cr. – Salmon R. French Cr.	NW				X										

<sup>1</sup>All watersheds assumed to contain Federally ESA-listed species and/or their habitat. Watershed names are fifth level HUCs.

<sup>2</sup>Administered by the Boise National Forest.

<sup>3</sup>Administered by the Salmon Challis National Forest.

#### 1.3.1.1. *Outfitter and Guide Operations*

The following section identifies activities and operational areas of the 17 OGs addressed in this opinion. Authorized activities and priority use service days are for the ten-year life of the permit with the expectation that new permits will be issued when the original permits expire. Activities and priority use day limitations are on an annual basis. A priority use day is one client a day; therefore, seven clients on a 7-day trip would be 49 priority use days<sup>1</sup>.

#### 1.3.1.2. *Bitterroot Outfitters*

Bitterroot Outfitters is permitted for 232 priority use days within the wilderness for fall big game hunting in Idaho Department of Fish and Game (IDFG) Hunting Unit 20A, as described in Idaho Outfitter and Guide Licensing Board (IOGLB) licensed area #15059-04. Spring bear hunting and summer pack trips providing fishing, sightseeing, or guide training, may be conducted with the assignment of temporary use days.

There are three assigned campsites: Queen Creek Meadows, Hot Spring Meadows, and Quaking Aspen Springs. A fourth site, West Fork Chamberlain Creek, is approved as a transfer camp and may be used as a layover camp for one or two nights.

Twenty-five animal months (AM) of grazing is authorized in association with this permit. An AM is defined as one animal for one month.

#### 1.3.1.3. *Mile High Outfitters of Idaho, Inc.*

Mile High Outfitters of Idaho is permitted for a total of 295 priority use days within the wilderness for fishing, trail rides/pack trips, backpacking, photography, fall big game hunting, and winter cougar hunting in IDFG Hunting Unit 26, as described in IOGLB license #07940. These priority use days are broken down as: fifteen priority service days from November 19 to March 31 permitted for winter cougar hunting; and 80 priority service days between July and August are permitted for summer activities (sightseeing and fishing pack trips). Two hundred priority service days are permitted for fall big game hunting and other incidental fall hunting and fishing services.

There are seven assigned camps associated with this permit: Cabin Creek, Bismark, Upper Cave, Mine Creek/Crescent Meadows, Mile High, Belt Mountain/Acorn Camp, and Mahan Cabin. There are additionally two transfer camps approved, Cold Meadows and Mile High.

Grazing for 52 AMs are authorized with this permit. A maximum of 40 head of pack and saddle stock may be used or held during the period of operation, with no more than 20 held or used at any one location.

#### 1.3.1.4. *Mackay Bar Outfitters and Guest Ranch*

Mackay Bar Outfitters is permitted for 284 priority use days, with 188 days for powerboat transportation on the main Salmon River, sightseeing, and fishing. Ninety-six priority use days

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<sup>1</sup> The PNF can authorize additional use days beyond what is in the permit (temporary use days). The permittee must request and then the PNF would determine whether to authorize or not.

within the wilderness for big game hunting, predator hunting, incidental fishing, hiking/backpacking, and pack trips within IDFG Hunting Units 19A and 20A, as described in IOGLB licensed area #17840-1, 3, and 5.

There is one assigned camp, Quartz Springs. There are a maximum of 20 head of pack and saddle stock authorized, with 100 percent supplemental feed being required.

#### 1.3.1.5. *Idaho Wilderness Company*

Idaho Wilderness Company is permitted for 376 priority use days within the wilderness, 264 days of use in Lower Big Creek and 112 days of use in Monumental Creek, for fall big game hunting, cougar and bear hunting, and summer recreation activities in the IDFG Hunting Unit 26 and as described in IOGLB licensed area #05078-02, 03. Summer use involves guided fishing, sightseeing, and pack trips during July and August. All camps will be progressive, which are defined as a series of camps used during trips through an area. Duration of use is usually 1-3 nights per location. These camps are not set up in advance of arrival and are removed as the party moves on.

There are seven assigned camps associated with this permit: Telephone Creek, Bear Trap Saddle, Rush Creek Point, Whiskey Springs, Cougar Creek, Cottonwood, and Camp Creek Camps.

Grazing for 12 summer AMs and 45 fall AMs in Lower Big Creek and 20 fall AMs in Monumental Creek is authorized with this permit. A maximum of 12 (summer) and 30 (fall) head of pack and saddle stock may be used or held during the associated periods.

#### 1.3.1.6. *Elk Springs Outfitters*

Elk Springs Outfitters is permitted for 330 priority use days in the non-wilderness areas. They are permitted for 230 use days for fall big game, bear and cougar hunting in IDFG Units 19A, 25, 26, and 27, as described in IOGLB licensed area #10748-04 and 07. The other 100 days are permitted for trail rides, pack trips, backpacking, mountain biking, and photography, as described in IOGLB licensed area #10748-04, 06, 07, and 08.

There are four assigned campsites associated with this permit: Quartz, Marble, Parks, and Thunder.

Grazing for an estimated 20 AMs is authorized in conjunction with approved activities. A maximum of 16 head of pack and saddle stock may be used or held during this period. Generally, 75 percent supplemental feed will be required in Pony Creek Meadow, South Fork Trail, and Crestline Trail; and 100 percent supplemental feed is required in the Chinook Campground.

#### 1.3.1.7. *Flying Resort Ranches, Inc.*

Flying Resort Ranches is permitted for 462 priority use days in the wilderness for big game hunting, predator hunting, incidental fishing, trail rides, pack trips, and backpacking in IDFG Hunting Units 20A and 26, as described in the IOGLB licensed area # 00114-01, 03, 05, 06, 8 and 9. There are two assigned camps associated with this permit: Telephone and McCoy Cabin Camps.



Grazing for five AMs is approved for progressive travel trips. A maximum of 20 head of pack and saddle stock may be used or held during the conduct of approved operations.

#### 1.3.1.8. *Buck Horn Outfitters*

Buckhorn Outfitters is permitted for 246 priority use days in the non-wilderness areas for big game hunting, predator hunting, incidental fishing, hiking/backpacking, and pack trips in the IDFG Hunting Units 19A, 20A, and 25; as described in the IOGLB licensed area #10899-01 and 02. Spring bear hunting has 50 service days and winter bear hunting has 40 service days. The remaining 156 days are for all other uses. There are no assigned camps associated with this permit.

This permit authorizes grazing for 20 AMs. A maximum of 15 head of pack and saddle stock may be used during the conduct of approved operations.

#### 1.3.1.9. *Elk Creek Outfitters*

Elk Creek Outfitters is permitted for 483 priority use days in the wilderness and non-wilderness areas for fall big game hunting and winter cougar hunting in IDFG units 20A and 26 as described in IOGLB licensed area #18966-2 and 04134-01. They are also permitted for pack and saddle stock, winter snowmobile trips from Yellowstone to Big Creek, summer fishing, sightseeing, pack trips, trail rides, and photography, as described in IOGLB licensed area #04134-02.

There are three assigned camps associated with this permit: Rattlesnake, Mosquito Springs, and Pilot Peak Transfer Camps. All camps are located on ridgelines.

Grazing for 15 AMs is approved for fall big game hunting purposes. A maximum of 20 head of pack and saddle stock may be used or held during this period.

#### 1.3.1.10. *The Last Resort, Colby Blair*

The Last Resort, Colby Blair is permitted for 475 priority use days in wilderness and non-wilderness areas. They are permitted for 40 days of guided fishing in the South Fork Salmon River (SFSR) between the mouth of the Secesh River and Three Mile Creek; 190 days guided fishing in local streams and rivers accessed via roads and trails near the Wapiti Meadow Ranch on Johnson Creek; and 245 days of pack trips/trail rides in the immediate vicinity of the Wapiti Meadow Ranch as well as some multi-day pack trips using progressive camps. These are all described in the IOGLB licensed area #18881-01, 02, 03, 04, and 06. There are no assigned camps associated with this permit.

There is no established level of grazing authorized by this permit, although limited, short term grazing (1-3 days) of pack animals will occur while on progressive pack trips. A maximum of 14 head of pack and saddle stock may be used or held during the conduct of approved operations.

#### 1.3.1.11. *Taylor Ranch Wilderness Research Station*

Taylor Ranch Wilderness Research Station is permitted for 850 priority use days in the wilderness for research and education programs and activities, which includes hiking and

backpacking. Primary use of priority use days is for research and education. There are no assigned camps or grazing authorized under this permit.

#### 1.3.1.12. *McCall Outdoor Science School*

University of Idaho McCall Outdoor Science School (MOSS) is permitted for 328 priority use days in wilderness and non-wilderness areas for guided educational trips. Guided educational trips are mainly comprised of day hikes and occasional overnight camping. There are no assigned camps or grazing authorized under this permit.

#### 1.3.1.13. *Payette Powder Guides*

Payette Powder Guides is permitted for 1,000 priority use days for winter activities and 100 priority use days for summer/fall activities in the non-wilderness areas as described in IOGLB licensed area #15090-01, 02, and 03. Winter activities permitted are backcountry skiing, snowshoeing, and overnight yurt rentals. Access to the yurts and skiing/snowshoe area are by snowmobile and snow cat. Mountain bike trips are permitted under the summer/fall use days. Two yurts are permitted and located at Lick Creek Summit.

There is one assigned campsite authorized under this permit, Lick Creek Summit, consisting of two yurts, a pit toilet, and a sauna.

#### 1.3.1.14. *Taylor Outfitting (McCall Angler)*

Taylor Outfitting is permitted for 410 priority use days in the non-wilderness areas for guided fly-fishing day trips in three Operating Areas, as described in the permit. For Operating Area 1, there is a maximum of two rods/clients per day per lake and ten user days per lake per season. For Operating Area 2, there is a maximum of four rods/clients per day per lake, one day per week per lake, and no weekends. For Operating Area 3, there is a maximum of four rods/clients per day, two days per week including weekends, and fly-fishing only. There are no assigned camps or grazing authorized under this permit.

#### 1.3.1.15. *Idaho Angler McCall/Fly Fish McCall*

Idaho Angler McCall is permitted for 97 priority use days in non-wilderness areas as described in IOGLB licensed area #13541-01, 02, 03, 04, 05, 06, and 07. Activities authorized under this permit are for high mountain lake fishing, day hiking fishing trips, overnight-fishing trips, and goat and llama assisted fishing trips. No assigned camps or grazing is authorized under this permit.

#### 1.3.1.16. *Pony Creek Outfitter*

Pony Creek Outfitters is permitted for 77 priority use days in non-wilderness areas for big game hunting and predator hunting, as described in the permit. Two campsites are approved for use from August 15-December 01: Pony Meadows and Blue Lake.

Twenty head of riding and pack stock are permitted as needed with 100 percent supplemental feed required.

#### 1.3.1.17. *Rugged Ridge Outfitter*

Rugged Ridge Outfitter is permitted for 77 priority use days in non-wilderness areas for big game hunting and predator hunting, as described in the permit. Two campsites are approved for use from August 15-December 01: Warren Meadows and Republican Flats. Access to Warren Meadows campsite requires fording Warren Creek with motorized vehicles on an unauthorized route. The permittee is allowed to use the ford under this permit, but the ford is closed to the general public.

Two non-fee campsites are approved for use: Raines Creek Transfer and Cottontail Creek Temporary Camps. Applications must be submitted for use, and maximum use per trip is limited to 18 days.

Twenty head of riding and pack stock are permitted as needed with 100 percent supplemental feed required.

#### 1.3.1.18. *Lockey U Outfitters*

Lockey U Outfitters is permitted for 130 priority use days in non-wilderness areas for predator hunting during spring (4/15-5/31) and fall (8/30-3/31) seasons, as described in IOGLB licensed area #18715-6. There are 60 priority use days for spring and 70 priority use days for fall. There are no assigned camps or grazing authorized under this permit.

### 1.3.2. General Outfitter and Guide Activity Summary

#### 1.3.2.1. *Big Game Hunting*

Nine of the 17 OGs provides big game hunting. Operations of four outfitters are based within the Frank Church-River of No Return Wilderness (Frank Church), with four outfitters operating in non-wilderness areas, and one operating in both wilderness and non-wilderness areas of the PNF (Table 1). Twenty-seven assigned sites (base camps or transfer camps) on National Forest System (NFS) lands are assigned to seven OGs: Elk Creek Outfitters, Mile High Outfitters, Idaho Wilderness Company, Elk Springs Outfitters, Rugged Ridge Outfitters, Flying Resort Ranch, and Pony Creek Outfitters. These OGs utilize one or more assigned sites in support of big game hunting operations. Pack stock is typically utilized to access assigned sites in support of hunting operations.

#### 1.3.2.2. *Predator Hunting*

Lockey U Outfitters is permitted for spring bear, cougar, and wolf hunts between April 15 and May 31 and is regulated by Idaho Department of Fish and Game regulations. All guided hunting trips are day use trips, with no overnight camping. All rules and regulations pertaining to the current Big Game Season Rules and Regulations will be adhered to.

Buck Horn Outfitters are permitted for spring bear hunting and winter cougar hunting. They are not permitted for overnight camping on NFS lands when guiding these trips. All rules and regulations pertaining to the current Big Game Season Rules and Regulations will be adhered to.

Mile High Outfitters is permitted for winter cougar hunting and spring bear hunting. A minimum facility camp at Cabin Creek is available for use from November 19 through March 30, in support of winter cougar hunting. This camp must meet the General Requirements of the Operating Plan (General Permit Requirements (Mitigations) section of the BA) and the Frank Church Management Plan (USFS 2009). The trips operate using the Cabin Creek airstrip. Eight head of pack and saddle stock may be held and used on the PNF from November 19 through March 30. Stock will be 100 percent supplemental fed using weed-free feed. For spring bear hunting, set up and occupancy of camps will be based on actually booked clients. Where baiting is planned, Mile High Outfitters will act in accordance to IDFG regulations. The permit holder will provide a copy of the IDFG approval documentation to conduct bear baiting prior to any baiting taking place on the PNF.

All predator hunting is conducted in accordance with IDFG regulations, with harvest of ESA-listed species prohibited.

#### 1.3.2.3. *Incidental Fishing*

Incidental fishing opportunities are provided to clients by nine outfitters in association with their summer use outfitting and guiding activities. Activities are conducted on streams and lakes within both wilderness and non-wilderness areas. By nature, incidental fishing opportunities occur as a secondary activity to the outfitter's priority activities, such as big game hunting, pack trips, or trail riding.

Fishing is conducted in accordance with IDFG regulations, with harvest of ESA-listed fish species prohibited, except under specific adult steelhead or Chinook salmon seasons targeting hatchery-produced fish from specified rivers.

#### 1.3.2.4. *Pack Trips/Progressive Travel*

Nine out of seventeen outfitter and guide operations addressed in this opinion offer pack trips/progressive travel as a summer use activity under their permits. Trips are conducted both in non-wilderness forest areas and within PNF areas of the Frank Church.

#### 1.3.2.5. *Trail Riding*

Five outfitters identify trail-riding opportunities as part of their summer use activities under their permits. Activities are conducted in both non-wilderness areas of the PNF and within the Frank Church.

