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

**Refer to NMFS No: WCRO-2024-00263**

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May 14, 2024

Shaun McKinney
Forest Supervisor
Wallowa-Whitman National Forest
1550 Dewey Ave., Suite A
Baker City, Oregon 97814

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Marr Flat Grazing Allotment; Upper Imnaha River (HUC 1706010201), Middle Imnaha River (HUC 1706010202), and Upper Big Sheep Creek (HUC 1706010203) watersheds, Wallowa County, Oregon.

Dear Mr. McKinney:

Thank you for your letter of January 24, 2024, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Marr Flat Grazing Allotment. NMFS also reviewed the likely effects of the proposed action on essential fish habitat (EFH), pursuant to Section 305(b) of the Magnuson–Stevens Fishery Conservation and Management Act (MSA) [16 U.S.C. 1855(b)], and concluded that the action would adversely affect the EFH of Pacific Coast Salmon. Therefore, we have included the results of that review in Section 3 of this document.

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 and Snake River Basin steelhead. NMFS also determined the action will not destroy or adversely modify designated critical habitat for Chinook salmon or steelhead. Rationale for our conclusions is provided in the attached opinion.

As required by Section 7 of the ESA, NMFS provides an incidental take statement (ITS) with the opinion. The ITS 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 Wallowa-Whitman National Forest (WWNF), and any permittee who performs any portion of the action, must comply with in order to be exempt from the ESA take prohibition.

This document also includes the results of our analysis of the action's effects on EFH pursuant to Section 305(b) of the MSA. That analysis determined that the effects minimization measures described in the proposed action would adequately avoid or minimize potential adverse effects on EFH. We therefore did not include any additional EFH conservation recommendations.

Please contact Jim Morrow, Southern Snake Branch Office, at (208) 378-5695, or jim.morrow@noaa.gov, if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

Nancy L. Munn, Ph.D.
Acting Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc: S. Brandy–WWNF
L. Faurot – WWNF
L. Navarrete–USFWS
P. Gower–USFWS
M. Lopez – NPT
J. Bushyhead – NPD

**Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Response**

Marr Flat Grazing Allotment

NMFS Consultation Number: WCRO-2024-00263

Action Agency: USDA Forest Service, Wallowa-Whitman National Forest

Affected Species and NMFS' Determinations:

| ESA-Listed Species | Status | Is Action Likely to Adversely Affect Species? | Is Action Likely to Jeopardize the Species? | Is Action Likely to Adversely Affect Critical Habitat? | Is Action Likely to Destroy or Adversely Modify Critical Habitat? |
|---|---|---|---|---|---|
| Snake River spring/summer Chinook salmon (*Oncorhynchus tshawytscha)* | Threatened | Yes | No | Yes | No |
| Snake River Basin steelhead (*O. mykiss*) | Threatened | Yes | No | Yes | No |

| 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 | Yes | No |

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

**Issued By:** Nancy L Munn

Nancy L. Munn, Ph.D.
Acting Assistant Regional Administrator
Interior Columbia Basin Office

**Date:** May 14, 2024

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**ACRONYMS**

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|---|---|
| ALLOTMENT | Marr Flat Allotment |
| BA | Biological Assessment |
| CFR | Code of Federal Regulations |
| CR | Conservation Recommendation |
| DCH | Designated Critical Habitat |
| DMA | Designated Monitoring Area |
| DPS | Distinct Population Segment |
| DQA | Data Quality Act |
| EFH | Essential Fish Habitat |
| ESA | Endangered Species Act |
| ESU | Evolutionarily Significant Unit |
| FMP | Fishery Management Plan |
| HAPC | Habitat Area of Particular Concern |
| HM | Head Months |
| HUC | Hydrologic Unit Code |
| ICTRT | Interior Columbia Technical Recovery Team |
| ISAB | Independent Scientific Advisory Board |
| ITS | Incidental Take Statement |
| LWD | Large Woody Debris |
| MIM | Multiple Indicator Monitoring |
| MPG | Major Population Group |
| MSA | Magnuson–Stevens Fishery Conservation and Management Act |
| MSL | Mean Sea Level |
| NF | North Fork |
| NFS | National Forest Service |
| NMFS | National Marine Fisheries Service |
| opinion | Biological Opinion |
| PBF | Physical or Biological Feature |
| PCE | Primary Constituent Element |
| PFMC | Pacific Fishery Management Council |
| PIBO | Pacfish/Infish Biological Opinion |
| RHCA | Riparian Habitat Conservation Area |
| RPA | Reasonable and Prudent Alternative |
| RPM | Reasonable and Prudent Measure |
| SF | South Fork |
| SRB | Snake River Basin |
| SRS Chinook salmon | Snake River Spring/Summer Chinook Salmon |
| SUP | Special Use Permit |
| U.S.C. | U.S. Code |
| USGCRP | U.S. Global Change Research Program |
| VSP | Viable Salmonid Population |
| WWNF | Wallowa-Whitman National Forest |

# 1. INTRODUCTION

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

## 1.1. Background

National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement (ITS) portions of this document in accordance with Section 7(b) of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, and implementing regulations at 50 CFR 402. We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with Section 305(b)(2) of the Magnuson–Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR 600.

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

## 1.2. Consultation History

The Wallowa-Whitman National Forest (WWNF) proposes to issue five special use permits (SUPs) authorizing livestock grazing on the Marr Flat Allotment (Allotment). This consultation covers Snake River spring/summer Chinook salmon (SRS Chinook salmon) and Snake River Basin steelhead (SRB steelhead), SRS Chinook salmon and SRB steelhead designated critical habitat (DCH), and Chinook salmon essential fish habitat (EFH). The SUPs will have a duration of ten years.

Previous ESA consultations on the Allotment were completed in 1995 (NWR-1995-82), 2003 (NWR-2003-553), and 2013 (NWR-2013-9926). Prior to 2013, the Marr Flat Allotment was batched with other projects in watershed scale consultations, but in 2013 the Allotment was consulted on as a single project. Between 2013 and 2021, the WWNF Level 1 Team had numerous discussions regarding issues with cattle management on the Allotment, and the Level 1 Team toured the Allotment on October 12, 2022. A draft biological assessment (BA), that included a number of proposed solutions to the cattle management issues, was presented to the Level 1 Team on November 22, 2022. After two BA revisions and a number of phone conversations and meetings, the WWNF sent the final BA to NMFS on January 24, 2024. On February 14, 2024, NMFS responded with an acknowledgment that formal consultation on the Allotment began on January 24, 2024.

In preparing this opinion, NMFS relied upon information from the BA (USFS 2024) and its supporting documentation, published scientific literature, and other documents (e.g., government reports). This information provided the basis for our determinations as to whether the WWNF

can ensure that their proposed action is not likely to jeopardize the continued existence of ESA-listed species, and is not likely to result in the destruction or adverse modification of designated critical habitat.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 Fed. Reg. 24268). We are applying the updated regulations to this consultation. The 2024 regulatory changes, like those from 2019, were intended to improve and clarify the consultation process, and, with one exception from 2024 (offsetting reasonable and prudent measures), were not intended to result in changes to the Services' existing practice in implementing section 7(a)(2) of the Act. 89 Fed. Reg. at 24268; 84 Fed. Reg. at 45015. We have considered the prior rules and affirm that the substantive analysis and conclusions articulated in this biological opinion and incidental take statement would not have been any different under the 2019 regulations or pre-2019 regulations.

On April 22, 2024, NMFS provided a copy of the proposed action and terms and conditions section of the draft opinion to the Nez Perce Tribe. As of May 10, 2024, the Nez Perce Tribe had not provided comments, on this consultation, to NMFS.

### 1.3. Proposed Federal Action

Under the ESA, "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies (see 50 CFR 402.02). Under the MSA, "federal action" means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a federal agency (see 50 CFR 600.910).

The proposed action is authorization of cattle grazing and associated activities (e.g., maintenance of allotment infrastructure such as water developments and fences, use of livestock handling facilities, movement of cattle on and off the Allotment) on the Allotment, through 2033. The Allotment consists of 67,686 acres, of which about 41,506 acres are considered suitable for grazing. The Allotment consists of 16 pastures (Figure 1), 13 of which will be grazed by four permittees[1] with separate herds, each with their own grazing management schedules. The four permittees will graze a total of 923 cattle (i.e., cow/calf pairs) from May 16 through October 31, for approximately 5,016 head months (HM) per year (Table 1). In addition, up to ten horses/mules will be permitted to graze from June 1 to October 31.

[1] Ownership of the companies holding the SUPs may change before the SUPs expire. The current permittees (i.e., companies holding the SUPs) are listed in Table 1.

Table 1. Permittees, number of animals grazed, and season of use for the Marr Flat Allotment.

| Permittee | Class | Number | Season |
|---|---|---|---|
| Dean Oregon Ranch, Inc. | Cow/Calf | 75 | July 1 – October 31 |
| Dan & Cynthia Warnock | Cow/Calf | 120 | May 16 – October 31 |
| | Horse/Mule | 6 | Jun 1 – October 31 |
| Lightning Bolt Cattle Company, LLC | Cow/Calf | 85 | May 23 – November 7 |
| Joe & Shari Warnock | Cow/Calf | 125 | May 23 – November 7 |
| | Horse/Mule | 4 | June 1 – October 31 |
| Lightning Bolt Cattle Company, LLC[1] | Cow/Calf | 518 | May 16 – October 31 |

1. Formally held by the Dean Oregon Ranch, Inc.

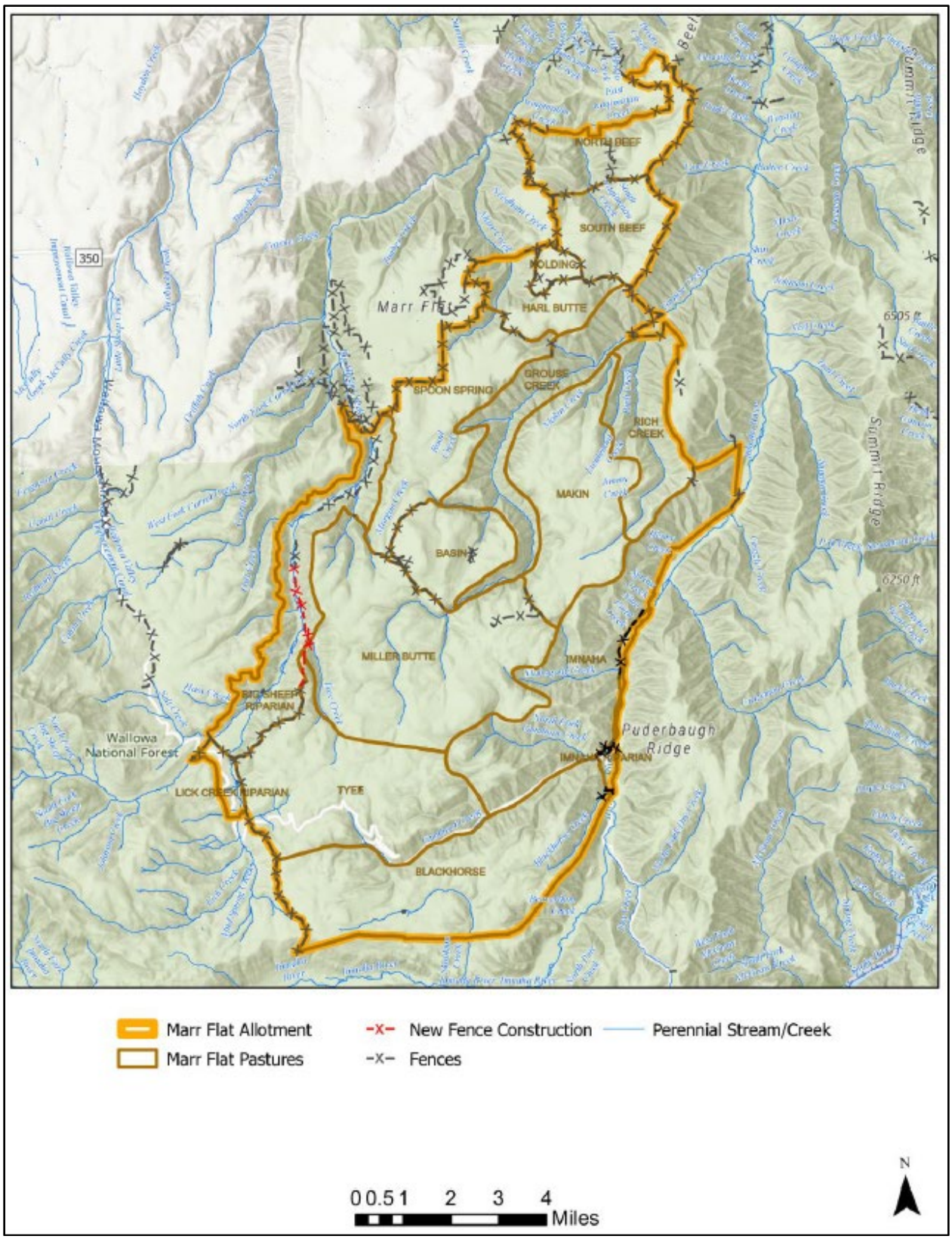


Figure 1. Marr Flat Allotment location, allotment boundaries, pasture boundaries, and fences.

