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

April 4, 2002

200204 012

Frank L. Cassidy, Jr.
Chairman, Northwest Power Planning Council
851 SW Sixth Avenue, Suite 1 100
Portland, OR 97204

Re: Interim Abundance and Productivity Targets for Interior Columbia Basin Salmon and Steelhead Listed under the Endangered Species Act (ESA)

Dear Mr. Cassidy,

As promised in my February 20, 2002 letter to you, enclosed are interim abundance and productivity targets for ESA listed salmon and steelhead in the Interior Columbia Basin. The National Marine Fisheries Service (NMFS) provides these to the Council, and by copy of this letter to the states, tribes and Federal agencies, to provide a preliminary and general sense of the ESA recovery objectives currently under development. These interim targets are only a starting point. NMFS will replace these targets with scientifically more rigorous and comprehensive recovery goals using viability criteria developed through the Interior Columbia Technical Recovery Team (TRT) process that commenced in October, 2001.

NMFS established the Interior Columbia TRT to develop specific population identification, characterization, and viability criteria for Interior Basin salmon and steelhead. The TRT will also characterize the relationship between the populations and their habitat and will provide specific analyses of the factors for decline (or limiting factors) for each population. The TRT will work with local experts, particularly tribal, state and federal biologists, to ensure that the most current and accurate technical information is used in developing their products. The TRT's draft recommendations for delisting criteria should be available by late 2002, with the remaining products completed by late 2003.

The TRT's efforts will provide the technical foundation and context for recovery planning. From this foundation, policy choices about recovery goals and actions can be made and recovery plans can be prepared. NMFS' recovery plan guidance for West Coast Salmon (www.nwfs.org) refers to the TRT efforts as Phase One, and these policy tasks as Phase Two. One of our critical next steps is to work with the Council, states, tribes and stakeholders to determine how best to implement Phase Two in the Interior Columbia. It is clear that Phase Two must be part of, or at least fully coordinated with, subbasin and watershed planning and Recovery Board efforts already underway.

APR 09 2002



It is important to note that these interim abundance and productivity targets make no particular assumptions regarding harvest or any other take of listed ESUs. These are intended to represent the number and productivity of naturally-produced spawners that may be needed for recovery, in the context of whatever take or mortality is occurring. NMFS intends that final recovery goals developed in Phase Two will include harvest sufficient to meet our treaty and trust responsibilities and fulfill our mission of sustainable fisheries. These final “broader-sense” recovery goals should provide for healthy populations to meet society’s needs.

The enclosure provides the interim abundance and productivity targets and an overview of how they were developed. These abundance and productivity targets for a given spawning aggregation or index area should not be considered in isolation, as they represent the values that, taken together, may be needed for the population to be self-sustaining in its natural ecosystem. It is worth clarifying that these interim targets are not the result of efforts by the Interior Columbia TRT nor the Northwest Fisheries Science Center, although they are based on scientific documents to which our Science Center and co-managers contributed. These are simply NMFS’ best early guidance based on existing information.

Sincerely,



Bob Lohn

Cc: CBFWA members
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Curt Smitch – WA Governor’s Office
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enclosure

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Interim Abundance and Productivity Targets for Pacific Salmon and Stecihead Listed under the Endangered Species Act in the Interior Columbia Basin

These interim abundance and productivity targets are provided for geographic spawning aggregations of naturally produced spawning adults. They address the portion of each evolutionarily significant unit's (ESU's) historical range below the major mainstem dams that do not provide for fish passage (e.g., Chief Joseph Dam on the upper Columbia, Hells Canyon Dam on the Snake mainstem and Dworshak Dam on the north fork Clearwater River). The potential role of geographic spawning aggregations above these dams in the ESU's viability as a whole will be evaluated through the formal recovery planning process guided by recommendations from the Interior Columbia Technical Recovery Team (Interior TRT).

It is important to note that these interim targets are not in the context of the whole ESUs, rather they are defined for tentative geographic spawning aggregations within the ESUs. The Interior TRT will develop more accurate population definitions to replace these preliminarily defined spawning aggregations. The TRT will also generate alternative delisting scenarios – different combinations of viable salmonid populations that would each provide for the recovery of the ESU as a whole.

