

State of Idaho
Department of Water Resources

Permit to Appropriate Water

NO. 72-16896

Priority: September 27, 2012

Maximum Diversion Rate: 295.00 CFS

This is to certify, that J R SIMPLOT COMPANY
C/O VIC CONRAD
999 MAIN ST, STE 1300
BOISE ID 83707

has applied for a permit to appropriate water from:

Source: YANKEE FORK

Tributary: SALMON RIVER

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
FISH HABITAT	01/01 to 12/31	295.00 CFS
RECREATION	01/01 to 12/31	295.00 CFS

LOCATION OF POINT(S) OF DIVERSION:

YANKEE FORK
CUSTER County

NW1/4NE1/4

Sec. 29, Twp 12N, Rge 15E, B.M.

PLACE OF USE: FISH HABITAT

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12N 15E 29		X	X											X			

PLACE OF USE: RECREATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12N 15E 29		X	X											X			

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **December 01, 2015**.
2. Subject to all prior water rights.
3. Fish Habitat and Recreation Uses are for development of an artificial side channel along Yankee Fork which will provide habitat for steelhead salmon and resident fish species and increase recreational opportunity.
4. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable permitting requirements of other agencies.

State of Idaho
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5. This right shall be junior and subordinate to future water rights authorizing the diversion and use of water from the Yankee Fork River and its tributaries, including ground water.
6. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
7. This right does not grant any right-of-way or easement across the land of another.
8. Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 170.
9. When notified by the Department or by a watermaster with regulatory authority over this right, the right holder shall report the amount of water diverted in connection with this right. The report shall be submitted in the manner and frequency specified by the Department or the watermaster.
10. Use of water under this right shall be non-consumptive.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 15th day of November, 2012.

FOR



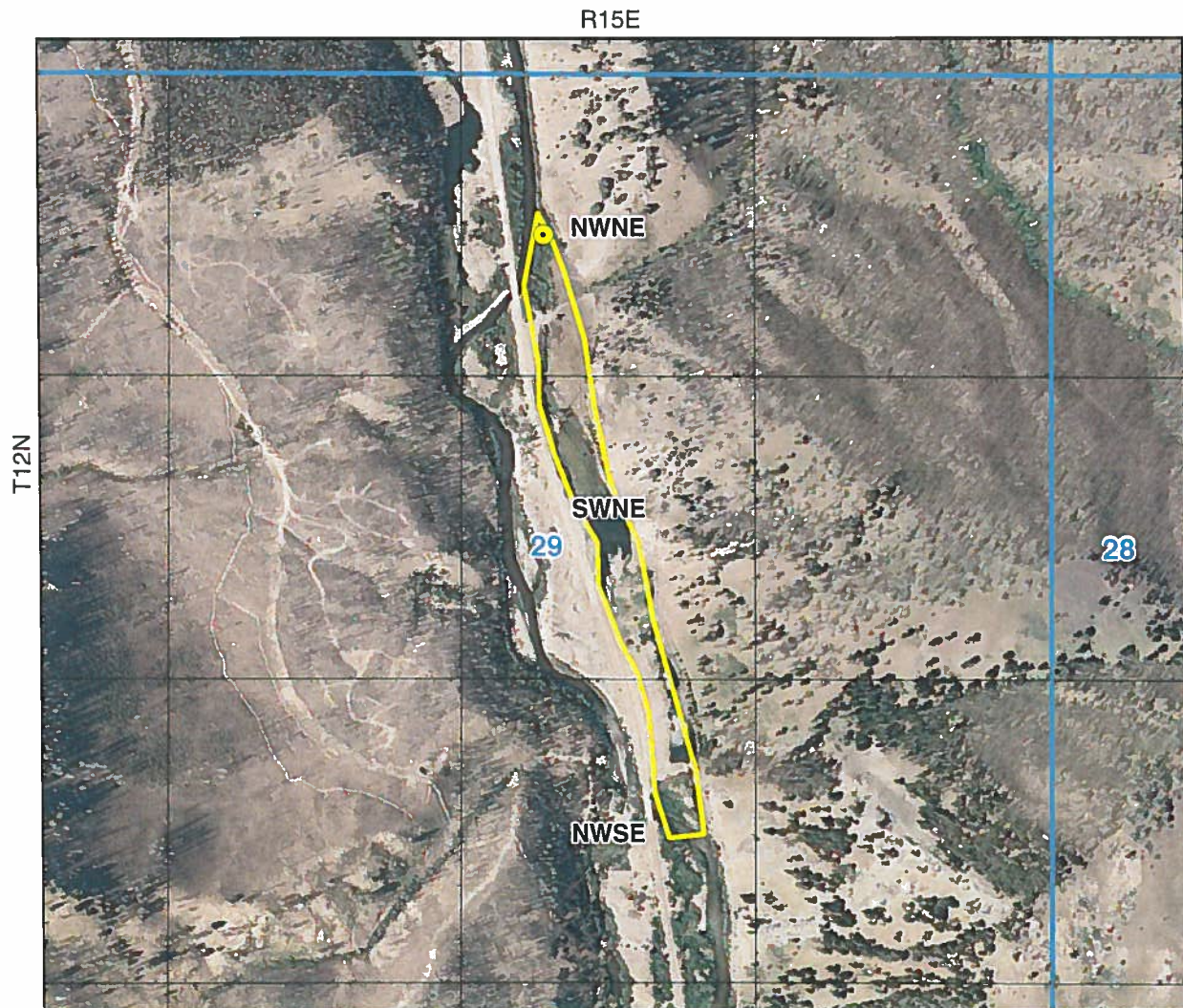
GARY SPACKMAN, Director

State of Idaho
Department of Water Resources

Attachment To Permit to Appropriate Water

72-16896

This map depicts the RECREATION and FISH HABITAT place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.075 0.15 0.3 Miles

-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters





State of Idaho

DEPARTMENT OF WATER RESOURCES

Southern Region, 1341 Fillmore Street, Suite 200 • Twin Falls, Idaho 83301-3380

Phone: (208) 736-3033 • Fax: (208) 736-3037 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

November 15, 2012

J R SIMPLOT COMPANY
C/O VIC CONRAD
999 MAIN ST, STE 1300
BOISE ID 83707

RE: Permit No. 72-16896

Permit Approval Notice

Dear Permit Holder:

The Department of Water Resources has issued the enclosed permit authorizing you to establish a new water right. Please be sure to thoroughly review the conditions of approval and remarks listed on your permit.

The permit is a PRELIMINARY ORDER issued by the Department pursuant to Section 67-5243, Idaho Code. It can and will become a final order without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

As a permit owner you must commence the excavation or construction of the diverting works within one year of the date the permit was issued, and you must proceed diligently until the project is completed. The date shown under condition no. 1 is the date when the project must be completed.

The Department will send you a 'Proof Due Notice' approximately 60 days prior to the above referenced date requesting you to file either a Proof of Beneficial Use form or a Request for Extension of Time form.

Please note that a separate stream channel alteration permit must be obtained from the Department prior to any activity in the stream channel other than construction or maintenance of the diversion structure for your water right(s). Applications for stream channel alteration permits must be filed at least sixty days prior to the commencement of work in the stream.

Also, please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-736-3033.

Sincerely,

A handwritten signature in black ink, appearing to read "Allen Merritt". The signature is stylized with a large, sweeping initial "A" and a cursive "Merritt".

Allen Merritt
Southern Region Manager

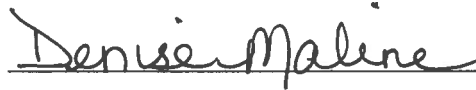
Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on November 15, 2012 I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER (Approved Permit) to the person(s) listed below:

RE: WATER RIGHT NO. 72-16896

**J R SIMPLOT COMPANY
C/O VIC CONRAD
999 MAIN ST, STE 1300
BOISE ID 83707**

A handwritten signature in cursive script, reading "Denise Maline", is written over a solid horizontal line.

**Denise Maline
Administrative Assistant**

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "**Preliminary Order**" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.



State of Idaho

DEPARTMENT OF WATER RESOURCES

Southern Region, 1341 Fillmore Street, Suite 200 • Twin Falls, Idaho 83301-3380

Phone: (208) 736-3033 • Fax: (208) 736-3037 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

November 15, 2012

NICK MILLER
WATER DISTRICT #170
322 FRONT ST
PO BOX 83720
BOISE, ID 83720-0098

via e-mail

Re: **APPROVED Permit No. 72-16896 (J.R. Simplot Company)**

Dear Nick:

For your information and records, we have enclosed a copy of an APPROVED Application for Permit within your District.

If you have any questions, please contact this office, or the applicant.

Sincerely,

A handwritten signature in cursive script that reads "Denise Maline". The signature is written in dark ink and is positioned above the printed name and title.

Denise Maline
Administrative Assistant

Enclosure

MEMORANDUM

Date: November 2, 2012
To: Application for Permit 72-16896 (JR Simplot) File
From: Jana Reeder
Re: Evaluation of Sufficiency of Information Submitted

Application proposes diverting up to 295 cfs of water from the Yankee Fork into an artificial side channel for fish habitat and recreation purposes for anadromous fish species. The point of diversion is located approximately 8.9 miles north and 10.3 miles east of Stanley.

This application proposes the diversion and use of water tributary to the federally designated Salmon River Wild & Scenic River. The decreed minimum stream flow rights for the federal Wild & Scenic Rivers are subordinate to certain categories of water use and to specific amounts of water use established after the minimum stream flow. The water use proposed in this application will benefit from the subordination provision because it is for non consumptive purposes.

Nick Miller, Water Master of Water District 170, comments "Given that this diversion is nonconsumptive, benefits from the subordination of the W & S rights, and will be conditioned to be subordinate to future uses, I advocate approving this application without a requirement for measurement and control."

- **Effect on Other Water Rights:**
The applicant has proposed to subordinate this use to all future rights within the Yankee Fork drainage, unless otherwise indicated on the face of the individual water rights.
- **Sufficiency of Water Supply:**
Water will be returned to the Yankee Fork. Water use is non consumptive. No issues anticipated at this time.
- **Application Made in Good Faith:**
Applicant has invested significant time and effort pursuing this project including engineering design and cooperative efforts with other agencies including the United States Government.
- **Financial Resources:**
The project is being financed by the United States Bureau of Reclamation and the Bonneville Power Administration.
- **Local Public Interest:**
The Wild and Scenic 30-day letter was sent to the applicant's with additional information being submitted. Application was subject to public notice and no negative comments were received. Project is being constructed to enhance anadromous fish and resident fish species habitat.
- **Beneficial Use/Conservation of Water Resources:**
Proposed use is a beneficial use of water.

Review of the application finds there is no clear inconsistency with criteria set forth in Section 42-203A Idaho Code or the Water Appropriation Rules (IDAPA 37.03.08) preventing processing of this application.

AFFIDAVIT OF PUBLICATION

State of Idaho, County of Custer, ss:

I, Susan Callahan, representing the Challis Messenger, a weekly newspaper, published at Challis, Idaho, do solemnly swear that the notice hereto attached and made a part hereof, was published in the regular and entire issue of the Challis Messenger for 2 consecutive weeks, commencing with the issue dated 10/4 2012 and ending with the issue dated 10/11 2012

Susan Callahan

STATE OF IDAHO)

COUNTY OF CUSTER)

On this 15th day of OCT. in the year of 2012, before me, a Notary Public,

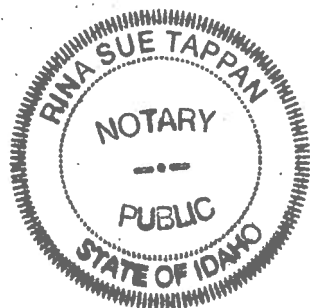
personally appeared Susan Callahan, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.

Rina Sue Tappan

Notary Public for Idaho

Residing at Challis, ID

My commission expires: 12-8-14



IDWR NOTICE

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

72-16896

J R SIMPLOT CO
999 MAIN ST STE 1300
BOISE, ID 83707

Point of Diversion NWNE S29
T12N R15E CUSTER County
Source YANKEE FORK Tributary
SALMON RIVER

Use: FISH HABITAT 01/01
to 12/31 295 CFS

Use: RECREATION 01/01
to 12/31 295 CFS

Total Diversion: 295 CFS

Date Filed: 9/27/2012

Place Of Use: FISH HABITAT
& RECREATION

T12N R15E S29

Application proposes diverting up to 295 cfs of water from the Yankee Fork into an artificial side channel for fish habitat and recreation purposes for anadromous fish species. The point of diversion is located approximately 8.9 miles north and 10.3 miles east of Stanley.

This application proposes the diversion and use of water tributary to the federally designated Salmon River Wild & Scenic River. The decreed minimum stream flow rights for the federal Wild & Scenic Rivers are subordinate to certain categories of water use and to specific amounts of water use established after the minimum stream flow. The water use proposed in this application will benefit from the subordination provision because it is for non consumptive purposes.

The applicant has proposed to subordinate this use to all future rights within the Yankee Fork drainage, unless otherwise indicated on the face of the individual water rights.

Permits will be subject to all prior water rights. For additional information concerning the property location, contact Southern Region office at (208) 736-3033; or for a full description of the right(s), please see

www.idwr.idaho.gov/apps/ExtSearch/WRFiling.asp

Protests may be submitted based on the criteria of Idaho Code § 42-203A. Any protest against the approval of this application must be filed with the Director, Dept. of Water Resources, Southern Region, 1341 Fillmore St, Suite 200, Twin Falls, ID 83301 together with a protest fee of \$25.00 for each application on or before October 22, 2012. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director

Published: October 4 and 11, 2012

RECEIVED

OCT 25 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

✓ OK DM
10/29/2012

Proof of Publication
The Post Register

RECEIVED

State of Idaho
Bonneville County:

OCT 15 2012

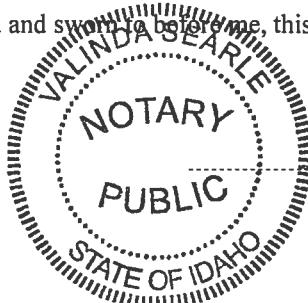
DEPT. OF WATER RESOURCES
SOUTHERN REGION

I, ~~Hilary Witt~~ or Staci Dockery, first being duly sworn, depose and say: That I am the ~~Classifieds Manager~~ or Legal Notice Representative of the Post Company, a corporation of Idaho Falls, Bonneville County, Idaho, publishers of The Post Register, a newspaper of general circulation, published Tuesday through Sunday at Idaho Falls, Idaho; said Post Register being a consolidation of the Idaho Falls Times, established in the year 1890, The Idaho Register, established in the year 1880, and the Idaho Falls Post, established in 1903, such consolidation being made on the First day of November 1931, and each of said newspapers have been published continuously and uninterruptedly, prior to consolidation, for more than twelve consecutive months and said Post Register having been published continuously and uninterruptedly from the date of such consolidations up to and including the last publication of notice hereinafter referred to.

That the notice, of which a copy is hereto attached and made a part of this affidavit, was published in said Post Register under this ad number: **507343**, for **2** consecutive (days) weeks, between **10/04/2012** and **10/11/2012**,

and that the said notice was published in the regular and entire issue of said paper on the respective dates of publication, and that such notice was published in the newspaper and not in a supplement.

Subscribed and sworn to before me, this 11 day of October 2012



Valinda Searle
Notary Public

My Commission expires: ~~1/10/2015~~

11-10-2017

----- attached jurat -----

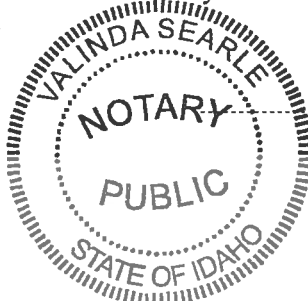
STATE OF IDAHO

ss.

COUNTY OF BONNEVILLE

Subscribed and sworn to before me, this 11 day of October 2012, before me, the undersigned, a Notary public for said state, personally appeared ~~Hilary Witt~~ or Staci Dockery, known or identified to me to be the person(s) whose name(s) is/are subscribed to the within instrument, and being by me duly sworn, declared that the statements therein are true, and acknowledged to me that he/she/they executed the same,

IN WITNESS WHEREOF, I have herunto set my hand and affixed my official seal the day and year in this certificate first above written.



Valinda Searle
Notary Public for The Post Company
Residing at: Idaho Falls
My Commission expires: ~~1/10/2015~~

11-10-2017

over →

✓ ok
DM 10/23/2012

RECEIVED

OCT 15 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

72-16896

J R SIMPLOT CO
999 MAIN ST STE 1300
BOISE, ID 83707

Point of Diversion NWNE S29 T12N R15E
CUSTER County Source YANKEE FORK Tributary
SALMON RIVER

Use: FISH HABITAT 01/01 to 12/31 295 CFS

Use: RECREATION 01/01 to 12/31 295 CFS

Total Diversion: 295 CFS

Date Filed: 9/27/2012

Place Of Use: FISH HABITAT & RECREATION
T12N R15E S29

Application proposes diverting up to 295 cfs of water from the Yankee Fork into an artificial side channel for fish habitat and recreation purposes for anadromous fish species. The point of diversion is located approximately 8.9 miles north and 10.3 miles east of Stanley.

This application proposes the diversion and use of water tributary to the federally designated Salmon River Wild & Scenic River. The decreed minimum stream flow rights for the federal Wild & Scenic Rivers are subordinate to certain categories of water use and to specific amounts of water use established after the minimum stream flow. The water use proposed in this application will benefit from the subordination provision because it is for non consumptive purposes.

The applicant has proposed to subordinate this use to all future rights within the Yankee Fork drainage, unless otherwise indicated on the face of the individual water rights.

Permits will be subject to all prior water rights. For additional information concerning the property location, contact Southern Region office at (208) 736-3033; or for a full description of the right(s), please see

[www.idwr.idaho.gov/apps/ExtSearch/WRFiling](http://www.idwr.idaho.gov/apps/ExtSearch/WRFiling.asp)

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GARY SPACKMAN, Director

Published: October 4 and 11, 2012 (507343)

✓ OK DM 10/23/2012

TRIBUNE PUBLISHING COMPANY, INC

The Lewiston Tribune
505 C St., P.O.Box 957
Lewiston, Idaho 83501
(208) 743-9411

**LEGAL ADVERTISING
INVOICE**

Sold To: DEPT OF WATER RESOURCES
1341 FILLMORE STREET, SUITE 200
TWIN FALLS ID 83301

Date:	<u>10/11/2012</u>	INVOICE NO.	<u>69067</u>
Account No.	<u>446620</u>		
Description	<u>69067 The follo</u>		
Times	<u>2</u>	Lines	<u>48</u>
		Tab. lines	

RECEIVED**OCT 15 2012**PO# 72-16896\$ 140.40

DEPT. OF WATER RESOURCES
SOUTHERN REGION

NOTICE: This is a invoice of Purchase made by you. Statement will be rendered the first of the month
Please Retain This Invoice as Your Statement Will Refer to Invoice by No. Only.

AFFIDAVIT OF PUBLICATION

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Karen J. Lewis, being duly sworn, deposes and says, I am the Legal Clerk of the Tribune Publishing Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho and under and by virtue of the laws of the State of Washington, publishers of the Lewiston Tribune, a newspaper of general circulation published at Lewiston, Nez Perce County, Idaho; That the said Lewiston Tribune is an established newspaper and has been published regularly and issued regularly at least once a day for more than 105 consecutive years next immediately preceding the first publication of this notice, and has been so published uninterrupted for said period; that the 69067 The follo attached hereto and which is made a part of this affidavit was published in the said Lewiston Tribune, 2 time(s). Publication being on 10/04, or once a Week for 2 consecutive Week, the first publication thereof being on the 10/04/2012, and the last publication thereof being on the 10/11/2012, and said 69067 The follo was so published in the regular and entire issue of said newspaper and was not in a supplement thereof and was so published in every issue and number of the said paper, during the period and times of publication as set forth above.

Karen J. Lewis

State of Idaho

S.S.

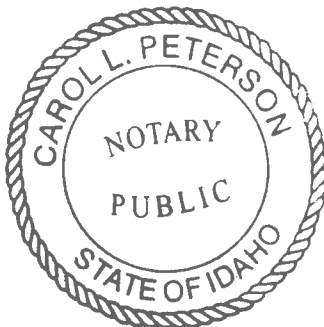
County of Nez Perce

On this 11th day of October in the year of 2012, before me, a Notary Public, personally appeared Karen J. Lewis, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.

Carol Peterson

Notary Public in and for the State of Idaho,
residing at Lewiston, therein
Commission Expires 9/1/2012

SEE REVERSE FOR REMAINDER OF AD



✓ DM
10/23/2012

Permits will be subject to all prior water rights. For additional information concerning the property location, contact Southern Region office at (208) 736-3033; or for a full description of the right(s), please see www.idwr.idaho.gov/apps/ExtSearch/WRFiling.asp. Protests may be submitted based on the criteria of Idaho Code § 42-203A. Any protest against the approval of this application must be filed with the Director, Dept. of Water Resources, Southern Region, 1341 Fillmore St, Suite 200, Twin Falls, ID 83301 together with a protest fee of \$25.00 for each application on or before October 22, 2012. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director
Published in the Challis Messenger, Times News, Idaho Statesman, Lewiston Tribune & Post Register on October 4th & 11th, 2012

✓ OK DM 10/23/2012

OCT 12 2012**DEPT. OF WATER RESOURCES
SOUTHERN REGION****LEGAL PROOF OF PUBLICATION**

Account #	Ad Number	Identification	PO	Amount	Cols	Lines
100632	0000616900	LEGAL NOTICE	JRSimplot	\$130.43	1	76

Attention:

IDAHO DEPT WATER RESOURCE

1341 FILLMORE ST STE 200

TWIN FALLS ID 83301

LEGAL NOTICE

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GARY SPACKMAN, Director

Pub. Oct. 4, 11, 2012

0000616900-01

JANICE HILDRETH, being duly sworn, deposes and says: That she is the Principal Clerk of The Idaho Statesman, a daily newspaper printed and published at Boise, Ada County, State of Idaho, and having a general circulation therein, and which said newspaper has been continuously and uninterruptedly published in said County during a period of twelve consecutive months prior to the first publication of the notice, a copy of which is attached hereto: that said notice was published in The Idaho Statesman, in conformity with Section 60-108, Idaho Code, as amended, for:

2 InsertionsBeginning issue of: 10/04/2012Ending issue of: 10/11/2012

Janice Hildreth
 (Legals Clerk)

STATE OF IDAHO)

.SS

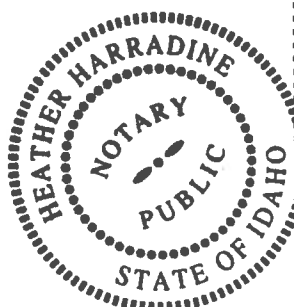
COUNTY OF ADA)

On this 11 day of October in the year of 2012 before me, a Notary Public, personally appeared before me Janice Hildreth known or identified to me to be the person whose name subscribed to the within instrument, and being by first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Heather Harradine

Notary Public for Idaho
 Residing at: Boise, Idaho

My Commission expires:

2/08/2014

✓ ok DM
 10/23/2012

Affidavit of Publication
STATE OF IDAHO)
COUNTY OF TWIN FALLS) SS.

RECEIVED
OCT 12 2012
DEPT. OF WATER RESOURCES
SOUTHERN REGION

I, Ruby Aufderheide, being first duly sworn upon oath, depose and say that I am Legal Clerk of the TIMES-NEWS, published daily at, Twins Falls, Idaho, and do solemnly swear that a copy of the notice of advertisement, as per clipping attached, was published in the regular and entire issue of said newspaper, and not in any supplement thereof, for two consecutive weeks, commencing with the issue dated 4th day of October, 2012 and ending with the issue dated 11th day of October, 2012

And I do further certify that said newspaper is a consolidation, effective February 16, 1942, of the Idaho Evening Times, published theretofore daily except Sunday, and the Twin Falls News, published theretofore daily except Monday, both of which newspapers prior to consolidation had been published under said names in said city and county continuously and uninterruptedly during a period of more than twelve consecutive months, and said TIMES-NEWS, since such consolidation, has been published as a daily newspaper except Saturday, until July 31, 1978, at which time said newspaper began daily publication under said name in said city and county continuously and uninterruptedly.

And I further certify that pursuant to Section 60-108 Idaho Code, Thursday of each week has been designated as the day on which legal notice by law or by order of any court of competent jurisdiction within the state of Idaho to be issued thereof Thursday is announced as the day on which said legal will be published.


Ruby Aufderheide, Legal Clerk

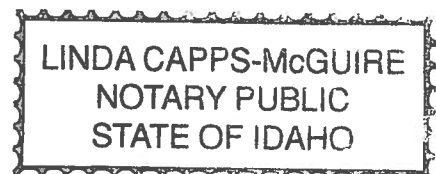
STATE OF IDAHO
COUNTY OF TWIN FALLS

On this 11th day of October, 2012, before me,

a Notary Public, personally appeared Ruby Aufderheide, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.


Notary Public for Idaho
Residing at Twin Falls, Idaho.

My commission expires: 5-19-15



✓ ok DM
10/23/2012

over →

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

72-16896

J R SIMPLOT CO

999 MAIN ST STE 1300

BOISE, ID 83707

Point of Diversion NWNE S29 T12N R15E CUSTER County

Source YANKEE FORK Tributary SALMON RIVER

Use: FISH HABITAT 01/01 to 12/31 295 CFS

Use: RECREATION 01/01 to 12/31 295 CFS

Total Diversion: 295 CFS

Date Filed: 9/27/2012

Place Of Use: FISH HABITAT & RECREATION

T12N R15E S29

Application proposes diverting up to 295 cfs of water from the Yankee Fork into an artificial side channel for fish habitat and recreation purposes for anadromous fish species. The point of diversion is located approximately 8.9 miles north and 10.3 miles east of Stanley.

This application proposes the diversion and use of water tributary to the federally designated Salmon River Wild & Scenic River. The decreed minimum stream flow rights for the federal Wild & Scenic Rivers are subordinate to certain categories of water use and to specific amounts of water use established after the minimum stream flow. The water use proposed in this application will benefit from the subordination provision because it is for non consumptive purposes.

The applicant has proposed to subordinate this use to all future rights within the Yankee Fork drainage, unless otherwise indicated on the face of the individual water rights.

Permits will be subject to all prior water rights. For additional information concerning the property location, contact Southern Region office at (208) 736-3033; or for a full description of the right(s), please see

www.idwr.idaho.gov/apps/ExtSearch/WRFiling.asp. Protests

may be submitted based on the criteria of Idaho Code 42-203A.

Any protest against the approval of this application must be filed with the Director, Dept. of Water Resources, Southern Region, 1341 Fillmore St, Suite 200, Twin Falls, ID 83301 together with a protest fee of \$25.00 for each application on or before October 22, 2012. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director

PUBLISH: Times-News October 4 and 11, 2012

✓ OK DM 10/23/2012

CORPORATE HEADQUARTERS

RECEIVED

OCT 11 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

October 10, 2012

Danise Maline
State of Idaho
Department of Water Resources
Southern Region
1341 Fillmore Street, Suite 200
Twin Falls, ID 83301-3380

**Re: IDWR Application for Permit No. 72-16896; Response to Additional Information
Pursuant to Rule 40 of the Department of Water Resources and Idaho Code Section
42-203A(5)(a).**

Dear Ms. Maline:

As you requested in your letter dated September 28, 2012 the following responses are provided in the order of your Guideline for Submitting Additional Information.

Response to Rule 040.05.c and Idaho Code, Section 42-203A(5)(a):

- i. The following IDWR water right numbers authorize for the use of the Yankee Fork Salmon River 72-7044, 72-7093, 72-10559, 72-16667, 72-7400, 72-7401, 72-7404.
- ii. Not Applicable. Source is a surface water source; not a groundwater source
- iii. Not Applicable. Proposed water use is not for irrigation.

Response to Rule 040.05.c and Idaho Code, Section 42-203A(5)(a):

- i. As designed, the point of diversion will be a passive inlet structure that will divert a percentage of the available flow of the Yankee Fork of the Salmon River into a low-velocity side channel for juvenile salmon. At low flow (approximately 100 cfs), approximately 5 cfs will be diverted from the mainstem into the side channel. At a mainstem 2 year flow (approximately 1,270 cfs), approximately 110 cfs (9% of the mainstem flow) will be directed into the side channel. At higher flows, approximately 5% to 10% of the mainstem flow will be routed into the side channel.
- ii. Please see the attached USGS Surface-Water Monthly Statistics for USGS Gage Number 13296000, Yankee Fork Salmon River Near Clayton, Idaho.

Response to Rule 040.05.c and Idaho Code, Section 42-203A(5)(a):

i. The point of diversion is owned by the applicant. The place of use is owned by the applicant and the United States of America. Enclosed are authorizations for the project issued by the United States Department of Army Corps of Engineers and the biological opinion issued by the United States Department of Commerce National Oceanic and Atmospheric Administration concluding that the proposed project "...is not likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon and the Snake River Basin steelhead, or result in the destruction or adverse modification of designated critical habitat for Snake River spring/summer Chinook salmon and Snake River Basin steelhead.

ii. Attached are the following approvals for the proposed water development project:

a. United States Department of Army Nationwide Permit No. 27 dated August 27, 2012.

b. Joint Permit No. S72-20037 dated August 31, 2012 issued by the Idaho Department of Water Resources.

c. Certification under Section 401(a)(1) of the Federal Water Pollution Control Act dated August 16, 2012 issued the Idaho Department of Environmental Quality.

d. Biological opinion issued by the United States National Oceanic and Atmospheric Administration date August 17, 2012.

i and ii. The financing for the construction of the project is provided by the United States Bureau of Reclamation and the Bonneville Power Administration.

Response to Rule 040.05.g and Idaho Code, Section 42-203A(5)(e):

i. The project will not have any adverse affect on the local public interest.

Sincerely,



Vic Conrad
Land, Water & Asset Recovery

Enclosures



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OCT 11 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGIONUSGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:

Surface Water

Geographic Area:

United States

GO

News - updated September 2012

USGS Surface-Water Monthly Statistics for the Nation

The statistics generated from this site are based on approved daily-mean data and may not match those published by the USGS in official publications. The user is responsible for assessment and use of statistics from this site. For more details on why the statistics may not match, [click here](#).

USGS 13296000 YANKEE FORK SALMON RIVER NR CLAYTON ID

Available data for this site

Time-series: Monthly statistics

GO

Custer County, Idaho
Hydrologic Unit Code 17060201
Latitude 44°16'44", Longitude 114°44'02" NAD83
Drainage area 189 square miles
Gage datum 5,950 feet above NGVD29

Output formats

[HTML table of all data](#)[Tab-separated data](#)[Reselect output format](#)

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in cfs (Calculation Period: 1921-05-01 -> 1949-02-28)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1921					1,134	1,955	303.2	115.9	89.6	78.7	69.1	63.6
1922	54.6	49.8	55.2	76.8	683.6	1,457	227.2	105.6	77.3	69.2	66.2	67.1
1923	54.7	42.5	45.0	139.3	647.2	885.6	331.9	115.9	74.0	67.2	61.6	47.3
1924	27.6	30.0	32.9	135.3	522.3	219.6	82.5	45.2	30.8	30.0	40.0	36.7
1925	39.1	45.0	49.6	276.8	1,098	776.1	237.9	103.6	75.0	66.1	57.0	40.5
1926	32.6	42.0	58.0	205.2	368.8	168.4	73.6	54.2	51.8	42.0	45.7	34.4
1927	35.0	30.0	41.5	140.0	618.0	1,529	358.5	112.9	82.2	74.9	77.4	54.6
1928	54.2	45.2	65.0	154.0	1,558	520.6	174.0	89.7	67.0	65.9	53.0	47.7
1929	44.0	41.6	43.9	67.3	398.4	567.4	150.3	70.1	56.1	50.4	49.3	90.7
1930	44.9	45.0	51.3	343.2	595.5	491.8	137.9	98.8	67.9	79.2	52.4	44.4

1931	45.5	45.1	55.1	132.4	424.7	237.8	79.2	50.1	48.8	50.5	48.3	45.0
1932	45.0	50.1	53.5	136.0	780.0	896.0	247.0	101.1	76.2	65.2	60.0	36.0
1933	38.5	39.0	46.8	141.9	485.5	1,191	180.0	86.1	65.7	58.0	56.7	50.2
1934	52.6	53.2	124.8	466.7	602.9	220.1	82.1	51.5	48.8	57.4	70.3	55.0
1935	55.0	50.0	55.0	149.4	571.1	733.3	162.4	73.9	54.7	49.9	40.9	35.0
1936	40.0	40.0	45.0	394.0	1,089	631.6	151.9	94.7	71.1	60.4	47.6	45.0
1937	40.0	40.0	45.0	70.9	492.7	327.0	121.7	63.8	54.7	50.5	49.1	52.4
1938	40.0	40.0	40.0	202.2	903.0	1,157	305.5	117.5	80.5	83.8	66.0	60.0
1939	55.0	50.0	65.3	265.8	584.0	265.2	102.8	57.5	57.1	50.5	39.8	37.0
1940	35.0	40.0	59.1	267.5	880.7	450.7	115.7	65.1	72.0	81.9	62.8	50.0
1941	50.0	45.0	65.2	153.8	599.8	466.3	150.3	107.2	82.9	71.7	93.5	101.9
1942	50.0	50.0	53.4	335.8	670.2	948.1	297.8	106.6	72.6	62.1	68.5	60.0
1943	54.1	41.8	47.2	497.5	1,114	1,510	777.3	189.6	106.5	92.9	84.2	63.9
1944	60.7	55.2	54.0	88.6	519.0	660.7	250.7	102.9	74.0	65.9	63.4	47.9
1945	45.0	40.0	38.0	59.0	481.8	637.2	216.9	84.1	64.3	59.9	54.7	54.8
1946	57.6	52.0	60.6	319.3	869.5	681.2	201.7	92.9	77.3	93.6	73.4	60.0
1947	45.6	43.0	87.1	268.6	1,318	770.6	287.4	108.8	83.9	79.5	64.7	55.5
1948	54.4	41.7	40.0	95.7	847.2	1,192	258.3	110.4	78.9	72.9	66.8	54.8
1949	45.0	47.3										
Mean of monthly Discharge	46	44	55	207	745	770	217	92	69	65	60	53
** No Incomplete data have been used for statistical calculation												

[Questions about sites/data?](#)[Feedback on this web site](#)[Automated retrievals](#)[Help](#)[Data Tips](#)[Explanation of terms](#)[Subscribe for system changes](#)[News](#)[Accessibility](#)[Plug-Ins](#)[FOIA](#)[Privacy](#)[Policies and Notices](#)[U.S. Department of the Interior | U.S. Geological Survey](#)**Title: Surface Water data for USA: USGS Surface-Water Monthly Statistics****URL: <http://waterdata.usgs.gov/nwis/monthly?>**Page Contact Information: [Idaho Water Data Support Team](#)

Page Last Modified: 2012-10-10 10:02:57 EDT

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DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
IDAHO FALLS REGULATORY OFFICE
900 N SKYLINE DRIVE, SUITE A
IDAHO FALLS, IDAHO 83402

RECEIVED

OCT 11 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

27 August 2012

Regulatory Division

SUBJECT: NWW-2012-125, USFS – J.R. Simplot Company

Ms. Kris Martinson
US Forest Service
HC 63, Box 1669
Challis, Idaho 83225

RECEIVED

AUG 30 2012

J.R. SIMPLOT COMPANY
L.W.A.R.

Mr. Vic Conrad
J.R. Simplot Company
PO Box 27
Boise, Idaho 83707

Dear Ms. Martinson and Mr. Conrad:

We have determined that your proposed project is authorized in accordance with Department of Army (DA) **Nationwide Permit (NWP) No. 27: Aquatic Habitat Restoration, Establishment, and Enhancement Activities**. This project is located within Section(s) 29 of Township 12 North, Range 15 East, near latitude 44.34224° N and longitude -114.72301° W, in Custer County, Idaho. Please refer to File Number NWW-2012-125 in all future correspondence with our office regarding this project.

Project activities include the discharge of approximately 15,975 cubic yards of gravel/tailings, 745 cubic yards of rock and 125 cubic yards of wood below the ordinary high water mark of the Yankee Fork, a side channel of the Yankee Fork, and adjacent wetlands to improve habitat for juvenile salmonids by creating channel habitat and floodplain wetlands in areas that are currently shallow ponds with little cover or structure. The habitat improvement project would fill approximately 0.1 acres of wetland and 3.2 acres of other waters of the United States. The project would result in the creation of 4.70 acres of wetlands and enhance approximately 0.5 miles of side channel as habitat for juvenile salmonids. All work shall be done in accordance to the attached drawings, titled, "*Upper Salmon River Subbasin*", dated 12 June 2012, Sheets 1-20.

DA permit authorization is necessary because your project would involve discharge of dredged and/or fill material into Waters of the U.S., including wetlands. This authorization is outlined in Section 404 of the Clean Water Act (33 U.S.C. 1344).

PERMIT CONDITIONS

You must comply with all regional and general conditions and the special conditions, listed below, for this verification letter to remain valid and to avoid possible enforcement actions. The regional and general permit conditions for *NWP No. 27: Stream and Wetland Restoration Activities* are available on-line at our Walla Walla Regulatory Division website found at <http://www.nww.usace.army.mil/BusinessWithUs/RegulatoryDivision/NationwidePermits.aspx>. If you are unable to access this website or would prefer a hard copy of the regional and general conditions please notify us and we will provide you a copy.

The following Special Conditions include:

- a. Permittee is responsible for all work done by any contractor. Permittee shall ensure any contractor who performs the work is informed of and follows all the terms and conditions of this authorization, including any Special Conditions listed above. Permittee shall also ensure these terms and conditions are incorporated into engineering plans and contract specifications.*
- b. This Corps permit does not authorize you to take an endangered species, in particular the Snake River steelhead, Snake River Spring/Summer Chinook salmon, and Bull trout. In order to legally take a listed species, you must have separate authorization under the ESA (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with "incidental take" provisions with which you must comply). The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) BOs, dated 29 May 2012 and 17 August 2012, respectively, contain mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BOs. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BOs, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS and NMFS are the appropriate authority to determine compliance with the terms and conditions of their respective BOs, and with the ESA.*

WATER QUALITY CERTIFICATION

You must also comply with the conditions detailed in the Section 401 Water Quality Certification (WQC) issued on August 16, 2012, by the Idaho Department of Environmental Quality (IDEQ). If you have any questions regarding the conditions set forth in the Water Quality Certification, please contact IDEQ directly at 208-528-2650.

PRELIMINARY JURISDICTIONAL DETERMINATION

Attached to this verification are two copies of the Preliminary Jurisdictional Determination (PJD) form. This PJD is for waters of the United States, including wetlands, which may be located within your project area. **Please sign both copies and return one to the Corps at the address in the letterhead above.** The other copy is for your records.

The Preliminary Jurisdictional Determination is a non-binding action and shall remain in effect, unless a request for an Approved Jurisdictional Determination or new information supporting a revision is provided to this office. Please note that since this jurisdictional determination is preliminary, it is subject to change and therefore is not an appealable action under the Corps of Engineers Administrative Appeal Procedures (33 CFR 331). Enclosed you will find a *Notification of Administrative Appeal Options and Process and Request for Appeal* (RFA) form for further clarification.

COMPLIANCE CERTIFICATION

Further, Nationwide Permit General Condition 30 (*Compliance Certification*) requires that every permittee who has received NWP verification must submit a signed certification regarding the completed work and any required mitigation. The enclosed Compliance Certification form is enclosed for your convenience and must be completed and returned to us.

LIMITATIONS OF THIS VERIFICATION

This letter of authorization does not convey any property rights, or any exclusive privileges and does not authorize any injury to property or excuse you from compliance with other Federal, State, or local statutes, ordinances, regulations, or requirements which may affect this work.

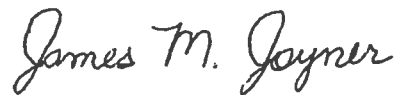
EXPIRATION OF THIS VERIFICATION

This verification is valid until 27 August 2014, unless the NWP is modified, suspended or revoked. If you begin or are under contract to begin your work activities before this date, you may have another year to complete the project activities under the present terms and conditions of this NWP verification. In the event you have not completed construction of your project by 27 August 2015, a new application and/or verification is required.