Cattle are moved onto the Allotment in the spring and removed in the fall. Pasture specific scheduling will be determined by WWNF range management specialists each year, and will be based on pasture resource concerns, range condition, estimated forage, etc. Pasture specific grazing is also managed using use indicators, adjusted based on the prior year's success at meeting the end of season indicator objectives. Much of the anadromous fish habitat on the Allotment is in steep sided, and heavily vegetated, canyons that limits cattle accessibility (Figure 2). Use period timing typically protects spawning SRB steelhead and redds in stream reaches that are readily accessible (i.e., not protected by terrain/vegetation) to cattle, and no authorized grazing is proposed in pastures with documented SRS Chinook salmon spawning habitat. In pastures with authorized grazing, stream reaches that are modeled SRS Chinook salmon spawning habitat, but that have no documented SRS Chinook salmon spawning, will be monitored for SRS Chinook salmon spawning for at least the first three years after SUP issuance. Effects on anadromous fish habitat will be minimized by monitoring utilization, and end of season indicators, and taking appropriate action to ensure that utilization is not exceeded and that end of season standards are met.

The 16 pastures on the Marr Flat Allotment range in size from 352 acres to 10,362 acres. A general description of pasture size, location, authorized use, typical use, and fish habitat, are in Sections 1.3.1 through 1.3.16. Utilization move triggers and end of season use indicators for all of the pastures are in Table 2.

### 1.3.1. North Beef Pasture

The North Beef Pasture is 3,057 acres and is the northern-most pasture in the Allotment (Figure 1). The authorized use period is May 16 to October 31, with grazing typically occurring in May, June, and October. In 2021 (a typical grazing year[2]) 50 cattle were grazed from May 16 to July 15, and 180 were grazed from October 11 to 31. Cattle are typically rotated throughout this pasture into "sub pastures" and therefore graze this pasture with a rotational grazing system. There are ten water developments in the pasture, and the east, south, and west boundaries; and portions of the north boundary, are fenced. There is 1.04 miles of anadromous fish habitat in the pasture, all of which is in South Fork (SF) Waqímataw Creek, and all of which is SRB steelhead spawning and rearing habitat. Cattle access to SF Waqímataw Creek, within the pasture, is limited by very steep terrain and dense vegetation.

### 1.3.2. South Beef Pasture

The South Beef Pasture is 2,507 acres and is located in the northern portion of the Allotment, directly south of the North Beef Pasture and north of Harl Butte and Holding Pastures (Figure 1). The authorized use period is May 16 to October 31 and the pasture is typically grazed in the summer and fall. In 2021 (a typical grazing year) 230 cattle were grazed from July 16 to September 30. There are six water developments in the pasture and the pasture borders are fenced. There is no anadromous fish habitat in the pasture. Although the pasture contains the headwaters of SF Waqímataw Creek, all of the reaches, within the pasture, are intermittent and are probably not fish bearing.

[2] It was not an unusually wet or dry year, with climatic conditions that likely resulted in normal forage production and livestock behavior.

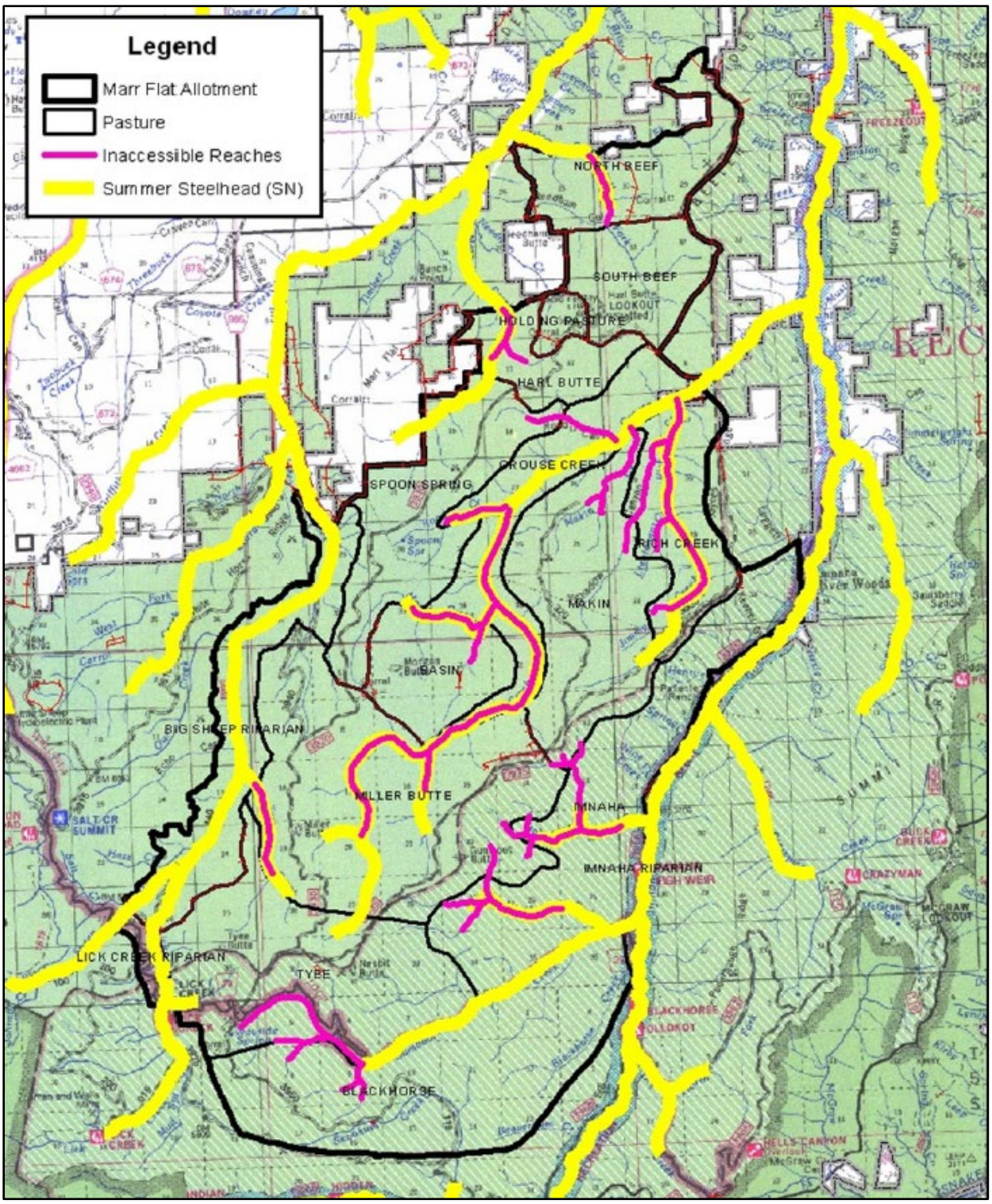


Figure 2. The Marr Flat Allotment showing the 41 miles of streams that were determined to be inaccessible to cattle, based on information available in 2012. Since 2012, stream surveys have determined that cattle could access an additional 5.5 miles of Grouse Creek, in the Miller Butte Pasture.

### 1.3.3. Rich Creek Pasture

Rich Creek Pasture is 3,090 acres and is located on the eastern side of the Allotment, bordering the Grouse Creek and Makin Pastures (Figure 1). The authorized use period is May 16 to October 31 and the pasture is typically grazed in May, June, and October. In 2021 (a typical grazing year) 85 cattle were grazed from May 16 to June 16, and 85 cattle were grazed from October 16 to 31. There are 5.11 miles of anadromous fish habitat in this pasture, 4.79 miles in Rich Creek and 0.32 miles in of Shadow Canyon Creek, and all of which are SRB steelhead spawning and rearing habitat. There are eight water developments in the pasture and the cattle access to streams is limited by steep terrain and heavily vegetated riparian habitat. Portions of the north and east borders of this pasture are fenced.

### 1.3.4. Makin Pasture

The Makin Pasture is 5,768 acres and is located near the center of the Allotment, bordering the Rich Creek, Grouse Creek, Miller Butte and Imnaha Pastures (Figure 1). The authorized period of use is May 16 to October 31 and the pasture is typically grazed in June, July, and October. In 2021 (a typical grazing year) 487 cattle were grazed from June 26 to July 21 and 287 were grazed from October 1 to October 31. The Makin Pasture contains 0.33 miles of SRB steelhead spawning and rearing habitat, all of which is in Rich Creek. This pasture contains 13 water developments, and SRB steelhead and habitat in Rich Creek is partially protected from grazing by steep terrain and dense vegetation.

### 1.3.5. Grouse Creek Pasture

The Grouse Creek Pasture is 4,189 acres and is located near the center of the Allotment, bordering the Makin, Spoon Springs, Basin, Miller Butte, and Harl Butte pastures (Figure 1). The authorized use period is May 16 to October 31 and the pasture is typically grazed in May, June, September, and October. In 2021 (a typical grazing season) 324 cattle were grazed from May 16 to June 15, 77 were grazed from Sept 15 to Oct 1, and 372 were grazed from October 1 to October 31. Cattle on the Grouse Creek Pasture are placed in “sub pastures” to ensure adequate distribution. The Grouse Creek pasture contains 10.89 miles of anadromous fish habitat: 8.57 miles of which are in Grouse Creek, 1.21 miles are in Morgan Creek, and 1.11 miles are in Road Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat, and the lower 5.8 miles of Grouse Creek is modeled SRS Chinook salmon spawning habitat. Although rearing SRS Chinook salmon have been documented in lower Grouse Creek, adults have not.

There are ten water developments in the pasture and anadromous fishes, and habitat, is partially protected by steep terrain and dense vegetation, but past stream surveys have documented some cattle use on Grouse Creek. A trained redd surveyor will walk the extent of modeled SRS Chinook salmon intrinsic potential habitat, within the Grouse Creek Allotment, once each year to determine if spawning SRS Chinook salmon are present in the Allotment. This monitoring will be reviewed and modified by the WWNF Level 1 each year, for the first three years of grazing, to determine if additional measures are needed to protect SRS Chinook salmon and SRS Chinook salmon habitat. The Level 1 Team will review monitoring results after year three to determine if additional monitoring, or effects minimization measures, are needed.

### 1.3.6. Spoon Springs Pasture

The Spoon Springs Pasture is 4,932 acres and is located on the west side of the Allotment, bordering the Harl Butte, Grove Creek, Basin, and Miller Butte Pastures. The authorized use period is May 16 to October 31 and the pasture is typically grazed in June, July, September, and October. In 2021 (a typical grazing season) 239 cattle were grazed from June 16 to July 15, and 77 were grazed from September 15 to October 31. The pasture contains 1.89 miles of anadromous fish habitat: 1.5 miles of which are in Marr Creek and 0.39 miles are in Morgan Creek. Both of these stream reaches are SRB steelhead spawning and rearing habitat. There are 13 water developments in the pasture, and SRB steelhead and SRB steelhead habitat is partially protected by steep terrain and thick vegetation.

### 1.3.7. Big Sheep Riparian Pasture

The Big Sheep Riparian Pasture is 4,336 acres and is located on the western edge of the Allotment, bordering the Spoon Spring, Miller Butte, and Tyee pastures (Figure 1). Prior to 2022, the authorized use period was July 10 to August 10, but cows would sometimes move back into the pasture after they had been removed, resulting in potential disturbance of spawning SRS Chinook salmon and their redds. This pasture was not grazed in 2022 or 2023, and the current proposal is no use. This pasture contains 8.72 miles of anadromous fish habitat: 7.1 miles of which are in Big Sheep Creek, 1.28 miles are in Lick Creek, and 0.34 miles are in Tyee Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat, and the Big Sheep and Lick Creek reaches are also SRS Chinook salmon spawning and rearing habitat. The pasture will be monitored for cattle presence every two weeks from August 10 through October 31, and the permittees will remove any cows that are found. In addition to the monitoring, most of the east side of Big Sheep Creek is fenced to protect anadromous fishes and their habitat from cows that might move into the pasture from the Spring Spoon or Miller Butte Pastures (Figure 1). Also, the southeast boundary of the pasture is fenced to reduce the chance of cows moving in from the Tyee Pasture (Figure 1).

### 1.3.8. Basin Pasture

The Basin Pasture is 2,535 acres and is located near the center of the Allotment, bordering the Spoon Springs, Grouse Creek, and Miller Butte Pastures (Figure 1). The authorized use period is May 16 to October 31 and it is typically grazed in July, August, and September. In 2021 (a typical grazing season) 85 cattle were grazed from July 16 to August 21, and 125 were grazed from August 8 to September 7. This pasture contains 0.78 miles of anadromous fish habitat: 0.19 miles of which are in Grouse Creek, 0.35 miles are in Morgan Creek, and 0.24 miles are in an unnamed Morgan Creek tributary stream. All of these stream reaches are SRB steelhead spawning and rearing habitat. This pasture contains eight water developments and impacts to SRB steelhead and SRB steelhead habitat are minimized by steep topography and dense vegetation. Impacts on spawning SRB steelhead and redds will also be minimized by grazing outside of the SRB steelhead spawning season.