Existing Delisting Objectives – Snake River spring/summer chinook, Snake River sockeye, Upper Columbia spring chinook and Upper Columbia steelhead

Recommended recovery objectives have been developed for Snake River spring/summer chinook spawning aggregations, Snake River fall chinook and Snake River sockeye by the Snake River Recovery Team (Bevan et al., 1994). Those recommendations were modified to apply to index stock areas' based on recommendations from the IDFG v NMFS Biological Requirements Workgroup (BRWG, 1994) and were incorporated into the 1995 Proposed Snake River Recovery Plan (NMFS, 1995). The targets were further modified based on input from the Idaho Department of Fish and Game and were included in another draft recovery plan for Snake River Salmon (NMFS, 1997). Population definitions and recommended abundance and productivity objectives have also been developed for upper Columbia spring chinook and steelhead ESU spawning aggregations in the Methow, Entiat, and Wenatchee through the QAR (Quantitative Analytical Report) process (Ford et al., 2001). Ford et al. (2001) did not identify an abundance goal for the Okanogan due to a lack of sufficient historical information. However, the potential for naturally spawning aggregations in this area will be evaluated by the Interior TRT. Tables 1(a) and 1(b) summarize those specific recommendations for interim targets for listed chinook and sockeye stocks in the upper Columbia and Snake River basins. Productivity criteria for Snake River sockeye were developed in the 2000 FCRPS BiOp (NMFS, 2000) for a 40-48 year time period, recognizing the time required to institute habitat rehabilitation options and the time

The index area recovery objectives were developed for use in assessing the status of Snake River spring chinook stocks. Index areas have established time-series of scientific observations (e.g., redd counts), and are generally smaller in scale than geographic spawning aggregations. Objectives for these specific index areas have played a key role in the recent series of Federal Hydropower system Biological Opinions (e.g., NMFS, 2000; see section 1.3.1). Index area recovery objectives are included in Table 1(a).

lag of response in the sockeye populations. However, to be consistent with the targets provided for the other ESUs, the productivity targets given for Snake River sockeye in Table 1(b) represent only a general biological rule of thumb over a time period of 8 years.

New Delisting Objectives – Interior Columbia Steelhead and Middle Columbia Steelhead ESU

Population definitions, abundance and productivity targets for Snake River and Middle Columbia steelhead have not been formally developed. For these ESUs, geographic spawning aggregations and interim abundance targets are based upon the QAR approach used in the Upper Columbia Biological Requirements Report (Ford et al., 2001), and from: descriptions in the 1990 Subbasin Plans; recommendations from state level stock surveys (e.g., ODFW, 1995; WDFW, 1993; IDFG, 1985); NMFS' Proposed Recovery Plan for Snake River Salmon (NMFS, 1995); the 2000 Biological Opinion on the operation of the Federal Columbia River Power System (FCRPS BiOp) (NMFS, 2000); and Oregon Department of Fish and Wildlife reports regarding conservation assessments (Chilcote, 2001; ODFW, 1995). Table 2 lists possible interim abundance targets and interim productivity objectives for major steelhead spawning aggregations in the Upper Columbia, the Middle Columbia and the Snake River ESUs. The abundance values listed for the Wenatchee, Entiat and Methow subbasins are the levels recommended through the QAR process (Ford et al., 2001). Productivity criteria for Snake River and mid-Columbia steelhead were developed in the 2000 FCRPS BiOp (NMFS, 2000) for a 40-48 year time period, recognizing the time required to institute habitat rehabilitation options and the time lag of response in the steelhead populations. However, to be consistent with the targets provided for the other ESUs, the productivity targets given for Snake River and mid-Columbia steelhead in Table 2 represent only a general biological rule of thumb over a time period of 8 years.

Interim Targets – Description and Discussion of Caveats

Interim Abundance Targets

The enclosed Tables provide interim abundance targets generally representing the geometric mean of spawner escapement over time scales of eight years or approximately two generations. A challenge for co-managers, in the context of these interim abundance targets, is how to measure their progress toward recovery. Uncertainties associated with estimates of abundance and population trends must be considered when determining whether a population's recovery abundance goal has been met. These issues will need to be addressed in formal recovery planning.