We are interested in your thoughts and opinions concerning the quality of service you received from the Walla Walla District, Corps of Engineers Regulatory Division. Please visit us online at <http://per2.nwp.usace.army.mil/survey.html>, which will be automatically submitted to us. Alternatively, you may call and request a paper copy of the survey, which you may complete and return to us by mail. For additional information about the Walla Walla Regulatory please visit us at <http://www.nwp.usace.army.mil/BusinessWithUs/RegulatoryDivision.aspx>.

Please contact me by telephone at 208-522-1676, by mail at the address in the letterhead, or via e-mail at james.m.joyner@usace.army.mil if you have any questions or need additional information. For informational purposes, a copy of this letter is being sent to the following individuals: Mr. Jerry Myers (Trout Unlimited), Mr. Mike Edmondson (OSC), Mr. Jim Gregory (Trout Unlimited), Ms. Mary Anne Davis (ISHPO), Mr. Aurele LaMontagne (NMFS), Mr. Ty Matthews (USFWS), Mr. Al Simpson (BOR), Ms. Yvette Tuell (Shoshone-Bannock Tribes), Ms. Kerrie Mathews (IDWR), Mr. Troy Saffle (IDEQ) and Ms. Stacie Angelopoulos (Custer County).

Sincerely,

A handwritten signature in black ink that reads "James M. Joyner". The signature is written in a cursive, flowing style.

James M. Joyner
Sr. Project Manager, Regulatory

Enclosures:

- Project Drawings (vicinity map, plan view, section view)
- Preliminary Jurisdictional Determination Form
- Request for Appeal Form
- Compliance Certification Form
- NWP Transfer form



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

IDA Custer Yankee Fork
Trout Unlimited

August 31, 2012

RECEIVED

SEP 05 2012

J.R. SIMPLOT COMPANY
L.W.A.R.

Kris Martinson
USDA Forest Service
HC 63, Box 1669
Challis, Idaho 83226

RECEIVED

OCT 11 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

Vic Conrad
J.R. Simplot Company
P.O. Box 27
Boise, Idaho 83707

RE: Joint Application for Permit No. S72-20037
Yankee Fork Salmon River

Dear Ms. Martinson and Mr. Conrad:

The Idaho Department of Water Resources (IDWR) has reviewed your above referenced application for a permit to alter the Yankee Fork Salmon River and has prepared a decision as provided for in Section 42-3805, Idaho Code. The conditions set forth in this permit are intended to prevent degradation of water quality, protect fish and wildlife habitat and protect the long-term stability of the stream channel. If you cannot meet the conditions set forth in the permit, please contact this office for further consideration.

Your project has been determined to meet the IDAPA 37.03.07 Minimum Standards (Rule 55). You may consider this letter a permit to construct your project according to your applications dated May 15, 2012 and June 9, 2012 including diagrams. Your proposed project is located within Section 29, Township 12 North, Range 15 East, Boise Meridian, Custer County, Idaho.

Failure to adhere to the conditions as set forth herein can result in legal action as provided for in Section 42-3809, Idaho Code. This project is subject to the following Minimum Standards, Special and General Conditions.

MINIMUM STANDARDS:

These standards are established in the Administrative Rules of the Idaho Water Resources Board; Stream Channel Alteration Rules, IDAPA 37 Title 03 Chapter 07 dated July 1, 1993 and are enclosed with this permit.

Rule 56 - Construction Procedures

SPECIAL CONDITIONS:

- [1] All construction shall be completed in accordance with the descriptions and methods on the application and diagrams. This office must approve any changes prior to construction.**
- [2] All construction activities shall be conducted in such a manner as to minimize turbidity and comply with Idaho water quality standards.**
- [3] All fuel, oil and other hazardous materials shall be stored and equipment refueled away from the stream channel to ensure that a spill will not enter the waterway.**
- [4] Permittee is responsible for all work done by any contractor and shall ensure any contractor who performs the work is informed of and follows all the terms and conditions of this authorization.**
- [5] This permit shall expire December 31, 2014.**

GENERAL CONDITIONS:

- 1. This permit does not constitute any of the following:
 - a. An easement or right-of-way to trespass or work upon property belonging to others.
 - b. Other approval that may be required by Local, State or Federal Government, unless specifically stated in the special conditions above.
 - c. Responsibility of the IDWR for damage to any properties due to work done.
 - d. Compliance with the Federal Flood Insurance Program, FEMA regulations or approval of the local Planning and Zoning authority.
- 2. In accordance with Sections 55-2201 - 55-2210, Idaho Code, the applicant and/or contractors must contact Digline statewide phone number 1-800-342-1585 (Boise area 208-342-1585) not less than three working days prior to the start of any excavation for this project.
- 3. The permit holder or operator must have a copy of this permit at the alteration site, available for inspection at all times.
- 4. The IDWR may cancel this permit at any time that it determines such action is necessary to minimize adverse impact on the stream channel.

Conditions and construction procedures approved under this permit may not coincide with the proposal as submitted. Failure to adhere to conditions as set forth herein can result in legal action as provided for in Section 42-3809, Idaho Code.

If you object to the decision issuing this permit with the above conditions, you have 15 days in which to notify this office in writing that you request a formal hearing on the matter. If an objection has not been received within 15 days, the decision will be final under the provisions of IDAPA 37.03.07 (Rule 70).

Please contact Aaron Golart (208) 287-4941 or aaron.golart@idwr.idaho.gov if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Aaron Golart', with a large, stylized loop at the end.

Aaron Golart
State Coordinator
Stream Protection Program

cc: John Simpson, Bureau of Reclamation, Salmon
Stacie Angelopoulos, Custer County Planning and Zoning, Challis
Mike Edmondson, Governor's Office of Species Conservation, Boise
Troy Saffle, Idaho Department of Environmental Quality, Idaho Falls
Doug Megargle, Idaho Department of Fish and Game, Jerome
Kevin Lewis, Idaho Rivers United, Boise
Jim Gregory, Lost River Fish Ecology, Mackay
James Joyner, US Army Corps of Engineers, Idaho Falls

056. CONSTRUCTION PROCEDURES (Rule 56).

01. Conformance to Procedures. Construction shall be done in accordance with the following procedures unless specific approval of other procedures has been given by the Director. When an applicant desires to proceed in a manner different from the following, such procedures should be described on the application.

02. Operation of Construction Equipment. No construction equipment shall be operated below the existing water surface without specific approval from the Director except as follows: Fording the stream at one location only will be permitted unless otherwise specified; however, vehicles and equipment will not be permitted to push or pull material along the streambed below the existing water level. Work below the water which is essential for preparation of culvert bedding or approved footing installations shall be permitted to the extent that it does not create unnecessary turbidity or stream channel disturbance. Frequent fording will not be permitted in areas where extensive turbidity will be created.

03. Temporary Structures. Any temporary crossings, bridge supports, cofferdams, or other structures that will be needed during the period of construction shall be designed to handle high flows that could be anticipated during the construction period. All structures shall be completely removed from the stream channel at the conclusion of construction and the area shall be restored to a natural appearance.

04. Minimizing Disturbance of Area. Care shall be taken to cause only the minimum necessary disturbance to the natural appearance of the area. Streambank vegetation shall be protected except where its removal is absolutely necessary for completion of the work adjacent to the stream channel.

05. Disposal of Removed Materials. Any vegetation, debris, or other material removed during construction shall be disposed of at some location out of the stream channel where it cannot reenter the channel during high stream flows.

06. New Cut of Fill Slopes. All new cut or fill slopes that will not be protected with some form of riprap shall be seeded with grass and planted with native vegetation to prevent erosion.

07. Fill Material. All fill material shall be placed and compacted in horizontal lifts except as provided for in Rule 55.05.e. for uncompacted dike and levee construction. Areas to be filled shall be cleared of all vegetation, debris and other materials that would be objectionable in the fill.

08. Limitations on Construction Period. The Director may limit the period of construction as needed to minimize conflicts with fish migration and spawning, recreation use, and other uses.

JOINT APPLICATION FOR PERMITS

U.S. ARMY CORPS OF ENGINEERS - IDAHO DEPARTMENT OF WATER RESOURCES - IDAHO DEPARTMENT OF LANDS

Authorities: The Department of Army Corps of Engineers (Corps), Idaho Department of Water Resources (IDWR), and Idaho Department of Lands (IDL) established a joint process for activities impacting jurisdictional waterways that require review and/or approval of both the Corps and State of Idaho. Department of Army permits are required by Section 10 of the Rivers & Harbors Act of 1899 for any structure(s) or work in or affecting navigable waters of the United States and by Section 404 of the Clean Water Act for the discharge of dredged or fill materials into waters of the United States, including adjacent wetlands. State permits are required under the State of Idaho, Stream Protection Act (Title 42, Chapter 38, Idaho Code and Lake Protection Act (Section 58, Chapter 13 et seq., Idaho Code).

Joint Application: Applicant will need to send a completed application, along with one (1) set of legible and reproducible drawings illustrating the location and character of the proposed activities/project to both the Corps and the State of Idaho. Information provided on this application will be used in evaluating the proposed activities. Disclosure of requested information is voluntary, however, if the information is not provided, the application may not be processed and permits may not be issued. Information requested in Block 28 and Block 27 are not required to process the application. DO NOT START WORK UNTIL YOU RECEIVE ALL PERMITS FROM BOTH THE CORPS AND THE STATE OF IDAHO.

Drawings & Supplemental Requirements: See Instruction Guide for required vicinity map, plan-view, and section-view drawings on 8-1/2 x 11 paper size.

INCOMPLETE APPLICATIONS MAY NOT BE PROCESSED

¹ DATE: May 8, 2012

² CONTACT INFORMATION - APPLICANT: Required

Name: Kris Martinson
Company: USDA Forest Service
Mailing Address: HC 63, Box 1669
City: Challis State: ID Zip: 83226
PH #: (208) 879-4100 E-mail: KMartinson@fs.fed.us

³ CONTACT INFORMATION - AGENT: Completion of Block #29 Required

Name: Mike Edmondson
Company: Governor's Office of Species Conservation
Mailing Address: PO Box 83720
City: Boise State: ID Zip: 83720-0195
PH #: (208) 334-2189 E-mail: Mike.Edmondson@OSC.idaho.gov

⁴ PROJECT NAME or TITLE:

Yankee Fork Habitat Improvement Project: PS3 Side Channel

⁵ PROJECT STREET ADDRESS:

Yankee Fork Rd - 6.0 miles from Intersection with Highway 75

⁶ PROJECT CITY:

Stanley, ID (nearest city)

⁷ PROJECT COUNTY:

Custer

⁸ PROJECT ZIP CODE:

83278

⁹ NEAREST WATERWAY/WATERBODY:

Yankee Fork of the Salmon River

¹⁰ TAX PARCEL ID#:

¹¹ LATITUDE/LONGITUDE (Required with vicinity Map):

44° 20.529 N 114° 43.369 W

^{12a}

1/4

NE

^{12b}

1/4

SW

^{12c}

SECTION

29

^{12d}

TOWNSHIP

12N

^{12e}

RANGE

15E

^{13a} ESTIMATED START DATE: August 1, 2012

^{13b} ESTIMATED END DATE: October 31, 2012

¹⁴ DESCRIBE INTENDED USE (Commercial, Industrial, Public, Private, Other): Other - Habitat Restoration

¹⁵ HAVE ALL ADJACENT PROPERTY OWNERS BEEN NOTIFIED OF PROPOSED ACTIVITY OR PROJECT? ☒ NO ☐ YES
Complete the attached sheet by providing list of contact information (including names, address, phone number) of all adjacent property owners.

¹⁶ ☐ CHECK BOX IF ALTERATION(S) ARE LOCATED ON PUBLIC TRUST LANDS ADMINISTERED BY STATE OF IDAHO DEPARTMENT OF LANDS.

¹⁷ DIRECTIONS TO PROJECT SITE Include vicinity map with legible crossroads, street numbers/names, landmarks, attach additional sheet(s), if needed:
From Stanley, ID (Intersection of Highway 21 and Highway 75) travel east on Highway 75 for approximately 13.0 miles. Turn left (north) onto Yankee Fork Rd and travel approximately 6.0 miles. The project site is east of Yankee Fork Rd between the Cabin Bridge and Cearley Creek Bridge. (See Exhibit 1.)

¹⁸ HAS WORK BEGAN ON THIS PROJECT/ACTIVITY? ☒ NO ☐ YES If yes, describe ALL work that has occurred, including dates; attach additional sheet(s), if needed.

¹⁹ PREVIOUSLY ISSUED PERMIT AUTHORIZATIONS:

None

²⁰ TYPE, MATERIAL AND AMOUNT BEING DISCHARGED BELOW THE ORDINARY HIGH WATER MARK, IN CUBIC YARDS:

(1) TYPE Gravel/Tellings Cubic Yards 15,795 (2) TYPE Rock / Riprap Cubic Yards 745 (3) TYPE Wood Cubic Yards 125

²¹ SURFACE AREA IN ACRES OF WETLAND OR OTHER WATERS FILLED See Instructions Guide:

3.36 (0.02 PEM, 0.08 PSS, 3.26 WUS)

Acres OR

Square Feet

²² SIZE AND FLOW CAPACITY OF BRIDGE OR CULVERT & DRAINAGE AREA SERVED: see attached sheet Square Miles

²³ IS PROJECT LOCATED IN A MAPPED FLOODWAY? ☒ NO ☐ YES If yes, contact the floodplain administrator in the local government jurisdiction in which the project is located. A Floodplain Development permit and a No-Rise Certification may be required.

FOR AGENCY USE ONLY

Corps of Engineers #:

Date Received:

☐ Incomplete App. - Return Date:

MMW FORM 1145-1 (IDWR 3204-2)
Jan 2010 (REV)

ID Water Resources # 572-20037

Date Received: May 18, 2012

Fee Received: \$20 Receipt #: C095343

SR7

ID Dept of Lands #:

Date Received:

Fee Received:

Receipt #:

24^a OVERALL DESCRIPTION & PURPOSE OF PROJECT TO WATERS OF U.S., INCLUDING WETLANDS. Attach additional sheet(s), if needed:
see attached sheet

24^b DETAILED DESCRIPTION OF EACH INDIVIDUAL ACTIVITY, WITHIN OVERALL PROJECT (Include dimensions, equipment, construction methods, etc.):
see attached sheet

25^a DESCRIBE MEASURES TAKEN TO AVOID, MINIMIZE, COMPENSATE FOR IMPACTS TO WATERS OF THE UNITED STATES, INCLUDING WETLANDS:
See Instruction Guide for specific details.

Historic mining activities have removed and limited the establishment of wetland habitat in the project area. The proposed project design has identified and avoided impacts to the largest and highest quality wetlands in the project area (see Exhibit 2). Wetland creation as part of the the habitat improvement project on mine tailings and adjacent to excavated ponds is intended to create and establish higher quality wetlands within the Yankee Fork drainage.

25^b PROPOSED MITIGATION PLAN: Attach copy of proposed mitigation plan or statement/reasoning why no mitigation plan is required. Attach additional sheet(s), if needed.

Additional compensatory mitigation for the Yankee Fork habitat improvement project is not anticipated as 4.70 acres of wetland (4.80 acres net gain) will be created as part of the proposed project. A monitoring plan for the created wetland and upland riparian communities will be provided as an Appendix to this application. Wetland monitoring will meet requirements provided in the USACE and USEPA Compensatory Mitigation Rule (2008).

26 LIST EACH IMPACT TO STREAM, RIVER, LAKE, RESERVOIR, INCLUDING SHORELINE. Attach site map with location of EACH impact listed; attach additional sheet(s).

Activity Number	Name of Waterbody	Seasonal or Perennial	Avg. Stream Width (Linear Feet)	Description of Impact (road crossing, impound, culvert, etc.)	Impact Length (Linear Feet)
1	Yankee Fork Mainstem and Pond Series 3	Perennial	100	Alcove and Nose	150
2	Yankee Fork Pond Series 3	Perennial	80	Inlet Channel	200
3	Yankee Fork Pond Series 3	Perennial	35	Roughened Channel and Culvert Removal	230
4	Yankee Fork Pond Series 3	Perennial	80	Bank Reinforcement	25

TOTAL STREAM IMPACTS (Linear Feet): 2,490 Linear Feet

27 LIST EACH WETLAND IMPACT, INCLUDING MECHANIZED CLEARING, FILL, EXCAVATION, FLOOD, DRAINAGE, ETC.

Attach site map with location of EACH impact listed; attach additional sheet(s).

Activity Number	Wetland Type (Emergent, Forested, Scrub/Shrub)	Distance to Waterbody (Linear Feet)	Description of Impact (purpose of road crossing, impoundment, culvert, etc.)	Impact Size (Acres or Square Feet)
1	Scrub/Shrub (PSS)	0	Alcove and Nose	0.02
2	Emergent (PEM)	0	Inlet Channel	<0.01
3	Emergent (PEM)	0	Inlet Channel	<0.01
4	Emergent (PEM)	0	Inlet Channel	0.01

TOTAL WETLAND IMPACTS (Linear Feet): 3.35 Acres

28 AUTHORIZATION OF AGENT/ACCESS: I hereby authorize the Agent (listed in Block 3 of this application) to act in my behalf in the processing of this application and to furnish all information, drawings, maps, and supplemental information in support of this application. I hereby grant to the agencies to which this application is made, the right to access/come upon the above-described location(s) to inspect the proposed and completed work/activities.

Kris Martenson
Signature of Applicant

5/9/12
Date

29 CERTIFICATION: Application is hereby made for permit, or permits, to authorize the work and uses of the work as described in this application and all supporting documentation. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein, or I am acting as the duly authorized agent for the applicant.*

Kris Martenson
Signature of Applicant

5/9/12
Date

[Signature]
Signature of Agent

10/18/12
Date

* The application must be signed by the person who desires to undertake the proposed activity AND signed by a duly authorized agent, if the authorization statement in both Blocks 3 & 28 have been completed and signed. 18 USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

JOINT APPLICATION FOR PERMITS

RECEIVED

MAY 16 2012

U.S. ARMY CORPS OF ENGINEERS - IDAHO DEPARTMENT OF WATER RESOURCES - IDAHO DEPARTMENT OF LANDS

Authorities: The Department of Army Corps of Engineers (Corps), Idaho Department of Water Resources (IDWR), and Idaho Department of Lands (IDL) established a joint process for activities impacting jurisdictional waterways that require review and/or approval of both the Corps and State of Idaho. Department of Army permits are required by Section 10 of the Rivers & Harbors Act of 1899 for any structure(s) or work in or affecting navigable waters of the United States and by Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States, including adjacent wetlands. State permits are required under the State of Idaho, Stream Protection Act (Title 42, Chapter 38, Idaho Code and Lake Protection Act (Section 58, Chapter 13 et seq., Idaho Code).

Joint Application: Applicant will need to send a completed application, along with one (1) set of legible and reproducible drawings illustrating the location and character of the proposed activities/project to both the Corps and the State of Idaho. Information provided on this application will be used in evaluating the proposed activities. Disclosure of requested information is voluntary, however, if the information is not provided, the application may not be processed and permits may not be issued. Information requested in Block 26 and Block 27 are not required to process the application. DO NOT START WORK UNTIL YOU RECEIVE ALL PERMITS FROM BOTH THE CORPS AND THE STATE OF IDAHO.

Drawings & Supplemental Requirements: See Instruction Guide for required vicinity map, plan-view, and section-view drawings on 8-1/2 x 11 paper size.

INCOMPLETE APPLICATIONS MAY NOT BE PROCESSED

¹ DATE: May 8, 2012

² CONTACT INFORMATION - APPLICANT: Required

Name: Vic Conrad
Company: J.R. Simplot Company
Mailing Address: P.O. Box 27
City: Boise State: ID Zip: 83707
PH #: (208) 336-2110 E-mail: vic.conrad@simplot.com

³ CONTACT INFORMATION - AGENT: Completion of Block #29 Required

Name: N/A
Company:
Mailing Address:
City: State: Zip:
PH #: () E-mail:

⁴ PROJECT NAME or TITLE:

Yankee Fork Habitat Improvement Project: PS3 Side Channel

⁵ PROJECT STREET ADDRESS:

Yankee Fork Rd - 6.0 miles from intersection with Highway 75

⁶ PROJECT CITY:

Stanley, ID (nearest city)

⁷ PROJECT COUNTY:

Custer

⁸ PROJECT ZIP CODE:

83278

⁹ NEAREST WATERWAY/WATERBODY:

Yankee Fork of the Salmon River

¹⁰ TAX PARCEL ID#:

¹¹ LATITUDE/LONGITUDE (Required with vicinity Map):
44° 20.529 N 114° 43.369 W

^{12a}

1/4
NE

^{12b}

1/4
SW

^{12c}

SECTION
29

^{12d}

TOWNSHIP
12N

^{12e}

RANGE
15E

^{13a} ESTIMATED START DATE: August 1, 2012

^{13b} ESTIMATED END DATE: October 31, 2012

¹⁴ DESCRIBE INTENDED USE (Commercial, Industrial, Public, Private, Other): Other - Habitat Restoration

¹⁵ HAVE ALL ADJACENT PROPERTY OWNERS BEEN NOTIFIED OF PROPOSED ACTIVITY OR PROJECT? ☒ NO ☐ YES
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¹⁹ PREVIOUSLY ISSUED PERMIT AUTHORIZATIONS:
None

²⁰ TYPE, MATERIAL AND AMOUNT BEING DISCHARGED BELOW THE ORDINARY HIGH WATER MARK, IN CUBIC YARDS:

(1) TYPE Gravel/Tailings Cubic Yards 15,795 (2) TYPE Rock / Riprap Cubic Yards 745 (3) TYPE Wood Cubic Yards 125

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3.36 (0.02 PEM, 0.08 PSS, 3.26 WUS) Acres OR Square Feet

²² SIZE AND FLOW CAPACITY OF BRIDGE OR CULVERT & DRAINAGE AREA SERVED: see attached sheet Square Miles

²³ IS PROJECT LOCATED IN A MAPPED FLOODWAY? ☒ NO ☐ YES If yes, contact the floodplain administrator in the local government jurisdiction in which the project is located. A Floodplain Development permit and a No-Rise Certification may be required.

FOR AGENCY USE ONLY

Corps of Engineers #:

Date Received:

☐ Incomplete App. - Return Date:

ID Water Resources #: 572-10037

Date Received: 5/16/2012

Fee Received: Receipt #:

620-0095343
SRX

ID Dept of Lands #:

Date Received:

Fee Received:

Receipt #:

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24b DETAILED DESCRIPTION OF EACH INDIVIDUAL ACTIVITY, WITHIN OVERALL PROJECT (Include dimensions, equipment, construction, methods, etc.):
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TOTAL STREAM IMPACTS (Linear Feet): 2,490 Linear Feet

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3	Emergent (PEM)	0	Inlet Channel	<0.01
4	Emergent (PEM)	0	Inlet Channel	0.01

TOTAL WETLAND IMPACTS (Linear Feet): 3.35 Acres

28 AUTHORIZATION OF AGENT/ACCESS: I hereby authorize the Agent (listed in Block 3 of this application) to act in my behalf in the processing of this application and to furnish all information, drawings, maps, and supplemental information in support of this application. I hereby grant to the agencies to which this application is made, the right to access/come upon the above-described location(s) to inspect the proposed and completed work/activities.

Terry T. Uhling, Senior V.P., Secretary

Applicant: J. R. Simplot Company

Signature of Applicant

Date May 15, 2012

29 CERTIFICATION: Application is hereby made for permit, or permits, to authorize the work and uses of the work as described in this application and all supporting documentation. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein, or I am acting as the duly authorized agent for the applicant." J. R. Simplot Company by Terry T. Uhling, Senior Vice President, Secretary and

General Counsel

Signature of Applicant

Date May 15, 2012

Signature of Agent

Date

* The application must be signed by the person who desires to undertake the proposed activity AND signed by a duly authorized agent, if the authorization statement in both Blocks 3 & 28 have been completed and signed. 18 USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Block 20

(4) TYPE: Metal/Sheet Pile CUBIC YARDS: 0

Existing gravel/tailings would be re-graded and discharged below the OHWM to construct a variety of project elements such as the Alcove, Berm Reinforcement, Inlet Channel, Roughened Channel, Side Channel, Floodplain, and the Point Bar near Outlet Channel Mouth. Gravels would be instrumental to the stability and function (physical as well as biological) of many of these elements.

Large rock/riprap would be discharged below the OHWM to construct a variety of project elements such as the Nose, Inlet Structure, Berm Reinforcement, Roughened Channel, and the Point Bar near Outlet Channel Mouth. Large rock/riprap would provide structural reinforcement for many of these elements and improve overall stability and function of the improvements.

Wood would be discharged below the OHWM to construct 10 Wood Habitat Structures in the Side Channel. Douglas fir and ponderosa pine would be the recommended species for all wood material. Cottonwood would be used if it is the only species available as a wood source.

Metal sheetpile would be used to construct the Inlet Structure but would not be discharged below the OHWM. The Inlet Structure would also control the volume of flow entering the pond series, helping to increase and maintain the quantity and quality of year-round habitat for juvenile salmonids in Pond Series 3. The Inlet Structure would also prevent the capture of the mainstem Yankee Fork.

Block 21

Habitat improvement projects would fill 0.1 acres of wetlands and 3.2 acres of other waters of the U.S. Impacts to wetlands and open waters would largely result from work in the PS3 Side Channel area and to a lesser degree from the mainstem of the Yankee Fork (Exhibit 3). Filled wetlands total approximately 4,500 square feet, including 900 square feet of PEM and 3,600 square feet of PSS. However, created wetlands (PEM, PSS) as a result of the work activities total approximately 204,900 square feet. Approximately 141,800 square feet of open water would be filled, and approximately 45,100 square feet of open water would be created. The shift from entrenched open water environments in the PS3 Side Channel area to a side channel with active floodplains would provide habitat preferred by juvenile Chinook salmon in the Yankee Fork (Gregory and Wood, 2012).

Earthwork and re-grading activities would be conducted with multiple excavators (tracked), bulldozers, pile drivers, loaders, and haul trucks. The extensive earthwork and re-grading activities would require erosion control measures to reduce runoff from newly placed material back into the waterbody. Successful revegetation and planting would be envisioned as the long-term solution to excessive erosion. Short-term erosion control measures and best management practices are discussed below.

Erosion Control Measures

Appropriate stormwater prevention techniques would be implemented according to the SWPPP, which may include, but are not limited to, the following measures: site preparation impacts minimization and earthmoving-related erosion minimization. These measures, described below, would be implemented in association with all activities within the action area, including all waste and source material sites.

Site Preparation Impacts Minimization

Methods to minimize site preparation impacts include the following:

- Identify site clearing, staging areas, access routes, stockpile areas, and material handling areas to minimize overall disturbance, minimize disturbance to riparian vegetation, and preclude sediment delivery to stream channels.
- Place silt fences, straw bales, straw wattles, or other sediment barriers around disturbed sites to reduce the potential for sediment to enter a stream directly or indirectly, including from roads and ditches.
- Keep on hand a supply of erosion control materials (e.g., silt fence and wattles) to respond to sediment emergencies.
- Ensure that all erosion control materials are certified weed free, including straw bales, wattles, straw, and seed mixes.

Earthmoving-Related Erosion Minimization

Methods to minimize earthmoving-related erosion include the following:

- Confine ground-disturbing activities to the minimum area necessary to complete the project.
- Use an onsite supply of erosion control materials (e.g., silt fence and straw bales) to respond to sediment emergencies.
- Ensure that all erosion control materials are certified weed free, including straw bales, wattles, straw, and seed mixes.
- Use methods of dewatering, excavation, and stockpiling earth and rock materials which include prevention measures to control erosion and intercept and settle runoff of sediment laden waters.
- Perform construction activities by methods that will prevent or control the discharge of sediments.
- Cease all project operations, except efforts to minimize storm or high-flow erosion, during precipitation and high-flow conditions that result in uncontrollable erosion in the construction area.
- Install sediment control measures prior to construction activities and have them remain in place until erosion control is assured. Once assured, remove all sediment control measures within 30 days and dispose of captured sediment and other materials of in accordance with all federal, state, and local laws and regulations.
- Monitor and inspect erosion controls and repair, replace, or install new erosion control measures as necessary to control erosion.
- Remove sediment from erosion controls once it has reached one-third of the exposed height of the control.

Sedimentation Minimization through Dewatering

Following are the proposed sedimentation minimization and dewatering measures:

- Place cofferdams to isolate the in-stream work areas prior to any in-stream construction activity taking place, with the exception of excavating materials to construct the Point Bar.
- Construct cofferdams of nonerodible material, such as bladder bags or other materials that divert water. If appropriate material is available onsite (from existing tailings piles), this may be used for constructing cofferdams (if necessary).

- Use temporary sumps (if required to keep the dewatered area dry during construction) to accommodate the predicted flow rate, relative to infiltration through the substrate during construction.
- Place outflows in areas where damage to riparian vegetation is reduced.
- When necessary, pump water from the dewatered work area to a temporary settling pond prior to water reentering the stream channel.
- Background measurements upstream of the project area will be taken prior to beginning construction in the mainstem (September 7). If noticeable sediment plumes occur in the mainstem as a result of construction, turbidity measurements would be obtained on a regular basis (e.g., every 15 minutes) to monitor turbidity increases over background levels. Should turbidity levels increase greater than 50 NTUs over background levels approximately 600 feet downstream, construction would be adjusted and/or halted, until levels drop close to the background levels. If persistent turbidity issues arise, the USFS, USFWS, and NMFS would be notified.

Flow Reintroduction

Potential effects to water quality as a result of construction would be minimized by using cofferdams and low water work windows to reduce the amount of sediment released into live water. Once construction is completed, and prior to removing cofferdams, the exposed substrate would be wetted and allowed to saturate while still isolated by downstream cofferdams. The construction site would be rewatered gradually to manage turbidity in the new side channel and downstream in the mainstem. Once substrate is fully saturated and waters have settled within the isolated coffered area, coffering (with the exception of the farthest downstream Check Dam) would be removed to reinitiate unrestricted flow in the channel.

As described in Block 24b.4 Habitat Creation, during the first several years following construction, the farthest downstream Check Dam would be left intact to help manage water levels to increase riparian vegetation recruitment and manage water quality. Although the mainstem within the action area downstream of the side channel mouth has not historically been used by Chinook salmon for spawning (Shoshone-Bannock Tribes, unpublished data), removal of the farthest downstream Check Dam would be timed to occur on the declining limb of a spring hydrograph, when turbidity in the Side Channel would be minimal relative to background levels in the mainstem.

Background measurements in the mainstem upstream of the project area would be obtained prior to removal of the farthest downstream Check Dam in the spring runoff. Should a noticeable sediment plume occur upon removal, turbidity measurements would then be obtained on a regular basis (e.g., every 15 minutes) to monitor turbidity increases over background levels. Should turbidity levels increase greater than 50 NTUs over background levels approximately 100 ft downstream, flow outputs would be adjusted until levels drop close to background levels.

Block 22

No bridge or culvert will be constructed/installed as part of the project. A 36-inch corrugated metal pipe (CMP) culvert and associated fill will be removed as part of the work activities.

Drainage Area: 190 square miles

Block 24a

The proposed action at the PS3 Side Channel includes multiple activities to construct the design elements. Each work activity is generally listed here in upstream to downstream order, and, in Block

24b, each design element is organized into five broad “action types” and described in detail (including purpose and quantities) to facilitate the effects determination.

- Excavating an alcove and reinforcing two existing berms along the left (facing downstream) bank of the mainstem
- Constructing an inlet channel and off-channel inlet control structure (sheet pile)
- Removing a 36-inch corrugated metal pipe (CMP) culvert and associated fill and constructing a roughened channel (rock) upstream of, through, and downstream of the existing culvert embankment
- Removing four beaver dams (two upstream of the existing culvert and two downstream of it)
- Removing an old road embankment across a floodplain
- Removing two check dams and temporarily protecting and operating one existing check dam (then removing it after several years)
- Regrading tailings piles adjacent to and through the pond series
- Placing wood habitat structures
- Revegetating with aquatic, wetland, riparian, and upland species
- Regrading the right bank of the mainstem using material excavated from the mainstem

The proposed design elements are shown in Exhibit 4, and the purpose of each is described in the following subsections. The proposed action area is located between river mile (RM) 6.6 and RM 5.9 on the mainstem Yankee Fork, but all of the design elements, except three, are located away from the mainstem and contained within the existing pond series.

Block 24b

Within each action type description, the overall purpose and existing conditions are summarized along with specifics describing the design elements and their locations and interactions.

1. Connecting Channels

The Connecting Channels would provide access for juvenile salmonids from the mainstem to both the upstream and downstream ends of the PS3 Side Channel. For purposes of the action types, the Connecting Channels include the Alcove and Nose upstream of the Inlet Structure, Inlet Channel downstream of the Inlet Structure, and Outlet Channel downstream of the Check Dam Protection (Exhibit 4); design elements between these points are parts of other action types as described in the following sections.

Currently, access into the pond series from the upstream end exists only at the highest flows and, consequently, for just a few weeks to months during runoff each spring. Inlet access into the pond series at the upstream end is currently blocked by a series of beaver dams, and access out of the pond series at the upstream end is currently blocked by a perched culvert. Outlet access (upstream and downstream passage) currently exists during most of the year, and outlet access would be maintained following completion of the project.

Following construction, the Alcove and Nose and Inlet Channel would provide a year-round surface flow connection between the mainstem and side channel. Access upstream out of the side channel would be improved on the existing condition, and downstream access at the outlet would be provided year round.

At a mainstem low flow (approximately 100 cubic feet per second [cfs]), approximately 5 cfs would be routed from the mainstem through the side channel and back to the mainstem. (The 5 cfs represents an existing water right held by Simplot for beneficial use.) At a mainstem 2-year flow (approximately 1,270 cfs; Reclamation, 2012), approximately 110 cfs (9 percent of the mainstem flow) would be routed into the side channel. At higher flows, approximately 5 to 10 percent of the mainstem flow would be routed through the side channel. For example, at a mainstem 50-year flow (approximately 3,300 cfs; Reclamation, 2012), approximately 300 cfs (9 percent of the mainstem flow) would be routed through the side channel.

Construction of the Connecting Channels would be expected to require multiple excavators (tracked), loaders, and haul trucks. The work activities would occur in areas separated by cofferdams along the bank of the mainstem. Some of the work activities would occur below the OHWM.

a. Work Activity 1: Alcove and Nose

The Alcove and Nose would provide low-velocity refuge for juvenile salmonids in the mainstem and a perennial surface water connection to the side channel via the Inlet Channel (Exhibit 4). The Alcove and Nose would be constructed of gravel and large rock/riprap as a single design element along the left bank of the mainstem. The Alcove would be sloped at approximately 0.4 percent (adverse grade) from the toe of the mainstem bank at an elevation of 6,246.0 ft and constructed of gravel. The Nose would be a small wedge, impacting approximately 20 ft of the left bank of the mainstem; it would be completely submerged (Nose top elevation = 6248.0 ft) at the 2-year flow (adjacent water surface elevation = 6249.2 ft). The Alcove and Nose would function together to convey flow and juvenile salmonids into the Inlet Channel and decrease the potential for sediment deposition in the Alcove. Approximately 120 cy of material would be excavated and 45 cy of gravel placed below the OHWM to construct the Alcove; 60 cy of large rock material, covering an area of 300 square feet (ft²), would be placed below the OHWM in the mainstem to construct the Nose.

b. Work Activity 2: Inlet Channel

The Inlet Channel would connect the Alcove to the Roughened Channel (Exhibit 4), extending from the Inlet Structure invert (elevation 6246.3) to the beginning of the Roughened Channel, a distance of approximately 240 ft at a 1.0 percent grade. The Inlet Channel would have a low flow notch to convey the 5 cfs low flow, and an 8-ft wide bench to convey higher discharges and provide habitat for emergent vegetation. Fill sections would be tied to the existing grade with 10 horizontal (H): 1 vertical (V) side slopes from the channel, and cut slopes would be constructed with 2H: 1V side slopes.

Construction of the Inlet Channel would impact existing wetland areas, and the Contracting Officer would identify existing vegetation to salvage prior to construction. (The Revegetation design element discusses the relocation of the existing vegetation.) Approximately 20 ft of Cearley Creek would be realigned to improve hydraulic conditions at the mouth of Cearley Creek and reduce potential erosion of the Inlet Channel. Construction of the Inlet Channel would also require removing one Beaver Dam upstream of the existing culvert and embankment; in total, approximately 440 cy of material would be removed and 890 cy of gravel placed below the OHWM.

Quantities Summary

To construct all the elements in the Connecting Channels action type, material would need to be excavated and placed below the OHWM along the existing pond series channel. A total of approximately 560 cy of material would be excavated, corresponding to an area of approximately 5,000 ft². Approximately 1,000 cy of material would be placed, corresponding to an area of approximately 16,000 ft²; materials placed below the OHWM would include gravel (tailings), and large rock/riprap.

2. Hard Structures

The Hard Structures would help to protect the investment in the habitat improvement project and reduce the potential for unintended consequences. Specifically, the Hard Structures would be limited to the size and shape necessary to provide grade control over the steep drop through the existing culvert, thereby reducing the potential for a head cut. The Hard Structures would also control the volume of flow entering the side channel, helping to increase and maintain the quantity and quality of year-round habitat for juvenile salmonids in the side channel and reducing the potential for capture of the mainstem channel through the side channel. Additionally, the Hard Structures would provide some high flow protection along the Yankee Fork Road and restrict vehicle access to the newly created habitat. Some of the Hard Structures define the transitions between the Connecting Channels design elements (Exhibit 4).

The Inlet Structure would be located approximately 70 ft (as the crow flies) from the mainstem and define the downstream end of the Alcove and the upstream end of the Inlet Channel (Exhibit 4). Currently, juvenile salmonids are unable to access the pond series from the upstream end year round, and the existing culvert is perched. The culvert is buried approximately 12 ft below the existing ground surface. Following construction, the culvert would be replaced with a Roughened Channel to route flow from the Inlet Channel into the side channel.

Several existing Hard Structures would be removed as part of the proposed project, thereby creating more access to habitat for juvenile salmonids and allowing geomorphic evolution of the side channel.

Construction of the Hard Structures and removal of existing Hard Structures would be expected to require multiple excavators (tracked), loaders, haul trucks, and a pile driver. The work activities would occur in areas isolated from the mainstem, and some of the work activities would occur below the OHWM.

a. Work Activity 3: Inlet Structure

The Inlet Structure would passively control flow into the side channel and define the transition from the Alcove and Nose to the Inlet Channel (Exhibit 4). The Inlet Structure would be constructed of sheet pile with a "notch" approximately 5.0 ft wide and 7.0 ft deep with side slopes of 1H:2V. The Inlet Structure would be embanked approximately 16 ft into the Reinforcement Berms and, in its entirety, span a distance of 44 ft, perpendicular to the flow in the PS3 Side Channel.

To help maintain the integrity of the structure and convey water and sediment more efficiently, smooth transitions would be provided from the Alcove into the Inlet Channel. Approximately 120 ft of excavated streambank would be covered by Fabric-Encapsulated Soil Lifts (FESL) and 40 ft of the excavated channel and banks would be covered with ecology block and large rock/riprap upstream and downstream of the Inlet Structure to maintain the necessary side slopes. The FESLs would also provide habitat complexity near the Inlet Structure. Downstream of the Inlet Structure, a 4-foot deep and 30-ft long pool would be constructed to dissipate energy at high flows.

The entirety of the Inlet Structure (beginning of the transition through the end of the pool) would be excavated and constructed entirely outside of the OHWM. Large rock/riprap, FESL, and ecology block would cover approximately 500 ft² of the excavated stream bed and 1,000 ft² of the excavated streambank. Large rocks and boulders would be placed on the channel bed and banks upstream and downstream of the structure to reduce erosion, provide grade control, and dissipate excess energy.

b. Work Activity 4: Roughened Channel and Culvert Removal

The Roughened Channel and Culvert Removal design elements would include removal of the 36-inch CMP culvert currently inhibiting fish passage and construction of the Roughened Channel through the

area currently occupied by the culvert. An existing power utility cable extending through the culvert embankment fill would be relocated (either overhead or buried below the Roughened Channel) by the Salmon River Electric Cooperative (SREC).

