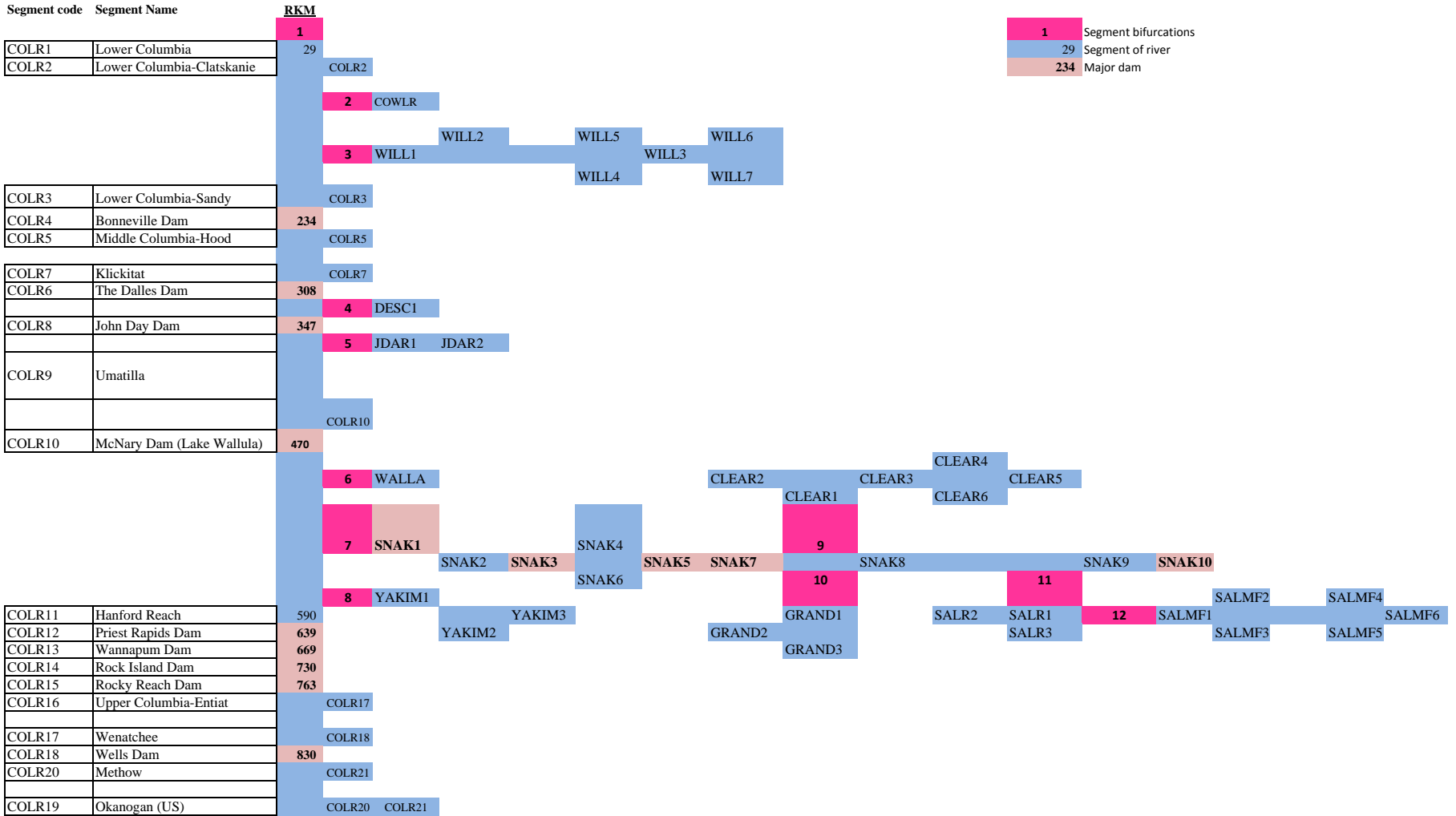


Programming model Network Structure

Analysis of the Cost-Effectiveness of Fish Tagging Technologies and Programs



NEW NETWORK DESCRIPTION FEBRUARY 13, 2013

Region (release)	NEW SEGMENT (ORDINAL NUMBER)	NEW SEGMENT LABEL	SEGMENT/SUBBASIN/DAM NAME	RKM	Release site?	Detection site?	Dam?
LOCR	1	COLR1	Lower Columbia	29	X	X	
LOCR	1	COLR2	Lower Columbia-Clatskanie	95	X	X	
LOCR	1	COLR3	Lower Columbia-Sandy	201	X	X	
LOCR	2	COWR	Lower Cowlitz	190	X	X	
LOCR	3	WILL1	Lower Willamette	198	X	X	
LOCR	3	WILL2	Clackamas	234	X	X	
LOCR	3	WILL3	Middle Willamette	277	X	X	
LOCR	3	WILL4	North Santiam	373	X	X	
LOCR	3	WILL5	South Santiam	375	X	X	
LOCR	3	WILL6	Upper Willamette	418	X	X	
LOCR	3	WILL7	Mckenzie	499	X	X	
CECR	1	COLR4	Bonneville Dam	234		X	X
CECR	1	COLR5	Middle Columbia-Hood	290	X	X	
CECR	1	COLR6	The Dalles Dam	308	X	X	X
CECR	1	COLR7	Klickitat	346	X	X	
CECR	4	DESC1	Lower Deschutes	455	X	X	
CECR	1	COLR8	John Day Dam	347	X	X	X
CECR	1	COLR9	Umatilla	470	X	X	
CECR	1	COLR10	McNary Dam	532	X	X	
UPCR	1	COLR11	Hanford Reach	590	X		
UPCR	1	COLR12	Priest Rapids Dam	639	X	X	X
CECR	5	JDAR1	Lower John Day	577	X	X	
CECR	5	JDAR2	Upper John Day	719	X	X	
UPCR	6	WALLA	Walla Walla	580	X	X	
UPCR	8	YAKIM1	Lower Yakima	651	X	X	
UPCR	8	YAKIM2	Naches	763	X	X	
UPCR	8	YAKIM3	Upper Yakima	791	X	X	
UPCR	1	COLR13	Wannapum Dam	669	X	X	X
UPCR	1	COLR14	Rock Island Dam	730	X	X	X
UPCR	1	COLR15	Rocky Reach Dam	763	X	X	X
UPCR	1	COLR16	Upper Columbia-Entiat	783	X	X	
UPCR	1	COLR17	Wenatchee	822	X	X	
UPCR	1	COLR18	Wells Dam	830	X	X	X
UPCR	1	COLR19	Okanogan	901	X	X	
UPCR	1	COLR20	Methow	917	X	X	
UPCR	1	COLR21	Similkameen	977	X	X	
SNAK	7	SNAK1	Ice Harbor Dam	538	X	X	X
SNAK	7	SNAK2	Lower Snake	564	X	X	

