CENWP-OD-TFF November 6, 2014

MEMORANDUM FOR THE RECORD

SUBJECT: Issues with reported clipped/non-clipped index counts in 2014.

A. In early September this year, when large numbers of salmonids were passing, we noted a few comments by the fish counters that there were too many fish passing to make the index counts for some hours. This is not a problem as we understand the need to not compromise the accuracy of regular fish counting and identification for additional special counting requests when circumstances such as this arise. We can simply eliminate those hours that were not split from our weekly report to the agencies. However, this made us look closer into those index counts and we noted that there were several index hours that these "split" counts were not being made yet the counters did not make any comments to allow us to know that. We looked deeper and found this at all projects and even the Snake River projects where they split the counts for all hours. After talking with several counters, we learned that a few were simply not doing the index counts, not doing it for all species, or forgetting the index hour and substituting another hour (but not letting us know).
B. Because of this, we have serious concerns over the accuracy of the "split" count reports that we have been sending out for 2014. It is impossible to go back and apply any correction factors or re-analyze the results because there are too many unknowns and assumptions to be made. The following is a list of the types of errors we feel have been intermittently made during the 2014 fish counting season:
    1. Fish counter cannot count clipped/unclipped during index hour because too many fish passing window would jeopardize total count accuracy AND THEY LET US KNOW IN REMARKS. Not a problem as we can simply not use those hours for the weekly summary report (other than this group may want to define a course of action for counters when this situation arises, likely to be more common with more fish passing these days).
    2. Fish counter cannot count clipped/unclipped during index hour because too many fish passing window would jeopardize total count accuracy and they DON'T let us know in remarks. This can lead to a bias if we include those hours unknowingly skewing it towards more non-clipped fish passing that actually did (the non-clipped button is supposed to be the default button when not splitting).
    3. Fish counters not universally and consistently using the non-clipped button for non-indexed hours. This will cause problems in the future if we set up the website for folks to query clipped/non-clipped on their own and there is no consistency with counters using one set of buttons. It also puts into doubt whether the counters are using the correct buttons for clipped and unclipped, as we have seen the numbers "flipped" occasionally, e.g. several days of 1000 clipped and 200 non-clipped then one day of 200 clipped and 1000 unclipped. Possible, but certainly questionable.

4. Particularly on the Snake River projects, it appears that counters have split counts for Chinook, but not for Coho. Yet most counters said they were splitting Coho counts and it is just that they are almost all clipped.
5. We have also seen clipped and non-clipped fish recorded on non-index hours, which does not affect the regular counts, but brings up questions. Was it done in error? Is it really part of the total fish passing or was the button hit in error and should be removed from the count?
6. Some index hours just seem to be missing or very low compared to adjacent days, for both clipped and unclipped.

C. The issue is that we can see there are a lot of "split" counts that do not appear to be accurate and see no way of going back and correcting them without making some big assumptions of our own. In light of this, we see one near term course of action, and there may be some potential questions and decisions this group can make for future counting and the fish count contract.
    1. The fish counting COR should remind Normandeau of what is required in the fish counting contract and these requirements need to be stressed to all counters for the sake of accuracy and consistency. (This has already occurred but should be stressed at the start of the season and occasionally throughout the year.
    2. What are these "split" counts used for and are they still needed and relevant (considering there are more and more non-clipped hatchery fish being released into the system)?
    3. If these "split" counts are still relevant and needed, and assuming we can get the counters to be more consistent, there is still the issue of what to do when there are too many fish for counters to accurately record species, size, number, clipped/non-clipped. This is why we went to index counting at the lower dams, because accuracy was becoming more of an issue with the larger runs in the early 2000's. Should there be a threshold number of fish passing that when exceeded, index counting is no longer required? What would that threshold be?
D. We did a quick look through 2012 and 2013 data as well and did not see nearly the number of incidents seen in 2014 (Table 1). It is not a case of newer counters not knowing, it does appear to be a fall fish passage season issue (highest daily fish passage numbers), yet it does it seem to be necessarily related to the number of salmon passing, as many high passage days at the higher passage ladders appeared to be indexed correctly (Tables 2 and 3). For the NWW projects, the Chinook split counts seem reasonable, however, there is a lot of variation in the coho split count ratios between dams where one would expect them to be similar (Table 4). In short, we feel it is only 2014 split count data that should be viewed with caution. Unfortunately, we can't reliably ferret out all of the dates and incidents, nor make any corrections for them.

Table 1. Summarized data for index hours only (10:00 and 16:00 PDT) at all NWP ladders, 2012 through 2014.

