



FISH PASSAGE CENTER

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MEMORANDUM

TO: FPAC

FROM: Jerry McCann

DATE: June 30, 2008

RE: Preliminary Detection Probability Estimates for Snake River Subs in 2008

The FPC estimated detection probability for subyearling Chinook released above Lower Granite Dam in 2008. Detection probability was estimated to be relatively low at all three Snake River collector projects (Table 1). Detection probability was estimated using downstream detections to estimate detection probability at upstream dams. Estimates should be viewed as preliminary and taken with caution. Data was summarized through June 26. Seasonal detection probabilities in 2007 were higher (0.16 for LGR, 0.32 for LGS and 0.18 at LMN). However in-season estimates done during June of 2007 had similar detection probabilities to 2008 (with LGR at 0.14, LGS at 0.25 and LMN a low 0.06).

As had occurred during the 2007 subyearling migration, the passage index at Lower Granite was less than that at Little Goose Dam. This was due to the higher spill proportion at Lower Granite resulting in the lower detection probability at the site. Based on our detection probability estimate a "population index" at Lower Granite Dam (collection/detection probability) would be nearly 2.7 million fish, while at Little Goose the "population index" would be closer to 2 million, while the Lower Monumental "index" would be nearer 1 million.

Based on SMP transport totals of 917,000 subyearling Chinook to date at Snake transport dams, about 30% of the population have already been transported, compared to about 10% at this same time in 2007. This estimate is difficult to compare in season from year to year and should be considered with caution since the starting population for the proportion is the index at Lower Granite Dam, and in 2007, with lower flows likely more fish were between projects at the time of estimating the transport proportion compared to this year, resulting in a lower proportion transported.

Table 1. Collection, Passage indices and estimated detection probability of subyearling Chinook PIT-tagged above LGR in 2008.

Site	Passage Index Since to June 26	Collection to June 26	Estimated Detection probability	PIT-tag based Population Index
Lower Granite	492,320	253,028	0.09	2,769,748
Little Goose	761,779	488,492	0.27	1,826,992
Lower Monumental	254,175	186,443	0.22	847,198

Table 2. Hatchery releases of subyearling fall Chinook above Lower Granite Dam in recent years.

Migration Year	Hatchery Releases above LGR
1997	282,794
1998	86,824
1999	670,033
2000	2,184,384
2001	1,878,529
2002	2,600,985
2003	2,881,640
2004	1,517,006
2005	3,964,117
2006	4,226,183
2007	2,231,124
2008	3,566,091

Figure 1. Population index figure from FPC web page.