### 1.3.9. Miller Butte Pasture

The Miller Butte Pasture is 10,362 acres and is located near the center of the Allotment, bordering the Spoon Spring, Basin, Makin, Imnaha, Tyee, and Big Sheep Riparian Pastures. The proposed authorized use period is July 1 to October 31. The Miller Butte and Tyee Pastures are grazed in common, with approximately 650 cattle (typical grazing year) rotated throughout both pastures for most of the period of use. The pasture contains 8.89 miles of anadromous fish habitat: 4.39 miles of which are in Grouse Creek, 2.09 miles are in Tyee Creek, and 2.41 miles are in two unnamed tributaries of Grouse Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat. This pasture contains 13 water developments and approximately half of the SRB steelhead habitat is protected by steep terrain, but the other half is accessible by cattle. The period of use, which begins after juvenile SRB steelhead typically emerge from the redds, is designed to protect spawning SRB steelhead, and redds, from grazing cattle.

### 1.3.10. Imnaha Pasture

The Imnaha Pasture is 7,727 acres and is located on the southeastern side of the Allotment, bordering the Rich Creek, Makin, Miller Butte, Tyee, Imnaha Riparian, and Blackhorse Pastures (Figure 1). The authorized use period is May 26 to October 31 and it is typically grazed in June and October. In 2021 (a typical grazing year), 402 cattle were grazed from June 15 through June 25 and 280 were grazed from October 16 through October 31. This pasture contains 7.58 miles of anadromous fish habitat: 2.57 miles of which are in Gumboot Creek, 2.54 miles are in North Fork (NF) Gumboot Creek, 1.94 miles are in Mahogany Creek, 0.37 miles are in an unnamed tributary of Mahogany Creek, and 0.16 miles are in an unnamed tributary of NF Gumboot Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat. The lower 1.2 miles of Gumboot Creek is also modeled SRS Chinook salmon spawning and rearing habitat. Juvenile SRS Chinook salmon have been documented in the lower 0.87 miles of Gumboot Creek, but adult SRS Chinook salmon have not been documented there. The reach of Gumboot Creek within the Imnaha Pasture forms the boundary with the Blackhorse Pasture, and is also listed as being in the Blackhorse Pasture (see Section 1.3.12). This pasture contains ten water developments, and impacts on SRS Chinook salmon, SRB steelhead, and salmonid habitat are minimized by steep terrain and dense vegetation. The Imnaha Pasture also borders 0.27 miles of the Imnaha River, but fencing precludes cattle access to that portion of the river.

### 1.3.11. Tyee Pasture

The Tyee Pasture is 7,326 acres and is located near the southern end of the Allotment, bordering the Lick Creek Riparian, Big Creek Riparian, Miller Butte, Imnaha, and Blackhorse Pastures. The western border of the pasture is fenced to prevent cattle access to Lick Creek. The authorized use period is May 16 to October 31 and the pasture is grazed in common with the Miller Butte Pasture, with approximately 650 cattle (typical grazing year) rotated throughout both pastures from July 1 through October 31 (see Section 1.3.9). This pasture contains 4.35 miles of anadromous fish habitat: 0.88 miles of which are in Grouse Creek, 0.02 miles are in Tyee Creek, 0.37 miles are in an unnamed tributary of Lick Creek, and 3.08 miles are in Gumboot Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat. The reach of Gumboot Creek, within the Tyee Pasture, forms the border with the Blackhorse Pasture and is also listed as being in the Blackhorse Pasture (see Section 1.3.12). The Tyee

Pasture contains 15 water developments and impacts on SRB steelhead and habitat in Gumboot and Tyee Creeks, and in the unnamed tributary, are minimized by steep terrain and dense vegetation. The portion of Grouse Creek, within the pasture, is more open, and therefore more susceptible to grazing impacts. However, grazing on this pasture typically occurs after SRB steelhead emerge from the redds, which should protect spawning SRB steelhead and SRB steelhead redds.

### 1.3.12. Blackhorse Pasture

The Blackhorse Pasture is 8,714 acres and is located on the southern end of the Allotment, bordering the Tyee, Imnaha, and Imnaha Riparian Pastures (Figure 1). The western border of the Blackhorse Pasture is fenced to prevent cattle access to Lick Creek. The authorized use period is from May 16 to October 31 and it is typically grazed in August, September, and October. In 2021 (a typical grazing season) 400 cattle were grazed from August 16 through October 15. This pasture contains 5.65 miles of anadromous fish habitat, all of which are in Gumboot Creek and all of which is SRB steelhead spawning and rearing habitat. The lower 0.87 miles of Gumboot is also occupied SRS Chinook salmon rearing habitat, and the lower 1.2 miles is modeled SRS Chinook salmon spawning and rearing habitat, although SRS Chinook salmon spawning has not been documented in Gumboot Creek. Gumboot Creek forms the boundary with the Tyee (3.08 miles), Imnaha (2.57 miles), and the Imnaha Riparian (0.43 miles) Pastures, and is also listed as being in those pastures (see Sections 1.3.10, 1.3.11, and 1.3.16). The Blackhorse Pasture contains four water developments. Spawning SRB steelhead and SRB steelhead redds in the Blackhorse Pasture are typically protected by the timing of grazing, which usually begins after juvenile SRB steelhead emerge from the redds. All of the modeled SRS Chinook salmon habitat will be monitored for spawning SRS Chinook salmon at least once each year for at least three years. Results of SRS Chinook salmon monitoring will be annually reviewed by the Level 1 Team to determine if additional measures are required to protect spawning SRS Chinook salmon.

### 1.3.13. Holding Pasture

The Holding Pasture is 443 acres and is located in the northern part of the Allotment, bordering the South Beef and Harl Butte pastures (Figure 1). This is the only pasture on the Allotment that is entirely fenced. The authorized use period is May 16 to October 31 and it is typically grazed in September and October. In 2021 (a typical grazing year) 390 cattle were grazed from September 16 through October 31. The pasture contains two water developments and does not contain any perennial streams or anadromous fish habitat.

### 1.3.14. Harl Butte Pasture

The Harl Butte Pasture is 1,839 acres and is located in the northwestern portion of the Allotment, bordering the South Beef, Grouse Creek, and Spoon Spring pastures. The authorized use period is May 16 to October 31 and it is typically grazed in July through October. In 2021 (a typical grazing year) 125 cattle were grazed from July 15 through September 15 and 85 were grazed from September 22 through October 15. The pasture contains 1.22 miles of anadromous fish habitat, all of which is in Marr Creek, and all of which is SRB steelhead spawning and rearing habitat. The pasture contains ten water developments and impacts on SRB steelhead and SRB

steelhead habitat are minimized by steep terrain and dense vegetation, and by the typical grazing timing, which begins after juveniles emerge from the redds.

### 1.3.15. Lick Creek Riparian Pasture

The Lick Creek Riparian Pasture is 454 acres and is on the southwest boundary of the Allotment, bordering the Big Sheep Riparian and Tyee Pastures (Figure 1). This pasture was historically grazed before August 10 (i.e., before SRS Chinook salmon spawning), but cows would sometimes move back into the pasture after they had been removed, resulting in potential disturbance of spawning SRS Chinook salmon and their redds. This pasture was not grazed in 2022 or 2023, and the current proposal is no use. The pasture contains 2.03 miles of anadromous fish habitat, 1.38 miles in Lick Creek, 0.61 miles in Big Sheep Creek, and 0.04 miles in an unnamed tributary of Lick Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat and all but the unnamed tributary is occupied SRS Chinook salmon habitat. The pasture will be monitored for cattle presence every two weeks from August 10 through October 31, and the permittees will remove any cows that are found. In addition, the north and east boundaries of the pasture are fenced (Figure 1), and there is no authorized grazing along the west and south boundaries, reducing the chance of unauthorized grazing affecting fish habitat in this pasture.

### 1.3.16. Imnaha Riparian Pasture

The Imnaha Riparian Pasture is 352 acres and is located on the eastern boundary of the Allotment. This pasture includes 4.25 miles of the Allotment's 4.52-mile boundary with the Imnaha River, and forms a buffer between the Imnaha and Blackhorse pastures to the west, and the Imnaha River to the east. In the past, this pasture was grazed incidentally, usually in October, as cattle were gathered prior to being removed from the Allotment. This pasture was not grazed in 2022 or 2023 and the current proposal is no use. This pasture contains 4.79 miles of anadromous fish habitat, 4.25 miles of which are in the Imnaha River, 0.43 miles are in Gumboot Creek, and 0.11 miles are in Mahogany Creek. All of these stream reaches are SRB steelhead spawning and rearing habitat and all but Mahogany Creek are also SRS Chinook salmon habitat. The pasture will be monitored for cattle presence in August, September, and October; and will be opportunistically monitored throughout the grazing season. Permittees will remove any cows that are found. Opportunistic monitoring will likely be effective because the Upper Imnaha Road (NF-3955) runs lengthwise through the pasture and is the primary access route for the southern end of the Allotment. In addition, the most accessible portions of the western boundary of the pasture are fenced to reduce the chance of cows on the Imnaha pasture straying onto the Imnaha Riparian Pasture.

Table 2. Move triggers and end of season indicators for each pasture in the Marr Flat Allotment.

| Pasture | Metric | Move Trigger | End of Grazing Indicator |
|---|---|---|---|
| North Beef<br>Rich Creek<br>Makin<br>Grouse Creek<br>Spoon Springs<br>Big Sheep Riparian<br>Basin<br>Miller Butte<br>Imnaha<br>Tyee<br>Blackhorse<br>Harl Butte | Greenline stubble height | 7” | 6” |
| | Browse use | 25-30% | 30-40% |
| | Streambank alteration | 15% | 20% |
| South Beef<br>Holding | Upland stubble height | 5” | 4” |
| Big Sheep Riparian | No authorized grazing | | |
| Lick Creek Riparian | | | |
| Imnaha Riparian | | | |

1.3.17. Changes in Grazing Management, compared to the 2013 Consultation

Compared to the proposed action in the 2013 consultation, the current proposed action includes a number of changes that should reduce adverse effects of grazing on anadromous fishes and their habitat. These include:

- There will be no authorized grazing on the Big Sheep Riparian, Lick Creek, and Imnaha Riparian Pastures. This will reduce (possibly eliminate) grazing impacts on 5,142 acres and 14.6 miles of SRS Chinook salmon spawning habitat.
- The Big Sheep Creek fence has been completed, which will reduce the chance of unauthorized grazing affecting anadromous fishes or their habitat in Big Sheep Creek.
- The number of cattle permitted on the Allotment has been permanently reduced by 18 percent, from 1,121 to 923, and the allowable HMs have been permanently reduced by 17 percent, from 6,077 to 5,016.
- All pastures with authorized grazing and anadromous fish habitat will have greenline stubble height, browse use, streambank alteration move triggers, and end of season indicators.
- There will be at least one designated monitoring area (DMA) in (or on the border of) each pasture with authorized grazing and anadromous fish habitat.
- Greenline stubble height move triggers and end of season indicators have been increased by 2-inches (to 7-inches and 6-inches respectively) in all pastures with authorized grazing and anadromous fish habitat.
- Modeled SRS Chinook salmon habitat in Gumboot and Grouse Creeks will be monitored for SRS Chinook salmon spawning for at least the first three years of the permit term.

These changes are designed to reduce the adverse effects of both authorized and unauthorized grazing. The reduction in cattle and HMs and the increase in greenline stubble height will reduce adverse effects of authorized grazing throughout the Allotment. Adverse effects of unauthorized grazing have largely been due to cows moving back into the Big Sheep Riparian and Lick Creek Pastures after they were removed to protect spawning SRS Chinook salmon. This presumably occurred because of the familiarity of cows with those pastures. Although cows are adept at moving back to pastures with desirable conditions, they are not very proficient at finding pastures that they have not visited. Therefore, eliminating authorized grazing in the Big Sheep Riparian and Lick Creek Pastures should greatly reduce unauthorized grazing in those pastures. The additional fencing, completed since 2013, will also reduce both the instances of, and adverse effects of unauthorized grazing.

1.3.18. Monitoring

The permittees will monitor utilization move triggers and end of season indicators on each pasture with authorized grazing. The permittees will use utilization move trigger monitoring results to ensure that permitted use, as indicated by end of season indicators, is not exceeded; but there are no reporting requirements for move trigger monitoring. The permittees are responsible for ensuring that permitted use is not exceeded, and the permittees will report the results of the end of season indicator monitoring to the WWNF. If end of season indicator monitoring suggest that use was exceeded, the WWNF will determine if corrective action is warranted.

The WWNF will conduct implementation and effectiveness monitoring in each pasture with authorized grazing and anadromous fish habitat. Implementation monitoring will consist of multiple indicator monitoring (MIM) of stream channels and streamside vegetation to determine if the pasture met the permitted use requirements. Implementation monitoring results will be used to inform adaptive management decisions needed to ensure that permitted use requirements are met in subsequent years. Effectiveness monitoring will use both MIM and Pacfish/Infish Biological Opinion (PIBO) techniques to determine if grazing management strategies are adequately protecting stream salmonids and their habitat. Effectiveness monitoring results will be used to inform adaptive management decisions at the pasture, allotment, forest, and regional scales. Adaptive management tools, described in the BA, range from consults with the permittee to reduction in grazing use. Schedules for implementation and effectiveness monitoring are in Table 3. End of season monitoring reports will be provided to NMFS by February 15 of each year.