The Roughened Channel would help control the vertical drop, previously provided by the culvert, at an average gradient of 2.1 percent. The Roughened Channel would begin at the end of the Inlet Channel and extend approximately 280 ft downstream where it would transition into existing ground approximately 230 ft upstream of the Floodplain Embankment Removal (Exhibit 4). The Roughened Channel would be constructed of large angular rocks, intended to withstand velocities at the 50-year flow (300 cfs); additional boulder-sized rocks would also be included in the Roughened Channel to increase channel complexity and roughness and provide grade control. A low-flow notch would be provided in the Roughened Channel to convey the 5 cfs. The Roughened Channel would be approximately 12 ft wide above the low-flow notch and would be graded similarly to the Inlet Channel with 2H:1V side slopes in cut situations and 10H:1V side slopes in fill situations. The side slopes (totaling approximately 9,500 ft²) would be reinforced with rock and revegetated with native upland plants, with the expectation they would be inundated only at flows greater than the 2-year event. The Roughened Channel would discharge into a large existing pool which would be excavated to place riprap to dissipate excess energy.

c. Work Activity 5: Berm Reinforcement

The Berm Reinforcement design element would involve placing additional fill (excavated during construction of the Alcove and Nose and Inlet Structure) and riprap on through the existing PS3 inlet and on top of and slightly upstream of the existing berm and riprap along the left bank of the mainstem channel upstream of Cearley Creek Bridge (Exhibit 4). The Berm Reinforcement (top elevation = 6253.0 ft) would help protect the Inlet Structure and Inlet Channel up to approximately the 50-year flow (approximately 3,300 and 300 cfs for the mainstem and side channel, respectively; water surface elevation = 6252.0 ft). The total area of riprap placement would include 1,100 ft² below the OHWM and over the existing berm along the mainstem left bank downstream of the Alcove and Nose (of which approximately 800 ft² would fill across the existing pond series inlet) and another 2,900 ft² of riprap would be placed outside of the OHWM along the Inlet Structure and Inlet Channel. The Berm Reinforcement would require no material be placed below the OHWM along the mainstem left bank and 130 cy below the OHWM in the off-channel area.

Construction of the Berm Reinforcement would require removing one Beaver Dam in the existing inlet. In total, approximately 110 cy of material would be removed and 130 cy of large rock/riprap placed below the OHWM. Existing vegetation would be protected to the extent possible.

d. Work Activity 6: Beaver Dam Removal

Long term, beaver are envisioned as important components to the overall success and sustainability of the PS3 Side Channel; however, to construct the project as designed, four Beaver Dams would need to be removed. Two were previously noted in conjunction with the Inlet Channel and Berm Reinforcement design elements, and one is associated with the Check Dam 2 Removal, discussed in the next subsection. One additional Beaver Dam would also be removed. This Beaver Dam Removal is located approximately 120 ft downstream of the end of the Roughened Channel and would require the removal of 40 cy of material below the OHWM. Any removal of beaver from the project area to allow the vegetation to initially establish would be conducted in coordination with appropriate resource agencies.

e. Work Activity 7: Check Dam Removal

Two existing Check Dams, constructed as part of the original pond series project in the 1980s, would be removed (Exhibit 4). The farthest upstream Check Dam Removal, located near the Floodplain

Embankment Removal, would include the removal of the upstream Beaver Dam and require excavation of approximately 20 cy of rock, concrete, and wood below the OHWM. This upstream Check Dam would be replaced by a constructed riffle to provide grade control and reduce the potential for propagation of headcuts. The constructed riffle would be constructed of boulders and require the placement of 120 cy of rock below the OHWM. The middle Check Dam Removal, located near the center of the Floodplain and Side Channel, would require excavation of approximately 100 cy of rock and concrete below the OHWM.

f. Work Activity 8: Check Dam Protection

A third Check Dam, located at the downstream end of the Floodplain and Side Channel, would not be removed during construction. This existing structure would be protected during construction so that it could be used during the first several years following construction to help manage water levels to increase riparian vegetation recruitment and manage water quality, as described in the Revegetation design element (Block 24b.4.2).

Although the structure itself would be retained temporarily, embankment material on either side of the Check Dam above the 1-year flow elevation (mainstem 650 cfs; Reclamation, 2012) would be removed. Once the vegetation established, this third Check Dam would be removed entirely, as part of a separate work contract.

g. Work Activity 9: Roadside Barrier Berm

The existing dredge tailings bordering the east side of the Yankee Fork Road would be left intact to act as Roadside Barrier Berm (Exhibit 4). The berm would provide a physical barrier between the road and the new habitats and restrict vehicle access to the newly created habitat. The temporary contractor staging area would be converted to a gravel parking area near the Inlet Structure. Construction of the gravel parking area would cover an area of 7,600 ft², all of which is located on tailings piles.

Quantities Summary

To construct all the elements in the Hard Structures action type, material would need to be excavated and placed below the OHWM along the existing pond series channel. A total of approximately 930 cy of material would be placed below the OHWM, corresponding to an area of approximately 9,100 ft²; materials placed below the OHWM would include 520 cy of gravel (tailings) and 410 cy large rock/riprap.

The removal of existing Hard Structure design elements would require the removal of concrete, gravel (tailings and native material), and wood below the OHWM. In total, an area of 2,200 ft² and volume of 470 cy would be removed from below the OHWM.

3. Habitat Conversion

The Habitat Conversion would create high-quality, year-round refuge and rearing habitat for juvenile salmonids by converting tailings and open ponds to a side channel, a habitat preferred by juvenile Chinook salmon in the Yankee Fork (Gregory and Wood, 2012). Habitat Conversion is the largest action type by area and volume, and it is bounded by existing terrain on the upstream end (downstream of the Floodplain Embankment Removal) and Hard Structures (Check Dam Protection) at the downstream end (Exhibit 4). Habitat Conversion encompasses the Habitat Creation action type (described in Block 24b.4). The Habitat Conversion would result in a Side Channel and Floodplain in the area currently occupied by dredge tailings and open ponds.

Currently, the upstream end of the pond series is only connected by surface flow to the mainstem for just a few weeks to months during runoff each spring. The ponds are large and lack shade and cover, except for aquatic macrophytes present during parts of the year. Fine sediment covers the bottom of

the ponds, creating anaerobic conditions that contribute to mercury methylation and subsequent bioaccumulation by aquatic species.

Following construction, the tailings and ponds would be converted to a Side Channel with Wood Habitat Structures and surrounding Floodplain supporting aquatic, wetland, riparian, and upland vegetation ("Riparian Vegetation"). The Side Channel would convey approximately 110 cfs at the 2-year flow event.

If and where possible during construction, existing fine material within the pond series would be excavated in the wet and stockpiled on a portion of the Floodplain or pumped out into "geotubes" on the Floodplain and allowed to drain slowly. While removal of fine sediment from the ponds would create some turbidity, the pond series (and new Floodplain) would be isolated from the mainstem, and removal of the fine material would reduce the long-term (post-construction) potential for the fine sediment to be mobilized. Once dry, the fine material would be spread over the Floodplain to provide a topsoil source to support revegetation. Fine material that could not be removed from the existing ponds would be covered with tailings as part of the regrading; some of this material would be expected to fill the interstitial space of regraded tailings, helping to support vegetation growth on the new Floodplain.

Construction of the Habitat Conversion would be expected to require multiple excavators (tracked), bulldozers, graders, carry-alls, loaders, and haul trucks. The work activities would occur in areas isolated from the mainstem. Some of the work activities would occur below the OHWM.

a. Work Activity 10: Floodplain Embankment Removal

The old road embankment extending across an existing floodplain east of the pond series would be removed to reestablish interaction between the channel and floodplain and existing wetland habitat. All of the excavation associated with the Floodplain Embankment Removal would occur above the OHWM, and approximately 1,200 cy of material would be excavated and used to support other design elements; only 20 cy of the total excavation is below the OHWM.

b. Work Activity 11: Floodplain (Tailings Regrading/Pond Fills)

To create the new Floodplain (and Side Channel), the existing tailings would be regraded to fill in the existing ponds and connecting channels. Prior to the regrading, the surface water connection to the existing large pond would be specifically blocked off from the rest of the pond series via a cofferdam on the upstream end of the pond and the temporary reinforcement of Check Dam 2 on the downstream end of the pond to allow excavation of up to 3,200 cy of existing fine material. The cofferdams would be removed after the fine material excavation. Approximately 16,000 cy of existing tailings would be regraded, and the resulting Floodplain would cover an area of approximately 4.0 acres. The Floodplain would gradually slope up from the Side Channel toward the Yankee Fork Road to the west and toward the hillslope to the east. The highest elevation on the Floodplain would correspond to the current elevation of the existing wetlands between the old road embankment and the large pond.

c. Work Activity 12: Side Channel

The Side Channel would be excavated through the Floodplain. Approximately 740 cy of material would be excavated below the OHWM to create a channel approximately 1,400 ft long with an average top width of 22 ft and varying cross section (pools, riffles, and runs) to provide increased habitat diversity. The thalweg of the Side Channel would be set approximately 0.5 to 4.0 ft below the ground water (pond water surface) elevation surveyed in fall 2011. A majority of the Side Channel would flow at least 2 ft deep at 5 cfs and 4 ft deep at the 2-year flow of 110 cfs. The Side Channel dimensions and profile would be designed to provide target juvenile fish habitat (depth greater than 2 ft, velocity less than 2 feet per second [ft/sec]) for as long as possible each year and maintain the potential to transport sand particles in suspension at the 110 cfs flow. Approximately 10 Habitat Structures (described in Block 24b.4.a) would be incorporated along the length of the Side Channel. A constructed riffle would be built at the

upstream end of the Side Channel using boulders to stabilize the entrance to the Side Channel, provide grade control, and reduce the potential for propagation of a headcut.

d. Work Activity 13: Other Floodplain Areas

Additional grading of the Floodplain would be completed to create upland areas, depression areas, and groundwater channels to provide additional habitat complexity, and select portions of the Floodplain would be regraded to create topographic complexity. This variable surface would create hydraulic roughness, provide high elevation areas to support a diverse mix of riparian and upland vegetation, and help maintain the pool-riffle structure of the Side Channel. Approximately 0.7 acres of the Floodplain would be either left in place or recontoured to create these upland areas.

Several narrow and deep groundwater channels would be excavated back from the Side Channel and would be watered by a combination of groundwater and backwater from the Side Channel. The groundwater channels would provide additional habitat preferred by juvenile salmonids, increase habitat complexity, and provide a high flow refugia for juvenile salmonids. These areas would also be expected to support a diverse mix of vegetation and habitat for amphibians.

In addition to the groundwater channels, several wide and shallow depression areas would be excavated back from the Side Channel and groundwater channels; these areas would be watered primarily by backwater and floodplain flow at high flows, and they would be graded to drain toward the Side Channel to reduce the potential for fish stranding. Like the groundwater channels, these depression areas would provide additional habitat refugia and complexity for juvenile salmonids and amphibians and support a diverse mix of vegetation.

Excavated material from the Side Channel, depression areas, and groundwater channels would be used to construct upland areas that provide additional habitat complexity to recruit more diverse riparian and upland vegetation.

Quantities Summary

To construct all the elements in the Habitat Conversion action type, material would need to be excavated and placed below the OHWM along the existing pond series. A total of approximately 1,400 cy of material would be excavated below the OHWM, corresponding to an area of approximately 25,100 ft². Approximately 14,300 cy of material would be placed below the OHWM, corresponding to an area of approximately 97,300 ft²; materials placed below the OHWM would include 14,200 cy of gravel (tailings) and 50 cy of large rock/riprap.

4. Habitat Creation

The Habitat Creation would complement the Habitat Conversion by jump-starting the physical and biological processes that would create and maintain complex in-channel and riparian habitat in the new Side Channel and Floodplain. The Habitat Creation would increase shade, cover, food, and nutrients by providing a mix of wetland, riparian, and upland vegetation and more complex habitat for both juvenile and adult salmonids in the form of wood structures.

Currently, the pond series lacks woody debris, and wetland and riparian vegetation is limited to a few low elevation zones and narrow strips along the edge of the ponds. Upland vegetation is essentially absent from the uplands around the pond series. Under current conditions, Geomorphic Reach YF-2 (RM 6.9 to 3.0) of the mainstem channel has a LWD density of zero medium to large pieces per mile near Pond Series 2 and Pond Series 3, an absence attributed in part to the confined channel conditions (Reclamation, 2012). This density is less than the target wood density of 20 medium to large pieces per mile based on the Riparian Management Objectives (RMOs) derived from PACFISH and cited in the TA (Reclamation, 2012).

Following construction, Wood Habitat Structures would be present along the Side Channel in densities meeting the RMOs, and the Floodplain would incorporate Woody Debris and support aquatic, wetland, riparian, and upland vegetation ("Revegetation"). Over time, this vegetation would be recruited to the Side Channel and provide a food source for beaver, an integral component to the long-term sustainability and habitat quality of the overall proposed action.

Construction of the Habitat Creation would be expected to require multiple excavators (tracked), loaders, and haul trucks. The work activities would occur in areas isolated from the mainstem. Some of the work activities would occur below the OHWM.

a. Work Activity 14: Wood Habitat Structures and Woody Debris

Wood Habitat Structures would be placed at 10 locations along the Side Channel, and Woody Debris would be placed into the Floodplain and Point Bar near Outlet Channel Mouth. These Wood Habitat Structures would consist of multiple LWD pieces excavated into the Side Channel along the proposed banklines, and Woody Debris would consist of individual and grouped pieces of wood buried into and placed on the Floodplain (Exhibit 4). Wood Habitat Structure placement and final grading would take place in the side channel when it would still be isolated from the mainstem. Douglas fir and ponderosa pine would be the recommended species for all wood material. Cottonwood would be used if it is the only species available as a wood source.

b. Work Activity 15: Revegetation

Native aquatic, wetland, riparian, and upland species (all considered "Revegetation") would be planted as seeds, cuttings, and container plants in and along the Alcove, Inlet Channel, Roughened Channel, Floodplain Embankment Removal, Floodplain, Side Channel, and Point Bar near Outlet Channel Mouth. Topsoil salvaged during the Habitat Conversion would be placed strategically on the recontoured tailings to support vegetation establishment. Other areas disturbed by construction, except for one, would be seeded with native plants. The temporary dumpster, toilet, vehicle parking, and contractor trailer area, located near the Roughened Channel and Culvert Removal and outside of the OHWM, would not be seeded with native plants because this area would remain as an unimproved (unpaved) parking area for public use. As part of the site preparation, the Contracting Officer would identify existing vegetation to preserve, protect, and salvage. Vegetation salvaged during the growing season would be watered and maintained until it could be replanted following construction activities. Salvaged vegetation would be replanted in its final location as directed by the Contracting Officer and the revegetation plan. A plan to use herbicides to control exotic species would be developed in collaboration with the landowners as part of the Wetland Monitoring and Mitigation Plan, an appendix to this 404 permit. Revegetation would result in the creation of approximately 0.63 and 4.07 acres of PEM and PSS, respectively, in the action area.

To increase riparian vegetation recruitment and manage water quality for the first several years following construction, flows would be managed at the Inlet Structure and the farthest downstream Check Dam would be left intact. (The Check Dam embankment tailings would be regraded so the top surface would match the 1-year recurrence interval flow elevation, as described in Block 24b.2.f, Hard Structures, for Check Dam Protection.) Inlet flows would be managed (using temporary materials such as sand bags placed at the Inlet Structure) to allow the riparian vegetation to establish and reduce the potential for bank erosion during high flows immediately following construction. The Check Dam at the downstream end of the new Side Channel would provide the opportunity to manage water levels, thereby increasing establishment of riparian vegetation across a wider range of elevations on the streambank and floodplain.

By placing check boards to still allow flow out of the Side Channel, the water surface elevation in the Side Channel would be managed to promote vegetation establishment without affecting the timing of juvenile use of the Side Channel, based on the Upper Salmon Basin Watershed Project (USBWP) Technical Team recommendations (2005). For example, at high flows, check boards would not be used, but, as flows would begin to decline in early July, boards would be placed to maintain higher water surface elevations through late September. In essence, the Check Dam would be managed to "extend the tail of the hydrograph," so that the groundwater elevation would decline at a slower daily rate than would occur without check boards, thereby increasing the survival and growth of naturally recruited seed as well as planted vegetation.

Once the riparian vegetation established, the Check Dam and remaining portion of the tailings piles would be removed as part of a separate construction contract. In addition to increasing the long-term growth and survival of vegetation, these temporary water management steps would decrease the potential release of fine sediment immediately after construction and during the first few high spring flows. Longer-term benefits would be anticipated as well; a more dense stand of vegetation along the Side Channel and on the Floodplain would increase the potential trapping and deposition of sediment, thereby improving water quality and creating a topsoil source on the recontoured tailings. This cycle would be self-sustaining and self-reinforcing: more vegetation would trap more sediment which would contribute to increased growth of wetland and riparian vegetation.

Quantities Summary

To construct all the elements in the Habitat Creation action type, material would need to be excavated and placed below the OHWM along the existing pond series channel. A total of approximately 260 cy of material would be placed below the OHWM, corresponding to an area of approximately 2,700 ft²; materials placed below the OHWM would include 150 cy of large rock/riprap and 110 cy of wood. The Wood Habitat Structures design element would require excavation to place the materials; however, all of this excavation would occur as part of the Floodplain (Tailings Regrading/Pond Fills) work activity; excavation OHWM impacts are recorded as part of that work activity.

5. Mainstem Improvements

The Mainstem Improvements would provide more access for juvenile salmonids from the mainstem to the pond series. For purposes of the action types, the Mainstem Improvements are limited to a Point Bar near the mouth of the Outlet Channel (Exhibit 4).

Currently, the meander bend near the mouth of the Outlet Channel lacks a defined point bar on the inside of the bend (right bank, facing downstream); as a result, a deep pool is not present opposite the point bar, at the mouth of the Outlet Channel. Following construction, the Point Bar would be expected to create more of a helical flow pattern along the left bank, scouring and maintaining a pool. This pool would be expected to provide cover for juvenile salmonids and attract them into the Side Channel from the downstream end.

No work activities would be conducted on the bank with the Outlet Channel (left bank), an area with higher quality existing habitat. All work activities would be completed from and on the bank opposite the Outlet Channel mouth (right bank).

Construction of the Mainstem Improvements would be expected to require multiple excavators (tracked), loaders, and haul trucks. The work activities would occur in areas separated by cofferdams along the bank of the mainstem. Some of the work activities would occur below the OHWM.

a. Work Activity 16: Point Bar near Outlet Channel Mouth (RM 6.0)

On the right bank across from the Outlet Channel mouth, a Point Bar approximately 200 ft long, 30 ft wide, and 3 ft tall would be constructed out into the mainstem. To help stabilize the placed material and promote future bar growth, a grade-control structure of coarser rock (approximately 30 ft along the intermediate axis) would be buried in the Point Bar. The grade-control structure would extend perpendicularly from the bank and be buried entirely within the Point Bar. The Point Bar would occupy approximately 2,700 ft² more of the mainstem surface than the existing point bar; this constriction of the mainstem is the purpose of the design element and necessary to promote the intended hydraulic and geomorphic responses.

The material used to construct the Point Bar would consist of gravels and cobbles, excavated from the bed of the mainstem, near the outlet to PS3 Side Channel and adjacent to the Point Bar. Work would be completed in live water with an excavator during the in-stream work window. Combined with the Point Bar, the excavation would be intended to "jump start" creation and maintenance of a pool at the outlet to PS3 Side Channel. A pool at this location would increase mainstem complexity and help attract fish to the mouth of PS3 Side Channel.

Quantities Summary

To construct all the elements in the Mainstem Improvements action type, material would need to be excavated and placed below the OHWM along the existing pond series channel. Approximately 90 cy of material would be excavated from the channel bed (downstream of the PS3 Side Channel outlet). The area of excavation would be approximately 4000 ft². In addition, approximately 20 cy of material would be excavated in a 200 ft² area on the right bank at the location of the point bar (to create the grade control structure). Approximately 110 cy of total excavated material would be placed, corresponding to an area of approximately 4000 ft²; materials placed below the OHWM would total 150 cy, including 110 cy of gravel (tailings), 25 cy of large rock/riprap, and 15 cy of wood.

Block 26 (continued from application)

Activity Number	Name of Waterbody	Seasonal or Perennial	Avg. Stream Width (Linear Feet)	Description of Impact (road crossing, impound, culvert, etc.)	Impact Length (Linear Feet)
5	Yankee Fork Pond Series 3	Perennial	40	Beaver Dam Removal	35
6	Yankee Fork Pond Series 3	Perennial	32	Check Dam Removal	50
7	Yankee Fork Pond Series 3	Perennial	32	Floodplain Embankment Removal	150
8	Yankee Fork Pond Series 3	Perennial	50	Side Channel and Floodplain	1,450
9	Yankee Fork Mainstem	Perennial	95	Point Bar near Outlet Channel Mouth	200
Total Stream Impacts (Linear Feet)					2,490

Block 27 (continued from application)

Activity Number	Wetland Type (Emergent, Forested, Scrub Shrub)	Distance to Waterbody (Linear Feet)	Description of Impact (road crossing, impound, culvert, etc.)	Impact Length (Acres)
5	Emergent (PEM)	0	Inlet Channel	<0.01
6	Scrub/Shrub (PSS)	10	Berm Reinforcement	0.01
7	Scrub/Shrub (PSS)	0	Berm Reinforcement	0.01
8	Scrub/Shrub (PSS)	0	Created Floodplain	0.01
9	Scrub/Shrub (PSS)	25	Floodplain Embankment Removal	<0.01
10	Scrub/Shrub (PSS)	0	Roughened Channel	0.02
11	Emergent (PEM)	10	Roughened Channel	0.01
12	Open Water	0	Alcove and Nose and Berm Reinforcement	0.02
13	Open Water	0	Inlet Channel	0.27
14	Open Water	0	Roughened Channel	0.16
15	Open Water	0	Floodplain Embankment Removal	<0.01
16	Open Water	0	Floodplain, Side Channel and Other Floodplain	2.69
17	Open Water	0	Point Bar near Outlet Channel Mouth	0.09
Total Wetland Impacts (Acres)				3.35

References

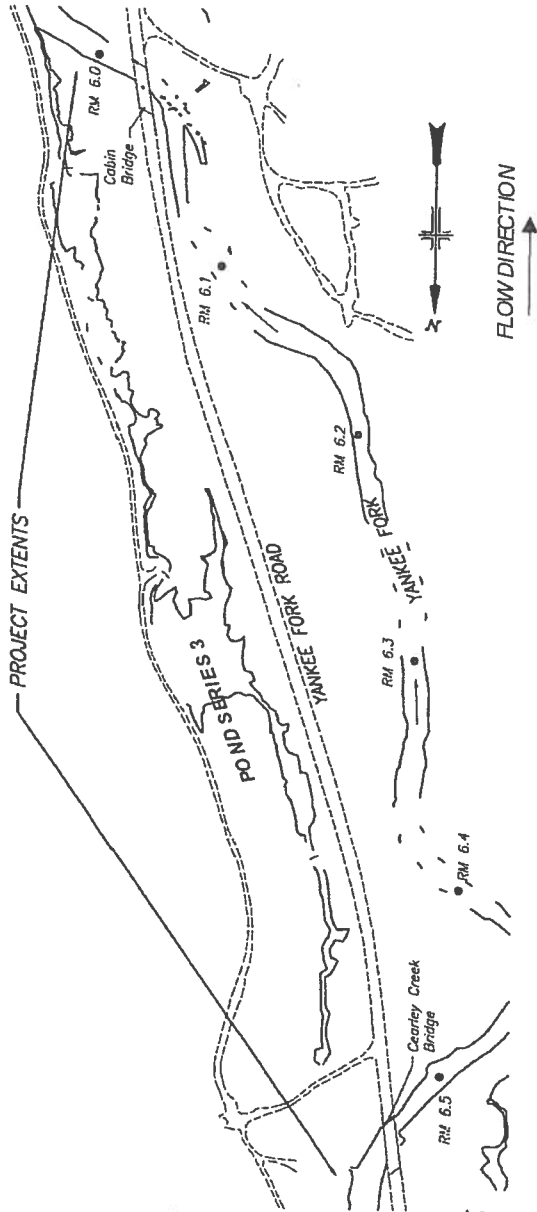
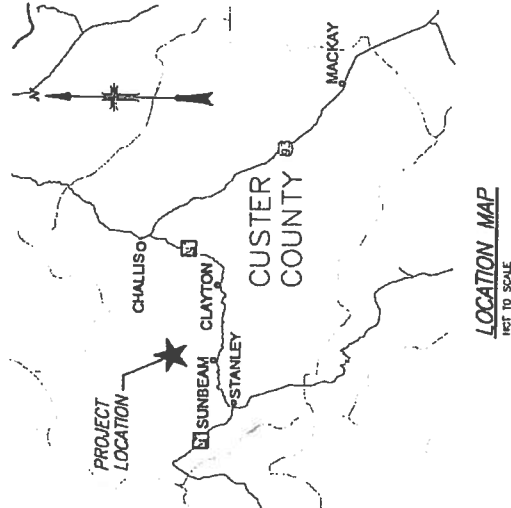
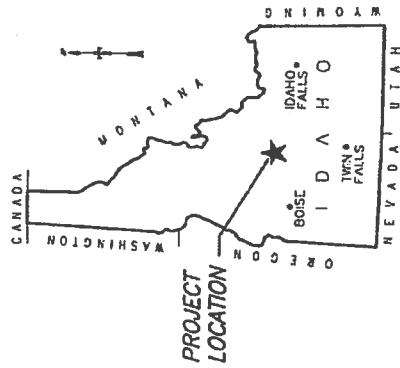
Gregory, J. and C. Wood, 2012. Evaluation of Juvenile Anadromous Fish Populations in Pond Series 2 and Pond Series 3 and Adjacent Areas in the Yankee Fork Drainage. Prepared for Bureau of Reclamation.

U.S. Department of the Interior. Bureau of Reclamation (Reclamation). 2012. *Yankee Fork Tributary Assessment Upper Salmon Subbasin, Custer County, Idaho*. Pacific Northwest Regional Office, Boise, Idaho January. 170 p. plus appendices.

Federal Register. 2008.

<http://www.epa.gov/owow/keep/wetlands/wetlandsmitigation/index.html#regs>. Final Compensatory Mitigation Rule, Federal Register Notice of Final Rule (pdf).

Exhibits



VICINITY MAP

NOT TO SCALE

Property Owners:

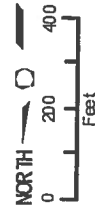
JR Simplot Company
Vic Conrad
929 Main Street, Suite 1000
Boise, ID 83702
P.O. Box 27
Boise, ID 83707
Phone: (208) 389-7359
Email: vic.conrad@simplot.com

United States Department of Agriculture
US Forest Service
Salmon/Challis National Forest
Challis-Yankee Fork Ranger District
HC 63, Box 1669, Hwy 93
Challis, ID 83726
Phone: (208) 879-4100
Stacy Baker, District Contact
Phone: (208) 879-4119
Email: sbaker@fs.fed.us
Barl L. Gannett, Technical Contact
Phone: (208) 588-3420
Email: bgannett@fs.fed.us

Project Sponsor:

Idaho Office of Species Conservation
304 North 8th Street, Room 149
Boise, ID 83702
P.O. Box 83720
Boise, ID 83720-0195
Phone: (208) 334-2189
Email: mike.edmondson@idaho.gov

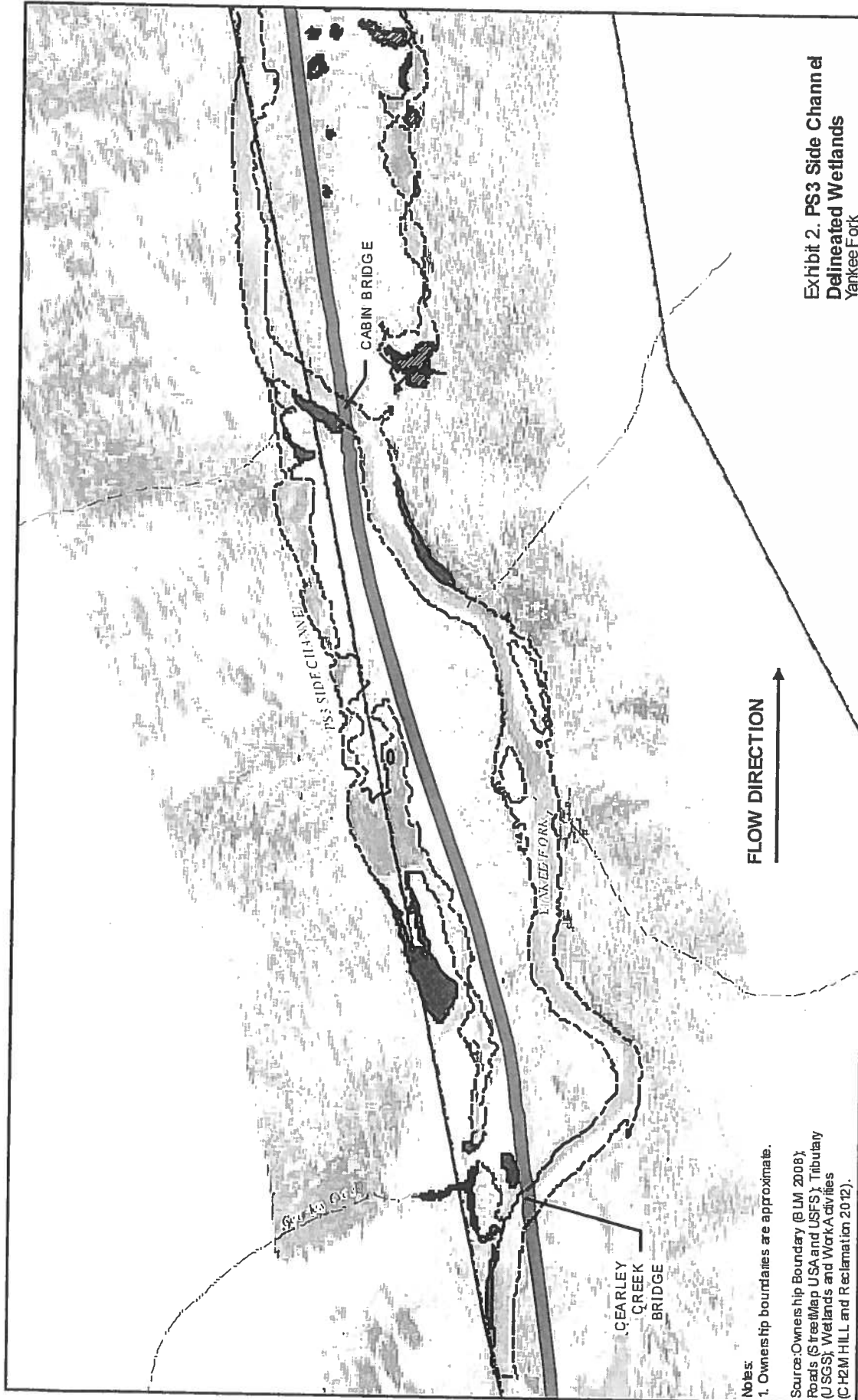
Exhibit 1. PS3 Side Channel Overview Map Yankee Fork



PROJECT TITLE: YANKEE FORK HABITAT
IMPROVEMENT, PS3 SIDE CHANNEL
APPLICANT: SIMPLOT
WATERBODY/RM: YANKEE FORK (RM 5.9 - 6.6)
COUNTY/STATE: CUSTER, ID
DATE PREPARED: MAY 4, 2012
SHEET 1 OF 5

CH2M HILL

SEC 29, T12N, R15E
44° 20' 27" N, 114° 43' 27" W



Notes:
 1. Ownership boundaries are approximate.

Source: Ownership Boundary (BLM 2008), Roads (StreetMap USA and USFS), Tributary (USGS), Wetlands and Work Activities (CH2M HILL and Reclamation 2012).

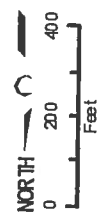
Exhibit 2. PS3 Side Channel Delineated Wetlands Yankee Fork

BASE

- Yankee Fork Road
- Tributary Stream
- Approximate USFS Boundary

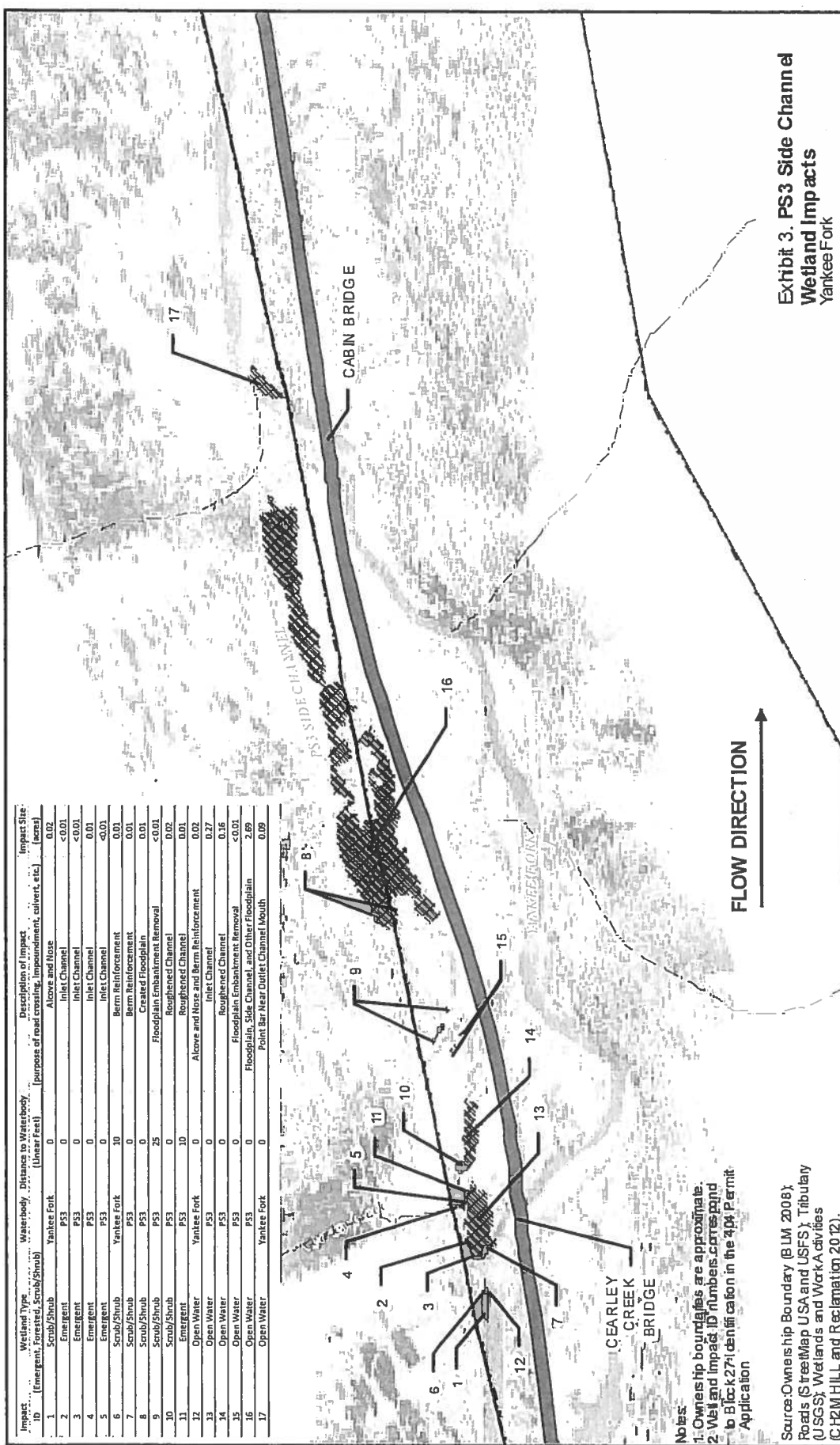
DELINEATED WETLAND TYPE

- Emergent Wetland
- Scrub/Shrub Wetland
- Open Water/OHWM



PROJECT TITLE: YANKEE FORK HABITAT IMPROVEMENT, PS3 SIDE CHANNEL
APPLICANT: SIMPLOT
WATERBODY/RM: YANKEE FORK (RM 5.9 - 6.6)
COUNTY/STATE: CUSTER, ID
DATE PREPARED: MAY 4, 2012
SHEET 2 OF 5

CH2MHILL
 SEC 29, T12N, R15E
 44° 20' 27" N, 114° 43' 27" W



PROJECT TITLE: YANKEE FORK HABITAT IMPROVEMENT, PS3 SIDE CHANNEL
 APPLICANT: SIMPLOT
 WATERBODY/RM: YANKEE FORK (RM 5.9 - 6.6)
 COUNTY/STATE: CUSTER, ID
 DATE PREPARED: MAY 4, 2012
 SHEET 3 OF 5

SEC 29, T12N, R15E
 44° 20' 27" N, 114° 43' 27" W

CH2MHILL

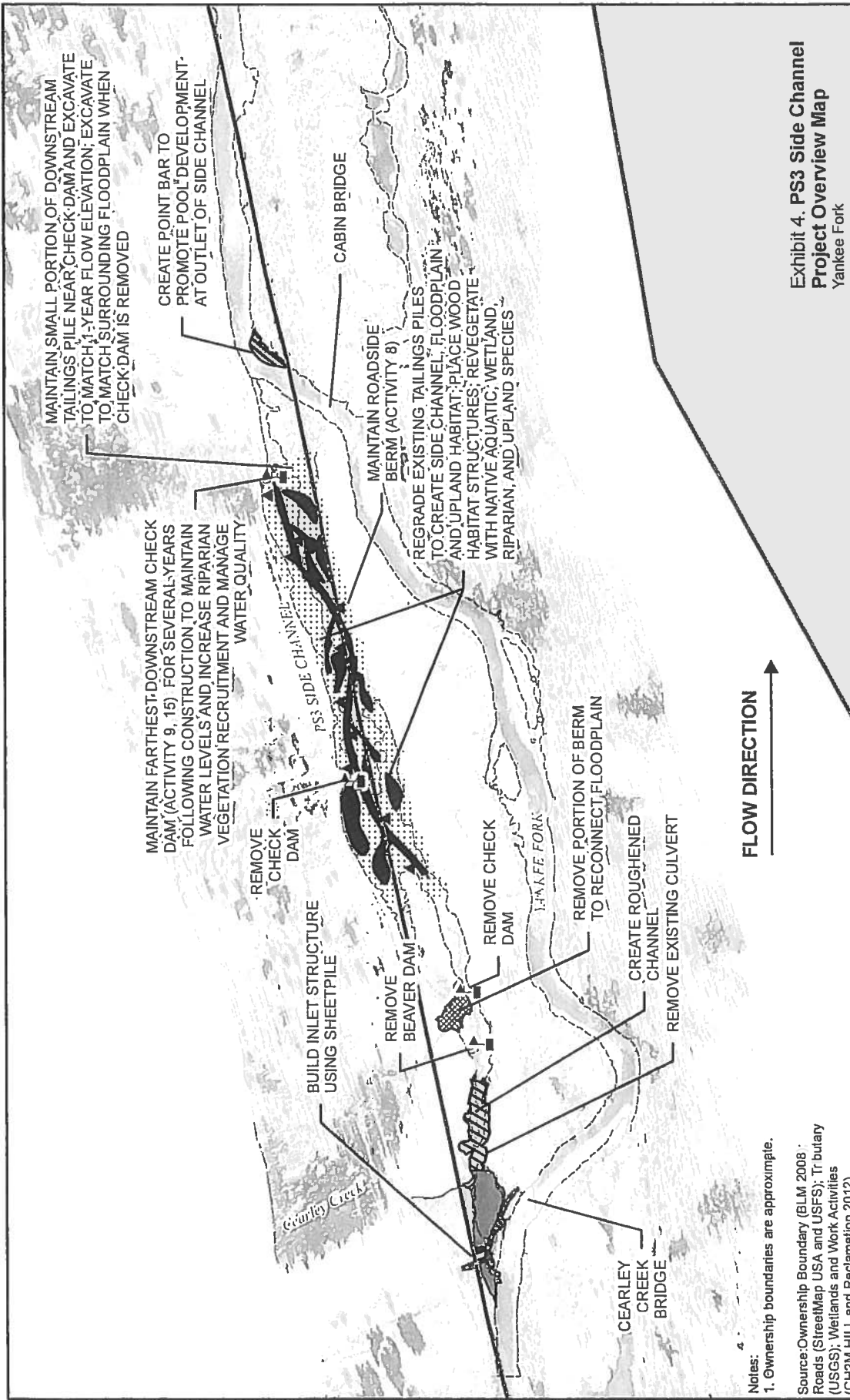
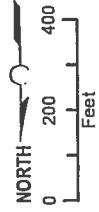


Exhibit 4. PS3 Side Channel
Project Overview Map
Yankee Fork



FLOW DIRECTION

Notes:
1. Ownership boundaries are approximate.

