

**Supplement: Additional Information on Sites used to Assess Steelhead Emigration**

Supplementary Table S.1. Summary of 60 sites in four watersheds where steelhead emigration was assessed between mark and recapture passes. Cells with an “x” indicate where virtual block nets were not set. Percentage of fish that emigrated is indicated in parentheses next to the count of upstream, downstream, and total emigrants and migrations. Population estimates and 95% CIs are irrespective of emigration and migrations. Date is given as month/day/year.

Site name	Site length (m)	Date set	Season	Marks	Captures	Recaptures	Emigrants			Migrations	Population estimate	95% CI
							Upstream	Downstream	Total			
<b>Asotin Creek</b>												
CC-F2	456	7/3/2013	Summer	89	94	17	x	3 (3.4)	x		474.0	302–646
SF-F2	590	7/5/2013	Summer	171	166	48	x	8 (4.7)	x		585.2	469.7–700.7
SF-F4	415	7/8/2013	Summer	165	158	35	x	14 (8.5)	x		732.2	548.3–916
CC-F3	369	9/17/2013	Summer	100	82	21	0 (0)	1 (1)	1 (1)		380.0	262–498.1
CC-F2	456	9/25/2013	Fall	90	85	23	x	9 (10)	x		325.1	232–418.2
SF-F2	590	9/27/2013	Fall	272	225	72	x	19 (7)	x	7 (36.8)	844.2	708.6–979.8
SF-F4	415	9/29/2013	Fall	254	189	60	x	16 (6.3)	x	2 (12.5)	793.3	651.2–935.3
NF-F1	410	10/11/2013	Fall	201	143	44	x	7 (3.5)	x	6 (85.7)	645.4	508.9–781.9
CC-F3	320	7/2/2014	Summer	93	80	20	0 (0)	0 (0)	0 (0)		361.6	246.7–476.5
CC-F4	350	7/15/2014	Summer	129	102	31	10	4 (3.1)	14 (10.9)		417.4	314.5–520.3
NF-F1	400	7/17/2014	Summer	100	102	9	2 (2)	0 (0)	2 (2)		1,039.3	484.8–1,593.8
CC-F4	350	10/1/2014	Fall	204	180	72	0 (0)	x	x		507.3	435.5–579
CC-F2	456	10/7/2014	Fall	127	124	57	x	9 (7.1)	x		274.9	236.8–312.9
SF-F3	466	10/15/2014	Fall	199	155	70	x	8 (4)	x	1 (12.5)	438.4	378.3–498.6
<b>Bridge Creek</b>												
BRL-MC	600	9/13/2012	Summer	72	47	6	2 (2.8)	0 (0)	2 (2.7)		499.6	194.7–804.4
BRL-UO	852	9/13/2012	Summer	90	82	4	x	5 (5.6)	x		1,509.6	370.5–2,648.7
BRL-SF	711	9/27/2012	Fall	139	141	26	1 (0.7)	0 (0)	1 (0.7)		735.3	514.8–955.8
BRL-BP	600	10/1/2012	Fall	5	3	1	0 (0)	x	x		11.0	3.4–18.6
BRL-JC	600	10/2/2012	Fall	65	51	15	x	6 (9.2)	x		213.5	139.7–287.3
BRL-WW	520	10/10/2012	Fall	143	123	21	1 (0.7)	0 (0)	1 (0.7)		810.6	533.7–1,087.5
GBC-GC	717	1/15/2013	Winter	185	166	46	3 (1.6)	x	x		659.9	522.9–796.9

