



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Refer to NMFS No.: WCRO-2021-01566

August 10, 2021

James DeMaagd
Forest Supervisor
Sawtooth National Forest
370 American Ave.
Jerome, ID 83338

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Outfitter Guided Commercial and Non-Outfitted Float Boating and Outfitted Walk/Wade Angling on the Sawtooth National Recreation Area, Upper Salmon River, HUC 17060201, Custer County, Idaho

Dear Mr. DeMaagd:

Thank you for your letter dated June 2, 2021, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for Outfitter Guided Commercial and Non-Outfitted Float Boating and Outfitted Walk/Wade Angling on the Sawtooth National Recreation Area. This consultation was conducted 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 [16 U.S.C. 1855(b)] for these actions. However, after reviewing the proposed action, we agree with your determination that there are no adverse effects on EFH. Therefore, we are hereby concluding EFH consultation.

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. NMFS also concurs with the Sawtooth National Forests (SNF's) determination that the proposed actions may affect, but are not likely to adversely affect Snake River sockeye salmon, Snake River Basin steelhead, and designated critical habitat for Snake River spring/summer Chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead.

As required by section 7 of the ESA, NMFS provides an incidental take statement (ITS) with the opinion. The ITS describes 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 terms and conditions, including reporting requirements, that the Sawtooth National Forest, including any permittees 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.

If you have questions regarding this consultation, please contact Chad Fealko, Southern Snake Branch Office, at (208) 768-7707, or chad.fealko@noaa.gov.

Sincerely,



Michael P. Tehan
Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc: S. Fisher - USFWS
C. Colter - SBT
J. Richards - IDFG
K. Flannigan - SNRA
L. Hardin - SNRA

Endangered Species Act Section 7(a)(2) Biological Opinion

Outfitter Guided Commercial and Non-Outfitted Float Boating and Outfitted Walk/Wade Angling on the Sawtooth National Recreation Area, Upper Salmon River, HUC 17060201, Custer County, Idaho

NMFS Consultation Number: WCRO-2021-01566


Action Agency: Sawtooth National Forest

Affected Species and 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 Basin steelhead (<i>Oncorhynchus mykiss</i>)	Threatened	No	NA	No	NA
Snake River spring/summer Chinook salmon (<i>Oncorhynchus tshawytscha</i>)	Threatened	Yes	No	No	NA
Snake River sockeye salmon (<i>Oncorhynchus nerka</i>)	Endangered	No	NA	No	NA

Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	No	No

Consultation Conducted by: National Marine Fisheries Service, West Coast Region

Issued By: 
Michael P. Tehan
Assistant Regional Administrator

Date: August 10, 2021

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ACRONYMS

ACRONYM	DEFINITION
AIS	Aquatic Invasive Species
BA	Biological Assessment
cfs	Cubic Feet Per Second
DQA	Data Quality Act
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
IDFG	Idaho Department of Fish and Game
ITS	Incidental Take Statement
MPG	Major Population Groups
MSA	Magnuson–Stevens Fishery Conservation and Management Act
NLAA	Not Likely To Adversely Affect
NMFS	National Marine Fisheries Service
opinion	Biological Opinion
PBF	Physical and Biological Features
PCE	Primary Constituent Element
RCA	Riparian Conservation Areas
RPM	Reasonable and Prudent Measures
SNF	Sawtooth National Forest
SNRA	Sawtooth National Recreation Area
SR Chinook	Snake River spring/summer Chinook Salmon
SR sockeye	Snake River Sockeye Salmon
SUP	Special Use Permit
VSP	Viable Salmonid Population

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 USC 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 two 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 Basin Office, in Boise, Idaho.

1.2. Consultation History

Outfitted and non-outfitted floatboating and guided angling have been occurring on the Sawtooth National Forest's (SNF) Sawtooth National Recreation Area (SNRA) for decades and has now been subject to ESA consultation multiple times. NMFS initially issued an opinion on September 25, 1992. Following some action modifications and when only considering the time period prior to Snake River spring/summer Chinook salmon (SR Chinook) spawning initiation in mid-August, NMFS concurred with a SNF determination of not likely to adversely affect (NLAA) on June 6, 1995. NMFS then issued a July 18, 1995, opinion for floatboating occurring during and after the SR Chinook spawning period. Later, changes to the action led NMFS to concur with a NLAA finding on June 21, 1996, for the issuance of permits for a 5-year term (1996 to 2000). On March 26, 2001, NMFS and the SNF agreed that reinitiation was not required and extended the consultation to address the 2001 season. After the SNF again modified the action, NMFS issued a third opinion on July 16, 2003. In 2009 the SNF proposed temporary (1 year) permits and NMFS issued an April 22, 2009, concurrence letter covering early season floating and walk/wade angling (NMFS No.: 2009/01893) and a June 29, 2009, opinion addressing late season float-boating (NMFS No.: 2009/02393). On July 22, 2010, NMFS issued a fifth opinion on the same suite of permits, with consideration of the complete operating season, addressing the 2010-2020 seasons (NMFS No.: 2010/00157). Most recently, NMFS completed informal consultation on early season floating and walk/wade angling (NMFS No.: WCRO-2021-00395) in order to complete this formal consultation prior to adverse effects to SR Chinook occurring in 2021.

NMFS received a draft biological assessment (BA) from the SNF on May 6, 2021. NMFS responded by email with requested edits on May 18, 2021. A revised BA was received on May 25, 2021, and NMFS again made minor comments by email on June 1, 2021. The SNF Level 1 streamlining team discussed the comments at a May 25, 2021, meeting – agreeing that with

minor edits, the BA would be ready to formally submit to NMFS. On June 2, 2021, NMFS received the final BA from the SNF (SNF 2021), which initiated formal ESA consultation under the accelerated timelines agreed to in the Level 1 streamlining process (i.e., 60 day period to provide an opinion). The current action (number of permits, season, location of use, and conservation measures) are identical to the most recent consultation. The only change from prior consultations are an increase in the number of service days authorized for commercial use (described in detail in section 1.2).

Because this action has the potential to affect tribal trust resources, NMFS provided copies of the draft proposed action and terms and conditions for this opinion to the Shoshone-Bannock Tribe on July 19, 2021, requesting comments. The Shoshone-Bannock Tribe did not respond. The same draft material was provided to the SNF on July 19, 2021. During the July 22, 2021, Sawtooth Level One Team meeting, the SNF provided minor recommended changes, primarily requesting additional flexibility with the proposed terms and conditions. Their proposals were acceptable to NMFS and the final document is consistent with their input.

1.3. Proposed 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 SNRA is proposing to:

1. Reissue four ten-year special use permits (SUPs) authorizing guided commercial float-boating on the upper Salmon River (i.e., Buckhorn Picnic Area to Torrey’s River Access Site, approximately 33 river miles). Use will be allowed between May 1 and October 31 annually. Each outfitter will be assigned a lunch/picnic site along the Salmon River within ½ mile upstream of Snyder Springs Picnic Area.
2. Reissue three ten-year SUPs authorizing outfitted walk/wade angling for steelhead fishing from 100 yards below the Sawtooth Fish Hatchery to the eastern boundary of the SNRA. Use will be allowed between March 1 and April 30, as allowed in Idaho Department of Fish and Game’s (IDFG) current or future sport fishing regulations.
3. Reissue one ten-year SUP authorizing guided walk and wade general fishing activities from March 1 through November 30 as allowed in IDFG’s sport fishing regulations, including steelhead and Chinook salmon seasons when they occur. The permittee will be authorized to guide clients along the Salmon River from the confluence with Alturas Lake Creek downstream to the eastern boundary of the SNRA (i.e., near Thompson Creek), and at Stanley, Alturas, and Perkins Lakes. The permit also includes portions of the Boise and Salmon-Challis National Forests, including: (1) Middle Fork Salmon River from Dagger Creek to the confluence of Marsh and Bear Valley Creeks; (2) Marsh Creek from its mouth to the confluence of Cape Horn Creek; (3) Bear Valley Creek from its mouth to Poker Meadows Bridge; and (4) Collie Lake.

4. Continue to manage non-outfitted float boating on the upper Salmon River by requiring a self-issue permit for each group launching boats. Self-register permits will be available at all river access sites. The permits are used to provide information and education regarding regulations and to determine use levels and patterns on the SNRA.

The total number of service days per year would increase from 11,453 to 14,900 for float-boating; a 30 percent increase from the permits issued in 2010. In addition, an increase from 326 to 500 service days for walk and wade fishing will be authorized to accommodate the existing use and anticipated future demand for such activities; this reflects a 53 percent increase from the previous permits.

This change will establish a set number of service days that may be allocated to permittees during the 10-year period (2021 through 2031). Unallocated days will be available in a pool and may be issued to individual permittees on a case-by-case basis if approved by the SNF's Authorized Officer.

1.3.1. Avoidance and Minimization Measures

The following design criteria¹ are applicable to outfitters and guides as well as the self-issue float boat permit holders, unless specifically stated.