NEW NETWORK DESCRIPTION FEBRUARY 13, 2013

Region (release)	NEW SEGMENT (ORDINAL NUMBER)	NEW SEGMENT LABEL	SEGMENT/SUBBASIN/DAM NAME	RKM	Release site?	Detection site?	Dam?
SNAK	7	SNAK3	Lower Monument Dam	589	X	X	X
SNAK	7	SNAK4	Palouse	618	X	X	
SNAK	7	SNAK5	Little Goose Dam	635	X	X	X
SNAK	7	SNAK6	Lower Snake-Tucannon	680	X	X	
SNAK	7	SNAK7	Lower Granite Dam	695	X	X	X
SNAK	7	SNAK8	Lower Snake-Asotiin	762	X	X	
SNAK	10	GRAND1	Lower Grande Ronde	807	X	X	
SNAK	10	GRAND2	Wallowa	957	X	X	
SNAK	10	GRAND3	Upper Grande Ronde	1,052	X	X	
SNAK	9	CLEAR1	Clearwater	793	X	X	
SNAK	9	CLEAR2	Lower North Fork Clearwater	811	X	X	
SNAK	9	CLEAR3	Middle Fork Clearwater	871	X	X	
SNAK	9	CLEAR4	South Fork Clearwater	955	X	X	
SNAK	9	CLEAR5	Lochsa	992	X	X	
SNAK	9	CLEAR6	Lower Selway	940	X	X	
SNAK	7	SNAK9	Imnaha	867	X	X	
SNAK	7	SNAK10	Hells Canyon Dam	882	X	X	X
SNAK	11	SALR1	Lower Salmon	928	X	X	
SNAK	11	SALR2	Little Salmon	987	X	X	
SNAK	11	SALR3	South Fork Salmon	1,131	X	X	
SNAK	12	SALMF1	Lower Middle Fork Salmon	1,194	X	X	
SNAK	12	SALMF2	Middle Salmon-Panther	1,227	X	X	
SNAK	12	SALMF3	Lemhi	1,298	X	X	
SNAK	12	SALMF4	Upper Middle Fork Salmon	1,312	X	X	
SNAK	12	SALMF5	Pahsimeroi	1,318	X	X	
SNAK	12	SALMF6	Upper Salmon	1,427	X	X	

REPORT FEBRUARY 13, 20

SEGMENT/SUBBASIN/DAM NAME	Population (Hatchery Releases)				
	Spring Chinook	Fall Chinook	Coho	Steelhead	Sockeye
Lower Columbia	9,831,000	86,236,000	34,582,000	-	-
Lower Columbia-Clatskanie	12,797,000	25,788,000	8,369,000	59,000	4,000
Lower Columbia-Sandy	2,104,000	7,103,000	28,109,000	-	1,000
Lower Cowlitz	1,160,000	1,218,000	1,744,000	-	-
Lower Willamette	5,835,000	1,101,000	6,515,000	-	1,000
Clackamas	-	-	5,389,000	88,000	-
Middle Willamette	1,000	1,000	-	-	-
North Santiam	11,204,000	2,000	-	-	-
South Santiam	17,501,000	1,000	-	-	-
Upper Willamette	2,000	-	-	-	-
Mckenzie	9,000	-	-	-	-
Bonneville Dam	-	-	-	-	-
Middle Columbia-Hood	35,656,000	271,698,000	5,467,000	34,000	13,000
The Dalles Dam	-	-	-	-	-
Klickitat	1,643,000	-	1,843,000	-	1,000
Lower Deschutes	8,098,000	-	-	-	-
John Day Dam	-	-	-	-	-
Umatilla	5,000	4,000	2,000	35,000	8,000
McNary Dam	3,354,000	28,404,000	8,530,000	1,559,000	2,000
Hanford Reach	-	-	-	-	-
Priest Rapids Dam	-	-	-	-	-
Lower John Day	3,000	-	-	-	1,000
Upper John Day	1,000	-	-	-	4,000
Walla Walla	6,000	-	-	503,000	12,000
Lower Yakima	6,000	8,912,000	4,000	-	2,000
Naches	6,000	4,000	231,000	-	-
Upper Yakima	3,170,000	1,000	257,000	-	1,000
Wannapum Dam	-	-	-	-	-
Rock Island Dam	-	-	-	-	-
Rocky Reach Dam	-	-	-	-	-
Upper Columbia-Entiat	70,392,000	11,000	45,000	417,000	10,000
Wenatchee	35,216,000	2,000	10,645,000	407,000	1,245,000
Wells Dam	-	-	-	-	-
Okanogan	38,063,000	-	-	-	14,000
Methow	25,476,000	1,000	3,016,000	246,000	75,000
Similkameen	-	-	-	-	9,000
Ice Harbor Dam	-	-	-	-	-
Lower Snake	6,000	4,665,000	-	-	4,000