#### 1.3.2.6. *Livestock Grazing*

Livestock grazing is authorized for eight OGs, with various levels from no specific AMs to 52 AMs. Grazing occurs around camps when livestock are not in use, with more grazing occurring at assigned camps versus progressive camps. Livestock can be turned free to roam or hobbled, or temporary pastures may be set up (such as within electric fences) for grazing. Grazing occurs where adequate feed occurs. Livestock are taken to water several times a day, although when in use, livestock water when crossing streams. Utilization monitoring does not occur, although

inspection reports document livestock use impacts. If an outfitter is not authorized to graze, then they are required to supply 100 percent of the livestock feed.

#### 1.3.2.7. *Hiking/Backpacking*

Eight outfitters identify hiking/backpacking opportunities as part of their summer use activities under their permits. Activities are conducted in both non-wilderness areas of the PNF and within the Frank Church.

#### 1.3.2.8. *Ski Touring*

One outfitter, Payette Powder Guides, provides supported winter ski touring opportunities on non-wilderness PNF lands as a priority use under its permit for operations in the North Fork (NF) Payette River-Lake Fork Creek and Upper North Fork Payette River watersheds.

Access to the yurts and skiing/snowshoe area will be by snowmobile or snow cat. Guide services and catering will be available as well. The permittees are also licensed to provide avalanche training within their permitted area.

Camp facilities include two yurts (one 17-foot sleeping yurt and one 20-foot dining yurt), a sauna and one 5 by 5-foot toilet structure. These facilities are located at Lick Creek Summit. The yurt and structural components should be disassembled and removed by June 30. The yurt base, outhouse, and sauna may remain in place year-round. An authorized access road is used to reach facilities during permit activities.

Use restrictions for Lick Creek Summit for the winter operation include:

- a. Maximum group size of 20, unless otherwise approved in advance by the PNF.
- b. No permanent improvements other than the yurt bases, sauna, and outhouse structures.
- c. Pre-trip notice is required, and is acceptable either in writing (through the Proposed Use Schedule), or by telephone call. Trip itineraries not scheduled on the annual Proposed Use form must be approved prior to use occurring, if possible. The PNF will be notified in advance of cancellations or other changes not previously approved in the operating plan.
- d. Permittee shall furnish the PNF with a schedule or rates for services offered.
- e. No trails may be groomed without prior written approval of the PNF.
- f. When unstable snow conditions exist, the McCall Ranger District (RD) will be notified in a timely manner. This will facilitate better information distributed to the public and the RD.

#### 1.3.2.9. *Photography*

A number of OGs identify photography opportunities as an auxiliary activity offered to clients.

#### 1.3.2.10. *Mountain Bike Tours*

One outfitter, Payette Powder Guides, provides supported mountain biking opportunities on non-wilderness PNF lands as a priority use under its permit for operations. Trips will originate at the Lick Creek yurt site and head either west or north to the Main Salmon River or east towards Edwardsburg via Yellow Pine, then to Warren, and on to the Main Salmon River.

Use restrictions for the fall mountain bike tour operation include:

- a. Maximum group size of 10, unless otherwise approved in advance by the PNF.
- b. Approved service days use is 100.
- c. No permanent improvements other than the yurt bases, sauna, and outhouse structures.
- d. Pre-trip notice is required and is acceptable either in writing (through the Proposed Use Schedule), or by telephone call. Trip itineraries not scheduled on the annual Proposed Use form must be approved prior to use occurring, if possible. The PNF will be notified in advance of cancellations or other changes not previously approved in the operating plan.
- e. Permittee shall furnish the PNF with a schedule or rates for services offered.

#### 1.3.2.11. *Research/Guided Educational Trips*

Two OGs provide education and research activities and programs on non-wilderness (MOSS) and wilderness (Taylor Ranch) PNF lands as a priority use under its permit for operations. Both parties are entities of the University of Idaho, and provide yearly operating guides outlining proposed use on PNF lands. No assigned camps or stock use is permitted.

#### 1.3.2.12. *Fishing*

Seven OGs are authorized to provide guiding services for fish angling clients. The action of legally pursuing, hooking, landing, or harvesting fish is subject to the laws and regulations of the sport fishery of the State of Idaho, as administered by the IDFG. All permittees and client angling are expected to comply with the specific rules, exceptions, and closures published annually within the Idaho Fishing Seasons and Rules.

Mile High Outfitters is licensed to fish all of Big Creek, all of the Middle Fork Salmon River (MFSR), and all of Camas Creek. Fishing trips along these creeks/rivers will conform to the general standards for summer client use.

The Last Resort, Colby Blair Outfitters is licensed by the IOGLB for fishing beginning at the Payette/Boise National Forest (BNF) boundary on the SFSR; then east on said boundary to the headwaters of Caton Creek; then northerly downstream on Caton Creek to the confluence with the East Fork South Fork Salmon River (EFSFSR); then westerly downstream on the EFSFSR to the confluence with the SFSR; then southerly upstream on the SFSR to the point of beginning. The following limitations and restrictions will apply:

RESTRICTIONS - Riordan Lake: Fishing may take place annually from June 1 through September 15, with each angler visit limited to no more than two days duration, and no more than eight anglers per week. Fishing MAY NOT be conducted in Mud, Pistol, or Roosevelt Lakes.

LIMITATIONS: Fishing activities are authorized in this area during the period from June 1 thru September 15, annually. There are no reserved camps authorized, and overnight stays are limited to one night. Maximum group size is limited to eight, including clients and outfitter help. The total service days allowed is 40. The maximum number of pack and saddle stock allowed per trip is 12. Catch and release fly-fishing may be conducted along the SFSR from the mouth of the Secesh River downstream to the end of the South Fork Road (#674) on the PNF.

McCall Angler Outfitters is licensed for fishing in three areas. Operating Area 1 includes: Coffee Cup Lake, Disappointment Lake, Ellis Lake, Grass Mountain Lakes 1 & 2, Goose Creek, Frog Lake, Hazard Creek, Middle & Upper Hazard Lakes, Hard Creek, Hidden Lake, Horton Lake, Lloyds Lake, Scribner Lake, Serene Lake, and Slab Butte Lake. Operating Area 2 includes: Brundage Reservoir, Granite Reservoir, Goose Lake, and Upper Payette Lake. Operating Area 3 includes SFSR-China Creek to Station Creek.

Fishing trips include day hiking from trailheads. All current IDFG Fishing Regulations will be adhered to. The following restrictions also apply to authorized activities:

Operating Area 1:

- a. Float tubes may be used on lakes.
- b. Stream fishing is walk and wade.
- c. Activities limited to day use.
- d. Maximum two rods per day per lake.
- e. Maximum ten user days per lake per season.

Operating Area 2:

- a. Non-motorized float boats, float tubes may be used.
- b. Maximum four rods per day, one day per week for each lake, no weekends.

Operating Area 3:

- a. Maximum four rods per day, two days per week including weekends.
- b. Fly-fishing only.

Idaho Angler McCall, LLC is licensed for fishing in eight areas. Operating Area 1 includes: Paddy/Boulder/Buckhorn (IDFG Units 24, 25), Kennally 1 & 2, Rapid, Dismal, Louie (not on NFS land), Boulder, Shaw-Twin, Anderson, Nick, Buckhorn, Pete, and Cougar lakes. Operating

Area 2 includes: Warren Wagon/Pearl (IDFG Units 19A, 24) Pearl, Tear Drop, Marge\*, Brush\*, Sisters, North, Victor, Frog, Deep, Trail, Summit\*, Lake Rock Lake, Nethker, Ann's, Loon, and Bear lakes. Operating Area 3 includes: McCall to Lick Creek Summit (IDFG Unit 24) Blackwell, Squaw, Buck, Crystal, Snowslide, Maki, Golden, Cly, Box\*, and Tsum lakes. Operating Area 4 includes: Lick Creek to SFSR (IDFG Units 19A, 24, 25) Duck, Hum, Ho, Burnside, Loon Lakes\*, Cow, Enos, Jungle 1 & 2, and Blue lakes. Operating Area 5 includes Upper Payette Lake (IDFG Unit 24). Operating Area 6 includes Brundage Reservoir (IDFG 23). Operating Area 7 includes Granite Lake (IDFG Unit 24). Operating Area 8 includes Goose Lake (IDFG Unit 23). All lakes and streams in operating areas one, two, three, and four are limited to Idaho Angler McCall, LLC unless marked with an asterisk. Those lakes marked with an asterisk are used by two OGs and six of the 12 user days will be dedicated to horse pack in trips provided by an outfitter other than Idaho Angler McCall LLC.

#### 1.3.2.13. *Powerboating*

Mackay Bar Outfitters and Guest Ranch is the only OG permitted to use powerboats on the Salmon River between Spring Bar (12 miles upstream of Riggins, Idaho) and Corn Creek (50 miles downstream of Northfork, Idaho), year-round. Powerboats are used for sightseeing and fishing trips on the main Salmon River.

#### 1.3.3. General Permit Requirements (Mitigations)

The PNF has established a number of permit requirements that the OGs must follow in order to minimize their impacts on environmental resources. The most notable mitigations are summarized in sections 1.3.3.1 through 1.3.3.6. A complete list of the mitigations and requirements are contained in the BA as well as in the SUPs and associated operating plans. In addition, the PNF will conduct inspections periodically and document their findings. Prior to modifying or issuing a new permit, the PNF will review proposed permit changes to document similarities/differences to the permitted action and provide necessary rationale/analysis as whether reinitiation of consultation is required. The PNF will coordinate this documentation with the U.S. Fish and Wildlife Service and NMFS.

Each year, at the end of the operating season, the OG will be evaluated on overall performance in regard to SUP and Operating Plan compliance, as well as public service and resource protection as stated in the Memorandum of Understanding between the IOGLB, PNF, and Bureau of Land Management.

##### 1.3.3.1. *Administrative Requirements*

At the end of each calendar year, and prior to the start of the next season, the Permit Holder shall:

1. Submit an Actual Use Report to the District Ranger, detailing client service and grazing use. Use Reports must include all use on NFS lands. This report shall be submitted annually by January 15, or as otherwise established or allowed by the District Ranger.
2. Submit an annual proposed use schedule for PNF review and approval at least 30 days prior to any intended use on the PNF. Where activities are not included in this pre-season



use schedule, itineraries shall be submitted to the designated PNF representative as soon as a trip is firmly scheduled. The Permit Holder shall, prior to use, provide dates, number of clients, number of stock and campsites proposed for use.

3. Obtain prior approval for changes or additions to the uses as approved in the Operating Plan or as shown in the approved proposed use schedule. Unapproved or unauthorized facilities or uses constitute permit noncompliance.

#### 1.3.3.2. *Resource Protection*

1. Prior approval by the PNF officer in charge or a designated representative shall be obtained if live trees are to be cut for constructing improvements (e.g., camp furniture, tent platforms, corrals, etc.) or for site clearing. No standing dead or live trees will be notched to facilitate installation of an improvement. Felled trees will be low stumped to a height, which is no more than half the diameter of the tree (i.e., 6-inch tree would have a stump less than 3 inches high). All such cutting will, to the extent feasible, be at least 200 feet from NFS trails and live water.
2. Camp areas will be kept clean and free of litter at all times (e.g., pull-tabs, cigarette butts, hay twine, foil, food scraps, etc.). Garbage will be packed out and disposed of properly. Appropriate precautions must be taken to avoid habituation of bears, i.e., clean camps, hanging of food, bear-proof storage, etc.
3. Soapy water will be dumped at least 200 feet from any water source. A sump hole for gray water disposal will be at least 1-foot deep and naturalized at the end of the use season.
4. Except as authorized, groups shall be limited to a maximum of 20 people and 20 head of pack and saddle stock. Twenty head means the sum total of outfitter owned or controlled stock. Twenty people mean the sum total of clients, help, and friends.

#### 1.3.3.3. *Information and Education*

1. It is the responsibility of the Permit Holder to inform all employees involved in the operation of all regulations, etiquette, and conditions of use pertaining to the specific area of operation. Before and during the trip all guests will be informed of regulations pertaining to minimum impact camping, river use, and/or stock use.
2. OG operations that include fishing as an activity in areas where redds may occur, will educate guides and clients in fish redd identification. Those areas where the guiding activity and redds may occur will be identified by the district fish biologist.

#### 1.3.3.4. *Trails*

1. Clearing of dead and downed trees across existing NFS trails to accommodate safe passage is authorized. The Permit Holder needs approval from the PNF prior to extensive maintenance or improvement of system trails.

2. No new trails may be cleared or constructed without prior written permission of the PNF. Use and maintenance of existing non system, or abandoned system trails, where the primary use is by the Permit Holder for client access, will be addressed in the Operating Plan. Maintenance shall be of a level adequate to protect the resource and is the responsibility of the Permit Holder with PNF approval and concurrence of the work to be conducted.

#### 1.3.3.5. *Livestock*

1. Grazing of pack and saddle stock must be specifically authorized and may be granted where forage is adequate. This privilege will be exercised only during periods when the stock is being used in the conduct of approved activities. Unless otherwise specifically approved, grazing will take place in the vicinity of approved camps and only while actually serving clients, except for assigned camps where grazing may be approved during the 15-day setup period and/or the 10-day takedown period.
  - a. For Bitterroot Outfitters, livestock will not be allowed to free roam at the West Fork Chamberlain assigned site to prevent impacts to redds from livestock.
2. Upon death within the PNF of any stock used in this operation, the Permit Holder shall dispose of the carcass in a suitable manner more than 200 feet from any water.
3. Where salt for pack and saddle stock is provided, mixing with grain will be the preferred method. Alternatively, salt may be provided in block form if secured off the ground in a waterproof container; located away from other camps, trails, and live water; and removed when livestock are removed.
4. Stock will not be tied to trees for longer than 2 hours in any location; hitch lines or hitch racks should be provided where necessary. Stock handling facilities will be located at least 200 feet from lakes, streams, and springs, where terrain allows. Manure will be scattered away from water.
5. Where supplemental livestock feed is used, it shall be processed pellets or high-quality alfalfa hay and/or grain. Use of certified weed-free hay or processed grain is required.
6. Stock must be ridden or led, not permitted to run loose on trails or travel routes (except where safety requires).
7. Only stock necessary for each trip will be permitted. No cripples, colts, or unbroken stock will be permitted, except for the trip duration if an animal becomes crippled during use.
8. Pack and saddle stock held on the PNF must be attended. Unless otherwise specifically accepted, breaks in client service exceeding 10 days will require that stock be removed from the PNF.

### 1.3.3.6. *Camps*

Camps include assigned sites, non-fee sites, drop camps, and itinerant camps. Rules and mitigations for each are summarized below.

Assigned sites are annual fee sites, designated and authorized for occupancy and use by the Permit Holder, and will conform to the following standards unless otherwise authorized or provided for in the SUP or Operating Plan.

1. The boundary of an assigned site will be described as the immediate area surrounding the authorized structures and installations.
2. All structures, including tent frames, meat racks, outhouses, corrals, saddle sheds and racks, woodsheds, hitch racks, feed bunks, saw bucks, water containment and delivery systems, etc., will be temporary, unless otherwise specifically determined to be the minimum necessary and authorized in the Operating Plan to be left in place season to season (i.e., permanent).
3. There will be no storage of equipment or non-native materials (e.g., sawn lumber or plywood) during periods of non-use.
4. All toilet facilities will be temporary, provide a sanitary disposal of waste, and be located at least 200 feet from water. If pit-type toilets are used, pits will be filled in and the site naturalized at the end of each season.
5. All camp facilities and improvements should be at least 200 feet from trails, streams, and lakes, where terrain allows.
6. Camp setup and duration of occupancy at assigned sites will be approved annually based on demonstrated need to provide client service as shown in the approved proposed use schedule. Unless otherwise specifically approved, camp occupancy (camp setup) shall be limited to a period 15 days before and 10 days after, actually serving clients (i.e., unless otherwise authorized, a camp shall be dismantled and removed if there is a break in client service of more than 10 days).
7. Firewood meeting only the anticipated needs for the use period shall be cut, and only a small amount of firewood should remain at the end of the use period. Cutting and storage of firewood in anticipation of next season's activity is not acceptable. Firewood will be collected greater than 200 feet from live water.

