

Schwartz FROM

Preliminary - Excluding Likely Predation

Direct survival/injury of released adult steelhead kelts, excluding likely seal predation, (removed from analysis) passed through Bonneville Dam, March 2011. Controls released into tailrace discharge downstream at the boat launch.

Adult Steelhead Release location	Treatment		Controls
	<u>BON B1</u> <u>Ice-and-</u> <u>Trash</u> (ITS)	<u>BON B2</u> <u>Corner</u> <u>Collector</u> (CC)	Boat launch
Number released	98	99	37
Number recaptured alive	98	96	37
Number recaptured dead	0	0	0
Number assigned dead	0	0	0
Number unknown	0	3	0
1 hour survival	0.100	0.100	
SE	N/A	N/A	
90% CI (+/-)	N/A	N/A	
Number died in holding	0	1	0
48 hour survival	0.100	0.990	
SE	N/A	0.010	
90% CI (+/-)	N/A	0.017	
Number examined for maladies	98	96	37
Number without maladies*	97	95	37
Number with maladies	1	1	0
Malady free rate	0.990	0.990	
SE	0.010	0.010	
90% CI (+/-)	0.017	0.017	

PRELIMINARY

*Fish free of passage related visible injuries and loss of equilibrium

Preliminary- Including Likely Predation

Direct survival/injury of released adult steelhead kelts, including likely seal lion predation, passed through Bonneville Dam, March 2011. Controls released into tailrace discharge downstream at the boat launch.

Adult Steelhead Release location	Treatment		Controls
	<u>BON B1</u> <u>Ice-and- Trash</u> (ITS)	<u>BON B2</u> <u>Corner</u> <u>Collector</u> (CC)	Boat launch
Number released	100	100	37
Number recaptured alive	98	96	37
Number recaptured dead	0	0	0
Number assigned dead	2*	1*	0
Number unknown	0	3	0
1 hour survival	0.980	0.990	
SE	0.014	0.010	
90% CI (+/-)	0.023	0.017	
Number died in holding	0	1	0
48 hour survival	0.980	0.979	
SE	0.014	0.014	
90% CI (+/-)	0.023	0.024	
Number examined for maladies	98	96	37
Number without maladies**	97	95	37
Number with maladies	1	1	0
Malady free rate	0.990	0.990	
SE	0.010	0.010	
90% CI (+/-)	0.017	0.017	

*Fish likely preyed upon

**Fish free of passage related visible injuries and loss of equilibrium

Table

Daily schedule for releases of adult steelhead kelts, passed through Bonneville Dam, March 2011. Controls released into the tailrace discharge downstream at the boat launch.

Date	Treatment		Control Boat Launch	Total	Actual* Release
	<u>BON B1</u> <u>Ice-and-Trash</u> <u>(ITS)</u>	<u>BON B2</u> <u>Corner Collector</u> <u>(CC)</u>			
28-Feb		Pretest		0	2
1-Mar	51			51	55
2-Mar	49			49	51
3-Mar		75		75	75
4-Mar		25	37	62	62
5-Mar	delayed assessment				
6-Mar	delayed assessment				
Total	100	100	37	237	245

*Six fish removed from analysis because they were in unrecoverable conditions/areas i.e. trash, hazardous discharge site

Table

Incidence of maladies, including visible injury, and loss of equilibrium (LOE) observed on adult steelhead kelts passed through Bonneville Dam, March 2011. Controls released into tailrace discharge downstream at the boat launch.

Date	Test Lot	Fish Tag	Live/Dead	Maladies	Passage Malady	Photo	Probable Cause	Status
BON 1 ITS								
3/1/11	1	517	alive 48h	bruised on head above left eye	Yes	Yes	Mechanical	Major
BON 2 CC								
3/3/11	4	648	dead 48h	torn right operculum	Yes	Yes	Shear	Major

PRELIMINARY

APPENDIX D

Hourly released data for recaptured adult steelhead kelts, passed through Bonneville Dam, March 2011. Controls released into tailrace discharge downstream at the boat launch.

Hourly Released	Number Released	Number Recovered	Status Unrecovered Fish and / or Removed From Analytical Sample
1-Mar-11 BON 1 ITS			
800	1	0	1 fish unrecovered due to radio tag failure, fish removed from analytical sample
900	4	4	
1000	6	6	
1100	7	6	1 fish trapped in trash, fish removed from analytical sample
1200	7	6	1 fish in dangerous water, fish removed from analytical sample
1300	8	8	
1400	11	10	1 fish unrecovered due to radio tag failure, fish removed from analytical sample
1500	9	9	
1600	2	2	
Sum	55	51	
2-Mar-11			
800	12	12	
900	9	9	
1000	9	7	1 fish trapped signal fluctuating, fish removed from analytical sample; 1 fish unrecovered likely predation
1100	9	9	
1200	11	9	1 fish trapped in trash, fish removed from analytical sample; 1 fish unrecovered likely predation
1300	1	1	
Sum	51	47	

PRELIMINARY

Hourly Released	Number Released	Number Recovered	Status
			Unrecovered Fish and / or Removed From Analytical Sample
3-Mar-11	BON 2 CC		
900	7	6	1 fish unrecovered brief or no radio signal received
1000	10	10	
1100	13	13	
1200	9	9	
1300	6	5	1 fish unrecovered brief or no radio signal received
1400	11	10	1 fish unrecovered likely predation
1500	9	8	1 fish unrecovered brief or no radio signal received
1600	10	10	
Sum	75	71	
4-Mar-11			
800	11	11	
900	6	6	
1000	8	8	
Sum	25	25	

4-Mar-11	Controls	
1300	10	10
1400	9	9
1500	9	9
1600	9	9
Sum	37	37

~~PRELIMINARY~~