1. General Public Use Permits: Free, self-issued permits will be required for all non-outfitted float boaters. One permit per group is required.
2. Quiet Zones and Disturbance Minimizing Measures: Quiet zones will be implemented through Indian Riffles and Torrey's Hole starting on August 15 through August 29. During this time, floatboaters will be required to: (1) Float the deepest channel; (2) follow redd avoidance measures provided by SNF personnel (float river right, river left, etc.); (3) remain in the boat; (4) minimize paddling; and (5) refrain from water play, sudden movements, and excessive noise.
3. Outfitted anglers will not be allowed to fish within Indian Riffles and Torrey's Hole from August 15 through September 22.
4. Outfitted float fishing is subject to the following provisions: (1) Clients may only fish from the bank at put-ins and take-outs and from the company's assigned lunch site; (2) boats may not anchor, beach, or tie-off to shore while fishing; (3) boats are allowed to back row and sit in eddies to fish; (4) only kayaks, rafts, catarafts, drift boats, and canoes may be used for float fishing; (5) float fishing service days will count against the listed priority use service days.
5. Portages: From August 29 through September 2, boaters will be required to portage Indian Riffles (0.7 miles from Lower O'Brien Campground to just above "The Narrows").

¹ For the complete list of all avoidance and minimization, measures and SNF-proposed monitoring and reporting please see the SNF's June 2, 2021, BA.

6. Closures:
 - a. On August 15, Buckhorn to Stanley, Mormon Bend to Yankee Fork, and Torrey's River Access Site to the eastern SNRA boundary will be closed to floatboating.
 - b. On August 29, Snyder Springs to the eastern SNRA boundary (including Torrey's Hole) will be closed to floatboating.
 - c. On September 3, the entire river will close to float boating and reopen to floatboating on September 23.
7. Other Redd Protection Measures: Outfitters will be required to identify and report new SR Chinook salmon redds observed while floating to the SNF river managers. Once a redd is identified, the outfitters will be expected to provide the maximum separation between their boats and the redd that facilitates quiet, direct, passage. In situations where the SNRA Ranger determines the exposure of individual redds to floating activities could be particularly acute, additional measures similar to those above may be applied.
8. River Access: Outfitted float boaters will only be allowed to access the river at designated access sites. For outfitters, these access sites include Buckhorn, Salmon River Bridge, Four Aces, Mormon Bend, Yankee Fork, Elk Creek, Torrey's Hole, and Snyder Springs. Non-outfitted float boaters will be allowed to use all of the above access sites plus the kayaker take-out just below "The Narrows" and Whiskey Flats Campground.
9. SNRA Monitoring: The SNF will monitor SR Chinook salmon redd development and locations annually. Bank monitoring will occur on August 15 on the upper section of river from the town of Stanley upstream to the Sawtooth Fish Hatchery. Bank monitoring will occur from the hatchery downstream to the eastern boundary of the SNRA on August 29, September 3, plus a concluding survey on approximately September 22.
10. Walk and Wade Angling Practices for the Protection of SR Chinook: Walk and wade angling permittees will be provided with a copy of the prior year's SR Chinook redd maps before offering guided steelhead trips. Permittees and their clients will not be allowed to wade in areas of identified SR Chinook redds during steelhead fishing season. Beginning August 1, in the Middle Fork Salmon River drainage, and in the Salmon River above Redfish Lake Creek (potential spawning habitat of spring Chinook), and beginning August 15 in the Salmon River below Redfish Lake Creek (potential spawning habitat of summer Chinook) the general fishing outfitter will be required to survey intended river segments for SR Chinook redds prior to fishing. Where identified, the permittee and their clients will be required to remain 150 feet above or below a redd or spawning activity. Each year after SR Chinook spawning, walk and wade anglers will be required to avoid identified redds through the remainder of the season, using SNF-provided maps. The permittee will ensure that guides are skilled in redd identification.

11. Walk and Wade Angling Practices for the Protection of Steelhead: During the steelhead fishing season, walk and wade angling permittees will be required to survey intended river segments to identify steelhead redds. Where identified, the permittee and their clients will be required to remain 150 feet above or below a redd or spawning steelhead.
12. Reports: An annual monitoring report will be prepared by the SNRA during the winter following each floating season. The report will consider the overall success of the action and mitigations, as well as compliance of floating and outfitted angling activities in meeting the required floating/fishing instructions, and in achieving their reporting requirements. The report will be available by February 1 annually.
13. Outfitter Lunch Sites: Each float boat outfitter will be authorized to occupy a lunch site on the Salmon River historically used by that outfitter. The lunch sites are well established and may include movable benches, tables, umbrellas, barbecue grills, fire pits and portable toilets, or other seasonally portable method for contained human waste disposal.
14. Information and Education: The SNRA will post information and educational materials regarding salmon protection at river access sites. In addition, the SNRA will continue to place large signs at the river access sites explaining current floating and angling restrictions and updates on identified redds.
15. Additional Areas for Walk and Wade Angling: Should adult sockeye (anadromous or captive) be reintroduced to Stanley, Perkins, and Alturas Lakes for natural spawning, the permit will be amended to remove the use of the lake(s) from September 15 to the end-of-season (November 30).
16. Aquatic Invasive Species Prevention: The in-water equipment of each outfitter is required to be “clean” of aquatic invasive species. The SNF’s authorized officer approves cleaning methods. Each outfitter, in coordination with the authorized officer, will be required to certify their equipment, and the equipment of their clients, is clean prior to its first use annually. Each time thereafter that any piece of equipment is used in waters other than those authorized by the SUP, it must be re-cleaned by an approved method prior to again entering the authorized waters. Aquatic invasive species education materials will be posted at river access sites encouraging clean practices by private boaters and anglers. Self-issued permits for non-outfitted boaters will require that watercraft be clean of aquatic invasive species and be in possession of an Idaho Invasive Species Sticker. Any violation of either provision will be a permit violation punishable under the Code of Federal Regulations. Inspection stations would be periodically operated at river put-ins to inspect for aquatic invasive species and compliance. Any watercraft found to contain aquatic invasive species, will have to be decontaminated at an off-site wash station and re-inspected before being used on the authorized waters. Use of felt soled waders will not be authorized for the walk and wade outfitters.

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 reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

The SNF determined the proposed actions are likely to adversely affect SR Chinook. They also determined the actions are not likely to adversely affect Snake River Basin steelhead, Snake River sockeye salmon (SR sockeye), and designated critical habitat for SR Chinook, Snake River Basin steelhead, and SR sockeye. Our concurrence is documented in the "Not Likely to Adversely Affect" Determinations section (Section 2.11). Table 1 provides the ESA listing status for these species and habitats.

Although steelhead fishing is the focus of three walk/wade angling permits, steelhead fishing regulations in Idaho (along with general sport fishing and Chinook salmon regulations) are covered under Limit 4 of the existing ESA 4(d) rule and the effects of those seasons on ESA-listed species and critical habitats have been previously addressed by NMFS (2011; 2019). The guiding of clients considered here is not expected to contribute any different type of effect or magnitude of fishing-related effect that has not already been considered. Therefore, the effects of pursuing, hooking, capturing, and releasing ESA-listed fish, even incidentally, are incorporated into the environmental baseline and are not considered an effect of this action. Instead, our analysis focuses on the effects of guides and clients accessing streams (i.e., walking near/wading in) for fishing activities as well as on the floatboating component of the proposed action.

Table 1. Federal Register notices for final rules that list threatened and endangered species, designated critical habitat, or apply protective regulations to listed species considered in this consultation.

Species	Listing Status	Critical Habitat	Protective Regulations
Chinook salmon <i>(Oncorhynchus tshawytscha)</i>			
Snake River spring/summer run	T 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543 10/25/99; 64 FR 57399	6/28/05; 70 FR 37160
Sockeye salmon (<i>O. nerka</i>)			
Snake River	E 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543	ESA Section 9 applies
Steelhead (<i>O. mykiss</i>)			
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.

2.1. 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. Because adverse effects to critical habitats are not expected, this opinion does not discuss the status of critical habitats. See section 2.11 for critical habitat effects discussion.

This opinion considers the status of the SR Chinook salmon evolutionarily significant unit (ESU). This ESU is composed of 32 populations (28 extant), which spawn and rear in different watersheds across the Snake River basin. Having multiple viable populations makes an ESU less likely to become extinct from a single catastrophic event (ICTRT 2010). NMFS expresses the status of an ESU in terms of the status and extinction risk of its individual populations, relying on McElhaney et al.'s (2000) description of a viable salmonid population (VSP). The four parameters of a VSP are abundance, productivity, spatial structure, and diversity. The recovery plan for SR Chinook (NMFS 2017) describes these four parameters in detail and the parameter values needed for persistence of individual populations and for recovery of the ESU.

Table 2 summarizes the status and available information on the SR Chinook ESU, based on the detailed information on the status of individual populations, and the species as a whole provided by the *ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon and 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 three documents are incorporated by reference here. Additional information (e.g., abundance estimates) has become available since the latest status review (NMFS 2016) and its technical support document (NWFSC 2015). This latest information represents the best scientific and commercial data available and is also summarized in the following sections. SR Chinook remain threatened with extinction due to many individual populations not meeting recovery plan abundance and/or productivity targets.

Table 2. Most recent listing classification and date, status summary (including recovery plan reference and most recent status review), and limiting factors for species considered in this opinion.