Table 3. Monitoring proposed for pastures on the Marr Flat Allotment. Monitoring will be conducted at established designated monitoring areas (DMAs) in the Grouse Creek and Imnaha Pastures, and at new DMAs on the other pastures.

| Pasture | Monitoring Frequency | | Monitoring Location | Justification |
|---|---|---|---|---|
| | Implementation | Effectiveness | | |
| North Beef | Yearly, when grazed prior to July 1. Every five years when grazing begins on or after July 1. | Every five years | SF Waqímataw Creek | The authorized use period is May 16–October 31 and these pastures are often grazed prior to July 1 |
| Rich Creek | | | Rich Creek | |
| Makin | | | Makin Creek | |
| Grouse Creek | | | Grouse Creek | |
| Spoon Springs | | | Marr Creek | |
| Basin | | | Morgan Creek or tributary | |
| Imnaha | | | NF Gumboot Creek | |
| Tyee | | | Gumboot Creek | |
| Blackhorse | | | Gumboot Creek | |
| Harl Butte | | | Marr Creek | |
| Miller Butte | Every five years | | Grouse Creek | Authorized use period is July 1–October 31 |
| Holding<br>South Beef | No monitoring proposed | | | No aquatic habitat |
| Big Sheep Riparian<br>Lick Creek Riparian<br>Imnaha Riparian | Monitoring for cattle presence/absence only | | | No authorized grazing |

In addition to the MIM and PIBO monitoring, the Big Sheep Riparian and Lick Creek Riparian Pastures will be monitored for cattle presence every two weeks from August 10 through October 31, and the Imnaha Riparian Pasture will be monitored for cattle presence in August, September, and October. Also, the portions of Grouse and Gumboot Creeks that are modeled SRS Chinook salmon habitat and are in pastures with authorized grazing will be monitored for SRS Chinook salmon redds for at least the first three years of the permit term. The cattle presence monitoring is designed to minimize the chance of SRS Chinook salmon redds being disturbed. The redd monitoring is designed to reduce uncertainty regarding SRS Chinook salmon use of habitat in Grouse and Gumboot Creeks.

### 1.3.19. Other Activities

We considered, under the ESA, 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.

## 2.1. Analytical Approach

This opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

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

The designations of critical habitat for SRS Chinook salmon and SRB steelhead use the term primary constituent element (PCE) or essential features. The 2016 final rule (81 FR 7414; February 11, 2016) that revised the critical habitat regulations (50 CFR 424.12) replaced these terms with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a "destruction or adverse modification" analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

The ESA Section 7 implementing regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the final rule revising the definition and adding this term (84 FR 44976, 44977; August 27, 2019), that revision does not change the scope of our analysis, and in this opinion, we use the terms "effects" and "consequences" interchangeably.

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

- Evaluate the rangewide status of the species and critical habitat expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species and critical habitat.
- Evaluate the effects of the proposed action on species and their critical habitat using an exposure–response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and critical habitat,

analyze whether the proposed action is likely to: (1) directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species; or (2) directly or indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

- If necessary, suggest a reasonable and prudent alternative (RPA) to the proposed action.

## 2.2. Rangewide Status of the Species and Critical Habitat

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" for the jeopardy analysis. The opinion also examines the condition of designated critical habitat, evaluates the value of the various watersheds that make up the designated critical habitat, and discusses the function of the PBFs that are essential for the conservation of the species. The Federal Register notices and notice dates for the species and critical habitat listings considered in this opinion are included in Table 4.

Table 4. Listing status, status of critical habitat designations and protective regulations, and relevant Federal Register decision notices for ESA-listed species considered in this opinion.

| Species | Listing Status | Critical Habitat | Protective Regulations |
|---|---|---|---|
| **Chinook salmon (*Oncorhynchus tshawytscha*)** | | | |
| Snake River spring/summer-run | T 4/22/92; 57 FR 14653[1] | 12/28/93; 58 FR 68543[2] | 6/28/05; 70 FR 37160 |
| **Steelhead (*O. mykiss*)** | | | |
| Snake River Basin | T 8/18/97; 62 FR 43937 | 9/02/05; 70 FR 52630 | 6/28/05; 70 FR 37160 |

Note: Listing status 'T' means listed as threatened under the ESA.
[1]The listing status for Snake River spring/summer Chinook salmon was corrected on 6/3/92 (57 FR 23458).
[2]Critical habitat for Snake River spring/summer Chinook salmon was revised on 10/25/99 (64 FR 57399).

The proposed action will affect SRS Chinook salmon and SRB steelhead in the Imnaha River drainage. Because SRB steelhead spawn in spring, when flows are high and water temperatures are cold, and SRS Chinook salmon spawn in late summer, during baseflow conditions, SRB steelhead are able to utilize streams that are too warm and/or dry for Chinook salmon. In high elevation drainages, this difference often does not result in appreciably different distributions of SRB steelhead and SRS Chinook salmon. However, in low elevation tributary drainages of the Imnaha and Grande Ronde Rivers, SRB steelhead typically occupy substantially more habitat than SRS Chinook salmon. The action area is relatively low elevation, with many stream reaches that have ideal flows and temperatures for SRB steelhead spawning and rearing during spring and early summer, but inadequate flow for SRS Chinook salmon in late summer. As a result, SRB steelhead occupy many more miles of stream, within the action area, than SRS Chinook salmon.

### 2.2.1. Status of the Species

This section describes the present condition of the SRS Chinook salmon evolutionarily significant unit (ESU), and the SRB steelhead distinct population segment (DPS). NMFS expresses the status of a salmonid ESU or DPS in terms of likelihood of persistence over 100 years (or risk of extinction over 100 years). NMFS uses McElhany et al.'s (2000) description of a viable salmonid population (VSP) that defines "viable" as less than a 5 percent risk of extinction within 100 years and "highly viable" as less than a 1 percent risk of extinction within 100 years. A third category, "maintained," represents a less than 25 percent risk within 100 years (moderate risk of extinction). To be considered viable, an ESU or DPS should have multiple viable populations so that a single catastrophic event is less likely to cause the ESU/DPS to become extinct, and so that the ESU/DPS may function as a metapopulation that can sustain population-level extinction and recolonization processes (ICTRT 2007). The risk level of the ESU/DPS is built up from the aggregate risk levels of the individual populations and major population groups (MPGs) that make up the ESU/DPS.

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

The following sections summarize the status and available information on the species and designated critical habitats considered in this opinion. These sections are based on detailed information provided by: *ESA Recovery Plan for Snake River Spring/Summer Chinook Salmon & Snake River Basin Steelhead* (NMFS 2017); *Biological Viability Assessment Update for Pacific Salmon and Steelhead Listed Under the Endangered Species Act: Pacific Northwest* (Ford 2022); *2022 5-Year Review: Summary & Evaluation of Snake River Spring/Summer Chinook Salmon* (NMFS 2022a); and *2022 5-Year Review: Summary & Evaluation of Snake River Basin Steelhead* (NMFS 2022b). These four documents are incorporated by reference here. Additional information that has become available since these documents were published is also summarized in the following sections and contributes to the best scientific and commercial data available.

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

A summary of the current status of the SRS Chinook salmon ESU can be found on NMFS' publicly available intranet site (https://www.fisheries.noaa.gov/s3/2023-02/feb-2023-status-snake-r-spring-summer-chinook.pdf), and is incorporated by reference here (NMFS 2023a). Overall, the species is at a moderate-to-high risk of extinction. Populations that may be affected by the proposed action include the Big Sheep Creek and Imnaha River populations, both of which are in the Grande Ronde/Imnaha MPG.

The Big Sheep Creek Chinook salmon population area includes the entire Big Sheep Creek drainage, and the population consists of all SRS Chinook salmon originating in the population area. Although the population is considered functionally extinct (ICTRT 2007) natural spawning has been documented every year since 2001. The most recent (2018-2022) 5-year geomean of redds counted is 15.1, approximately evenly divided between upper Big Sheep Creek and lower Lick Creek. Some of this spawning activity is the result of stocking hatchery adults from the Imnaha River, but all SRS Chinook salmon produced in the Big Sheep Creek drainage, regardless of parentage, are listed under the ESA. Although currently considered functionally extinct, the population could eventually recover, which would reduce the overall risk of extinction at the MPG and ESU scales. As with most other populations in the ESU, Big Sheep Creek Chinook salmon population abundance has declined over the past ten years.

The Imnaha River Chinook salmon population area includes all of the Imnaha River drainage, except the Big Sheep Creek drainage, and the population includes all SRS Chinook salmon originating in the population area as well as those produced by the Imnaha River hatchery program. The population is classified as "Intermediate" sized and has one major and one minor spawning area. Although the population has been supplemented by hatchery production since 1982, all hatchery fish are Imnaha River origin, and spatial structure/diversity rating is moderate risk. As with nearly all of the populations in the ESU, the abundance/productivity rating is high risk. The 5-year (2018–2022) geomean of natural spawners is approximately 284, which is among the highest in the ESU, and approaching the levels needed to achieve moderate risk (i.e., maintained status), but population productivity will have to substantially improve before moderate risk can be achieved. Because the Imnaha River Chinook salmon population is the only one in the MPG that exhibits both spring and summer life histories, it must achieve low risk of extinction (i.e., viable status) in order for the MPG to be considered viable. As with most other populations in the ESU, the Imnaha River Chinook salmon population abundance has declined over the past 10 years.

#### 2.2.1.2. *Snake River Basin Steelhead*

A summary of the current status of the SRB steelhead DPS can be found on NMFS' publicly available intranet site (https://www.fisheries.noaa.gov/s3/2023-02/feb-2023-status-snake-r-steelhead.pdf), and is incorporated by reference here (NMFS 2023b). Overall, available information suggests that SRB steelhead continue to be at a moderate risk of extinction within the next 100 years. The Imnaha River steelhead population is the only steelhead population that will be affected by the proposed action.

The Imnaha River steelhead population includes all steelhead originating in the Imnaha River drainage and from the Little Sheep Creek/Imnaha River hatchery program. This is the only population in the Imnaha River steelhead MPG. The population (and MPG) area includes the entire Imnaha River drainage. The 5-year geomean of wild steelhead returns to Lower Granite Dam was 2,365 for 2011-2015 and was 941 for 2016-2020. Although abundance has declined, it remains among the highest in the DPS. Both the spatial structure/diversity and the abundance/productivity ratings are moderate risk, and the overall risk rating is moderate (i.e., maintained status). Because it is the only population in the MPG, the Imnaha River steelhead population must achieve very low risk (i.e., highly viable) for the MPG to be considered viable.

### 2.2.2. Status of Critical Habitat

In evaluating the condition of DCH, NMFS examines the condition and trends of PBFs, which are essential to the conservation of the ESA-listed species because they support one or more life stages of the species. Proper function of these PBFs is necessary to support successful adult and juvenile migration, adult holding, spawning, incubation, rearing, and the growth and development of juvenile fishes. Modification of PBFs may affect freshwater spawning, rearing or migration in the action area. Generally speaking, sites required to support one or more life stages of the ESA-listed species (i.e., sites for spawning, rearing, migration, and foraging) contain PBFs essential to the conservation of the listed species (e.g., spawning gravels, water quality and quantity, side channels, or food) (Table 5).

Table 5. Types of sites, essential physical and biological features (PBFs), and the species life stage each PBF 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** | | |
| Spawning and 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 areas have also been described for Snake River 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.

Table 6 describes the geographical extent of critical habitat within the Snake River Basin for SRS Chinook salmon and SRB steelhead. Critical habitat includes the stream channel and water column with the lateral extent defined by the ordinary high-water line, or the bankfull elevation where the ordinary high-water line is not defined. In addition, critical habitat for SRS Chinook salmon includes the adjacent riparian zone, which is defined as the area within 300 feet of the line of high water of a stream channel or from the shoreline of standing body of water (58 FR 68543). The riparian zone is critical because it provides shade, streambank stability, organic matter input, and regulation of sediment, nutrients, and chemicals.

Table 6. Geographical extent of designated critical habitat (DCH) within the Snake River Basin for ESA-listed salmon and steelhead.

| Evolutionarily Significant Unit (ESU)/ Distinct Population Segment (DPS) | Designation | Geographical Extent of Critical Habitat |
|---|---|---|
| Snake River spring/summer Chinook salmon | 58 FR 68543; December 28, 1993<br><br>64 FR 57399; October 25, 1999 | All Snake River reaches upstream to Hells Canyon Dam; all river reaches presently or historically accessible to Snake River spring/summer Chinook salmon within the Salmon River Basin; and all river reaches presently or historically accessible to Snake River spring/summer Chinook salmon within the Hells Canyon, Imnaha, Lower Grande Ronde, Upper Grande Ronde, Lower Snake–Asotin, Lower Snake–Tucannon, and Wallowa subbasins. |
| Snake River Basin steelhead | 70 FR 52630; September 2, 2005 | Specific stream reaches are designated within the Lower Snake, Salmon, and Clearwater River basins. Table 21 in the Federal Register details habitat areas within the DPS's geographical range that are excluded from critical habitat designation. |

Spawning and rearing habitat quality in tributary streams in the Snake River varies from excellent in wilderness and roadless areas to poor in areas subject to intensive human land uses (NMFS 2017). Critical habitat throughout much of the Interior Columbia (which includes the Snake River and the Middle Columbia River) has been degraded by intensive agriculture, alteration of stream morphology (i.e., channel modifications and diking), riparian vegetation disturbance, wetland draining and conversion, livestock grazing, dredging, road construction and maintenance, logging, mining, and urbanization. Reduced summer streamflows, impaired water quality, and reduction of habitat complexity are common problems for critical habitat in non-wilderness areas. Human land use practices throughout the basin have caused streams to become straighter, wider, and shallower, thereby reducing rearing habitat and increasing water temperature fluctuations.