REPORT FEBRUARY 13, 20

SEGMENT/SUBBASIN/DAM NAME	Population (Hatchery Releases)				
	Spring Chinook	Fall Chinook	Coho	Steelhead	Sockeye
Lower Monument Dam	-	-	-	-	-
Palouse	-	-	-	-	-
Little Goose Dam	-	-	-	-	-
Lower Snake-Tucannon	807,000	120,000	-	688,000	78,000
Lower Granite Dam	-	-	-	-	-
Lower Snake-Asotiin	-	148,000	-	-	7,000
Lower Grande Ronde	1,524,000	2,171,000	-	794,000	5,000
Wallowa	2,969,000	-	-	7,420,000	12,000
Upper Grande Ronde	2,935,000	-	-	-	4,000
Clearwater	18,384,000	83,000	1,112,000	4,532,000	13,000
Lower North Fork Clearwater	56,000	-	-	-	-
Middle Fork Clearwater	11,659,000	-	2,728,000	183,000	2,000
South Fork Clearwater	9,182,000	5,000	1,000	5,705,000	12,000
Lochsa	3,563,000	-	-	-	10,000
Lower Selway	2,805,000	4,000	1,000	-	1,000
Imnaha	31,000	-	-	2,402,000	14,000
Hells Canyon Dam	-	-	-	-	-
Lower Salmon	-	10,000	-	688,000	3,000
Little Salmon	45,505,000	-	-	7,794,000	7,000
South Fork Salmon	17,096,000	-	-	-	4,000
Lower Middle Fork Salmon	5,000	-	-	-	2,000
Middle Salmon-Panther	-	-	-	308,000	2,000
Lemhi	4,000	-	-	369,000	3,000
Upper Middle Fork Salmon	10,000	-	-	-	1,000
Pahsimeroi	10,000	-	-	-	5,000
Upper Salmon	5,033,000	-	-	16,885,000	192,000

RIPTION FEBRUARY 13, 20 Mostly from <http://www.cbr.washington.edu/trends/index.php>

SEGMENT/SUBBASIN/DAM NAME	Population - Wild				
	Spring Chinook	Fall Chinook	Coho	Steelhead	Sockeye
Lower Columbia					
Lower Columbia-Clatskanie					
Lower Columbia-Sandy					
Lower Cowlitz					
Lower Willamette					
Clackamas					
Middle Willamette					
North Santiam					
South Santiam					
Upper Willamette					
Mckenzie					
Bonneville Dam					
Middle Columbia-Hood	-	-	-	140,000	-
The Dalles Dam					
Klickitat	582,000				
Lower Deschutes	427,000				
John Day Dam					
Umatilla	-	-	-	240,000	-
McNary Dam					
Hanford Reach					
Priest Rapids Dam					
Lower John Day	-	-	-	400,000	-
Upper John Day	710,000	-	-	140,000	-
Walla Walla	-	-	-	160,000	-
Lower Yakima	1,850,000	-	-	180,000	-
Naches	-	-	-	100,000	-
Upper Yakima	-	-	-	20,000	-
Wannapum Dam					
Rock Island Dam					
Rocky Reach Dam					
Upper Columbia-Entiat	40,000	-	-	20,000	-
Wenatchee	200,000	-	-	120,000	-
Wells Dam					
Okanogan					
Methow	100,000	-	-	80,000	-
Similkameen	12,020,000	-	-	20,000	-
Ice Harbor Dam					
Lower Snake					

RIPTION FEBRUARY 13, 20 Mostly from <http://www.cbr.washington.edu/trends/index.php>

SEGMENT/SUBBASIN/DAM NAME	Population - Wild				
	Spring Chinook	Fall Chinook	Coho	Steelhead	Sockeye
Lower Monument Dam					
Palouse					
Little Goose Dam					
Lower Snake-Tucannon	40,000	-	-	-	-
Lower Granite Dam					
Lower Snake-Asotiin					
Lower Grande Ronde	80,000	-	-	400,000	-
Wallowa	150,000	-	-	-	-
Upper Grande Ronde	60,000	-	-	200,000	-
Clearwater	18,000				
Lower North Fork Clearwater					
Middle Fork Clearwater					
South Fork Clearwater					
Lochsa					
Lower Selway					
Imnaha	100,000	-	-	-	-
Hells Canyon Dam					
Lower Salmon	20,000	-	-	-	-
Little Salmon	326,000				
South Fork Salmon	300,000	-	-	-	-
Lower Middle Fork Salmon					
Middle Salmon-Panther	120,000				
Lemhi	20,000	-	-	-	-
Upper Middle Fork Salmon	280,000	-	-	-	-
Pahsimeroi	40,000	-	-	-	-
Upper Salmon	50,000	-	-	-	6,000

Survival Detection Requirements

Hatchery Fall Chinook

Region (release)	Segment label	Row: Release Group/Subbasin	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles
			Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapum Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam
LOCR	COLR1	Lower Columbia		0		0	0		0	0		0	0	0
LOCR	COLR2	Lower Columbia-Clatskanie												
LOCR	COLR3	Lower Columbia-Sandy												
LOCR	COWR	Lower Cowlitz												
LOCR	WILL1	Lower Willamette												
LOCR	WILL2	Clackamas												
LOCR	WILL3	Middle Willamette												
LOCR	WILL4	North Santiam												
LOCR	WILL5	South Santiam												
LOCR	WILL6	Upper Willamette												
LOCR	WILL7	Mckenzie												
CECR	COLR4	Bonneville Dam												
CECR	COLR5	Middle Columbia-Hood		1300		100	0		0	0		0	0	0
CECR	COLR6	The Dalles Dam												
CECR	COLR7	Klickitat												
CECR	DESC1	Lower Deschutes												
CECR	COLR8	John Day Dam												
CECR	COLR9	Umatilla		100		300	0		0	0		0	0	0
CECR	COLR10	McNary Dam												
UPCR	COLR11	Hanford Reach												
UPCR	COLR12	Priest Rapids Dam												
CECR	JDAR1	Lower John Day												
CECR	JDAR2	Upper John Day												
UPCR	WALLA	Walla Walla												
UPCR	YAKIM1	Lower Yakima		500		1100	1500		1500	0		0	0	0
UPCR	YAKIM2	Naches		100		100	200		200	0		0	0	0
UPCR	YAKIM3	Upper Yakima		0		0	0		0	0		0	0	0
UPCR	COLR13	Wannapum Dam												
UPCR	COLR14	Rock Island Dam												
UPCR	COLR15	Rocky Reach Dam												
UPCR	COLR16	Upper Columbia-Entiat		200		300	1700		1700	0		0	0	0
UPCR	COLR17	Wenatchee		0		0	0		0	0		0	0	0
UPCR	COLR18	Wells Dam												
UPCR	COLR19	Okanogan (US)												
UPCR	COLR20	Methow		100		100	100		100	0		0	0	0
UPCR	COLR21	Similkameen (US)												
SNAK	SNAK1	Ice Harbor Dam												
SNAK	SNAK2	Lower Snake		2900		4200	12600		12600	0		100	0	0
SNAK	SNAK3	Lower Monument Dam												
SNAK	SNAK4	Palouse												
SNAK	SNAK5	Little Goose Dam												
SNAK	SNAK6	Lower Snake-Tucannon		6200		7600	16500		16500	0		13000	17500	100
SNAK	SNAK7	Lower Granite Dam												
SNAK	SNAK8	Lower Snake-Asotiin		3800		5000	9600		9600	0		8400	18700	20200
SNAK	GRAND1	Lower Grande Ronde		400		500	800		800	0		900	2000	1300