Site name	Site length (m)	Date set	Season	Marks	Captures	Recaptures	Emigrants			Migrations	Population estimate	95% CI
							Upstream	Downstream	Total			
BRL-UO	852	1/17/2013	Winter	186	202	17	0 (0)	3 (1.6)	3 (1.6)		2,107.9	1,247.3–2,968.5
BRL-LO	934	1/21/2013	Winter	285	204	28	0 (0)	0 (0)	0 (0)		2,020.7	1,385.3–2,656.2
BRL-SF	711	1/23/2013	Winter	75	78	15	0 (0)	0 (0)	0 (0)		374.3	232.7–515.8
BRL-JC	600	1/30/2013	Winter	70	59	24	0 (0)	0 (0)	0 (0)		169.4	129.2–209.6
BRL-NC	570	2/4/2013	Winter	242	230	65	0 (0)	0 (0)	0 (0)		849.5	702.6–996.4
BRL-CR	586	2/13/2013	Winter	90	59	9	6 (6.7)	0 (0)	6 (6.7)	1 (16.7)	545.0	267.1–822.9
BRL-WW	520	2/14/2013	Winter	231	207	50	4 (1.7)	10 (4.3)	14 (6)		945.2	747.9–1,142.5
BRL-SF	711	5/23/2013	Spring	25	31	5	0 (0)	0 (0)	0 (0)		137.7	56.5–218.9
GBC-GC	717	5/28/2013	Spring	127	88	39	2 (1.6)	18 (14.2)	20 (15.7)	1 (5)	283.8	230.2–337.4
BRL-BS	435	6/20/2013	Spring	69	58	16	1 (1.4)	10 (14.5)	11 (16)		241.9	159.6–324.3
BRL-UO	852	6/20/2013	Spring	418	400	79	0 (0)	0 (0)	0 (0)		2,099.2	1,731.2–2,467.3
BRL-CR	586	6/22/2013	Spring	47	32	9	0 (0)	5 (10.6)	5 (10.6)		157.4	87.9–226.9
BRL-PC	600	6/22/2013	Spring	27	9	0	3 (11.1)	2 (7.4)	5 (18.5)		279.0	0–640.5
BRL-MC	600	9/25/2013	Fall	229	188	24	0 (0)	0 (0)	0 (0)		1,737.8	1,150–2,325.6
BRL-LO	934	9/27/2013	Fall	627	410	79	2 (0.3)	16 (2.6)	18 (2.9)	6 (33.3)	3,225.4	2,636.3–3,814.4
BRL-UO	852	9/27/2013	Fall	807	635	192	0 (0)	10 (1.2)	10 (1.2)		2,661.6	2,388.8–2,934.4
BRL-CR	586	9/30/2013	Fall	27	19	6	1 (3.7)	0 (0)	1 (3.7)		79.0	40.3–117.7
BRL-NC	570	2/20/2014	Winter	86	96	24	0 (0)	3 (3.5)	3 (3.5)		336.6	242.2–430.9
GBC-GC	717	2/4/2014	Winter	60	54	14	0 (0)	0 (0)	0 (0)		222.7	141.5–303.8
BRL-UO	852	2/24/2014	Winter	331	204	57	0 (0)	10 (3)	10 (3)		1,172.4	942.1–1,402.8
BRL-LO	934	2/26/2014	Winter	278	319	55	0 (0)	2 (0.7)	2 (0.7)		1,593.3	1,257.2–1,929.4
BRL-BS	435	6/19/2014	Spring	18	12	1	4 (22.2)	2 (11.1)	6 (33.3)		122.5	0.9–244.1
BRL-JC	600	6/21/2014	Spring	42	26	4	0 (0)	6 (14.3)	6 (14.3)		231.2	73.5–388.9
GBC-GC	717	6/21/2014	Spring	40	61	13	1 (2.5)	2 (5)	3 (7.5)		180.6	115–246.2
BRL-LO	934	6/23/2014	Summer	110	137	18	1 (0.9)	3 (2.7)	4 (3.6)	1 (25)	805.2	506.5–1,103.9
BRL-UO	852	6/23/2014	Summer	428	335	141	0 (0)	x	x		1,014.1	910.7–1,117.5
<b>Middle Fork John Day River</b>												
MFJD-290034	160	9/29/2012	Fall	31	12	4	0 (0)	3 (9.7)	3 (9.7)		82.2	34.3–130.1
MFJD-207602	160	10/2/2012	Fall	33	27	8	2 (6.1)	1 (3)	3 (9.1)		104.8	58.5–151
MFJD-289522	160	10/2/2012	Fall	19	15	1	1 (5.3)	0 (0)	1 (5.3)		159.0	0–319.7
MFJD-275954	280	9/12/2013	Summer	94	69	14	0 (0)	1 (1.1)	1 (1.1)		442.3	265.6–619
<b>Murderers Creek</b>												
MRC-MRL	800	9/16/2012	Summer	305	207	49	0 (0)	0 (0)	0 (0)		1,272.0	993.5–1,550.5

Site name	Site length (m)	Date set	Season	Marks	Captures	Recaptures	Emigrants			Migrations	Population estimate	95% CI
							Upstream	Downstream	Total			
MRC-MRM	800	9/16/2012	Summer	94	96	9	0 (0)	0 (0)	0 (0)		920.5	432.7–1,408.3
MRC-MRU	140	9/18/2012	Summer	30	41	8	0 (0)	0 (0)	0 (0)		143.7	76.7–210.6
MRC-MRL	800	2/19/2013	Winter	139	120	22	0 (0)	0 (0)	0 (0)		735.5	493.1–977.9
MRC-MRM	800	2/21/2013	Winter	72	56	14	0 (0)	1 (1.4)	1 (1.4)		276.4	172.4–380.4
MRC-MRL	800	6/24/2013	Spring	242	226	76	0 (0)	1 (0.4)	1 (0.4)		715.4	608.6–822.2
MRC-MRM	800	7/17/2013	Summer	106	61	17	0 (0)	x	x		367.6	240.2–494.9
MRC-231026	160	7/19/2013	Summer	21	16	2	4 (19.0)	1 (4.8)	5 (23.8)		123.7	20.7–226.7
MRC-522866	160	7/19/2013	Summer	17	17	1	4 (23.5)	x	x		161.0	0–323.9