In many stream reaches designated as critical habitat in the Snake River Basin, streamflows are substantially reduced by water diversions (NMFS 2017). Withdrawal of water, particularly during low-flow periods that commonly overlap with agricultural withdrawals, often increases summer stream temperatures, blocks fish migration, strands fish, and alters sediment transport (Spence et al. 1996). Reduced tributary streamflow has been identified as a major limiting factor for SRS Chinook and SRB steelhead in particular (NMFS 2017).

Many stream reaches designated as critical habitat for these species are listed on the Clean Water Act 303(d) list for impaired water quality, such as elevated water temperature (IDEQ 2022). Many areas that were historically suitable rearing and spawning habitat are now unsuitable due to high summer stream temperatures, such as some stream reaches in the Upper Grande Ronde River drainage. Removal of riparian vegetation, alteration of natural stream morphology, and withdrawal of water for agricultural or municipal use all contribute to elevated stream temperatures. Water quality in spawning and rearing areas in the Snake River has also been impaired by high levels of sedimentation and by heavy metal contamination from mine waste (e.g., IDEQ and USEPA 2003; IDEQ 2001).

The construction and operation of water storage and hydropower projects in the Columbia River basin, including the eight run-of-river dams on the mainstem lower Snake and lower Columbia Rivers, have altered biological and physical attributes of the mainstem migration corridor. Hydrosystem development modified natural flow regimes, resulting in warmer late summer and fall water temperature. Changes in fish communities led to increased rates of piscivorous predation on juvenile salmon and steelhead. Reservoirs and project tailraces have created opportunities for avian predators to successfully forage for smolts, and the dams themselves have created migration delays for both adult and juvenile salmonids. Physical features of dams, such as turbines, also kill out-migrating fish. In-river survival is inversely related to the number of hydropower projects encountered by emigrating juveniles. However, some of these conditions have improved. The Bureau of Reclamation and U.S. Army Corps of Engineers have implemented measures in previous Columbia River System hydropower consultations to improve conditions in the juvenile and adult migration corridor including 24-hour volitional spill, surface passage routes, upgrades to juvenile bypass systems, and predator management measures. These measures are ongoing and their benefits with respect to improved functioning of the migration corridor PBFs will continue into the future.

SRS Chinook salmon DCH in the Big Sheep Creek Chinook salmon population area is impaired by water diversions serving the Wallowa Valley Improvement Project canal. The canal starts at the confluence of Big Sheep Creek and SF Big Sheep Creek, and transfers water to the Wallowa River drainage, where it is used for irrigation. The canal also intercepts Big Sheep Creek headwater tributaries, including Salt, Little Sheep, Redmont, Canal, and Ferguson Creeks. These diversions reduce flow in the primary spawning reaches of Big Sheep Creek and impairs passage to potential Chinook salmon spawning and rearing habitat upstream from the diversion on Big Sheep Creek. There are also a number of smaller diversions downstream from the canal that further impair flows in SRS Chinook salmon spawning and rearing habitat. However, there are no water diversions in the Lick Creek drainage, and therefore, Chinook salmon DCH in Lick Creek is not impaired by water abstraction. Habitat in the Big Sheep Creek Chinook salmon population area is also impaired by roads, that are often located near streams; channelization of lower Big and Little Sheep Creeks; agriculture adjacent to lower Big and Little Sheep Creeks; timber harvest; and livestock grazing. Management of timber and livestock on National Forest System (NFS) land has generally been improving since at least the mid-1990s, resulting in generally improved condition of riparian and stream channel habitat (see the Baseline Conditions section).

Quality of SRS Chinook salmon DCH in the Imnaha River Chinook salmon population area ranges from essentially pristine, in reaches within the Eagle Cap Wilderness, to substantially impaired in the lower parts of the drainage. High summer water temperatures and excess fine sediment are limiting factors in the lower mainstem Imnaha River and in the lower reaches of several tributary streams (NMFS 2017). There are numerous small water diversions on the mainstem Imnaha River, and tributaries, that likely exacerbate problems with high water temperature and excess sediment. These diversions also impair fish passage into some tributary streams, reducing access to cold water refugia. The water abstraction in the Big Sheep Creek drainage (described above) also exacerbates high summer water temperatures in the lower Imnaha River. Habitat in the Imnaha River Chinook salmon population area, outside of the Wilderness, is also impaired by roads located near streams, agriculture adjacent to the Imnaha

River, timber harvest, and livestock grazing. Management of timber and livestock on NFS land has generally been improving since at least the mid-1990s, resulting in generally improved condition of riparian and stream channel habitat (see Section 2.4).

The Imnaha River steelhead population area encompasses the Big Sheep Creek and Imnaha River Chinook salmon population areas, and condition of SRB steelhead DCH in the Imnaha River steelhead population area is essentially the same as the condition of SRS Chinook salmon DCH described in the previous two paragraphs.

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

One factor affecting the rangewide status of Snake River salmon and steelhead, and aquatic habitat at large, is climate change. As observed by Siegel and Crozier in 2019, long-term trends in warming have continued at global, national, and regional scales. The five warmest years in the 1880 to 2019 record have all occurred since 2015, while nine of the ten warmest years have occurred since 2005 (Lindsey and Dahlman 2020). The year 2020 was another hot year in national and global temperatures; it was the second hottest year in the 141 year record of global land and sea measurements and capped off the warmest decade on record (https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202013). Events such as the 2014–2016 marine heatwave (Jacox et al. 2018) are likely exacerbated by anthropogenic warming, as noted in the annual special issue of Bulletin of the American Meteorological Society on extreme events (Herring et al. 2018). The U.S. Global Change Research Program (USGCRP) reports average warming in the Pacific Northwest of about 1.3ºF from 1895 to 2011, and projects an increase in average annual temperature of 3.3ºF to 9.7ºF 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 (USGCRP 2018).

Climate change generally exacerbates threats and limiting factors, including those currently impairing salmon and steelhead survival and productivity. The growing frequency and magnitude of climate change related environmental downturns will increasingly imperil many ESA-listed stocks in the Columbia River basin and amplify their extinction risk (Crozier et al. 2019, 2020, 2021). This climate change context means that opportunities to rebuild these stocks will likely diminish over time. As such, management actions that increase resilience and adaptation to these changes should be prioritized and expedited. For example, the importance of improving the condition of and access and survival to and from the remaining functional, high-elevation spawning and nursery habitats is accentuated because these habitats are the most likely to retain remnant snowpacks under predicted climate change (Tonina et al. 2022).

Climate change is already evident. It will continue to affect air temperatures, precipitation, and wind patterns in the Pacific Northwest (ISAB 2007; Philip et al. 2021), resulting in increased droughts and wildfires and variation in river flow patterns. These conditions differ from those, under which native anadromous and resident fishes evolved and will likely increase risks posed by invasive species and altered food webs. The frequency, magnitude, and duration of elevated water temperature events have increased with climate change and are exacerbated by the Columbia River hydrosystem (EPA 2021a; 2021b; Scott 2020). Thermal gradients (i.e., rapid change to elevated water temperatures) encountered while passing dams via fish ladders can

slow, reduce, or altogether stop the upstream movements of migrating salmon and steelhead (e.g., Caudill et al. 2013). Additional thermal loading occurs when mainstem reservoirs act as a heat trap due to upstream inputs and solar irradiation over their increased water surface area (EPA 2021a, 2021b, 2021c). Consider the example of adult sockeye salmon in 2015, when high summer water temperatures contributed to extremely high losses of Columbia River and Snake River stocks during passage through the mainstem Columbia and Snake River (Crozier et al. 2020), and through tributaries such as the Salmon and Okanogan rivers, below their spawning areas. Some stocks are already experiencing lethal thermal barriers during a portion of their adult migration. The effects of longer or more severe thermal barriers in the future could be catastrophic. For example, Bowerman et al. (2021) concluded that climate change will likely increase the factors contributing to pre-spawn-mortality of Chinook salmon across the entire Columbia River basin.

Columbia River basin salmon and steelhead spend a significant portion of their life-cycle in the ocean, and as such the ocean is a critically important habitat influencing their abundance and productivity. Climate change is also altering marine environments used by Columbia River basin salmon and steelhead. This includes increased frequency and magnitude of marine heatwaves, changes to the intensity and timing of coastal upwelling, increased frequency of hypoxia (low oxygen) events, and ocean acidification. These factors are already reducing, and are expected to continue reducing, ocean productivity for salmon and steelhead. This does not mean the ocean is getting worse every year, or that there will not be periods of good ocean conditions for salmon and steelhead. In fact, near-shore conditions off the Oregon and Washington coasts were considered good in 2021 (NOAA 2022). However, the magnitude, frequency, and duration of downturns in marine conditions are expected to increase over time due to climate change. Any long-term effects of the stressors that fish experience during freshwater stages that do not manifest until the marine environment will be amplified by the less-hospitable conditions there due to climate change. Together with increased variation in freshwater conditions, these downturns will further impair the abundance, productivity, spatial structure, and diversity of the region's native salmon and steelhead stocks (ISAB 2007; Isaak et al. 2018). As such, these climate dynamics will reduce fish survival through direct and indirect impacts at all life stages (NOAA 2022).

All habitats used by Pacific salmon and steelhead will be affected by climate dynamics. However, the impacts and certainty of the changes will likely vary by habitat type. Some changes affect salmon at all life stages in all habitats (e.g., increasing temperature), while others are habitat-specific (e.g., streamflow variation in freshwater, sea-level rise in estuaries, upwelling in the ocean). How climate change will affect each individual salmon or steelhead stock also varies widely, depending on the extent and rate of change and the unique life-history characteristics of different natural populations (Crozier et al. 2008; Crozier and Siegel 2023). The continued persistence of salmon and steelhead in the Columbia basin relies on restoration actions that enhance climate resilience (Jorgensen et al. 2021) in freshwater spawning, rearing, and migratory habitats, including access to high elevation, high quality cold-water habitats, and the reconnection of floodplain habitats across the interior Columbia River basin.

## 2.3. Action Area

"Action area" means all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area includes the 67,686-acre Allotment (Figure 1) plus a 1,969-foot (600 m) buffer around the perimeter of the Allotment. The buffer was added to include stream reaches adjacent to the Allotment that could potentially be impacted by the proposed action, and to account for any errors regarding fence locations, Allotment boundaries, and stream locations. The action area includes portions of three watersheds (10-digit hydrologic unit codes [HUCs]) and 12 subwatersheds (12-digit HUCs) (Table 7).

Table 7. Watersheds and subwatersheds in the Marr Flat Allotment action area.

| Watershed | HUC | Subwatershed | HUC |
|---|---|---|---|
| Upper Big Sheep Creek | 1706010203 | Big Sheep Creek-Steer Creek | 170601020306 |
| | | Big Sheep Creek-Marr Creek | 170601020305 |
| | | Big Sheep Creek-Tyee Creek | 170601020303 |
| | | Upper Big Sheep Creek | 170601020301 |
| | | Lick Creek | 170601020302 |
| Middle Imnaha River | 1706010202 | Imnaha River-Chalk Creek | 170601020205 |
| | | Lower Grouse Creek | 170601020203 |
| | | Imnaha River-Summit Creek | 170601020201 |
| | | Upper Grouse Creek | 170601020202 |
| Upper Imnaha River | 1706010201 | Imnaha River-Crazyman Creek | 170601020106 |
| | | Gumboot Creek | 170601020105 |
| | | Imnaha River-Dry Creek | 170601020104 |

## 2.4. Environmental Baseline

The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or DCH 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 impacts to listed species or DCH from federal agency activities or existing federal agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

The action area is used by all freshwater life history stages of SRS Chinook salmon and SRB steelhead. Streams within the action area are DCH for SRS Chinook salmon and SRB steelhead. The condition of the listed species and DCH in the action area, based on information in the BA (USFS 2024), are described further below.

All of the land in the Allotment (67,686 acres) is administered by the WWNF, but the buffer includes small amounts of private land. Elevation in the action area ranges from approximately 3,400 feet above mean sea level (msl) at the Imnaha River at the north end of the Allotment, to 6,240 feet msl. Much of the Allotment is high elevation plateau with low gradient stream reaches that are often intermittent, although some of the high elevation stream reaches are perennial with

open meadows with sinuous channels. The high elevation streams flow into high gradient constrained channels leading to Lick and Big Sheep Creeks, to the west; and the Imnaha River to the east, north, and south. Vegetation in the Allotment largely consists of grassland communities of bluebunch wheatgrass (approximately 65percent), and timber types (approximately 35 percent) of ponderosa pine/pine grass, but many of the stream channels are heavily forested with hardwood species dominant. The Allotment contains 57.9 miles of SRB steelhead occupied habitat, 56.5 miles of which is also SRB steelhead DCH (Figure 3), and 22.3 miles of which is modeled intrinsic potential habitat for SRS Chinook salmon (Figure 4).