Species	Listing Status	Status Summary	Limiting Factors
<p>Snake River Spring/summer Chinook Salmon</p>	<p>Threatened 6/28/05</p>	<p>This ESU comprises 28 extant and four extirpated populations, organized into five major population groups (MPGs), none of which are meeting the viability goals laid out in the recovery plan (NMFS 2017). All except one extant population (Chamberlin Creek) are at high risk of extinction (NWFSC 2015). Most populations will need to see increases in abundance and productivity in order for the ESU to recover. 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 also need to be lowered in multiple populations in order for the ESU to recover (NWFSC 2015). Overall adult returns declined dramatically across the ESU between 2015 and 2019, compared to the five preceding return years (NWFSC 2021). Only three populations (Minam, Bear Valley, and Marsh Creek) exhibit an increasing abundance when evaluating returns over periods of 10 to 20-years and these are the only populations currently expected to be meeting VSP criteria for a maintained status (NWFSC 2021).</p>	<ul style="list-style-type: none"> • Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species’ migration corridor. • Degraded freshwater habitat, including altered stream flows and degraded water quality. • Harvest-related effects. • Predation in the migration corridor. • Potential effects from high proportion of hatchery fish on natural spawning grounds.

The majority of the proposed actions will occur in the upper Salmon River. Two populations belonging to the Upper Salmon River MPG may be affected in this area – a small part of the Salmon River Upper Mainstem population (above Redfish Lake Creek) and the Salmon River Lower Mainstem (below Redfish Lake Creek) population (Lower Mainstem, hereafter). The general fishing SUP will mostly affect the same two populations but authorized fishing in the Middle Fork Salmon River basin will occur within the boundaries of three distinct populations - Middle Fork Salmon River Upper Mainstem, Marsh Creek, and the Bear Valley Creek populations. These three populations belong to the Middle Fork Salmon River MPG.

The Lower Mainstem population is a very large-sized population in the Upper Salmon River MPG , which contains a total of eight extant populations and one functionally extirpated population (i.e., Panther Creek). The Lower Mainstem population, which primarily exhibits summer run timing, is not currently identified in NMFS’ example recovery scenario for this MPG (NMFS 2017), but the population is one of two very large size populations in the MPG and could be used to satisfy viability criteria in lieu of other populations. The population will also need to reach a ‘maintained’ status – less than 25 percent chance of extinction in 100 years – to maintain options for a viable MPG and the species recovery. The majority of anticipated effects from the proposed actions are expected to affect this population of SR Chinook given the timing

of those actions and potential overlap with spawning fish or their redds. Specific effects are discussed in section 2.4.

In 2015, the Lower Mainstem population was the only population in the MPG exhibiting a decrease in abundance from the 2011 review period. As such, the population retained a high risk rating for abundance and productivity (NWFSC 2015). The Lower Mainstem population was at low risk for spatial structure and diversity metrics. Collectively, the population was at high risk of extinction (i.e., >25% extinction risk within 100 years). Since our last status review, abundance and productivity have declined further (NWFSC 2021), nearing levels reported when the species was first listed. During this time, observations of coastal ocean conditions suggested that the 2015-2017 out-migrant year classes experienced below average ocean survival during a marine heatwave and its lingering effects. This led researchers to predict a corresponding drop in adult returns through 2019 (Werner et al. 2017). In fact, the best scientific and commercial data available with respect to the adult abundance of Lower Mainstem Chinook salmon indicate a substantial downward trend in abundance and productivity when comparing returns from 2010-2014 to 2015-2019. Specifically, 5-year geometric mean natural adult abundance declined 73 percent for this population compared to the prior time period. Although NMFS has not yet completed our most recent status determination, declining abundance and productivity will likely preclude any change from the high risk rating.

The Upper Mainstem Salmon River population (upstream of Redfish Lake Creek) is a large-sized population and is included in NMFS' recovery scenario for the MPG (NMFS 2017). This population's life history is primarily spring-run. In the current draft, viability assessment (NWFSC 2021), the population remains at high risk of extinction, with poor abundance and productivity metrics being the major influence. Like almost all the other populations in the MPG and ESU, the Upper Mainstem Salmon population's abundance decreased 73 percent between the past two five-year periods – dropping from a five year geomean of 628 adults between 2010 and 2014 to 170 adults for the 2015 through 2019 return years (NWFSC 2021).

In addition to the Upper Salmon River populations described above, walk and wade angling in the Middle Fork Salmon River basin will also occur in the boundaries of the Middle Fork Salmon River Upper Mainstem (intermediate-size), Marsh Creek (basic-size), and the Bear Valley Creek (intermediate-size) Chinook salmon populations. These are all part of the Middle Fork Salmon River MPG. Comparing the 2015 through 2019 five year geomean abundance to the prior five year period, the best available data (NWFSC 2021) indicates each of these populations' abundance has decreased from 44 percent (Middle Fork Salmon River Upper Mainstem) to 70 percent (Bear Valley). The pattern was consistent across the other five populations in the Middle Fork Salmon River MPG. Because most of the MPG habitat is designated as wilderness, freshwater spawning and rearing habitat is generally in very good condition and observed decreases in abundance likely reflect impacts during mainstem migration or ocean residency portions of their life-history. Although final updates to the 2021 status review are not yet complete, the Bear Valley and Marsh Creek populations currently appear to meet VSP criteria for maintained populations, and are the only populations in the MPG not at high risk of extinction (NWFSC 2021). The Middle Fork Salmon River Upper Mainstem population is at high risk (NWFSC 2021).

2.1.1. Climate Change Implications for ESA-listed Species

One factor affecting the rangewide status of SR Chinook, and aquatic habitat at large, is climate change. The U.S. Global Change Research Program (USGCRP 2018) 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).

Likely changes in temperature, precipitation, wind patterns, and sea-level height have implications for survival of SR Chinook in both its freshwater and marine habitats. Climate change is expected to make recovery targets for salmon more difficult to achieve (Crozier et al 2019). 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).

2.2. 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 majority of outfitted floatboating, float fishing, non-outfitted floatboating, and steelhead walk/wade fishing occurs in approximately 33-miles of the Salmon River, from the Buckhorn Picnic Area to the SNRA boundary, near Thompson Creek (Salmon River SA-1, are also included in the action area.

The proposed SUP for guided walk and wade angling has an action area that includes: (1) The Salmon River from the confluence with Alturas Lake Creek downstream to the eastern boundary of the SNRA; (2) Stanley, Alturas, and Perkins Lakes; (3) the Middle Fork Salmon River from Dagger Creek to the confluence of Marsh and Bear Valley Creeks; (4) Marsh Creek from its mouth to the confluence of Cape Horn Creek; (5) Bear Valley Creek from its mouth to Poker Meadows Bridge; and (6) Collie Lake. Except for the overlapping area along the mainstem Salmon River, these areas are not depicted on the figure below.

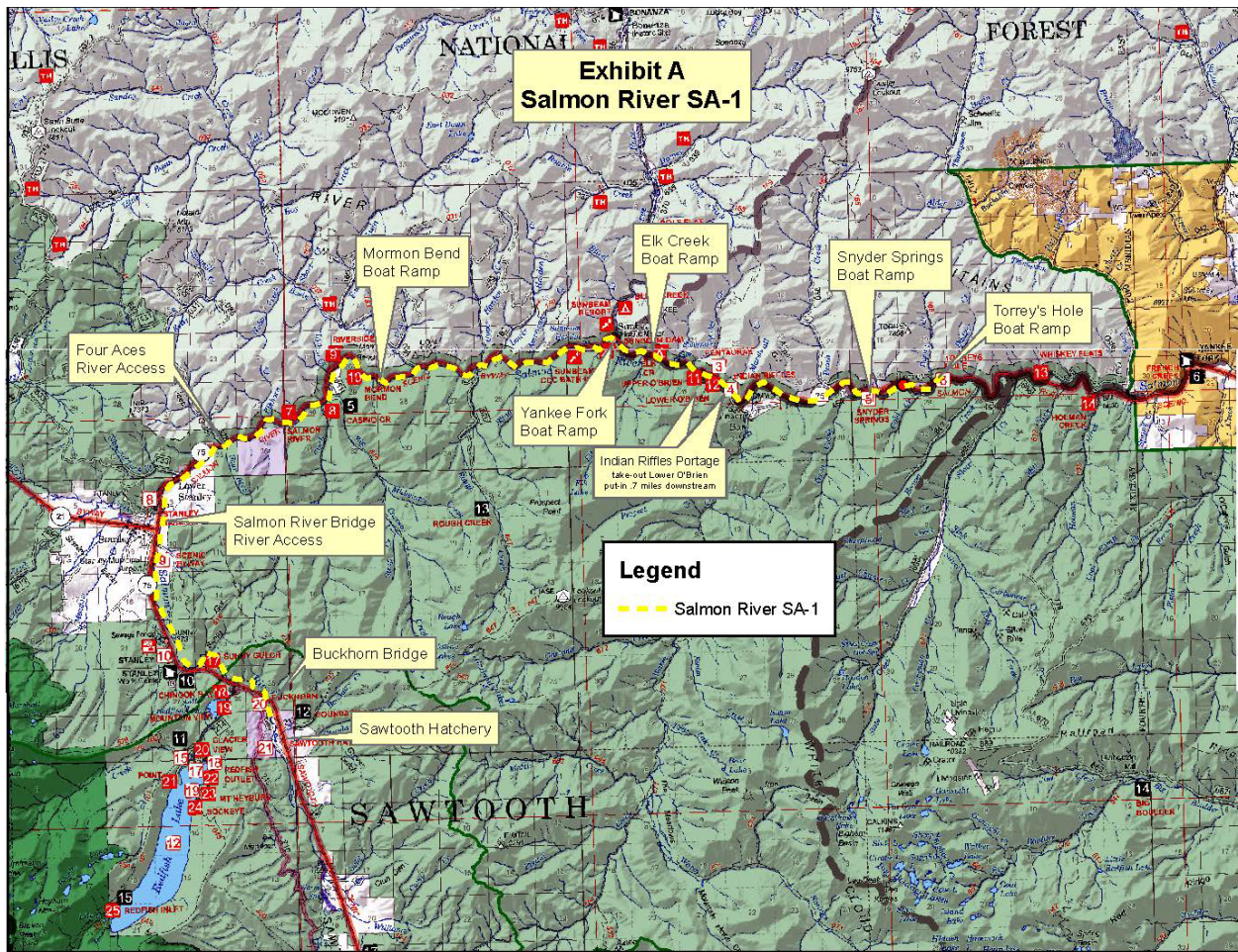


Figure 1. Principle action area for the SNF’s proposed Outfitter & Guide Permits.

