

## FPP Change Form

January 12, 2010

**Change Request Number: 10AppGBON002**

**Date:**

**Proposed by: CRITFC, WDFW, IDFG**

**Location of Change- AppG\_ BON 3.9**

### **Current Language:**

**3.9.** No more than two picket leads will be down while trapping activities are in operation. Additional leads may be requested through the Project Biologists.

### **Proposed Change:**

**3.9.** (Assumes the center (dividing) pickets has been removed). Four picket leads will be allowed during trap operations for up to 5 continuous hours for fish counts of less than a total of 6000 adult salmonids as enumerated at the Washington Shore count station for the previous day. (12,000 shad, not including salmon) *Need to work out max weight concept. Using the 1lb per 0.3 cubic feet criteria, max number of fish between two weirs is ~5000 shad and 1250 chinook salmon at any one time or hour. Need to determine a rate but I used these number to inform the break point in operations)* For a previous day adult salmonid count at Washington Shore between 6000 – 12,000 four picketed leads may not be used for more than 4 hours continuously. For adult salmon numbers above 12,000 all four picketed leads may not be down for longer than 2 hours and then at least one picketed lead needs to be raised for a minimum 1 hour before going back to 4 picketed leads. Researchers will also be required to monitor the ladder every 1.5 hours to ensure that crowding is not taking place. If evidence of crowding is occurring at least two picketed lead will be raised for a minimum 1 hour before all 4 picketed lead may be deployed again.

### **Add:**

**4.2.1** (Temperatures greater than 70 degree F and the center picket has been removed) Four picketed leads may be used for no more than 4 hours continuously before the picketed leads need to be raised. The density criteria and monitoring of the adult ladder by the researchers as outlined in 3.9 also apply

### **Reason for Change:**

1. Under current operations 2-3 picketed leads does not appear to adequately insure the number of Chinook and steelhead needed to meet sample and statistical needs for the research and monitoring being conducted at AFF, and mandated by numerous state, federal and international agreements. In addition this configuration results in trapping bias (see #7).
2. Elimination of the center pickets is required to remove the observed sampling bias.
3. Operating four picketed leads does appear to significantly improve the ability to achieve sampling rates, and reduces the sampling bias observed with the center picket/ 2-3 picketed lead configuration.
4. Allowing more fish to be diverted into the trap could potentially reduce the hours of trap operation, allowing researchers to efficiently collect data as more fish moved through the trap.

5. An alternative to the proposed language is to allow all four pickets to be engaged at least during the first four hours of operation. This action would potentially allow researchers to complete duties prior to peak temperature/salmonid passage.
6. This monitoring supports the data needs of the Pacific Salmon Commission's U.S. Chinook Technical Committee, U.S. v. Oregon's Technical Advisory Committee, Harvest BiOp, 2008 FCRPS BiOp, and 2009 Adaptive Management Implementation Plan and the Columbia River Accords for monitoring ocean abundance, in-season harvest, run reconstruction and forecasting, and stock specific escapement of Chinook and sockeye salmon, and steelhead. Sampling at BON allows for fisheries agencies to meet international treaty obligations (Pacific Salmon Treaty), federal court decision (US V Oregon), and develop the best available science for fisheries management, ESA risk assessments, and many other purposes. We need to continue to work together to meet joint goals such as recovering salmon and steelhead populations and using the best available science for extinction risk, harvest, hydro, and other assessments
7. See following tables showing bias for smaller sized salmonids

Table showing the percentage of previously PIT tagged Chinook that are jacks on the AFF and far side of the fish ladder when pickets are down. (Coils 12 and 14 are in the area where fish proceed to the AFF, coils 11 and 13 are in the area where fish bypass the AFF when pickets are down.) Statistically significant results (using a test comparing proportions in independent samples) are highlighted. In 20 out of 24 weeks, the higher percentage of jacks used the AFF side of the ladder.