Riparian habitat and stream channel conditions, within the Allotment, have improved since the early 1990s, primarily due to changes in grazing management. All of the subwatersheds in the Allotment are functioning appropriately for sediment, off-channel habitat, riparian habitat conservation areas (RHCAs), and disturbance regime; ten of the 12 subwatersheds are functioning appropriately for large woody debris (LWD) (two functioning at risk); and nine of twelve are functioning appropriately for streambank condition (three functioning at risk). These habitat features are typically sensitive to grazing, and their generally good condition suggests that grazing management has been protective of aquatic habitat in the action area.

The action area is not functioning appropriately for water temperature, but that is likely an artifact of the geology of the area wherein small headwater streams originate in relatively low elevation prairie type habitat, with summer temperatures that are naturally too warm for SRS Chinook salmon. The action area is also not functioning appropriately for pool frequency and pool quality, also likely due to geology of the action area wherein stream gradients are very steep and stream channels are naturally confined. This supposition is supported by the mostly properly functioning streambank condition and LWD features, which would generally result in good quality pools in suitable geology. The poor functioning flow conditions in Big Sheep Creek is mostly due to water diversions upstream from the action area.

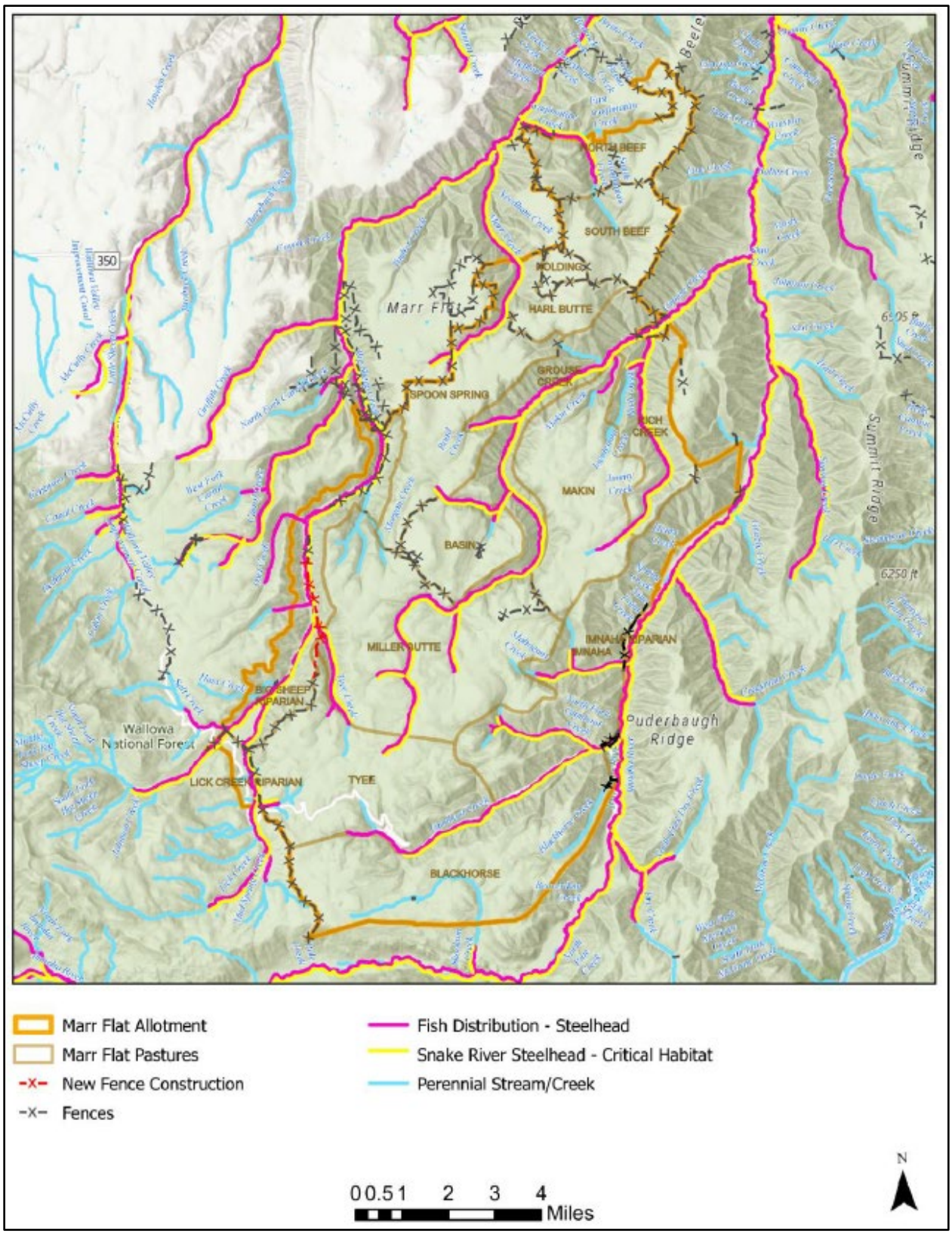


Figure 3. Snake River basin steelhead distribution and designated critical habitat on the Marr Flat Allotment.

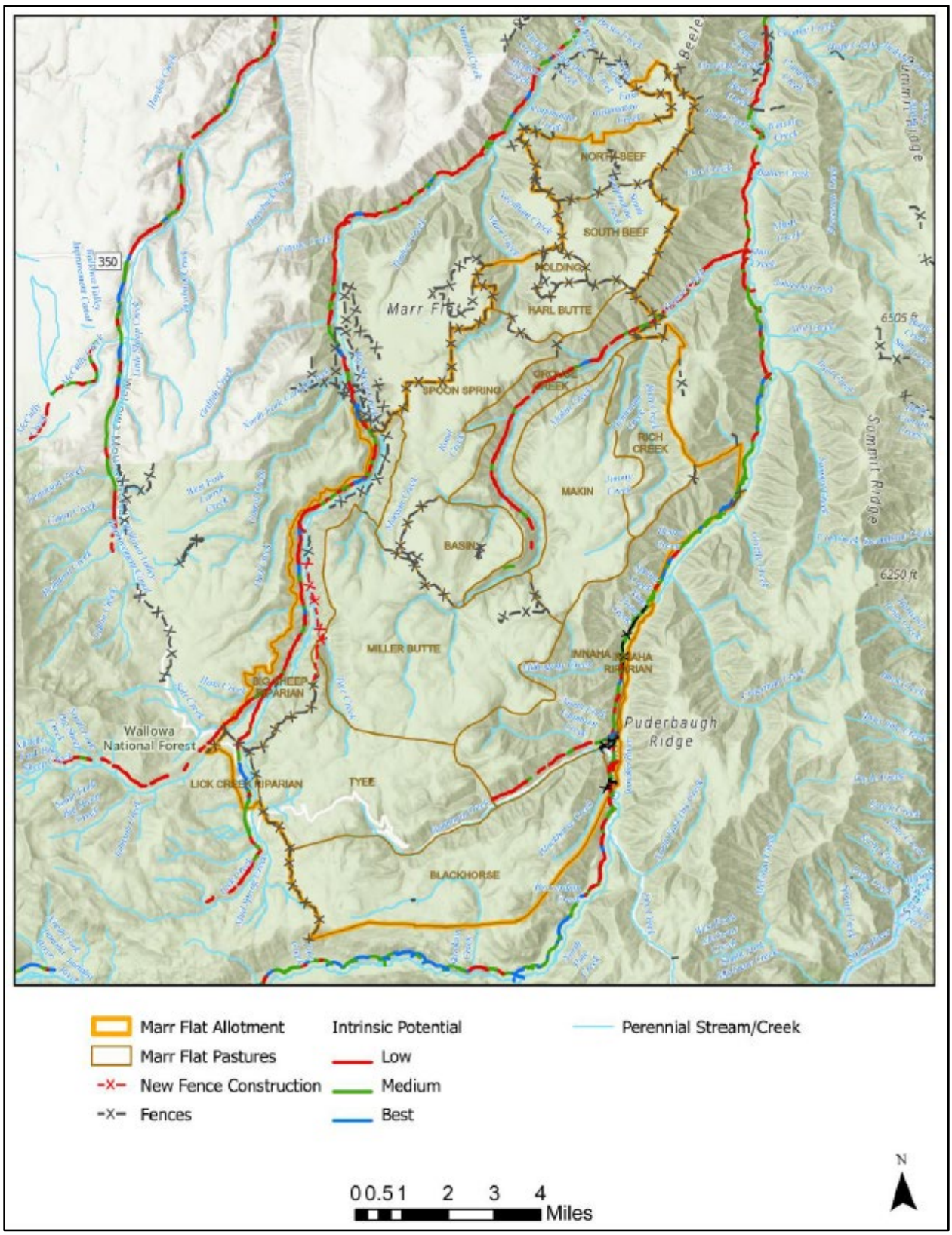


Figure 4. Snake River spring/summer Chinook salmon modeled intrinsic potential habitat on the Marr Flat Allotment.

The action area does not include alpine habitat. The high elevation headwater streams originate in relatively flat, prairie type habitats, and the transition from the prairie habitat to the higher order low elevation streams is via very steep, naturally confined stream channels. This type of habitat exists throughout much of the lower Imnaha River and Grande Ronde River drainages, and is characterized by widespread occupancy by SRB steelhead with SRS Chinook salmon largely confined to the lower elevations, where summer flows are more consistent. The generally good condition of habitat features that are sensitive to grazing indicates that grazing management since 2013 has been protective of aquatic habitat. With the exception of flow in Big Sheep Creek, baseline conditions in the action area generally support SRB steelhead throughout the action area, and generally supports SRS Chinook salmon in stream reaches with intrinsic potential habitat. Because the large size of the action area (i.e., > 12 percent of the Imnaha River drainage), and high suitability of much of the action area for SRB steelhead, DCH within the action area is extremely important for the Imnaha River steelhead population. Because the action area contains much of the spawning habitat for the Big Sheep Creek Chinook salmon population, and a substantial portion of spawning habitat for the Imnaha River Chinook salmon population, DCH in the action area is extremely important for those populations.

## 2.5. Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action but are not part of the 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 402.02).

Cattle can harm or kill anadromous fishes directly by walking on active redds or by disturbing spawning or rearing individuals, and indirectly by damaging riparian and stream channel habitat. These effects can only occur if cattle have access to streams and riparian habitat, and cattle accessibility of stream reaches is therefore an important factor for determining the potential risks to anadromous fishes. Stream reaches can be naturally inaccessible to cattle due to steep and/or rocky terrain, thick riparian vegetation, and/or large amounts of LWD; and can be made inaccessible by fencing. Determining accessibility of streams on the Allotment has been an ongoing process. In 2012, the WWNF estimated that 41 miles of anadromous fish habitat were inaccessible to cattle in the Allotment (Figure 2). The current estimate, which incorporates monitoring data collected from 2013 – 2022, is 35.5 miles of inaccessible habitat. These "inaccessible" reaches are typically occupied SRB steelhead habitat, but are mostly either unoccupied, or infrequently occupied, SRS Chinook salmon habitat. Essentially all of the occupied SRS Chinook salmon habitat on the Allotment is in stream reaches that are considered accessible to cattle. However, most of those stream reaches are in pastures with no authorized grazing, and will therefore probably not actually be affected by cattle grazing.

### 2.5.1. Effects on SRS Chinook Salmon and SRB Steelhead

#### *2.5.1.1 Direct Effects on SRS Chinook Salmon and SRB Steelhead Spawning Adults and Redds*

Documented SRS Chinook salmon spawning, in the Allotment, has only occurred in Big Sheep Creek (7.71 miles), Lick Creek (2.66 miles), and the Imnaha River (4.52 miles). These portions of Big Sheep Creek and Lick Creek, and all but 0.27 miles of the Imnaha River, are in pastures with no proposed grazing. The 0.27 miles of the Imnaha River that is in a pasture with authorized grazing is in the Imnaha pasture. This portion of the Imnaha River is not accessible to cattle grazing on the Allotment[3] because of fencing. Because the measures to prevent unauthorized grazing on "closed" pastures should be effective, direct effects on adult spawning SRS Chinook salmon or their eggs, in documented spawning habitat, will occur very rarely. However, because the permit duration is ten years, the Allotment is large, and most of the pastures are unfenced, cows could occasionally be in the "unauthorized" pastures when spawning or incubating SRS Chinook salmon are present. Therefore, adult spawning SRS Chinook salmon and redds in Lick and Big Sheep Creeks, and the Imnaha River, will likely be occasionally be disturbed by cattle grazing on the Allotment.

In addition to the documented spawning habitat described above, the Allotment contains 1.3 miles of Gumboot Creek that is occupied SRS Chinook salmon rearing habitat; and 2.5 miles of Gumboot Creek and 5.8 miles of Grouse Creek that is modeled SRS Chinook salmon intrinsic potential spawning and rearing habitat. Except for the lower 0.53 miles of Gumboot Creek, which is in the Imnaha Riparian pasture, all of these stream reaches are in pastures that could be grazed during SRS Chinook salmon spawning and incubation (i.e., after August 14). However, although several surveys have been conducted in Grouse and Gumboot Creeks, no SRS Chinook salmon spawning has been documented, suggesting that direct effects of the proposed action on SRS Chinook salmon in Grouse and Gumboot Creeks, will be rare. In addition, there is a partial fish passage barrier on Grouse Creek, between the Allotment boundary and the Imnaha River, which further reduces the chance of Chinook salmon spawning in Grouse Creek. The proposed monitoring should provide the information needed to determine if SRS Chinook salmon in Grouse and Gumboot Creeks require additional protection. Therefore, we expect occasional impacts on SRS Chinook salmon redds in Gumboot and Grouse Creeks.