Non-fee sites will conform to the following standards unless otherwise authorized or provided for in the SUP or Operating Plan.

1. Facilities in non-fee sites shall be temporary in nature. No permanent facilities will be authorized.
2. Occupancy shall not exceed 14 consecutive days, beginning with camp setup and ending with removal of camp. Within this period, it is the responsibility of the outfitter to naturalize the site.

3. A non-fee site shall not be reoccupied until 14 days after the termination of the last use (occupancy).
4. Campsites and camping activities will be located at least 200 feet from trails, streams, and lakes, where terrain allows.

Drop camp service may be provided only at approved sites. It is the responsibility of the outfitter to naturalize a site used for drop camp services. The site cannot be occupied or in place for more than 14 days.

Itinerant camps (or layover camps), used on progressive travel trips or for layouts of one to three nights, are unassigned. Proposed routes and projected number of nights at each campsite for progressive travel trips shall be submitted to the PNF as part of the annual activity schedule.

We considered whether or not the proposed action would cause any other activities and determined that it would not.

## **2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT**

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat, upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

The PNF determined the proposed action is LAA SRS Chinook salmon and SRB steelhead. They also determined that the proposed action is NLAA Snake River sockeye salmon, Snake River fall Chinook salmon, and designated critical habitats for the following four species: SRS Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon and SRB steelhead. Our concurrence is documented in the "Not Likely to Adversely Affect" Determinations section (Section 2.12).

### **2.1. Analytical Approach**

This opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

This opinion relies on the definition of “destruction or adverse modification,” which “means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species” (50 CFR 402.02).

The designations of critical habitat for salmon and steelhead use the term primary constituent element (PCE) or essential features. The 2016 critical habitat regulations (50 CFR 424.12) replaced this term with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a “destruction or adverse modification” analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

The 2019 regulations define effects of the action using the term “consequences” (50 CFR 402.02). As explained in the preamble to the regulations (84 FR 44977), that definition does not change the scope of our analysis and in this opinion we use the terms “effects” and “consequences” interchangeably.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species, destroy, or adversely modify critical habitat:

- Evaluate the range wide status of the species and critical habitat expected to be adversely affected by the proposed action.
- 
- Evaluate the environmental baseline of the species and critical habitat.
- Evaluate the effects of the proposed action on species and their habitat using an exposure-response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and critical habitat, analyze whether the proposed action is likely to: (1) Directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species; or (2) directly or indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.
- If necessary, suggest a reasonable and prudent alternative to the proposed action.

## **2.2. Rangewide Status of the Species**

This opinion examines the status of each species that would be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species’ likelihood of both survival and recovery. The species status section also helps to inform the description of the species’ “reproduction, numbers, or distribution” as described in 50 CFR 402.02. The opinion also

examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up the designated area, and discusses the function of the essential PBFs that help to form that conservation value. Table 2 describes the Federal Register notices and notice dates for the species under consideration in this opinion.

Table 2. Listing status, status of critical habitat designations and protective regulations, and relevant Federal Register (FR) decision notices for ESA-listed species considered in this opinion.

Species	Listing Status	Critical Habitat	Protective Regulations
<b>Chinook salmon (<i>Oncorhynchus tshawytscha</i>)</b>			
Snake River spring/summer-run	T 6/28/05; 70 FR 37160	10/25/99; 64 FR 57399	6/28/05; 70 FR 37160
<b>Steelhead (<i>O. mykiss</i>)</b>			
Snake River Basin	T 1/05/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160

Note: Listing status: ‘T’ means listed as threatened under the ESA; ‘E’ means listed as endangered.

### 2.2.1. Status of the Species

This section describes the present condition of the SRS Chinook salmon evolutionarily significant unit (ESU) and the SRB steelhead distinct population segment (DPS). NMFS expresses the status of a salmonid ESU or DPS in terms of likelihood of persistence over 100 years (or risk of extinction over 100 years). NMFS uses McElhaney et al.’s (2000) description of a viable salmonid population (VSP) that defines “viable” as less than a five percent risk of extinction within 100 years and “highly viable” as less than a 1 percent risk of extinction within 100 years. A third category, “maintained,” represents a less than 25 percent risk of extinction within 100 years (moderate risk of extinction). To be considered viable, an ESU or DPS should have multiple viable populations so that a single catastrophic event is less likely to cause the ESU/DPS to become extinct and so that the ESU/DPS may function as a meta-population that can sustain population-level extinction and recolonization processes (ICTRT 2007). The risk level of the ESU/DPS is built up from the aggregate risk levels of the individual populations and major population groups (MPGs) that make up the ESU/DPS.

Attributes associated with a VSP are: (1) Abundance (number of adult spawners in natural production areas); (2) productivity (adult progeny per parent); (3) spatial structure; and (4) diversity. A VSP needs sufficient levels of these four population attributes in order to: safeguard the genetic diversity of the listed ESU or DPS; enhance its capacity to adapt to various environmental conditions; and allow it to become self-sustaining in the natural environment (ICTRT 2007). These viability attributes are influenced by survival, behavior, and experiences throughout the entire salmonid life cycle, characteristics that are influenced in turn by habitat and other environmental and anthropogenic conditions. The present risk faced by the ESU/DPS informs NMFS’ determination of whether additional risk will appreciably reduce the likelihood that the ESU/DPS will survive or recover in the wild.

The following sections summarize the status and available information on the species considered in this opinion based on the detailed information provided by the *ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon & Snake River Basin Steelhead* (NMFS 2017), *Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific*

*Northwest* (NWFSC 2015), and *2016 5-year review: Summary and evaluation of Snake River sockeye salmon, Snake River spring-summer Chinook, Snake River fall-run Chinook, Snake River Basin steelhead* (NMFS 2016). These documents are incorporated by reference here.

#### 2.2.1.1. *Snake River Spring/Summer Chinook salmon*

The SRS Chinook salmon ESU was listed as threatened on April 22, 1992 (57 FR 14653). This ESU occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Large portions of historical habitat were blocked in 1901 by the construction of Swan Falls Dam, on the Snake River, and later by construction of the three-dam Hells Canyon Complex from 1955 to 1967. Dam construction also blocked and/or hindered fish access to historical habitat in the Clearwater River basin as a result of the construction of Lewiston Dam (removed in 1973 but believed to have caused the extirpation of native Chinook salmon in that sub-basin). The loss of this historical habitat substantially reduced the spatial structure of this species. The production of SR spring/summer Chinook salmon was further affected by the development of the eight federal dams and reservoirs in the main-stem lower Columbia/Snake River migration corridor between the late 1930s and early 1970s (NMFS 2017).

Several factors led to NMFS' conclusion that SRS Chinook salmon were threatened: (1) abundance of naturally produced Snake River spring and summer Chinook runs had dropped to a small fraction of historical levels; (2) short-term projections were for a continued downward trend in abundance; (3) hydroelectric development on the Snake and Columbia Rivers continued to disrupt Chinook runs through altered flow regimes and impacts on estuarine habitats; and (4) habitat degradation existed throughout the region, along with risks associated with the use of outside hatchery stocks in particular areas (Good et al. 2005). On May 26, 2016, in the agency's most recent 5-year review for Pacific salmon and steelhead, NMFS concluded that the species should remain listed as threatened (81 FR 33468).

***Life History.*** SRS Chinook salmon are characterized by their return times. Runs classified as spring Chinook salmon are counted at Bonneville Dam beginning in early March and ending the first week of June; summer runs are those Chinook adults that pass Bonneville Dam from June through August. Returning adults will hold in deep main-stem and tributary pools until late summer, when they move up into tributary areas and spawn. In general, spring-run type Chinook salmon tend to spawn in higher-elevation reaches of major Snake River tributaries in mid-through late August; and summer-run Chinook salmon tend to spawn lower in Snake River tributaries in late August and September (although the spawning areas of the two runs may overlap).

Spring/summer Chinook salmon follow a "stream-type" life history characterized by rearing for a full year in the spawning habitat and migrating in early to mid-spring as age-1 smolts (Healey 1991). Eggs are deposited in late summer and early fall, incubate over the following winter, and hatch in late winter and early spring of the following year. Juveniles rear through the summer, and most overwinter and migrate to sea in the spring of their second year of life. Depending on the tributary and the specific habitat conditions, juveniles may migrate extensively from natal reaches into alternative summer-rearing or overwintering areas. SRS Chinook salmon return from the ocean to spawn primarily as 4- and 5-year-old fish, after 2 to 3 years in the ocean. A

small fraction of the fish return as 3-year-old “jacks,” heavily predominated by males (Good et al. 2005).

***Spatial Structure and Diversity.*** The Snake River ESU includes all naturally spawning populations of spring/summer Chinook in the main-stem Snake River (below Hells Canyon Dam) and in the Tucannon River, Grande Ronde River, Imnaha River, and Salmon River sub-basins (57 FR 23458), as well as the progeny of 13 artificial propagation programs (85 FR 81822). The hatchery programs include the McCall Hatchery (SFSR), SFSR Eggbox, Johnson Creek, Pahsimeroi River, Yankee Fork Salmon River, Sawtooth Hatchery, Tucannon River, Lostine River, Catherine Creek, Lookingglass Creek, Upper Grande Ronde River, and Imnaha River programs. The historical Snake River ESU likely also included populations in the Clearwater River drainage and extended above the Hells Canyon Dam complex.

Within the Snake River ESU, the ICTRT identified 28 extant and 4 extirpated or functionally extirpated populations of spring/summer-run Chinook salmon, listed in Table 3 (ICTRT 2003; McClure et al. 2005). The ICTRT aggregated these populations into five MPGs: Lower Snake River, Grande Ronde/Imnaha Rivers, South Fork Salmon River, MFSR, and Upper Salmon River. For each population, Table 3 shows the current risk ratings that the ICTRT assigned to the four parameters of a VSP (spatial structure, diversity, abundance, and productivity).

Spatial structure risk is low to moderate for most populations in this ESU (NWFSC 2015) and is generally not preventing the recovery of the species. Spring/summer Chinook salmon spawners are distributed throughout the ESU albeit at very low numbers. Diversity risk, on the other hand, is somewhat higher, driving the moderate and high combined spatial structure/diversity risks shown in Table 3 for some populations. Several populations have a high proportion of hatchery-origin spawners—particularly in the Grande Ronde, Lower Snake, and South Fork Salmon MPGs—and diversity risk will need to be lowered in multiple populations in order for the ESU to recover (ICTRT 2007; ICTRT 2010; NWFSC 2015).

***Abundance and Productivity.*** Historically, the Snake River drainage is thought to have produced more than 1.5 million adult spring/summer Chinook salmon in some years (Matthews and Waples 1991), yet in 1994 and 1995, fewer than 2,000 naturally produced adults returned to the Snake River (ODFW and WDFW 2019). From the mid-1990s and the early 2000s, the population increased dramatically and peaked in 2001 at 45,273 naturally produced adult returns. Since 2001, the numbers have fluctuated between 32,324 (2003) and 4,425 (2017), and the trend for the most recent five years (2016-2020) has been generally downward (ODFW and WDFW 2021). Although most populations in this ESU have increased in abundance since listing, 27 of the 28 extant populations remain at high risk of extinction due to low abundance/productivity, with one population (Chamberlin Creek) at moderate risk of extinction (NWFSC 2015). Furthermore, the most recent returns indicate that all populations in the ESU were below replacement for the 2013 brood year (Felts et al. 2019)<sup>2</sup>, which reduced abundance across the ESU. All currently extant populations of SRS Chinook salmon will likely have to increase in abundance and productivity in order for the ESU to recover (Table 3).

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<sup>2</sup> The return size is not known until five years after the brood year. Preliminary results for the 2019 redd counts indicate that the 2014 brood year will be below replacement for the vast majority (possibly all) of the populations in the Snake River spring/summer Chinook salmon ESU.



Spring/summer Chinook salmon occur on the northern and eastern parts of the PNF. They occupy all of the Salmon River drainage except upstream of the falls on the Little Salmon River (LSR). Although these falls may have been only a partial barrier in the past, they have been identified as a complete barrier in the Final Recovery Plan (NMFS 2017).

Table 3. Summary of viable salmonid population parameter risks and overall current status of each population in the Snake River spring/summer Chinook salmon evolutionarily significant unit (NWFSC 2105).

Major Population Group	Population	VSP Risk Parameter		
		Abundance/Productivity	Spatial Structure/Diversity	Overall Viability Rating
South Fork	Little Salmon River	<i>Insf. data</i>	Low	High Risk
Salmon River	South Fork Salmon River main-stem	High	Moderate	High Risk
(Idaho)	Secesh River	High	Low	High Risk
	East Fork South Fork Salmon River	High	Low	High Risk
	Chamberlain Creek	Moderate	Low	Maintained
	Lower Middle Fork Salmon River	<i>Insf. data</i>	Moderate	High Risk
Middle Fork	Big Creek	High	Moderate	High Risk
Salmon River	Camas Creek	High	Moderate	High Risk
(Idaho)	Loon Creek	High	Moderate	High Risk
	Upper Middle Fork Salmon River	High	Moderate	High Risk
	Sulphur Creek	High	Moderate	High Risk
	Bear Valley Creek	High	Low	High Risk
	Marsh Creek	High	Low	High Risk
	North Fork Salmon River	<i>Insf. data</i>	Low	High Risk
	Lemhi River	High	High	High Risk
	Salmon River Lower Main-stem	High	Low	High Risk
Upper	Pahsimeroi River	High	High	High Risk
Salmon River	East Fork Salmon River	High	High	High Risk
(Idaho)	Yankee Fork Salmon River	High	High	High Risk
	Valley Creek	High	Moderate	High Risk
	Salmon River Upper Main-stem	High	Low	High Risk
	Panther Creek			<b><i>Extirpated</i></b>
Lower Snake	Tucannon River	High	Moderate	High Risk
(Washington)	Asotin Creek			<b><i>Extirpated</i></b>
	Wenaha River	High	Moderate	High Risk
Grande	Lostine/Wallowa River	High	Moderate	High Risk
Ronde and	Minam River	High	Moderate	High Risk
Imnaha	Catherine Creek	High	Moderate	High Risk
Rivers	Upper Grande Ronde River	High	High	High Risk
(Oregon/	Imnaha River	High	Moderate	High Risk
Washington)	Lookingglass Creek			<b><i>Extirpated</i></b>
	Big Sheep Creek			<b><i>Extirpated</i></b>

Note: Populations shaded in gray are those that occupy the action area.