Source: Ownership Boundary (BLM 2008), Roads (StreetMap USA and USFS), Tributary (USGS), Wetlands and Work Activities (CH2M HILL and Reclamation 2012).

WORK ACTIVITY ACTIVITY NUMBER

- | | |
|---------------------------|--|
| Yankee Fork Road | Floodplain Embankment Removal |
| Tributary Stream | Floodplain (Tailings Regrading/Pond Fills) ¹¹ |
| Approximate USFS Boundary | Side Channel ¹² |
| Waters of the US | Other Floodplain Areas ¹³ |
| | Wood Habitat Structures ¹⁴ |
| | Point Bar near Outlet Channel ¹⁵ |
| | Beaver Dam and Check Dam Removals ^{6,7} |
| | Roughened Channel and Culvert Removal ⁴ |
| | Berm Reinforcement ⁵ |
| | Alcove, Nose, and Inlet Channel ¹ |
| | Inlet Structure ³ |

PROJECT TITLE: YANKEE FORK HABITAT IMPROVEMENT, PS3 SIDE CHANNEL
APPLICANT: SIMPLOT
WATERBODY/RM: YANKEE FORK (RM 5.9 - 6.6)
COUNTY/STATE: CUSTER, ID
DATE PREPARED: MAY 4, 2012
SHEET: 4 OF 5

CH2MHILL

SEC 29, T12N, R15E
44°20'27"N, 114°43'27"W



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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OCT 11 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

900 North Skyline, Suite B • Idaho Falls, ID 83402 • (208) 528-2650

C. L. "Butch" Otter, Governor
Curt A. Fransen, Director

August 16, 2012

Mr. Jerry Meyers
Trout Unlimited
194 Indian Creek Road
North Fork, Idaho 83466

Mr. Vic Conrad
J.R. Simplot Company
P.O. Box 27
Boise State ID Zip 83707

RECEIVED

AUG 21 2012

J.R. SIMPLOT COMPANY
L.W.A.R.

RE: NWW-2012-00125-I02

Dear Messrs. Conrad and Meyers:

Enclosed, please find the final §401 water quality certification for the above referenced project. The 401 process requires a public notice of 21-days. The comment period closed on August 7, 2012. After considering public comments, we are pleased to issue this final certification.

If you have any questions or concerns, please do not hesitate to contact me at 208.528.2650 or troy.saffle@deq.idaho.gov.

Sincerely,

Troy Saffle
Regional Manager
Idaho Falls Regional office

c: James Joyner, ACOE
Sue Christensen, TU
Mike Edmonson, OSC
Miranda Adams, TRIM Reference only

2012 AKF218



Idaho Department of Environmental Quality Final §401 Water Quality Certification

August 16, 2012

404 Permit Application Number: NWW-2012-00125-I02

Applicant/Authorized Agent: US Forest Service/JR Simplot Company

Project Location: 44.34224 ° N, -114.72301° W, Custer County

Receiving Water Body: Yankee Fork, tributary to the Salmon River

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review activities receiving Section 404 dredge and fill permits and issue water quality certification decisions.

Based upon its review of the joint application for permit, received from the applicant on May 9, 2012, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the activity will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Project Description

Habitat improvement projects are proposed, including channel re-contouring and placement of large wood habitat structures through the issuance of an individual 404 permit.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected

(IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.04).

- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.05).
- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Pollutants of Concern

The primary pollutant of concern for this project is sediment. As part of the Section 401 water quality certification, DEQ is requiring the applicant comply with various conditions to protect water quality and to meet Idaho WQS, including the water quality criteria applicable to sediment.

Receiving Water Body Level of Protection

The proposed activity is located within the Upper Salmon Subbasin assessment unit (AU) ID 17060201SL032_04 (Yankee Fork Creek - Jordan Creek to mouth). This AU is designated in Idaho Water Quality Standards (WQS) for cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply.

These uses in this Salmon River AU are fully supported (2010 Integrated Report). As such, DEQ will provide Tier 2 protection, in addition to Tier 1 protection, for both the aquatic life use and for the recreation beneficial use (IDAPA 58.01.02.051.01 and 58.01.02.051.02).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The BMPs outlined for the project along with the conditions in this 401 certification will ensure compliance with the narrative and numeric criteria in the WQS. Therefore, there is reasonable assurance that water quality necessary to protect existing uses shall be maintained and protected.

High-Quality Waters (Tier 2 Protection)

The Salmon River is considered high quality for cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply. As such, the water quality relevant to cold water aquatic life and salmonid spawning uses of the Salmon River must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to cold water aquatic life and salmonid spawning uses of the Salmon River (IDAPA 58.01.02.052.06). The only pollutant of concern for this project is sediment. Sediment is not relevant to recreational beneficial uses, but is relevant to the aquatic life use, including salmonid spawning. Aquatic life uses will be protected through construction management and best management practices. These practices specifically include the use of specific erosion control measures such as the creation, filing and implementation of a Storm Water Pollution Prevention Plan (SWPPP), minimizing ground disturbing actions, and dewatering of areas before beginning earth disturbing activities.

Permanent erosion and sediment controls will be implemented according to the plans submitted. These actions will minimize or prevent future sediment contributions from the project area. Although this project may result in minimal short-term sediment impacts to the water body, DEQ does not expect long-term impacts or degradation to the Yankee Fork Creek - Jordan Creek to mouth AU or the Salmon River. Furthermore, the intent of this project is to restore and reconnect portions of the stream in order to promote higher levels of fish spawning and rearing, for both anadromous and resident salmonids. Therefore, DEQ concludes that this project complies with IDAPA 58.01.02.051.02 and IDAPA 58.01.02.052.08.

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

General Conditions

1. This certification is conditioned upon the requirement that any modification (e.g., change in BMPs, work windows, etc.) of the permitted activity shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401. Such modifications may not be implemented until DEQ has determined whether additional certification is necessary.
2. DEQ reserves the right to modify, amend, or revoke this certification if DEQ determines that, due to changes in relevant circumstances—including without limitation, changes in project activities, the characteristics of the receiving water bodies, or state WQS—there is no longer reasonable assurance of compliance with WQS or other appropriate requirements of state law.
3. If ownership of the project changes, the certification holder shall notify DEQ, in writing, upon transferring this ownership or responsibility for compliance with these conditions to

another person or party. The new owner/operator shall request, in writing, the transfer of this water quality certification to his/her name.

4. A copy of this certification must be kept on the job site and readily available for review by any contractor working on the project and any federal, state, or local government personnel.
5. Project areas shall be clearly identified in the field prior to initiating land-disturbing activities to ensure avoidance of impacts to waters of the US beyond project footprints.
6. The applicant shall provide access to the project site and all mitigation sites upon request by DEQ personnel for site inspections, monitoring, and/or to ensure that conditions of this certification are being met.
7. The applicant is responsible for all work done by contractors and must ensure the contractors are informed of and follow all the conditions described in this certification and the Section 404 permit.

Erosion and Sediment Control

1. BMPs for sediment and erosion control suitable to prevent exceedances of state WQS shall be selected and installed before starting construction at the site. One resource that may be used in evaluating appropriate BMPs is DEQ's *Catalog of Stormwater Best Management Practices for Idaho Cities and Counties*, available online at <http://www.deq.idaho.gov/media/494058-entire.pdf>. Other resources may also be used for selecting appropriate BMPs.
2. One of the first construction activities shall be placing permanent and/or temporary erosion and sediment control measures around the perimeter of the project or initial work areas to protect the project water resources.
3. BMPs such as truck or wheel washes, if needed, must be used when earth-moving equipment will be leaving the site and traveling on paved surfaces.

Turbidity

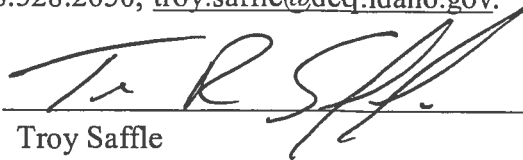
1. Sediment discharges resulting from this activity must be minimized by the implementation of best management practices so as to prevent the violation of the turbidity criterion in IDAPA 58.01.02.250.02.e. Any violation of this standard must be reported to the DEQ regional office immediately.
2. Turbidity monitoring must be conducted and recorded as described below. Monitoring must occur each day during project implementation. A properly and regularly calibrated turbidimeter is recommended, but visual observation is acceptable. The applicant shall contact Troy Saffle to coordinate the monitoring activities and details.
3. Turbidity monitoring must be reported. Copies of daily logs for turbidity monitoring must be available to DEQ upon request. The log must include background measurements (in NTUs) or observations; compliance point measurements or observations; comparison of background and compliance point monitoring as a numeric value (in NTUs) or in narrative form; and location, time, and date for each sampling event. The report must

describe all exceedances and subsequent actions taken, monitoring, and the effectiveness of the action.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the "Rules of Administrative Procedure before the Board of Environmental Quality" (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to Troy Saffle, Idaho Falls Regional Office, 208.528.2650, troy.saffle@deq.idaho.gov.

A handwritten signature in black ink, appearing to read "T. R. Saffle", is written over a horizontal line.

Troy Saffle

Regional Manager

Idaho Falls Regional Office



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NMFS No: 2012/01923 (BPA)2012/02575(COE),
2012/03493(BOR), 2012/03494(SCNF)

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OCT 11 2012

DEPT. OF WATER RESOURCES
SOUTHERN REGION

August 17, 2012

Israel N. Duran
Environmental Protection Specialist KEC-4
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Vince Kozakiewicz
Bureau of Reclamation
1150 North Curtis Road, Suite 100
Boise, Idaho 83706-1234

Lt. Col. Andrew D. Kelly
U.S. Army Corps of Engineers
Idaho Falls Regulatory Office
900 North Skyline Drive, Suite A
Idaho Falls, Idaho 83402

Frank Guzman
Salmon-Challis National Forest
1206 S. Challis Street
Salmon, Idaho 83467

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery
Conservation and Management Act Essential Fish Habitat Consultation for the Yankee
Fork Habitat Improvement Project Pond Series 3 Side Channel Creation, HUC
1706020106, Custer County, Idaho. (One project)

Dear Mr. Duran, Lt. Col. Kelly, Mr. Kozakiewicz, and Mr. Guzman:

The enclosed document contains a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7(a)(2) of the Endangered Species Act (ESA) on the effects of Bonneville Power Administration's (BPA) proposed Yankee Fork Habitat Improvement Project Pond Series 3 Side Channel Creation. In addition, this Opinion will also address the U.S. Army Corps of Engineers (COE) probable issuance of permits under the Clean Water Act (CWA) (33 U.S.C. 1251 *et seq*) for this project. Other cooperating Federal agencies are the Bureau of Reclamation and the U.S. Forest Service. Project waters of the United States include the Yankee Fork, Pond Series 3, and Cearley Creek.

In this 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, or result in the destruction or adverse modification of designated critical habitat for Snake River spring/summer Chinook salmon and Snake River Basin steelhead.

As required by section 7 of the ESA, NMFS provides an incidental take statement with the Opinion. The incidental take statement describes reasonable and prudent measures NMFS considers necessary or appropriate to minimize the impact of incidental take associated with this



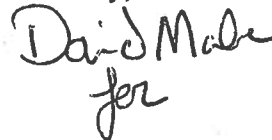
action. The take statement sets forth nondiscretionary terms and conditions, including reporting requirements, that the Federal agency and any person who performs the action must comply with to carry out the reasonable and prudent measures. Incidental take from actions that meet these terms and conditions will be exempt from the ESA take prohibition.

This document also includes the results of our analysis of the action's likely effects on Essential Fish Habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and includes six conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects on EFH. These conservation recommendations are a non-identical set of the ESA terms and conditions. Section 305(b)(4)(B) of the MSA requires Federal agencies provide a detailed written response to NMFS within 30 days after receiving these recommendations.

If the response is inconsistent with the EFH conservation recommendations, the BPA must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations. In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, in your statutory reply to the EFH portion of this consultation, we ask that you clearly identify the number of conservation recommendations accepted.

Mr. Aurele LaMontagne (208) 378-5686 and Mr. Bill Lind (208) 378-5697 are the NMFS contacts for this consultation.

Sincerely,

A handwritten signature in dark ink, appearing to read "David M. Stelle" with a stylized "for" written below it.

William W. Stelle, Jr.
Regional Administrator

Enclosure

cc: V. Conrad – Simplot Company
J. Joyner – COE
M. Edmonson – OSCU
R. Holder – FWS
Y. Tuell - SBT

**Endangered Species Act Section 7(a)(2) Biological Opinion
And
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat
Consultation**

Yankee Fork Habitat Improvement Project Pond Series 3 Side Channel Creation,
HUC 1706020106, Custer County, Idaho

NMFS Consultation Numbers: 2012/01923(BPA), 2012/02575 (COE), 2012/03493(BOR), 2012/03494(SCNF)

Lead Action Agency: Bonneville Power Administration

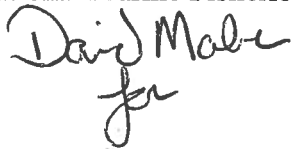
Affected Species and Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species or Critical Habitat?	Is Action Likely To Jeopardize the Species?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Snake River Basin steelhead	Threatened	Yes	No	No
Snake River Spring/Summer Chinook Salmon	Threatened	Yes	No	No

Fishery Management Plan That Describes EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes

Consultation Conducted By: National Marine Fisheries Service, Northwest Region

Issued By:



William W. Stelle, Jr.
Regional Administrator

Date:

August 17, 2012

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1. Background	1
1.2. Consultation History	1
1.3. Proposed Action	2
1.3.1. Construction Approach and Sequence.....	2
1.3.2. Pre-Construction Activities	5
1.3.3. Off-channel Construction	11
1.3.4. Mainstem Construction.....	15
1.3.5. Post-construction activities.....	15
1.3.6. Best Management Practices (BMPs)	16
1.3.7. Monitoring and Reporting	22
1.3.8. Interrelated and Interdependent Actions.....	23
1.4. Action Area	23
2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT.....	24
2.1. Introduction to the Biological Opinion	24
2.2. Rangewide Status of the Species and Critical Habitat	26
2.2.1. Status of the Species	26
2.2.2. Status of Critical Habitat	30
2.2.3. Climate Change	33
2.3. Environmental Baseline	33
2.3.1. Sediments.....	35
2.3.2. Fish Surveys and Redd Counts in the Project Area.....	36
2.3.3. Water Quality.....	37
2.3.4. Access	38
2.3.5. Habitat Elements.....	38
2.3.6. Channel Condition and Dynamics	39
2.3.7. Flow/Hydrology.....	39
2.3.8. Watershed Conditions.....	39
2.4. Effects of the Action on the Species and its Designated Critical Habitat.....	40
2.4.1. Species Effects.....	41
2.4.2. Effects to Critical Habitat	59
2.5. Cumulative Effects	64
2.6. Integration and Synthesis	64
2.7. Conclusion.....	65
2.8. Incidental Take Statement.....	66
2.8.1. Amount or Extent of Take	66
2.8.2. RPMs	67
2.8.3. Terms and Conditions.....	68
2.9. Conservation Recommendations.....	70
2.10. Reinitiation of Consultation	71
3. MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT CONSULTATION	71
3.1. Essential Fish Habitat Affected by the Project.....	71

3.2. Adverse Effects on Essential Fish Habitat	72
3.3. Essential Fish Habitat Conservation Recommendations.....	72
3.4. Statutory Response Requirement	73
3.5. Supplemental Consultation	74
4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW ...	74
4.1. Utility	74
4.2. Integrity	74
4.3. Objectivity.....	74
5. REFERENCES	76

TABLES

Table 1. Construction schedule.....	3
Table 2. Setback distances (feet) for blasting applied to waters occupied, or potentially occupied, by ESA-listed fish species. Relationship between explosive charge weight (pounds) in various substrates and setback distance (feet) from a waterbody, which will not exceed 2 psi hydrostatic overpressure on the swim bladders of fish, or .5 inches per second vibration velocity for incubating eggs (Firth 2002; Wright and Hopky 1998; and Alaska DNR 1991).....	12
Table 3. Federal Register notices for final rules that list threatened and endangered species, designate critical habitats, or apply protective regulations to listed species considered in this consultation.	24
Table 4. Types of sites and essential physical and biological features designated as PCEs, and the species life stage each PCE supports.	31
Table 5. Harm and mortality calculations for juvenile Chinook and steelhead found in mainstem, side channels, and side channel ponds. Methods not used in the calculation are represented by blank cells.	57
Table 6. Project Take totals for harassment, harm, mortality, and adult equivalents.....	58

FIGURE

Figure 1. Project Actions and Locations. Figure provides an overview of the project site with specific design elements and constructed habitat types.....	4
Figure 2. Staging (single cross hatch), access routes (shaded), and staging area 1 to become an unimproved viewing parking and viewing area (double cross hatch).	6
Figure 3. Cofferdam locations and fish salvage zones.	8

ACRONYMS

BA	Biological Assessment
BMPs	Best Management Practices
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
CHART	Critical Habitat Analytical Review Team
COE	U.S. Army Corps of Engineers
cu. yds.	cubic yards
CWA	Clean Water Act
dB	decibels
DNR	Department of Natural Resources
DPS	Distinct Population Segment
DQA	Data Quality Act
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESU	Evolutionarily Significant Unit
FCRPS	Federal Columbia River Power System
HUC	Hydrologic Unit Code
ICBTRT	Interior Columbia Basin Technical Recovery Team
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
ips	inch per second
ISAB	Independent Scientific Advisory Board
ITS	Incidental Take Statement
LWD	Large Woody Debris
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
OHWM	Ordinary High Water Mark
Opinion	Biological Opinion
PCE	Primary Constituent Elements
PFMC	Pacific Fishery Management Council
PPV	Peak Particle Velocity
psi	pounds per square inch
RM	River Mile
RMO	Riparian Management Objectives
ROW	Right-of-way

RPAs	Reasonable and Prudent Alternative
RPMs	Reasonable and Prudent Measures
SAR	Smolt-to-Adult Return
SCNF	Salmon-Challis National Forest
SHIPUSS	Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin
Simplot	Simplot Corporation
SPCC	Spill Prevention Control and Countermeasures
SRUMA-s	Upper Mainstem Salmon River steelhead population
SSI	Steelhead Streamside Incubation
SWPPP	Stormwater Pollution Prevention Plan
Tribes	Shoshone-Bannock Tribes
TU	Trout Unlimited
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VSP	Viable Salmonid Populations

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

The biological opinion (Opinion) was prepared by the National Marine Fisheries Service (NMFS) in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531, *et seq.*), and implementing regulations at 50 CFR 402.

NMFS also completed an Essential Fish Habitat (EFH) consultation. It was prepared 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.

The Opinion and EFH conservation recommendations are both in compliance with section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-5444) ("Data Quality Act") and underwent pre-dissemination review.

1.2. Consultation History

This Opinion is based on information provided in the May 14, 2012, biological assessment (BA) and supplemental information provided to NMFS on June 15, 2012. The administrative record for this consultation is on file at the Idaho State Habitat Office, Boise, Idaho.

This consultation is for the restoration of Pond Series 3 in the Yankee Fork River near Sunbeam, Idaho. The Yankee Fork project area is located in Section 29, Township 12N, Range 15E, in Custer County, north of Stanley Idaho. The project area is approximately 14 acres in size. The lead action agency for this consultation is the Bonneville Power Administration (BPA). The U.S. Army Corps of Engineers (COE) is also an action agency for this consultation due to their probable issuance of a Clean Water Act (CWA) permit (33 U.S.C. 1251 *et seq.*) for the project. A draft BA was provided to NMFS and the U.S. Fish and Wildlife Service (USFWS) for review on March 9, 2012. NMFS reviewed the draft BA and provided BPA with suggested edits on March 22, 2012. A final BA and request for consultation from the BPA was received by NMFS on May 14, 2012. Supplemental information regarding the project was provided to NMFS on June 15, 2012.

The Bureau of Reclamation (BOR), BPA, in conjunction with Simplot Corporation (Simplot), U.S. Forest Service (USFS), Trout Unlimited (TU), and the Shoshone-Bannock Tribes (Tribes), are working together to implement two habitat improvement projects (Pond Series 2 and Pond Series 3) on the Yankee Fork, a tributary to the Salmon River in central Idaho. The two projects are located between Cearley Creek Bridge and Jerry's Creek Bridge along the Yankee Fork on

private land owned by Simplot and public land managed by the Salmon-Challis National Forest (SCNF). The two projects will be constructed separately. This Opinion will focus on construction of Pond Series 3.

The BPA is the lead agency and providing funding for construction of this project through the Columbia Basin Fish Accords. The accords are 10-year agreements between the Federal action agencies, states, and tribes to supplement the Columbia Basin Fish and Wildlife Program and assist action agencies in meeting obligations under the ESA by producing substantial biological benefits for Columbia basin fish. As a landowner, the USFS is a cooperating agency for this project. Under approval of BPA, BOR provided technical support to design the project with support from CH2M HILL. The TU, as the project sponsor, will issue the construction contract and manage the construction.

1.3. Proposed Action

“Action” means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. For the action covered in this Opinion, there are no interrelated or interdependent actions.

The primary goal of the Yankee Fork Pond 3 project is to immediately create and maintain high-flow refugia and year-round rearing habitat for juvenile Chinook salmon (*Oncorhynchus tshawytscha*). Specifically, this project is intended to convert a side channel series of ponds (Pond Series 3) into side channel habitat that is passively accessible to juvenile salmonids during high flows, supports habitat complexity year round, and provides well-vegetated riparian zones. The project is also expected to improve holding and spawning habitat for returning adult Chinook salmon, and provide habitat for steelhead (*O. mykiss*), bull trout (*Salvelinus confluentus*), and other native species.

Currently, access into the pond series from the upstream end exists only at the highest flows for just a few weeks to months during runoff each spring. At the upstream end of the pond series, inlet access is currently blocked by a series of beaver dams, and access out of the pond series, is blocked by a perched culvert. Outlet access currently exists during most of the year, but during late summer, intermittent flow through a check dam can impede access, increasing the potential for fish stranding. Following construction, inlet access will be provided year-round and access upstream out of the pond series will be improved.

1.3.1. Construction Approach and Sequence

The mainstem work window is shifted away from the preferred work window (mid-July through mid-August; USBWP 2005) to September 7 through October 31. The work window proposed in the BA is based on Yankee Fork-specific data collected by the Tribes. The Tribes’ monitoring data indicate that the shifted work window will occur after Chinook salmon spawning ends in early September. It further indicates that no known past Chinook spawning has occurred within the project area (Shoshone-Bannock Tribes, unpublished data, as cited in BPA 2012a). In

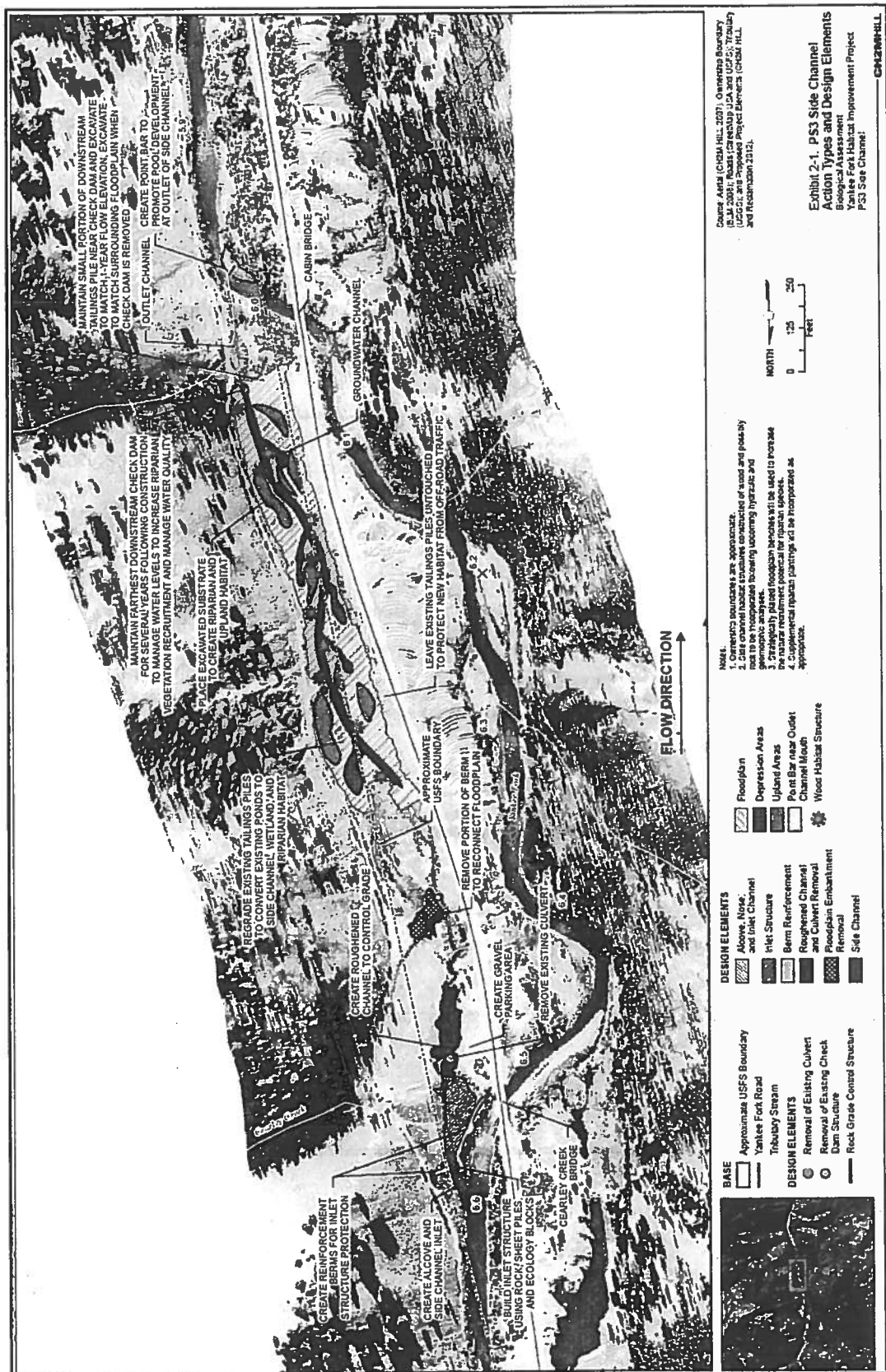
addition, prior to constructing cofferdams in the mainstem, current redd monitoring data from the Tribes will be evaluated to confirm that no redds will be affected. All work will be completed by the end of October. The final construction sequence will be determined by the construction contractor. A COE 404 permit will be secured prior to initiating instream work.

Construction will occur from September 7 through October 31. The majority of the work will be completed "in the wet," but not in "live water" because the existing pond series will be isolated from the mainstem Yankee Fork and Cearley Creek via cofferdams and pumping (Figure 1). Fish salvage will be completed for the entire isolated work area. As described in the following sections, the work will be implemented using methods to reduce effects on ESA-listed species. Measures such as installing cofferdams and pumping will also be used to manage turbidity caused by excavations and pond fills. The anticipated construction schedule is shown in Table 1.

Table 1. Construction schedule.

406	Pre-Construction Activities	Wed 3/21/12	Fri 9/28/12
407	Coordinate and Conduct High Flow Discharge and Suspended Sediment Measurements	Wed 3/21/12	Tue 6/12/12
408	Identify Wood Source and Transport Wood to PS3	Tue 6/26/12	Fri 8/24/12
409	Identify Rock Source and Transport Rock to PS3	Tue 6/26/12	Fri 8/24/12
410	Collect Local Seed and Start in Nurseries for Spring 2013 Revegetation	Tue 7/10/12	Fri 9/28/12
411	Remove and Relocate SREC Utilities	Mon 7/30/12	Fri 8/3/12
412	Place Exclusion Nets and Salvage Fish	Mon 8/13/12	Fri 8/24/12
413	Staging, Salvage, and Access Activities	Mon 8/27/12	Fri 8/31/12
414	Prepare Staging Areas A & B	Mon 8/27/12	Wed 8/29/12
415	Mobilization	Mon 8/27/12	Wed 8/29/12
416	Place Cofferdams and Dewater	Mon 8/27/12	Wed 8/29/12
417	Salvage Vegetation Clumps and Store in Vegetation Stockpile Areas G & H; Salvage LWD and Store in Stockpile Areas E & F	Mon 8/27/12	Wed 8/29/12
418	Excavate Fine Sediment at Staging Areas C & D and Store in Stockpile Areas E & F	Mon 8/27/12	Wed 8/29/12
419	Regrade Tailings to Create Staging Areas C & D, Stockpile Areas E & F, and Access Roads	Mon 8/27/12	Wed 8/29/12
420	Off-Channel Construction Activities	Mon 9/3/12	Thu 10/18/12
421	Excavate Fine Sediment, Dewater, and Stockpile for Growth Media	Mon 9/3/12	Fri 9/21/12
422	Remove Beaver Dams and Check Dams	Mon 9/3/12	Tue 9/4/12
423	Regrade Tailings/Fill Ponds to Create Floodplain; Sort and Stockpile Engineered Streambed Materials and Screened Tailings	Mon 9/3/12	Fri 9/21/12
424	Excavate Side Channel	Mon 9/24/12	Fri 10/5/12
425	Place Wood Habitat Structures (Side Channel)	Mon 9/24/12	Fri 10/5/12
426	Construct Uplands, Groundwater Channels, and Depression Areas	Mon 9/24/12	Fri 10/5/12
427	Construct Planting Islands with Growth Media	Mon 10/8/12	Fri 10/12/12
428	Remove Floodplain Embankment and Stockpile Areas E & F	Mon 10/8/12	Fri 10/12/12
429	Harvest Cuttings for FESL/Live Stakes/Fascines for Inlet Channel, Roughened Channel, Reinforcement Berms, and Alcove and Nose	Fri 9/21/12	Thu 10/4/12
430	Construct Inlet Channel and Roughened Channel and Remove Culvert (and Salvage Existing Vegetation)	Fri 9/21/12	Thu 10/4/12
431	Construct Inlet Structure	Fri 9/21/12	Thu 10/4/12
432	Remove Cofferdams	Fri 10/5/12	Thu 10/18/12
433	Mainstem Construction Activities	Fri 9/7/12	Thu 10/18/12
434	Place Cofferdams and Dewater	Fri 9/7/12	Thu 9/13/12
435	Construct Reinforcement Berms	Fri 9/14/12	Thu 9/20/12
436	Construct Alcove and Nose	Fri 9/21/12	Tue 10/2/12
437	Construct Point Bar near Outlet Channel Mouth	Tue 10/2/12	Thu 10/11/12
438	Remove Cofferdams	Fri 10/12/12	Thu 10/18/12
439	Post-Construction Activities	Mon 10/15/12	Tue 10/30/12
440	Rewatering	Fri 10/19/12	Thu 10/25/12
441	Revegetate with FESL, Fascines, Live Cuttings, and Seeding	Mon 10/15/12	Fri 10/26/12
442	Demobilization	Mon 10/29/12	Tue 10/30/12
443	Remove Stockpiled Gravel	Wed 10/31/12	Tue 11/6/12
444	Revegetate with Container Plants and Sedge Mats	Mon 5/20/13	Fri 5/31/13
445	Monitoring and Maintenance	Mon 10/1/12	Fri 9/22/17
446	Manage Water Levels at Inlet and Outlet to Promote Revegetation	Mon 10/1/12	Fri 9/22/17
447	Manage Weeds	Mon 10/1/12	Fri 9/22/17
448	Monitor Vegetation	Mon 10/1/12	Fri 9/22/17

Figure 1. Project Actions and Locations. Figure provides an overview of the project site with specific design elements and constructed habitat types.



1.3.2. Pre-Construction Activities

1.3.2.1. Prepare Access and Staging Areas

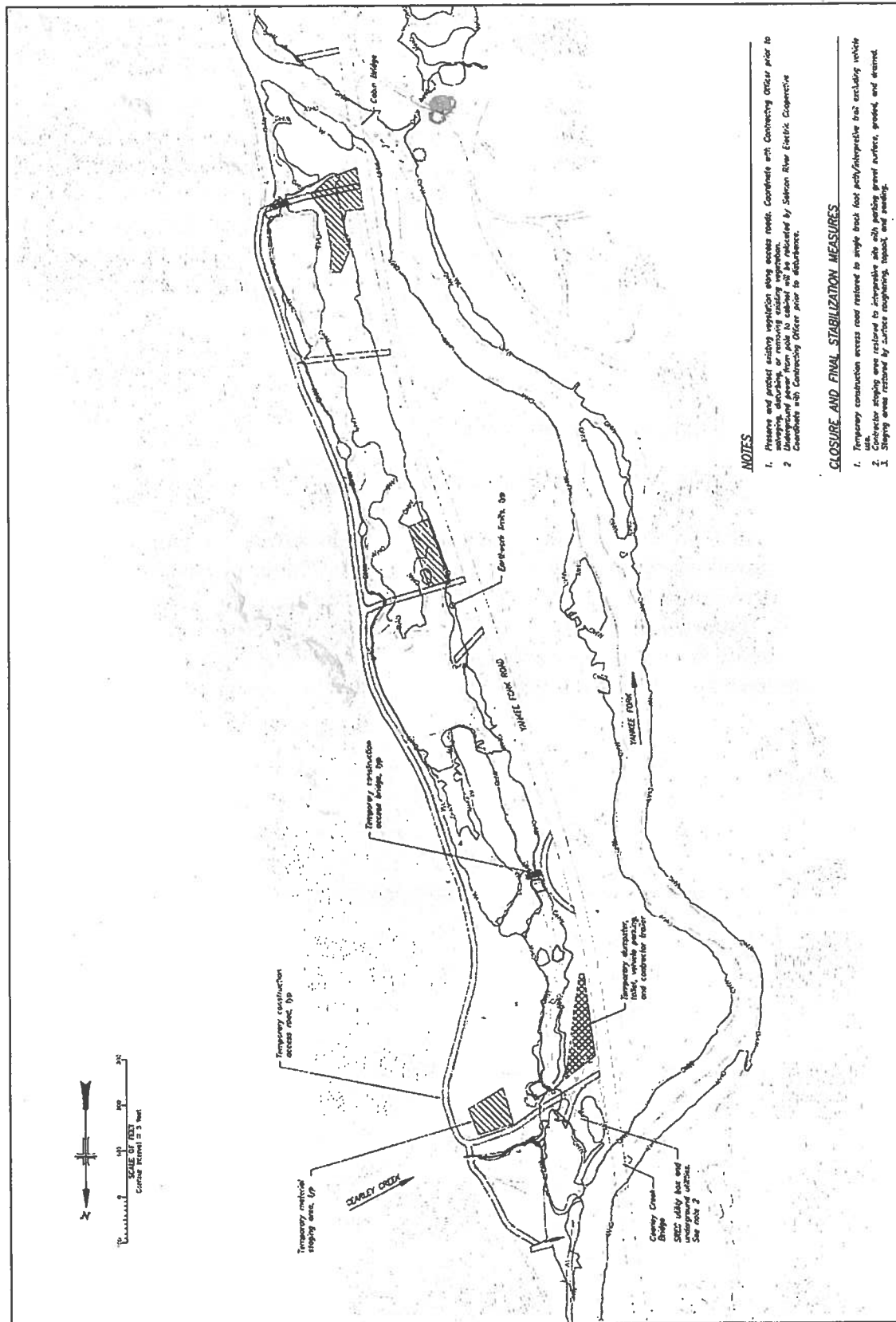
Some construction-related activities taking place outside the construction limits, such as material extraction, material wasting, or equipment staging, will require ground disturbance, occupation, or clearing. These activities will result in some temporary environmental impacts. Final site selections will be coordinated with the landowners, including Simplot and an Aquatics Specialist from the U.S. Forest Service (USFS), to reduce unintended impacts to the property, and ESA-listed species and their critical habitat. Right-of-way (ROW) clearing includes clearing and grubbing staging areas and access roads within excavation limits (Figure 2). The following prerequisite components are listed in the anticipated sequence:

- Identify construction limits;
- Delineate access and haul routes; and
- Identify trees or shrubs to be protected or salvaged.

Access routes will be located based on work activity requirements. Staging areas will be located to provide access for contractor equipment and materials. These sites will include areas outside of the construction limits but will not adversely impact traffic on the Yankee Fork Road (Forest Road 013). With the exception of the point bar access, staging areas and access routes are adjacent to the side channel and separated from the Yankee Fork by the Yankee Fork Road. The intended uses and purpose of the anticipated access routes and staging areas include the following:

- Access routes
 - Site access for equipment; and
 - Haul routes to transport material to and from work sites
- Staging areas
 - Contractor trailer site; and
 - Equipment and material staging.

Figure 2. Staging (single cross hatch), access routes (shaded), and staging area 1 to become an unimproved viewing parking and viewing area (double cross hatch).



Anticipated materials to be staged will include large woody debris (LWD), large rock, riprap, streambed gravel, coir fabric and rolls, plant material, and excess spoils from the dredge tailings. Possible specialized equipment will include, but not be limited to, excavators, bulldozers, graders, carry-alls, loaders, haul trucks, a hydraulic crane, and storage containers. Once construction is complete, Staging Area 1 (adjacent to the roughened channel), will remain as an unimproved (unpaved) parking area for public use. Water will be used for dust control and other construction activities. Up to 6 truckloads of water per day (in total, up to an estimated 2.7 million gallons) will be needed for the proposed project.

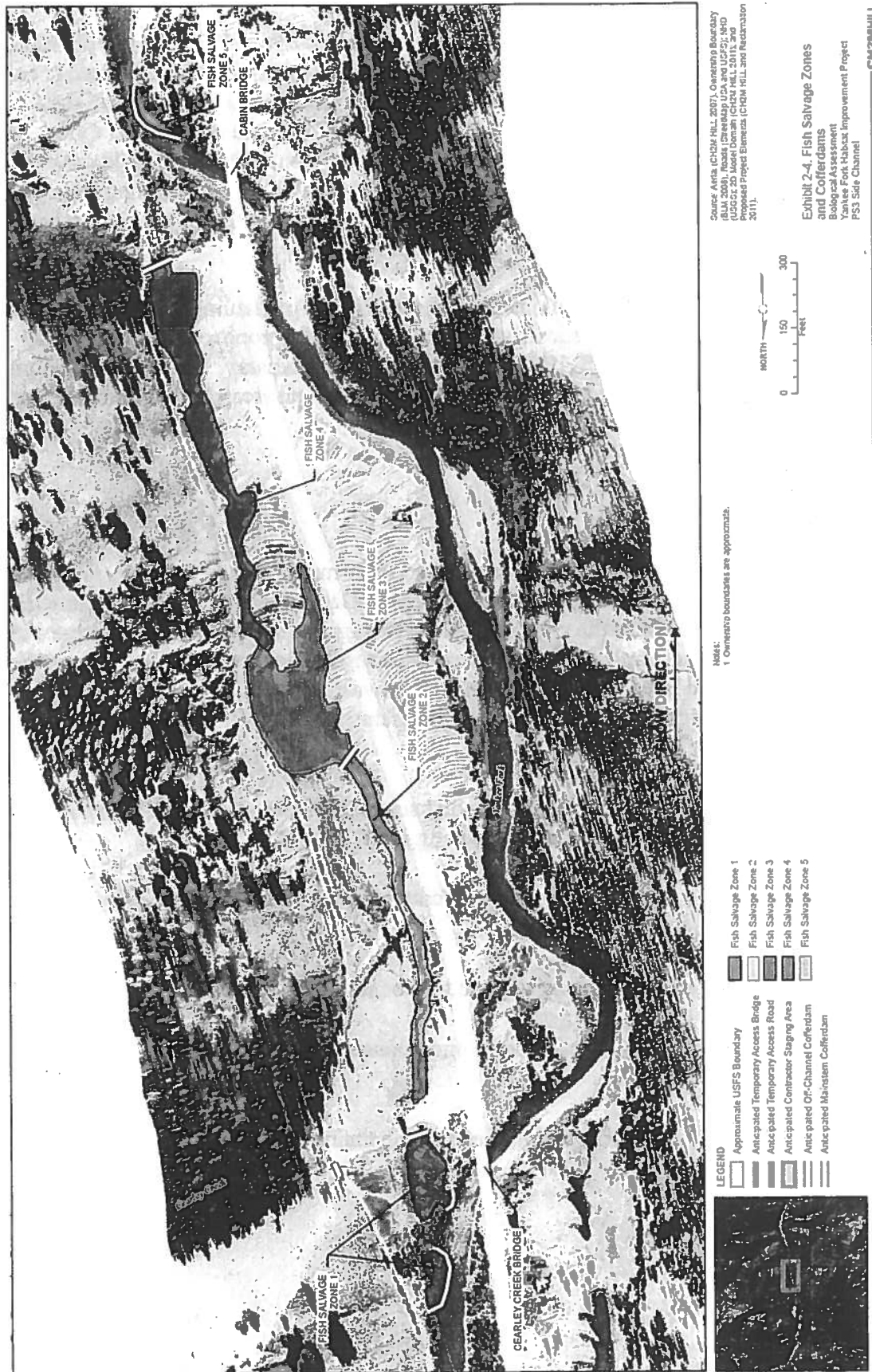
Excess spoils from dredge tailings will not be hauled offsite. Any hauling of earthwork waste volume offsite will be handled under a separate contract than the proposed action and will involve coordination with the USFS, USFWS, and NMFS as necessary. No waste or temporary stockpiles will be allowed in wetland or riparian areas. Structural scrap and debris will be hauled to an approved recycling center or landfill.