2.3. 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 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 descriptions provided below focus only on baseline conditions within the action area. This is done to focus analysis emphasis on those habitat parameters most likely to be influenced by recreational floating activities and set the context for analyzing the effects of the proposed action on these conditions. More detailed baseline matrices of diagnostic pathways and indicators for these watersheds are provided in Appendix B of SNF’s final BA (2021), which is incorporated by reference here.

Fish habitat conditions in Marsh Creek are generally in good condition. Overall physical habitat quality, including the elements of water quality, flow/hydrology, channel conditions and structural habitat elements, is considered good, and connectivity is excellent. Over the past five years, several activities have occurred to improve habitat quality in the drainage, including the closure of the Cape Horn Sheep Allotment and the removal of a diversion and allocation of the water right (approximately 7 cubic feet per second [cfs]) to the water bank managed by Idaho Department of Water Resources. The Idaho State Bowhunters has also adopted the Swamp and Vader Creek areas and have been volunteering their time to improve riparian habitat conditions over the past few years. There have also been two fires that have burned through the watershed in the past several years. In 2019, the Vader Creek Fire burned 443 acres in Swamp and Vader Creeks within the Marsh Creek drainage, and in 2020 the Trap Fire burned 2,627 acres in Marsh and Valley Creeks. The road density is moderate and many of the roads are in the valley bottoms and the riparian conservation areas (RCAs). Recreation is the dominant use within the Marsh Creek action area.

Within the Bear Valley Creek (Fir Creek) watershed habitat conditions are mostly functioning at risk or unacceptable risk. Riparian areas show some disturbance from past and ongoing land management activities including road construction, dispersed recreation, and developed recreation. Riparian areas in the area of the County Line Fire (1992) area are revegetating, and high to moderate fire intensities during the 2006 Red Mountain Fire were concentrated in the upper Fir Creek drainage, which have resulted in a reduction in the canopy cover within the RCA, and an increase in large woody debris recruitment in the affected areas. Grazing allotments were eliminated in the Bear Valley watershed in 2000.

Within the Upper Salmon River watershed (i.e., Valley Creek downstream to Holman Creek), habitat conditions are mostly functioning at risk or unacceptable risk. Highway 75 has greatly influenced the Salmon River and vegetation along it. The development of the roadway on the north side of the Salmon River has exacerbated the steep unstable slopes that sit above the sparse and discontinuous riparian margins of the river below. The native topography naturally limits channel migration in the majority of the watershed. However, where waste rock was dumped or encroached into the channel during road construction, a corresponding scour of the less resistant material on the opposite bank has typically occurred. In these common settings, riparian extent and condition has been diminished from both sides of the river. Agricultural development on private lands has also substantially altered riparian habitats. Past livestock grazing, developed and dispersed recreation sites, mining, and timber harvest have all negatively influenced habitats in these drainages. The SNF has implemented multiple projects within the Salmon River corridor since 1996, addressing historic impacts from recreational development and use. With the exception of whirling disease, no aquatic invasive species (AIS) are currently known within the action areas, though some infestations of New Zealand mud snail² (*Potamopyrgus antipodarum*) are known to occur very nearby.

As indicated in Appendix B of the SNF's final BA (2021) (incorporated by reference), habitat conditions in the action area are generally functioning at risk. This is due to historic and current factors such as water diversions, encroachment by Highway 75, grazing, timber harvest, mining,

² Found in the Salmon and Pahsimeroi Rivers near Ellis, Idaho.

etc., contributing to cumulative degradation of habitat conditions. The issuance of SUPs for commercial float boat and walk/wade angling activities has had insignificant effects on physical habitats over period of consultation, approximately 25 years.

2.3.1. SR Chinook Salmon in the Action Area

The SNRA conducts annual redd monitoring in the Salmon River portion of the action area, and they have divided the river into three river segments (Upper, Middle, and Lower). The Upper Section spans from the Sawtooth Fish Hatchery to Stanley; the Middle Section spans from Stanley to the Yankee Fork Salmon River; and the Lower Section runs from the Yankee Fork Salmon River to the eastern boundary of the SNRA. Systematic full streambank spawning surveys are conducted four times during the spawning season each year.

Over the last 16 years, the number of redds has been variable, but overall, there has been a steady decline of total action area redds starting in 2009, from 446 redds to 78 redds in 2020 (SNRA 2021). The decline appears to mirror (in scale and timing) the recent ESU-wide decline in abundance. Most of the spawning occurs in the Upper Section, with fewer redds found in the Lower and Middle sections. Between 2004 and 2020, the Upper Section contained an average of 74 percent of all action area redds, with more than 80 percent of the redds occurring here most years. During the same time span, the Middle Section averaged 7 percent of the total number of action area redds while the lower section averaged 17 percent of the total redds documented.

Furthermore, the onset of redd construction usually occurs on or after August 29. During the August 15 spawning surveys, no redds were documented in the Lower and Middle Sections between 2010 and 2020. A few redds were documented on the August 15 date in the Upper Section throughout the same period. In the Upper Section, the majority of redds were detected during the August 29 and September 3 surveys. In the Middle Section, redds started to appear on the August 29 survey, with the majority being detected on the September 3 survey. In the Lower section, redds were more readily detectable on the September 3 survey, with the majority being detected during the September 23 observation. Chinook salmon generally spawn at higher elevations sooner than they do at lower elevations (C. Stewart, SNF Fish Biologist, personal observation, in SNF 2021). This is likely what is occurring in the action area, as the elevation drops approximately 900 feet through the Salmon River portion of the action area.

SR Chinook salmon also spawn in the Middle Fork Salmon River, Bear Valley Creek, and Marsh Creek portions of the action area. Spawning typically begins in mid- to late-August and embryos emerge the following spring or late winter. The IDFG conducts aerial redd surveys over most of this area, with the Shoshone Bannock Tribe augmenting surveys with ground-based counts. Redd distribution is available directly from IDFG regional offices. Juveniles are present year round and overlap with proposed general walk and wade angling locations.

2.4. 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).

2.4.1. Effects to Species

The proposed action will authorize boats to float through sections of river while SR Chinook salmon are migrating, staging to spawn, preparing redds, and potentially after redds are established. The action will also authorize outfitter guided angling greater than 150 feet from identified redds and in compliance with IDFG's approved fishing regulations. As previously stated, effects associated with angling have been addressed under Limit 4 of the existing ESA 4(d) rule (NMFS 2011, NMFS 2019). For this reason, those effects are part of the environmental baseline and are not further considered in this consultation. Instead, our analysis focuses on the effects of guides and clients accessing streams (i.e., walking near/wading in) for fishing activities and on the floatboating component of the proposed action.

For Chinook salmon spawning prior to September 2, passing boats or nearby guided angling clients could influence spawning site pre-selection and selection, redd construction, and pre-spawning, spawning, and post-spawn behaviors. Impacts are typically caused by boats floating over/near females that spook them off redds, which could cause stress. Stress could result in pre-spawning mortality or insufficient egg burial depth, if stress was extreme and/or stressed fish lacked adequate energy reserves. Eggs and pre-emergent fry of Chinook salmon could potentially be displaced or damaged from boats or oars grounding on redd substrate. Post-spawn fish could be displaced from redds, potentially losing the protection provided by a fish defending the redd site. Observations of boats floating by redds on the Middle Fork Salmon River have shown repetitive disturbance of boats spook fish off redds, and potential impacts from boats impacting redds or boaters getting out of boats and wading on redds (SNF 2021).

2.4.1.1. Salmon River Floating Use

Floating use of the Salmon River typically peaks in late July and tails notably through the pre-spawning period of early August. Due to increasingly shallow river conditions, commercial float boat outfitters make essentially no use of the upper and middle sections of the river after late July. However, increasingly limited public use of these sections continues until the upper section, and segments of the middle section, close on August 15. By late August, public floating of the remaining open segments in the middle section is rare. This is largely due to river flows decreasing, creating less-than-desirable floating conditions. Late August is when SR Chinook spawning initiates in the middle and lower sections.

