UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

March 7, 2013

Douglas M. Marsh
National Marine Fisheries Service/NOAA Fisheries
Northwest Fisheries Science Center
Fish Ecology Division
2725 Montlake Boulevard East
Seattle, WA 98112

RE: Determination of Take for Research Purposes (16-13-NWFSC21)

Dear Mr. Marsh:

National Marine Fisheries Service (NMFS) Hydropower Division's Federal Columbia River Power System (FCRPS) Branch has determined that take associated with the study, "Survival estimates for the passage of juvenile salmonids through Snake and Columbia River dams and reservoirs" is permitted in 2013 under the 2010 FCRPS Supplemental Biological Opinion (2010 Opinion). If this research continues beyond 2013, the take allowed under the determination process must be updated annually. The estimated numbers of listed salmonids needed to complete this study in 2013 are given in Table 1 below.

Project Justification, Description, and Methods

Justification

The proposed study is required by the 2008 FCRPS biological opinion, in the RPA Table, RM&E Strategy 2—Hydrosystem Research, Monitoring, and Evaluation "Juvenile In-river Survival Performance Metric". This project was recently reviewed by the Independent Science Review Panel (ISRP) and approved for funding for the 2012-2014 time period. The proposal received a very positive review.

Description

During 2013, hatchery and wild steelhead and wild yearling spring/summer Chinook salmon will be collected and Passive Integrated Transponder (PIT)-tagged at Lower Granite Dam's juvenile collection facility for survival estimation. No hatchery yearling spring/summer Chinook salmon will be tagged for our study because sufficient numbers of these stocks will be tagged in other studies for survival estimation. We will be more rigorous in describing the condition of the fish tagged for this study to better understand if, and why, bypass selectivity occurs at dams below Lower Granite Dam. As part of this evaluation, we will collect fish from this study at Bonneville Dam to evaluate how fish with differing fish condition at the time of tagging perform during their migration through the hydropower system. The recapture of fish at Bonneville Dam from this study has been covered under another study (NWFSC17) for a similar purpose, but, due to our increased attention to fish condition, we moved it under this study.

Methodology

During 2013, up to 21,000 wild Snake River yearling Chinook salmon, 21,000 Snake River wild steelhead, and 21,000 hatchery steelhead will be PIT-tagged at Lower Granite Dam during the spring migration (April through early June). The actual number of wild Chinook salmon and wild steelhead tagged will likely be less than requested due to fish availability at Lower Granite Dam. All fish will be collected at the Lower Granite Dam juvenile collection facility, anesthetized prior to handling, PIT tagged, and released to the tailrace after a 24 h recovery period. In the past, fish for this study were part of the overall collection at Lower Granite Dam for another study (NWFSC17), so most of the incidental mortality relating to the capture of fish in this study that are handled but not tagged was covered under the NWFSC17 request. However, this year, NWFSC17 will not begin tagging until the third week of April, so fish handled during the first two weeks of tagging have to be included in this request. Incidental mortalities resulting from tagging are included here, with requested numbers equal to 2% of the fish to be tagged; incidental mortality related to handling was set equal to 1%.

As stated above, the tagging for this study is coordinated with other studies to reduce the number of total fish required. No hatchery yearling Chinook salmon will be tagged at Lower Granite Dam during 2013 for reach survival because sufficient numbers of this species will be tagged for transportation research by others.

Terms, Conditions, and Requirements

Fish listed under the Endangered Species Act (ESA) must be handled with extreme care and kept in water to the maximum extent possible during sampling and processing. Adequate circulation and replenishment of water in holding units is required. When using gear that captures a mix of species, ESA-listed fish must be processed first, to the extent possible, to minimize the duration of handling stress. Endangered Species Act listed fish must be transferred using a sanctuary net (which holds water during transfer) whenever practical to prevent the added stress of being out of water. Should NMFS determine that a researcher's procedure is no longer acceptable; the researcher must immediately cease such activity until an acceptable alternative procedure can be developed with NMFS. To implement the Hydro research, monitoring & evaluation (RM&E) reasonable and prudent alternatives (RPAs), the Applicant shall ensure that all of the following conditions are met:

1. Researchers must not intentionally kill or cause to be killed any listed species unless a specific monitoring or evaluation proposal, approved by NMFS, specifically allows intentional lethal take.

2. Each ESA-listed fish handled out of water must be anesthetized to prevent injury or mortality.

3. Anesthetized fish must be allowed to recover (e.g., in a recovery tank) before being released. Fish that are simply counted but not handled must remain in water, but do not have to be anesthetized. Whenever possible, unintentional or indirect mortalities of ESA-listed fish that occur during scientific research and monitoring activities shall be used in place of intentional lethal take, if applicable.