Interim Productivity Objectives

In the long-term, a viable population will be characterized by a natural replacement rate (population growth rate) that fluctuates due to natural variability around an average of 1.0, but at an abundance high enough to provide a low risk of extinction. In many cases, spawner abundances are currently far below the levels required to minimize longer term risks of extinction. In those cases, average growth rates for spawner aggregations must exceed a 1:1 replacement rate until viable population abundance levels are achieved. These interim productivity and abundance targets should not be considered in isolation. A replacement rate ≥ 1 is indicative of a healthy population only if the abundance target has been achieved as well.

However, a measure of the growth rate during the rebuilding/recovery phase may be most informative to subbasin planning groups in the near term, as population growth parameters are more reliably quantified than are abundance parameters. The enclosed Tables include recommendations of productivity objectives utilizing the above rules of thumb, as well as recommendations from the FCRPS BiOp (NMFS, 2000), the QAR (Ford et al., 2001), and the Proposed Snake River Recovery Plan (NMFS, 1995).

Interim Spatial Structure and Diversity Objectives

The provided interim abundance and productivity targets are just a start, and do not provide a comprehensive index of healthy populations. Typically, a recovered ESU would have healthy populations representative of all the major life history types, and of all the major ecological and geographic areas within an ESU. In the absence of specific diversity data about populations, conservation of habitat diversity might be used as a reasonable interim proxy. More specifically, the QAR Biological Requirements Report (Ford et al., 2001) developed the following objective for upper Columbia River populations: “In order to be considered completely recovered, spring chinook (and steelhead) populations should be able to utilize properly functioning habitat in multiple spawning streams within each major tributary, with patterns of straying among these areas free from human caused disruptions.” Furthermore, the FCRPS BiOp (NMFS 2000) states that “... currently defined populations should be maintained to ensure adequate genetic and life history diversity as well as the spatial distribution of populations within each ESU.” NMFS recommends that these approaches be utilized in early Interior Columbia subbasin planning efforts.

Table 1(a). Interim Objectives – Listed Snake River and Upper Columbia Chinook ESUs²

Geographic Spawning Aggregations		Interim Abundance Targets ³		Interim Productivity Objectives
ESU/Spawning Aggregation	Index Areas	Spawning Aggregation	Index Areas	
<i>Upper Col. Spring Chinook ESU</i>				Upper Col. Spring chinook populations are currently well below recovery levels. The geometric mean ⁴ Natural Replacement Rate (NRR) will therefore need to be greater than 1.0 (QAR recommendations; Ford et al., 2001)
Methow	Methow	2000	2000	
Entiat	Entiat	500	500	
Okanogan		-- ⁵		
Wenatchee	Wenatchee	3750	3750	
<i>Snake River Spring/Summer Chinook ESU</i>				“For delisting to be considered, the eight year (approximately two generation) geometric mean cohort replacement rate of a listed species must exceed 1.0 during the eight years immediately prior to delisting. For spring/summer chinook salmon, this goal must be met for 80% of the index areas available for natural cohort replacement rate estimation.” (Proposed Snake River Recovery Plan, NMFS, 1995)
Tucannon River		1000		
Grande Ronde River		12000		
	Minam		1439	
Imnaha		2500		
	Mainstem		802	
Lower Mainstem tributaries		1000		
Little Salmon River Basin		1800		
Mainstem Salmon small trib’s		700		
South Fork Salmon (Sum.)		9200		
	Johnson Cr.		288	

²These interim targets are derived from: Bevan et al., 1994; BRWG, 1995; NMFS, 1995; and NMFS, 1997.

³Eight year, or approx. 2 generations, geometric mean of annual natural spawners. Abundance targets are also provided for smaller scale “Index Areas”.

⁴Using the geometric mean as opposed to the arithmetic mean is a common practice when dealing with data series with inherently high annual variability. In the Columbia basin, the geometric mean has been used as a standard measure in the series of Biological Opinions issued covering the Federal Coluuiibia River Power system (e.g., NMFS, 2000, section 1.3) and in the upper Columbia QAR.

⁵Ford et al. (2001) did not identify an abundance goal for the Okanogan due to a lack of sufficient historical information. However, the potential for naturally spawning aggregations in this area will be evaluated by the Interior TRT.