| 2009<br>Statistical<br>Week | Far side of ladder (Coils 11<br>and 13) |              |         | AFF side of the ladder (Coils 12 and<br>14) |              |         | Combined<br>Percentage<br>Jacks | T-<br>Statistic |
|-----------------------------|---|--------------|---------|---|--------------|---------|---------------------------------|-----------------|
|                             | JACK<br>S                               | NON<br>JACKS | % Jacks | JACKS                                       | NON<br>JACKS | % JACKS |                                 |                 |
| 17                          | 1                                       | 14           | 7%      | 1   | 4            | 20%     | 10%                             | 0.86            |
| 18                          | 4                                       | 42           | 9%      | 1   | 13           | 7%      | 8%                              | -0.18           |
| 19                          | 36                                      | 100          | 26%     | 10  | 19           | 34%     | 28%                             | 0.87            |
| 20                          | 45                                      | 83           | 35%     | 30  | 3            | 91%     | 47%                             | 5.72            |
| 21                          | 50                                      | 98           | 34%     | 23  | 30           | 43%     | 36%                             | 1.25            |
| 22                          | 12                                      | 30           | 29%     | 2   | 12           | 14%     | 25%                             | -1.07           |
| 23                          | 18                                      | 37           | 33%     | 12  | 11           | 52%     | 38%                             | 1.61            |
| 24                          | 24                                      | 31           | 44%     | 9   | 7            | 56%     | 46%                             | 0.89            |
| 25                          | 32                                      | 38           | 46%     | 13  | 3            | 81%     | 52%                             | 2.57            |
| 26                          | 28                                      | 29           | 49%     | 6   | 1            | 86%     | 53%                             | 1.83            |
| 27                          | 39                                      | 41           | 49%     | 17  | 1            | 94%     | 57%                             | 3.54            |
| 28                          | 16                                      | 19           | 46%     | 9   | 2            | 82%     | 54%                             | 2.10            |
| 29                          | 3                                       | 4            | 43%     | 2   | 0            | 100%    | 56%                             | 1.43            |
| 30                          | 2                                       | 6            | 25%     | 0   | 1            | 0%      | 22%                             | -0.57           |
| 31                          | 1                                       | 1            | 50%     | 1   | 0            | 100%    | 67%                             | 0.87            |
| 33                          | 6                                       | 9            | 40%     | 3   | 0            | 100%    | 50%                             | 1.90            |
| 34                          | 17                                      | 25           | 40%     | 7   | 4            | 64%     | 45%                             | 1.37            |
| 35                          | 20                                      | 33           | 38%     | 17  | 11           | 61%     | 46%                             | 1.97            |
| 36                          | 39                                      | 42           | 48%     | 16  | 8            | 67%     | 52%                             | 1.60            |
| 37                          | 60                                      | 73           | 45%     | 60  | 16           | 79%     | 57%                             | 4.76            |
| 38                          | 53                                      | 55           | 49%     | 51  | 8            | 86%     | 62%                             | 4.76            |

|   |     |     |     |     |     |     |     |       |
|---|-----|-----|-----|-----|-----|-----|-----|-------|
| 39  | 27  | 36  | 43% | 35  | 8   | 81% | 58% | 3.95  |
| 40  | 0   | 2   | 0%  | 8   | 1   | 89% | 73% | 2.55  |
| 41  | 0   | 0   |     | 0   | 1   | 0%  | 0%  |       |
| Total   | 533 | 848 | 39% | 333 | 164 | 67% | 46% | 10.89 |
| Overall, 26.2% of the previously PIT tagged fish passing upstream when the trap was in operation used the AFF side of the ladder. |     |     |     |     |     |     |     |       |

Table showing the percentage of previously PIT tagged Chinook that are jacks on the AFF and far side of the fish ladder when pickets are up (trap is not in operation). Statistically significant results are highlighted. In 12 out of 24 weeks, the higher percentage of jacks used the AFF side of the ladder.