4. Each researcher must ensure that the ESA-listed species are taken only by the means, in the areas, and for the purposes set forth in the research proposal, as limited by the terms and conditions.

5. Each researcher, in effecting the take authorized by the incidental take statement (ITS) (Chapter 14, 2008 Opinion – incorporated into the 2010 Opinion) and through NMFS' Take Determination Letters, is considered to have accepted the terms and conditions of the ITS and any additional terms or conditions required by NMFS' Take Determination Letters, and must be prepared to comply with the provisions of these two documents, and the applicable NMFS' regulations and the ESA.

6. Each researcher is responsible for the actions of any individual operating under the authority of the researcher's designated take authorization within the ITS of the 2010 Opinion and NMFS' Take Determination Letters.

7. Each researcher, staff member, or designated agent acting on the researcher's behalf must possess a copy of the ITS in the 2010 Opinion and the NMFS authorizing Take Determination letter when conducting the activities for which a take of ESA-listed species or other exception to ESA prohibitions is authorized herein.

8. Researchers may not transfer or assign a take authorization included within this determination to any other person(s), as person is defined in Section 3(12) of the ESA. The take authorization ceases to be in force or effective if transferred or assigned to any other person without prior authorization from NMFS.

9. Each researcher must obtain any other Federal, State, and local permits or authorizations necessary to conduct the activities provided for in this ITS.

10. Each researcher must coordinate with other applicable co-managers and researchers to ensure that no unnecessary duplication or adverse cumulative effects occur as a result of the researcher's activities.

11. NMFS reserves the right to inspect research activities as they occur. This may include observation or review of research activities, facilities, records, etc., pertaining to ESA-listed species covered by this determination.

12. Under the terms of NMFS' regulations, a violation of any of the terms and conditions of this ITS will subject the offending researcher and/or any individual who is operating under the authority of this ITS to penalties as provided for in the ESA for authorized take.

13. Each researcher is responsible for biological samples collected from ESA-listed species as long as they are useful for research purposes. The terms and conditions concerning any samples collected remain in effect as long as the researcher maintains authority over and responsibility for the material taken. A researcher may not transfer biological samples to anyone not listed in the research proposal without obtaining prior written

approval from NMFS. Any such transfer will be subject to such conditions, as NMFS deems appropriate.

14. NMFS may amend a take authorization identified in this determination, or adjust specific take levels after reasonable notice to the applicable researcher.

15. NMFS may revoke a take authorization identified in this ITS if the activities for which it provides are not carried out. If the activities are not carried out in accordance with the conditions of this ITS and the purposes and requirements of the ESA, or if NMFS otherwise determines that the continuation of activities would operate to the disadvantage of ESA-listed species.

Annual Reporting and Authorization Requirements

The conduct of scientific research and monitoring activities each year is contingent on submission and approval of a report on each proceeding year's research and monitoring activities. Researchers are providing annual reports summarizing the take of ESA-listed salmon and steelhead associated with their activity. These annual reports are to be provided to NMFS' designated Take Determination Coordinator by December 1 of each year unless this date is otherwise modified by NMFS' authorizing Take Determination letter. The report must include the following:

1. A detailed description of scientific research and monitoring activities, including the total number of fish taken at each location, an estimate of the number of ESA-listed fish taken at each location, the manner of take, and the dates and locations of the take.

2. Measures taken to minimize disturbances to ESA-listed fish and the effectiveness of these measures, the condition of ESA-listed fish taken and used for research and monitoring, a description of the effects of research and monitoring activities on the subject species, the disposition of ESA-listed fish in the event of mortality, and a brief narrative of the circumstances surrounding fish injuries or mortalities to ESA-listed fish.

3. Any problems that arose during research and monitoring activities, and a statement as to whether the activities had any unforeseen effects.

4. Descriptions of how all take estimates were derived.

5. Steps that have been and will be taken to coordinate research and monitoring activities with those of other researchers.

Operational Reporting & Notification Requirements

1. Researchers must obtain NMFS' approval prior to implementing research protocols (e.g., changes in sampling locations or fish handling protocols) that differ from those considered in the Take Determination Letters, unless immediate deviation from these same protocols are necessary to reduce impacts to fish in hand. In this case, researchers must contact NMFS' designated Take Determination Coordinator or other designated staff as soon as possible to report on the situation (including reporting any resultant unexpected take), the actions taken by the research to minimize impacts to research fish, and coordination of additional actions that are necessary before the research can continue.