River segment mitigation and closure dates during the former permit period (2010 to 2020) were managed identically to the proposed action. That is, on August 15, the segments from Buckhorn to Stanley, Mormon Bend to the Yankee Fork, and Torrey's River Access to the eastern boundary of the SNRA close to floating. Additionally, designated quiet zones are implemented at

Indian Riffles and through Torrey's Hole³ where boaters are required to: (1) float the deepest channel; (2) follow redd avoidance measures provided by SNF personnel (float river right, river left, etc.); (3) remain in the boat; (4) minimize paddling; and (5) refrain from water play, sudden movements, and excessive noise. Outfitted anglers are not allowed to fish within Indian Riffles and Torrey's Hole from August 15 through September 22. From August 29 to September 2, mandatory portages of Indian Riffles (0.7 miles from Lower O'Brien Campground to just above "The Narrows") are required. Also on August 29, Snyder Springs to the eastern SNRA boundary (including Torrey's Hole) is closed to boating. On September 3, access sites for the entire river on SNF lands are closed to floating until reopened on September 23.

Since the number of boats passing a fish/redd is the causal mechanism for harm, this opinion focuses on boat numbers rather than user days (for floatboating effects). Between 2004 and 2009⁴, about 10 boats per day (range 6 to 15) floated the lower section from the date the first redd was identified through September 2 (hereafter late season), after which the river closes. The current action proposes to increase outfitter provided user days by up to 30 percent over the course of the next 10 years. The SNF believes that most new use will occur during June and July (current and historical peak use periods). Thus most boat increases will likely occur prior to SR Chinook salmon spawning. We assumed private use days will increase at a similar times and rates. For this opinion, we assumed the total number of boats per day will increase at a rate of three percent annually for the next 10 years. We then applied the three percent rate increase to the 2004-2009 observed use levels for the late season floating period. By 2031, the end of the 10-year period, the number of boats floating during the late season is estimated to range between 8 and 20 boats per day. Individual outfitter boats and self-issue permit groups typically travel close together, typically 2 to 6 boats during the late season. Up to four outfitter groups float daily.

2.4.1.2. Spawning Chinook Salmon Exposure to Float boats

An estimate of spawning SR Chinook exposure from float-boat activities can be obtained by overlaying the administrative closure dates with the SR Chinook spawning information collected by the SNF over the past 10 years. We can also estimate the number of daily disturbances and duration of disturbances a redd or spawning fish may experience during the late season (in the lower section). The Salmon River flows fairly swiftly, but in the slowest waters, an individual boat may require 2 to 3 minutes to approach, pass, and leave a fixed point (e.g., a redd). A group of six boats traveling together may take 12 to 18 minutes to pass.

By extrapolating on the number of boats expected to float the lower section daily during the late season (section 2.4.1.1) we expect up to four 12-18 minute long outfitter disturbances daily and up to three self-issue permit group disturbances of the same duration. Cumulatively, daily exposure to float boats after redds occur in the lower section may lead to as much as seven 12-18 minute long disturbances for each redd or spawning fish. We assumed any redds or spawning fish in the open portion of the middle section (i.e., Stanley to Mormon Bend) will receive up to three 12-18 minute long disturbances from self-issue permit groups each day. Low flows and the lack of outfitter floating in the middle section led to the reduced exposure there.

³ Indian Riffles and Torey's Hole are traditional 'hot spots' for SR Chinook spawning and redd density in these areas can sometimes be high.

⁴ SNF (2021) did not provide user days or number boats per day for the 2010-2020 use period.

The SNRA's 2010 to 2020 redd surveys identified a total of 2,053 redds in the Salmon River portion of the action area. The upper section accounted for 74 percent (1,519 redds) of the total redds, the middle reach seven percent (144 redds), and the lower reach 17 percent (349). All redds in the upper section were avoided due to the August 15 closures. In the middle section, redds started to appear on the August 29 survey, consistent with the historical onset of spawning timing. The majority were observed during the September 3 surveys. Closures on August 15 avoid exposure to any redds from Mormon Bend Campground downstream to the Yankee Fork Boat Ramp, which is about half the length of the middle reach and where the majority of redds have historically occurred. The potential for effects is also very low in this reach due to low river use during late season, when spawning is occurring (section 2.4.1.1). In the lower reach, a few redds were routinely observed during the August 29 survey most years, but the number of redds increased with each subsequent survey (September 3 and September 23) most years.

From 2010 to 2020, SNF monitoring indicated that on average, 97 percent of detected redds had zero or reduced exposure to boaters due to the same design criteria (i.e., closures, quiet zones, portages) currently proposed. This means that on average, 3 percent of redds in the Salmon River portion of the action area were exposed to unmitigated floatboating annually. The number of redds exposed during that time ranged from 0 to 15. All exposures only affected the Lower Mainstem population. Our previous consultation (NMFS No.: 2010/00157) indicated the average percentage of unmitigated redds (2004-2009) averaged 7 percent of the annual total (range 1 to 9 percent). During those years, the maximum number of redds exposed to floatboating was 36 in 2002. For the most recent timespan, it's clear that fewer redds and a smaller proportion of the total number of redds have been exposed to unmitigated floatboating than during permits' prior time span. It is unknown if this reflects a shift of spawning distribution upstream, away from open floating areas, or if is just a product of lower overall abundance and thus less redds in areas subject to floating.

Given the observed variability in adult abundance over the available record, we expect the number of redds to rise for at least portions of the proposed permit period considered. For this reason, we find it acceptable to anticipate that the percentages of redds exposed and the number of redds present during 2004 and 2009 could occur during the consultation period considered now (i.e., up to 9 percent, or up to 36 redds exposed).

Redd/spawning fish exposure to floating activities does not mean they are exposed during the entire duration salmon occupy a redd. The residence time of female Chinook salmon with their redds ranges between 6 and 25 days, with residence time decreasing as redds are established later in the spawning period (Neilson and Green 1983). SR Chinook in the action area exhibit similar behavior with occupancy routinely extending 7 days with some instances of fish being present in excess of 21 days (SNF 2010). The most active period for redd construction and egg deposition occurs in the earlier portion of this residency period (Healey 1991).

Annually, the earliest fish to spawn, in open river segments, are potentially exposed to the most floating activity simply because they have the greatest period of time before the implementation of portages and closures provide protection. As the number of redds increases through the spawning period, more and more redds/spawning salmon can potentially be exposed, but for shorter and shorter periods as the closure/portage dates draws near. With the anticipated increase

in use, we estimate up to seven, 12 to 18 minute long daily disturbances for each redd or spawning fish in the lower segment and as many as three 12 to 18 minute long daily disturbances in the open portion of the middle segment, equal to about two hours of daily disturbance or approximately six to nine percent of a 24-hour period. In reality, after fish are initially displaced by boats, additional boats and/or groups of boats could approach and pass the redd location while the fish is absent, precluding additional impacts from the other boats until the fish actually returns to the redd site. Based on past observations, fish may return to the redd within five to 60 minutes.

Available information, provided above and in SNF 2021 and NMFS 2010, indicate the proposed river closure and portage dates eliminate potential float boat interactions with the majority of spawning and post-spawning fish and that most fish exposed to floatboating are exposed for brief periods of time and typically for less than four days (August 29 spawning onset until September 3 river closure). River closures avoid all boating interactions with spawning and post-spawn fish in the upper section, thus fish in the Mainstem Salmon River population (upstream of Redfish Lake Creek) are not exposed to potential adverse effects and only fish in the Lower Mainstem population are exposed.

2.4.1.3. Chinook Salmon Exposure to Guided Walk/Wade Anglers

Three SUPs will authorize the permitted outfitters to guide clients in the pursuit of steelhead on lands administered by the SNF. The only areas authorized for steelhead walk/wade angling are in the Salmon River from approximately 100 yards downstream of the Sawtooth Fish Hatchery to the eastern edge of the SNF, about 33 miles downstream. Steelhead fishing is only authorized between March 1 and April 30. This timing avoids any exposure to spawning, pre-spawn, or post-spawn Chinook salmon for what we assume is more than 75 percent of the service days (three of four SUPs are spring steelhead fishing permits and the fourth includes spring steelhead and general fishing). Chinook salmon embryos may still be in the gravel during the early portion of spring steelhead seasons where steelhead guiding is occurring. To avoid effects from anglers wading on redds, the permits' terms and conditions require anglers to remain more than 150 feet from all SR Chinook redds that were mapped by the SNF the prior fall. This results in a highly unlikely potential for anglers to wade over established redds and very limited disturbance of spawning fish.

A fourth SUP will authorize steelhead and general fishing activities across the same section of the Salmon River authorized by the three steelhead SUPs and general fishing within several areas located in the Middle Fork Salmon River (described in detail in section 1.3 and 2.2). This SUP is valid for guided fishing from March 1 through November 30. The same fall closures identified above apply to this permittee and they are required to consult existing redd maps for the Salmon River in addition to Middle Fork Salmon River redd locations identified by the IDFG prior to fishing. As above, fishing and wading is not permitted within 150 feet of established or otherwise visible redds.

The proposed permits include an increase from 326 to 500 service days⁵ for walk and wade fishing, to accommodate the existing use and anticipated growth. The BA does not indicate how many service days each SUP holder utilizes or will utilize in the future. We assumed equal distribution of the total allotment is reasonable and that approximately 125 service days per SUP holder may occur. Given all four permittees operate spring steelhead fishing trips, the overwhelming majority of service days are likely to occur in the spring, when no adult Chinook salmon are present.

All outfitters and their guides must be trained in redd identification and they are required to survey stream sections for redds prior to fishing them. Chinook salmon redds are easily identifiable, particularly in the wade able sections of streams being targeted by fishermen. Guides typically take one or two clients each day, increasing their ability to communicate with clients and ensure they comply with the permit terms. For this reason the likelihood of redds being identified prior to fishing and thus avoided by guides and clients is considered high.