1.3.2.2. Fish Salvage

To reduce potential impacts to fish from the proposed construction activities, fish salvage efforts will be conducted before dewatering activities. An Idaho Department of Fish and Game (IDFG) biologist will be present to direct the salvage. The existing pond series consists of large and small ponds and interconnecting channels, each presenting challenges for fish removal. The salvage will be completed in five separate zones: three within the pond series, one in the mainstem, and one overlapping the pond series and mainstem. Each isolated zone is shown in Figure 3 and listed here:

- Zone 1: from the alcove and existing pond series inlet, on the left bank of the mainstem Yankee Fork, to just upstream of the existing inlet (19,100 ft²)
- Zone 2: from the existing culvert to immediately upstream of the large pond in the pond series (24,200 ft²)
- Zone 3: from upstream of the large pond to the middle Check Dam (54,700 ft²)
- Zone 4: from the middle Check Dam to immediately below the farthest downstream Check Dam (50,300 ft²)
- Zone 5: single-point bar on the right bank of the mainstem Yankee Fork across from the outlet of the pond series (5,000 ft²)

Figure 3. Cofferdam locations and fish salvage zones.



In the large pond (Zone 3), salvage will be conducted to the extent possible in coordination with IDFG. The depth, fine sediment, and other physical characteristics of Zone 3 may make some methods of salvage difficult and likely less efficient than what is anticipated in other zones. Fewer fish, however, are anticipated in Zone 3 given the lack of existing habitat and based on recent surveyed juvenile fish densities (Gregory and Wood 2012).

Mesh barriers will be used to isolate fish salvage zones in the pond series, and these will be placed at the upstream and downstream ends of each zone as the first step in the salvage effort. Fish salvage will be accomplished using several techniques including electrofishing with backpacks (for channels and shallow water in zones 1, 2, 4, and 5), and seine netting/pumping (for deeper ponded areas in zone 3). The IDFG will use a combination of salvage techniques employing the most effective methods until no more fish can be recovered (Tom Curret, IDFG, personal communication June 2012). The deeper ponds will be salvaged with a seining/pumping technique that pumps down the volume of water, then drives the fish into channels using boats and nets, and possibly snorkelers, where they are seined then electrofished. This process is repeated until no more fish are recovered (Tom Curret, IDFG, personal communication June 2012). Tom Curret indicated that the ramping down of water technique would remove 60% to 70% of the fish before electroshocking. Fish collected within the isolated work areas will be relocated to the mainstem Yankee Fork.

Fish salvage efforts will be conducted by or under the direction of IDFG, and methods outlined in the following documents:

- NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act (NMFS 2000); and
- IDFG Scientific Collection Permit.

Additionally, outside of the five fish salvage zones, if pumping was required during project implementation, pumps will have a fish screen and be installed, operated, and maintained in accordance with NMFS fish screen criteria (NMFS 2008).

1.3.2.3. Coffering and Dewatering

Redd surveys will be conducted by the Tribes prior to September 7, to determine if any redds have been constructed in the action area. If monitoring of Chinook redds prior to construction or any work in live water shows a redd(s) within the action area, NMFS will be notified.

Before earthwork begins, cofferdams will be installed to: (1) Isolate the pond series from the mainstem Yankee Fork and Cearley Creek; (2) aid de-watering and fish salvage in the existing large pond; (3) control runoff from the pond series; and (4) manage turbidity resulting from project excavation. In the isolated side channel, all of the design elements except the revegetation and some wood habitat structures are anticipated to require either cofferdams or dewatering.

Where possible, equipment operating within the ordinary high water mark (OHWM) will be isolated from live water by cofferdams. Three cofferdams are required along the mainstem (Figure 3), and construction of each cofferdam is expected to require some work in live water. Cofferdams will be constructed from the banks to the extent feasible (considering equipment reach and access). Where work in live water is necessary, it is expected to be completed by a tracked excavator. The excavator will only operate in live water for the time necessary to gently traverse a portion of the channel (to reduce erosion and disturbances to the channel) and place sand bags and/or bladder dams on the channel bed (to reduce the suspension of sediments). The anticipated number of round trips and duration of effort is summarized by cofferdam below:

- Construction of Mainstem Cofferdam 1: Assuming a maximum reach of 10 feet from the bank, approximately 125 feet of cofferdam would need to be constructed in live water. Up to 30 round trips (averaging 25 feet each and occurring every 15 minutes) are anticipated; the inwater work window is expected to last less than one work day.
- Construction of Mainstem Cofferdam 2: Assuming a maximum reach of 10 feet from the bank, approximately 70 feet of cofferdam would need to be constructed in live water. Up to 20 round trips (averaging 25 feet each and occurring every 15 minutes) are anticipated; the inwater work window is expected to last less than one work day.
- Construction of Mainstem Cofferdam 3: Assuming a maximum reach of 10 feet from the bank, approximately 130 feet of cofferdam would need to be constructed in live water. Up to 30 round trips (averaging 25 feet each and occurring every 15 minutes) are anticipated; the inwater work window is expected to last less than one work day.

Surface water flow into the pond series and coffered areas will be restricted by coffering, but water will be expected to infiltrate through existing dredge piles, and some construction will occur in the wet. Excess turbid water will be pumped onto overland surfaces and allowed to infiltrate or settle before returning to the mainstem, if necessary. If necessary, clear water upstream of the work area will be pumped from the ponds into the mainstem. Cearley Creek will be temporarily diverted to the mainstem to further reduce turbid outflow from the pond downstream of the work area.

Average width of anticipated coffering in the pond series will be approximately 5- to 8-feet. The total length of coffering required to isolate the pond series will vary from approximately 80- to 320-feet (depending on construction phase) and will isolate approximately 8.8- to 9.6-acres of the pond series from the mainstem Yankee Fork for the majority of construction. Of these 320 feet of coffering, 280 feet will occur in the mainstem Yankee Fork to isolate the pond series at the upstream end and construct the alcove, nose, and berm reinforcement areas. Additionally, approximately 220 feet of mainstem coffering will be required to isolate the point bar near the channel outlet mouth. In total, the mainstem cofferdams will isolate 6,600 ft² of the mainstem during the instream work window. Turbidity will be monitored during all work in “live water” as described in Section 1.3.6.

1.3.3. Off-channel Construction

The majority of habitat modification and conversion will occur in the pond series side channel, isolated from the mainstem Yankee Fork. Construction will be expected to require multiple excavators (tracked), loaders, haul trucks, and a pile driver. Because the side channel will be isolated from the mainstem, the primary effects to ESA-listed fish will be from fish salvage, sediment released during pumping to dewater and channel rewatering, the addition of 7,470 ft² of riprap to the side channel, and the use of herbicides to control weeds for several years after construction. The use of herbicides will be conducted as described in the SCNF programmatic consultation on noxious weed control in non-wilderness areas. Additional potential effects are from construction noise including machinery operation, pile driving of the inlet structure, and potential blasting of bedrock. Only details of the actions directly producing these effects will be discussed further in the Proposed Action section of this Opinion to facilitate the effects analysis. Additional details of side channel construction activities can be found in the BA and are summarized in the list below:

- Constructing the inlet area including the nose, excavating the alcove, and reinforcing two existing berms along the left (facing downstream) bank of the mainstem;
- Constructing an the inlet channel and off-channel inlet control structure (sheet pile) with a low flow notch to convey 5 cubic feet per second (cfs) in low water and 8-foot wide for higher flows. The inlet structure will act as a grade control to prevent head cutting and will prevent fish passage in the upstream direction only;
- Removing a 36-inch corrugated metal pipe culvert and culvert embankment and replacing with a roughened channel (rock) that will act as grade control and convey flow to the converted floodplains and channels below. The current culvert is perched and is an upstream fish passage barrier;
- Removing four beaver dams hindering construction of the roughened channel (two upstream of the existing culvert and two downstream of it). Beavers are expected to return after reestablishment of vegetation;
- Removing an old road embankment across an existing floodplain;
- Removing two check dams and temporarily protecting and operating one existing check dam (then removing it after several years);
- Placing of 10 LWD habitat structures through the side channel; and
- Revegetating with aquatic, wetland, riparian, and upland species.

Pile Driving. The inlet structure will require pile driving during installation. The inlet structure is made of steel sheet pile, with a span of 44 feet, and will be embanked 16 feet into reinforcement berms on both sides.

Blasting. Rock (bedrock) blasting is not anticipated based on the available subsurface information. However, if bedrock is encountered, an initial attempt will be made to modify the side channel alignment and/or profile to avoid rock blasting. If changes to the alignment and/or profile will compromise the project goals, bedrock removal using hammers or blasting may be required. Drilling and hydraulic splitting, or ripping and excavation will be attempted prior to consideration of blasting. The USFS, USFWS, and NMFS will be contacted prior to using hammers or blasting to remove bedrock during construction. Should it be required, blasting will be done using setback distances and monitoring as provided in Table 2. Setbacks in this table and the best management practices (BMPs) included for blasting adjacent to fish-bearing waters were derived from: (1) Recommended blasting standards (Firth 2002); (2) Wright and Hopky (1998) (appendix III); and (3) Alaska Department of Natural Resources [DNR] (1991) (page 17, equation D). These standards protect fish from both swimbladder effects and egg disturbances associated with blasting by using 2 pounds per square inch (psi) and 0.5 inch per second (ips) limitations.

Table 2. Setback distances (feet) for blasting applied to waters occupied, or potentially occupied, by ESA-listed fish species. Relationship between explosive charge weight (pounds) in various substrates and setback distance (feet) from a waterbody, which will not exceed 2 psi hydrostatic overpressure on the swim bladders of fish, or .5 inches per second vibration velocity for incubating eggs (Firth 2002; Wright and Hopky 1998; and Alaska DNR 1991).

Substrate*/ life stage**	Explosive Charge Weight (lbs)								
	0.5	1	2	5	10	25	100	500	1000
Rock/ all	30 [#]	50	80	120	170	270	530	1180	1670
Frozen Material/ all	40	50	70	110	160	250	500	1120	1580
Stiff Clay, Gravel, Ice/ all	30	40	60	100	140	220	440	990	1400
Clayey Silt, Dense Sand/ all	30	40	50	80	120	180	370	820	1160
Medium to Dense Sand/ all	20	30	50	70	100	160	320	720	1020
Medium Organic Clay/ Spawning & Rearing	15	20	30	50	70	100	210	460	660
Medium Organic Clay/ Incubation	19	27	38	60	85	135	270	600	850
Soft Organic Clay/ Spawning & Rearing	15	20	30	40	60	100	190	440	620
Soft Organic Clay/ Incubation	19	27	38	60	85	135	270	600	850

[#] All values are slope distance from the edges of water, in feet.

*Substrate represents underlying soil and rock located between the charge and the water body.

**Life stage is to distinguish effects of the explosion on swim bladders of rearing fish versus incubating eggs.

Floodplain. Floodplain connectivity has been eliminated in areas where dredge mining occurred. Tailings piles adjacent to and through the pond series will be regraded to create

channel and floodplain habitats. There are an estimated 3,500 cubic yards (cu. yds.) of fine sediment in the ponds which will be used in the floodplain construction as top soil for vegetation. The final design is based on excavation of almost all of the 3,500 cu. yds. of pond sediments and incorporation of those pond sediments into the planting islands along the side channel and floodplain as growth media as shown in the final drawings. Some pond sediments placed on the floodplain may be inundated at flows greater than baseflow and some pond sediments placed on upland areas may never be inundated. Immediately following placement and prior to rewatering the new side channel, pond sediments would be covered with a coir erosion control blanket for the first several years and stabilized by vegetation (sterile ryegrass, followed by native plants). Very little of the excavated pond sediment is expected to be mobilized during rewatering. The project will preserve 0.7 acres, and create 4.6 acres of floodplain in the side channel.

Revegetation. Native aquatic, wetland, riparian, and upland species (all considered "revegetation" for this Opinion) will be planted as seeds, cuttings, and container plants in and along the alcove, inlet channel, roughened channel, floodplain, side channel, and point bar near the outlet channel mouth. Topsoil salvaged during the habitat conversion will be placed strategically on the recontoured tailings to support vegetation establishment. Other areas disturbed by construction will be seeded with native plants. The gravel parking area near the old culvert removal element will not be seeded, but will remain as an unimproved (unpaved) parking area for public use. As part of the site preparation, the Contracting Officer will identify existing vegetation to preserve, protect, and salvage.

The intended goals of increasing Pond Series 3 wetlands are to increase the extent (acres) of existing wetland floodplain relative to current conditions, and improve low scoring wetland function through expansion of wetland floodplains and vegetative cover (e.g., flood attenuation and sediment nutrient/toxicant removal). Variable grading and three planting combinations would result in two riparian wetland communities and one upland riparian community:

1. Approximately 0.63 acres (0.02 existing) of palustrine emergent wetland will be created by regrading tailings and planting native wetland vegetation. Regrading and planting will improve habitat, vegetative diversity, and qualitative water quality functions.
2. Approximately 4.07 acres (0.08 existing) acres of palustrine scrub-shrub wetland will be created by planting woody species. Willow, alder, and other appropriate plant material would be installed at a density of 1 to 2 feet on center. Plantings will increase wetland acreage, habitat structure, and community diversity.
3. Approximately 0.57 acres (no existing) of palustrine forest upland will be created by regrading and planting woody species. Upland plantings will provide vegetative diversity within the study area and restore connectivity with adjacent upland habitats.

A 5-year monitoring plan will be implemented annually to monitor vegetation conditions and trends relative to the performance standards. Monitoring will begin one full growing season after each wetland site is constructed. The monitoring effort will be discontinued after 5 years, assuming that the stated performance standards are met during that period. All field monitoring will be conducted by a qualified biologist.

As part of the monitoring plan, general moisture levels in the wetland habitat types will be monitored through the first and second season to determine whether sufficient groundwater and surface water are available to keep the plants viable. If the water table in some areas is determined to be too deep or too shallow to sustain wetland plants, then the area might be regraded where possible or replanted with more appropriate vegetative material.

Herbicides will be used for individual weed control as part of the monitoring plan. Upland and wetland areas around the habitat improvement project will be observed annually for unwanted encroaching plant species. Herbicide application on action area lands in the SCNF will be applied under the conditions specified in NMFS consultation *Salmon-Challis National Forest Noxious Weeds Management Program (non-wilderness areas), Upper Salmon River Basin – 170602, Lemhi and Custer Counties, Idaho* (NMFS consultation number 2012/02030). Broadcast application of herbicides will not be allowed. All herbicides will be applied by a certified herbicide applicator. Control of undesired species in buffer zones will be conducted each year for the first 5 years after initial planting.

Maintenance activities that include removing invasive species, establishing temporary irrigation, and replanting vegetation will be conducted for the duration of the monitoring period as required to meet performance standards. These contingency activities will be proposed as necessary to meet performance standards. Proposed contingency actions will be documented in writing and submitted to NMFS for approval. NMFS approval will be required prior to the beginning of any field implementation of contingency activities. Contingency activities might include, but are not limited to, modifying proposed weeding and irrigation schedules, and planting additional woody material.

To increase riparian vegetation recruitment and manage water quality for the first several years following construction, flows will be managed. Inlet flows will be managed (using temporary materials such as sand bags placed at the inlet structure) to control high flows allowing the riparian vegetation to establish and reduce the potential for bank erosion immediately following construction. Check Dam 3 will provide the opportunity to manage water levels during the monitoring period, thereby increasing establishment of riparian vegetation across a wider range of elevations on the streambank and floodplain.

Placing check boards in Check Dam 3 will control water surface elevations while allowing flow and downstream fish migration over the top of the Dam. Water surface elevation in the side channel will be managed to promote vegetation establishment without affecting the timing of juvenile use of the side channel (USBWP 2005). At high flows, check boards will not be used. Boards will be used to raise surface elevations from early July through late September to “extend the tail of the hydrograph,” and raise surface and groundwater elevations thereby increasing the survival and growth of naturally recruited seed as well as planted vegetation.

These temporary water management steps will decrease the potential release of fine sediment immediately after construction and during the first few spring high flows. Long-term benefits will be anticipated as well; a denser stand of vegetation along the side channel and on the

floodplain will increase the potential trapping and deposition of sediment, thereby improving water quality and creating a topsoil source on the recontoured tailings.

1.3.4. Mainstem Construction

The mainstem improvement component of the action will provide more access for juvenile salmonids from the mainstem to the pond series. Mainstem improvements included in the proposed action are limited to creation of a point bar near the mouth of the outlet channel (Figure 1). Currently, the meander bend near the mouth of the outlet channel lacks a defined point bar on the inside of the bend (west bank); as a result, a deep lateral scour pool is not present opposite the point bar, at the mouth of the outlet channel. Following construction, the point bar will be expected to create a flow pattern along the left bank that will scour and maintain a pool. This pool will be expected to provide cover for juvenile salmonids and attract them into the side channel from the downstream end. A pool at this location will increase mainstem complexity and help attract fish to the mouth of the PS3 side channel.

Point Bar near Outlet Channel Mouth (River Mile [RM] 6.0). On the right bank across from the outlet channel mouth, a point bar approximately 200 feet long, 30 feet wide, and 3 feet tall, will be constructed out into the mainstem. To help stabilize the placed material and promote future bar growth, a grade-control structure of coarser rock, approximately 30 feet long, will extend perpendicularly from the bank and be buried entirely within the point bar. The point bar will occupy approximately 2,700 ft² more of the mainstem water surface than the existing point bar. The material used to construct the point bar will consist of washed gravels and cobbles.

Construction of the mainstem improvements will be expected to require multiple excavators (tracked), loaders, and haul trucks. Work on the point bar will occur behind cofferdams along the bank of the mainstem. Some of the work activities will occur below the OHWM. No work activities will be conducted on the east bank of the outlet channel, an area with higher quality existing habitat.

Quantities Summary. To construct all the elements in the mainstem improvements action type, material will need to be placed below the OHWM in the mainstem. Approximately 20 cu. yds. of additional material will be excavated in a 200 ft² area on the right bank at the location of the point bar to create the grade control structure. In total, approximately 110 cu. yds. of excavated material will be placed in an area of approximately 4,000 ft². There will be 150 cu. yds. of material placed below the OHWM, including 110 cu. yds. of cobble (tailings), 25 cu. yds. of large rock/riprap, and 15 cu. yds. of LWD.

1.3.5. Post-construction activities

1.3.5.1. Rewatering

After side channel construction is complete and turbidity in the new side channel is close to background levels in the Yankee Fork, blockages and cofferdams would be removed gradually to

control the water release rate into and out of the side channel. The exposed substrate will be wetted and allowed to saturate while still isolated by downstream cofferdams. The construction site will be rewatered gradually to manage turbidity in the new side channel and downstream in the mainstem. Once substrate is fully saturated and waters have settled in the isolated coffered area, coffering (with the exception of Check Dam 3) would be removed to reinitiate unrestricted flow in the channel.

During the first several years following construction, Check Dam 3 will be left intact to help manage water levels to increase riparian vegetation recruitment and manage water quality. Although the mainstem within the action area downstream of the side channel mouth has not historically been used by Chinook salmon for spawning (Shoshone-Bannock Tribes, unpublished data in BPA 2012a), removal of Check Dam 3 would be timed to occur on the declining limb of the spring hydrograph, when turbidity in the Side Channel will be minimal relative to background levels in the mainstem.

Turbidity monitoring in the mainstem below the outlet channel will occur during all stages of rewatering. Background measurements in the mainstem upstream of the project area will be obtained prior to introducing side channel flow to the mainstem and during removal of Check Dam 3 in the last year of rewatering during the spring runoff. Should a noticeable sediment plume occur upon removal, turbidity measurements will then be obtained on a regular basis (e.g., every 15 minutes) to monitor turbidity increases over background levels. Should turbidity levels increase greater than 50 nephelometric turbidity units (NTUs) over background levels approximately 100 feet downstream, flow outputs will be adjusted until levels drop close to background levels.

At the end of the monitoring period Check Dam 3 will be removed under a separate contract and will not be analyzed in this Opinion.

1.3.6. Best Management Practices (BMPs)

The following BMPs will be implemented to minimize or avoid effects to ESA-listed species:

1. Low-Water Work Window
 - a. All instream work in the isolated pond series will be conducted during low-flow conditions from September 7 through October 31, 2012.
 - b. All instream work in the mainstem (e.g., point bar construction and coffering to isolate the pond series) will occur between September 7 and the end of October.
 - c. All instream construction activities will be completed within one work season.
2. Fish Exclusion, Avoidance, and Salvage
 - a. If redds are identified in the action area prior to or during instream work, NMFS will be contacted.

- b. A qualified fish biologist will conduct all of the fish salvage and work area clearing operations, including those associated with coffering, dewatering, and rewatering.
- c. To reduce the number of fish that must be salvaged in the pond series, the existing inlet to the pond series will be blocked in early spring (to exclude fish from entering the pond series during high spring flows).
- d. All side channel construction activities will be isolated from live and/or moving water in the mainstem Yankee Fork.
- e. Fish salvage will be conducted by or under the direction of a fisheries biologist, using methods directed by the following:
 - (1) NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act (NMFS 2000); and
 - (2) The IDFG Scientific Collection Permit.
- f. Water intakes (pumps) used during project implementation and connected to live water will have a fish screen installed, operated, and maintained in accordance with NMFS fish screen criteria (NMFS 2008).

3. Water Drafting

- a. Water withdrawal will be conducted in a manner that reduces harm to ESA-listed species and will be consistent with NMFS screening criteria (NMFS 2008).
- b. Appropriate drafting sites available for contractor use will be identified through coordination with the USFS, USFWS, and NMFS.
- c. Equipment will be properly cleaned before it is used in the area to reduce the spread of Aquatic Invasive Organisms (AIOs).

4. Blasting

- a. Blasting minimum setbacks will be used as described in Table 2 in this Opinion.
- b. No more than two blast shots will occur in 1 day.
- c. To ensure overpressures does not exceed 2.0 psi and peak particle velocity (PPV) does not exceed 0.5 ips, overpressure will be monitored with a piezoelectric hydrophone, and PPV monitored with a triaxial geophone, at the closest Yankee Fork mainstem water's edge during each blast.

5. Pollution Control Measures

- a. Project actions will follow all provisions of the CWA and provisions for maintaining water quality standards as described by the Idaho Department of Environmental Quality (IDEQ). Project activities will comply with all applicable Federal laws and processes as administered in Idaho (e.g., section 404 permits).
- b. If quantities of stored fuel for the project exceed 1,320 gallons, a standard U.S. Environmental Protection Agency (EPA) written Spill Prevention Control and Countermeasures (SPCC) Plan will be required onsite that describes measures to prevent or reduce impacts from potential spills (e.g., from fuel or hydraulic fluid) (40 CFR 112, Oil Pollution Act relating to SPCC Plans).
- c. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared as required. The plan will conform to National Pollutant Discharge Elimination System (NPDES) general permit requirements and describe the specific hazardous materials, procedures, and spill containment that will be used, including inventory, storage, and handling.
- d. Federal and Idaho state regulations regarding spills will be followed (see http://www.deq.state.id.us/water/data_reports/storm_water/catalog/index.cfm).
- e. Any spills resulting in a detectable sheen on water shall be reported to the EPA National Response Center (1-800-424-8802).
- f. Any spills over 25 gallons will be reported to the IDEQ (1-800-632-800), and clean-up will be initiated within 24 hours of the spill.
- g. All equipment used for instream work will be cleaned of external oil, grease, dirt, and mud, and leaks will be repaired prior to arriving at the project site. All equipment will be inspected before unloading at site. Any leaks or accumulations of grease will be corrected before entering streams or areas that drain directly to streams or wetlands. Equipment shall not have damaged hoses, fittings, lines, or tanks, with the potential to release pollutants into any waterway.
- h. Equipment used for instream or riparian work will be fueled and serviced in an established staging area. When not in use, vehicles will be parked in the designated staging area. The staging area will be in an area that will not deliver fuel, oil, or any other hazardous substance to streams.
- i. Oil-absorbing floating booms and other equipment, such as absorbent pads appropriate for the stream size, will be available onsite during all construction phases. Booms will be placed in a location that facilitates an immediate response to potential petroleum leakage.

- j. Vehicle staging, cleaning, maintenance, refueling, and fuel storage will occur as far as possible from any stream, waterbody, or wetland to minimize concerns associated with exposure to fuel and other fluids. Containment structures will be required to reduce the potential for spilled material

6. Invasive Aquatic and Weed Control Measures

- a. Water from water tenders will not be dumped directly from one stream or lake into another in order to prevent the spread of potential aquatic organisms/diseases.
- b. Sucking of organic and bottom material into water intakes will be avoided when drafting from streams or ponds.
- c. Driving equipment through or wading across water bodies will be minimized whenever possible.
- d. Maps of where AIO occur in the watershed will be obtained where the operation will take place. Geographic information system (GIS) coverages of individual species for most areas will be made accessible to biologists, resource advisors, and fire personnel on the USFS Region 4 webpage (http://www.fs.fed.us/r4/resources/aquatic/spatial_data/index.shtml).
- e. Cleaning and sanitation activities will comply with USFS Intermountain Region guidelines (e.g., use of quaternary ammonium compounds).
- f. All equipment will be disinfected prior to use if it has an unknown sanitizing history as well as after an incident.
- g. Equipment and supplies will be kept as clean as possible to reduce the spread of undesirable aquatic organisms; equipment will be thoroughly cleaned periodically.
- h. All plant parts, soil, and other materials that may carry noxious weed seeds will be removed from all equipment and vehicles before entering the project site.
- i. Equipment will be cleaned and sanitized before moving from areas where whirling disease and other invasive aquatic organisms occur to areas where they are not known to occur.
- j. Cleaning and sanitation will be conducted in areas where there is no potential to deliver effluent to waterways. Areas will be designated for cleaning and sanitation of heavy equipment to reduce the spread of noxious weeds and unwanted organisms.

- k. If possible, sanitation effluent will be disposed of in sanitary sewers. If sanitary sewers are not available, then sanitation effluent will be applied to roads in areas where there is no potential to deliver to waterways. Care will be taken to avoid exposing the public, or areas outside of the road ROW to the sanitation effluent as it is applied.
- l. Treated water will not be dumped into any stream or lake or on areas where it can migrate into any water body. Treated water will be offloaded to sanitary sewers, if possible.
- m. Heavy equipment will be high-pressure washed to remove all visible plant parts, dirt, and material that may carry noxious weed seeds, or invasive life forms, prior to entry into the project area. The same equipment will be cleaned again prior to leaving if warranted.
- n. Gravel or rock material source sites with noxious weed species present shall not be used, unless effective treatment or other mitigation measures are implemented.
- o. Materials used in rehabilitation will be certified as weed free.
- p. Revegetation will utilize native species and will be implemented on all disturbed areas.
- q. Following implementation, areas disturbed will be monitored for noxious weeds, and all noxious weeds will be treated according to EPA policies and procedures.
- r. Following construction, the entire project area will be monitored at least once a year for 2 years. Any noxious weeds identified in the project area will be removed by hand or by application of herbicides to individual plants; broadcast application of herbicides will not be used.

7. Restoration of Temporary Impacts to Habitat

- a. Disturbed areas will be seeded and planted with a mixture of native species that are present in the project area or that historically occurred there.
- b. Seed sources will be from the project area or sources acclimated to the region.
- c. All disturbed areas that are not planted with vegetation during the project will be seeded with a native grass seed mix specified by the USFS.
- d. In the fall of the year following the completion of the project, the entire project area will be reviewed to evaluate the success of revegetation efforts. If needed, additional revegetation efforts will be planned and implemented.

8. Sediment and Erosion Control Measures

- a. A written spill plan, also known as a SWPPP, will be prepared as required. The plan will conform to NPDES general permit requirements and describe the specific hazardous materials, procedures, and spill containment that would be used, including inventory, storage, and handling.
- b. Ground-disturbing activities will be confined to the minimum area necessary to complete the project.
- c. Site clearing, staging areas, access routes, and stockpile areas will be identified to minimize overall disturbance, to minimize disturbance to riparian vegetation, and to preclude sediment delivery to stream channels.
- d. Silt fences, straw bales, straw wattles, or other sediment barriers will be placed around disturbed sites to prevent sediment from entering a stream directly or indirectly, including by way of roads and ditches.
- e. A supply of erosion control materials (e.g., silt fence and wattles) will be kept on hand to respond to sediment emergencies.
- f. All erosion control materials will be certified weed free, including straw bales, wattles, straw, and seed mixes.
- g. In the event of a sediment emergency, all project operations will cease, except efforts to minimize storm or high-flow erosion, during precipitation and high-flow conditions that result in uncontrollable erosion in the construction area.
- h. Sediment control measures will be installed prior to construction activities and will remain in place until erosion control is assured. Once assured, all sediment control measures will be removed within 30 days and captured sediment and other materials will be disposed of in accordance with all Federal, State, and local laws and regulations.

9. Turbidity Minimization

- a. Cofferdams to isolate the instream work areas will be placed prior to any instream construction activity taking place.
- b. Cofferdams will be constructed of non-erodible material, such as bladder bags or other materials that divert water. Existing tailings may be used for cofferdams if necessary and appropriate material is available onsite.
- c. Temporary sumps will be used during construction to accommodate the predicted flow rate of infiltration through the substrate (if required to keep the dewatered area dry).

- d. Any outflows will be placed in an area that minimizes or prevents damage to riparian vegetation.
- e. When necessary, water will be pumped from the dewatered work area to a temporary settling pond prior to water reentering the stream channel.
- f. A tracked excavator will only operate in live water for the time necessary to gently traverse a portion of the channel (to reduce erosion and disturbances to the channel) and place sand bags and/or bladder dams on the channel bed (to reduce the suspension of sediments).
- g. Background measurements upstream of the project area will be taken prior to beginning construction in the mainstem (September 7). If noticeable sediment plumes occur in the mainstem as a result of construction, turbidity measurements will be obtained on a regular basis (e.g., every 15 minutes) to monitor turbidity increases over background levels. Should turbidity levels increase greater than 50 NTUs over background levels approximately 600 feet downstream, construction will be adjusted and/or halted, until levels drop close to the background levels. If persistent turbidity issues arise, the USFS, USFWS, and NMFS will be notified.

10. Flow Reintroduction

- a. Potential effects to water quality as a result of construction will be minimized by using cofferdams and low water work windows to reduce the amount of sediment released into live water.
- b. Once construction is completed, and prior to removing cofferdams, the exposed substrate will be wetted and allowed to saturate while still isolated by downstream cofferdams.
- c. Once substrate is fully saturated and waters have settled within the isolated coffered area, coffering will be removed to reinitiate unrestricted flow in the channel.

1.3.7. Monitoring and Reporting

1.3.7.1. Redd Monitoring Prior to Construction

Prior to constructing cofferdams in the mainstem, redd monitoring data from the Tribes will be evaluated to confirm that no redds will be affected. If a redd is found in the action area before construction or any live water work, NMFS will be contacted to discuss how to proceed.

1.3.7.2. Turbidity Monitoring for Mainstem Activity

Turbidity will be monitored and reported throughout construction using the methods described in BMP 7f.

1.3.7.3. Blasting Monitoring

Monitoring will document that the established tolerances or over pressures and PPVs are met and to guide project managers in changing procedures to meet established tolerances. Monitoring methods are described in BMP 4c.

1.3.8. Interrelated and Interdependent Actions

Interrelated actions are those that are part of a larger action and depend on the larger action for their justification; interdependent actions are those that have no independent utility apart from the action under consideration (50 CFR 402.02).

The removal of the last check dam will be done under a separate contract several years after the PS3 restoration. Although it is an interrelated action, the procedure for removal is not known at this time and will undergo separate consultation at a later date and prior to the removal. Therefore, this activity will not be addressed further in this Opinion. There are no other interrelated or interdependent actions associated with this project.

1.4. 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 proposed action is located between RM 6.6 and RM 5.9 on the mainstem Yankee Fork, but all of the design elements, except one, are located away from the mainstem and contained within the disconnected pond series. The action area extends 100 feet upstream and 600 feet downstream from the project footprint. For this consultation and ESA-listed Chinook salmon and steelhead, the action area includes the channels and riparian zones of the Yankee Fork (5th field hydrologic unit code [HUC 1706020105]) 100 feet upstream from the uppermost inlet (alcove) to the pond series, and 600 feet downstream of the outlet mouth of the pond series in the Yankee Fork. The upstream extent is based on potential noise effects and turbidity sampling. The downstream extent is based on turbidity monitoring and the possible travel distance for sediment plumes.

ESA-listed Snake River spring/summer Chinook salmon, Snake River Basin steelhead, and their designated critical habitats are found within the action area (Table 3). The action area is also designated as EFH for Chinook salmon. The action area for this consultation provides freshwater spawning, rearing, and migration habitat for Snake River spring/summer Chinook salmon and Snake River Basin steelhead.

Table 3. Federal Register notices for final rules that list threatened and endangered species, designate critical habitats, or apply protective regulations to listed species considered in this consultation.

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

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

2. 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 on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with the USFWS, NMFS, or both, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitat. Section 7(b)(3) requires that at the conclusion of consultation, NMFS provides an opinion stating how the agencies' actions will affect listed species or their critical habitat. If incidental take is expected, section 7(b)(4) requires the provision of an incidental take statement (ITS) specifying the impact of any incidental taking, and including reasonable and prudent measures (RPMs) to minimize such impacts.

2.1. Introduction to the Biological Opinion

Section 7(a)(2) of the ESA requires Federal agencies, in consultation with NMFS, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. The jeopardy analysis considers both survival and recovery of the species. The adverse modification analysis considers the impacts to the conservation value of the designated critical habitat.

“To jeopardize the continued existence of a listed species” means to engage in an action that will 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).

This Opinion does not rely on the regulatory definition of 'destruction or adverse modification' of critical habitat at 50 C.F.R. 402.02. Instead, NMFS has relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.¹

¹ Memorandum from William T. Hogarth to Regional Administrators, Office of Protected Resources, NMFS (Application of the “Destruction or Adverse Modification” Standard Under Section 7(a)(2) of the Endangered Species Act) (November 7, 2005).

NMFS uses the following approach to determine if the proposed action described in Section 1.3 is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- *Identify the rangewide status of the species and critical habitat likely to be adversely affected by the proposed action.* This section describes the current status of each listed species and its critical habitat relative to the conditions needed for recovery. For listed salmon and steelhead, NMFS has developed specific guidance for analyzing the status of the listed species' component populations in a "viable salmonid populations" (VSP) paper (McElhany et al. 2000). The VSP approach considers the abundance, productivity, spatial structure, and diversity of each population as part of the overall review of a species' status. For listed salmon and steelhead, the VSP criteria, therefore, encompass the species' "reproduction, numbers, or distribution" (50 CFR 402.02). In describing the range-wide status of listed species, NMFS relies on viability assessments and criteria in technical recovery team documents and recovery plans, where available, that describe how VSP criteria are applied to specific populations, major population groups, and species. NMFS determines the rangewide status of critical habitat by examining the condition of its physical or biological features (also called "primary constituent elements" or PCEs in some designations) - which were identified when the critical habitat was designated. Species and critical habitat status are discussed in Section 2.2.
- *Describe the environmental baseline for the proposed action.* The environmental baseline includes the past and present impacts of Federal, state, or private actions and other human activities *in the action area*. It includes the anticipated impacts of proposed Federal projects that have already undergone formal or early section 7 consultation and the impacts of state or private actions that are contemporaneous with the consultation in process. The environmental baseline is discussed in Section 2.3 of this Opinion.
- *Analyze the effects of the proposed actions.* In this step, NMFS considers how the proposed action will affect the species' reproduction, numbers, and distribution or, in the case of salmon and steelhead, their VSP characteristics. NMFS also evaluates the proposed action's effects on critical habitat features. The effects of the action are described in Section 2.4 of this Opinion.
- *Describe any cumulative effects.* Cumulative effects, as defined in NMFS' implementing regulations (50 CFR 402.02), are the effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area. Future Federal actions that are unrelated to the proposed action are not considered because they require separate section 7 consultation. Cumulative effects are considered in Section 2.5 of this Opinion.
- *Integrate and synthesize the above factors to assess the risk that the proposed action poses to species and critical habitat.* In this step, NMFS adds the effects of the action (Section 2.4) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5) to assess if the action could reasonably be expected to: (1) Appreciably reduce the likelihood of both survival and recovery of the species in the wild by reducing its numbers, reproduction, or distribution; or (2) reduce the value of designated or

proposed critical habitat for the conservation of the species. These assessments are made in full consideration of the status of the species and critical habitat (Section 2.2). Integration and synthesis occurs in Section 2.6 of this Opinion.

- *Reach jeopardy and adverse modification conclusions.* Conclusions regarding jeopardy and the destruction or adverse modification of critical habitat are presented in Section 2.7. These conclusions flow from the logic and rationale presented in the Integration and Synthesis Section (2.6).
- *If necessary, define a reasonable and prudent alternative to the proposed action.* If, in completing the last step in the analysis, NMFS determines that the action under consultation is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat, NMFS must identify a reasonable and prudent alternative (RPA) to the action in Section 2.8. The RPA must not be likely to jeopardize the continued existence of ESA-listed species nor adversely modify their designated critical habitat and it must meet other regulatory requirements.

2.2. Rangewide Status of the Species and Critical Habitat

2.2.1. Status of the Species

NMFS reviews the condition of the listed species affected by the proposed action using criteria that describe a 'VSP' (McElhany *et al.* 2000). Attributes associated with a VSP include abundance, productivity, spatial structure, and genetic diversity that maintain its capacity to adapt to various environmental conditions and allow it to sustain itself in the natural environment. These attributes are influenced by survival, behavior, and experiences throughout the entire life cycle, characteristics that are influenced, in turn, by habitat and other environmental conditions.

2.2.1.1. Snake River spring/summer Chinook Salmon

The Snake River spring/summer Chinook salmon Evolutionarily Significant Unit (ESU) was first listed as threatened on April 22, 1992 (67 FR 14653), and after a status review was again listed on June 28, 2005 (Table 3). The most recent status review was completed in December 2010, and determined that biological risk for the ESU had not changed since the 2005 review (Ford 2011). This ESU includes all natural-origin populations in the Tucannon, Grande Ronde, Imnaha, and Salmon Rivers. Some or all of the fish returning to several hatchery programs are also listed, including those returning to the Sawtooth, Pahsimeroi, and McCall hatcheries in the Salmon River drainage.

Snake River spring/summer Chinook typically migrate from the ocean to areas near their natal streams from April to July and hold until spawning in August to September. This migration and spawning timing makes adult Snake River spring/summer Chinook salmon especially vulnerable

to streamflow reductions caused by irrigation diversions. Juvenile spring/summer Chinook salmon emerge the spring following spawning and rear in freshwater for about a year before migrating downstream to the ocean.