2. Each researcher must alert NMFS whenever the authorized level of take is exceeded, or if circumstances indicate that such an event is imminent. Notification should be made as soon as possible, but no later than 2 days after the authorized level of take is exceeded. The researcher must then submit a detailed written report to NMFS. Pending a review of the circumstances, NMFS may suspend the research and monitoring activities or implement reasonable measures and/or alternatives to allow research and monitoring activities to continue.

3. Each researcher must alert NMFS when a take of any ESA-listed species not included in the research proposal is killed, injured, or collected during the course of research and monitoring activities. Notification should be made as soon as possible, but no later than 2 days after the unauthorized take. The researcher must then submit a detailed written report to NMFS. Pending a review of the circumstances, NMFS may suspend research and monitoring activities or implement reasonable measures and/or alternatives to allow research and monitoring activities to continue.

4. In the case of ongoing studies, a report of actual take will be submitted to NMFS no less than 30 days before the request for take for the next year is submitted. For studies which only last 1 year, or upon termination of a multi-year study, a report of actual take will be submitted no less than 30 days after the activities described in the take determination letter cease. Take reports will include the numbers, life stage, species, and evolutionarily significant unit (ESU) of fish taken; the type of take (harass, handle, kill); and levels of incidental mortality. The reports will also include the location of the take (geographical names and Hydrologic Unit Code (HUC), and summarize take into blocks no larger than one month (i.e., take for April, May, etc.). Any of the incidents described in items 2 and 3 above (exceeded take limits, or incidental morality not covered by the take determination) will also be described in this report. The report will also include an evaluation if methodology can be improved to reduce take (especially incidental mortality).

Take Estimates

The following tables list the total authorized take of listed salmon species.

Table 1. Total number of all potentially listed salmon species taken by the study. These numbers do not include numbers of fish carcass (no limit) which may be handled or sampled in the course of this project. Take levels: 1-harass or disturb, 2-capture and handle, 3-collect sample or tag, 4-lethal sampling.

Species	Clip status	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Chinook	unk	Yearling	Yearling	Tag	3	21,000	420	Lower Granite Dam	7 Apr-15 Jun
Steelhead	unk	Yearling	Yearling	Tag	3	21,000	420	Lower Granite Dam	7 Apr-15 Jun
Steelhead	Hatchery	Yearling	Yearling	Tag	3	21,000	420	Lower Granite Dam	7 Apr-15 Jun
Chinook	unk	Yearling	Yearling	capture, measure, release	2	948	9	Lower Granite Dam	7 Apr-15 Jun
Chinook	Hatchery	Yearling	Yearling	capture, measure, release	2	54,552	546	Lower Granite Dam	7 Apr-15 Jun
Chinook	unk	subyearling	Subyearling	capture, measure, release	2	40	0	Lower Granite Dam	7 Apr-15 Jun
Chinook	Hatchery	subyearling	Subyearling	capture, measure, release	2	0	0	Lower Granite Dam	7 Apr-15 Jun
Steelhead	unk	Yearling	Yearling	capture, measure, release	2	300	3	Lower Granite Dam	7 Apr-15 Jun
Steelhead	Hatchery	Yearling	Yearling	capture, measure, release	2	37,254	373	Lower Granite Dam	7 Apr-15 Jun
Sockeye	unk	Yearling	Yearling	capture, measure, release	2	60	1	Lower Granite Dam	7 Apr-15 Jun

Species	Clip status	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Sockeye	Hatchery	Yearling	Yearling	capture, measure, release	2	200	2	Lower Granite Dam	7 Apr-15 Jun
Coho	unk	Yearling	Yearling	capture, measure, release	2	60	1	Lower Granite Dam	7 Apr-15 Jun
Chinook	Unclipped	Yearling	Yearling	capture, measure, release	2	3,061	31	Bonneville Dam	April-July
Chinook	Hatchery	Yearling	Yearling	capture, measure, release	2	4,423	44	Bonneville Dam	April-July
Chinook	unk	subyearling	Subyearling	capture, measure, release	2	375	4	Bonneville Dam	April-July
Chinook	Hatchery	subyearling	Subyearling	capture, measure, release	2	2,115	21	Bonneville Dam	April-July
Steelhead	unk	Yearling	Yearling	capture, measure, release	2	1,245	12	Bonneville Dam	April-July
Steelhead	Hatchery	Yearling	Yearling	capture, measure, release	2	1,455	15	Bonneville Dam	April-July
Sockeye	unk	Yearling	Yearling	capture, measure, release	2	950	10	Bonneville Dam	April-July
Coho	unk	Yearling	Yearling	capture, measure, release	2	33	0	Bonneville Dam	April-July
Coho	Hatchery	Yearling	Yearling	capture, measure, release	2	327	3	Bonneville Dam	April-July