2.4.1.4. Effects on Listed Species

Repetitive disturbance to fish by float craft or guided walk/wade anglers can influence SR Chinook spawning site pre-selection and selection; redd pre-construction and construction; and pre-spawning, spawning, and post-spawning behaviors. Impacts are typically caused by boats floating over females or wading close to fish, which may spook them off redds. Repeated flight from the spawning location could potentially result in pre-spawning mortality or insufficient burial depth of eggs, or reduced protection of eggs by the fish post-spawn. Egg and pre-emergent fry of Chinook salmon could potentially be displaced or damaged by impacts from boats or oars. Widespread effects on salmon adults, eggs or pre-emergent fry can significantly affect short- and long-term population viability due to the low number of adults expected to return as spawners most years.

During the pre-spawning period, floating or guiding of fishing clients through spawning habitats are likely to disrupt natural site selection behavior by introducing a perceived threat. Monitoring conducted by the Salmon Challis National Forest on the Middle Fork Salmon River has shown repetitive disturbance of boats spook fish off redds, and potential impacts from boats on redds or boaters getting out of boats and wading on redds (SNF 2021). Spooked fish will likely flee to other, potentially less suitable, habitats, delay spawning, or abandon spawning altogether.

Two instances of fish abandoning ‘test redds’ (2005 and 2007) exposed to mitigated floating were observed by the SNF, one in 2005 and one in 2009. Test redds occur naturally, and the limited information makes it impossible to definitively identify floatboating as the causal factor for the observed abandonments. However, the SNF observances may reflect potential effects of increased disturbance during this sensitive period. SNF staff observed a female Chinook salmon abandon a partially completed redd following heavy angling pressure in 1994 (SNF 2010). The same fish was later believed to have constructed another redd in a pocket of gravel within a boulder dominated reach having much higher velocities and presumably more cover (SNF 2010).

⁵ A service day is one guided client during any one day. An outfitter who guides two clients on one trip would use two service days.

Despite one observance of changed spawning location there is no clear shift in spawning site selection or timing of spawning initiation in the action area (Fornander 2008). The proposed closures and quiet zones implemented on August 15 protect pre-spawning fish in approximately 21 miles of the 33 mile long core action area. Fornander's (2008) observations, and continued effectiveness of the river closures and quiet zone measures in avoiding most spawning fish, indicate that pre-spawn fish disturbance has not affected spawn timing in the action area and the current river closure dates effectively avoid the spawning surge. There are no studies evaluating the effects of float boating or walk/wade angling on spawning success in the action area.

Because of the distance these Chinook salmon travel and their proximity to realizing their reproductive potential, human-induced disturbances of pre-spawning or spawning salmon could result in reduced reproductive success, and/or premature death. In an evaluation of energy expenditure from migration until after spawning, Mesa and Magie (2006) reported that Chinook salmon in the Yakima River used 95 to 99 percent of their muscle and 73 to 86 percent of their visceral lipid stores by the time of death post-spawn. Although they did not report on energy reserves during spawning initiation, these values suggest that any additional energy use could further reduce already limited energy reserves, which could have adverse effects on a fish's ability to successfully spawn, including possibly burying eggs too shallow, where they could be damaged or scoured at high flows. Damage to embryos in the gravel, from boat or oar strike, or wading, could lead to direct impacts on their survival. Low and declining numbers of returning adult salmon, described in the baseline, increases the importance that each fish that successfully migrates to the area successfully spawns and that deposited eggs successfully hatch.

For the few spawning salmon that are exposed to float boat activities each year, some critical energy reserves must be used in flight and avoidance behaviors. Campbell and Moyle (1992) reported that rafting over staging adult Chinook salmon resulted in a six-time increase in the number of individual fish movements made every 20-minutes (1.1 fish movements/20 minutes vs. 0.2 fish movements/20 minutes). However, the number of movements for both the control fish and disturbed fish was still very low. Floatboating has not been researched extensively and there are no studies that address its effect on the reproductive success of spawning salmon (Fornander 2008).

Fish response to the expected disturbance is an important factor in assessing the action's impact. In an attempt to evaluate fish response to float boating, the SNF and Salmon Challis National Forest have completed multiple evaluations over the long history of float boating on the SNRA. A summary of these mostly anecdotal observations is provided below:

1. Adult salmon were not typically displaced from redds if boats passed at a distance greater than 25 feet (James 1976; Dufour 1994; Olson 1996; SNRA 2009).
2. Salmon typically fled from boats passing within 25 feet of an active redd. Salmon returned to the redd within 5 to 60 minutes of displacement (Ries 1995; Olson 1996; SNRA 2009; SNF 2021).

3. There are instances when boats float close to active fish and no displacement occurs, even when floaters exhibit heavy paddling in close proximity to spawning fish (SNRA 2009; Olson 1996; Dufour 1994, SNF 2021).
4. Salmon were observed to routinely move away from redds as a result of natural spawning behavior (e.g., chasing, redd defense, avoidance of predatory birds, avoidance of other fishes, etc.) and natural disturbances such as passing ducks and osprey (Ries 1995; Olson 1996; Dufour 1994; SNRA 2009).
5. The resulting energy expenditure and effects of displacements on spawning success could not be determined.

Observed behaviors tended to be highly influenced by individual fish and/or individual site characteristics where boat/fish interactions occur. For example, salmon were observed to flee some boats when they passed quietly at 40 feet while others remained with the redd even when boats passed directly overhead and the occupants were busy paddling.

Although reproductive success is likely to be affected in some instances of exposure to boats, via increased movements near the end of the fish's lives, the amount of exposure and its significance have been effectively avoided and/or minimized by the proposed river closures, quiet zones, portages, and guided angler restrictions. During the recent period of implementation (2010 to 2020), 97 percent of all redds were avoided or mitigated by proposed design criteria, including all fish in the Mainstem Salmon River population (upstream of Redfish Lake Creek). Disturbed fish will typically be buffered by more than 25- or 150-feet of separation (boats and anglers, respectively). Since the proposed action remains fundamentally identical to the previous proposed action, similar outcomes are expected for the duration of the proposed permits. A small number of adult Chinook salmon (maximum of up to 36 redds or about 72 salmon) will be annually disturbed from float boat activities and the total effect of this disturbance on the extended population is expected to remain very small. We anticipate that the percentages of redds exposed and the number of redds present during 2004 and 2009 could occur during the consultation period considered now (i.e., up to 9 percent, or up to 36 redds exposed).

Once spawning is complete, trampling of redds could also occur if floatboaters exit the boat and walk on a redd, or if a boat becomes grounded in shallow water on a redd. Although Chinook salmon have been recorded to spawn at stream depths between 2 inches and 23 feet (Meehan 1991), Chinook salmon spawning in the action area typically occurs between 1.5 and 3.5 foot depths (Personal observation, C. Fealko). Floatboats draft less than 1 foot of water and typically stay near the deepest portion of the channel to avoid grounding the boat. Although grounding of a boat or walking on a redd is conceivable, no occurrences are known from the previous periods in the action area. Design criteria also prohibit commercial boats from anchoring and boat-based fishermen from exiting the boat, and quiet zone restrictions require floating the deepest channels, further reducing potential harm to redds. Signs at access points describe redd locations helping all users avoid redd/boat interactions. For guides, their familiarity with river conditions and redd locations further assists their entire groups in avoiding redds. For these reasons, it is unlikely that boats will strike a redd.

Roberts and White (1992) documented that trampling of trout redds by anglers and/or float-boaters could cause mortality of eggs and pre-emergent fry. Chinook eggs are typically located in larger substrate and buried deeper than trout eggs and trampling effects may not be as severe, but the difference in risk is unknown.

As discussed above, the proposed action includes measures to avoid angler trampling of SR Chinook redds. Guides will conduct bank side surveys to identify any evidence of spawning before fishing and anglers and guides are restricted from fishing or wading within 150 feet of any active or completed redd. Outfitted fishing is also not permitted in Indian Riffles and Torrey's Hole following implementation of mandatory quiet zones on August 15 and until September 23. After September 23, guides and anglers remain restricted from wading within 150 feet of redds and provided maps continue to aid in their avoidance. Redd avoidance measures carry over to the spring steelhead season. These measures have been implemented with high compliance in the past and they remain highly effective avoidance measures. For these reasons, it is unlikely that outfitted anglers or their guides will disturb actively spawning fish or trample SR Chinook redds.

Summary. Monitoring suggests that 1 to 9 percent of the total number of redds in the action area may be exposed to floatboating annually, thus exposing fish attending those redds to brief periods of harassment and/or harm. Proposed conservation measures are the same as those implemented the past 16 years. These measures have prevented floating over 97 percent of the annual total redds in the action area during the past 10 years. Fish that were observed to be displaced by floating are expected to return to their redds within 5 to 60 minutes following a disturbance by boats within about 25-feet. During this time, other boats or groups of boats may float past the redd, potentially avoiding an additional disturbance. Float boat disturbance of pre-spawn and spawning fish is likely to take the form of harassment, resulting in minor behavioral responses. However, available information precludes us from determining the biological effects of these disturbances on exposed fish. There is at least potential that some fish may abandon test redds, partially complete redds, inadequately bury eggs, or they could die before spawning. Most observations suggest exposed fish are likely to return to their spawning activities and are expected to survive to spawn. Considering 91 to 99 percent of the action area's redds and the fish tending them are likely to be fully protected, and the other 1 to 9 percent of redds/tending fish are expected to experience only minor levels of boater exposure and low levels of harassment over about four days, the proposed action is not expected to affect VSP parameters of abundance and productivity for the Lower Mainstem SR Chinook population. Due to the nature of the action, the action has no potential to affect spatial structure/diversity measures. Because the population's VSP criteria will not be significantly affected by the anticipated harassment, the VSP criteria for the MPG and the ESU as a whole will also not be affected.