#### 2.2.1.2. Snake River Basin Steelhead

The SRB steelhead was listed as a threatened ESU on August 18, 1997 (62 FR 43937), with a revised listing as a DPS on January 5, 2006 (71 FR 834). This DPS occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Reasons for the decline of this species include substantial modification of the seaward migration corridor by hydroelectric power development on the main-stem Snake and Columbia Rivers, and widespread habitat degradation and reduced stream flows throughout the Snake River basin (Good et al. 2005). Another major concern for the species is the threat to genetic integrity from past and present hatchery practices, and the high proportion of hatchery fish in the

aggregate run of SRB steelhead over Lower Granite Dam (Good et al. 2005; Ford 2011). On May 26, 2016, in the agency's most recent 5-year review for Pacific salmon and steelhead, NMFS concluded that the species should remain listed as threatened (81 FR 33468).

**Life History.** Adult SRB steelhead enter the Columbia River from late June to October to begin their migration inland. After holding over the winter in larger rivers in the Snake River basin, steelhead disperse into smaller tributaries to spawn from March through May. Earlier dispersal occurs at lower elevations and later dispersal occurs at higher elevations. Juveniles emerge from the gravels in 4 to 8 weeks, and move into shallow, low-velocity areas in side channels and along channel margins to escape high velocities and predators (Everest and Chapman 1972). Juvenile steelhead then progressively move toward deeper water as they grow in size (Bjornn and Rieser 1991). Juveniles typically reside in fresh water for 1 to 3 years, although this species displays a wide diversity of life histories. Smolts migrate downstream during spring runoff, which occurs from March to mid-June depending on elevation, and typically spend 1 to 2 years in the ocean.

**Spatial Structure and Diversity.** This species includes all naturally spawning steelhead populations below natural and manmade impassable barriers in streams in the Snake River basin of southeast Washington, northeast Oregon, and Idaho, as well as the progeny of six artificial propagation programs (85 FR 81822). The artificial propagation programs include the Dworshak National Fish Hatchery, Salmon River B-run, South Fork Clearwater B-run, East Fork Salmon River Natural, Tucannon River, and the Little Sheep Creek/Imnaha River programs. The Snake River basin steelhead listing does not include resident forms of *O. mykiss* (rainbow trout) co-occurring with steelhead.

The ICTRT identified 24 extant populations within this DPS, organized into five MPGs (ICTRT 2003). The ICTRT also identified a number of potential historical populations associated with watersheds above the Hells Canyon Dam complex on the main-stem Snake River, a barrier to anadromous migration. The five MPGs with extant populations are the Clearwater River, Salmon River, Grande Ronde River, Imnaha River, and Lower Snake River. In the Clearwater River, Dworshak Dam blocked the historic North Fork population from accessing spawning and rearing habitat. Current steelhead distribution extends throughout the DPS, such that spatial structure risk is generally low. For each population in the DPS, Table 4 shows the current risk ratings for the parameters of a VSP (spatial structure, diversity, abundance, and productivity).

The SRB steelhead DPS exhibit a diversity of life-history strategies, including variations in fresh water and ocean residence times. Traditionally, fisheries managers have classified SRB steelhead into two groups, A-run and B-run, based on ocean age at return, adult size at return, and migration timing. A-run steelhead predominantly spend 1-year in the ocean; B-run steelhead are larger with most individuals returning after 2 years in the ocean. New information shows that most Snake River populations support a mixture of the two run types, with the highest percentage of B-run fish in the upper Clearwater River and the South Fork Salmon River; moderate percentages of B-run fish in the MFSR; and very low percentages of B-run fish in the Upper Salmon River, Grande Ronde River, and Lower Snake River (NWFSC 2015). Maintaining life history diversity is important for the recovery of the species.

Diversity risk for populations in the DPS is either moderate or low. Large numbers of hatchery steelhead are released in the Snake River, and the relative proportion of hatchery adults in natural spawning areas near major hatchery release sites remains uncertain. Moderate diversity risks for

some populations are thus driven by the high proportion of hatchery fish on natural spawning grounds and the uncertainty regarding these estimates (NWFSC 2015). Reductions in hatchery-related diversity risks would increase the likelihood of these populations reaching viable status.

***Abundance and Productivity.*** Historical estimates of steelhead production for the entire Snake River basin are not available, but the basin is believed to have supported more than half the total steelhead production from the Columbia River basin (Mallet 1974, as cited in Good et al. 2005). The Clearwater River drainage alone may have historically produced 40,000 to 60,000 adults (Ecovista et al. 2003), and historical harvest data suggests that steelhead production in the Salmon River was likely higher than in the Clearwater (Hauck 1953). In contrast, at the time of listing in 1997, the 5-year geomean abundance for natural-origin steelhead passing Lower Granite Dam, which includes all but one population in the DPS, was 11,462 adults (Ford 2011). Abundance began to increase in the early 2000s, with the single year count and the 5-year geomean both peaking in 2015 at 45,789 and 34,179, respectively (ODFW and WDFW 2021). Since 2015, the numbers have declined steadily with only 9,634 natural-origin adult returns counted for the 2020-run year (ODFW and WDFW 2019).

Population-specific abundance estimates exist for some but not all populations. Of the populations, for which we have data, three (Joseph Creek, Upper Grande Ronde, and Lower Clearwater) are meeting minimum abundance/productivity thresholds and several more have likely increased in abundance enough to reach moderate risk. Despite these recent increases in abundance, the status of many of the individual populations remains uncertain, and four out of the five MPGs are not meeting viability objectives (NWFSC 2015). In order for the species to recover, more populations will need to reach viable status through increases in abundance and productivity.

Snake River basin steelhead occur on the northern and eastern parts of the PNF. They occupy all of the Salmon River drainage except upstream of LSR falls, where the falls has been identified as a complete barrier in the Final Recovery Plan, pg. 39 (NMFS 2017).

Table 4. Summary of viable salmonid population parameter risks and overall current status of each population of the Snake River steelhead distinct population segment (NWFSC 2015). Risk ratings with "?" are based on limited or provisional data series.

Major Population Group	Population	VSP Risk Parameter		
		Abundance/Productivity	Spatial Structure/Diversity	Overall Viability Rating
Lower Snake River	Tucannon River	High?	Moderate	High Risk?
	Asotin Creek	Moderate?	Moderate	Maintained?
Grande Ronde River	Lower Grande Ronde	N/A	Moderate	Maintained?
	Joseph Creek	Very Low	Low	<b>Highly Viable</b>
	Wallowa River	N/A	Low	Maintained?
	Upper Grande Ronde	Low	Moderate	<b>Viable</b>
Imnaha River	Imnaha River	Moderate?	Moderate	Maintained?
Clearwater River (Idaho)	Lower Main-stem Clearwater River*	Moderate?	Low	Maintained?
	South Fork Clearwater River	High?	Moderate	High Risk?
	Lolo Creek	High?	Moderate	High Risk?
	Selway River	Moderate?	Low	Maintained?
	Lochsa River	Moderate?	Low	Maintained?
	North Fork Clearwater River			<i>Extirpated</i>
Salmon River (Idaho)	Little Salmon River	Moderate?	Moderate	Maintained?
	South Fork Salmon River	Moderate?	Low	Maintained?
	Secesh River	Moderate?	Low	Maintained?
	Chamberlain Creek	Moderate?	Low	Maintained?
	Lower Middle Fork Salmon River	Moderate?	Low	Maintained?
	Upper Middle Fork Salmon River	Moderate?	Low	Maintained?
	Panther Creek	Moderate?	High	High Risk?
	North Fork Salmon River	Moderate?	Moderate	Maintained?
	Lemhi River	Moderate?	Moderate	Maintained?
	Pahsimeroi River	Moderate?	Moderate	Maintained?
	East Fork Salmon River	Moderate?	Moderate	Maintained?
	Upper Main-stem Salmon River	Moderate?	Moderate	Maintained?
Hells Canyon	Hells Canyon Tributaries			<i>Extirpated</i>

Note: Populations shaded in gray are those that occupy the action area.

\*Current abundance/productivity estimates for the Lower Clearwater Main-stem population exceed minimum thresholds for viability, but the population is assigned moderate risk for abundance/productivity due to the high uncertainty associated with the estimate.

### 2.2.2. Climate Change Implications for ESA-listed Species and their Critical Habitat

One factor affecting the range wide status of Snake River salmon and steelhead, and aquatic habitat at large is climate change. The U.S. Global Change Research Program (USGCRP) reports average warming in the Pacific Northwest of about 1.3°F from 1895 to 2011, and projects an increase in average annual temperature of 3.3°F to 9.7°F by 2070 to 2099 (compared to the period 1970 to 1999), depending largely on total global emissions of heat-trapping gases (predictions based on a variety of emission scenarios including B1, RCP4.5, A1B, A2, A1FI, and RCP8.5 scenarios). The increases are projected to be largest in summer (Melillo et al. 2014, USGCRP 2018). The 5 warmest years in the 1880 to 2019 record have all occurred since 2015, while 9 of the 10 warmest years have occurred since 2005 (Lindsey and Dahlman 2020).

Several studies have revealed that climate change has the potential to affect ecosystems in nearly all tributaries throughout the Snake River (Battin et al. 2007; ISAB 2007). While the intensity of

effects will vary by region (ISAB 2007), climate change is generally expected to alter aquatic habitat (water yield, peak flows, and stream temperature). As climate change alters the structure and distribution of rainfall, snowpack, and glaciations, each factor will in turn alter riverine hydrographs. Given the increasing certainty that climate change is occurring and is accelerating (Battin et al. 2007), NMFS anticipates salmonid habitats will be affected. Climate and hydrology models project significant reductions in both total snow pack and low-elevation snow pack in the Pacific Northwest over the next 50 years (Mote and Salathé 2009). These changes will shrink the extent of the snowmelt-dominated habitat available to salmon and may restrict our ability to conserve diverse salmon life histories.

In the Pacific Northwest, most models project warmer air temperatures, increases in winter precipitation, and decreases in summer precipitation. Average temperatures in the Pacific Northwest are predicted to increase by 0.1 to 0.6°C (0.2°F to 1.0°F) per decade (Mote and Salathé 2009). Warmer air temperatures will lead to more precipitation falling as rain rather than snow. As the snow pack diminishes, seasonal hydrology will shift to more frequent and severe early large storms, changing stream flow timing, which may limit salmon survival (Mantua et al. 2009). The largest driver of climate-induced decline in salmon populations is projected to be the impact of increased winter peak flows, which scour the streambed and destroy salmon eggs (Battin et al. 2007).

Higher water temperatures and lower spawning flows, together with increased magnitude of winter peak flows are all likely to increase salmon mortality. The Independent Scientific Advisory Board (ISAB) (2007) found that higher ambient air temperatures will likely cause water temperatures to rise. Salmon and steelhead require cold water for spawning and incubation. As climate change progresses and stream temperatures warm, thermal refugia will be essential to persistence of many salmonid populations. Thermal refugia are important for providing salmon and steelhead with patches of suitable habitat while allowing them to undertake migrations through or to make foraging forays into areas with greater than optimal temperatures. To avoid waters above summer maximum temperatures, juvenile rearing may be increasingly found only in the confluence of colder tributaries or other areas of cold-water refugia (Mantua et al. 2009).

Climate change is expected to make recovery targets for salmon and steelhead populations more difficult to achieve. Climate change is expected to alter critical habitat by generally increasing temperature and peak flows and decreasing base flows. Although changes will not be spatially homogenous, effects of climate change are expected to decrease the capacity of critical habitat to support successful spawning, rearing, and migration. Habitat action can address the adverse impacts of climate change on salmon. Examples include restoring connections to historical floodplains and freshwater and estuarine habitats to provide fish refugia and areas to store excess floodwaters, protecting and restoring riparian vegetation to ameliorate stream temperature increases, and purchasing or applying easements to lands that provide important cold water or refuge habitat (Battin et al. 2007; ISAB 2007).

### **2.3. Action Area**

“Action area” means all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area is the

watersheds on the PNF that have Chinook salmon, steelhead, and/or their critical habitats, and that could be affected by OG operations (Table 5 and Figure 1).

Table 5. Section 7 Watersheds and sub-basins where proposed outfitter and guide activities on the Payette National Forest could affect Snake River spring/summer Chinook salmon and Snake River Basin steelhead and their critical habitat.

Section 7 Watershed	Sub-basin Name	5 <sup>th</sup> HUC
South Fork Salmon River (SFSR)	Upper EFSFSR	1706020802
	Lower EFSFSR	1706020803
	Upper SFSR	1706020804
	Secesh River	1706020805
	Lower SFSR	1706020806
	Johnson Creek (BNF)	1706020801
Middle Fork Salmon River (MFSR)	Marble Creek	1706020508
	Upper Big Creek	1706020605
	Middle Big Creek	1706020606
	Monumental Creek	1706020607
	Rush Creek	1706020608
	Lower Big Creek	1706020609
	Indian Creek (Salmon-Challis National Forest)	1706020507
Main Salmon Southeast (MSSE)	Chamberlain Creek	1706020703
	Big Mallard Creek-Salmon River	1706020707
	Big Squaw Creek-Salmon River	1706020705
	Cottonwood Creek-Salmon River	1706020702
Main Salmon Southwest (MSSW)	Warren Creek	1706020708
	Sheep Creek-Salmon River	1706020711
	Partridge Creek-Salmon River	1706020902
	French Creek	1706020901
Little Salmon River (LSR)	Hazard Creek	1706021003
	Middle LSR	1706021002
	Lower LSR	1706021005
	Rapid River	1706021004

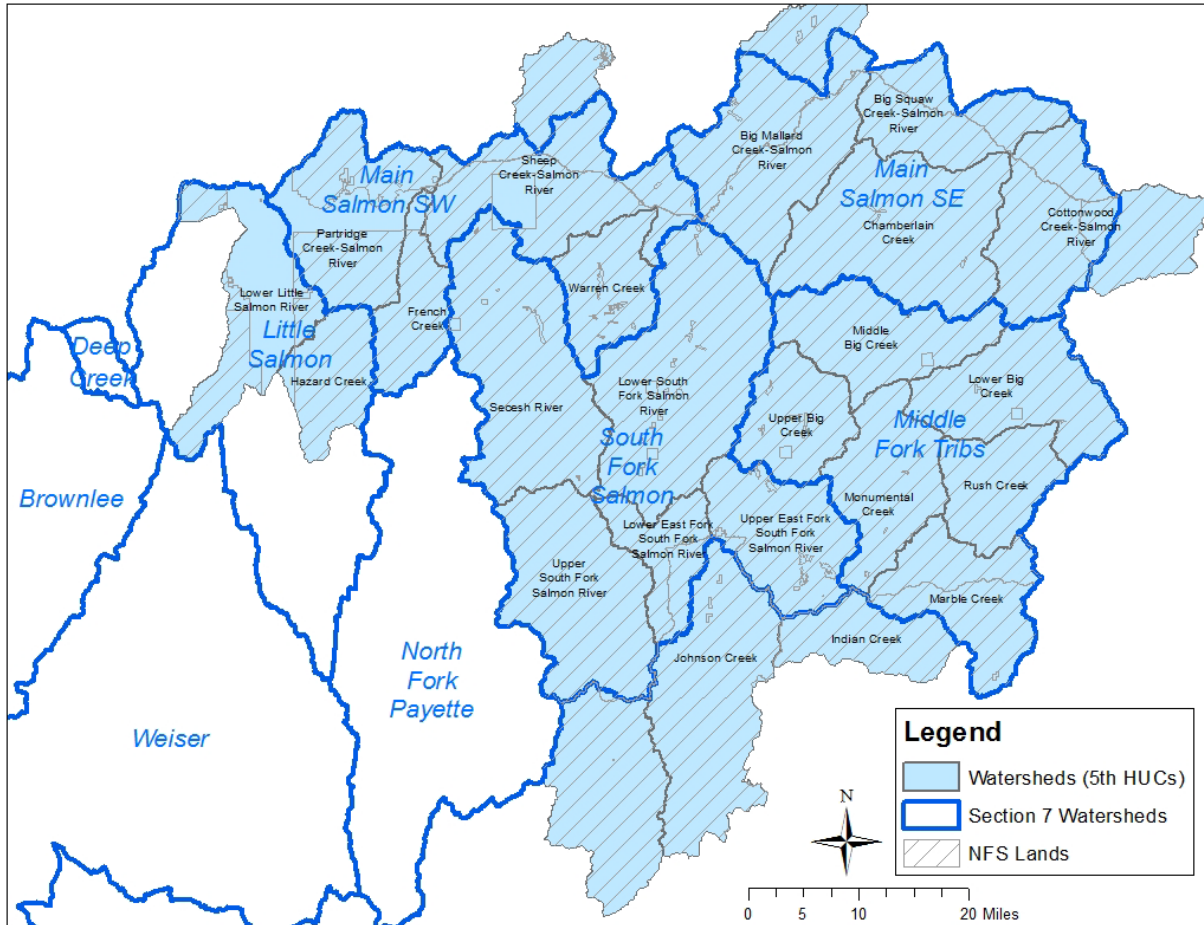


Figure 1. Map of the action area with sub-watersheds, for the proposed Payette National Forest Outfitters and Guides Operations.