Measurements	Hatchery					Fall Chinook									
	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults
Row: Release Group/Subbasin	Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapum Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam	Lower Granite Dam	
Lower Columbia			0			0	0		0	0		0		0	
Lower Columbia-Clatskanie			0			0	0		0	0		0		0	
Lower Columbia-Sandy															
Lower Cowlitz															
Lower Willamette															
Clackamas															
Middle Willamette															
North Santiam															
South Santiam															
Upper Willamette															
Mckenzie															
Bonneville Dam															
Middle Columbia-Hood			100			0	0		0	0		0		0	
The Dalles Dam															
Klickitat															
Lower Deschutes															
John Day Dam															
Umatilla			0			0	0		0	0		0		0	
McNary Dam															
Hanford Reach															
Priest Rapids Dam															
Lower John Day															
Upper John Day															
Walla Walla															
Lower Yakima			100			100	0		0	0		0		0	
Naches			0			0	0		0	0		0		0	
Upper Yakima			0			0	0		0	0		0		0	
Wannapum Dam															
Rock Island Dam															
Rocky Reach Dam															
Upper Columbia-Entiat			0			0	0		0	0		0		0	
Wenatchee			0			0	0		0	0		0		0	
Wells Dam															
Okanogan (US)															
Methow			0			0	0		0	0		0		0	
Similkameen (US)															
Ice Harbor Dam															
Lower Snake			200			100	0		0	0		0		100	
Lower Monument Dam															
Palouse															
Little Goose Dam															
Lower Snake-Tucannon			1400			700	0		0	0		0		400	
Lower Granite Dam															
Lower Snake-Asotiin			1200			600	0		0	0		0		600	
Lower Grande Ronde			100			0	0		0	0		0		0	

Survival Detection Requirements			Hatchery Spring Chinook												
Region (release)	Segment label	Row: Release Group/Subbasin	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles
			Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam
LOCR	COLR1	Lower Columbia													
LOCR	COLR2	Lower Columbia-Clatskanie													
LOCR	COLR3	Lower Columbia-Sandy													
LOCR	COWR	Lower Cowlitz													
LOCR	WILL1	Lower Willamette		0				0	0			0	0	0	0
LOCR	WILL2	Clackamas													
LOCR	WILL3	Middle Willamette													
LOCR	WILL4	North Santiam													
LOCR	WILL5	South Santiam													
LOCR	WILL6	Upper Willamette													
LOCR	WILL7	Mckenzie		0				0	0			0	0	0	0
CECR	COLR4	Bonneville Dam													
CECR	COLR5	Middle Columbia-Hood		3300				100	0			0	0	0	0
CECR	COLR6	The Dalles Dam													
CECR	COLR7	Klickitat		500				0	0			0	0	0	0
CECR	DESC1	Lower Deschutes		800				0	0			0	0	0	0
CECR	COLR8	John Day Dam													
CECR	COLR9	Umatilla		200				400	0			0	0	0	0
CECR	COLR10	McNary Dam													
UPCR	COLR11	Hanford Reach													
UPCR	COLR12	Priest Rapids Dam													
CECR	JDAR1	Lower John Day													
CECR	JDAR2	Upper John Day													
UPCR	WALLA	Walla Walla		100				200	0			200	0	0	0
UPCR	YAKIM1	Lower Yakima		100				300	0			500	0	0	0
UPCR	YAKIM2	Naches		100				300	0			400	0	0	0
UPCR	YAKIM3	Upper Yakima		1400				2600	0			4800	0	0	0
UPCR	COLR13	Wannapum Dam													
UPCR	COLR14	Rock Island Dam													
UPCR	COLR15	Rocky Reach Dam													
UPCR	COLR16	Upper Columbia-Entiat		3600				7200	0			13800	0	0	0
UPCR	COLR17	Wenatchee		5700				11300	0			23200	0	0	0
UPCR	COLR18	Wells Dam													
UPCR	COLR19	Okanogan (US)		100				0	0			100	0	0	0
UPCR	COLR20	Methow		1400				1600	0			3300	0	0	0
UPCR	COLR21	Similkameen (US)		0				0	0			0	0	0	0
SNAK	SNAK1	Ice Harbor Dam													
SNAK	SNAK2	Lower Snake		600				1100	100			2100	0	0	0
SNAK	SNAK3	Lower Monument Dam													
SNAK	SNAK4	Palouse													
SNAK	SNAK5	Little Goose Dam													
SNAK	SNAK6	Lower Snake-Tucannon		400				700	1100			1100	0	0	100
SNAK	SNAK7	Lower Granite Dam													
SNAK	SNAK8	Lower Snake-Asotiin													
SNAK	GRAND1	Lower Grande Ronde		100				100	200			300	0	0	400