2.5. 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.

Existing highway infrastructure and its maintenance will continue to artificially limit riparian vegetation and reduce habitat complexity along the majority of the Salmon River through the action area. Conservation easements, held by the SNF, are expected to maintain current levels of development on most large private parcels along the Salmon River section of the action area. Those easements prevent large-scale future developments and offer habitat protections that would not exist otherwise. Small private parcels, within Stanley or Lower Stanley have essentially all been developed and current baseline conditions along the shoreline of these lots is expected to persist for the duration of the permit terms. No other future State or private activities are expected to occur. For these reasons, habitat conditions, as influenced by State and private activities in the action area, are not expected to materially change during the next 10 years. SR Chinook growth and abundance is therefore expected to mirror levels generated under the current environmental baseline and no new future impacts to the populations' VSP parameters are anticipated or otherwise known at this time.

2.6. Integration and Synthesis

In this section, we add the effects of the action (Section 2.4) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5), taking into account the status of the species (Section 2.1), 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 for the conservation of the species. Since adverse effects to critical habitat are not expected, step two is not pursued further.

Species. SR Chinook abundance experienced population increases, relative to time of ESA listing, through the mid-2000s. During the past five years abundance has dropped, with many population's nearing levels observed when the species were listed. All individual populations, including those affected by this action, are still at high risk of extinction and remain far below recovery plan abundance and productivity targets. As a result the species remains threatened with extinction. Current abundance/productivity estimates for the Lower Mainstem population are well below levels needed for the population to reach a maintained status, and they have recently declined. Observed declines have been similar for all populations in the ESU and declines are believed to be tied to recent ocean conditions (NWFSC 2021), not action area conditions or impacts of the past permits. In addition to abundance and productivity concerns, climate factors will likely make it more challenging to increase abundance and recover the species (NMFS 2017; Crozier et al. 2019).

Outfitted and self-guided boats floating near pre-spawn, spawning, and post-spawn fish is expected to cause minor harassment and/or harm. Encounters with pre-spawn fish that are staging in deep pools is expected to cause minor behavioral modifications, via increased frequency of movement relative to undisturbed fish. Encounters with actively spawning and post-spawning fish will mostly be avoided. Most encounters will occur over an approximate four-day period from the onset of spawning initiation (August 29) until the river closes to floating on September 3. Approximately one to nine percent of the action area redds may be exposed to any floating activity, with the maximum redd exposure estimated to be 36 redds. Encounters are expected to be relatively brief. Cumulatively, daily exposure to float boats is

expected to be limited to seven 12-18 minute long disturbances for each redd or spawning or post-spawn fish present. Although the biological endpoint of this type and amount of stress is largely unknown, the effect to individual fish is believed to be minor. Available evidence suggests harassed fish return to redds shortly after displacement. Increased use of limited energy reserves could lead to slightly reduced egg burial depths, pre-spawn mortality, or less time protecting redds. These are largely speculative impacts as little research exists regarding the biological impacts of even these types of disturbances. Impacts on actively spawning fish are expected to occur on only about four days, and be mitigated by closely aggregated groups of boats. This will likely have little if any measurable effect on fish productivity or survival. All fish exposed to adverse effects from the proposed action will belong to the Lower Mainstem population. Although fish within the Upper Mainstem Salmon Population also occur in the action area, river closures preclude adverse effects to members of that population.

The action has been adjusted and conditioned to avoid 91 to 99 percent of most year's spawning fish (depending on annual run abundance, with larger percentages typically occurring when abundance is high), and exposure is limited to periods of approximately four days for almost all fish. Effects to exposed fish are mostly minor behavioral modifications with small potential impacts on spawning success remaining possible. These effects are too small to have meaningful short- or long-term impacts on the spawning success, individual growth, or individual survival of SR Chinook in the Lower Mainstem population. Adding the projected impacts to the continued effects of State and private actions already occurring in the action area, as well as with other environmental baseline conditions, does not result in additional risks for the population. Considering climate change impacts on available habitat and SR Chinook salmon over the next 10 years, spawning may incrementally shift later in the season and/or further upstream, when and where water temperatures are more optimal. In the event such temporal or spatial shifts occur, the action would affect fewer fish than is currently projected and the action would likely have even less potential influence on population viability than the already low levels described. Because the effects are expected to be so minor, the action is not expected to appreciably reduce the abundance and productivity of the population. Because we do not anticipate a change in the viability of the Lower Mainstem population from the action, we also find that the action will not likely affect the survival of the affected MPG, nor the affected ESU. Similarly, the minor severity of the annual adverse effects should not affect the species' probability of recovery.

2.7. Conclusion

After reviewing the current status of the listed species, the environmental baseline within the action area, the effects of the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of SR Chinook salmon.

2.8. 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) of the ESA 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.

2.8.1. Amount or Extent of Take

In the opinion, NMFS determined that incidental take is reasonably certain to occur when float boats pass within approximately 25 feet of pre-spawn, actively spawning, or post-spawn adult SR Chinook, causing fish to flee and thus potentially increase the amount of energy spent, potentially compromising their spawning success. When displacement occurs, fish are expected to temporarily move away from redds for 5 to 60 minutes. Exposure is mostly limited to the lower segment of the floating area (i.e., below Elk Creek) but may also occur in the open segment of the middle section (i.e., between the Salmon River Access at Stanley and Mormon Bend Campground) when spawning occurs prior to segment closure. As discussed above, the action could annually expose between one and nine percent of the total number of action area redds (maximum of 36 redds) to boat traffic.

Redds occur at different dates and in different locations each year. The number of fish tending to each redd also varies and the number of boats floating each day can be different. For these reasons, it is impossible for NMFS to determine how many fish will be exposed to float boat interactions. In these instances we use a surrogate to describe the extent of incidental take, pursuant to 50 CFR 402.14[I]. In this case, we use the number of redds occurring in open floating areas as a surrogate for the amount of take. NMFS applied the best available information to estimate the total number of redds that may be exposed. NMFS used the past 23 years of action area redd data to predict an amount of take. NMFS applied a 9 percent exposure estimate to the highest observed number of redds recorded in the past 12 years (403 redds in 2002). Using these numbers, NMFS estimates that fish tending up to 36 individual redds could be harassed for short periods of time when float boats pass the redds. NMFS will consider the extent of take exceeded if more than 36 redds occur in areas open to float boating between August 15 and September 2. Exceeding this limit will trigger the reinitiation provisions of this opinion.

2.8.2. 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 jeopardize SR Chinook salmon.

2.8.3. Reasonable and Prudent Measures

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

The SNF shall:

1. Minimize the incidental take resulting from issuance of four outfitted float boat permits, and the authorization of non-outfitted float boating on the upper Salmon River.
2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS are effective in avoiding and minimizing incidental take from permitted activities and that the extent of take is not exceeded.

2.8.4. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Federal action agency must comply (or must ensure that any applicant complies) with the following terms and conditions. The SNF 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. To implement RPM #1 (minimizing incidental take), the SNF shall:
 - a. Work with all float boat outfitters to coordinate, to the degree it is possible, to facilitate boats passing identified redds in groups. The intent is to minimize the number of individual disturbances of fish actively constructing or tending redds.
 - b. Add language to self-issue boating permits, or otherwise inform non-outfitted floaters (e.g., signs at river access sites), that all boats in a group are to remain within ½ mile of one another when passing through active spawning areas. Active spawning areas are currently identified at authorized river access locations.
2. To implement RPM # 2 the SNF shall:
 - a. Annually monitor the effectiveness of the information/education efforts in safeguarding redd development and deposited eggs.
 - b. Annually monitor the compliance of commercial and non-commercial boaters and walk/wade angling activities in meeting the relevant terms and conditions listed above and the SNF-proposed design criteria.

- c. Annually monitor the number of redds present in open floatboating sections prior to river closure. The proposed action identified redd monitoring will occur on August 29, which meets the intent of this term and condition. NMFS understands that the intent is to monitor on August 29, but when the date falls on a Sunday completing the survey may be compromised by authorized staff schedules. For this reason, monitoring may occur one day earlier or one day later than August 29 and still be consistent with the proposed action and these terms and conditions. Redd locations shall continue to be mapped and made available to NMFS (upon request).
- d. If more than 36 redds are observed in the open floating sections in any given year, the SNF shall immediately implement additional floating restrictions within the action area as necessary to protect any future redds that may be constructed and immediately contact NMFS to reinstate ESA consultation.
- e. The SNF shall submit an annual report to the [Snake River Basin Office email \(nmfswcr.srbo@noaa.gov\)](mailto:nmfswcr.srbo@noaa.gov) by February 28. The report will address the monitoring identified in the proposed action and these terms and conditions.

2.9. 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 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).

NMFS has not identified any conservation recommendations for this consultation.