#### 2.4. Environmental Baseline

The “environmental baseline” refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of state or private actions which are contemporaneous with the consultation in process. The consequences to listed species, or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline (50 CFR 402.02).

The action area is used by all freshwater life history stages of threatened SRS Chinook salmon and SRB steelhead. The condition of the listed species and their habitat in the action area are described in the sections below. Because climate change has already had impacts across the Snake River basin, discussions of the status of the species and the environmental baseline incorporates effects of climate change.



2.4.1. Condition of Snake River Spring/Summer Chinook Salmon in the Action Area

Eight populations of SRS Chinook salmon have the potential to be affected by the proposed action: Little Salmon River, SFSR main-stem, Secesh River, EFSFSR, Chamberlain Creek, Lower MFSR, Big Creek, and Upper MFSR. Estimates of natural-origin and total (natural- plus hatchery-origin) spawners through 2018 for these populations are shown in Table 6 along with the proposed recovery goal for each population. These data show recent and substantial downward trends in abundance of natural-origin and total spawners for most of the populations when compared to the 2009 to 2013 period. All populations except Chamberlain Creek remain considerably below the minimum abundance thresholds established by the ICTRT and are at a high risk of extinction.

Table 6. Recovery goals and 5-year geometric mean of natural-origin spawner counts for Snake River spring/summer Chinook salmon, excluding jacks. Number in parenthesis is the 5-year geometric mean of total spawner counts. “% Change” is a comparison between the two most recent 5-year periods.

Population	Minimum Abundance Threshold	Proposed Recovery Goal <sup>1</sup>	Spawner Counts (5-year geomean)		% Change
			2009 - 2013	2014 - 2018	
Little Salmon River	750	Maintained	NA	NA	NA
South Fork Salmon River	1,000	Viable	759 (1,058)	241 (615)	-68 (-42)
East Fork South Fork Salmon River	1,000	Maintained	338 (646)	317 (556)	-6 (-14)
Secesh River	750	Highly Viable	781 (798)	481 (501)	-38 (-37)
Chamberlain Creek	750	Viable	748 (748)	693 (693)	-7 (-7)
Big Creek	1,000	Highly Viable	257 (257)	129 (129)	-50 (-50)
Lower Middle Fork Salmon River	500	Maintained	NA	4 (4)	NA
Upper Middle Fork Salmon River	750	Maintained	76 (76)	75 (75)	-1 (-1)

NA = Not Available.

Note: At the time of drafting this opinion, data for 2019 and 2020 have not yet been synthesized at the population level in this ESU. Data obtained from Williams 2020a.

<sup>1</sup>There are several scenarios that could meet the requirements for ESU recovery (as reflected in the proposed goals for populations in Oregon and Washington). What is reflected here for populations in Idaho are the proposed status goals selected by NMFS and the State of Idaho. The goals are defined as follows: Maintained = moderate risk of extinction over a 100-year period; Viable = Low risk of extinction over a 100-year period; and Highly Viable = very low risk of extinction over a 100-year period.

The BA provides detailed information about Chinook salmon use of streams within each Section 7 watershed. For visual purposes, streams within the action area are illustrated in Figure 2. Significant spawning of spring/summer Chinook salmon occur in the following rivers that are within the action area: Rapid River, SFSR, Secesh River, Big Creek, Chamberlain Creek, and

EFSFSR. Spawning also occurs in tributaries to these rivers. Rearing by juvenile Chinook may occur in any of the streams that are currently accessible.

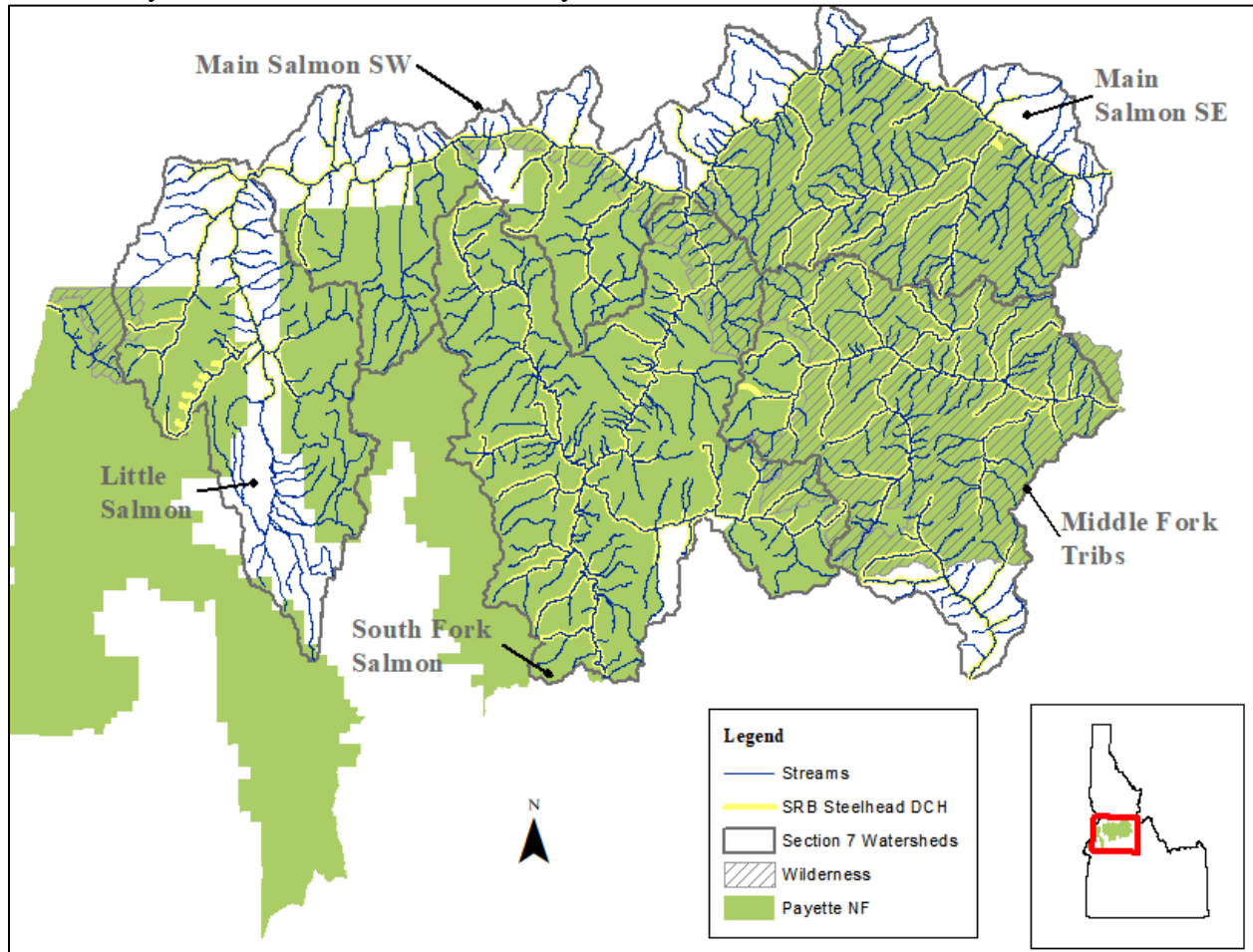


Figure 2. Overview of streams (mapped at the 1:100K scale) within the action area.

The most common habitat-related limiting factors identified for these populations includes excess sediment, degraded riparian conditions, passage barriers, elevated stream temperatures, and nutrient deficiency. Low flow is an additional limiting factor that impacts fish in the Little Salmon River and Big Creek populations (NMFS 2017).

#### 2.4.2. Condition of Snake River Basin steelhead in the Action Area

Six populations of SRB steelhead may be impacted by the proposed action: Little Salmon River SFSR, Secesh River, Chamberlain Creek, Lower MFSR, and Upper MFSR. The best available scientific information about the current condition of these populations is the genetic evaluations performed by the IDFG, Columbia River Inter-Tribal Fish Commission, and the Northwest Fisheries Science Center (NWFSC). Tissue samples are collected from adult steelhead trapped at Lower Granite Dam and the sampled fish are then assigned to genetic stocks by comparing them to samples taken inside the boundary of each spawning population (Table 7). The genetic stock identification groups are broader than spawning populations, but fit within larger aggregates. The two aggregates including populations subject to this consultation are the SFSR and MFSR. The

most recent 5-year geometric means indicate large decreases in natural-origin abundance for most of these two genetic stocks. Numbers for 2019 were much lower than the 2014 to 2018 geomean.

Table 7. 5-year geometric mean of natural-origin abundance for genetic stocks of SRB steelhead.

Genetic Stock Group	Spawner Counts (5-year geomean)		% Change
	2009- 2013	2014- 2018	
Middle Fork Salmon	3,246	1,643	-49
South Fork Salmon River	1,441	831	-42

Data obtained from Williams 2020b, c.

The BA provides detailed information about steelhead use of streams within each Section 7 watershed. For visual purposes, streams including those identified as steelhead designated critical habitat within the action area are illustrated in Figure 2. Steelhead spawning likely overlaps much of the Chinook salmon spawning and also likely extend into tributary habitats to a greater extent. Juveniles rear in any of the currently accessible streams.

The most common habitat-related limiting factors identified for these populations are similar to Chinook salmon and include excess sediment, passage barriers, and elevated stream temperatures. Degraded riparian conditions, degraded habitat complexity, and low flows are additional limiting factors impacting some of the populations (NMFS 2017).

#### 2.4.3. Condition of Habitat in the Action Area

To describe habitat conditions within the action area, we first provide a general overview of the physical condition of the action area and of activities that have an impact on ESA-listed resources. NMFS then describes the environmental baseline in terms of the biological requirements for habitat features and processes necessary to support all life stages of each listed species within the action area. As described above, the SRS Chinook salmon and SRB steelhead reside in and migrate through the action area. Thus, the biological requirements are the physical and biological features (PBFs) essential to spawning, rearing, and freshwater migration. Examples of PBFs include, but are not limited to: water temperature, water quality and quantity, natural cover, spawning gravel, and riparian vegetation.

All of the PBFs for Chinook salmon and steelhead are represented to varying degrees in the PNF's Land and Resource Management Plan (LRMP) Matrix of Pathways and Watershed Condition Indicators (hereinafter referred to as the LRMP Matrix) (USFS 2003, Appendix B). A watershed condition indicator (WCI) is a particular aquatic, riparian, or hydrologic measure that is relevant to the conservation of ESA-listed salmonids. In some instances, a WCI is synonymous with a PBF, temperature being a prime example. In other instances, many WCIs comprise a PBF. For example, the large woody debris, pool frequency and quality, large pools/pool quality, and off-channel habitat WCIs provide insight into the natural cover and cover/shelter PBFs.

The PNF uses the LRMP Matrix as a tool for assessing environmental baseline conditions and evaluating the potential effects of an action on WCIs, which as described above are representative of the PBFs essential for the conservation of ESA-listed species. The WCIs are

described in terms of their functionality, that is, functioning appropriately (FA), functioning at risk (FAR), or functioning at unacceptable risk (FUR). A watershed comprised of WCIs that are FA is considered to be meeting the biological requirements of listed anadromous species (whereas WCIs that are FAR or FUR suggest that the relevant PBF is not adequately provided for).

The PNF evaluated the baseline conditions of the action area, at the scale of the Section watershed, using the LRMP Matrix. The analysis performed by the PNF represents some of the best available science in regards to the environmental baseline within the action area. A summary of environmental baseline conditions for each Section 7 watershed is provided below. The BA and Appendix B of the BA contain more detailed descriptions of the environmental baseline for individual WCIs in each section 7 watershed, and are herein incorporated by reference. Within the action area, habitat-related limiting factors include degraded riparian conditions and instream habitat complexity, excess sediment, passage barriers, low summer flows, and high water temperatures (NMFS 2017).

#### 2.4.3.1. *Main Salmon Southwest*

The Main Salmon SW (MSSW) watershed is not a true watershed. It is a grouping of multiple tributaries of, and including, the main Salmon River. This watershed extends from the mouth of the Lower Snake River upstream to the SFSR and includes land on both sides of the Salmon River. Only those fifth field hydrologic unit codes (HUC) with some portion of their area on the PNF are considered in this opinion. Private land exists in the lower sections of the Partridge Creek-Salmon River and French Creek sub-watersheds. Private lands are also present, mainly in the Warren Mining District (Warren Creek 5th field HUC), and within a large section of Bureau of Land Management land on Marshal Mountain in the Sheep Creek-Salmon River 5th field HUC.

Land uses across the watershed include timber harvest, grazing, localized areas of mining, recreation, and maintenance of roads and trails; however, some portions of the MSSW are isolated by their steep terrain and have relatively few human influences. In general, these activities result in ground disturbance and vegetation removal and increase the potential for erosion and sediment delivery to stream channels. Mining has altered the natural characteristics of the Warren Creek sub-watershed in particular where much of the valley floor was extensively dredged for gold. Removal of shading vegetation has resulted in localized increases in stream temperatures. Timber harvest is limited, but some areas have been salvage logged since fires in 1994. Recreational all-terrain vehicle (ATV) use is popular in some areas and ground disturbance, fording of streams and creation of new, unauthorized ATV trails have led to resource damage in areas. There are approximately 357 miles of road in the MSSW Section 7 watershed, although road density is relatively low at 0.69 mi/mi<sup>2</sup>.

Habitat conditions in the MSSW Section 7 watershed vary greatly, ranging from FA to FUR. The Warren Creek sub-watershed is the most degraded considering the extent of historical mining activities and many WCIs are FUR (e.g., refugia, floodplain connectivity, temperature, peak/base flows, riparian conservation area [RCA], and road density/location). Where human activities have occurred in the watershed, temperature is FUR and the following WCIs are FAR: refugia, streambank condition, road density/location, and RCA.