Table 1(a) continued. Interim Objectives – Listed Snake River and Upper Columbia Chinook ESUs

Geographic Spawning Aggregations		Interim Abundance Targets		Interim Productivity Objectives
ESU/Spawning Aggregation	Index Areas	Spawning Aggregation	Index Areas	
<i>Snake River Spring/Summer Chinook ESU (cont.)</i>				<i>(see above)</i>
Middle Fork Salmon River		9300		
	Bear Valley/Elk		911	
	Marsh Cr.		426	
Mainstem Tributaries (Middle Fk. to Lemhi)		700		
Lemhi River				
Pahsimeroi (Sum.)				
Mainstem Tributaries (Sum.) Lemhi to Redfish Lake Cr.		2000		
Mainstem Tributaries (Spr.) Lemhi to <i>Yankee</i> Fork		2400		
Upper East Fork Trib's (Spr.)		700		
Upper Salmon Basin (Spr.)		5100		

Table 1(b). Interim Objectives – Snake River Fall Chinook and Sockeye ESUs

<i>ESU</i>	Interim Abundance Targets^{6,7}	Interim Productivity Objectives
<i>Snake River Full Chinook ESU</i>	2500	“For delisting to be considered, the eight year (approximately two generation) geometric mean cohort replacement rate of a listed species must exceed 1.0 during the eight years immediately prior to delisting. For spring/summer chinook salmon, this goal must be met for 80% of the index areas available for natural cohort replacement rate estimation.” (Proposed Snake River Recovery Plan; NMFS, 1995)
<i>Snake River Sockeye ESU</i>	1000 spawners in one lake; 500 spawners per year in a second lake.	The Snake River sockeye ESU is currently well below recovery levels. The geometric mean Natural Replacement Rate (NRR) will therefore need to be greater than 1.0. ⁸

⁶These interim targets are derived from the Snake River Recovery Team recommendations included in the 1995 Proposed Snake River Recovery Plan (NMFS, 1995).

⁷Eight year, or approx. 2 generations, geometric mean of annual natural spawners in the mainstem Snake River

⁸The 2000 FCRPS BiOp provided a productivity objective for Snake River sockeye, Snake River and Middle Columbia steelhead populations of “a median annual population growth rate (lambda) greater than 1.0 over a 40-48 year period.” (NMFS, 2000).

Table 2(a). Interim Objectives –Snake River Steelhead ESU⁹

<i>ESU/Spawning Aggregations</i>	Interim Abundance Targets¹⁰	Interim Productivity Objectives
<i>Snake River Steelhead ESU</i>		Snake River ESU steelhead populations are currently well below recovery levels. The geometric mean Natural Replacement Rate (NRR) will therefore need to be greater than 1.0. ⁸
Tucannon R.	1300	
Asotin Cr.	400	
Grande Ronde		
Lower Gr. Ronde	2600	
Joseph Cr.	1400	
Middle Fork	2000	
Upper Mainstem	4000	
Imnaha	2700	
Clearwater River		
Mainstem	4900	
South Fork	3400	
Middle Fork	1700	
Selway R.	4900	
Lochsa R.	2800	
Salmon River		
Lower Salmon	1700	
Little Salmon	1400	
South Fork	4000	
Middle Fork	7400	
Upper Salmon	4700	
Lemhi	1600	
Pahsimeroi	800	

⁹These interim targets are derived from: Ford et al., 2001; Chilcote, 2001; NMFS, 1995; ODFW, 1995; WDFW, 1993; and IDFG, 1985.

⁸Eightyear, or approx. 2 generations, geometric mean of annual natural spawners.

Table 2(b). Interim Objectives – Upper & Middle Columbia River Steelhead ESUs¹¹

ESU/ Spawning Aggregations	Interim Abundance Targets ¹²	Interim Productivity Objectives
<i>Upper Columbia Steelhead ESU</i>		
Methow R.	2500	Geometric mean Natural Return Rate (NRR) should be 1.0 or greater over a sufficient number of years to achieve a desired level of statistical power. (QAR recommendations; Ford et al., 2001)
Entiat R.	500	
Okanogan R.	-- ¹³	
Wenatchee R	2500	
<i>Middle Columbia Steelhead ESU</i>		
Yakima River		Middle Columbia ESU steelhead populations are currently well below recovery levels. The geometric mean Natural Replacement Rate (NRR) will therefore need to be greater than 1.0. ⁸
Satus/Toppenish	2400	
Naches	3400	
Mainstem (Wapato to Roza)	1800	
Mainstem (above Roza)	2900 ¹⁴	
Klickitat	3600	
Walla-Walla	2600	
Umatilla	2300	
Deschutes (Below Pelton Dam complex)	6300	
John Day		
North Fork	2700	
Middle Fork	1300	
South Fork	600	
Lower John Day	3200	
Upper John Day	2000	

¹¹These interim targets are derived from: Ford et al., 2001; and NMFS, 2000.