Out of 406 index hours (hours 5 and 11) from 1 April through 21 Oct.								
2014	**Project**	**Hours Likely to be Un-split**	**Partial splits - (all in Sept)**	**Commented**	**Flipped (all Hatchery instead of all Wild)**	**(%) unsplit during hours 5 and 11**	**(%) Partial splits of un-split index hours**	**(%) Un-split hours with comments**
BONBI	**1**	**2**	**0**	**0**	**2**	**0.5**	**0.0**	**0.0**
BONW	**2**	**36**	**12**	**12**	**11**	**8.9**	**33.3**	**33.3**
TDAE	**3**	**33**	**6**	**3**	**7**	**8.1**	**18.2**	**9.1**
TDAN	**4**	**22**	**0**	**0**		**5.4**	**0.0**	**0.0**
JDAS	**5**	**6**	**1**	**4**	**5**	**1.5**	**16.7**	**66.7**
JDAN	**6**	**5**	**0**	**2**	**4**	**1.2**	**0.0**	**40.0**

2013	**Project**	**Hours Likely to be Un-split**	**Partial splits**	**Commented**	**Flipped (all Hatchery instead of all Wild)**	**(%) un-split during hours 5 and 11**	**(%) Partial splits of un-split index hours**	**(%) Un-split hours with comments**
BONBI	**1**	**0**	**0**	**0**	**0**	**0.0**	**0**	**0.0**
BONW	**2**	**3**	**2**	**2**	**0**	**0.7**	**66.7**	**66.7**
TDAE	**3**	**13**	**9**	**1**	**3**	**3.2**	**69.2**	**7.7**
TDAN	**4**	**1**	**1**	**0**	**0**	**0.2**	**100.0**	**0.0**
JDAS	**5**	**7**	**0**	**0**	**0**	**1.7**	**0.0**	**0.0**
JDAN	**6**	**6**	**0**	**1**	**1**	**1.5**	**0.0**	**16.7**

2012	**Project**	**Hours Likely to be Un-split**	**Partial splits**	**Commented**	**Flipped (all Hatchery instead of all Wild)**	**(%) unsplit during hours 5 and 11**	**(%) Partial splits of un split index hours**	**(%) Un-split hours with comments**
BONBI	**1**	**0**	**0**	**0**	**0**	**0.0**	**0.0**	**0.0**
BONW	**2**	**1**	**0**	**0**	**0**	**0.2**	**0.0**	**0.0**
TDAE	**3**	**2**	**2**	**1**	**1**	**0.5**	**100.0**	**50.0**
TDAN	**4**	**0**	**0**	**0**	**0**	**0.0**	**0.0**	**0.0**
JDAS	**5**	**8**	**1**	**1**	**0**	**2.0**	**12.5**	**12.5**
JDAN	**6**	**2**	**0**	**1**	**0**	**0.5**	**0.0**	**50.0**

Table 2. Hourly Chinook count vs. likely un-split index hours per ladder.

	Ladder	less than 100	100-999	1000-1999	2000-2999	3000-3999
	1	1	1	0	0	0
BON	2	3	12	17	2	2
	3	2	13	18	0	0
TDA	4	18	4	0	0	0
	5	4	0	0	0	0
JDA	6	3	1	0	0	0

Table 3. Summarized data for fall only (September 1 through October 21, 2014), showing it is primarily a fall (high daily fish passage) issue at most ladders.

		September 1 through Oct 21 (102 hours)			
2014	Project	Hours Likely to be Un-split	(%) un-split during hours 5 and 11	(%) Partial splits of un-split index hours	(%) Un-split hours with comments
BONBI	1	1	1.0	0.0	0.0
BONW	2	34	33.3	35.3	35.3
TDAE	3	28	27.5	21.4	10.7
TDAN	4	11	10.8	0.0	0.0
JDAS	5	0	0.0	0.0	0.0
JDAN	6	3	2.9	0.0	66.7

Table 4. Clipped/unclipped ratios for Walla Walla projects, April 1 through October 31, 2014.

2014	McNARY		ICE HARBOR		LO MO		LITTLE GOOSE		L. GRANITE	
Chinook Adult	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**
Total count	147,025	352,490	68,407	63,370	59,580	59,068	62,777	60,208	64,600	63,390
% of split	29.4%	70.6%	51.9%	48.1%	50.2%	49.8%	51.0%	49.0%	50.5%	49.5%
Chinook Jack	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**
Total count	35,777	52,313	16,177	12,869	18,714	17,539	17,734	13,758	17,904	15,504
% of split	40.6%	59.4%	55.7%	44.3%	51.6%	48.4%	56.3%	43.7%	53.6%	46.4%

2014	McNARY		ICE HARBOR		LOWER MONUMENTAL		LITTLE GOOSE		LOWER GRANITE	
COHO Adult	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**
Total count	3,370	72,511	290	12,482	0	12,157	989	13,943	84	14,359
% of split	4.1%	88.3%	2.3%	97.7%	0.0%	100.0%	6.6%	93.4%	0.6%	99.4%
COHO Jack	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**	**clip**	**un-clip**
Total count	1,012	10,559	53	577	10	2,100	438	2,522	15	396
% of split	8.7%	90.3%	8.4%	91.6%	0.5%	99.5%	14.8%	85.2%	3.6%	96.4%

- At McNary - Ladder 7 manually entered counts on July 6, Aug 1 and 23 and Sept 25, splits were entered sporadically for hours 5 and 11 or other hours or not at all.

- At McNary - Ladder 8 manually entered counts on May 22, June 6 and 7, splits were entered sporadically for hours 5 and 11 or other hours or not at all.

-August 23 - count station flooding.