Survival Detection Requirements			Hatchery Spring Chinook													
			Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	
Region (release)	Segment label	Row: Release Group/Subbasin	Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam	Lower Granite Dam
SNAK	GRAND2	Wallowa		500			500	1100		1400	0	0	2100			2000
SNAK	GRAND3	Upper Grande Ronde		600			700	1300		1500	0	0	3100			2300
SNAK	CLEAR1	Clearwater		100			200	400		300	0	0	500			500
SNAK	CLEAR2	Lower North Fork Clearwater		3400			5000	6100		9900	0	0	12300			11900
SNAK	CLEAR3	Middle Fork Clearwater		700			700	900		1900	0	0	2000			1800
SNAK	CLEAR4	South Fork Clearwater		700			1100	1300		1700	0	0	2400			2200
SNAK	CLEAR5	Lochsa		500			700	700		1300	0	0	1600			1400
SNAK	CLEAR6	Lower Selway		500			400	800		1400	0	0	1600			1500
SNAK	SNAK9	Imnaha		900			1200	1800		2500	0	0	4600			3600
SNAK	SNAK10	Hells Canyon Dam														
SNAK	SALR1	Lower Salmon														
SNAK	SALR2	Little Salmon		5100			6100	10800		16200	0	0	23700			16700
SNAK	SALR3	South Fork Salmon		2400			2700	4700		6200	0	0	13800			9500
SNAK	SALMF1	Lower Middle Fork Salmon														
SNAK	SALMF2	Middle Salmon-Panther														
SNAK	SALMF3	Lemhi														
SNAK	SALMF4	Upper Middle Fork Salmon														
SNAK	SALMF5	Pahsimeroi		300			300	500		900	0	0	1200			1000
SNAK	SALMF6	Upper Salmon		200			400	500		700	0	0	1300			900

Protection Requirements

Hatchery

Spring Chinook

Segment label	Row: Release Group/Subbasin	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults
		Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monume nt Dam	Little Goose Dam
COLR1	Lower Columbia													
COLR2	Lower Columbia-Clatskanie													
COLR3	Lower Columbia-Sandy													
COWR	Lower Cowlitz													
WILL1	Lower Willamette													
WILL2	Clackamas													
WILL3	Middle Willamette													
WILL4	North Santiam													
WILL5	South Santiam													
WILL6	Upper Willamette													
WILL7	Mckenzie													
COLR4	Bonneville Dam													
COLR5	Middle Columbia-Hood		700			0	0		0	0	0	0		0
COLR6	The Dalles Dam													
COLR7	Klickitat		100			0	0		0	0	0	0		0
DESC1	Lower Deschutes		100			0	0		0	0	0	0		0
COLR8	John Day Dam													
COLR9	Umatilla		100			0	0		0	0	0	0		0
COLR10	McNary Dam													
COLR11	Hanford Reach													
COLR12	Priest Rapids Dam													
JDAR1	Lower John Day													
JDAR2	Upper John Day													
WALLA	Walla Walla		200			100	0		0	0	0	0		0
YAKIM1	Lower Yakima					0	0		0	0	0	0		0
YAKIM2	Naches													
YAKIM3	Upper Yakima		500			300	0		0	0	0	0		0
COLR13	Wannapum Dam													
COLR14	Rock Island Dam													
COLR15	Rocky Reach Dam													
COLR16	Upper Columbia-Entiat		1100			700	600		700	200	400	0		0
COLR17	Wenatchee		1100			600	600		500	200	200	0		0
COLR18	Wells Dam													
COLR19	Okanogan (US)		100			100	100		100	0	100	0		0
COLR20	Methow		1300			600	600		500	400	600	0		0
COLR21	Similkameen (US)		100			100	100		100	0	100	0		0
SNAK1	Ice Harbor Dam													
SNAK2	Lower Snake		100			0	0		0	0	0	0		0
SNAK3	Lower Monument Dam													
SNAK4	Palouse													
SNAK5	Little Goose Dam													
SNAK6	Lower Snake-Tucannon		1700			800	0		0	0	0	0		600
SNAK7	Lower Granite Dam													
SNAK8	Lower Snake-Asotiin		100			0	0		0	0	0	0		0
GRAND1	Lower Grande Ronde		200			100	0		0	0	0	0		100

ection Requirements

Hatchery

Spring Chinook

Segment label	Row: Release Group/Subbasin	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults
		Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monume nt Dam	Little Goose Dam
GRAND2	Wallowa		400			200	0		0	0	0	0		200
GRAND3	Upper Grande Ronde		200			100	0		0	0	0	0		100
CLEAR1	Clearwater		200			100	0		0	0	0	0		100
CLEAR2	Lower North Fork Clearwat		600			300	0		0	0	0	100		300
CLEAR3	Middle Fork Clearwater		200			100	0		0	0	0	0		100
CLEAR4	South Fork Clearwater		300			100	0		0	0	0	0		200
CLEAR5	Lochsa		100			100	0		0	0	0	0		0
CLEAR6	Lower Selway		100			0	0		0	0	0	0		0
SNAK9	Imnaha		700			400	0		0	0	0	100		400
SNAK10	Hells Canyon Dam													
SALR1	Lower Salmon													
SALR2	Little Salmon		1400			700	0		0	0	0	200		600
SALR3	South Fork Salmon		1000			500	0		0	0	0	100		500
SALMF1	Lower Middle Fork Salmon													
SALMF2	Middle Salmon-Panther		100			100	0		0	0	0	0		100
SALMF3	Lemhi													
SALMF4	Upper Middle Fork Salmon													
SALMF5	Pahsimeroi		200			100	0		0	0	0	0		100
SALMF6	Upper Salmon		500			200	0		0	0	0	0		200