¹²Eight year, or approx. 2 generations, geometric mean of annual natural spawners

¹³Ford et al. (2001) did not identify an abundance goal for the Okanogan due to a lack of sufficient historical information. However, the potential for naturally spawning aggregations in this area will be evaluated by the Interior TRT.

¹⁴NWPPC smolt capacity reduced by 50% to reflect shared production potential with resident form

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Questions & Answers about Interim Abundance and Productivity Targets for Interior Columbia Basin Pacific Salmon and Steelhead Listed Under the Endangered Species Act

Why is NMFS issuing interim abundance and productivity targets?

The National Marine Fisheries Service (NMFS) is providing these interim abundance and productivity targets for the Interior Columbia Basin in support of regional, state, tribal and local planning efforts. It is NMFS' intent that these preliminary estimates be meaningful to stakeholders by helping them gauge the level of effort that may be needed to recover the species. These targets should also help reduce the uncertainty that would otherwise occur for affected landowners and other stakeholders. NMFS also hopes that these interim abundance and productivity targets will stimulate local involvement in establishing the final recovery goals through subbasin planning and recovery planning..

Why is NMFS providing interim targets **for** the Interior Columbia Recovery Domain?

NMFS is providing interim targets for the Interior Columbia Recovery Domain to assist subbasin and watershed recovery planning already underway in the Columbia Basin. In response to the interest in recovery planning for the Interior Columbia Basin, NMFS is issuing these interim targets to ensure that these efforts have adequate preliminary guidance. The scientific team responsible for developing the viability criteria, the Interior Columbia Technical Recovery Team (TRT) was established in October 2001, and is approximately 9 months away from preliminary recommendations. However, adequate technical information is currently available for this ESU to provide sound preliminary abundance and productivity objectives.

Why are **no** interim targets provided for other recovery domains?

The TRTs for the Willamette/Lower Columbia and the Puget Sound recovery domains will have preliminary recommendations for population viability criteria and ESU recovery scenarios by late April 2002. Hence, NMFS will await the more specific and comprehensive criteria from these TRTs rather than issue short-lived interim targets. These preliminary TRT products will subsequently undergo comanager and peer review, as well as review by recovery planning policy groups (such as the Puget Sound Shared Strategy and the ESA Executive Committee for the Willamette/Lower Columbia Recovery Domain) and the broader public, before they are finalized.

NMFS is currently in the process of determining how best to provide interim targets for the Oregon Coast recovery domain.

What do these interim abundance and productivity targets mean?

The interim abundance and productivity targets provide a preliminary and general sense for the number and productivity of naturally-produced salmon and steelhead spawners that may be necessary to achieve recovery and satisfy NMFS' Endangered Species Act (ESA) recovery objectives. These targets are intended to help those stakeholders, that are beginning subbasin and recovery planning to gauge the gap between current conditions and the ESA recovery objectives.

How were the interim targets derived?

These interim targets are based on a variety of sources including technical products developed by the NMFS Northwest Science Center, work by state and tribal co-managers, as well as joint products. These targets include preliminary objectives that have been developed previously or were created utilizing established analytical methods. Interim targets for the:

- *Uvver Columbia spring chinook salmon and steelhead ESUs* were developed through the Quantitative Analytical Report (QAR) (Ford et al., 2001) process;
- *Snake River spring/summer chinook, fall chinook and sockeye ESUs* were developed through the 1995 Proposed Snake River Recovery Plan (NMFS, 1995), and the 2000 Federal Columbia River Power System Biological Opinion; and
- *Snake River and mid-Columbia steelhead ESUs* were developed applying the methodology used in the QAR to data from the Idaho Department of Fish and Game, the Oregon Department of Fish and Wildlife, and the Washington Department of Fish and Wildlife.