2.10. Reinitiation of Consultation

This concludes formal consultation for the Outfitter Guided Commercial and Non-Outfitted Float Boating and Outfitted Walk/Wade Angling on the Sawtooth National Recreation Area. As 50 CFR 402.16 states, reinitiation of formal consultation is required 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 agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

2.11. “Not Likely to Adversely Affect” Determinations

The previous discussion focused on the actions’ (section 1.3) adverse effects to SR Chinook salmon. The SNF determined the proposed actions may affect, but are NLAA Snake River Basin

steelhead and Snake River sockeye. The SNF also determined the actions are NLAA designated critical habitats for SR Chinook, Snake River Basin steelhead, and SR sockeye. Please refer to Table 1 for the ESA listing status information for each species and habitat.

2.11.1. NLAA Effects to Species

Snake River Basin steelhead spawn, rear, and migrate through the majority of the action area. Steelhead spawn in early spring, ending sometime in May (USBWP 2005). Recreational floating rarely occurs until late May. Although floating is authorized, during steelhead spawning periods, infrequent boating, combined with steelhead preference to spawn in tributary habitat rather than the mainstem Salmon River, results in rare exposure of boats to spawning steelhead. During this time, flow is increasing in the Salmon River, approaching its annual peak by the end of May. Along with increased depth and velocity, turbidity also increases as the river rises. These conditions separate steelhead and boats during the rare occasions there may be overlap. Peak flows usually persist into early- to mid-July, isolating incubating eggs from boats until fry emerge (as late as July 7, USBWP 2005). Direct disturbance to spawning gravels resulting from grounding craft is less likely to occur during high and fast water conditions. These conditions result in a discountable potential for spawning steelhead or their redds to be disturbed or harmed by authorized boats.

Permitted walk/wade anglers will be guided through the action area during steelhead spawning season in pursuit of steelhead (when seasons are open) and trout. All fishing is conducted pursuant to existing IDFG sportfishing regulations (NMFS 2011; NMFS 2019). Sportfishing impacts (i.e., pursuing, hooking, capturing, and releasing ESA-listed fish) have been previously considered under the ESA and are not further considered in this consultation. SNF-permitted outfitters are skilled fishermen uniquely able to identify steelhead redds. The SNF also trains outfitters in redd identification to improve avoidance. Terms of the proposed SUPs require fishing be conducted more than 150 feet from actively spawning steelhead or their redds and the outfitters must conduct surveys of desired fishing reaches to confirm their absence. These measures make it discountable that outfitted fishermen/guides would wade across steelhead redds.

Guided clients and guides are likely to startle some steelhead while wading through the river or while fishing. Exposed fish are expected to flee to the closest suitable refugia and exposed fish are expected to resume pre-disturbance behavior within minutes and up to an hour, similar to what was described for SR Chinook in the preceding opinion. These types of disturbances are expected to be minor and not significantly modify their behavior. Therefore we conclude startle responses incurred by steelhead will be insignificant.

Adult endangered SR sockeye migrate through the Salmon River portion of the action area between mid-July through October. Adults are quickly migrating upstream, covering dozens of miles daily. The influence of the actions on the seasonal and/or migratory movements of sockeye through the mainstem waterways would be very small, with the most common encounter being a boat passing overhead, likely resulting in only insignificant startle response when a fish is encountered. Sockeye do not spawn in the Salmon River and a boat passing overhead is expected to have little influence on their rate of migration or normal behavior. Permit provisions close

Stanley, Perkins, or Alturas Lakes to outfitted fishing in the event adult sockeye are released in the lakes to spawn. This precludes the potential for wading-related impacts on redds, although the risk there is likely low due to sockeye redds being deeper and thus not accessible to wading fishermen. These measures would preclude any influence to sockeye spawning in any of the Stanley basin lakes. For the reasons discussed, the proposed actions will have only insignificant effects on sockeye salmon.

2.11.2. NLAA Effects to Critical Habitat

The designations of critical habitat for SR Chinook, Snake River Basin steelhead, and SR sockeye use the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace these terms with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting our analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this document, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat. Table 3 identifies the PBFs for designated critical habitats considered in this consultation.

Table 3. Types of sites, essential physical and biological features, and the species life stage each physical and biological feature supports.

Site	Essential Physical and Biological Features	Species Life Stage
Snake River Basin Steelhead^a		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development
Freshwater rearing	Water quantity and floodplain connectivity to form and maintain physical habitat conditions	Juvenile growth and mobility
	Water quality and forage ^b	Juvenile development
	Natural cover ^c	Juvenile mobility and survival
Freshwater migration	Free of artificial obstructions, water quality and quantity, and natural cover ^c	Juvenile and adult mobility and survival
Snake River Spring/Summer Chinook Salmon and Sockeye Salmon		
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 ^d , riparian vegetation, space, safe passage	Juvenile and adult

^a Additional PBFs pertaining to estuarine and nearshore areas have also been described for Snake River Basin 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, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

^d Food applies to juvenile migration only.

The action as proposed has the potential to affect the following PBFs: Forage (via AIS); water quality (e.g., turbidity/water temperature), spawning gravel; cover/shelter; riparian vegetation; and safe passage. Any modification of these PBFs may affect freshwater spawning, rearing or migration in the action area. Proper function of these PBFs is necessary to support successful

adult and juvenile migration, adult holding, spawning, rearing, and the growth and development of juvenile fish. The remaining PBFs will not be affected by the proposed action.

Forage. Boating and/or guiding of fishermen could potentially introduce AIS. New Zealand mud snails are a principle threat as they are present in the Salmon River downstream of the action area. They are known to colonize riverine habitats similar to those within the action area, and are opportunistic and invasive. Once colonized, they rapidly expand, replace, and dominate the native prey base for salmonids throughout accessible habitats (Kerans et al. 2005). They provide little nutrition as forage for salmon since they are poorly assimilated within salmonid digestive systems, leading to reduced fitness (Vinson and Baker 2008). Quagga (*Dreissena rostriformis bugensis*) and zebra (*Dreissena polymorpha*) mussels also represent a substantial threat to aquatic ecosystem integrity. Idaho and neighbor states invest heavily in boat inspection and decontamination measures to prevent the inadvertent introduction of these invasive species. Boats, boat trailers, and waders have all been implicated in the spread of AIS. Rothlisberger et al. (2010) found that over two-thirds of boaters still do not routinely clean their boats. Though the spread of AIS is largely unintentional, administrative actions are currently believed necessary, particularly where such uses concentrate, in order to reduce the threats.

No point of origin information has been tabulated for float boat users within the action areas. Watercraft inspections conducted at Redfish Lake suggest boats arrive in the area from a wide source area, including many boats originating previously from waters known to currently contain AIS (Valdes 2009). While the craft/equipment, use, and users for floatboating and walk and wade angling differs from those using Redfish Lake, the same threat is present – the inadvertent transport or spread of an invasive species to waters within the action areas. Infestations within waterways of the action areas could alter fundamental food webs and habitat structure (Strayer et al. 1999).

The SNF has proposed measures to reduce the threat of inadvertent introduction of AIS and we anticipate they will be effective. Principle measures include: (1) requiring outfitter boats to be certified clean at the start of the floating season; (2) requiring re-cleaning of outfitter boats if they are used outside the action area any time during the float season; (3) posting of AIS educational materials at river access points; (4) require non-outfitted boats to be clean prior to use in the action area; (5) require non-outfitted boats to possess an Idaho invasive species sticker; and (6) outfitters and clients may not use felt soled boots. These measures are believed to reduce the threat of infestation posed by the proposed action to minor levels. For example, Rothlisberger et al. (2010) found that high and low pressure washing were 91 to 74 percent effective, respectively, in removing small bodied organisms. Effectiveness of these measures on smooth hulled boats common in the action area is likely to be higher. For these reasons the risk of AIS infection of the action area as a result of the proposed action are very small and thus is discountable.

Water Quality, Spawning Gravel, Natural Cover, and Riparian Vegetation. Due to the nature of the actions, river access sites and lunch areas are the only areas where direct effects to critical habitat could occur. Impacts to spawning gravel, riparian vegetation, and natural cover could occur if permitted activities caused extensive bank trampling and loss of riparian vegetation followed by bank instabilities that subsequently deliver excessive sediment to spawning gravels.

All access sites are limited to 30 to 100 feet of streambank, and most have developed (i.e., concrete) boat ramps or boat slides and constructed walkways. The four lunch sites are also small and have been previously disturbed by previous SUPs over many years. Nonetheless, continued use of these sites could generate small amounts of sediment introduction and maintain small areas of degraded vegetation condition. Less than 0.5 percent of the action area's riverbanks are influenced at designated float boat access points and lunch sites. No substantial erosion problems are known, though opportunities for better foot traffic control, etc., are continually being considered and addressed as possible. The small size and limited number of sites result in only small, insignificant bank alterations and localized trampling of riparian vegetation at the site scale. These localized alterations are not capable of generating measurable impacts to water quality (turbidity or water temperature), substrate, riparian vegetation, or natural cover in the action area. Therefore, the direct effects of the action on critical habitat are expected to remain insignificant.

3. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (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 the SNF and any of their permittees. A copy of this opinion was provided to the SNF. This consultation will be posted 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 NMFS ESA Consultation Handbook, ESA regulations,

50 CFR 402.01, et seq., and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) implementing regulations regarding Essential Fish Habitat (EFH), 50 CFR 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion contain 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 and MSA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

5. REFERENCES

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