Survival Detection Requirements

Hatchery Steelhead

Region (release)	Segment label	Row: Release Group/Subbasin	Steelhead														
			Juveniles Columbia	Juveniles Bonneville Dam	Juveniles The Dalles Dam	Juveniles John Day Dam	Juveniles McNary Dam	Juveniles Priest Rapids Dam	Juveniles Wannapum Dam	Juveniles Rock Island Dam	Juveniles Rocky Reach Dam	Juveniles Wells Dam	Juveniles Ice Harbor Dam	Juveniles Lower Monument Dam	Juveniles Little Goose Dam	Juveniles Lower Granite Dam	
LOCR	COLR1	Lower Columbia		0				0	0		0	0	0	0		0	
LOCR	COLR2	Lower Columbia-Clatskanie															
LOCR	COLR3	Lower Columbia-Sandy															
LOCR	COWR	Lower Cowlitz															
LOCR	WILL1	Lower Willamette		0				0	0		0	0	0	0		0	
LOCR	WILL2	Clackamas															
LOCR	WILL3	Middle Willamette															
LOCR	WILL4	North Santiam															
LOCR	WILL5	South Santiam															
LOCR	WILL6	Upper Willamette															
LOCR	WILL7	Mckenzie															
CECR	COLR4	Bonneville Dam															
CECR	COLR5	Middle Columbia-Hood		900				100	0		0	0	0	0		0	
CECR	COLR6	The Dalles Dam															
CECR	COLR7	Klickitat		400				0	0		0	0	0	0		0	
CECR	DESC1	Lower Deschutes		0				0	0		0	0	0	0		0	
CECR	COLR8	John Day Dam															
CECR	COLR9	Umatilla		300				400	0		0	0	0	0		0	
CECR	COLR10	McNary Dam															
UPCR	COLR11	Hanford Reach															
UPCR	COLR12	Priest Rapids Dam															
CECR	JDAR1	Lower John Day		0				0	0		0	0	0	0		0	
CECR	JDAR2	Upper John Day															
UPCR	WALLA	Walla Walla		500				400	0		500	0	0	0		0	
UPCR	YAKIM1	Lower Yakima															
UPCR	YAKIM2	Naches															
UPCR	YAKIM3	Upper Yakima		0				0	0		0	0	0	0		0	
UPCR	COLR13	Wannapum Dam															
UPCR	COLR14	Rock Island Dam															
UPCR	COLR15	Rocky Reach Dam															
UPCR	COLR16	Upper Columbia-Entiat		200				600	0		600	0	0	0		0	
UPCR	COLR17	Wenatchee		2200				4000	0		3400	0	0	0		0	
UPCR	COLR18	Wells Dam															
UPCR	COLR19	Okanogan (US)		500				800	0		800	0	0	0		0	
UPCR	COLR20	Methow		2400				5300	0		4900	0	0	0		0	
UPCR	COLR21	Similkameen (US)		200				800	0		800	0	0	0		0	
SNAK	SNAK1	Ice Harbor Dam															
SNAK	SNAK2	Lower Snake		200				300	200		400	0	0	0		0	
SNAK	SNAK3	Lower Monument Dam															
SNAK	SNAK4	Palouse															
SNAK	SNAK5	Little Goose Dam															
SNAK	SNAK6	Lower Snake-Tucannon		2300				2800	7900		2800	0	0	200		8700	
SNAK	SNAK7	Lower Granite Dam															
SNAK	SNAK8	Lower Snake-Asotiin		300				300	1000		300	0	0	1400		1500	
SNAK	GRAND1	Lower Grande Ronde		500				400	900		400	0	0	1400		1500	

Survival Detection Requirements

Hatchery

Steelhead

Region (release)	Segment label	Row: Release Group/Subbasin	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles
			Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monume nt Dam
SNAK	GRAND2	Wallowa		800			600	1300		500	0	0	2800	2500
SNAK	GRAND3	Upper Grande Ronde												
SNAK	CLEAR1	Clearwater		1000			1000	1900		1200	0	0	3200	3300
SNAK	CLEAR2	Lower North Fork Clearwater		0			0	0		0	0	0	0	0
SNAK	CLEAR3	Middle Fork Clearwater		200			200	300		200	0	0	500	500
SNAK	CLEAR4	South Fork Clearwater		900			1300	2900		1200	0	0	4700	4800
SNAK	CLEAR5	Lochsa												
SNAK	CLEAR6	Lower Selway												
SNAK	SNAK9	Imnaha		700			600	1700		500	0	0	3000	2700
SNAK	SNAK10	Hells Canyon Dam												
SNAK	SALR1	Lower Salmon		200			100	500		200	0	0	700	800
SNAK	SALR2	Little Salmon		700			500	1100		500	0	0	2400	2100
SNAK	SALR3	South Fork Salmon												
SNAK	SALMF1	Lower Middle Fork Salmon												
SNAK	SALMF2	Middle Salmon-Panther		300			200	400		200	0	0	800	700
SNAK	SALMF3	Lemhi		0			0	100		0	0	0	100	100
SNAK	SALMF4	Upper Middle Fork Salmon												
SNAK	SALMF5	Pahsimeroi		500			400	600		200	0	0	1300	1000
SNAK	SALMF6	Upper Salmon		1000			1000	2300		800	0	0	4300	4000

Measurements	Hatchery							Steelhead						
	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults
Row: Release Group/Subbasin	Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapum Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam	Lower Granite Dam
Lower Columbia		0								0	0	0		0
Lower Columbia-Clatskanie														
Lower Columbia-Sandy														
Lower Cowlitz														
Lower Willamette		0			0	0		0	0	0	0			0
Clackamas														
Middle Willamette														
North Santiam														
South Santiam														
Upper Willamette														
Mckenzie														
Bonneville Dam														
Middle Columbia-Hood		200			0	0		0	0	0	0			0
The Dalles Dam														
Klickitat		0			0	0		0	0	0	0			0
Lower Deschutes														
John Day Dam														
Umatilla		100			0	0		0	0	0	0			0
McNary Dam														
Hanford Reach														
Priest Rapids Dam														
Lower John Day		0			0	0		0	0	0	0			0
Upper John Day														
Walla Walla		200			100	0		0	0	0	0			0
Lower Yakima														
Naches														
Upper Yakima														
Wannapum Dam														
Rock Island Dam														
Rocky Reach Dam														
Upper Columbia-Entiat		100			0	0		0	0	0	0			0
Wenatchee		600			300	300		300	200	100	0			0
Wells Dam														
Okanogan (US)		100			0	0		0	0	0	0			0
Methow		1100			500	500		400	300	500	0			0
Similkameen (US)		100			100	100		0	0	100	0			0
Ice Harbor Dam														
Lower Snake		100			0	0		0	0	0	0			0
Lower Monument Dam														
Palouse														
Little Goose Dam														
Lower Snake-Tucannon		1600			800	0		0	0	0	0			600
Lower Granite Dam														
Lower Snake-Asotiin		100			0	0		0	0	0	0			0
Lower Grande Ronde		200			100	0		0	0	0	0			100