#### 2.4.3.2. *Main Salmon Southeast*

The Main Salmon Southeast (MSSE) watershed includes Chamberlain Creek and other tributaries, which flow north into the main Salmon River between the SFSR and the MFSR. Because the MSSE is entirely within the Frank Church (aside from some private inholdings), ground-disturbing activities generally do not occur. The area is not roaded, although there are 93.1 miles of open, non-motorized trails located within RCAs in this watershed. Human activities that have potential to impact aquatic ecosystems include outfitter operations and other actions occurring in recreation and administration areas (e.g., Chamberlain Guard Station and airstrip).

Prior to the 1990s, Ranch Creek and a historic channel that received some high flows from Ranch Creek were impacted by stock grazing near the Chamberlain Guard Station, administered by the PNF, and at Stonebraker and Hotzel Ranches, administered by IDFG. Stock are no longer held for long periods of time in the area. Historically, ditches were constructed to Ranch Creek base flows into the historic channel in order to protect guard station infrastructure. Currently, Ranch Creek flows down a constructed ditch and the historic channel west of the guard station and under the north-south airstrip through a culvert. The original Ranch Creek channel east of the airstrip is dry most of the year. Juvenile Chinook salmon have been documented in the historic channel and constructed ditch west of the guard station.

Fires have continually influenced the succession of the vegetative landscape, creating brush fields, large lodge pole pine stands, extensive snag patches, and variations in the age and structure of the vegetation. Some of the larger fires within the MSSE in the last 30 years include a 1988 fire that burned 78,000 acres, a 95,346-acre fire in 2000, and a 90,050-acre fire in 2017 that re-burned much of the 2000 fire area. As a rule, when a lightning caused fire starts in the Frank Church, the default response of the PNF is to allow the fire to burn. However, in many cases actions are taken to suppress fires that threaten structures or pose other risks to life or property. Suppression actions that have occurred in this watershed include digging line, cutting snags, controlled burns, dousing flames with helicopter buckets, and retardant drops.

Habitat conditions in this Section 7 watershed are FA. Chamberlain Creek and West Fork Chamberlain Creek are the most important spawning and rearing streams in the watershed. Trends in long-term sediment monitoring data for West Fork Chamberlain Creek and Chamberlain Creek do not show significant increases in sediment deposition in Chinook salmon spawning areas from the fires (Zurstadt 2017). The stream temperature in Chamberlain Creek does appear to be on a long-term increasing trend. It is possible that wildfire effects on riparian vegetation are playing a part in stream temperatures, but other factors such as increased air temperatures could also be having an effect.

#### 2.4.3.3. *Middle Fork Salmon River Tributaries*

The MFSR tributaries watershed (MFT) includes Big Creek and its tributaries, and upper Marble Creek. Big Creek is a tributary to the MFSR. Except for upper Big Creek, the MFT falls within the Frank Church. Little new PNF habitat data are available for Frank Church streams, and the data that is available dates back to the 1990s and early 2000s, but ongoing management related impacts are isolated and minor.

Most of the anthropogenic impacts from mining, grazing, and other activities are becoming less and less evident as fire and other natural processes prevail. Since 2007, wildfire has been the most significant form of disturbance affecting baseline conditions. In 2014, rain on snow triggered a number of avalanches in Big Creek and Monumental Creek that swept large volumes of fire killed trees into the stream channels. Many of the large wood jams have subsequently broken apart during high flows and the wood has been redistributed into new aggregates in the stream channels or onto floodplains. The natural processes of fire, avalanche, landslide, and flood undoubtedly have affected WCIs, but new PNF habitat data are not available for areas in the Frank Church.

Habitat quality is considered near natural throughout Big Creek, with the exception of upper Big Creek Aquatic habitats in upper Big Creek have been influenced by human activities including historical and present mining, private summer residences, outfitter lodges, water diversions, hydropower sites, airstrips, recreation, and PNF guard stations. Mining and related activities such as road building have been most influential. Numerous placer and lode deposits were prospected, but most are abandoned now. Scattered mining disturbance dates back almost a century and abandoned mining debris has been left in or near streams. In the past few years the PNF and other entities have implemented storm damage risk reduction measures on roads, decommissioned roads, and placed roads in long-term storage. In addition, dispersed recreation sites adjacent to Big Creek have been decommissioned or rehabilitated to limit use. Implementation of these activities will reduce ongoing sediment delivery, improve riparian vegetation conditions, and reduce the potential for direct impact to fish from recreating individuals.

Most of Monumental Creek, including West Fork Monumental Creek, is within the Frank Church, where WCIs are expected to be within the range of natural conditions. Upper Monumental Creek still has degraded conditions from the main road into the area (i.e., barrier culverts and sediment delivery), and large-scale open pit mining in the 1970s and 80s. The Dewey Mine in upper Mule Creek is of particular concern due to a failing settling pond and other erosion issues.

All tributaries to middle and lower Big Creek (including Rush Creek) are entirely within the Frank Church and WCIs are expected to be within the range of natural variability. Minor impacts are expected from NFS trails, and activities related to PNF administrative facilities and private inholding, such as the Cabin Creek Airstrip and Taylor Ranch.

The upper six miles of Marble Creek, above Cottonwood Creek, are on the PNF (total stream length of 24 miles). Except for relic impacts from historic mining especially in upper Sunnyside Creek, WCIs for Marble Creek are expected to be within the natural range of variability. The Lightning Pit and Sunnyside Mine tailings continue to pose a risk to watershed condition.

In summary, the vast majority of the MFSR Section 7 watershed is designated wilderness and habitat conditions are generally FA and considered to be near natural. In areas impacted by human activities, the following WCIs are generally FAR: substrate embeddedness, temperature, physical barriers, road density, and RCA. Preserving habitat conditions that are FA and improving habitat conditions that are FAR is vitally important for the recovery of SRS Chinook salmon and SRB steelhead. In addition, portions of this watershed may serve as an important “climate shield” over time in the face of climate change.

#### 2.4.3.4. *South Fork Salmon River*

The SFSR Section 7 watershed includes the EFSFSR, Lower SFSR, Secesh River, and the lower portion of the Upper SFSR watershed. Over the last 30 years, most of the culvert fish barriers in the SFSR have been replaced with structures that allow fish passage. As a result, the sub-basin has a range of connected high quality fish habitat.

State and private lands make up less than 4 percent of the area. Designated wilderness areas total 69,100 acres. A variety of land uses occur on public and private land, including but not limited to, mining, recreation, road maintenance and reconstruction, road use, and timber harvest. Livestock grazing on allotments no longer occurs in this Section 7 watershed.

Since 2007, wildfires have been the largest disturbance mechanism in the SFSR. Within the action area, 255,866 acres have experienced fire between 2007 and 2017. In June of 2010, a heavy rain caused record high flows in the SFSR with 9,710 cubic feet per second recorded at the Krassel Gaging Station. In 2014, many large avalanches along the EFSFSR deposited large wood into the drainage.

Human-influenced disturbances vary within this Section 7 watershed. The upper South Fork is in an area dominated by granitic rocks of the Idaho Batholith with soils that are relatively infertile and lack cohesion. This characteristic leads to high potential for erosion when the lands are disturbed. Rain on snow events have periodically occurred within the upper SFSR, causing increased sediment to enter the system from old logging roads. However, restoration and sediment reduction efforts have been underway for over 40 years. Since 2007, the PNF in partnership with the Nez Perce Tribe, has obliterated approximately 50 miles of logging road on the PNF. The upper SFSR is also influenced by an annual fishing season managed by the IDFG. This activity results in ongoing streambank impacts related to concentrated use of areas for fishing access and camping. Construction of access points using naturally occurring elements (stone and logs) has been underway since 2016 to reduce erosion. The EFSFSR is predominately influenced by the legacy of the century-old Stibnite and Cinnabar mining areas (Faurot and Burns, 2007). However, reclamation efforts in the area have reduced potential erosion and sediment delivery by reducing sediment sources, restoring hydrologic function, and vegetating disturbed sites. Actions have also removed hazardous materials toxic to aquatic organisms (Faurot and Burns, 2007). The lower South Fork and Secesh River have had few human-influenced disturbances in the past ten years.

Temperature within the action area is currently rated as functioning at risk, except for a functioning at unacceptable risk rating in the upper South Fork. However, there is little evidence that management activities within the sub-basin contribute to elevated temperatures. Given the stream elevation, topography, aspect, and riparian vegetation characteristics, the data likely reflects the natural range of variability of the watershed. The Idaho Department of Environmental Quality has a total maximum daily load for temperature for the SFSR largely due to wildfire effects on shade in areas where stand-replacing fires occurred in higher elevation areas of the BNF (IDEQ 2012a). The lower canyon section of the SFSR is in relatively good condition with respect to shade primarily because it is wide with low shade targets to begin with, and is in a more sparsely vegetated dry forest zone (IDEQ 2012a). Sediment ratings for the action area are currently rated as functioning appropriately, with more weight put on Free Matrix ratings than Cobble Embeddedness.

#### 2.4.3.5. *Little Salmon River*

The upper half of the Little Salmon River (LSR) Section 7 watershed consists of a broad-valley surrounded by heavily forested mountain slopes. The valley narrows at about the midpoint of the watershed, and from that point the LSR flows through a steep, narrow canyon to its confluence with the main Salmon River. Highway 95, a main travel way connecting north and south Idaho, is adjacent to the LSR for most of its length. The watershed is predominantly rural and sparsely populated, though rural housing development has increased substantially in recent years. Fifty-six percent of the watershed is NFS land (Payette and Nez Perce-Clearwater National Forests). Human activities on Federal and non-federal lands in the watershed include logging, road construction, water withdrawal, agriculture, livestock grazing, and other activities. These activities have reduced vegetation, increased sedimentation, altered stream channels and water flows, and contributed to elevated downstream water temperatures. There is a large network of roads in the LSR sub-basin, with roughly 1,001 miles of road. Chinook salmon and steelhead fishing occurs seasonally in the main-stem LSR.

The Idaho Department of Environmental Quality (IDEQ) has developed total maximum daily loads for temperature, sediment, nutrients, and/or bacteria for the upper segment of the LSR and its tributaries. Below Round Valley Creek, the LSR is not fully supporting its cold water aquatic life beneficial use due to physical substrate and habitat alteration (IDEQ 2018). Since 2007, restoration actions, including riparian fencing, riparian planting, irrigation upgrades (e.g., improved water conveyance), improved grazing management, road closures, and road obliteration have been implemented on private and/or NFS lands (IDEQ 2012b; ISWCC 2016).

Habitat conditions vary greatly across the Little Salmon River sub-basin. Rapid River is a relatively pristine (unroaded) watershed with few management activities. The majority of WCIs are FA in the Rapid River watershed, with only the sediment and substrate embeddedness WCIs being rated as FAR. Across the remainder of the Section 7 watershed, overall watershed function is impaired with many WCIs FAR. The WCIs identified by the PNF as the biggest limiting factors include substrate embeddedness (associated with road-related sediment), road location/density, and disturbance regime. Overall road density in watersheds reach 1.2 miles per square mile (mi/mi<sup>2</sup>), with the LSR watershed having 35.5 miles in the RCA. Disturbance history has been degraded through past and current activities, indicated by substantially reduced habitat quality/diversity/complexity in the main-stem LSR and some of its tributaries.

In summary, the habitat within the action area ranges from near natural to highly impacted by current and historic anthropogenic changes. Much of the action area is within the Frank Church and is in near pristine, natural condition. While other areas are highly impacted by historic mining and current land use. The larger river corridors within the action area are generally functioning appropriately. A small number of the smaller tributaries are highly degraded due to historic mining operations that were either not cleaned up, or, for which the reclaiming efforts are failing.

## **2.5. Effects of the Action**

Under the ESA, “effects of the action” are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not



occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

### 2.5.1. Effects to the Species

Chinook salmon and steelhead have the potential to be affected by the proposed action through direct disturbance from activities occurring in or near the water, as well as indirectly as a result of chemical contamination, or increased sediment delivery to streams. These potential pathways of effects are described further below.

#### 2.5.1.1. *Direct Disturbance of Fish*

The following guided activities have the potential to result in direct disturbance of fish: pack trips/progressive travel, hiking/backpacking, trail rides, research/educational trips, mountain biking, fishing, hunting, and jet boating. Direct impacts to fish are most likely to occur during stream fording, fishing, and jet boating. These are described in more detail below.

**Fishing.** The primary purpose of the proposed guided fishing permits would be to guide clients to successful, legal harvest of target fish as authorized under valid State of Idaho sport fishing licenses. As such, NMFS does not believe OG activities associated with guided fishing will increase the effect to salmon or steelhead beyond that considered and consulted on separately by the State of Idaho for their sport-fishing program (NMFS tracking number WCR-2018-10283). Nevertheless, where practical, additional protective measures will be taken by OGs to further reduce potential effects to salmon and steelhead. These measures include educating guides and clients in fish redd identification, and redd avoidance by people and livestock.

Redds can also be impacted by wading anglers. Roberts and White (1992) found that twice-daily angler wading during trout egg development killed up to 96 percent of trout eggs and pre-emergent fry, while a single wading just before hatching killed up to 43 percent of eggs. To address this concern, the proposed action includes a requirement that OG operations that include fishing as an activity will educate guides and clients in fish redd identification if fishing areas where redds may occur. Additionally, steelhead incubation in main-stem waterways occurs largely coincident with the annual high water period. High water will preclude wading in steelhead spawning and incubation areas until after or very near, emergence. For these reasons, we expect there to be an extremely low likelihood of fishermen crushing SRS Chinook salmon and SRB steelhead redds.

**Jet Boating.** Powerboat permittees utilize rigid-hull watercraft propelled by gasoline/diesel motors. These craft draft more water than float boat vessels, and there is a strong motivation to keep hulls from coming in contact with the river bottom. As in all whitewater boating, boat operators tend to select deeper runs with fewer obstructions.

Jet boats may disturb fish that are near the boat as they pass by. ESA-listed salmon and steelhead will be disturbed by noise and overhead boat movement, and be exposed to increased wave energy from boat wakes. Jet boat operations have the potential for temporary disturbance of ESA-listed fish species in main-stem Salmon River waters, but the scope and magnitude of

disturbances are reduced to low levels due to the large relative volume of main-stem river waters and spatial isolation from shallow spawning habitats. Operators, by necessity, utilize the deepest corridors of the river channels for navigation, avoiding both shallow areas and instream obstacles. Fish located in deeper waters or more than roughly 10 feet from a passing boat are unlikely to react to passing boats. Fish that are close to a boat when it passes are likely to dart toward cover, with no consequences other than a minor expenditure of energy and a brief disruption in their behavior. Therefore, the consequences of the disturbances by jet boats are likely to be minor, due to the infrequent, brief duration that boats will be present and the benign nature of the disturbances.

Sub-yearling fish may occupy the margins of the rivers and be exposed to pulses of waves as each boat passes by. Sub-yearling fish may not have the ability to swim against waves, which makes them potentially vulnerable to wave effects. Once fish reach the parr stage, they are likely to have sufficient swimming skill to swim against the waves generated by a jet boat. Waves with sufficient size and energy can potentially wash salmon or steelhead fry ashore or cause physical trauma if the waves break over the fish in shallow water. The waves generated by the types of boats used by OG are relatively small, and are unlikely to be large enough to wash fry ashore or expose fish to significant amounts of wave energy. Waves from a wake created by a jet boat in a small river should be no more than several inches in height and with this small size, the waves do not break until they intercept the shore. Under these circumstances, effects of the waves on ESA-listed fish would be minimal because the waves are likely to pass over fry before they break, and the waves are not large enough to wash fish ashore or disrupt their behavior.