Grazing may occur during the steelhead spawning and incubation period (i.e., before July 1) on every pasture with authorized grazing, except the Miller Butte Pasture (Table 3). There are approximately 33.5 miles of SRB steelhead habitat on these pastures. However, approximately 19.0 of these miles are mostly or entirely inaccessible to cattle due to steep terrain and/or dense riparian vegetation. Pastures that have essentially no steelhead habitat that is accessible to cattle include: The Holding Pasture (no aquatic habitat), the South Beef Pasture (upstream from occupied habitat); and the North Beef, Rich Creek, Makin, Spoon Springs, Basin, and Harl Butte Pastures (steep terrain, vegetation, fencing, etc.). Approximately 14.5 miles of SRB steelhead habitat is in pastures that could be grazed prior to July 1 (i.e., Grouse Creek, Imnaha, Tyee, and Blackhorse Pastures) and is considered to be accessible to cattle, although it is somewhat protected by steep terrain and thick riparian vegetation. Steelhead habitat that is accessible to

[3] This portion of the Imnaha River could possibly be accessed by cattle on adjacent private land.

cattle and could be grazed prior to July 1, includes approximately 8.6 miles of Grouse Creek, approximately 4.9 miles of Gumboot Creek, and approximately 0.9 miles of NF Gumboot Creek.

Although cattle will be in pastures with steelhead habitat for up to six weeks during the steelhead spawning and incubation period, the risk of direct effects on spawning and incubating SRB steelhead is small. This is because: (1) the stream reaches in these pastures are typically confined in steep sided canyons with narrow, heavily vegetated, riparian areas and floodplains, and are relatively cold and wet during spring/early summer; (2) cattle will be placed in upland areas that have readily available water developments; and (3) cattle typically forage in uplands during the early grazing period (Platts and Nelson 1989) and avoid riparian areas with wet soil and cold temperatures (Platts and Nelson 1989; Kovalchick and Elmore 1991). Monitoring data from the 2013 – 2022 period indicate that the proposed grazing management will minimize disturbance of spawning and incubating SRB steelhead. Disturbance of spawning SRB steelhead or redds, due to the proposed action, is likely to be extremely rare, and will be minor if it does occur. The current proposed action includes nine additional DMAs, so that every pasture with authorized grazing and anadromous fish habitat will be monitored annually, whenever the pasture is grazed prior to July 1. Therefore, we expect that the permittees and the WWNF will take appropriate action to minimize cattle use of riparian areas, thereby resulting in occasional and minor direct effects on steelhead.

#### *2.5.1.2 Direct Effects on Juvenile Rearing SRS Chinook Salmon and SRB Steelhead*

Some juvenile SRS Chinook salmon and SRB steelhead will likely be disturbed by cows. This will likely occur because: (1) juvenile SRS Chinook salmon and SRB steelhead are present in the Allotment throughout the summer and fall, when cows are more likely to enter the relatively cool riparian areas; (2) the permit duration is ten years, so even if cows grazing and resting near streams is relatively rare, some juvenile SRS Chinook salmon and SRB steelhead are likely to be disturbed. Most disturbances will probably be minor (temporarily accessing nearby cover, etc.) and will probably not result in reduced feeding, increased predation risk, etc.; but some disturbances may be sufficiently severe to adversely affect some individuals. Disturbance of juvenile SRB steelhead will probably be relatively rare because: (1) the vast majority of SRB steelhead habitat, on pastures with authorized grazing, is partially or completely protected, from cattle access, by steep terrain and dense riparian vegetation; (2) management actions by permittees (i.e., riding, etc.) will actively move cows away from streams and riparian habitat. Disturbance of juvenile SRS Chinook salmon will be rarer because very little SRS Chinook salmon habitat is in pastures with authorized grazing, and those streams (i.e., Grouse and Gumboot Creeks) are partially protected, from cattle access, by steep terrain and dense riparian vegetation. Although rare, disturbance of some individuals could be sufficiently severe to cause harm by reducing feeding, increasing predation risk, etc. Disturbance sufficient to cause harm is particularly likely in Miller Butte Pasture due to presence of relatively long reaches of accessible (to cows) steelhead habitat. However, because disturbance of juvenile SRB steelhead and SRS Chinook salmon will be relatively rare, and because most disturbances will likely be minor, disturbance of juvenile SRB steelhead and SRS Chinook salmon is not likely to reduce productivity of any of the affected populations.

#### 2.5.1.3. *Habitat Related Effects on SRS Chinook Salmon and SRB Steelhead*

The proposed action may adversely affect SRS Chinook salmon and SRB steelhead by reducing quality of occupied spawning, rearing, and migration habitat. The habitat effects, which could impact the species include increased summer water temperature, reduced pools and undercut banks, increased substrate fine sediment and cobble-embeddedness, and reductions in riparian vegetation. These types of impacts to habitat could reduce survival of eggs, rearing juveniles, and spawning adults. All of the occupied SRS Chinook salmon habitat and 97.5 percent of the occupied SRB steelhead habitat, within the action area, is DCH. Because the vast majority of occupied habitat is also DCH, the effects of the proposed on DCH, described in Section 2.5.2 below, will also affect individual SRS Chinook salmon and SRB steelhead. Based on the description of the effects in Section 2.5.2, the effects of the proposed action on habitat will not appreciably reduce productivity of any of the affected populations. However, because the permit duration is ten years, the action area is large, and there could be localized adverse effects on stream habitat, some rearing SRS Chinook salmon and SRB steelhead could experience reduced growth or survival due to the proposed action.

### 2.5.2. Effects on SRS Chinook Salmon and SRB Steelhead Designated Critical Habitat

Livestock grazing often degrades quality of habitat for stream dwelling salmonids. Numerous symposia and publications have documented the detrimental effects of livestock grazing on stream and riparian habitats (Menke 1977; Meehan and Platts 1978; Cope 1979; American Fisheries Society 1980; Peek and Dalke 1982; Ohmart and Anderson 1982; Kauffman and Krueger 1984; Johnson et al. 1985; Clary and Webster 1989; Gresswell et al. 1989; Kinch 1989; Chaney et al. 1990; Platts 1991; Belsky et al. 1997). These publications include descriptions of a series of synergistic effects that can occur when cattle over-graze riparian areas, including: (1) woody and hydric herbaceous vegetation along a stream can be reduced or eliminated; (2) streambanks can collapse due to livestock trampling; (3) without vegetation to slow water velocities, hold the soil, and retain moisture, streambanks can erode; (4) the stream can become wider and shallower, and in some cases downcut; (5) the water table can drop; and (6) hydric, deeply rooted herbaceous vegetation can die out and be replaced by upland species with shallower roots and less ability to bind the soil. The proposed action of authorizing cattle grazing on the Allotment could potentially affect the following PBFs: (1) water quality; (2) forage; (3) substrate; (4) natural cover; and (5) riparian vegetation. Any modification of these PBFs could affect spawning or rearing 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.

As described above in Section 2.5.1.1, 14.62 miles of stream habitat are in pastures with no authorized grazing. All of this habitat is both SRS Chinook salmon and SRB steelhead DCH and all of it is currently occupied by both species. Because there will be no authorized grazing, and because fencing and monitoring should be effective in minimizing unauthorized grazing, there will be essentially no effects on the 14.62 miles of SRS Chinook salmon and SRB steelhead DCH in pastures with no authorized grazing (i.e., Big Sheep Riparian, Lick Creek Riparian, and Imnaha Riparian).

Effects on DCH in pastures with authorized grazing will be minimized by managing grazing so that pasture utilization; measured using indicators for greenline stubble height, streambank alteration, and browse use (Table 2); are not exceeded. Grazing management, including monitoring of indicators to ensure that utilization is not exceeded, is the responsibility of the permittees, but the WWNF will conduct end of season monitoring to determine if utilization standards are exceeded. Greenline stubble height is relatively easy for permittees to measure and is correlated with other use indicators, but because plants continue to grow after grazing stops, greenline stubble height is not always the best indicator for post season monitoring. Streambank alteration is well correlated with habitat condition and recovery, and typically remains static for several weeks post grazing, and is therefore a useful indicator for post season monitoring. If greenline stubble height and streambank alteration indicators are within standards, browse use is typically also within standards.

Multiple studies have evaluated minimum stubble heights necessary to protect stream habitat from the impacts of livestock grazing. Most researchers have reported stubble height of the entire greenline graminoid and herbaceous community—as opposed to a subset of key plant species—because it is simpler to evaluate, avoids controversy over which species to monitor, and is likely more informative of actual streambank conditions than knowing the height of a subset of plant species (Roper 2016). Using the PACFISH–INFISH opinion monitoring data from federal lands in the Columbia basin, Goss (2013) found that stubble height was related to streambank disturbance, and streambank disturbance began to increase substantially when stubble heights fell below 10-inches. Bengeyfield (2006) found that a 4-inch stubble height did not initiate an upward trend in stream channel morphology at sites on the Beaverhead–Deerlodge National Forest in Montana. Clary (1999) found that while 5-inch stubble height at the end of the growing season resulted in improvements in most measured aquatic and riparian conditions in an Idaho meadow after 10 years, 6.5-inch stubble height was needed to improve all measured habitat metrics. Pelster et al. (2004) found that during summer and fall grazing, more than 40 percent of cattle diets were willow when stubble heights were less than 8-inches; they suggested that stubble heights greater than 8-inches were needed to reduce willow consumption during these critical periods. Willows enhance salmonid habitat by providing fish with cover, modulating stream temperatures, and contributing leaf detritus and terrestrial insects that expand food sources (Bryant et al. 2006; Clary & Leininger 2000; Murphy & Meehan 1991). This reinforces the idea that higher stubble heights lead to improved fish habitat.

After reviewing the available scientific literature, including all of the studies mentioned above, Roper (2016) strongly recommended 6-inches as a starting point for a stubble height objective, measured at the end of the growing season, for small to medium-sized cold-water streams inhabited by salmon and trout. This is consistent with Clary and Webster (1989), who suggested a 6-inch starting point for stubble height objectives in the presence of ESA-listed or sensitive fishes. Roper (2016) acknowledges that 4-inches or-8 inches could be appropriate stubble height objectives for some stream sites, but that site-specific data would be necessary to support these more liberal or conservative objectives. The WWNF proposes an end of grazing season 6-inch greenline stubble height for all pastures with authorized grazing and anadromous fish habitat (Table 2). This is an increase of 2-inches over the 4-inch greenline stubble height proposed in the 2013 consultation and used for managing grazing on the Allotment from 2013–2021. An increase in greenline stubble height represents a decrease in utilization.

The available literature indicates that streambank alteration of 10 to 20 percent will generally result in protection of anadromous fish habitat (Pfankuch 1978; Hayslip 1993; Powell et al. 2000; Cowley 2002) and alterations of greater than 30 percent will likely result in habitat degradation (Bengeyfield 2006). The WWNF proposes end of grazing season streambank alteration of 20 percent for all pastures with authorized grazing and anadromous fish habitat. This is the same level that was proposed in the 2013 consultation and used for managing grazing on the Allotment from 2013–2021.

The findings in the literature cited above suggest that the WWNF's proposal of managing grazing with end of season utilization limits of 6-inch greenline stubble height and 20 percent bank alteration will result in protection, and possibly some recovery, of anadromous fish habitat on the Allotment. The current baseline conditions, which are generally very good and were achieved under grazing management from 2013–2021, also suggests that the proposed utilization standards will be protective of aquatic habitat. Therefore, the proposed utilization standards, along with the proposed monitoring, should result in very low levels of adverse effects on SRS Chinook salmon and SRB steelhead DCH, and may facilitate further improvement of habitat features. Because the action area is large and neither the permittees nor the WWNF can monitor all of the DCH, localized adverse effects could occur. However, because the quality of habitat features is likely to remain the same or improve, the proposed action will probably not degrade the PBFs (listed in Table 5) for SRS Chinook salmon and SRB steelhead, at the scale of the action area.

## 2.6. Cumulative Effects

"Cumulative effects" are those effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation [50 CFR 402.02]. 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.

Some continuing non-federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline versus cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described earlier in the discussion of environmental baseline (Section 2.4).

There is one private in-holding located within the boundary of the Marr Flat Allotment, totaling about 120 acres. Primary activities on this property are grazing and timber production. Grazing practices are likely to be similar to the surrounding federal range, and timber harvest is regulated by Oregon forest practices rules. The parcel is too small, relative to the surrounding Allotment, to have a major effect on stream habitat quality.

There is a water diversion on Grouse Creek, on private land, that likely limits use of Grouse Creek by anadromous fishes. There is also a diversion on Big Sheep Creek, upstream from the action area. This diversion is a partial barrier to fish passage and may limit use of habitat in Grouse Creek. The Wallowa Valley Improvement Canal diverts Big Sheep Creek, and several

tributaries, upstream from the action area and reduces flow in the Big Sheep Creek. These diversions will probably operate for the foreseeable future and will continue to impair anadromous fish use within the action area.

