

2.2 Adult Kelt Passage Test at B1 Sluiceway and B2CC. Starting the first week of March 2011 researchers will be releasing balloon tagged adult steelhead through both the B1 sluiceway and the B2CC. At this time the B1 sluiceway will be opened in early March for normal operations. The B2CC will need to be opened for approximately 2-3 days in early March for adult fish releases and recovery. During the B2CC testing the B1 Sluiceway will be closed. This study is in support of a decision on safe kelt passage operations each spring at Bonneville Dam. This data will be used to help finalize spring sluiceway operations at Bonneville Dam for out years.

The above mentioned study is part of a larger research proposal (ADS-11-3) to determine relative dam, reach, and system survival estimates by passage route of adult steelhead that is a mixed population comprised of kelts moving downriver and overwintering pre-spawners moving upriver. This study will produce data on direct injury (Maladies) and relative direct survival estimates of post hatchery spawned adult steelhead passing a sluiceway and corner collector at Bonneville Dam. A decision tree of proposed operations for the 2011 Spring kelt passage season depending on research findings are provided below:

1. The Corps and through the FPOM group will have the opportunity to review the direct survival and malady rates between B1 and B2CC release groups upon completion of the test on or after March 7th. **Once reviewed the decision to move towards a Powerhouse 1 turbine and sluiceway priority in early March or if there will be no change will be based on the following criteria as outlined below.** Examples of what types of recovery rates, maladies and SE's needed to achieve a detectable difference between 5 and 10% are given below in table 1:
 - a. No detectable difference between treatment groups (differences of $\leq 6\%$)
 - b. Difference of $\geq 6\%$ between the treatments with adequate sample sizes and SE's as below showing that PH1 has performed better than the B2CC.
 - c. Difference of $\geq 6\%$ between the treatments with adequate sample sizes and SE's as below showing that the B2CC has performed better than the PH1 Sluiceway. If the B2CC has shown a better passage performance than the PH1 sluiceway then trigger points as decided by the region to open the B2CC will be followed.

TABLE 1	PH Route											
	CC	IT										
N/100 Recovered	98	98	98	98	98	98	98	98	98	98	98	98
N maladies	7	8	5	8	2	8	3	6	6	10	0	8
Malady-free est	93	92	95	92	98	92	97	94	94	90	100	91.8
SE	2.6	2.8	2.2	2.8	1.4	2.8	1.7	2.4	2.4	3.1	0.0	2.8
Z	0.2687		0.8633		1.967*		1.041		1.046		2.951*	

0.10 significance 1.6

0.05 significance 1.9