Can we expect the interim target values for other **ESUs** to be similar *to* those **for** the Interior Columbia **ESUs**?

No. The preliminary TRT goals for the Willamette/Lower Columbia, Puget Sound, or other ESUs will reflect ESU-specific biological factors that are considered in determining viability criteria for ESUs and their component populations.

What **is** the relationship **of these** interim targets to final recovery goals?

These interim targets are provided only as a matter of preliminary management guidance to assist current regional, state, tribal, and local recovery planning efforts. These targets will be superseded by recovery goals developed through formal recovery planning. In NMFS Recovery Planning Guidance for West Coast Salmon (www.nwfsc.noaa.gov), we provide for two phases of recovery goal development. In Phase One, the TRTs develop biological viability criteria for the ESUs and their populations. In Phase Two, policy makers and stakeholders will use the science context from Phase One and, in coordination with the TRT, develop “broad sense” recovery goals that go beyond ESA viability and that provide for sustainable fisheries and other societal needs.

To date, NMFS has established five TRTs (Puget Sound, Willamette/Lower Columbia, Interior Columbia, Southern Oregon/Northern California Coasts, and North-Central California Coast) to develop biological delisting or viability criteria. The TRTs are undertaking rigorous reviews and analyses of technical data to develop viability criteria for each of the ESUs and populations within their recovery domains. These criteria will then be used by appropriate local policy forums to determine final recovery goals. The TRTs will work closely with local biologists to compile the most complete data possible. Accordingly, the TRT criteria will be more accurate, more specific, and more complete than the interim targets. In addition to abundance and productivity recovery goals, the TRTs will provide recovery criteria for the spatial distribution and genetic diversity of viable salmon and steelhead populations. Finally, the TRTs will establish population recovery goals in the context of an ESU by generating alternative delisting scenarios (e.g., different combinations of viable populations that would provide for the recovery of an ESU as a whole

Why **do** we need the Technical Recovery Teams if NMFS is issuing these targets?

The TRTs' recommended viability criteria will be more detailed and comprehensive than these interim targets. The TRTs' products will detail the population abundance, growth rate, number and distribution of populations, and population diversity required for viable salmonid populations. The TRTs will also provide alternative population recovery scenarios for Viability of the ESU as a whole. Furthermore, the TRTs will detail specific factors for decline for each population that will need to be addressed for recovery. The interim targets will provide guidance to recovery planners until they are refined by the more comprehensive TRT final recovery goals. Finally, TRTs will provide technical support for policy decisions on broad sense recovery goals.

Do these interim targets have legal significance?

No, these interim targets do not have legal meaning. They are provided as a matter of general management guidance by NMFS. These interim goals will precede (and eventually be replaced by) the final recovery goals developed through the TRT and formal recovery planning processes, and are intended to provide an early gauge of the level of effort that could be needed to meet final recovery goals. The TRT biological recovery goals, in turn, will be incorporated into delisting criteria and included in NMFS' formal recovery plans.

What if these interim targets **turn out to** be higher **or** lower than the goals **established** through the **TRTs** and formal recovery?

It is certainly possible and likely that these targets will be adjusted either up or down to reflect more accurate information, specific application to the populations and ESUs as a whole, and broader societal goals. Therefore, these targets are preliminary and only intended to provide a general sense of **abundance** and productivity objectives.

Do these interim abundance targets provide for harvest **or** other take?

These interim abundance targets make no particular assumptions regarding harvest or any other mortality factor. Rather, these targets are meant to provide a general sense of the number **of** spawners needed under the **ESA** for the recovery of naturally produced populations in their natural ecosystems. Different levels of take, in order to be consistent with recovery goals, must be accommodated for by increased productivity (e.g., increased number of spawners, increased survivorship in the early life-history stages, improved habitat condition). Different levels of take from harvest, the hydropower system, or other sources will need to be considered in Phase Two of recovery planning and determined within the context of meeting the viability criteria and broader recovery goals. Final recovery goals will need to account for tribal treaty rights.

Do these interim targets include hatchery fish?