Habitat degradation is common in the range of this ESU. Spawning and rearing habitats are likely impaired by factors such as tilling, water withdrawals, timber harvest, grazing, mining, and alteration of floodplains and riparian vegetation. Mainstem Columbia and Snake River hydroelectric, irrigation, and flood control developments have altered flow regimes and estuarine habitat, and disrupted migration corridors. Hatchery operations have also likely adversely affected Snake River spring summer Chinook salmon. Estimates of numbers of natural and hatchery origin Snake River spring/summer Chinook salmon returning over Bonneville Dam are available from 1980 through 2010 (ODFW and WDFW 2011). These estimates indicate that percentage of wild Snake River spring/summer Chinook salmon has declined from approximately 56% when the records begin in 1980, to 39% in 1992 when the ESU was listed, to approximately 14% in 2010. The high level of production/mitigation and supplementation hatchery programs across the ESU represents ongoing risks to natural populations (Ford 2011).

Historically, the Snake River drainage is thought to have produced more than 1.5 million adult spring/summer Chinook salmon in some years during the late 1800s (Matthews and Waples 1991). By the 1950s, abundance of spring/summer Chinook had declined to an annual average of 125,000 adults. Intensive hatchery supplementation started in the late-1970s (Cannamela 1992), but adult returns over Lower Granite Dam continued to decline and reached all-time lows in 1994 and 1995 when 3,915 and 1,797 (hatchery and wild combined) respectively, were counted at Lower Granite Dam. After 1995 there was a general increasing trend; however, zero redd counts were recorded for a number of populations in 1995, 1998, and 1999 suggesting complete loss of year classes for independent populations even as the ESU was growing. The increasing trend continued until 2001 when 185,693 were counted, the largest run since the Lower Granite Dam was constructed in 1975; however, only about 45,000 (24%) were natural origin. Between 2001 and 2010 the Lower Granite Dam count fluctuated between 37,636 and 164,796, and estimated numbers of wild fish fluctuated between 7,093 and 32,325.

The Yankee Fork Salmon River spring Chinook salmon population is one of nine extant populations in the Upper Salmon River MPG within the Snake River spring/summer Chinook salmon ESU. Yankee Fork Chinook are spring-run fish that return as adults to spawn from mid-August to early September, similar to other Upper Salmon River populations. Spawning is distributed throughout the population, extending from approximately 1 mile upstream of the Yankee Fork Salmon River mouth to the headwaters, and up the West Fork Yankee Fork Salmon River. None of the nine independent populations in the Upper Salmon River MPG currently meets viability criteria (Ford 2011). All are at high risk due to low population size and low population productivity (Ford 2011). However, recent changes resulting from Federal Columbia River Power System (FCRPS) mitigation may improve survival of this population.

The Yankee Fork Salmon River Chinook salmon independent population (Yankee Fork population) includes all Chinook salmon that spawn in the Yankee Fork drainage. The Yankee Fork population is included in an integrated hatchery program based on indigenous stocks. There was extensive hatchery supplementation from the late 1960s through the early 1990s, with

a recent stocking of 400,000 fingerlings in both 2010 and 2011 (IDFG 2012). The Yankee Fork population has a history of hatchery supplementation with Upper Salmon, local, and Rapid River stocks, but are considered to be persisting because of natural reproduction of the local stocks at the present (Ford 2011).

The Interior Columbia Basin Technical Recovery Team (ICBTRT) classified the Yankee Fork Salmon River Chinook population as “basic” in size and complexity based on historical habitat potential. To be “viable,” a basic population has a mean minimum abundance threshold criteria of 500 natural-origin spawners with a sufficient intrinsic productivity (≥ 2.21 recruits per spawner at the abundance threshold) to achieve a 5% or less risk of extinction over a 100-year timeframe (Ford 2011). In contrast, the most current (2000-2009) 10-year geometric mean abundance of natural-origin spawners is 21 (4% of the 500 needed for viable status) for the population, with a range from 0 in 1995 to 1,414 in 1968 (Ford 2011). Annual abundance estimates for Yankee Fork Salmon River spring Chinook salmon are based on expanded redd counts. The 10-year geometric mean productivity for the same period is only 0.80 recruits per spawner, below replacement and far below the minimum productivity needed to be viable (Ford 2011).

A 2012 estimate of wild Chinook can be made. In fall 2011, 25 redds were counted in the Yankee Fork watershed (IDFG 2012). Assuming 4,000 eggs per redd, and a 25% juvenile survival (Jim Morrow, NMFS Fisheries Biologist, pers. comm. 6/25/2012), NMFS estimates 16,000 juvenile Chinook salmon were likely present in the watershed in 2012. The IDFG stocking reports (IDFG 2012) show 98,518 juvenile Chinook were stocked in the Yankee Fork in April 2012. These numbers indicate that approximately 20% of juvenile Chinook in the watershed are expected to be natural origin in the summer of 2012.

Limiting factors are described below in Section 2.2.2, Status of Critical Habitat.

2.2.1.2. Snake River Basin Steelhead

The Snake River Basin steelhead distinct population segment (DPS) was first listed as threatened on August 18, 1997 (62 FR 43937), and after a status review was again listed as threatened on July 28, 2005. The most recent status review was completed in December 2010 and concluded no change in biological risk for this DPS (Ford 2011). This DPS includes all natural-origin populations of steelhead in the Snake River basin. The Snake River basin includes portions of southeast Washington, northeast Oregon, and central Idaho.

Snake River Basin steelhead enter fresh water in the summer through fall and hold in rivers and larger streams until spring when they move into natal tributaries to spawn. Steelhead typically spawn in early spring when flows are high, which allows access to small streams that may be unsuitable for salmonids that spawn in the fall. This migration and spawning timing makes adult steelhead less vulnerable than fall spawning salmonids (e.g. Chinook salmon) to impacts of irrigation on streamflow. However, the latter part of the adult run can be adversely affected by water diversion for irrigation. Juvenile steelhead emerge from redds from late spring to early summer and rear in fresh water for 1 to 6 years before migrating downstream to the ocean where they stay for 1 to 2 years before returning to freshwater.

Natural runs of Snake River Basin steelhead have been declining in abundance over the past several decades. Some of the significant factors in the declining populations are mortality associated with the many dams along the Columbia and Snake Rivers, losses from harvest, loss of access to more than 50% of their historic range, and degradation of habitat used for spawning and rearing (Busby et al. 1996). Since 1984, the first year for which estimated numbers of naturally produced steelhead are available, the number of wild Snake River Basin steelhead migrating over Lower Granite Dam have fluctuated between 8,000 and 43,000 (ODFW and WDFW 2011). Some of the strongest returns have occurred since listing (e.g., since 1998) but there have also been some very weak returns in recent years. Negative impacts of hatchery operations are also a concern. Percentage of wild fish was only about 30% when records began in 1984, declined to 25% by 1998 when the DPS was listed, and continued to decline to about 20% by 2010. Maintaining such a high proportion of hatchery fish for so many generations could cause genetic introgression, and possibly other problems, such as competition for resources and spread of disease. More information on the range-wide status of Snake River Basin steelhead is available in the "Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest" (Ford 2011).

The recent "Yankee Fork Tributary Assessment" (Reclamation 2012) notes that steelhead population trends in the Yankee Fork are largely unknown. The only direct count of natural origin steelhead occurs at the Sawtooth Fish Hatchery weir located on the Salmon River, upstream of Stanley. The average number of natural-origin returns to the Sawtooth Hatchery weir between 1986 and 2007 was 34 fish (Reclamation 2012).

The Yankee Fork is included in the Upper Mainstem Salmon River steelhead population (SRUMA-s) which is one of 12 populations in the Salmon River major population group (MPG) within the Snake River Basin steelhead DPS. Steelhead populations in this DPS are all summer run, with the Upper Mainstem Salmon River steelhead population is an A-run population. The ICBTRT classified the Upper Mainstem Salmon River population as "intermediate" in size and complexity based on historical habitat potential (ICBTRT 2007). The ICBTRT subtracted the estimated natural-origin returns accounted for in known Grande Ronde River populations from the A-run steelhead Lower Granite Dam counts, and assumed the resulting time series represented the remaining A-run populations in order to generate a surrogate for steelhead counts in the Salmon River (Ford 2011). A steelhead population classified as intermediate has a mean minimum abundance threshold of 1,000 natural-origin spawners with sufficient intrinsic productivity (≥ 1.14 recruits per spawner at the abundance threshold) to achieve a 5% or less risk ("low risk") of extinction over a 100-year timeframe. The surrogate population for A-run steelhead above Lower Granite Dam has an estimated recent abundance of 556 (57% of the 1,000 needed for viability) and productivity of 1.86. The current average natural abundance (recent 10-year geometric mean) is well below the ICBTRT minimum threshold value of 1,000. The SRUMA-s is part of the Salmon River MPG and none of the populations in the MPG are currently viable.

Hatchery steelhead are released into this population at multiple locations for both harvest augmentation and for supplementation of the natural population. The harvest augmentation hatchery program releases marked smolts derived from both local and out-of-MPG stocks. Some returning hatchery fish are not harvested in fisheries and do not recruit back to weirs or traps, and are thus assumed to be spawning naturally in the population. The Tribes initiated a steelhead supplementation program in the Yankee Fork in 2007, with the goal of helping rebuild

populations, collect broodstock, and sustain harvest (Tardy 2009). Another effort implemented by the Tribes to enhance steelhead production in the Yankee Fork included a Steelhead Streamside Incubation (SSI) program which began in 1995. Steelhead eggs from the Sawtooth and Pahsimeroi fish hatcheries are transferred to streamside upwellers where they are incubated on river water to mimic natural hatch timing in the system (BPA 2012a). From October 1, 2008, to September 30, 2009, approximately 513,412 total steelhead eggs were planted in the Yankee Fork, with a reported survival of approximately 78% (Tardy 2009). Rotary screw trap data estimated 97,504 juvenile steelhead migrated past the trap from July 3 through November 13, 2009 (Tardy 2009).

The number and proportion of natural spawners that are hatchery-origin is unknown. An additional diversity concern for this population is the current management practice of releasing unmarked hatchery steelhead and planting eyed eggs to supplement natural production. Planned production releases for brood years 2008 to 2017 under the current U.S. v. Oregon Technical Advisory Committee Interim Management Agreement (U.S. v Oregon Parties 2008) for upriver Chinook, sockeye, and steelhead fisheries include releases into the Yankee Fork and may include other tributaries if hatchery production is adequate. The prevalence of hatchery-origin spawners is assumed to be highest in the mainstem Salmon River between the Yankee Fork Salmon River and the Sawtooth Fish Hatchery weir. These hatchery spawners pose a genetic risk to the natural population.

Limiting factors are described below in Section 2.2.2, Status of Critical Habitat.

2.2.2. Status of Critical Habitat

Critical habitats were designated for Snake River spring/summer Chinook salmon on October 25, 1999 (64 FR 57399), and for Snake River Basin steelhead on September 2, 2005, (70 FR 52630). Critical habitat for the two species 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, designated critical habitat for spring/summer 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. The riparian zone is critical because it provides shade, streambank stability, organic matter input, and sediment/nutrient/chemical regulation. The proposed action discussed in this Opinion will be constructed within designated critical habitat for Snake River spring/summer Chinook salmon, and Snake River Basin steelhead.

Since the ESA-listed species addressed in this Opinion occupy many of the same geographic areas and have similar life history characteristics, their habitat needs, or PCEs are also similar (Table 4). In general, these PCEs include sites essential to support one or more life stages of the ESA-listed species (e.g., sites for spawning, rearing, migration, and foraging) and contain physical or biological features essential to the conservation of the listed species (e.g., spawning gravels, water quality and quantity, side channels, or food).

When designated as critical habitat, the action area contained one or more PCEs within the acceptable range of values required to support the biological processes for which ESA-listed

species use that habitat. The PCEs supporting all life stages of Chinook and steelhead that may be affected by the proposed action include water quality (chemical/ temperature/turbidity), substrate (sediment), water velocity, cover/shelter, floodplain connectivity, riparian vegetation, and access/space. Any modification of these PCEs may affect freshwater spawning, rearing, or migration in the action area. Proper function of these essential elements is necessary to support successful adult and juvenile migration, adult holding and spawning, and juvenile rearing, growth and development.

Table 4. Types of sites and essential physical and biological features designated as PCEs, and the species life stage each PCE supports.

Site	Essential Physical and Biological Features	ESA-listed Species Life Stage
Snake River Steelhead^a		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development
Freshwater rearing	Water quantity & 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 & Juvenile Rearing	Spawning gravel, water quality and quantity, cover/shelter, food, riparian vegetation, and space	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 PCEs pertaining to estuarine, nearshore, and offshore marine areas have also been described for Snake River steelhead. These PCEs 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.

2.2.2.1. Spring/Summer Chinook Salmon and Steelhead Designated Critical Habitat

Snake River spring/summer Chinook salmon designated critical habitat in the Snake and Columbia Rivers has been altered by water use; by operation of dams upstream from the migration corridor for water storage and flood control; by construction of dams, reservoirs, and a navigation channel within the migration corridor; and by operation of dams and reservoirs for power generation, flood control, water storage, and navigation within the migration corridor. Use of water, primarily for irrigation, has greatly reduced water quantity available for rearing and migration and construction and operation of storage and flood control reservoirs has further

reduced water quantity during spring when juvenile Chinook salmon migrate downstream through the Snake and Columbia Rivers. The eight mainstem dams and their associated reservoirs along the migration route have greatly reduced water velocity and have increased habitat for native and introduced predators, such as pikeminnow, smallmouth bass, and channel catfish. The eight mainstem dams also constitute physical barriers that can substantially decrease migration survival. Impounding water for storage, flood control, and navigation may also increase summer water temperatures, which could adversely affect late migrating juvenile and adult Chinook salmon.

Designated critical habitat in the Salmon River has not been affected by mainstem dams and large storage reservoirs, so it is somewhat less altered than habitat in the Snake and Columbia Rivers, but it has been affected by extensive water use, construction and maintenance of water diversion structures, construction and maintenance of roads, conversion of wetlands into agriculture land, and by livestock grazing. Water use reduces streamflow available for rearing juveniles, migrating juveniles and adults, and holding adults in the mainstem Salmon River. Water use also reduces streamflow in tributary streams, and actually completely dries many tributaries, which reduces available rearing habitat, reduces thermal refugia for rearing juveniles, and increases summer water temperatures in the mainstem.

The project area is in designated critical habitat for Chinook salmon and steelhead. Chinook salmon designated critical habitat in the Yankee Fork watershed includes all streams downstream from naturally impassable barriers. Critical habitat for steelhead was designated by the Snake River Basin steelhead Critical Habitat Analytical Review Team (CHART) (NMFS 2005).

The CHART rated the conservation value of all 5th field HUC watersheds that supported populations of Snake River Basin steelhead (NMFS 2005). The CHART concluded that all of the occupied areas contained one or more PCEs for this ESU and identified management activities that may affect the PCEs. The Team rated 97 miles of mainstem and tributary habitat in the Yankee Fork watershed (5th field HUC 1706020106). The lower Yankee Fork/Jordan Creek habitat, containing the project area, was given a conservation value of "medium" with its PCE's affected by mining, roads, and irrigation. The project area is located in a 7 mile section of the mainstem Yankee Fork downstream of Jordan Creek. This reach was directly affected by dredge mining which has constricted the river, disconnected the river from its floodplain, and lowered the riverbed 10- to 35-feet, increasing tributary gradients, leading to increased streambed degradation and sedimentation.

The Upper Salmon Basin Watershed Project ranked all of the streams in the Yankee Fork watershed at Priority 1 under Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin (SHIPUSS; USBWP 2005). Priority I indicates that the Yankee Fork and its tributaries have the potential to realize immediate, tangible benefits to fish from habitat restoration efforts. With little water diversion in the Yankee Fork watershed, the watershed has unimpaired late-summer base flows and cold water temperatures, key elements for successful salmonid habitat restoration (CH2M Hill 2008). The highest priority in the watershed is to reconnect the lower Yankee Fork Salmon River to its floodplain (Reclamation 2012). Approximately 50% of the historic spring/summer Chinook spawning and rearing habitat in the Yankee Fork watershed was below the confluence with Jordan Creek, which is the stretch of the

river that was dredge-mined. By restoring natural processes to this portion of the river, this river segment could again return to its historical high value as spring/summer Chinook spawning and rearing habitat. This pond series project will increase side channel habitat and flood plain connectivity.

2.2.3. Climate Change

Climate change is likely to have negative implications for the conservation value of designated critical habitats in the Pacific Northwest (CIG 2004; Scheuerell and Williams 2005; Zabel et al. 2006; Independent Scientific Advisory Board [ISAB] 2007). Average annual Northwest air temperatures have increased by approximately 1°C since 1900, or about 50% more than the global average warming over the same period (ISAB 2007). The latest climate models project a warming of 0.1°C to 0.6°C per decade over the next century. According to the ISAB, these effects may have the following physical impacts within the next 40 or so years:

- Warmer air temperatures will result in a shift to more winter/spring rain and runoff, rather than snow that is stored until the spring/summer melt season.
- With a shift to more rain and less snow, the snowpacks will diminish in those areas that typically accumulate and store water until the spring freshet.
- With a smaller snowpack, these watersheds will see their runoff diminished and exhausted earlier in the season, resulting in lower streamflows in the June through September period.
- River flows in general and peak river flows are likely to increase during the winter due to more precipitation falling as rain rather than snow.
- Water temperatures will continue to rise, especially during the summer months when lower streamflow and warmer air temperatures will contribute to the warming regional waters.

These changes will not be spatially homogenous. Areas with elevations high enough to maintain temperatures well below freezing for most of the winter and early spring would be less affected. Low-lying areas that historically have received scant precipitation contribute little to total streamflow and are likely to be more affected. These long-term effects may include, but are not limited to, depletion of cold water habitat, variation in quality and quantity of tributary rearing habitat, alterations to migration patterns, accelerated embryo development, premature emergence of fry, and increased competition among species.

2.3. Environmental Baseline

‘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 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02). An environmental baseline that does not meet the biological requirements of a listed species may increase the likelihood that adverse effects of the proposed action will result in jeopardy to a listed species or in destruction or adverse modification of a designated critical habitat.

NMFS describes the environmental baseline in terms of the biological requirements for habitat features and processes necessary to support all life stages of each listed species within the action area. Each listed species considered in this Opinion resides, spawns or migrates through the action area. Thus, for this action area, the biological requirements for salmon and steelhead are the habitat characteristics that support successful completion of spawning, rearing, and freshwater migration. The following baseline conditions are organized to coincide with NMFS' Matrix of Pathways and Indicators (NMFS 1996).

The Yankee Fork is a major tributary of the Salmon River, entering the Salmon River at RM 368 near Sunbeam, Idaho. The Yankee Fork watershed is 122,000 acres and is entirely within the SCNF with the exception of a few private inholdings, most related to mining. Water rights in the watershed are primarily for mining and are small when compared to more developed watersheds. Lost access to floodplains in the mainstem below Jordan Creek has decreased moderating effects on flood flows. Despite these effects, the hydrograph is considered to be properly functioning² for the Yankee Fork. The U.S. Geological Survey (USGS) operated a streamflow gage (USGS Gage No. 13296000) on the Yankee Fork near RM 0.5 between May 1921 and February 1949. Mean annual flow at the gage was 197 cfs, and the mean annual peak flow is 1,603 cfs (Reclamation 2012).

Pond Series 3 is part of a previous side channel restoration effort which occurred in the late 1980s, previous to Chinook salmon and steelhead listings. In the 1980s, working together, the BPA, IDFG, Tribes, USFS, and Simplot, created off-channel habitat for salmonids by connecting remnant tailings ponds to the mainstem Yankee Fork. As part of this effort, Pond Series 3, and Pond Series 2 (immediately downstream), were developed as side-channel habitats each consisting of a riprap entry from the mainstem Yankee Fork, ponds created with wooden check dams, and channels connecting the ponds. In their current state, access to either pond series is seasonal, many of the check dams are down, and the ponds have captured substantial amounts of fine sediment. In Pond Series 3, beaver have created several dams, one of which is an upstream passage barrier in the location of the proposed inlet control structure. Immediately below this passage barrier is an earthen road prism across the pond series channel with a small culvert that conveys the Pond Series 3 water. At present, Pond Series 3 is dominated by ponds with little channel or spawning habitat, little summer flow, and fish access is primarily from the lower end.

The mainstem and West Fork Yankee Fork provide most of the spring/summer Chinook habitat for this population. Historically, 50% of the spawning habitat for this population occurred in the

² Rankings completed consistent with guidance provided in NMFS' document "*Making Endangered Species Act Determinations of Effect for Individual and Grouped Actions at the Watershed Scale*" (NMFS 1996).

Lower Yankee Fork Salmon River below Jordan Creek. Within the project area, the limiting factors are habitat fragmentation, connectivity, complexity, quantity, and quality (Reclamation 2012).

2.3.1. Sediments

The Yankee Fork Tributary Assessment (Reclamation 2012) summarizes the conditions leading to high background turbidity in the watershed. The steep slopes and erosive soils in the watershed are susceptible to mass wasting processes. Summer storm events are common in the watershed and high-intensity thunderstorms can trigger shallow slides and debris flows, especially in areas where intensive/severe fires have burned and in the headwater areas. Some of these sediment inputs contain a high percentage of fine materials that can cause high turbidity and siltation, which generally have short-term negative impacts to fish habitat (on the order of days or weeks). However, these types of events provide the necessary gravel and wood inputs to the system that benefit the fish species over the long term (months or years).

The Yankee Fork below Jordan Creek and through the project area is severely altered by dredge mining. In the 1940s and early 1950s, a large floating dredge mined the Yankee Fork stream channel beginning about 1 mile from the confluence with the Salmon River and continuing upstream to Jordan Creek, covering approximately 7 miles. The dredge dug 10- to 35-feet into the streambed to recover gold by washing and separating rock from dirt. This floating dredge moved massive amounts of channel substrate (mostly gravel to large cobble) into large tailings piles along the east side of the streambank. A total of 626 acres of land is now covered in tailings with gravel piles up to 20 feet high. These gravel piles have constricted 7 miles of the Yankee Fork Salmon River and disconnected the channel from much of its floodplain. The steep slopes and erodible soils in the Yankee Fork watershed contribute to mass wasting. Some of these sediment inputs contain a high percentage of fine materials that can cause high turbidity and siltation, which generally have short-term negative impacts to fish habitat lasting days or weeks (Reclamation 2012). The IDEQ currently reports that the project reach supports beneficial uses, but is impaired for sedimentation and siltation, and physical substrate habitat alteration (IDEQ 2009).

The constricted channel and disconnected floodplains through the project area have resulted in conditions inhospitable to spawning or rearing salmonids. Channel constriction has degraded the stream bed, concentrated the flow, and increased stream gradient causing increased water velocities, scour, and transport of spawning gravels. The high velocities are unsuitable for rearing and offer little high water refugia for juvenile fish. Although the action area includes some suitable spawning and rearing habitat for Chinook salmon and steelhead, these areas are greatly reduced from that available historically (BPA 2012a). There are far fewer pools, especially deep pools, in the lower Yankee Fork than in undisturbed reference reaches in the watershed (BPA 2012a). Tributaries have eroded downward as they adjust to the lowered elevation of the mainstem Yankee Fork, causing excess fine sediment delivery to the stream. The tailings piles block access to off-channel habitat and cover riparian vegetation. Further, since the tailings do not contain sufficient soil, riparian vegetation has not regrown.

Consequently, the current riparian zone does not provide either LWD recruitment or shade to the Yankee Fork stream channel. This has adversely affected and reduced spawning and rearing habitat for spring/summer Chinook and steelhead in the Yankee Fork.

2.3.2. Fish Surveys and Redd Counts in the Project Area

Anadromous fish presence in the project area has been documented through juvenile fish densities and redd counts. Juvenile anadromous fish density surveys taken at the project site demonstrate the value of the lost side channel rearing habitat. Juvenile anadromous fish densities were 0.9 per 100 ft² in the Yankee Fork mainstem, as compared to 6.5 per 100 ft² in the existing pond series side channels, and 0.5 per 100 ft² in the ponds (Gregory and Wood 2012).

Juvenile anadromous fish densities from the action area were interpreted from Gregory and Wood (2012). In the density study, anadromous fish densities were taken in the lower Yankee Fork and Pond Series 2 and 3, spanning several years. The median densities used to establish fish presence in this Opinion had a large variation due to the large variation in stocking of eggs, juveniles, and spawning adults during the years of the study. Snake River spring/summer Chinook salmon found in the action area are considered 'stream type' with juvenile's rearing in freshwater for only 1 year (Taylor 1990). Therefore, only 1 year class of spring/summer Chinook salmon is included in Chinook juvenile densities. Age 0 Chinook densities were found to be approximately 0.4 fish per 100 ft² in the mainstem, 0.0 fish per 100 ft² in the isolated ponds, and 3.1 fish per 100 ft² in the isolated side channels. For steelhead ages 0-2, densities were found to be approximately 0.5 fish per 100 ft² in the mainstem, 0.5 fish per 100 ft² in the isolated ponds, and 3.4 fish per 100 ft² in the isolated side channels.

Historically, 50% of the spawning habitat for this population occurred in the Yankee Fork Salmon River below Jordan Creek (BPA 2012a). Chinook salmon redd counts since 2006 show the majority of Chinook spawning now occurs in the mainstem above Jordan Creek (above dredge mining) and West Fork of the Yankee Fork (Unpublished data from IDFG). Restoring a functioning riparian floodplain to the lower Yankee Fork would provide the greatest benefit to Yankee Fork spring/summer Chinook (BPA 2012a).

Steelhead spawning likely occurs throughout the Yankee Fork drainage but is not known to occur specifically in the action area (BPA 2012a). The Yankee Fork Tributary Assessment (Reclamation 2012), summarizing several surveys, shows suitable spawning conditions are found in unconfined to moderately confined reaches. The reach containing the action area was historically a moderately confined reach but is now confined due to dredge mine tailings constricting the river. Due to the confinement and increased water velocities, spawning gravels have been mostly stripped away (Reclamation 2012) and the mainstem in the action area is now dominated by cobble, a substrate unsuitable for steelhead spawning. Juvenile steelhead may be found in the project area throughout the year (BPA 2012a).

No physical habitat migration barriers occur along the mainstem of the Yankee Fork in the action area. However, the side channel habitats associated with Pond Series 3 have multiple existing physical barriers that impede upstream and downstream migration for salmonids under existing

conditions. These occur primarily during low flows at the inlets and outlets as well as in association with existing water control structures. After completion of the project, and at all water levels, migration will be available throughout the side channel in the downstream direction and up to the inlet control structure in the upstream direction.

2.3.3. Water Quality

The Habitat Elements pathway of exposure and risk addresses temperature, sediment, and chemical contamination. Factors influencing water temperatures within the Yankee Fork watershed such as stream shading, width/depth ratios, and flows are believed to be “functioning at risk” in the dredged reaches of the Lower Yankee Fork and Jordan Creek subwatersheds. Water temperature data collected in 2002 showed water temperatures exceeding 62.6°F in those areas. In the project area, the mainstem Yankee Fork is a transport reach with channel constriction and high water velocities resulting in very little fine or gravel sediment deposition. There are no CWA 303d designated reaches (in regards to chemical contaminants) with the Yankee Fork watershed.

2.3.3.1. Toxics

Past mining activities have negatively affected water quality in the Yankee Fork. Efforts to control pollution associated with historical mining activities have been implemented to reduce chemical contamination inputs into the mainstem (Reclamation 2012). Although there remains a potential risk of chemical contamination from past and present mining activities, presently water quality is within IDEQ standards.

Mercury and selenium are present in the undisturbed ground, dredge tailings, sediments, and water column as a result of the historical mining activities and natural occurrence of selenium in the watershed. However, USGS studies in the Yankee Fork (Rhea et al. 2008; Frost and Box 2009) suggest little bioaccumulation of mercury is occurring from sediment with a slightly elevated risk of toxicity to aquatic life based on EPA guidelines (USEPA 2004; Rhea et al. 2008). Anadromous and fluvial fish populations may be at a lower risk of selenium bioaccumulation than resident fish populations because of the shortened duration of time and life stage that each population uses the watershed.

In October 2011, CH2M HILL conducted a geochemical characterization of Pond Series 2 and Pond Series 3 to evaluate the potential risk from contaminant exposure to aquatic and benthic resources and their potential consumers (e.g., upper trophic level fish, wildlife, and humans) (CH2M HILL 2011a). Risks were evaluated under current and reasonably anticipated future land and water uses (e.g., the proposed habitat improvement projects). Based on previous work by the USGS (Frost and Box 2009), the constituents of potential concern in the Yankee Fork surface water and sediment are considered to be selenium, mercury, and methyl mercury.

The following three conclusions can be drawn regarding the exposure pathways of concern under the current conditions at both pond Series 2 and 3: (1) Measured selenium and mercury concentrations appear to be generally consistent with background levels in the water column and sediments (e.g., background levels are those measured from areas of the Yankee Fork basin not

impacted by historical mining activities); (2) the greatest risk to aquatic species appears to be from the potential bioaccumulation and biomagnification of selenium and mercury; and (3) conditions that enhance the transformation and accumulation of these constituents include low dissolved oxygen, high organic carbon, and high sulfur concentrations. Currently, the pond series lacks a perennial surface water connection to the mainstem at the upstream end. Fine sediment covers the bottom of the ponds, creating anaerobic conditions that contribute to mercury methylation and subsequent bioaccumulation by aquatic species.

The proposed habitat improvement activities are intended to increase connectivity between both pond series and the mainstem, thereby increasing the flow rates and dissolved oxygen, and decreasing fine sediment deposition. These expected future conditions are anticipated to reduce the bioaccumulation potential for selenium and mercury, and subsequently reduce the overall the upstream direction of the side channel.

2.3.4. Access

Habitat access is compromised within the project area. No anthropogenic physical barriers are present on the mainstem of the Yankee Fork that prevent fish passage. In turn, upstream and downstream passage to most anadromous and resident fish habitat is at natural levels. However, some historically accessible tributaries to the Yankee Fork, including Jerry's and Silver Creeks in the action area, are now inaccessible due to past dredge mining. In addition, Cearly Creek enters the Pond Series 3 side channel and is accessible only from the upper end of the existing Pond Series 3 side channel.

2.3.5. Habitat Elements

The Habitat Elements pathway of exposure and risk addresses the following habitat elements: substrate embeddedness, LWD, pool frequency, pool quality, off-channel habitat, and refugia. Baseline data show pool frequency, pool quality, LWD, and instream cover were limiting for juvenile rearing habitat (Reclamation 2012).

As of 2010, Riparian Management Objectives (RMOs) derived from PACFISH (> 20 pieces of medium or LWD per mile) were not met for LWD in any of the surveyed reaches (USFS 2010). Annual LWD inputs are generally not retained in the dredged reaches of the Yankee Fork and Jordan Creek because of high water velocities and lack of floodplain; however, these areas likely functioned similarly under natural conditions (Reclamation 2012). Upper portions of the Yankee Fork watershed, however, retain more LWD than the Lower Yankee Fork subwatershed and appear to recruit and maintain potential sources of LWD.

Although it is questionable as to whether or not pool frequency criteria listed in the RMOs are suitable for the alternating bedrock and alluvial channel segments that occur in the Yankee Fork watershed, results from a 2010 stream habitat survey for the Yankee Fork and Jordan Creek (USFS 2010) showed that pool frequencies within the reach did not always meet standards.

Off-channel habitat within the dredged reaches of the Yankee Fork and Jordan Creek is likely reduced from natural levels. Some tributaries are no longer accessible because of past dredge mining (e.g., Jerry's and Silver Creeks) may have historically functioned as refugia for fish. Existing refugia within the dredged reaches of the Yankee Fork are limited because the floodplain has been reduced and water velocities are high during the spring.

2.3.6. Channel Condition and Dynamics

The Channel condition and dynamics pathway addresses the following habitat features: width/depth ratio, streambank condition, and floodplain connectivity. As of 2010, RMOs for the Yankee Fork within the dredged reaches were not met for width/depth ratios within any of the dredged reaches of the Yankee Fork. The RMOs for streambank stability were met for all but one of the survey reaches (USFS 2010). Floodplain connectivity in the upper reaches of the Yankee Fork was good. However, in the dredged reaches, overbank flows have been eliminated relative to historical frequency because of the unnatural confinement of the stream by dredge piles (USFS 2011). The current side channel has mainstem inflow only in high water indicating that flows necessary to inundate existing side channel flood plains are of larger magnitude and lower frequency than the rest of the watershed. Channel conditions and dynamics in the Yankee Fork are "Functioning at Risk" for width/depth ratio and floodplain connectivity, and "Functioning Appropriately" for streambank condition.

2.3.7. Flow/Hydrology

NMFS Matrix indicators relative to flow/hydrology pathway include the following: change in peak/base flows, and increase in drainage network. Multiple water rights occur in the watershed, with an approximate total diversion rate of 45 cfs (Reclamation 2012). No major agricultural or municipal uses for existing diversions on USFS lands currently exist. Changes over time in the annual hydrograph for the Yankee Fork appear related to climate change and are not unique to the system (Reclamation 2012). There does not appear to have been any significant change to the drainage network within the Yankee Fork watershed. Flow and hydrology conditions in the Yankee Fork are "Functioning Appropriately" for all indicators as noted by the status of baseline conditions for Yankee Fork watershed. It must be noted however, that the project areas within the dredged reach is confined by the tailings piles and therefore has a constricted flow with higher velocities than would be found without the constriction.

2.3.8. Watershed Conditions

The NMFS Matrix watershed conditions pathway evaluates conditions of a watershed's riparian habitat conservation areas. Riparian zones in dredged portions of the Lower Yankee Fork are severely altered by past mining activities. Vegetation in these areas is now scattered at low levels, and riparian zones are for the most part "Not Properly Functioning." Upper portions of the Yankee Fork watershed that were not dredge mined remain relatively intact.

The Habitat Improvement and Monitoring Plan (BPA 2012b) describes the existing riparian area in the 14-acre project area. The 0.88 acres of existing wetland have limited function for flood attenuation, sediment, nutrient and toxicant removal, and uniqueness, and have moderate value as fish/aquatic habitat, water storage, bank stabilization, and groundwater discharge/recharge. The current simplified channel and lack of floodplain connections reduce the amount of available juvenile rearing habitat, high-flow refugia, and adult holding and spawning habitat.

Along the Yankee Fork mainstem, water temperatures generally range from 48°F to 56°F. Despite “Properly Functioning” conditions for water temperature, warm water temperatures and their effects on habitat quality are a concern primarily in the Yankee Fork downstream of Jordan Creek, including the action area (Reclamation 2012). In general, warm water contributions to the Yankee Fork come from Jordan Creek and some tailing pond outlets. In contrast, several smaller tributaries, springs, and tailing ponds contribute cooler water to the Yankee Fork (Reclamation 2012).

In conclusion, Pond Series 3 has filled in with fine sediment and, for the most part, now lacks upstream connections to the mainstem, except at high spring flows. Additionally, because of the historical mining which left large piles of dredge tailings, the mainstem has less complexity, fewer pools, and limited availability of spawning-size gravel. The simplified channel and lack of floodplain connections reduce the amount of available juvenile rearing habitat, high-flow refugia, and adult holding and spawning habitat. Collectively, these changes have reduced the quantity and quality of habitat necessary to help recover listed salmonid stocks.

2.4. Effects of the Action on the Species and its Designated Critical Habitat

“Effects of the action” means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

The proposed action has the potential to generate adverse effects to juvenile ESA-listed fish occupying the action area. Construction-related effects (e.g., turbidity, sediment deposition, and chemical contamination) will generally be habitat-related and temporary in nature, while fish salvage will likely result in individual fish mortality. The majority of construction actions will occur in the isolated side channel, will not result in direct effects to the species, and will not be discussed further.

The project will have short- and long-term effects to species and critical habitat that will be analyzed in the following effects sections. In the short-term, extensive fish salvage may result in fish mortality; and placing and removal of cofferdams in the mainstem and rewatering the side channel mainstem will cause turbidity and sediment deposition. There may be also be contamination threats from machinery and associated chemicals, and metal toxicity in sediments released from the side channel. In addition, there is a longer-term chemical threat from the use of herbicides during the 5-year vegetation monitoring plan. Short-term construction effects are

expected to be demonstrably outweighed by long-term improvements to instream habitat (e.g., improved floodplain connectivity, velocity refugia, added rearing habitat, added riparian area, and water temperature improvement), resulting in greater fish productivity.

The work window is from September 7 to October 31. The mainstem work window is shifted away from the preferred work window (mid-July through mid-August; USBWP 2005) to allow initiation and completion of the project in 2012. During this period Chinook spawning is expected to have ended and incubating eggs will be in the redds. Tribal Chinook redd counts show that no new redds are typically found after the September 7 date and there is no historical spawning in the action area (BPA 2012a). In addition, the Tribes will survey the Yankee Fork prior to the work window so the presence of any redds will be known. If a redd is within the action area, NMFS will be contacted to determine if and how to proceed with implementation. For these reasons the likelihood of affecting Chinook spawning adults and incubating eggs is discountable. Juvenile spring/summer Chinook salmon and steelhead will be present during the entire construction period.

2.4.1. Species Effects

2.4.1.1. Turbidity

The project has several activities that may elevate turbidity in live waters of the Yankee Fork. Activities include:

- Preparation of staging areas (unoccupied habitat);
- Placement and removal of cofferdams affecting the mainstem at the entrance of the side channel and at the point bar;
- The rewatering of the point bar, inlet area, and pond series following construction; and
- Pumping of turbid water from the pond series while under construction.

Turbidity and Erosion Control BMPs (e.g., minimize disturbed area, sediment barriers, cofferdams, etc.) presented as part of the proposed action are intended to prevent the majority of sediment delivery to stream habitat but cannot prevent all sediment due to the nature of the in-channel work. Juvenile spring/summer Chinook salmon and steelhead may experience short-term adverse effects as a result.

The most critical aspects of a sediment effects analysis are timing, duration, intensity and frequency of exposure (Bash et al. 2001). Depending on the level of these parameters, turbidity can cause lethal, sublethal, and behavioral effects in juvenile and adult salmonids (Newcombe and Jensen, 1996). For salmonids, elevated suspended sediment (i.e. turbidity) has been linked to a number of behavioral and physiological responses (e.g., gill flaring, coughing, avoidance, and increase in blood sugar levels) which indicate some level of stress (Bisson and Bilby 1982; Sigler *et al.* 1984; Berg and Northcote 1985; Servizi and Martens 1992). The magnitude of these stress responses is generally higher when turbidity is increased and particle size decreased

(Bisson and Bilby 1982; Servizi and Martens 1987; Gregory and Northcote 1993). Although turbidity may cause stress, Gregory and Northcote (1993) have shown that moderate levels of turbidity (35-150 NTUs) accelerate foraging rates among juvenile Chinook salmon, likely because of reduced vulnerability to predators (camouflaging effect).

Timing of sediment inputs from construction-related activities would generally occur during lower background sediment levels in the stream system (during low flow season and during a lack of precipitation). Bash et. al (2001) reported that protective mucus levels of individual fish are lower during the low sediment background period, therefore, effects to fish may be amplified at this time.

Newcombe and Jensen (1996) calculated "severity-of-ill-effect scores" for various durations (hours) and intensities (concentration in mg/l suspended solids) of juvenile salmonid exposure to suspended sediment. These values can easily be broken down into four basic classes as it relates to take under the ESA. A severity rating of '0' has no behavioral effect and thus no 'harm.' Severity levels 1-4 represent alarm reactions, abandonment of cover, avoidance response and short-term reduction in feeding rates (<2 hours) and are considered insignificant temporary impacts to individuals. Severity levels 5-9 represent ascending levels of sublethal effects that can be assumed to cause 'harm' to listed salmonids and include physiological stress, habitat degradation, impaired homing, reduced growth rate and delayed hatching. Suspended sediment concentrations resulting in severity levels 10-14 result in lethal effects to the subjected individuals.

The proposed action includes monitoring in order to change procedures if turbidity reaches 50 NTU over background during instream work and when rewatering the side channel. The Idaho standard for turbidity is 50 NTU instantaneous measurement over background which is considered protective of cold water aquatic life. Lloyd (1987) notes that stream turbidity is variable and larger substrates will settle out of the water column quicker than fine particles. Lloyd (1987) also concludes that streams that have a high natural turbidity are less impacted by increased turbidity than very clear streams. The Yankee Fork is a naturally turbid stream and the reach within the project area has been stripped of fine sediment with cobble as the dominant substrate (Reclamation 2012). Because of these characteristics of the project reach, few fines are expected to be entrained during any instream work while placing or removing the cofferdams.