Jet boats can potentially injure fish by striking them with the hull or the impeller. Jet boats by design have shallow drafts. Smolts, adults, and juvenile fish that have overwintered in freshwater use deeper waters for cover and they are unlikely to be near the surface where they would be vulnerable to strikes. Sub-yearling fish are not vulnerable to strikes by boats because they move into waters along the shore where it is too shallow for boats to travel. Therefore, the risk of strikes is very unlikely to occur.

Potential for impacts to fish or redds vary by species. General operational seasons encompass steelhead spring spawning and incubation periods as well as fall and spring adult migration periods. However, steelhead-spawning areas in main-stem reaches of the Salmon River are typically located near the stream margins rather than the deeper river thalweg corridors, and potential for direct impacts to spawning fish or incubating eggs would be considered unlikely. Natural/practical protections are afforded incubating steelhead in these main-stem waterways in that their spawning and incubation is largely coincident with higher water volumes during the annual high water period. The Salmon River also becomes naturally turbid during this period. Together, these conditions serve to provide physical and visual separation between steelhead and jet boats on those rare occasions when they may occur concurrently. The annual runoff period extends into mid-July. This period of much greater water depth and velocity continues to isolate steelhead incubating within redds from the boats floating well above until their emergence. Spring/summer Chinook salmon do not utilize main-stem reaches of the Salmon River within the jet boating permit areas for spawning, but migrating fish may be exposed to the same levels of general disturbance as steelhead. Considering this information, the risk of jet boating impacting redds or incubating embryos is very small and it is unlikely the early life stages of fish will be negatively impacted by this activity.

***Stream Fording.*** There is the potential for impacts to spring/summer Chinook salmon and steelhead individuals caused by motor vehicles and non-motorized means during stream fording. Impacts to individuals may include: disturbance of mobile fish at all life stages; crushing of fry or juveniles if they attempt to hide in the gravels with motorized or non-motorized crossings; disturbance of spawning fish if they are spawning; trampling or crushing of redds; or disruption of migration behavior if fish are in these areas.

Motorized stream fording only occurs with the Rugged Ridge Outfitter across Warren Creek, at two ford locations. A ford occurs on NFS Road 346 (open to the public) across Warren Creek approximately ½ mile upstream of an unauthorized crossing approved for OG use only. Warren Creek is assumed to be occupied by juvenile steelhead around the ford locations but in very low densities with no indication that spawning occurs. Chinook salmon have not been observed within the vicinity of the fords.

Non-motorized stream fording on NFS trails occurs with all OGs across their individual permit areas. The number of trail fords in the action area located in steelhead and Chinook spawning/rearing habitat identified as moderate/high intrinsic potential (Cooney and Holzer 2006) is summarized in Table 8.

Additionally there may be stream fording occurring on non-system trails if approved in the OG permit for access to spike camps, etc. The OG must request, and the PNF must approve, the use of these routes. Prior to approval, professional judgement is used to determine if there could be detrimental effects from its use. If detrimental effects are likely, requests can be denied to minimize the potential for direct impacts to occur.

Table 8. Estimated number of trail fords utilized by outfitters operating in spawning/rearing habitat in Payette National Forest.

Section 7 Watershed	Sub-watershed*/Watershed	Estimated # fords in spawning/rearing habitat.	
		Spring/summer Chinook Salmon	Steelhead
Little Salmon River	Lower Little Salmon River		
	Hazard Creek		
	<b>Watershed Total</b>	<b>0</b>	<b>0</b>
Main Salmon SW	Partridge Creek-Salmon River		
	French Creek		
	Sheep Creek-Salmon River		
	Warren Creek	2	1
	<b>Watershed Total</b>	<b>1</b>	<b>0</b>
Main Salmon SE	Big Mallard Creek-Salmon River		
	Big Squaw Creek-Salmon River		
	Chamberlain Creek	9	20
	Cottonwood Creek-Salmon River	1	3
	<b>Watershed Total</b>	<b>10</b>	<b>23</b>
Middle Fork Tribe	Middle Big Creek	11	23
	Lower Big Creek	16	5
	Upper Big Creek	3	3
	Monumental Creek	7	15
	Rush Creek	1	6
	Marble Creek		10
	<b>Watershed Total</b>	<b>38</b>	<b>62</b>
South Fork Salmon	Upper SFSR	5	10
	Lower EFSFSR		
	Upper EFSFSR		3
	Lower SFSR		4
	Secesh River	5	8
	<b>Watershed Total</b>	<b>10</b>	<b>25</b>
<b>Forest Totals</b>		<b>59</b>	<b>110</b>

The use of trail fords, by motor vehicles and non-motorized means, to cross-streams has the potential to directly impact individuals or redds. Sub-watersheds with more trail fords have a higher potential to have direct effects to individuals. The PNF has no data to document spawning/rearing fish at fords across the forest.

There are ongoing efforts to identify and eliminate fords located in areas where their use could directly impact salmon and steelhead. The efforts to replace these is occurring in specific projects that range from standalone crossing placements (Idaho Stream Crossing Programmatic consultation WCRO-2011-00001) to larger landscape level projects (Big Creek Restoration and Access Management Project BA) (PNF 2016). Although it is unknown the exact number of fords that are located in Chinook salmon or steelhead spawning habitats, it is presumed that negative effects will occur as a result of OGs using the current trail system. It is also presumed that negative impacts from fording streams would be more likely to affect Chinook than steelhead, as Chinook redds are constructed in the fall at a time of heaviest use by recreational activities such as those mentioned above. Outfitter guide operations are lower in the spring, and streams are higher and much less favorable to fording during the time of year that steelhead redds are present.

Use of fords is expected to lead to adverse effects to both Chinook salmon and steelhead; however, it is not possible to estimate how many times the fords will be used nor the frequency, with which fords will be used. Furthermore, quantifying the number of juveniles killed or injured, or the number of redds that are crushed is not possible. Substrate in stream crossings is often more compacted, which should limit, although not eliminate, the ability of juvenile fish to hide in interstitial spaces and be crushed. It should also limit the suitability of these crossings for spawning and the potential that redds will be present in road or trail crossings. In terms of disturbance, most juvenile and adult fish are expected to quickly respond to approaching people, pack stock, and vehicles as they near streams, a behavioral response that should reduce the likelihood that fording's will result in injury or death. Because the locations of all redds in any given year varies and is largely unknown, particularly in the wilderness, we will not be able to determine how many juvenile fish or redds will be crushed by fording.

#### 2.5.1.2. *Surface Water Contamination*

Use of motorized vehicles near, or within, streams and camp activities within RCAs can result in surface water contamination.

Location of camps within RCAs could introduce contaminants such as soaps, detergents, and bleach into nearby waterbodies. Some toxic substances such as stove and lantern fuel, and gas and oil for vehicles to transport clients to the backcountry, could have localized effects if spilled near a stream. In addition, fecal waste from human and animals could enter streams and negatively affect aquatic species. The PNF is requiring OGs to locate camps and camp activities at least 200 feet from waterbodies, ensure camps are clean, dump gray water more than 200 feet from surface water, locate stock holding facilities 200 feet away from surface water and scatter manure away from surface water, and fill in pit toilets and naturalize the site at the end of each season. Implementation of these measures are expected to be effective at preventing contamination of surface water; therefore, any negative effects to ESA-listed species will be avoided.

Access to the yurts and ski touring area will be by snowmobile or snow cat on existing roads, and only when conditions permit (minimum snow coverage requirements). Motorized vehicles may also ford Warren Creek, as described in section 2.5.1.1. Potential fuel spills or fluid leaks associated with use of these vehicles have the potential to affect SRS Chinook or Snake River basin steelhead. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain polycyclic aromatic hydrocarbons, which can be acutely toxic to salmonid fish and other aquatic organisms at high levels of exposure and can cause sub-lethal adverse effects to aquatic organisms at lower concentrations (Heintz et al. 1999; Incardona et al. 2005; Incardona et al. 2004; Incardona et al. 2006).

All snowmobiles or snow cats will be operating in the uplands and outside of flowing water, which will limit the potential for chemical contamination of surface water. Should an accidental discharge occur, it is expected that the quantity of fuel released would be small due to the small size of the tanks used in these vehicles, rendering the risk of negative impacts to ESA-listed fish and fish habitat from toxic contamination improbable. Minor amounts of contaminants will likely be washed off vehicles as they drive through Warren Creek at the two fords. The quantities of contaminants that will enter Warren Creek during fording events are expected to be exceedingly small due to the limited time vehicles are in the water. It is unlikely that

contaminants will be present in sufficient quantities to cause any lethal or sub-lethal effects to juvenile steelhead that may be present at the ford locations.

#### 2.5.1.3. *Sediment Delivery*

Guided pack trips/progressive travel, hiking/backpacking, trail rides, research/educational trips, mountain biking, fishing, and hunting will occur sporadically, are well distributed across the PNF, and are minor in scope and potential for resource disturbance. These activities, other than hunting and fishing, would occur primarily on and alongside the existing road and trail network, and will not be concentrated in or near riparian areas or waterways. Some of these OG activities may include the use of pack stock (i.e., horses, mules, and llamas) or mountain bikes, the use of non-assigned campsites, the use of assigned campsites, and the grazing and picketing of pack stock. Ground disturbance associated with these activities, especially in areas of concentrated use, could include clearing of vegetation and soil compaction, which could, in turn, lead to increased erosion and sediment delivery to streams. When sediment is delivered to streams, it can lead to elevated turbidity and sediment deposition. Wading in streams or crossing streams with stock, mountain bikes, or vehicles can also lead to increased turbidity. Elevated turbidity and increased sediment deposition can negatively impact Chinook salmon and steelhead.

Turbidity may have detrimental or beneficial effects on fish, depending on the intensity, duration and frequency of exposure (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and larger juvenile salmonids may be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjorn and Reiser 1991), although these events may produce behavioral effects, such as temporary displacement from preferred habitat, gill flaring and feeding changes (Berg and Northcote 1985). Chronic, moderate turbidity can harm newly emerged salmonid fry, juveniles, and even adults by causing physiological stress that reduces feeding and growth and increases basal metabolic requirements (Redding et al. 1987; Lloyd 1987; Bjorn and Reiser 1991; Servizi and Martens 1992; Spence et al. 1996). Although turbidity may cause stress, Gregory and Northcote (1993) have shown that moderate levels of turbidity accelerated foraging rates among juvenile Chinook salmon, likely because of reduced vulnerability to predators (camouflaging effect). Predation on salmonids may be reduced in turbid waters (Gregory 1993; Gregory and Levings 1998), an effect that may improve overall survival.

Once in streams, fine sediment is transported downstream and is ultimately deposited in slow water areas and behind obstructions. Sediment deposition can locally alter fish habitat conditions through partly or completely filling pools, increasing the width to depth ratio of streams, and changing the distribution of pools, riffles, and glides. In particular, fine sediment has been shown to fill the interstitial spaces among larger streambed particles, which can eliminate the living space for various microorganisms, aquatic macroinvertebrates, and juvenile fish (Bjorn and Reiser 1991). Potential problems associated with excessive sediment have been recognized in a variety of salmonid species and at all life stages, and include: possible suffocation and entrapment of incubating embryos (Peterson and Metcalfe 1981; Irving and Bjorn 1984; Tagart 1984; Reiser and White 1988; Newcombe and Jensen 1996); loss of summer rearing and overwintering cover for juveniles (Hillman et al. 1987; Griffith and Smith 1993); and reduced

availability of invertebrate food (Cederholm and Lestelle 1974; Bjornn et al. 1977; Alexander and Hansen 1986; Spence et al. 1996).

Sediment generation and subsequent delivery to streams is expected to be minor because activities will occur on established trail systems that are periodically maintained, the number of clients will be limited, and because camps and other concentrated-use areas will be located at least 200 feet from waterbodies. Because sediment delivery to streams from these activities will be minor, we do not expect sediment deposition will be substantial enough to lead to lethal effects associated with entrapment of embryos or alevins, or sublethal effects such as reduced growth that can be associated with loss of rearing habitat. Stream crossings during these activities could also generate turbidity; however, turbidity pulses resulting from motorized and non-motorized fording will generally be in low intensity, localized, and short in duration. For these reasons, individual fish are not expected to be negatively impacted by these minor turbidity pulses.

#### 2.5.1.4. *Summary of Effects to Species*

The main effect to ESA-listed anadromous fish will be the fording of streams. Fording streams, whether motorized or non-motorized, has the potential to negatively affect redds and juvenile fish, specifically if they have not emerged from the spawning gravel. However, given the low numbers of stream crossings made in any given year, and the broad distribution of these fords across a vast landscape and across multiple populations, the low number of fish killed or redds trampled will be very small for each population. Therefore, the fording of streams is not expected to occur in numbers large enough to effect population abundance. Because the likely effects associated with fording of streams will not affect the VSP characteristics of any salmon or steelhead population, they also will not have any effects at the species level.

## 2.6. **Cumulative Effects**

“Cumulative effects” are those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation (50 CFR 402.02 and 402.17(a)). Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

The vast majority of the project area is federally managed; however, there are small pieces of land that are privately owned. Activities on these private lands include continued residential development, additional authorization of water rights for surface water withdrawals on private land, road maintenance, fuel woodcutting, motorized and non-motorized recreation use, and mining. All of these activities could adversely affect ESA-listed fish and their designated critical habitat through sediment delivery, alteration of vegetation in riparian corridors, water quality alterations, and visual or auditory disturbances, and injury or death from crushing, displacement, and impacts to water quality. With the exception of potential future mining impacts on private land, future impacts from other private or state activities are expected to continue at rates similar to today. This is because private land is very limited within the action area, and its current or historic use is representative of what would likely occur in the future.

Outfitters and Guides operate almost exclusively on federal lands, and many of these actions take place within the Frank Church. Due to the nature of the activities, those areas that are not within the Frank Church are still quite remote and fairly inaccessible. Due to the remoteness of the area, protective management mandates, and the minor amount of public or state owned property, it is assumed that future activities will continue to be dominated by recreational activities (e.g., hunting, fishing, hiking, recreational vehicle use, etc.). With the growing population of Idaho and the Northwest, it can be assumed that these activities will continue and will continue to increase at a rate similar to the population. However, it is also expected that the IDFG will continue to adjust fishing and hunting guidelines to address any potential increases in population to effectively regulate pressures from these activities on local fish and wildlife populations.

The impacts of the activities on the current condition of ESA-listed species within the action area was described in Sections 2.2 and 2.4. Current levels of these uses are likely to continue into the future and while some uses may increase (e.g., recreation) impacts from such increases are unlikely to be substantially more severe than they currently are. This is because we expect commensurate changes in land management and guidelines (i.e., hunting or fishing regulations) will be made to address resource concerns arising from such increases in use. Some continuing non-federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline vs. cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described in the environmental baseline (Section 2.4).

## **2.7. Integration and Synthesis**

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species (Section 2.2), to formulate the agency's opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

SRS Chinook salmon and SRB steelhead occupy streams within the action area. These species are listed as threatened and many of their component populations within the action area will need to see substantial improvements in the abundance and productivity ratings in order to achieve recovery.