Measurements

Hatchery

Steelhead

Row: Release Group/Subbasin	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults
	Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam	Lower Granite Dam
Wallowa		300			100	0		0	0	0	0			100
Upper Grande Ronde														
Clearwater		100			100	0		0	0	0	0			100
Lower North Fork Clearwater		0			0	0		0	0	0	0			0
Middle Fork Clearwater		0			0	0		0	0	0	0			0
South Fork Clearwater		200			100	0		0	0	0	0			100
Lochsa														
Lower Selway														
Innaha		300			100	0		0	0	0	0			100
Hells Canyon Dam														
Lower Salmon		0			0	0		0	0	0	0			0
Little Salmon		200			100	0		0	0	0	0			100
South Fork Salmon														
Lower Middle Fork Salmon														
Middle Salmon-Panther		100			100	0		0	0	0	0			100
Lemhi		0			0	0		0	0	0	0			0
Upper Middle Fork Salmon														
Pahsimeroi		100			100	0		0	0	0	0			100
Upper Salmon		300			200	0		0	0	0	0			200

Survival Detection Requirements

Wild Spring Chinook

Region (release)	Segment label	Row: Release Group/Subbasin	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Adults
			Lower Columbia	Bonnevill e Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapu m Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monumen t Dam	Little Goose Dam
SNAK	CLEAR3	Middle Fork Clearwater	0	0	0							0	0	0	
SNAK	CLEAR4	South Fork Clearwater													
SNAK	CLEAR5	Lochsa													
SNAK	CLEAR6	Lower Selway													
SNAK	SNAK9	Imnaha	400	700	1400							900	1700	2300	
SNAK	SNAK10	Hells Canyon Dam													
SNAK	SALR1	Lower Salmon													
SNAK	SALR2	Little Salmon	0	0	0							0	0	0	
SNAK	SALR3	South Fork Salmon	400	800	1600							1400	2200	2500	
SNAK	SALMF1	Lower Middle Fork Salmon	100	200	300							300	400	500	
SNAK	SALMF2	Middle Salmon-Panther													
SNAK	SALMF3	Lemhi	100	200	400							300	500	600	
SNAK	SALMF4	Upper Middle Fork Salmon	100	300	500							400	700	900	
SNAK	SALMF5	Pahsimeroi	100	100	300							200	500	600	
SNAK	SALMF6	Upper Salmon	100	200	400							400	800	900	

Requirements

Wild Spring Chinook

	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	
Row: Release Group/Subbasin	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapum Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam	Lower Granite Dam
Middle Fork Clearwater	0			0	0		0	0	0	0			0
South Fork Clearwater													
Lochsa													
Lower Selway													
Imnaha	300			100	0		0	0	0	0			100
Hells Canyon Dam													
Lower Salmon													
Little Salmon	0			0	0		0	0	0	0			0
South Fork Salmon	200			100	0		0	0	0	0			100
Lower Middle Fork Salmon	100			0	0		0	0	0	0			0
Middle Salmon-Panther													
Lemhi	0			0	0		0	0	0	0			0
Upper Middle Fork Salmon	0			0	0		0	0	0	0			0
Pahsimeroi	0			0	0		0	0	0	0			0
Upper Salmon	0			0	0		0	0	0	0			0

Survival Detection Requirements

Wild

Steelhead

Region (release)	Segment label	Row: Release Group/Subbasin	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles	Juveniles
			Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapum Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam
	0 COLR1	Lower Columbia													
	0 COLR2	Lower Columbia-Clatskanie													
	0 COLR3	Lower Columbia-Sandy													
	0 COWR	Lower Cowlitz													
	0 WILL1	Lower Willamette													
	0 WILL2	Clackamas													
	0 WILL3	Middle Willamette													
	0 WILL4	North Santiam													
	0 WILL5	South Santiam													
	0 WILL6	Upper Willamette													
	0 WILL7	Mckenzie													
	0 COLR4	Bonneville Dam													
0.0035714	COLR5	Middle Columbia-Hood		500			0	0					0	0	0
	0 COLR6	The Dalles Dam													
	0 COLR7	Klickitat													
	0 DESC1	Lower Deschutes		0			0	0					0	0	0
	0 COLR8	John Day Dam													
0.00125	COLR9	Umatilla		100			200	0					0	0	0
	0 COLR10	McNary Dam													
	0 COLR11	Hanford Reach													
	0 COLR12	Priest Rapids Dam													
0.00025	JDAR1	Lower John Day		0			100	0					0	0	0
0.0064285	JDAR2	Upper John Day		300			600	0					0	0	0
0.00375	WALLA	Walla Walla		200			200	200					0	0	0
0.0011111	YAKIM1	Lower Yakima		0			100	100					0	0	0
	0 YAKIM2	Naches													
	0 YAKIM3	Upper Yakima		0			0	0					0	0	0
	0 COLR13	Wannapum Dam													
	0 COLR14	Rock Island Dam													
	0 COLR15	Rocky Reach Dam													
0.0299985	COLR16	Upper Columbia-Entiat		200			200	200					0	0	0
0.0025	COLR17	Wenatchee		100			100	100					0	0	0
	0 COLR18	Wells Dam													
	0 COLR19	Okanogan (US)		0			0	0					0	0	0
0.00375	COLR20	Methow		100			100	100					0	0	0
	0 COLR21	Similkameen (US)													
	0 SNAK1	Ice Harbor Dam													
200	SNAK2	Lower Snake													
	0 SNAK3	Lower Monument Dam													
	0 SNAK4	Palouse													
	0 SNAK5	Little Goose Dam													
18000	SNAK6	Lower Snake-Tucannon													
	0 SNAK7	Lower Granite Dam													
2800	SNAK8	Lower Snake-Asotin													
0.003	GRAND1	Lower Grande Ronde		100			100	100					200	400	300