Recreational activities such as hunting, fishing, camping, and off-road vehicle use are likely to continue at levels similar to the past and will have some minor impacts to streams and riparian habitat in the action area. These impacts will be too minor to cause any discernible impact on SRB steelhead or SRS Chinook salmon abundance or productivity or the quality of their DCH.

## 2.7. Integration and Synthesis

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

The proposed action will affect the Big Sheep Creek and Imnaha River populations of SRS Chinook salmon and the Imnaha River population of SRB steelhead. The Big Sheep Creek Chinook salmon population is considered functionally extinct, although the population area is occupied at levels that would be considered high risk of extinction. The Imnaha River Chinook salmon population is currently at high risk of extinction and the Imnaha River steelhead population is currently at moderate risk. The recovery goals for the Imnaha River Chinook salmon population and steelhead populations are low risk and very low risk, respectively. There are no currently identified recovery goals for the Big Sheep Creek Chinook salmon population, but the population would contribute to recovery if it achieved moderate or low risk of extinction.

Because there will be no authorized grazing in pastures with documented SRS Chinook salmon spawning, and because those pastures will be monitored for unauthorized grazing, direct effects on spawning and incubating SRS Chinook salmon will occur infrequently, if at all, and will likely be short duration if they do occur. Because there will usually be no grazing, prior to July 1, in pastures with accessible (to cattle) SRB steelhead habitat, and because pastures with any SRB steelhead habitat, that are grazed prior to July 1, will be monitored annually for riparian habitat use (by cattle), direct effects on spawning and incubating steelhead will occur infrequently. Disturbance of rearing juvenile SRS Chinook salmon will likely occur rarely, possibly not every year, and will probably be relatively minor when they do occur. Disturbance of SRB steelhead could occur more often, possibly every year in the Miller Butte Pasture, but will probably be relatively minor.

Because pastures with the most accessible habitat will not be grazed, much of the habitat on grazed pastures is inaccessible or difficult to access (by cattle), and grazing will be managed to minimize adverse effects on aquatic habitat, adverse effects on anadromous fish habitat will probably be relatively minor. The habitat features that are most sensitive to grazing are generally functioning appropriately, indicating that grazing management during 2013–2021 successfully

protected anadromous fish habitat. The current proposed action would increase habitat protection, which should facilitate continued improvement of habitat function, and likely improvement of PBFs listed in Table 5. The adverse effects that would occur would probably be sufficiently minor that productivity of the Imnaha River steelhead population would not be appreciably affected. Because most of the SRS Chinook salmon occupied habitat is in pastures that will not be grazed, productivity of the Big Sheep Creek and Imnaha River Chinook salmon populations will probably not be affected.

## 2.8. Conclusion

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

## 2.9. Incidental Take Statement

Section 9 of the ESA and federal regulations pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Harass" is further defined by guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and Section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

### 2.9.1. Amount or Extent of Take

In this opinion, NMFS determined that incidental take is reasonably certain to occur as follows: (1) cows could occasionally enter the Big Sheep, Lick Creek Riparian, or Imnaha Riparian Pastures and disturb spawning SRS Chinook salmon or their redds; (2) SRS Chinook salmon could occasionally spawn in Gumboot or Grouse Creeks and be disturbed by cows; (3) rearing SRS Chinook salmon and SRB steelhead, and SRB steelhead redds, will be disturbed by cattle approaching, crossing, or drinking from streams; and (4) effects on habitat could reduce growth and/or survival of rearing SRS Chinook salmon and SRB steelhead.

#### 2.9.1.1. *SRS Chinook Salmon Redd Trampling in Big Sheep and Lick Creeks and the Imnaha River*

Because monitoring in pastures with no authorized grazing will be limited to presence/absence of cows, quantifying the number or location of adults disturbed or redds trampled will not be feasible. Because quantifying amount or extent of redd trampling due to unauthorized grazing is not feasible, because a redd can only be trampled if cows are present when redds are present, and because redds are typically only present after August 10, NMFS will use the presence of cows in SRS Chinook salmon spawning habitat, after August 10, as a surrogate for take due to disturbance and redd trampling. NMFS anticipates that cows could be in the stream channels of SRS Chinook salmon spawning habitat in Big Sheep Creek, Lick Creek, or the Imnaha River, one time each year. Therefore, the extent of take would be exceeded if there is more than one instance, in a single grazing season, of cows observed in stream channel or riparian habitat of Big Sheep Creek, Lick Creek, or the Imnaha River after August 10.

#### 2.9.1.2. *SRS Chinook Salmon Redd Trampling in Grouse and Gumboot Creeks.*

Neither adult SRS Chinook salmon nor SRS Chinook salmon redds have been documented in Grouse or Gumboot Creeks. Grouse and Gumboot Creeks might be too small to be regularly used as SRS Chinook salmon spawning habitat, but they could possibly be used during wet years, and there have not been enough stream surveys to rule out spawning in these streams. If SRS Chinook salmon spawn in Grouse or Gumboot Creeks, adults and redds could be disturbed by grazing cattle. Determining the number of adults or redds that would be disturbed is not feasible, but adults and redds can only be disturbed if they are in stream reaches that are accessible to cattle, and if cattle are present when the adults and redds are present. NMFS will therefore use the number of redds present, and accessible to cows, as a surrogate for take due to disturbance of SRS Chinook salmon spawning adults and redds in Grouse and Gumboot Creeks. NMFS anticipates that a total of two SRS Chinook salmon redds, each year, could be present, and accessible to cows, in the portions of Grouse and Gumboot Creeks that are on the Allotment. Therefore, the extent of take will be exceeded if more than two SRS Chinook salmon redds are identified in a single year, and are determined to be accessible to cows, in the portions of Grouse and Gumboot Creeks that are on the Allotment. A redd will be determined to be accessible to cows if it is in a pasture with authorized grazing when the redd is active and if no management actions are taken to ensure that the redd is not disturbed.

#### 2.9.1.3. *Disturbance of Rearing SRS Chinook salmon and SRB Steelhead and SRB Steelhead Redd Trampling*

Incidental take is reasonably certain to occur in the form of harm as a result of the habitat impacts of the proposed action and in the form of disturbance of SRB steelhead redds and harassment to juvenile SRB steelhead and SRS Chinook salmon when livestock enter the riparian area to cross or drink from a stream. The number of individual SRB steelhead redds disturbed, and the number juvenile SRB steelhead and juvenile SRS Chinook salmon that will be injured or harassed cannot practically be counted. Therefore, percent bank alteration will be used as a surrogate indicator for the take caused by disturbance of SRB steelhead redds, rearing juvenile SRB steelhead, and rearing juvenile SRS Chinook salmon; and due to habitat impacts on SRB steelhead and SRS Chinook salmon.

Percent bank alteration is the best extent of take indicator for SRB steelhead redd disturbance and for harm and harassment to rearing SRB steelhead and SRS Chinook salmon because: (1) due to timing of spawning and extent of habitat use, surveys of SRB steelhead redds are often not feasible; (2) both cattle and fish are mobile, making quantification of individual disturbances infeasible; (3) the habitat effects of cattle grazing increase with cattle proximity to streams; (4) all habitat pathways of take will vary in proportion to bank alteration; (5) severity of disturbance and harassment is likely to vary proportionally to the level of bank alteration; (6) measured streambank alteration is sensitive to within-season grazing; and (7) bank alteration is measured by a standardized and repeatable methodology. It is important to point out that NMFS is not saying that bank alteration is, in itself, take. Nor does bank alteration necessarily and directly cause take in every instance. Rather, NMFS is certain that the overall habitat effects of grazing cattle on the Marr Flat Allotment will cause take, and that measured bank alteration is the best currently available single indicator that is proportional to all of the effects pathways.

Due to variable grazing conditions, sampling error, etc., some exceedance of utilization standards is expected and does not necessarily indicate incidental take in excess of that analyzed in this opinion. However, frequent and/or severe exceedances would indicate take in excess of that analyzed. The WWNF proposes that end of season bank alteration will not exceed 20 percent in any pasture with anadromous fish habitat. The WWNF also proposes implementation of adaptive management to address exceedances. Therefore, the extent of take would be exceeded if: (1) measured end-of-season bank alteration exceeds 21 percent in more than three DMAs within the Allotment in a single year; (2) measured end-of-season bank alteration exceeds 21 percent in the same DMA 2 years in a row; (3) measured end-of-season bank alteration exceeds 31 percent in any single DMA.

### 2.9.2. Effect of the Take

In the opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to SRS Chinook salmon or SRB steelhead or destruction or adverse modification of their critical habitat.

### 2.9.3. Reasonable and Prudent Measures

"Reasonable and prudent measures" refers to those actions the Director considers necessary or appropriate to minimize the impact of the incidental take on the species (50 CFR 402.02). The following measures are necessary and appropriate to minimize the impact of incidental take of listed species due to the proposed action:

The WWNF shall:

1. Minimize incidental take from livestock grazing on the Allotment.

2. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS were effective in avoiding and minimizing incidental take from permitted activities and that the extent of take was not exceeded.

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

1. The following terms and conditions implement RPM 1: (minimize incidental take from livestock grazing), the WWNF shall:
   a. Ensure that any cows found on the Big Sheep, Lick Creek Riparian, and Imnaha Riparian Pastures are removed within 48 hours of discovery.
   b. Take appropriate action to protect SRS Chinook salmon redds found in Grouse and Gumboot Creeks.
      i. If SRS Chinook salmon redd(s) are found in Grouse or Gumboot Creeks, WWNF fisheries and range personnel will identify actions that are needed to protect redd(s) from trampling.
      ii. If SRS Chinook salmon redds are found in Grouse or Gumboot Creeks during the first three years of surveys, then surveys will continue as follows: Grouse Creek will be surveyed during years, in which the Grouse Creek Pasture would be grazed after August 10; and Gumboot Creek will be surveyed during years, in which the Imnaha or Blackhorse Pastures would be grazed after August 10.

2. The following terms and conditions implement RPM 2 (monitoring and reporting): the WWNF shall ensure that the following monitoring information is collected and reported to NMFS:
   a. Provide an end-of-year report to NMFS by February 15 of each year. The following shall be included in the report for the Marr Flat Allotment:
      i. Results of monitoring for cow presence on the Big Sheep, Lick Creek Riparian, and Imnaha Riparian Pastures.
      ii. Actual authorized HMs.
      iii. On-off dates.
      iv. Results from all monitoring identified as part of the proposed action, to include utilization, unauthorized use, and compliance monitoring.
      v. Review of management and compliance successes and failures.
      vi. Results of implementing and completing long-term trend monitoring using appropriate methodology needed to identify trends for riparian ecosystems on streams containing ESA-listed fishes within the allotment.
      vii. Management recommendations for subsequent years.
      viii. MIM Monitoring results.

## 2.10. Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and

endangered species. Specifically, "conservation recommendations" (CR) 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).

The following recommendation is a discretionary measure that NMFS believes is consistent with this obligation and therefore should be carried out by WWNF:

1. Work with landowners to improve fish passage and grazing management on land adjacent to the Allotment.

### 2.11. Reinitiation of Consultation

This concludes formal consultation for the permitting of grazing activities on the Marr Flat Allotment.

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

## 3. MAGNUSON–STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," and includes the physical, biological, and chemical properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH [CFR 600.905(b)].

This analysis is based, in part, on the EFH assessment provided by the WWNF and descriptions of EFH for Pacific Coast salmon (PFMC 2014) contained in the fishery management plans (FMP) developed by the Pacific Fishery Management Council (PFMC) and approved by the Secretary of Commerce.

### 3.1. Essential Fish Habitat Affected by the Project

The action area, as described in Section 2.3 of the above opinion, is EFH for Chinook salmon (PFMC 2014). The PFMC designated the following five habitat types as habitat areas of particular concern (HAPCs) for salmon: complex channel and floodplain habitat, spawning habitat, thermal refugia, estuaries, and submerged aquatic vegetation (PFMC 2014). The proposed action may adversely affect the following HAPCs: complex channel and floodplain habitat, spawning habitat, thermal refugia.

### 3.2. Adverse Effects on Essential Fish Habitat

The proposed action's adverse effects on EFH are the same as the effects to DCH described above in Section 2.5. These impacts are due to the effects of livestock grazing on stream and riparian habitat (reduced riparian vegetation, soil compaction, etc.) in the Allotment. Although condition of stream and riparian habitat, on the Allotment, is generally very good and will likely improve somewhat during the permit term, it would probably improve somewhat faster without livestock grazing.

### 3.3. Essential Fish Habitat Conservation Recommendations

NMFS determined that no Conservation Recommendations are necessary to avoid, minimize, mitigate, or otherwise offset the impact of the proposed action on EFH.

### 3.4. Supplemental Consultation

The WWNF must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations [50 CFR 600.920(l)].

## 4. Data Quality Act Documentation and Pre-Dissemination Review

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

### 4.1. 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 WWNF and the grazing permittees. Individual copies of this opinion were provided to the WWNF and the Nez Perce Tribe. The document will be available within two weeks at the

NOAA Library Institutional Repository (https://repository.library.noaa.gov/welcome). The format and naming adhere to conventional standards for style.

### 4.2. 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.

### 4.3. Objectivity

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

***Standards:*** This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding 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 and EFH consultation 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 reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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