Staging Areas. Staging areas and access points and roads are located adjacent to the pond series on the opposite side of the Yankee Fork Road from the Yankee Fork, or behind cofferdams separating the access routes from live water in the Yankee Fork. Maintenance, sediment control, and using water for dust abatement will be done using proposed Erosion Control BMPs (e.g., minimize disturbed areas, use of sediment barriers, and ceasing operations during precipitation). These BMPs will help to eliminate or minimize the introduction of fine sediment to the waters of the Yankee Fork. In addition, all staging and access areas drain towards the isolated pond series where sediments will be mixed with construction-generated turbidity and addressed when the pond series is rewatered. Because staging and access areas drain toward the isolated pond series, and BMPs will be employed to minimize disturbed areas and control runoff and dust, the chance of sediment being introduced from staging and access areas directly to the Yankee Fork is discountable.

Cofferdams. Mainstem coffering will control inlet and outlet flow to the pond series during construction, and isolate the construction of the point bar. Approximately 500 feet of coffering will be required in live water of the mainstem to isolate the pond series and construction of the alcove, nose and reinforcement berms near the inlet, and the point bar adjacent to the outlet channel mouth. A 40-foot cofferdam will isolate the pond series in the outlet channel, 300 feet from the mainstem and will be placed after flow has been stopped to the side channel; therefore will not be included in mainstem cofferdam effects. The outlet cofferdam is approximately 300 feet from the mainstem Yankee Fork. Other coffering will occur in the side channel, isolated from the mainstem, with no effects on mainstem fish or habitat. In total, the mainstem cofferdams will isolate 6,600 ft² of the mainstem during the instream work window.

Cofferdam construction will happen from the banks and trips into live water will be minimized to the extent feasible. To isolate work from the mainstem, the cofferdams may need to be placed farther into the mainstem than the reach of the excavator, necessitating the use of machinery in the mainstem. For cofferdams 1, 2, and 3, the BA estimates that machinery will perform a maximum of 30, 20, and 30 round-trips into the mainstem, with a round-trip distance of 25 feet each at 15 minute intervals. At 15 minute intervals, placement of cofferdams 1, 2, and 3 will take 7.5, 5, and 7.5 hours respectively. NMFS estimates that half of each interval will be spent in the water placing the cofferdam section and half the time out of the water retrieving the next cofferdam section.

The proposed action has turbidity BMPs (e.g., cofferdams, pumping, minimize live-water work) and monitoring to minimize turbidity plumes. Project BMPs call for minimizing machinery trips and time in the water, placing cofferdam material gently on the stream bed, and for turbidity monitoring to guide project methods in keeping turbidity below 50 NTU. If a sediment plume is seen, monitoring will be established 600 feet below the site and if three consecutive readings at 30-minute intervals are 50 NTU over background, construction will be adjusted and/or halted until readings return to near background levels. If persistent turbidity issues arise, the USFS, USFWS, and NMFS will be notified. Most importantly, if monitoring of Chinook redds prior to construction shows a redd within the action area, NMFS will be notified and construction will be not begin until a procedure for protecting the redd(s) is in place.

Placement of cofferdams and instream work will generate turbidity pulses causing an avoidance response from ESA-listed fish. In order to assess the effects of turbidity pulses on fish, the duration and intensity of the pulses was estimated by considering similar projects. While pulling embedded wood supports from the stream bed in a project in the East Fork South Fork of the Salmon River, it was noted that the sediment plume had dissipated in 10 minutes (Aaron Golhart, COE, pers. comm. 2011). The Yankee Fork in the project reach shares the same large cobble substrate character as the project location on the East Fork South Fork project. Because of the lack of fines in both locations, sediment plumes generated by coffer placement can also be expected to subside in minutes. Quick settling sediment will also have a limited travel distance and be confined to one side of the channel in the low water conditions.

During completion of restoration objectives at Slate Creek in 2007, the temporary effects to turbidity were assessed. The maximum measured turbidity resulting from three excavator stream

crossings was 30 NTUs. This was well below IDEQ's standard which allows a 50 NTU increase over background. Although the actions are similar, the geology in Slate Creek is much more erosive than that found in the Yankee Fork implying that turbidity levels under the proposed action's inwater work would be the same or lower.

NMFS believes that installation of the cofferdam (first pulse) and the excavator work in live water will likely generate comparable turbidity levels to the Slate Creek example. The 50 NTU Idaho standard was established from data presented by Lloyd (1987), which suggested that salmonids reacted negatively, by moving away, when turbidity reaches 50 NTU. Assuming turbidity levels remain below 50 NTU, the first turbidity pulse will likely invoke only an avoidance response from ESA-listed fish, with fish avoiding individual work areas for each several hour duration of inwater work.

The placement and removal of cofferdams is expected to generate turbidity pulses of short duration (minutes) over a time span of up to 7.5 hours. The pulses are expected to be of low intensity and remain confined to one side of the river (east side for inlet cofferdams 1 and 2, and west side for cofferdam 3 around the point bar) until they dissipate. To calculate the number of fish harassed by the plume NMFS multiplied the affected areas by the mainstem fish densities ($[\text{length of cofferdams} + 600 \text{ feet monitoring zone}] \times \text{half the width of the river} \times \text{fish density}$). Using this calculation NMFS estimates 197 juvenile Chinook and 262 juvenile steelhead will volitionally move from the affected areas during cofferdam placement. Through the use of project BMPs and monitoring to minimize sediment, and given the low intensity pulses dissipating in minutes and remaining on one side of the river, it is expected that ESA-listed fish response will only reach the level of avoidance with fish seeking refuge from the plumes in other areas of the stream.

Rewatering. Rewatering of the newly created point bar and side channel immediately after construction will entrain fine sediment into the outflow from the side channel and the mainstem Yankee Fork. Approximately 3,500 cu. yds. of fine sediment will have been incorporated into the banks, floodplain, planting islands, and upland areas of the side channel. Rewatering will occur immediately after construction and when the Yankee Fork is anticipated to be at October baseflow with a side channel inflow of approximately 3 cfs (or 5% of the estimated 65 cfs) (October monthly average for the Yankee Fork USGS gage 13296000). Check Dam 3 and the adjacent banks will allow the rewatering to reach a surface elevation, in the channel/floodplain area, of approximately the 1-year flood interval which is slightly less than a bankfull flow (Approximately 1.5- to 2-year interval). This rewatering flow will not overtop the banks and inundate the full area of the floodplain, which will be covered with a coir erosion control blanket, limiting the exposure of the newly disturbed areas. The point bar will be expanded 2,700 ft² into the river and be constructed of sifted course gravel to riprap sized substrate. At this time it is not anticipated that any juvenile salmonids will be in the pond series but will be present in the mainstem below the rewatering.

Rewatering can produce the highest turbidity during a construction project (Casselli 2000; Jakober 2002). Jakober (2002) found that 95% of construction-related sediment was introduced in the first 2 hours after the diversion was removed; Casselli (2000) observed a similar response. Monitoring of a culvert removal project (Jakober 2002) recorded that initial turbidity of

15,600 mg/l suspended solids (SS/l) returned to 677 SS/l half an hour after rewatering began and within an hour was 63 SS/l. On the severity-of-effects score (Newcombe and Jensen 1996), this turbidity would have caused decreasing effects ranging from 7, sublethal harm, to 3, avoidance response in the 1 hour period. In 90 minutes, Jakober (2002) found turbidity had reduced to 29 mg/l consistent with an effects score of 3, avoidance response. In a similar monitoring effort, Bakke (2002) recorded sediment concentrations up to 514-2,060 mg/l following removal of culverts for a period of less than one hour. For the Pond Series 3 project, sublethal turbidity plumes are expected to dissipate within 90 minutes and not expected to extend more than 600 feet hundred feet downstream (Casselli et al. 2000; Jakober 2002; FWS 2004; USFS 2005).

Rewatering of the side channel is likely to result in the greatest turbidity/suspended sediment levels for the duration of the project with sublethal effects occurring for up to 90 minutes and confined to the east side of the river for 600 feet downstream. However, intensity levels of turbidity from the 3,500 cu. yds. of fine sediment are expected to be reduced due to following reasons related to timing of rewatering and flow reintroduction BMPs: (1) The Yankee Fork will likely be at baseflow with a corresponding baseflow into the side channel of only 3 cfs which will limit stream power to mobilize sediments; (2) Check Dam 3 will be used to keep water levels at the 1-year peak flow interval so the floodplain areas will not be inundated; (3) assuming the plume would be confined to the east half of the Yankee Fork, the plume will be 10% of half the flow or, concentration (intensity) would be 10% of that found in the monitoring studies cited above; (4) pond sediments will be covered with a coir erosion control blanket to control mobilization of sediment; and (5) the side channel will be slowly rewatered allowing the banks to saturate and stabilize before the full flow is introduced. In addition, to ensure turbidity levels do not exceed expected levels, the action agency proposes to begin monitoring immediately should a turbidity plume be seen while releasing water from the side channel into the Yankee Fork. This will allow the action agency to quickly slow or cease rewatering activities until turbidity levels dissipate. To better ensure that turbidity levels don't exceed expected levels, the action agency should have this monitoring in place prior to releasing side-channel water into the mainstem.

Considering timing and BMPs, NMFS expects sublethal effects near the outlet of the side channel with effects decreasing as the turbidity mixes and becomes diluted with the Yankee Fork. Sublethal severity-of-effects that amount to "harm" and temporarily degrade habitat rearing conditions may include minor to major physiological stress, increased rates of coughing and respiration, moderate habitat degradation, and impaired homing. It is expected that the plume and these effects will dissipate in the first 90 minutes and as the plume is diluted downstream for 600 feet. It is expected that turbidity will return to background in 24 hours.

To estimate the number of fish potentially exposed to this turbidity, NMFS has assumed a worst-case scenario where sublethal effects are experienced by ESA-listed species for the full 600 feet over half the Yankee Fork's width (25 feet). Considering the area affected and the fish densities expected in the Yankee Fork, NMFS estimates approximately 56 juvenile Chinook and 74 juvenile steelhead will be present and potentially harmed by the rewatering of the side channel. Because the juveniles are free to move from the plume to adjacent areas of the stream,

and monitoring should reduce the amount of time concentrations will be elevated, these numbers are likely an overestimate of harm to ESA-listed salmonids. No turbidity-related lethal take is anticipated from the rewatering of the side channel.

Rewatering of the point bar and inlet areas will be done before rewatering of the side channel. The point bar will be constructed of sorted course sediments and should therefore contain very few fines. In addition, reintroduced flow will only flow around the point bar's perimeter. The inlet area will have disturbed areas of the stream bed making limited fines available for mobilization.

At the time of rewatering, the Yankee Fork will be at base flow and will not overtop the point bar or inundate far up the banks. Monitoring will assist in keeping turbidity levels below 50 NTUs. Based on past project monitoring, the initial turbidity pulses are expected to be of less intensity than the rewatering of the side channel due to the smaller areas and lack of fine sediment available for entrainment. Pulses are expected remain on one side of the river (east side for the inlet and west side for the point bar) for up to 600 feet downstream, and dissipate after approximately 90 minutes. The anticipated severity-of-effects, given the lack of fines in the placed material and available in the stream bed, is anticipated to range from a high of 7, sublethal moderate habitat degradation, to 3, avoidance response, within 90 minutes. It is expected that turbidity will return to background in 24 hours.

Although the magnitude of the turbidity plumes may vary greatly between the rewatering of the side channel and mainstem construction areas, none are anticipated to reach levels that are lethal to ESA-listed fish. Past monitoring reports are fairly consistent with sublethal levels of turbidity dissipating quickly to levels insignificant to fish in the first 90 minutes and the majority of sediments settling out of the water column in the first several hundred feet. Rewatering of the inlet, point bar, and side channel areas will result in 56 juvenile Chinook and 74 juvenile steelhead being exposed for each of the three rewaterings. For each rewatering, turbidity levels are expected to be reduced within 90 minutes with effects decreasing from sublethal to levels causing avoidance responses from the 90 minute mark and for the next 22.5 hours when turbidity is expected to have returned to background levels.

Pumping. Pumping of water may be used to reduce inflow or turbid outflow, or to keep areas dry, during construction in the isolated pond series. If necessary, excess turbid water will be pumped from the construction areas into a settling pond or onto overland surfaces and allowed to settle and/or infiltrate before returning to the mainstem. To reduce inflow further, the action agency proposes to pump clear water above construction areas to the mainstem Yankee Fork. Cearley Creek will be coffered and diverted to the mainstem to reduce the inflow to the isolated pond series. This will reduce the amount of pumping necessary to achieve dry working conditions in some areas of the isolated pond series.

During project implementation, or when water drafting for dust abatement, it may be necessary to pump water from the five fish salvage zones or outside the action area. The proposed action calls for screening the pumps when pumping water from outside the fish salvage zones in accordance with NMFS' fish screen criteria (NMFS 2008). Turbid water pumped to the floodplain will infiltrate and return to the isolated pond series. Turbid water that is routed to the

mainstem Yankee Fork will first settle in ponds and infiltrate before reaching the Yankee Fork. Clear water pumped from the isolated pond series, but above the construction, will be tested to ensure that turbidity does not exceed 50 NTU above a concurrent turbidity measurement taken in the mainstem Yankee Fork. Because of the magnitude of flow in the Yankee Fork, drafting pumps are not capable of taking 10% of the flow, a limit set in NMFS water drafting criteria (NMFS 2001).

Following pumping BMPs, monitoring turbidity, and screening criteria should protect against pumping-related sedimentation and accidental entrainment in pump hoses. For these reasons, the likelihood of releasing significant amounts of excess fine sediment into the Yankee Fork from pumping is discountable. Additionally, because all pumps will be screened, the chance of entraining ESA-listed fish into the pumps is discountable.

In summary, there are several project activities that may generate turbidity in the Yankee Fork. The duration and intensity of turbidity pulses will be greatly reduced by isolating the side channel construction, and employment of BMPs (e.g., minimizing disturbance areas, erosion control materials, controlled rewatering of the side channel, turbidity monitoring, and revegetation). Staging areas will be minimized and be equipped with sediment control materials. Turbidity plumes from cofferdam placement are expected to cause volitional movement of fish. Rewatering of the inlet, point bar, and side channel areas are expected to create more intense plumes with sublethal effects immediately downstream for up to 90 minutes with avoidance response level intensity for the next 22.5 hours. Pumping directly into the Yankee Fork will be monitored for turbidity and pump hoses will be screened to avoid entraining fish into the pumps. Turbidity plumes are expected to harm (sublethal effects) up to 168 juvenile Chinook and 222 juvenile steelhead.

2.4.1.2. Water Temperature

Riparian vegetation is “not properly functioning” within the action area. Baseline conditions show tailings piles have limited riparian vegetation to narrow margins along the Yankee Fork and side channel. Consequently, the current riparian zone does not provide either LWD recruitment or shade to the Yankee Fork stream channel. Project construction will increase the amount of long-term stream shading by creating floodplains and revegetating streambanks. The project will increase riparian area and vegetation by 47 times the current acreage (BPA 2012b). Of the 14 acres in the project area, there are 0.88 acres of existing limited function riparian area and no trees. Of the 0.88 acres, 0.1 acres will temporarily be removed then replaced by project constructed wetlands. Approximately 2.2 acres of open water will be eliminated in the conversion to channel habitat.

Water temperatures can be elevated in the Yankee Fork below Jordan Creek, partially due to open ponds with heated water (BPA 2012a). However, the IDEQ has described Yankee Fork temperatures as supporting beneficial uses (IDEQ 2009). In addition, there is no flow from the Yankee Fork to the side channel in low water, high temperature summer periods. With the limited shading, limited flow, and open pond areas, removal of the 0.1 acres of riparian vegetation will be insignificant to water temperature in the short-term period of several years

while project vegetation establishes. Immediate improvements in floodplain area and storage of groundwater, elimination of pond area, and long-term growth of riparian vegetation may have insignificant but positive effects on water temperature in the lower 6 miles of the Yankee Fork but produce small tangible areas of cooler water in the side channel.

2.4.1.3. Chemical Contamination

Sediment Toxicity. During initial periods of rewatering the side channel, some pond sediments will be exposed and released into the Yankee Fork. In the estimated 3,500 cu. yds. of fine sediment currently in Pond Series 3, there is accumulated mercury and selenium; both can have toxic effects to ESA-listed salmonids. Concern had been expressed that these toxics-bearing sediments will have negative effects to ESA-listed fish, not through brief exposure to the sediment plume, but through long-term bioaccumulation. However, after the majority of these sediments have been incorporated into newly formed floodplains, only a small fraction of the sediments will remain exposed in the newly formed channels.

Fish tissue expresses the bioaccumulation of mercury and selenium in the watershed. Mercury's primary path as a toxin to fish is in the form of methylmercury. Methylmercury is formed with organic matter in oxygen poor conditions such as those found in the deep fine sediments of the Yankee Fork ponds (Rhea 2008). The effects to fish from mercury or methylmercury are permanent damage to the olfactory, visual, and systems; and adverse effects to growth and development, reproduction, and osmoregulation (Baatrup 1991; Rhea 2008). Selenium has several toxic forms, with the most toxic being in highly oxygenated systems such as the Yankee Fork, and least toxic in oxygen poor pond type environments. Selenium is a necessary nutrient in very low concentrations and can inhibit the uptake of mercury. Adverse effects of selenium include reduced growth, mortality, immune suppression, and reproductive failure (Rhea 2008). Bioaccumulated selenium is transferred from adult fish to egg yolks which cause deformities in larvae and fry (Frankenberger 1998). Because of bioaccumulation, fish can receive toxic levels of mercury or selenium from food sources when concentrations in the surrounding water are below toxic levels (Rhea 2008).

Several studies and standards help summarize mercury and selenium levels in the Yankee Fork fine sediments and fish. Mercury, methylmercury, and selenium concentrations in the water column and sediments are fairly consistent between channels and pond series pools with mercury being slightly higher in the pools (CH2M Hill 2011a). Mercury concentrations in fish tissue samples from the Yankee Fork are similar to other rivers in the region and are below the EPA standard for toxicity (Rhea 2008). Selenium concentrations in fish tissue are lower in the ponds than the river (Rhea 2008). Concentrations in Yankee Fork fish tissues were generally higher than fish in the Snake and Columbia River systems but did not exceed the EPA toxic criteria for whole-body concentration, a measure of all fish tissue combined (Rhea 2008). These relationships in toxic levels show that the Pond Series 3 sediments are below thresholds for toxicity and are similar in toxicity to the Yankee Fork and downstream waters.

Rewatering of the project site is likely to result in little toxic sediment being released into the Yankee Fork. The overall volume of fine sediments released is expected to be reduced due to

following reasons: (1) The Yankee Fork will be at baseflow allowing a corresponding baseflow into the side channel of only 3 cfs, which will limit stream power to mobilize sediments; (2) Check Dam 3 will be used to keep water levels at the 1-year peak flow interval so the floodplain areas will not be inundated; (3) pond sediments used for floodplain construction will be covered with a coir erosion control blanket to control mobilization of sediment; and (4) the side channel will be slowly rewatered allowing the banks to saturate and stabilize before the full flow is introduced. Sediments released from the pond are similar in toxicity to the Yankee Fork and therefore pose no additional toxic threat. In addition, anadromous salmonids spend very little of their life cycle in the Yankee Fork exposed to sediment mercury and selenium and these metals have not been found in toxic levels in fish tissue. For the above reasons, the release of minor amounts of sediment from Pond Series 3 poses an insignificant toxic threat to anadromous fish species in the Yankee Fork.

Petroleum-based Contaminants. ESA-listed fish have the potential to be affected by chemical contamination should it occur as a result of the action. The project will require the use of multiple pieces of heavy machinery which will pose a risk of chemical fluid contamination to water and riparian areas. The proposed action includes machinery working in live water when placing some sections of the cofferdams. Staging areas for machinery, fuels storage, and refueling are off site, or adjacent to the side channel and separated from the Yankee Fork by the Yankee Fork Road. Staging, storage, and refueling taking place at this location is expected to contain any spills to the isolated channel and should not affect ESA-listed fishes present in the mainstem Yankee Fork.

Petroleum-based contaminants such as fuel, oil, and some hydraulic fluids, contain poly-cyclic aromatic hydrocarbons, which can cause chronic sublethal effects to aquatic organisms (Neff 1985). Ethylene glycol (the primary ingredient in antifreeze) has been shown to result in sublethal effects to rainbow trout at concentrations of 20,400 mg/L (Beak Consultants Ltd., 1995 as cited in Staples 2001). Brake fluid is also a mixture of glycols and glycol ethers, and has about the same toxicity as antifreeze.

The proposed action and BMPs include many pollution control measures. Project actions will follow all provisions and standards of the clean water act and IDEQ. If required, a standard EPA SPCC will be written for fuel storage exceeding 1,320 gallons. A SWPPP will be prepared as required. Spill prevention and containment equipment will be available on site for immediate response. Because all work will be in areas draining to streams or riparian areas, all equipment will be washed free of mud, petroleum products, and plant and seed material, and leaks and damaged fittings will be repaired, prior to arriving on site. The fuel spill and prevention, and equipment leak contingencies described in the proposed action are sufficient to effectively minimize the potential for chemical spills making the risk of adverse effects from chemical spills discountable.

Herbicides. The 5-year monitoring, maintenance and contingency plan includes the possible use of herbicides. Herbicides will be used to control weeds while replanted vegetation establishes. To minimize the application of herbicides, hand pulling and spot herbicide treatments will be used. Broadcast application of herbicides will not be allowed. Hand herbicide application on action area lands in the SCNF will be applied under the conditions specified in NMFS

consultation *Salmon-Challis National Forest Noxious Weeds Management Program (non-wilderness areas), Upper Salmon River Basin – 170602, Lemhi and Custer Counties, Idaho* (NMFS consultation number 2012/02030). The Noxious Weeds Programmatic Consultation concludes that appreciable population scale effects can be ruled out if the potential exposure is limited to small numbers of fish and a spatial pattern that is not likely to cause the loss of a unique genetic stock. Although sublethal harm to individuals cannot be ruled out, because the use of herbicides is limited to hand application and prohibits broadcast application, and is limited in application area, the chance of appreciable affects at the population scale is discountable.

In summary, chemical contamination threats come from petroleum products at the project site including machinery operating instream, the release of toxic sediments from the side channel, and the use of herbicides during a 5-year post-construction monitoring and maintenance period. BMPs (e.g., spill prevention and cleanup plans, spill equipment on site, staging area locations, machinery washing, inspection, and repair, and minimizing machinery time in live water) will help bring the possibility of a chemical spill to discountable levels. Levels of mercury and selenium in side channel sediments are similar to those of the Yankee Fork posing no additional toxic threat, and these sediments will be incorporated into the vegetated areas as substrate and/or covered with stabilizing fabric to minimize their release during the rewatering of the side channel. Herbicide use will be done by hand with no broadcast application permitted. In addition, the types and use of herbicides on Federal lands will be governed by a recent NMFS consultation with the SCNF on the use of herbicides in non-wilderness areas.

2.4.1.4. Sediment/Substrate.

The methods for sediment introduction to the stream channel were described in the Turbidity section above. The same suite of BMPs proposed to reduce the potential for suspended sediment, also minimize the potential for in-channel sediment deposition. In addition, the side channel will take approximately 10% of peak flows from the Yankee Fork resulting in greater deposition of spawning gravels in the project reach.

The potential effects of sediment deposition on fish habitat can be described by evaluating the literature reported effects. Fine sediment can fill pools and interstitial spaces in rocks and gravels used by fish for thermal cover and for predator avoidance (Waters 1995). Egg-to-emergence survival and size of alevins can be negatively affected by fine sediment intrusion into spawning gravel (Cedarholm et al., 1981; Young et al., 1991). Fine sediment deposition in spawning gravel ultimately reduces the oxygen supply rate to the redd (Wu 2000). However, levels of sediment delivery to downstream reaches should be reduced in magnitude by sediment control BMPs proposed, including isolation of the work area for completion of most project activities (discussed in more detail below). Although some project-generated sediment will be delivered to the mainstem Yankee Fork, no redds should be affected as they will not be present within the project area nor within the expected extent of sediment deposition (~600 feet).

Fine sediments also have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996; Suttle et al. 2004) and reduce cover for juvenile salmonids (Bjornn and Reiser 1991). Suttle (2004) found that increases in fine sediment concentration led to a change

from available aquatic insects (surface grazers and predators) to unavailable burrowing species. NMFS does not expect effects to primary productivity as a result of the project. Although secondary production could be affected in the short term (within the individual 600-foot affected stream sections), recolonization of affected areas is expected to occur rapidly from nearby unaffected reaches.

Throughout the project's life, the greatest potential for fines affecting spawning substrate will be during the initial rewatering of the side channel when fine pond sediments first become exposed to running water. Slow rewatering, working primarily in an isolated work area behind cofferdams, BMP's including a sediment fabric covering regraded fines, and monitoring will minimize fine sediment mobilization. However, a plume of fine sediment settling out in 600 feet downstream in the Yankee Fork is anticipated. NMFS also anticipates that these fines will be scoured from substrate in the next high water event. These effects will be temporary in nature (< 6 months), and will not have any long-term effects to ESA-listed fish.

Spawning gravel is limited in the project reach of the Yankee Fork. Due to constriction of the river from dredge piles resulting in increased stream power, there is little spawning gravel deposition (BPA 2012a) in the mainstem through the project reach. Approximately 10% of sediment transport flows will enter the side channel after construction. This will result in reduced stream power and scour of gravels in the mainstem. The positive result is the increased deposition of spawning gravels in the mainstem, and transport and deposition of gravels into the side channel, increasing spawning area in the project reach.

In summary, as with turbidity, potential effects of increased sediment deposition on fish habitat will likely occur in the immediate work site and up to 600 feet downstream of the dewatered area. They will remain for up to 6 months until the next high water occurs. Project-related sediment that settles on downstream substrates is expected to be flushed out during fall/winter/spring high flows after project completion (USFS 2005; BPA 2012a). Therefore, NMFS expects that

long-term adverse impacts to spawning gravels are not likely to occur. In the long term, partitioning peak flows into the side channel will result in increased gravel recruitment in the project reach and increased spawning area in the Yankee Fork watershed.

2.4.1.5. Fish Disturbance

Noise. When operating in or near live water, heavy equipment (e.g., excavators, dump trucks) will create visual, noise, vibration, and water surface disturbances. Popper et al. (2003) and Wysocki et al. (2007) discussed potential impacts to fish from long-term exposure to anthropogenic sounds, predominantly air blasts and aquaculture equipment, respectively. Popper et al. (2003) identified possible effects to fish including temporary, and potentially permanent hearing loss (via sensory hair cell damage), reduced ability to communicate with conspecifics due to hearing loss, and masking of potentially biologically important sounds. Studies evaluated noise levels ranging from 115 to 190 decibels (dB). Wysocki et al. (2007) did not identify any adverse impacts to rainbow trout from prolonged exposure to three sound treatments common in

aquaculture environments (115, 130, and 150 dB). In the studies identified by Popper et al. (2003) that caused ear damage in fishes, all evaluated fish were caged and thus incapable of moving away from the disturbance.

The FHWA (2009) indicates backhoe and truck noise production ranging between 80 and 84 dB. Because the dB scale is logarithmic, there is nearly a 100-fold difference between noise levels expected from the action and noise levels known to have generated adverse effects to surrogate species, as discussed above. Therefore, noise-related disturbances of this magnitude are unlikely to result in injury or death. It is unknown if the expected dB levels will cause fish to temporarily move away from the disturbance or if fish will remain present. The large majority of work will occur in the side channel more than 150 feet from the Yankee Fork. During live water work and general construction, NMFS estimates that sublethal avoidance to noise would extend approximately 50 feet upstream, across and downstream of any point on the Yankee Fork where machinery operates (inlet area and point bar). Therefore, an additional 49 juvenile Chinook and 65 juvenile steelhead could be disturbed and temporarily displaced by project-generated noise daily for the few days that machinery is operating in these areas. Volitional fish movement is expected for only short distances to an area where they feel more secure and only for a few hours in any given day. Each day fish are routinely disturbed by passing birds, walking mammals, and other fish. NMFS does not anticipate short-term movements caused by construction equipment noise will result in effects substantially different than those typically experienced by fish reacting to natural perturbations. Therefore, the expected noise levels are expected to cause insignificant volitional fish movement.

Pile driving. The inlet structure will require pile driving during installation. The inlet structure is made of steel sheet pile with a span of 44 feet. It would be embanked 16 feet into reinforcement berms on both sides. Pile driving sound pressure is transmitted through soil with greater transmission through compact saturated soils and greater attenuation when traveling through dryer porous soils. Sound pressure from a given depth in the soil transfers to a water body at the soil/water interface. Pile driving sound is not considered to transmit in very shallow water less than 3 feet deep (Jackie Meyer (NMFS) personal communication 2010). Sound is also attenuated by moving water and can blend with background noise during high water events (CALTRANS 2007). The inlet structure is in the dewatered side channel, with porous tailings that will quickly attenuate pile driving sound. In addition, the Yankee Fork in the action area is very shallow throughout the year outside of high water events. For baseflows in the action area, water depths greater than 3 feet may only be found in a few large pools. The characteristics of the soil and lack of water over 3 feet deep limits the propagation of pile driving sound in the Yankee Fork action area.

NMFS utilized the Compendium of Pile Driving Sound Data (CALTRANS 2007) and the NMFS hydroacoustic calculator to estimate the distance from pile driving where underwater sound pressures attenuate to NMFS thresholds, and effects beyond that distance are no longer considered to be harmful or cause behavioral effects. The CALTRANS document does not cover sheet pile specifically but covers steel H-pile driving which resembles the steel sheet pile in form. In the 2010 Biological Opinion on the replacement of seven bridges on Lapwai Creek (NMFS 2010), the effects were analyzed for driving steel H-piles into dry soil at a distance of

33 feet from Lapwai Creek. The input values for the NMFS calculator in that analysis are the same as would be used for Pond Series 3. The calculator revealed an injurious threshold distance for juvenile salmonids to be 3.3 feet, far short of the 33 feet to live water in the Yankee Fork. The calculator also yielded an avoidance response distance of 328 feet. It must be taken into account that these calculated thresholds are for driving in the water and project pile driving will be done in the dry, greatly reducing the intensity and distance of sound pressure transmission.

Pile driving effects will be temporary and sporadic in nature. Installation will be done in the dry, at a minimum straight line distance to the Yankee Fork of 30 feet. The substrate being driven into and separating the driving from the Yankee Fork is very porous, consisting primarily of tailings including cobble and boulder, with coarse sand, and riprap on the bank of the Yankee Fork. Distance from the stream, pile driving in dry porous soil, and stream conditions will attenuate sound quickly. Similar projects found in CALTRANS (2007) and hydroacoustic modeling results predict only behavioral effects of volitional movement to fish during pile driving. For the above reasons, effects from pile driving are expected to cause behavioral avoidance and are never expected to reach lethal or harmful levels.

Blasting. Blasting of bedrock remains an option in the proposed action. According to subsurface reports, blasting is not anticipated, is only proposed in the dewatered side channel, and would be used as a last resort during construction.

Blasting near water produces compressive shock waves that propagate from the earth into waterbodies. This has the potential to cause damage to the swimbladder of fish (Wright 1982; Bishaie 1961; Rasmussen 1967; Bird and Roberson 1984). These waves are associated with ground vibrations that are potentially lethal to incubating eggs (Wright 1982; Wright and Hopky 1998; Alaska DNR 1991). The killing power of the shock waves is greater near the air-water interface because of lower ambient pressures. Therefore, fish closer to the water surface are more susceptible to injury or mortality. This makes juvenile fish and spawning adults, which frequently occur in shallow waters, more susceptible to shock wave effects (Alaska DNR 1991). Sublethal effects have been observed in relation to noise produced by explosives (Wright 1982). Blasting in or near streams may result in alteration of habitat. Sedimentation resulting from the blast may cover spawning habitats or may fill interstitial spaces in the substrate affecting bottom-dwelling life forms used by fish for food (Wright and Hopky 1998).

According to Bishaie (1961) and Rasmussen (1967), swim-up fry will die if exposed to shock wave pressures exceeding 2.8 psi. Studies by Alaska Department of Fish and Game found that no mortality was observed at a psi of 2.7 for chum and coho salmon (Bird and Roberson 1984). Other studies have observed up to 8% mortality in salmon smolts at 4.4 psi (Munday et.al. 1986), 40% mortality at a psi as low as 7.2 (Coastline Environmental Studies 1987), and up to 50% mortality at psi ranges of 19.3 to 21 (Dames and Moore 1987). These investigations were unable to establish an absolute lower limit or psi standard for 0% mortality, although no mortality was observed in one study at the lowest psi of 2.7.

Studies by Smirnov (1955) found significant egg mortality resulting from ground vibrations at 2 ips, the standard established by the U.S. Bureau of Mines. Alaska DNR requires a more protective standard; no explosive will be detonated that is likely to result in a PPV (ground vibration) exceeding 0.5 ips in spawning beds during incubation. The same standard is also

applied in or near Canadian fisheries habitats (Wright and Hopky 1998). The rationale for using this standard is based upon the fact that the 0.5 psi level is well below (one-fourth) the ground vibration peak velocities observed for mortality in incubating eggs. This standard should be applied until more research is available to define a more appropriate level.

If blasting were to occur, there may be incubating Chinook eggs in redds, and juvenile Chinook and steelhead in the mainstem Yankee Fork. The location of Chinook redds outside the action area and the proposed setbacks for use of explosives should protect ESA-listed fish and habitat from adverse effects of blasting. Setbacks in Table 2, blasting BMPs limiting the action to two blasts per day, and monitoring to adjust blasting setbacks, should protect incubating eggs and juvenile ESA-listed fish from potential sublethal effects associated with shockwaves and vibration from blasting. Using Table 2 setbacks, and monitoring sound levels and particle velocities to confirm the 2 psi and 0.5 ips maximums, adverse effects to ESA-listed fish from blasting are discountable.

In summary, project-generated noise from machinery, pile driving, blasting will have very little effect on ESA-listed species for several reasons. Noise from machinery operation will cause avoidance responses when machinery is operating near the Yankee Fork in proximity to the inlet and point bar areas. Work in these areas will only occur for a fraction of the total days of the project. The rest of the work is in the isolated side channel more than 150 feet away. The side channel is also separated by a road from the Yankee Fork. Pile driving will be done in the dry in porous soils away from live water of the Yankee Fork and sound effects are expected to attenuate to insignificant levels before reaching the Yankee Fork. Blasting is not anticipated. However, if it were to occur, proposed setbacks, BMPs, and monitoring are protective of eggs and juveniles in the Yankee Fork making adverse effects discountable.

2.4.1.7. Fish Salvage

Fish salvage will occur prior to construction starting September 7. For the salvage areas, it is expected that only juvenile Chinook and steelhead will be present. At the time of salvage, the IDFG will be present to supervise or perform the fish salvage using the best available practices. Salvage can be categorized as mainstem (6,600 ft²), side channels (38,300 ft²), and ponds (105,000 ft²). Mainstem salvage will be a combination of dewatering, netting, and electrofishing. Included is estimated mortality from machinery operating in live water to place the cofferdams on the mainstem Yankee Fork. Methods for salvaging the side channels and ponds will be determined on site to maximize salvage under the assumption that all unrecovered fish will die during the construction due to high levels of inwater construction and dewatering in the isolated work area. Methods of salvage are likely to include block netting, staged-dewatering, multiple seining, and electrofishing (Tom Curret IDFG, personal communication 2012).

Blocknets. Blocknets will be used to separate and block the upstream and downstream ends of salvage zones 2-4. Use of blocknets at these sites poses an alternative source of harm and potential for take. The FWS (2002) conducted a study on sampling efficiency with the use of blocknets that observed five mortalities as a result of block net impingement out of 704 bull trout handled. Although not all fish are thought to have encountered the blocknets, this mortality

figure represents approximately a 0.7% blocknet mortality rate for fry or juvenile fish handled in the study. A determination of the number or percent of juvenile fish that may be entrained in the blocknets was not calculated for this Opinion as the risk of mortality is considered discountable because: (1) Seining and or flow reductions will reduce the number of fish in the work area prior to the downstream block net being installed minimizing exposure; and (2) personnel will be present to check blocknets and release any impinged fish.

Dewatering. Although passive dewatering of the mainstem sites is not directly proposed for mainstem coffering, NMFS assumes the method will be used because IDFG is supervising the salvage and recommends the procedure (Tom Curret, Fisheries Biologist, IDFG, 2005). NMFS has identified the use of 'slow dewatering' as a method to minimize effects to individual fish when dewatering a stream channel. Discussions with Tom Curret (Fisheries Biologist, IDFG, 2005), suggest that initial removal of approximately 80% of the base flow results in the greatest number of fish volitionally moving out of the dewatered work area. This 80% flow reduction is assumed to be the method used in the dewatering of Yankee Fork fish salvage zones 1 and 5 and is applied in this analysis. The IDFG estimated that approximately 50-75% of the fish at a proposed dewatering site will voluntarily move downstream when this 80% flow reduction recommendation is implemented. For this analysis, NMFS assumes the lower value of 50% volitional movement at fish salvage zones 1 and 5.

Stepped Dewatering and Seining. For the pond series, stepped dewatering, alternated with seining is proposed for use. This method is expected to remove 60-70% of fish (Tom Curret, District Biologist IDFG, pers. comm., 2012) from deeper water areas characteristic of fish salvage zones 3 and 4. NMFS will use the conservative 60% for this analysis. The use of fish seines is expected to cause some fish to retreat to cover while others are directed to the channel areas and seined there. Fish not captured in the seine will be removed by electrofishing. Seining of fish is likely to cause some elevated stress levels from contact with the seine and personnel.

Electrofishing. The proposed action did not identify how many electrofishing passes would be employed during fish salvage. NMFS assumes that a three pass electrofishing effort will be employed because it is a standard practice. NMFS conducted this Opinion's analysis with an electrofishing capture efficiency of 45% for three pass electrofishing (Peterson et al. 2004). After applying this assumption, NMFS calculated an expected stranding rate of 8% (of total exposed population) for both electrofished and non-electrofished sites. The effects of electrofishing on juvenile Snake River Basin steelhead will be limited to the direct and indirect effects of exposure to an electric field, capture by netting, and the effects of handling associated with transferring the fish back to the river. Smaller fish intercept a smaller head-to-tail potential than larger fish (Sharber and Carothers 1988) and may therefore be subject to lower injury rates (e.g., Dalbey et al. 1996, Thompson et al. 1997). McMichael et al. (1998) found a 5.1% injury rate for juvenile middle Columbia River steelhead captured by electrofishing in the Yakima River subbasin while Ainslie et al. (1998) reported injury rates of 15% for direct current applications on juvenile rainbow trout. To be conservative, NMFS uses a 25% injury and 5% mortality rates. Only a few recent studies have examined the long-term effects of electrofishing on salmonid survival and growth (Ainslie et al. 1998, Dalbey et al. 1996). These studies indicate that although some of the fish suffer spinal injury, few die as a result. However,

severely injured fish grow at slower rates and sometimes show no growth at all (Dalbey et al. 1996). NMFS electroshocking and subsequent fish handling protocols (NMFS 2000) will be followed during the salvage.

Take Calculations. When calculating the number of fish harmed or killed during salvage operations, NMFS used the following assumptions: (1) 50% of fish will volitionally move out of the area when dewatering in fish salvage zones 1 and 5; (2) 60% will be captured when staged dewatering and seining are used in deeper water areas (fish salvage zones 2, 3 and 4); (3) 45% of fish present will be captured by electrofishing, 25% of these will be injured and 5% will be killed from the shocking; (4) 8% of the starting number of fish will die from stranding (mainstem fish salvage zones 1 and 5); (5) 100% of fish not salvaged will die in the isolated side channels and ponds because of the intensity of inwater work (side channels and pond fish salvage zones 2-4); and (6) Chinook densities are 0.4 fish per 100ft² in the mainstem, 0.0 fish per 100ft² in the isolated ponds, and 3.1 fish per 100ft² in the isolated side channels. Steelhead (parr and fry) densities are 0.5 fish per 100 ft² in the mainstem, 0.5 fish per 100 ft² in the isolated ponds, and 3.4 fish per 100 ft² in the isolated side channels (densities detailed in the Baseline Section of this Opinion).

Take was calculated for three types of salvage areas, mainstem, side channels, and ponds, based on their individual fish densities and methods for salvage. The IDFG will be on site to manage fish salvage and will use the best methods for maximum salvage based on site conditions at that time. For take calculations, NMFS will use methods given in the BA and predicted methods (Tom Curret, IDFG District Biologist, pers. comm., 2012) with the understanding that additional methods or passes, based on site conditions, may be used to increase the capture or reduce harm to the juvenile fish during salvage. The mainstem areas will be coffered and electrofished. The side channels and ponds will be block netted, seined, and electrofished. Although block netting is stated in the BA, block netting mortality is not present in the calculations because all fish not captured within blocknets are assumed to be killed.