The habitat within the action area ranges from near natural to highly impacted by current and historic anthropogenic changes. Much of the action area is within the Frank Church and is in near pristine natural condition, while other areas are highly impacted by historic mining and current land use. The larger river corridors within the action area are generally functioning appropriately. A small number of the smaller tributaries are highly degraded due to historic mining operations that were either not fully cleaned up, or, for which the reclaiming efforts are failing.



Impacts from existing state and private actions in the action area are reflected in the environmental baseline. Current levels of these uses are likely to continue into the future. The predominant use of the area is recreational use, and we assume this use will continue to grow as the population of Idaho grows. Impacts from recreational increases are unlikely to be substantially more severe than they currently are because we expect commensurate changes in land management and guidelines (i.e., hunting or fishing regulations) will be made to address resource concerns that arise.

The proposed action allows for the continuation of OG operations on the PNF. The main effect to ESA-listed anadromous fish will be the fording of streams. Fording streams, whether motorized or non-motorized, has the potential to negatively affect redds and juvenile fish, specifically if they have not emerged from the spawning gravel. The more crossings of streams containing ESA-listed species increases the chance of a trampling/crushing event occurring. Effects to individual fish may potentially affect the attributes associated with a VSP (i.e., abundance, productivity, spatial structure, and genetic diversity that support the species' ability to maintain itself naturally at a level to survive environmental stochasticity). However, the anticipated level of effects to individuals are not anticipated to result in tangible impacts to SRS Chinook salmon or SRB steelhead at the population level. This is due to the low numbers of stream crossings made in any given year and the broad distribution of these fords across a vast landscape and across multiple populations. Because the likely effects associated with fording of streams will not affect the VSP characteristics of any salmon or steelhead population, they also will not have any effects at the species level.

When considering the status of the species, environmental baseline, and cumulative effects, adding in the potential effects from the proposed action will not appreciably increase the risk of extinction for any populations included in the SRS Chinook salmon ESU or SRB steelhead DPS. Because the VSP criteria for the populations will not be negatively influenced, neither the current viability nor the recovery potential of the MPGs and ESU/DPS will be appreciably diminished.

## **2.8. Conclusion**

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' opinion that the proposed action is not likely to jeopardize the continued existence of SRS Chinook and SRB steelhead.

## **2.9. Incidental Take Statement**

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). On an interim basis, NMFS interprets "Harass" to mean, "Create the likelihood of injury to wildlife by annoying it to such an extent as to

significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, or sheltering.” “Incidental take” is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

#### 2.9.1. Amount or Extent of Take

In the opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

Impacts to SRS Chinook salmon and SRB steelhead individuals will occur from motor vehicles and non-motorized means during stream fording. Take of juvenile steelhead and salmon will result from: disturbance of mobile fish at all life stages; crushing of fry or juveniles if they attempt to hide in the gravels with motorized or non-motorized crossings; disturbance of spawning fish if they are spawning; trampling or crushing of redds; or disruption of migration behavior if fish are in these areas.

Quantifying the number of juveniles killed or injured or the number of redds that are trampled is not possible. It is also not possible to quantify the number of fording events that will occur at each location in a given year. Because the adverse effects will occur as a result of fording, the number of ford serves as an effective surrogate. If the number of fords increases to more than 59 within spring/summer Chinook salmon habitat or 110 within SRB steelhead habitat, then take will be exceeded. Although this surrogate could be considered at least partially coextensive with the proposed action, periodic inspections, combined with monitoring and reporting requirements, will provide opportunities to check throughout the course of the proposed action whether the surrogates have been exceeded, and therefore mean that the surrogates function as effective reinitiation triggers.

#### 2.9.2. Effect of the Take

In the opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species.

#### 2.9.3. Reasonable and Prudent Measures

“Reasonable and prudent measures” are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

1. Avoid or minimize take from OG activities
2. Track, monitor, and report on the proposed action to ensure that activities are implemented as proposed, and the extent of take is not exceeded.

#### 2.9.4. Terms and Conditions

The terms and conditions described below are non-discretionary, and the PNF or any applicant must comply with them in order to implement the RPMs (50 CFR 402.14). The PNF or any

applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement RPM 1:

- a. Before approving stream fording on non-system trails or roads across streams with potential for ESA-listed salmon and steelhead and where there is potential for detrimental effects, the PNF shall coordinate with the Level 1 Team to discuss site-specific details and to determine if additional minimization/avoidance measures should be applied prior to the PNF's approval.
- b. The PNF shall request that OG pack trains trail in a single line as much as possible when fording streams to minimize the area trampled by livestock when fording.
- c. The PNF shall identify trail-stream crossings that are located in spring/summer Chinook salmon and/or steelhead spawning/rearing habitat, develop a strategy to eliminate potential take associated with fording, and prioritize trail-stream crossings for remedial action. Remedial actions may include such things as hardening the ford or installing a structure capable of aquatic organism passage. Where spawning surveys are conducted by other entities, spawning survey data may be used to cross reference redd locations with known ford locations. Problem fords shall be addressed as funding resources become available

2. The following terms and conditions implement RPM 2:

- a. Prior to issuing a new permit or amending an existing permit, the PNF shall provide to the Level 1 Team a summary of annual actual use that has occurred since this Biological opinion was issued. Additionally the PNF will provide a summary of all inspections that have occurred since this Biological opinion has been issued, including a summary of any resource issues identified and instructions given to the OG to correct the concerns. This information shall be included to help inform whether the new or amended permit results in any effects that were not considered in the project BA or this opinion and to determine if reinitiation of consultation is necessary.
- b. Coordinate with the Level 1 Team as necessary should inspections or monitoring identify that conservation measures are not being properly/fully implemented by OGs, or if unintended resource damage is occurring that could be better addressed for upcoming seasons. Strategies to address these issues shall be developed in coordination with the Level 1 Team in watersheds occupied by ESA-listed fish species or designated critical habitat.

## **2.10. Conservation Recommendations**

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

1. As soon as possible, the PNF should work with OGs to determine when and where they typically ford streams, completing an inventory of where these stream crossings occur in watersheds occupied by ESA-listed fish species. Those that overlap with known or suspected spawning reaches for Chinook salmon and steelhead, and proposed activities overlap with spawning/redd incubation periods, should be prioritized for relocation, rehabilitation, hardening, or replacement with bridges. The PNF should make it a priority to secure funding for the necessary improvements to the fords identified in the inventory mentioned above.
2. To mitigate the effects of climate change on ESA-listed salmonids, the PNF should follow recommendations by the ISAB (2007) to plan now for future climate conditions by implementing protective tributary and main-stem habitat measures. In particular, implement measures to protect or restore riparian buffers, wetlands, and floodplains; remove stream barriers; and to ensure late summer and fall tributary stream flows.

Please notify NMFS if the PNF or any other entity carries out these recommendations so that we will be kept informed of actions that minimize or avoid adverse effects and those that benefit listed species or their designated critical habitats.

## **2.11. Reinitiation of Consultation**

This concludes formal consultation for PNF Outfitters and Guide Operations

As 50 CFR 402.16 states, reinitiation of consultation is required and shall be requested by the federal agency or by the NMFS where discretionary federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

## **2.12. “Not Likely to Adversely Affect” Determinations**

The PNF determined the proposed action is NLAA affect Snake River fall Chinook or Snake River sockeye salmon. Snake River fall Chinook and Snake River sockeye salmon are only present in the main-stem Salmon River, and there are no fords utilized by OGs across the main-stem Salmon River. Fall Chinook may sparingly use the main Salmon River as spawning and rearing areas. However, the closest known spawning area is several miles downriver of the action area. Sockeye salmon use the main-stem Salmon River as a migration corridor to and from the

Stanley basin lakes where they spawn and rear. Jet boating is not expected to affect any life stage of fish for reasons described in Section 2.5.1.1. The potential for contamination of the main Salmon River is extremely unlikely to occur. Furthermore, any sediment delivered to the main Salmon River as a result of OG activities is expected to be incredibly minor and will be immediately diluted to levels that will not impact fish. For these reasons, potential impacts to Snake River sockeye salmon and Snake River fall Chinook salmon will be extremely minor and will not cause negative affects to individual fish.

The PNF also determined that the proposed action was NLAA SRS Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and SRB steelhead designated critical habitats. The action area includes designated critical habitat for each of these species. The designations of critical habitat for salmon and steelhead use the term primary constituent element (PCE) or essential features. The 2016 critical habitat regulations (50 CFR 424.12) replaced these terms with PBFs. The shift in terminology does not change the approach used in conducting a “destruction or adverse modification” analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

As described above in the species effects section, most of the described OG services are not concentrated in or near riparian areas and therefore have minimal inherent potential for effects to designated critical habitat. These include big game and predator hunting, pack trips/progressive travel, hiking/backpacking, trail riding, ski touring/ mountaineering, photography, research/education trips, and mountain biking. Potential for negative effects to habitat from other activities, such as snowmobiling and snow cat use, are reduced by the buffering effects of winter snow cover. The greatest potential for impacts from land-based activities is associated with ancillary camping and/or stock use. The OG Operating Plans identify specific design criteria (operating requirements) to be implemented in camp and stock use operations, which are designed to avoid or minimize impacts of operations on soil, vegetation and aquatic habitats and resources.

The PBFs, which apply to freshwater spawning and rearing sites for ESA-listed salmon and steelhead within the action area included in Table 9. The proposed action has the potential to affect the following PBFs: water quality, natural cover, substrate, and forage. Any modification of these PBFs may affect freshwater spawning or rearing in the action area. Proper function of these PBFs are necessary to support successful adult holding, spawning, rearing, and the growth and development of juvenile fish. Potential effects to PBFs will be discussed in more detail below.

Table 9. Types of sites, essential physical and biological features, and the specific life stage each PBF supports.

Site	Essential Physical and Biological Features	Species Life Stage
<b>Snake River Basin Steelhead<sup>a</sup></b>		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development

Site	Essential Physical and Biological Features	Species Life Stage
Freshwater rearing	Water quantity & floodplain connectivity to form and maintain physical habitat conditions	Juvenile growth and mobility
	Water quality and forage <sup>b</sup>	Juvenile development
	Natural cover <sup>c</sup>	Juvenile mobility and survival
Freshwater migration	Free of artificial obstructions, water quality and quantity, and natural cover <sup>c</sup>	Juvenile and adult mobility and survival
<b>Snake River Spring/Summer Chinook Salmon, Fall Chinook, &amp; Sockeye Salmon</b>		
Spawning & Juvenile Rearing	Spawning gravel, water quality and quantity, cover/shelter (Chinook only), food, riparian vegetation, space (Chinook only), water temperature and access (sockeye only)	Juvenile and adult
Migration	Substrate, water quality and quantity, water temperature, water velocity, cover/shelter, food <sup>d</sup> , riparian vegetation, space, safe passage	Juvenile and adult

a Additional PBFs pertaining to estuarine, nearshore, and offshore marine areas have also been described for Snake River steelhead and Middle Columbia steelhead. These PBFs will not be affected by the proposed action and have therefore not been described in this opinion.

b Forage includes aquatic invertebrate and fish species that support growth and maturation.

c Natural cover includes shade, large wood, logjams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

d Food applies to juvenile migration only

### 2.12.1. Water Quality

Potential consequences of the proposed action on the water quality PBF could occur through increases in sedimentation, increases in turbidity, and introduction of toxic substances into streams. General permit requirements (measures) that will be implemented by OGs to protect resources are included in the submitted BA and summarized in section 1.3.2.14 of this opinion. OGs will also implement measures to minimize frequency of events that could affect water quality and to minimize the magnitude of the effects when they do occur.

#### 2.12.1.1. *Increase in Sedimentation/Turbidity*

The proposed action includes grazing, maintenance of a main camp and a spike camp, and use of other areas for overnight camping. Grazing and camping can disturb the ground sufficiently to increase sediment delivery to streams and cause pulses of turbidity. However, measures implemented by the OGs will ensure that ground disturbance due to grazing or camping will not occur within 200 feet of streams. Furthermore, land at camps are generally flat and therefore not conducive for sediment delivery into action areas streams. Due to the setback from streams, and the anticipated effectiveness of the other minimization measures to limit impacts to vegetation described in the proposed action, the amount of sediment expected to be delivered to streams and the associated turbidity pulses are likely to be very minimal.

Additional, permitted activities that could potentially lead to increases in turbidity include: stream crossings by motorized vehicle at designated sites, saddle and pack horses, and stream crossings by humans while hunting, fishing or hiking. Stream crossings at designated sites and stream crossings by humans typically result in low intensity, localized, and short duration turbidity pulses. Therefore, NMFS expects turbidity pulses will not be substantial enough to measurably impact the function of the water quality PBF.

#### 2.12.1.2. *Toxic Substances Entering Streams*

Motorized stream crossings could release toxic substances into streams. Only Warren Creek, which is designated critical habitat for SRS Chinook salmon and SRB steelhead, will be forded with motor vehicles. Jet boats will also be used in the main Salmon River, which is designated critical habitat for all four species. There is some risk of spills occurring; however, that risk is considered to be extremely remote. Leaks from improperly maintained equipment may occur; however, NMFS expects any leaks that do occur in streams will be extremely small and will be temporary in duration. These temporary and insignificant increases in contaminants will not impact the ability of the water quality PBF to support the conservation needs of the species.

#### 2.12.2. Riparian Vegetation/Natural Cover

The proposed action includes a number of activities, such as grazing, camping, trail riding, etc., that could affect the riparian vegetation PBF. As described above, the camps are required to be a minimum of 200 feet from streams. The proposed action includes multiple measures that will be implemented to minimize the effects of the proposed action on riparian vegetation. The proposed action also includes measures to minimize effects of permitted activities (grazing, camping, fishing, trail riding, etc.) on streambanks, stream channels, and riparian habitat. These measures include, but are not limited to: grazing only in the designated area at camps; keeping horses away from streams, except at trail crossings; and watering pack animals in the stream once a day. Because the measures are expected to be effective, the effects of damage to streambanks, stream channels, and riparian habitat, on designated critical habitat will be very small. Therefore, NMFS does not expect OG activities to impact riparian vegetation or to affect natural cover.

#### 2.12.3. Substrate/Spawning Gravel

Camps and other areas of concentrated use will be located over 200 feet away from action area streams, and stream fording will be infrequent and widely distributed across a broad geographic area. For these reasons, and because other measures (previously described) will be implemented to reduce resource impacts, NMFS expects that only minor amounts of sediment will be delivered to streams. As such, the proposed action will not affect the substrate/spawning gravel PBFs.

#### 2.12.4. Forage

The proposed action has the potential to impact the forage PBF by increasing sediment delivery, impacting water quality, and reducing riparian vegetation. However, as described above, impacts to sediment delivery, water quality, and riparian vegetation are expected to be very minor. These minor impacts will not cause any reductions in forage available to juvenile fish. As such, the proposed action will not affect the forage PBF.

### **3. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW**

The DQA specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

### 3.1. Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users of this opinion are PNF and the permittees. Individual copies of this opinion were provided to the PNF. The document will be available within 2 weeks at the NOAA Library Institutional Repository [<https://repository.library.noaa.gov/welcome>]. The format and naming adheres to conventional standards for style.

### 3.2. Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

### 3.3. Objectivity

**Information Product Category:** Natural Resource Plan.

**Standards:** This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, and 50 CFR 402.01 et seq.

**Best Available Information:** This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion contains more background on information sources and quality.

**Referencing:** All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

**Review Process:** This consultation was drafted by NMFS staff with training in ESA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.



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