



FISH PASSAGE CENTER

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MEMORANDUM

TO: FPAC

FROM: Michele DeHart

DATE: July 29, 2008

RE: Proportion of hatchery Snake River subyearling Chinook (released above Lower Granite Dam) that are released unclipped and/or unmarked.

In response to your request at today's FPAC conference call, the FPC staff have looked into the proportion of the hatchery subyearling Chinook released above LGR that are unclipped and/or unmarked over the past five years (2004-2008).

Over the past five years, approximately 64% (on average) of the subyearling Chinook released above LGR are unclipped (Table 1). In migration year 2008, approximately 53.6% of subyearling Chinook were released unclipped.

Over the past five years, approximately 41.5% (on average) of the subyearling Chinook released above LGR are unmarked (i.e., no fin clip or CWT). In migration year 2008, approximately 34% of subyearling Chinook were unmarked (Table 2).

Table 1. Estimated percent of hatchery subyearling Chinook released unclipped and unmarked.

Migration Year	Total Released	Percent Unclipped	Percent Unmarked
2004	1,517,006	88.4	50.9
2005	3,964,117	54.9	39.6
2006	3,615,216	52.1	37.0
2007	2,251,450	70.5	46.3
2008	3,796,492	53.6	34.0
Average	3,028,856	63.9	41.5

There is only one release group of subyearling Chinook that has consistently had ~100% of its fish clipped and/or marked. These are the subyearlings that are reared at Oxbow and/or Umatilla Hatchery and released just below Hells Canyon Dam. These releases typically occur earlier in the season (usually early May) and these juveniles tend to out-migrate quickly. The contribution of these releases to the total release above LGR is highly variable. For example, in 2008 these releases represent approximately 25% of the total subyearling release above LGR, where as in 2007 this contribution was only 6%. Given this, we re-estimated the proportion of the hatchery subyearling population released unclipped and/or unmarked with the Hells Canyon releases removed. The average percent of the hatchery population that is released unclipped and/or unmarked increased to approximately 72% and 47%, respectively (Table 2).

Table 2. Estimated percent of hatchery subyearling Chinook released unclipped and unmarked (Hells Canyon releases removed).

Migration Year	Total Released	Percent Unclipped	Percent Unmarked
2004	1,507,049	89.0	51.2
2005	3,374,998	64.4	46.5
2006	3,091,915	60.9	43.2
2007	2,126,911	74.6	49.0
2008	2,833,671	71.8	45.5
<i>Average</i>	<i>2,586,909</i>	<i>72.2</i>	<i>47.1</i>

In conclusion, with such a large portion of the hatchery population being released unclipped and/or unmarked, it is difficult to determine whether the subyearling Chinook passing LGR now are of natural or hatchery origin.