The general method of calculating harm or mortality is to estimate the number of fish present in each category, by multiplying area and fish density, then applying a harm or mortality percentage, in the order of exposure, to the fish present or remaining from the previous method. The results of the harm and mortality calculations are presented in Table 5.

Fish salvage is likely to result in various levels of harm and stress that may lead to eventual death. Death may occur as a result of actual stress levels and increased cortisol production, physical trauma, or increased predation rates on released fish. However, it is impossible to quantify the level of mortality that may occur from handling. Application of BMPs provided in the proposed action, and enlisting IDFG to supervise the salvage, should effectively reduce the potential harm to individuals during capture and transport such that the risk of death is minimized. The proposed action is estimated to result in the harassment (hazing, capture, handling and subsequent transport of approximately 724 juvenile Chinook salmon and 1,127 juvenile steelhead (parr and fry), and harm (electrofishing injury) of approximately 53 juvenile Chinook salmon and 83 juvenile steelhead.

NMFS has estimated that fish salvage is likely to directly result in the death of juvenile Chinook and steelhead (parr and fry). Death from electrofishing is estimated to be up to 11 juvenile spring/summer Chinook salmon and 17 juvenile steelhead, death of fish remaining in the side channel after salvage is estimated to be up to 248 juvenile spring/summer Chinook salmon and 387 juvenile steelhead, and death from stranding in the mainstem cofferdams is up to 1 juvenile spring/summer Chinook salmon and 1 juvenile steelhead. The total mortality from salvage is estimated to be up to 259 juvenile spring/summer Chinook salmon and 405 juvenile steelhead.

Table 5. Harm and mortality calculations for juvenile Chinook and steelhead found in mainstem, side channels, and side channel ponds. Methods not used in the calculation are represented by blank cells.

	Chinook			Steelhead			Totals	
	Yankee Fork Mainstem	Side-channel	Ponds	Yankee Fork Mainstem	Side-channel	Ponds	Chinook	Steelhead
Fish Density (fish/100ft ²)	0.4	3.1	0.0	0.5	3.4	0.5		
Salvage Area (100ft ²)	66	383	1,050	66	383	1,050		
Fish Present	25	1,174	0	32	1,299	537	1,199	1,868
Fish Volitional Movement from Salvage Zone (50%)	12			16				
Fish Remaining to be Salvaged	12	1,174	0	16	1,299	537		
Capture from Seine (60%)	7	705	0	10	779	322		
Total Fish Harassed	20	705	0	26	779	322	724	1,127
Electrofished (45%)	2	211	0	3	234	97		
Electrofishing Injury (25%)	1	53	0	1	58	24	53	83
Electrofishing Mortality (5%)	0	11	0	0	12	5	11	17
Mortality of Fish Remaining in Pond Series (100%)		248	0		274	113	248	387
Stranding Mortality for Mainstem Salvage (8%)	1			1			1	1
Total Salvage Mortality	1	258	0	1	286	118	259	405
Parr to Smolt Survival (50%)							130	203
Adult Equivalent (Chin 0.3%) (steelhead 1.1%)							0.4	2

To understand the effect of this level of juvenile mortality on population abundance, the estimated number of juveniles killed can be translated to adult equivalents using parr-to-smolt survival and smolt-to-adult return rates (SAR). NMFS has assumed a reasonably conservative estimate of 50% parr-to-smolt survival for spring/summer Chinook salmon and steelhead (Keifer and Lockhart 1994). Raw pit tag data from 1998-2008 was used by Arthaud et al. (2012) to calculate SARs for spring/summer Chinook salmon in both the Lemhi River and Marsh Creek in Idaho. Marsh Creek SARs were chosen because its watershed borders the Yankee Fork watershed and shares its higher elevation and lower productivity attributes. The SAR rate used is 0.3% for Chinook (David Arthaud, NMFS fisheries biologist, pers. comm. 2012). A steelhead SAR of 1.1% was calculated from pit-tag data collected at Lower Granite Dam and the Sawtooth Hatchery fish trap, which represent upper Salmon River return rates (David Arthaud, NMFS fisheries biologist, pers. comm. 2012). To calculate the adult equivalents, these parr-to-smolt survival and SARs were applied to total salvage mortality (Table 5) from for juvenile Chinook (259) and steelhead (405). From these calculations, NMFS estimates that fewer than one (0.4)

adult equivalent spring/summer Chinook and two adult equivalent steelhead will be lost from their respective populations for the single year of project construction (Table 5). Because fish salvage will take place only once for this project, the loss of these fish will be a one-time occurrence.

2.4.1.8. Summary of Species Effects

The proposed action was designed and funded to improve the abundance and productivity of ESA-listed fish in the action area by increasing and improving velocity refugia and rearing habitat for juvenile ESA-listed fish. Abundance and productivity increases are necessary to recover the affected populations. Increasing available spawning and rearing habitat is likely to lead to small but long-term survival improvements and contribute to recovery of these populations.

Project construction will have isolated one-time adverse effects to juvenile spring/summer Chinook salmon and Snake River Basin steelhead. Juvenile fish in the salvaged areas will either volitionally migrate out of the area or be salvaged using a variety of methods including dewatering/seining, and electrofishing. Salvage, dewatering, construction, and rewatering will harass, harm, or kill juvenile Chinook and steelhead. Estimates of the three levels of take and the associated activities are summarized in Table 6. Under a worst-case scenario for juvenile Chinook and steelhead respectively, 246 and 326 are expected to be harassed, 221 and 305 harmed, and 259 and 405 killed. The adult equivalent, based on juvenile mortality, is 0.4 adult Chinook and 2 adult steelhead.

Table 6. Project Take totals for harassment, harm, mortality, and adult equivalents.

	Chinook			Steelhead			Totals	
	Yankee Fork Mainstem	Side-channel	Ponds	Yankee Fork Mainstem	Side-channel	Ponds	Chinook	Steelhead
Cofferdam Placement	197			262			197	262
Noise	49			65			49	65
Total Fish Harassed	246			326			246	326
Rewatering the Inlet Area	56			74			56	74
Rewatering the Point Bar	56			74			56	74
Rewatering the Side Channel	56			74			56	74
Electrofishing Injury	1	53	0	1	58	24	53	83
Total Fish Harmed	168	53	0	222	58	24	221	305
Total Salvage Mortality	1	258	0	1	286	118	259	405
Adult equivalent (Chin 0.3%) (steelhead 1.1%)							0.4	2

Although every returning adult is vital to population recovery, the single year loss of the adult equivalents will have only a small influence on the population abundance and productivity. For the Yankee Fork Chinook population, the 10-year geometric mean return rate is 21. The loss of 0.4 adult equivalents is a small, one time, negative effect. For steelhead, the 10-year geometric mean is 556 returning adults. The loss of two adults is a small, one time, negative effect.

This single year loss of abundance and productivity is expected to be greatly outweighed by the short- and long-term addition of spawning and rearing habitat in the form of additional and/or improved:

- Complex side channel habitat;
- Floodplain connectivity and area;
- Addition of nearly 5 acres of varied high functioning riparian habitat;
- Tributary connection;
- Velocity refugia; and
- Reduction of stream power resulting in gravel recruitment and additional spawning area.

These habitat additions and improvements are expected to result in long-term increases in abundance and productivity for all ESA-listed salmonid populations found in the Yankee Fork.

2.4.2 Effects to Critical Habitat

The action area is designated critical habitat for Snake River spring/summer Chinook salmon and Snake River Basin steelhead. Critical habitat within the action area has a combination of physical and biological features essential for supporting freshwater rearing, migration, and spawning for Chinook salmon and steelhead. The project is being implemented with the primary goal of immediately creating and maintaining high-flow refugia and year-round rearing habitat for juvenile Chinook salmon. The project is also expected to improve holding and spawning habitat for returning adult Chinook salmon, and habitat for all life stages of steelhead. Beneficial habitat improvements are numerous:

- Year round access to side channel habitat;
- Year-round variable side channel flows based on a natural hydrograph;
- Velocity refugia in a reach of the Yankee Fork that is constricted;
- Increased spawning area;
- Increased habitat complexity including channel, pool, and floodplain;
- Creation of 4.6 acres of floodplain with variable riparian vegetation types; and
- Addition of LWD and long-term wood source.

Associated with these benefits, the action should also result in small increases in spawning substrate, natural cover/shelter, space, floodplain connectivity, riparian vegetation, and decreased water temperature. However, during construction, temporary adverse effects to critical habitat are likely to occur. The PCEs that may be affected by the proposed action include water quality (turbidity/ chemical/ temperature), substrate (sediment), water velocity, cover/shelter, floodplain connectivity, and riparian vegetation, and access and space.

2.4.2.1. Water Quality

Water quality in the action areas may be temporarily degraded due to increased turbidity from construction activities, chemical contamination, or increased water temperatures. The duration and intensity of turbidity pulses will be greatly reduced by isolating the side channel construction, and employment of BMPs (e.g., minimizing disturbance areas, erosion control materials, controlled rewatering of the side channel, turbidity monitoring, and revegetation). As discussed in the species effects section, temporary turbidity is anticipated to cause only a short-term (90 minutes) and small reduction in the conservation value of water quality.

As discussed in the species effects section, operation of heavy equipment in or near the stream channel elevates the risk for accidental fuel and oil contamination of the aquatic environment within the action area. However, BMPs in the proposed action will reduce the risk to discountable levels. Mercury and selenium in pond sediments do not pose a short- or long-term risk to the Yankee Fork because of similar levels of metals in and outside the side channel, and the metals are not found to be accumulating to toxic levels in fish tissues. Limited herbicide use during the 5-year monitoring plan will be governed by the SCNF Noxious Weeds (non-wilderness) Biological Opinion. The Noxious Weeds Programmatic Consultation concludes that effects to aquatic habitat from the use of herbicides are unpredictable. Depending on concentration, primary production and associated invertebrate communities may increase or decrease growth. The programmatic and this consultation include numerous BMPs to minimize or eliminate water contamination and any water contamination from herbicides is not likely to persist due to hand application and limited area of application. Therefore, the proposed action is unlikely to appreciably diminish the conservation value of designated critical habitat within action area streams.

In the long term, action area water temperature may improve, as pond area is reduced and floodplain and riparian structure and function improve. Because of the addition of a functioning side channel with added floodplain (limiting factor) and riparian area, the restoration will improve the long-term conservation value of water quality in the project reach.

2.4.2.2. Water Velocity and Substrate

The project will decrease water velocities and increase spawning substrate and consequent spawning habitat. As discussed in the species effects above (Section 2.4.1.4), the side channel will take 10% of sediment transport flows reducing stream power in the mainstem and increasing

sediment delivery to the side channel. Because of the change in flow pattern, more gravel will be recruited to the project reach and spawning area should increase in the Yankee Fork watershed.

The project will add 20 linear feet of riprap to the east side of the mainstem Yankee Fork and 390 feet of riprap to the side channel below the OHWM. Under current baseline conditions, dredge mine tailings and riprap produce similar channel dynamics so the conversion will not produce large changes in baseline stream dynamics. However, the side channel will add at least a third of a mile of channel totaling over half a mile of more natural streambank with access to floodplains which further dissipate energy at high flows. In addition, 10% of the mainstem flow will be routed into the side channel which will significantly reduce, in a positive way, stream velocities in the mainstem Yankee Fork. The project gain of more natural velocities, streambank cover, and floodplain and pool velocity refugia greatly increases the conservation value of the reach and offsets water velocity and habitat effects associated with the addition of 20 feet of riprap in the mainstem Yankee Fork.

Expansion of the point bar is necessary to promote the intended hydraulic and geomorphic response of creating a scour pool at the mouth of the outlet channel. The point bar will be expanded to direct mainstem flow to the intended location of the pool. The expanded point bar will occupy 2,700 ft² more of the Yankee Fork and is intended to create velocity refugia and increase access to the side channel. This loss of stream area is compensated by the addition of project created channel and pool habitat, and an additional scour pool in the mainstem. The conservation value of the velocity and substrate PCEs is increased because of the addition of pools, velocity refugia and changes in flow that will recruit spawning gravels and add spawning area to the Yankee Fork.

2.4.2.3. Natural Cover/Shelter

Baseline data show pool frequency, pool quality, LWD, and instream cover are limiting for juvenile rearing habitat (Reclamation 2012). Natural cover will increase with restoration of the side channel and is essential for rearing juvenile ESA-listed fish (NMFS 1996). Natural cover should increase in the form of overhanging vegetation, LWD, log jams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks (BPA 2012a). At the upstream end of the pond series, inlet access is currently blocked by a series of beaver dams. Mainstem flows only breach these dams for an approximate 4 week period during the 2-year peak flow or higher (BPA 2012a). The restoration will remove the beaver dams and establish a year-round flow of approximately 10% of the Yankee Fork. The establishment of high flows will enable natural geomorphic process to continue to shape the side channel and produce a variety of natural cover types (Poff et al. 1997). There is a short-term loss of habitat from beaver dam removal but the project will add more quality habitat than is lost and beavers displaced during project construction are expected to return to build dams.

The project will add considerable habitat complexity to the side channel. Several narrow and deep groundwater channels, and high water depression areas, will be excavated back from the side channel providing additional habitat preferred by juvenile salmonids, habitat complexity,

high flow refugia for juvenile salmonids, and mixed vegetation. Ponds will be converted to channel which will increase the substrate variety, pool complexity, undercut banks, and overhanging vegetation. Under current conditions, the project reach of the mainstem channel has a LWD density of zero medium to large pieces per mile near Pond Series 3. The LWD will be added to 10 locations along the side channel which will offer cover and additional pool formation. Planted vegetation will provide a future source of woody debris and material for beaver dams. The addition of the side channel will greatly increase the long-term conservation value of critical habitat at the reach scale with less gain at the watershed scale.

2.4.2.4. Floodplain Connectivity

Floodplain connectivity has been eliminated in areas where dredge mining occurred and is considered a limiting factor in the lower Yankee Fork (Reclamation 2012). The project will preserve 0.7 acres, and create 4.6 acres of floodplain in the side channel. Because overbank flows will be restored to the side channel, a total of 5.3 acres of floodplain will become accessible to rearing juvenile fish following construction. This is a substantial increase in conservation value for critical habitat in this reach and a positive step in mitigating the effects from dredge mining in the Yankee Fork.

2.4.2.5. Riparian Vegetation

Effects associated with vegetation will originate from the clearing and replanting of staging and access areas, and revegetation of restored and constructed riparian areas. Staging and access areas will be cleared for the 2-month life of the project. Post-construction, these areas will be seeded and planted with native species of grasses and native or salvaged plants. The exception is the main staging area on the East side of the Yankee Fork Road which will be maintained as a gravel parking and viewing area after project completion. Revegetation of riparian and upland areas in the side channel will be monitored and maintained according to the 5-year Yankee Fork Habitat Improvement Project Pond Series 3 Side Channel Habitat Improvement and Monitoring Plan included with the BPA consultation documents.

The riparian zone is critical for shade, streambank stability, organic matter input, and sediment, nutrient, and chemical regulation. Currently, the pond series lacks LWD. Wetland and partially functioning riparian vegetation is limited to 0.88 acres in narrow strips along the edge of the ponds. Upland vegetation is essentially absent from the uplands around the pond series.

The intended goals of increasing Pond Series 3 wetlands are to increase the extent (acres) of existing wetland floodplain relative to current conditions, and improve low scoring wetland function through expansion of wetland floodplains and vegetative cover (e.g., flood attenuation and sediment nutrient/toxicant removal). For project completion, 0.1 acres of existing riparian area will be removed. Variable grading and three planting combinations will result in the addition of 0.61 acres of emergent wetland, 4 acres of scrub-shrub wetland, and 0.57 acres of upland forest.

Converting tailings areas to riparian areas will begin the physical and biological processes that will create and maintain complex in-channel and riparian habitat in the new side channel and floodplain. The new riparian area will increase shade, cover (in the form of overhanging vegetation), food, and nutrients by providing a mix of wetland, riparian, and upland vegetation and more complex habitat for both juvenile and adult salmonids in the form of wood structures. The project will substantially increase the conservation value of the riparian habitat in the previously dredge mined reach.

2.4.2.6. Access and Space

The project will restore connectivity to the side channel and improve access to Cearley Creek. Fish passage is blocked in the downstream direction from blocked flow and in the upstream direction by a perched culvert. For example, under current conditions, flow in the mainstem must exceed approximately 1,270 cfs (2-year peak flow) to create a surface water connection between the mainstem and pond series. The temporary side channel isolation for project activity would not change the existing passage conditions.

In the short-term, following construction and before the last check dam is removed, fish will be able to access the newly constructed side channel via the upstream inlet all year. Access in the upstream direction through the outlet channel will be available all year except when the Check Dam 3 is being used to elevate the water surface from early July through late September, for a period of up to 5 years, until Check Dam 3 is removed. However, fish will be able to pass downstream unrestricted over the Check Dam and no stranding is anticipated.

In the long term, large benefits will be realized for access to juvenile rearing habitat including side channel, floodplain, and tributary habitats, all limiting factors in the lower Yankee Fork. The project will result in year-round access from the upstream and downstream ends. Downstream passage through the side channel will be available year-round; however, full upstream passage will be permanently blocked by the inlet structure. Because the side channel will have year-round access immediately following construction, the conservation value of habitat at the reach scale will greatly improve and represents progress towards restoring the conservation value of the dredged areas of the lower Yankee Fork.

In summary, implementation of the proposed action is expected to cause some short-term impairment to PCEs in the action area due to temporary turbidity and sediment impacts to substrate. However, the proposed action will provide long-term improvements to some critical habitat PCEs within the action area. Specifically, the essential features of water quality, water velocity and substrate, natural cover/shelter, floodplain connectivity, riparian vegetation, and access and space (barriers) will all experience some beneficial effects of project implementation. Partitioning flows into the side channel will offer velocity refugia and improve gravel recruitment for spawning. Access to this expanded and functional habitat will be made year-round. Construction of floodplains, increased riparian areas, and added habitat complexity will offer greatly expanded and improved juvenile rearing habitat in the lower Yankee Fork.

2.5. Cumulative Effects

“Cumulative effects” are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). 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.

Between 2000 and 2009, the population of Custer County is estimated to have decreased 2.3%³ indicating a decreasing amount of development in the county. However, the Yankee Fork watershed was a prolific gold producing watershed. Current and future mining efforts will be at least partially dependent on profitability and the price of gold. The price of gold (<http://goldprice.org>) has gone up five-fold between 2000 and 2012. Therefore, it is likely that demand for gold will continue in the future accompanied by pressure to continue mining in the Yankee Fork watershed. Should additional gold mining occur in the near future, it's very unlikely that it would occur at the scales seen historically in the drainage where large stretches of the Yankee Fork floodplain were dredge mined. Instead, increases in mining would be more likely to take the form of smaller scale activities like recreational suction dredging or placer mining. NMFS is not able to predict how much additional mining could occur in the watershed, or quantify the effect these types of activities will have in at this time. However, it's likely that any additional mining in the watershed will at least locally affect instream habitat conditions through increased sediment delivery and potentially through chemical contamination of streams. Should larger scale mining operations take place in the drainage in the future, they will most likely be associated with Federal lands and therefore undergo independent section 7 consultation.

2.6. Integration and Synthesis

The Integration and Synthesis section is the final step of NMFS' assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.4) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5) to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) Result in appreciable reductions in the likelihood of both survival and recovery of the species in the wild by reducing its numbers, reproduction, or distribution; or (2) reduce the value of designated or proposed critical habitat for the conservation of the species. These assessments are made in full consideration of the status of the species and critical habitat (Section 2.2).

The Yankee Fork, below Jordan Creek, has been dramatically altered by past dredge mining. This section of the Yankee Fork is thought to have supported over half of the Chinook salmon spawning in the watershed and supported juvenile rearing for Chinook and steelhead with extensive floodplains and tributary access. Today, these historic floodplains, riparian areas, and tributaries are inaccessible because piles of mine tailings have buried or cut off their access. Since the listings of Snake River spring/summer Chinook, Snake River Basin steelhead and their

³ U.S. Census Bureau, State and County Quickfacts, Lemhi County. Available at <http://quickfacts.census.gov/qfd/states/16/16059.html>.

critical habitats under the ESA, the Pond Series 3 project is the first habitat restoration project to specifically address the factors limiting population abundance and productivity in the Yankee Fork. Although legacy and future mining in the watershed will threaten critical habitat and species recovery, this and other habitat restoration efforts are underway to hasten species recovery in the Yankee Fork.

The purpose of the action is to create juvenile rearing habitat and create velocity refugia in the lower Yankee Fork. The Pond Series 3 restoration project will improve access to an improved half a mile of complex off-channel habitat and create 4.6 acres of floodplain with complex riparian and upland vegetation. By providing year-round flow to the side channel, peak flows and high velocities will be reduced in the mainstem. This will offer velocity relief in the mainstem and refugia in the side channel. In addition, the lower Yankee Fork is confined by the tailings and has excessive velocities that scour fines and gravels from the reach. Partitioning the flow will reduce these velocities, encourage gravel deposition in the mainstem, and encourage transport and deposition into the side channel, thus increasing spawning substrate and area in both locations. Elimination of over 2 acres of pond will help reduce water temperatures. All of these actions will increase and improve the conservation value of critical habitat which should improve the long-term abundance and productivity of the Yankee Fork watershed.

There is a one-time loss of juveniles during project implementation. For 1 year, the loss of juvenile Chinook and steelhead equates to the loss of 0.4 adult equivalents of Chinook and two adult equivalent steelhead. For the Yankee Fork Salmon River Chinook population, the 10-year geometric mean return rate of adults is 21 or, 4% of the 500 needed for population viability. The loss of 0.4 adult equivalents is a one-time negative effect. For the Upper Mainstem Salmon River steelhead population, which includes the Yankee Fork steelhead, the loss of two adult equivalents is again a negative effect. However, the current 10-year geometric mean of 556 returning adults is over 50% of the 1,000 needed for population viability. This loss is for only 1 year. After the first year, project habitat improvements are expected to improve abundance and productivity rewatering the side channel. Improved population abundance and productivity will move the population towards viability and recovery. Improvements to a population's viability will improve the viability of associated MPG and ESU/DPS. Project improvements are consistent with recommendations made in local and regional assessment documents (Ecovista 2004) and draft recovery plan documents (NMFS Sharber and Carothers 1988).

2.7. Conclusion

After reviewing the status of Snake River spring/summer Chinook salmon and Snake River Basin steelhead, their designated critical habitats, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon or Snake River Basin steelhead, and is not likely to destroy or adversely modify their designated critical habitats.

2.8. Incidental Take Statement

Section 9 of the ESA and Federal regulation 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 results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. For purposes of this consultation, we interpret “harass” to mean an intentional or negligent action that has the potential to injure an animal or disrupt its normal behaviors to a point where such behaviors are abandoned or significantly altered.⁴ 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.

2.8.1. Amount or Extent of Take

Juvenile spring/summer Chinook salmon and Snake River Basin steelhead are likely to be present in the action area during project implementation. Therefore, they are likely to be taken as result of project implementation. Capture, handling, and harassment related take (from dewatering, seining, and electrofishing) will occur during the fish salvage operation. Capture associated with the proposed action is estimated to result in the disturbance (harassment) of approximately 724 juvenile Chinook salmon and 1,127 juvenile steelhead. NMFS assumed a 25% injury rate during electrofishing resulting in the harm of 53 juvenile Chinook and 83 juvenile steelhead. NMFS also assumed a 5% mortality for capture by electrofishing and a 100% mortality for any fish remaining in the isolated side channel after salvage. NMFS estimates salvage mortality and stranding mortality in the side channel of up to 258 juvenile spring/summer Chinook salmon and 404 juvenile steelhead. In addition, NMFS assumes an 8% stranding mortality for mainstem salvage efforts. NMFS estimates this stranding mortality to be one juvenile Chinook and one juvenile steelhead. Therefore, NMFS will consider the amount of take exceeded if more than 259 juvenile spring/summer Chinook salmon or more than 405 juvenile steelhead are killed from all salvage and project operations during project implementation.

There will be substantial noise created during the project resulting in sublethal incidental take. Disturbance to mainstem fish will occur near the inlet and point bar area for the days when construction is occurring in these areas. With the use of BMPs, limited area affected, and low fish densities in the mainstem, the number of fish displaced through volitional movement will be

⁴ NMFS has not adopted a regulatory definition of harassment under the ESA. The World English Dictionary defines harass as “to trouble, torment, or confuse by continual persistent attacks, questions, etc.” The U.S. Fish and Wildlife Service defines “harass” in its regulations as an intentional or negligent act or omission which creates 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 (50 CFR 17.3). The interpretation NMFS adopts in this consultation is consistent with our understanding of the dictionary definition of harass and is consistent with the U.S. Fish and Wildlife interpretation of the term.

minimized. For several days during construction near the inlet and point bars, NMFS estimates that noise will temporarily displace up to 49 juvenile Chinook salmon and 65 juvenile steelhead. Because of the disbursed nature of this avoidance response, it is not possible to monitor this movement. However, the disturbance is expected to harass juvenile ESA-listed fish occupying the action area, but is not expected to rise to the level of harm.

In the above analysis, NMFS estimated that sublethal sediment pulses may persist for up to 90 minutes. The sediment pulses will progressively diminish as each pulse progresses downstream, reaching insignificant levels within approximately 600 feet of individual inputs. Each pulse generated from cofferdam placement is anticipated to create brief, low intensity sediment plumes. The plumes from rewatering are anticipated to be of sublethal intensity for up to 90 minutes, decreasing to an intensity causing only volitional movement for up to 24 hours after the plume was initiated. NMFS expects exposed fish to volitionally seek adjacent, less turbid habitats, thus avoiding prolonged direct sediment exposure. Fish movements are expected to be short duration (minutes to hours). If fish fail or are unable to move out of sediment plumes they are likely to experience an intermittent range of sublethal effects ranging from: (1) Minor physiological stress and increased rates of coughing and respiration; (2) moderate physiological stress; (3) moderate habitat degradation; (4) impaired homing; to (5) short-term indicators of major physiological stress. No sediment related mortality is expected due to the anticipated effectiveness of the design measures, including real-time adaptive management.

NMFS cannot accurately estimate the number of fish that could be affected by the pulses due to extreme variability between sites over the distance to be affected and similar variability in fish abundance over multiple days. Thus, surrogate measures of take are necessary to establish a limit to the take exempted by this Opinion. NMFS will consider the extent of take exceeded if turbidity readings, taken approximately 600 feet downstream of sediment inputs and at 30-minute intervals, exceed the IDEQ standard of 50 NTUs over background for three consecutive readings (90 minutes). As specified in the BA, if persistent turbidity issues arise, the USFS and NMFS will be notified.

The authorized take includes only take caused by the proposed actions within the action area as defined in this Opinion. The extent of take is the threshold for reinitiating consultation. Should this limit be exceeded, the reinitiation provisions of the Opinion apply.

2.8.2. RPMs

“Reasonable and prudent measures” are nondiscretionary measures to minimize the amount or extent of incidental take (50 CFR 402.02). “Terms and conditions” implement the RPMs (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply.

NMFS believes that full application of BMPs included as part of the proposed action, together with use of the RPMs and terms and conditions described below, are necessary and appropriate to minimize the impact of incidental take of listed species due to completion of the proposed action.

The BPA and its cooperators shall:

1. Minimize the potential for incidental take resulting from excess turbidity and chemical contamination.
2. Minimize the potential for incidental take resulting from post construction regrading.
3. Ensure completion of a monitoring and reporting program to confirm that the terms and conditions in this ITS are effective in avoiding and minimizing incidental take from permitted activities and ensure incidental take is not exceeded.

2.8.3. Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the BPA and its cooperators, including binding conditions of any permit, contract or funding issued to or by BPA or the COE, if any, must fully comply with BMPs described as part of the proposed action and the following terms and conditions that implement the RPMs described above. Partial compliance with these terms and conditions may invalidate this take exemption, result in more take than anticipated, and lead NMFS to a different conclusion regarding whether the proposed action will result in jeopardy or the destruction or adverse modification of designated critical habitats.

1. To implement RPM #1 the BPA and its cooperators shall:
 - a. Ensure that the proposed action, including all described BMPs and monitoring, are implemented as described in the BA and proposed action section of this Opinion.
 - b. Minimize use of machinery in live water, only operating in live water where no other alternatives exist.
 - c. Ensure that all pumping of water from inside or outside fish salvage zones (anywhere fish have or had access prior to project implementation) is screened according to NMFS screening criteria (NMFS 2008).
 - d. For machinery operating in live water, ensure that vegetable oil, mineral oil, and/or other non-toxic equivalent is used instead of hydraulic fluid to better protect the Yankee Fork in case there is a leak or a blowout in hoses, fittings, lines, or tanks.
2. To implement RPM #2 the BPA and its cooperators shall:
 - a. Contact NMFS prior to commencing the regrading of the side channel.

3. To implement RPM #3 (monitoring) the BPA and its cooperators shall ensure that:
- a. The 5-year monitoring commences after project completion.
 - b. Adequate records of all electrofishing salvage (e.g., number fish captured by species, number harmed or killed, etc.), are maintained during project implementation.
 - c. Adequate records of all redd, turbidity, and blasting monitoring are maintained during project implementation.
 - d. Proposed turbidity monitoring is completed as described below:
 - (1) For all cofferdam work, pumping of water, and release of water from the side channel directly in or into the Yankee Fork, turbidity monitoring should be in place prior to commencing the work, pumping, or rewatering.
 - (2) An appropriate and regularly calibrated turbidity meter, measuring NTUs, will be used.
 - (3) A sample will be taken prior to the seven expected turbidity pulses at a relatively undisturbed area approximately 100 feet upstream from inwater disturbance to establish background turbidity levels.
 - (4) A sample will also be taken every 30 minutes no more than 600 feet downstream from the point of discharge or the most appropriate downstream site during sediment pulses and be compared against the background measurement.
 - (5) Results documenting turbidity levels that exceed 50 NTUs over background levels for three consecutive readings (90 minutes).
 - e. A post-project report, confirming successful implementation of all proposed BMPs described in this Opinion and the terms and conditions discussed above will be submitted within 4 weeks of project completion.
 - f. Submit post-project report to:

Idaho State Director
Habitat Conservation Division
National Marine Fisheries Service
Attention: 2011/00602 (SNF) & 2011/00606 (COE)
10095 W Emerald St.
Boise, Idaho 83704

- g. NOTICE: If a sick, injured or dead specimen of a threatened or endangered species is found in the project area, the finder must notify NMFS through the contact person identified in the transmittal letter for this Opinion, or through Idaho State Habitat Office of NMFS Law Enforcement at (208) 321-2956, and follow any instructions. If the proposed action may worsen the fish's condition before NMFS can be contacted, the finder should attempt to move the fish to a suitable location near the capture site while keeping the fish in the water and reducing its stress as much as possible. Do not disturb the fish after it has been moved. If the fish is dead, or dies while being captured or moved, report the following information: (1) NMFS consultation number; (2) the date, time, and location of discovery; (3) a brief description of circumstances and any information that may show the cause of death; and (4) photographs of the fish and where it was found. NMFS also suggests that the finder coordinate with local biologists to recover any tags or other relevant research information. If the specimen is not needed by local biologists for tag recovery or by NMFS for analysis, the specimen should be returned to the water in which it was found, or otherwise discarded.

2.9. Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. The following recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the BPA and its cooperators:

1. To mitigate the effects of climate change on ESA-listed salmonids, follow recommendations by the ISAB (2007) to plan now for future climate conditions by implementing protective tributary and mainstem habitat measures; as well as protective hydropower mitigation measures. In particular, implement measures to protect or restore riparian buffers, wetlands, and floodplains; remove stream barriers; and to ensure late summer and fall tributary streamflows.
2. Continue to implement restoration projects with priority given to reconnecting the mainstem Yankee Fork with former floodplains and tributaries.
3. Conduct post construction fish density and/or other fish use surveys to help evaluate the change in fish use following restoration. Distribution of this information to agencies such as BPA, IDFG, NMFS, and TU will help guide future restoration efforts.
4. Consider using non-explosive alternatives such as Betonamit®, a non-explosive, non-toxic agent to break rock into smaller more manageable pieces.

5. Consider using the same herbicide active ingredients and application restrictions on the private land portion of the action area as is used on the SCNF portion of the action area (i.e., treat weeds in accordance with the SCNF biological opinion for treatment of noxious weeds).

2.10. Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) The amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated critical habitat in a manner or to an extent not considered in this Opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this Opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. To reinitiate consultation contact NMFS' Idaho State Habitat Office and refer to consultation numbers 2012-01923 (BPA) and 2012-02575 (COE).

3. MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT CONSULTATION

The consultation requirement of section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA (section 3) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Adverse effects include the direct or indirect physical, chemical, or biological alterations 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 EFH, and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH.

This analysis is based, in part, on the EFH assessment provided by the BPA and descriptions of EFH for Pacific coast salmon (PFMC 1999) contained in the fishery management plans 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 PFMC has designated EFH for Chinook salmon (PFMC 1999). The proposed action and action area for this consultation are described in the Introduction to this document. The action area includes areas designated as EFH for spawning, rearing, and migration life-history stages of Chinook salmon.

3.2. Adverse Effects on Essential Fish Habitat

Based upon information provided in the BA, supplemental information provided by the action agency (BPA), and the analysis of effects presented in the ESA portion of this document, the proposed action is likely to result in short-term adverse effects to EFH. Turbidity plumes may impair water quality for several hours for several non-consecutive days which will result in localized fine sediment deposition to substrate. It is expected that these fines will be scoured away within 6 months during the next high water event. The project calls for the removal of 0.01 acres of riparian vegetation from the project site. Given that there is only 0.88 acres of low functioning riparian vegetation on site, the existing or the removed portion will have little effect on stream shading (water temperature) or riparian vegetation. In the long-term, 4.6 acres of high functioning riparian vegetation will be added to the project site.

The proposed action should also provide long-term improvements to critical habitat within the action area. Specifically, the essential features of water quality, water velocity and substrate, natural cover/shelter, floodplain connectivity, riparian vegetation, and access and space (barriers) will all experience some beneficial effects of project implementation. Partitioning flows into the side channel will offer velocity refugia and improve gravel recruitment for spawning. Access to this expanded and functional habitat will be made year round. Construction of floodplains, increased riparian areas, and added habitat complexity will offer greatly expanded and improved juvenile rearing habitat in the lower Yankee Fork.

3.3. Essential Fish Habitat Conservation Recommendations

NMFS believes that the following six conservation measures are necessary to avoid, mitigate, or offset the impact of the proposed action on EFH. These conservation recommendations are a non-identical set of the ESA terms and conditions.

1. The proposed action, including all described BMPs and monitoring, should be implemented as described in the BA and proposed action section of this Opinion.
2. The use of machinery in live water should be minimized, only operating in live water where no other alternatives exist.
3. For machinery operating in live water, vegetable oil, mineral oil, and/or other non-toxic equivalent shall be used instead of hydraulic fluid to better protect the Yankee Fork in case there is a leak or a blowout in hoses, fittings, lines, or tanks.
4. NMFS should be contacted before any regrading of the side channel after project completion.
5. Adequate records of all redd, turbidity, and blasting monitoring should be maintained during project implementation.

6. Proposed turbidity monitoring should be completed as described:
 - a. For all cofferdam work, pumping of water, and release of water from the side channel directly in or into the Yankee Fork, turbidity monitoring should be in place prior to commencing the work, pumping, or rewatering.
 - b. An appropriate and regularly calibrated turbidity meter, measuring NTUs, should be used.
 - c. A sample should be taken prior to the seven expected turbidity pulses at a relatively undisturbed area approximately 100 feet upstream from inwater disturbance to establish background turbidity levels.
 - d. A sample should also be taken every 30 minutes no more than 600 feet downstream from the point of discharge or the most appropriate downstream site during sediment pulses and be compared against the background measurement.
 - e. Results documenting turbidity levels that exceed 50 NTUs over background levels should be recorded for three consecutive readings (90 minutes).

NMFS expects that full implementation of these EFH conservation recommendations would protect, by avoiding or minimizing the adverse effects described in Section 3.2 above, approximately 14 acres of designated EFH for Pacific coast salmon.

3.4. Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, the Federal agency must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation from NMFS. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations, unless NMFS and the Federal agency have agreed to use alternative time frames for the Federal agency response. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NMFS Conservation Recommendations, the Federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects [50 CFR 600.920(k)(1)].

In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we ask that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

3.5. Supplemental Consultation

The BPA or COE 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

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) (Data Quality Act [DQA]) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the Opinion addresses these DQA components, documents compliance with the DQA, and certifies that this Opinion has undergone pre-dissemination review.

4.1. Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users.

This ESA consultation concludes that the proposed Pond Series 3 Restoration project will not jeopardize the affected ESA-listed species. Therefore, the BPA can fund and implement and the COE can permit this action in accordance with their authorities under the Pacific Northwest Electric Power Planning and Conservation Act of 1980, and section 404 of the CWA (33 U.S.C. 1251 *et seq*), respectively. The intended users are the BPA and COE and any permittees or applicants.

Individual copies were provided to the above-listed entities. This consultation will be posted on NMFS Northwest Region website (<http://www.nwr.noaa.gov>). The format and naming adheres 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 NMFS ESA Consultation Handbook, ESA Regulations, 50 CFR 402.01, *et seq.*, and the MSA implementing regulations regarding EFH, 50 CFR 600.920(j).

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the Literature Cited section. The analyses in this Opinion/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 MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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The following application(s) have been filed to appropriate the public waters of the State of Idaho:

72-16896

J R SIMPLOT CO

999 MAIN ST STE 1300

BOISE, ID 83707

Point of Diversion NWNE S29 T12N R15E
CUSTER County Source YANKEE FORK Tributary
SALMON RIVER

Use: FISH HABITAT 01/01 to 12/31 295 CFS

Use: RECREATION 01/01 to 12/31 295 CFS

Total Diversion: 295 CFS

Date Filed: 9/27/2012

Place Of Use: FISH HABITAT & RECREATION

T12N R15E S29

Application proposes diverting up to 295 cfs of water from the Yankee Fork into an artificial side channel for fish habitat and recreation purposes for anadromous fish species. The point of diversion is located approximately 8.9 miles north and 10.3 miles east of Stanley.

This application proposes the diversion and use of water tributary to the federally designated Salmon River Wild & Scenic River. The decreed minimum stream flow rights for the federal Wild & Scenic Rivers are subordinate to certain categories of water use and to specific amounts of water use established after the minimum stream flow. The water use proposed in this application will benefit from the subordination provision because it is for non consumptive purposes.

The applicant has proposed to subordinate this use to all future rights within the Yankee Fork drainage, unless otherwise indicated on the face of the individual water rights.

Permits will be subject to all prior water rights. For additional information concerning the property location, contact Southern Region office at (208) 736-3033; or for a full description of the right(s), please see

www.idwr.idaho.gov/apps/ExtSearch/WRFilin_g.asp.

Protests may be submitted based on the criteria of Idaho Code § 42-203A. Any protest against the approval of this application must be filed with the Director, Dept. of Water Resources, Southern Region, 1341 Fillmore St, Suite 200, Twin Falls, ID 83301 together with a protest fee of \$25.00 for each application on or before October 22, 2012. The protestant must also send a copy of the protest to the applicant.

GARY SPACKMAN, Director

Published: October 4 and 11, 2012 (507343)

✓ OK SM 10/3/2012

E-mail sent to Post Register

State of Idaho
Department of Water Resources
Application for Permit
RECOMMENDATION OF WATERMASTER

Application for Permit No 72-16896
Applicant's Name: J R SIMPLOT CO
999 MAIN ST STE 1300
BOISE ID 83707

Watermaster's Recommendation:

- a) ☒ I do not oppose approval of this application.
- b) ☐ I do not oppose approval of this application if it is conditioned as follows:
- c) ☐ I oppose approval of this application for the following reasons:
- d) ☒ Additional Comment:

Given that this diversion is nonconsumptive, benefits from the subordination of the W&S rights, and will be conditioned to be subordinated to future uses, I advocate approving this application without a requirement for measurement and control.

Dated this 28th day of September, 2012,

Water District No: 170



Watermaster's Signature