| 2009  | Far side of ladder (Coils 11 and 13) |           |         | AFF side of the ladder (Coils 12 and 14) |           |         |                           |             |
|---|--------------------------------------|-----------|---------|--|-----------|---------|---------------------------|-------------|
| Statistical Week  | JACKS                                | NON JACKS | % Jacks | JACKS                                    | NON JACKS | % Jacks | Combined Percentage Jacks | T-statistic |
| 17  | 3                                    | 34        | 8%      | 1  | 35        | 3%      | 5%                        | -1.00       |
| 18  | 18                                   | 93        | 16%     | 15                                       | 96        | 14%     | 15%                       | -0.57       |
| 19  | 63                                   | 150       | 30%     | 58                                       | 147       | 28%     | 29%                       | -0.29       |
| 20  | 142                                  | 246       | 37%     | 110                                      | 169       | 39%     | 38%                       | 0.74        |
| 21  | 52                                   | 149       | 26%     | 37                                       | 84        | 31%     | 28%                       | 0.91        |
| 22  | 39                                   | 117       | 25%     | 27                                       | 73        | 27%     | 26%                       | 0.36        |
| 23  | 35                                   | 79        | 31%     | 27                                       | 66        | 29%     | 30%                       | -0.26       |
| 24  | 65                                   | 103       | 39%     | 36                                       | 66        | 35%     | 37%                       | -0.56       |
| 25  | 88                                   | 121       | 42%     | 33                                       | 48        | 41%     | 42%                       | -0.21       |
| 26  | 41                                   | 50        | 45%     | 13                                       | 16        | 45%     | 45%                       | -0.02       |
| 27  | 16                                   | 18        | 47%     | 7  | 7         | 50%     | 48%                       | 0.19        |
| 28  | 23                                   | 26        | 47%     | 6  | 7         | 46%     | 47%                       | -0.05       |
| 29  | 17                                   | 19        | 47%     | 11                                       | 11        | 50%     | 48%                       | 0.21        |
| 30  | 1                                    | 5         | 17%     | 2  | 3         | 40%     | 27%                       | 0.87        |
| 31  | 3                                    | 5         | 38%     | 3  | 5         | 38%     | 38%                       | 0.00        |
| 33  | 2                                    | 3         | 40%     | 2  | 2         | 50%     | 44%                       | 0.30        |
| 34  | 4                                    | 15        | 21%     | 6  | 12        | 33%     | 27%                       | 0.84        |
| 35  | 32                                   | 59        | 35%     | 18                                       | 28        | 39%     | 36%                       | 0.46        |
| 36  | 109                                  | 142       | 43%     | 76                                       | 97        | 44%     | 44%                       | 0.10        |
| 37  | 132                                  | 162       | 45%     | 155                                      | 199       | 44%     | 44%                       | -0.28       |
| 38  | 146                                  | 179       | 45%     | 145                                      | 170       | 46%     | 45%                       | 0.28        |
| 39  | 120                                  | 137       | 47%     | 108                                      | 124       | 47%     | 47%                       | -0.03       |
| 40  | 91                                   | 98        | 48%     | 64                                       | 70        | 48%     | 48%                       | -0.07       |
| 41  | 0                                    | 5         | 0%      | 20                                       | 22        | 48%     | 43%                       | 2.04        |
| Total   | 1242                                 | 2015      | 38%     | 980                                      | 1557      | 39%     | 38%                       | 0.38        |
| Overall, 43.8% of the previously PIT tagged fish passing upstream when the trap was in operation used the AFF side of the ladder. |                                      |           |         |  |           |         |                           |             |

**Comments from others:** Fryer said there was ladder bias and a strong bias in regards with the two picket leads. Rerecich asks how much bias is at the switchgate operator or in the holding pool.

Meyer asked why not use the count window. Fryer said it wouldn't give age composition and stock composition. Meyer commented that he isn't clear as to why we can't get the A and B run split from window counts. He said he has an email from IDFG that states a B-run fish is over 78cm and that size is the only thing that matters. Why isn't that a line on the window?

Meyer said the holding density criteria, which is based on 50°F is .25 cu ft per lb. of fish at 50°F. For every degree above that you decrease it 5%. 60°F would equal .15 cu ft per lb. This is in a flowing environment with short-term holding (less than 24 hours). Based on NOAA criteria, there would be no trapping at 70°F. Kruger expressed a lot of concern about delaying fish by putting four leads down. Clugston asked about the bias at BI. Fryer said there was some bias.

Morrill commented that he thought four leads would result in fewer hours of sampling.

Whiteaker said they needed the genetics for stock composition. Ehlke said they would love to have a line on the window but they haven't gotten funding to further develop that. She thinks the information could be gotten from window counts. It is additional data to collect but maybe there wouldn't need to be a human determining the size if the technology is available. Fredricks said that

Kiefer told him that A run sized fish are B run fish. He also said there is a genetic difference.

Byrne chimed in that large fish greater than or equal to 70cm are the B run fish. There is no A run and B run, there are different stocks of steelhead but the B run designation came in to play in the 70's as a way for managers to provide some protection to the larger fish that predominately returned to Idaho. Within the A and B run designations, there are several stocks. We need to manage on a finer level for steelhead.

Clugston would like to see more detail in the numbers. He appreciates the desire to get good sample numbers but we also need the take numbers.

Meyer is very happy to hear that there is a desire to move away from AFF sampling.

CRITFC recognizes the potential bias between commercial and non-commercial steelhead catch.

CRITFC, WDFW, IDFG- approve. ODFW not convinced; want better development of the density criteria. USFWS- supports pulling leads but with density criteria. NOAA- supports pulling leads but with density criteria. BON- not convinced, but if that is the direction it goes, then they can pull the lead; want to see density criteria. NWD- would like to see the density criteria fleshed out further.

**Record of Final Action:** delayed for further revision and discussion. Fryer will look at same hours on sample and non sample days. Lorz will work more on the density criteria to clearly lay out what will occur if the center leads are pulled.