Species Summary	Allotted take	Allotted Incidental Mortality	Location
Chinook	21,040	420	Lower Granite Dam
Steelhead	42,000	840	Lower Granite Dam
Chinook	55,500	555	Lower Granite Dam
Steelhead	37,554	376	Lower Granite Dam
Sockeye	260	3	Lower Granite Dam
Coho	60	1	Lower Granite Dam
Chinook	7,484	75	Bonneville Dam
Chinook	2,490	25	Bonneville Dam
Steelhead	2,700	27	Bonneville Dam

Table 2. Estimated 2013 take activities for potentially ESA-listed salmonids authorized to be taken during the study. These numbers do not include numbers of fish carcass (no limit) which may be handled or sampled in the course of this project. Take levels: 1-harass or disturb, 2-capture and handle, 3-collect sample or tag, 4-lethal sampling.

ESU	Hatchery or Wild	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Snake River Spring Summer Chinook	wild	Juvenile	Yearling	Tag	3	21,000	420	Lower Granite Dam	7 Apr-15 Jun
Snake River Steelhead	wild	Juvenile	Yearling	Tag	3	21,000	420	Lower Granite Dam	7 Apr-15 Jun
Snake River Steelhead	hatchery	Juvenile	Yearling	Tag	3	7,797	156	Lower Granite Dam	7 Apr-15 Jun
Snake River Steelhead	hatchery	Juvenile	Yearling	Tag	3	2,078	42	Lower Granite Dam	7 Apr-15 Jun
Snake River Spring Chinook	wild	Juvenile	Yearling	capture, measure, release	2	648	6	Lower Granite Dam	7 Apr-15 Jun
Snake River Spring Summer Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	10,280	103	Lower Granite Dam	7 Apr-15 Jun
Snake River Spring Summer Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	3,371	34	Lower Granite Dam	7 Apr-15 Jun
Snake River Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	300	3	Lower Granite Dam	7 Apr-15 Jun
Snake River Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	13,832	138	Lower Granite Dam	7 Apr-15 Jun

ESU	Hatchery or Wild	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Snake River Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	3,686	369	Lower Granite Dam	7 Apr-15 Jun
Snake River Fall Chinook	wild	Juvenile	Subyearling	capture, measure, release	2	6	0	Lower Granite Dam	7 Apr-15 Jun
Snake River Fall Chinook	hatchery	Juvenile	Subyearling	capture, measure, release	2	0	0	Lower Granite Dam	7 Apr-15 Jun
Snake River Fall Chinook	hatchery	Juvenile	Subyearling	capture, measure, release	2	0	0	Lower Granite Dam	7 Apr-15 Jun
Snake River Fall Chinook	wild	Juvenile	Yearling	capture, measure, release	2	300	3	Lower Granite Dam	7 Apr-15 Jun
Snake River Fall Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	4,500	45	Lower Granite Dam	7 Apr-15 Jun
Snake River Fall Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	4,500	45	Lower Granite Dam	7 Apr-15 Jun
Snake River sockeye	wild	Juvenile	Yearling	capture, measure, release	2	60	1	Lower Granite Dam	7 Apr-15 Jun
Snake River sockeye	hatchery	Juvenile	Yearling	capture, measure, release	2	200	2	Lower Granite Dam	7 Apr-15 Jun

ESU	Hatchery or Wild	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Snake River Spring Summer Chinook	wild	Juvenile	Yearling	capture, measure, release	2	726	7	Bonneville Dam	April-July
Snake River Spring Summer Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	166	2	Bonneville Dam	April-July
Snake River Spring Summer Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	104	1	Bonneville Dam	April-July
Snake River Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	658	7	Bonneville Dam	April-July
Snake River Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	316	3	Bonneville Dam	April-July
Snake River Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	91	1	Bonneville Dam	April-July
Snake River Fall Chinook	wild	Juvenile	Subyearling	capture, measure, release	2	2	0	Bonneville Dam	April-July
Snake River Fall Chinook	hatchery	Juvenile	Subyearling	capture, measure, release	2	8	0	Bonneville Dam	April-July
Snake River Fall Chinook	hatchery	Juvenile	Subyearling	capture, measure, release	2	10	0	Bonneville Dam	April-July