No. These targets are for naturally produced spawning adults. NMFS is in the process of revising its policy on artificial propagation in **ESA** listing determinations to give consideration to the potential role of hatchery production in mitigating extinction risk, and to ensure that hatchery and natural populations within the same **ESU** are treated properly in listing determinations. NMFS, however, believes that the **ESA's** goal **is** the recovery **and** conservation of naturally reproducing and self-sustaining species in their natural ecosystems. NMFS expects its draft artificial propagation policy to be available for review and comment by late spring.

Are the interim abundance and productivity targets as high as we need to aim?

No. To meet broader societal needs, NMFS advises that recovery planning efforts aspire towards abundance and productivity goals that exceed these interim targets. These targets provide only preliminary guidance for the minimum levels of abundance and productivity that may be needed for the recovery of self-sustaining and naturally producing populations.

NMFS has maintained that recovery planning will include close coordination and partnership with co-managers. Why then were co-managers not included in the development of these interim targets?

NMFS stresses that these interim targets are largely derived from sources that had substantial co-manager involvement and opportunities for public input. Moreover, they are **only** interim informal guidance. NMFS remains committed to the formal recovery planning process involving substantial co-manager cooperation and partnership, and we hope that these interim targets stimulate interest in participating in subbasin planning and recovery planning efforts. These interim targets will be updated and refined through the TRT and recovery planning process. These interim targets are issued, in part, to allow current and ongoing recovery efforts to aim for a target, even if it is preliminary.

Will NMFS accept comments on these interim targets?

Since these interim targets will be replaced by more specific and comprehensive products developed through the Interior Columbia TRT, it would be most effective for technical information and comments to be provided to NMFS for use in the development of TRT products. Also, since final recovery goals will be developed through broad policy and stakeholder involvement, we encourage interested **entities** to express their interest **and** ideas to us for the formal recovery and subbasin planning processes.

Why are these interim targets just for the portion of ESUs that presently spawn below the major mainstem dams that do not provide for fish passage?

More substantial scientific evaluation and policy determinations are needed prior to identifying potential spawning habitats above these barriers (e.g., Chief Joseph Dam on the upper Columbia, Hells Canyon Dam on the Snake mainstem, and Dworshak Dam on the north fork Clearwater River). The TRTs will evaluate potential spawning aggregations above these barriers in the context of whole-ESU viability scenarios.

Isn't NMFS undertaking coastwide status reviews for Pacific salmon and steelhead ESUs? Why doesn't NMFS just wait for those status reviews to be completed before issuing interim targets?

Yes, we are undertaking status review updates for **24** of the **26** currently listed ESUs, as well as one candidate ESU. However, these efforts to update the present status, viability, and level of extinction risk for an ESU will not include the exhaustive evaluation of what is required to recover an ESU that is at risk of extinction. Detailing such recovery requirements involves a separate effort that is accomplished through *the* TRT **and** formal recovery planning process. Although it is conceivable that an original listing determination could be revised once a status review update is completed, NMFS remains **committed to** moving forward in its recovery efforts for all ESUs currently listed as threatened or endangered under the ESA. Provision of these

interim targets is part of that commitment.

When will we have achieved final abundance goals, and how should our progress toward abundance targets be measured?

Subbasin- or tributary-level returns of salmon and steelhead are typically highly variable from year to year. As a result, average returns over a short time period can be very different than longer term averages, and may not be indicative of longer term abundance trends for a particular subbasin or spawning area. The uncertainty inherent in shorter term abundance estimates could be accounted for by providing shorter term recovery targets that exceed the final recovery objectives. Such shorter term recovery targets would incorporate estimates of sampling error and annual population variability, and reflect a predetermined level of acceptable risk. The levels of acceptable risk and the relevant time-frames for determining whether recovery goals have been met will be determined during formal recovery planning.

How do these interim targets relate to Subbasin Planning efforts already underway?

NMFS hopes that these interim targets will help stimulate subbasin planning. NMFS also hopes that these interim targets will encourage local involvement in improving these interim estimates and establishing the final recovery goals through the TRT and formal recovery planning process.

Commonly Used Acronyms

ESA – Endangered Species Act

ESU – Evolutionarily Significant Unit

NMFS – National Marine Fisheries Service

QAR – Quantitative Analytical Report

TRT – Technical Recovery Team

- * Please refer to the Interim Targets Letter & Enclosure for the above cited references.
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