ESU	Hatchery or Wild	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Snake River Fall Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	84	1	Bonneville Dam	April-July
Snake River Fall Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	84	1	Bonneville Dam	April-July
Snake River sockeye	unknown	Juvenile	Yearling	capture, measure, release	2	8	0	Bonneville Dam	April-July
Upper Columbia Spring Chinook	wild	Juvenile	Yearling	capture, measure, release	2	182	2	Bonneville Dam	April-July
Upper Columbia Spring Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	102	1	Bonneville Dam	April-July
Upper Columbia Spring Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	352	4	Bonneville Dam	April-July
Upper Columbia Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	116	1	Bonneville Dam	April-July
Upper Columbia Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	136	1	Bonneville Dam	April-July
Upper Columbia Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	40	0	Bonneville Dam	April-July

ESU	Hatchery or Wild	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Middle Columbia Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	174	2	Bonneville Dam	April-July
Middle Columbia Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	120	1	Bonneville Dam	April-July
Middle Columbia Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	256	3	Bonneville Dam	April-July
Middle Columbia Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	26	0	Bonneville Dam	April-July
Lower Columbia Spring Chinook	wild	Juvenile	Yearling	capture, measure, release	2	20	0	Bonneville Dam	April-July
Lower Columbia Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	12	0	Bonneville Dam	April-July
Lower Columbia Winter Steelhead	wild	Juvenile	Yearling	capture, measure, release	2	6	0	Bonneville Dam	April-July
Lower Columbia Steelhead	hatchery	Juvenile	Yearling	capture, measure, release	2	20	0	Bonneville Dam	April-July
Lower Columbia Chinook	wild	Juvenile	Yearling	capture, measure, release	2	24	0	Bonneville Dam	April-July

ESU	Hatchery or Wild	Age	Age detail	Activity	Take Level	Take	Incidental mortality	Location	Dates
Lower Columbia Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	846	8	Bonneville Dam	April-July
Lower Columbia Chinook	hatchery	Juvenile	Yearling	capture, measure, release	2	50	1	Bonneville Dam	April-July
Lower Columbia Coho	wild	Juvenile	Yearling	capture, measure, release	2	6	0	Bonneville Dam	April-July

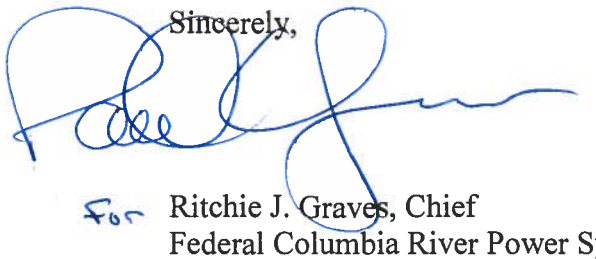
ESU Summary	Allotted Take	Allotted Incidental Mortality
Lower Columbia Chinook	940	9
Lower Columbia Coho	6	0
Lower Columbia Steelhead	38	0
Middle Columbia Steelhead	576	6
Snake River Fall Chinook	9494	95
Snake River sockeye	268	3
Snake River Spring Summer Chinook	15295	153
Snake River Steelhead	49758	807
Upper Columbia Spring Chinook	640	7
Upper Columbia Steelhead	292	2

Pacific eulachon are listed as threatened under the ESA and eulachon critical habitat in the lower Columbia River and tributaries has been designated for protection. Nothing in this letter authorizes any take of eulachon which may occur as a result of your activities. If you encounter any eulachon in your activities, you should report any sighting, handling or other encounters with eulachon, and take all appropriate measures to avoid contact or minimize the potential for harm to the species. Any eulachon captured during your activities should be released as quickly as possible; and NMFS should be notified as soon as practicable. If your activities are also likely to adversely affect eulachon critical habitat, you should consult with NMFS.

Determinations by the FCRPS Branch for this research during the 2013 fish passage season and beyond will be made on an annual basis. The annual determination will depend upon information submitted in the research study's annual report, other new information, the annual anticipated status of fisheries stocks, and any subsequent review through regional review processes.

Please notify Paul Wagner, (503)31-2316, Paul.Wagner@noaa.gov) as soon as possible of any deviation from the terms and conditions in this determination. Please include the study's official title and the number (from the subject line) of the current Take Determination Letter in all communications regarding this study. Please provide the FCRPS Branch's Take Determination Coordinator, Blane Bellerud (503-231-2238, Blane.Bellerud@noaa.gov), with the annual report for this research study.

Sincerely,



For Ritchie J. Graves, Chief
Federal Columbia River Power System Branch
Hydropower Division

cc: Kinsey Frick
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