Measurements

Wild

Steelhead

	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults	Adults
Row: Release Group/Subbasin	Lower Columbia	Bonneville Dam	The Dalles Dam	John Day Dam	McNary Dam	Priest Rapids Dam	Wannapum Dam	Rock Island Dam	Rocky Reach Dam	Wells Dam	Ice Harbor Dam	Lower Monument Dam	Little Goose Dam	Lower Granite Dam	
Lower Columbia															
Lower Columbia-Clatskanie															
Lower Columbia-Sandy															
Lower Cowlitz															
Lower Willamette															
Clackamas															
Middle Willamette															
North Santiam															
South Santiam															
Upper Willamette															
Mckenzie															
Bonneville Dam															
Middle Columbia-Hood		200				0	0		0	0	0	0		0	
The Dalles Dam															
Klickitat															
Lower Deschutes															
John Day Dam															
Umatilla		0				0	0		0	0	0	0		0	
McNary Dam															
Hanford Reach															
Priest Rapids Dam															
Lower John Day		0				0	0		0	0	0	0		0	
Upper John Day		200				0	100		0	0	0	0		0	
Walla Walla		100				0	0		0	0	0	0		0	
Lower Yakima						0	0		0	0	0	0		0	
Naches															
Upper Yakima		0				0	0		0	0	0	0		0	
Wannapum Dam															
Rock Island Dam															
Rocky Reach Dam															
Upper Columbia-Entiat			100			0	0		0	0	0	0		0	
Wenatchee			0			0	0		0	0	0	0		0	
Wells Dam															
Okanogan (US)															
Methow		0				0	0		0	0	0	0		0	
Similkameen (US)															
Ice Harbor Dam															
Lower Snake															
Lower Monument Dam															
Palouse															
Little Goose Dam															
Lower Snake-Tucannon															
Lower Granite Dam															
Lower Snake-Asotin															
Lower Grande Ronde		0				0	0		0	0	0	0		0	

Model Assumptions

Catch Levels by Species and Location (hatchery only)

(based on 10-year average of commercial and sport fishery CWT data)

	Chinook: spring and summer	Chinook: fall and other	Coho	Steelhead	Sockeye	Grand Total
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Ocean Fishery Catch

GEN: Alaska	2,800	1,000	-	-	-	3,700
GEN: Canada	3,900	2,900	100	-	-	6,900
GEN: NW Washington	1,200	2,500	3,100	-	-	6,800
GEN: Oregon Coast	900	800	2,600	-	-	4,300
<u>Grand Total</u>	8,700	7,200	5,800	-	-	21,700
Shares of total	40%	33%	27%	0%	0%	100%

Tag Recovery Levels by Species and Location (hatchery only)

(based on 10-year average of commercial and sport fishery CWT data)

	spring and	fall and	Coho	Steelhead	Sockeye	Total
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Ocean Fishery Catch

GEN: Alaska	900	300	-	-	-	1,300
GEN: Canada	1,200	800	-	-	-	2,000
GEN: NW Washington	500	1,000	1,300	-	-	2,800
GEN: Oregon Coast	300	300	900	-	-	1,500
<u>Grand Total</u>	2,900	2,500	2,200	-	-	7,600
Shares of total	38%	33%	29%	0%	0%	100%

Sampling rates implied from CWT data (actual; hatchery only)

(based on 10-year average of commercial and sport fishery CWT data)

	Chinook: spring and summer	Chinook: fall and other	Coho	Steelhead	Sockeye	Grand Total
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Ocean Fishery Catch

GEN: Alaska	32%	30%	-	-	-	-
GEN: Canada	31%	28%	0%	-	-	-
GEN: NW Washington	42%	40%	42%	-	-	-
GEN: Oregon Coast	33%	38%	35%	-	-	-
<u>Average</u>	33%	35%	38%	-	-	-

Model Assumed Destinations of Outmigrating Fish from Region of Origin to Ocean locations
 Assumptions (based on 10-year average of commercial and sport fishery CWT data)

Distribution of fish populations		Chinook:	Chinook:	Coho	Steelhead	Sockeye	Total
		spring and summer	fall and other				
Region of origin	Ocean fishery destinations						
SNAK	GEN: Alaska						3%
SNAK	GEN: Canada		47%				45%
SNAK	GEN: NW Washington		39%				37%
SNAK	GEN: Oregon Coast		14%				13%
SNAK	Grand Total	0%	100%	0%	0%	0%	97%
	Shares of total		100%				
UPCR	GEN: Alaska	8%					8%
UPCR	GEN: Canada	46%	37%				44%
UPCR	GEN: NW Washington	37%	63%				37%
UPCR	GEN: Oregon Coast	9%					10%
UPCR	Grand Total	100%	100%	0%	0%	0%	99%
	Shares of total	95%	4%				
CECR	GEN: Alaska	11%					16%
CECR	GEN: Canada	43%	43%				32%
CECR	GEN: NW Washington	31%	12%	58%			32%
CECR	GEN: Oregon Coast	15%	45%	42%			19%
CECR	Grand Total	100%	100%	100%	0%	0%	99%
CECR	Shares of total	51%	25%	24%			100%
LOCR	GEN: Alaska	15%	56%				7%
LOCR	GEN: Canada	27%		53%			41%
LOCR	GEN: NW Washington	16%		45%			32%
LOCR	GEN: Oregon Coast	42%	44%	2%			18%
LOCR	Grand Total	100%	100%	100%	0%	0%	99%
	Shares of total	40%	2%	58%			100%

In-River Catch Levels by Species and Location (hatchery only)

(based on 10-year average of commercial and sport fishery CWT data)

Model Assumptions	Chinook:	Chinook:				Grand
	spring and summer	fall and other	Coho	Steelhead	Sockeye	Total
Lower Columbia	3,200	1,400	7,500	200	-	12,300
Middle Columbia-Hood	2,900	2,500	1,600	1,000	100	8,000
Lower Columbia-Clatskanie	1,400	400	1,100	300	-	3,200
Lower Columbia-Sandy	1,800	600	200	300	-	2,900
Middle Columbia-Lake Wallula	200	100	-	1,400	-	1,800
Lower Willamette	500	-	200	-	-	700
Lower Grande Ronde	-	-	-	600	-	600
Lower Deschutes	200	-	-	-	-	200
Lower Snake-Tucannon	-	-	-	100	-	100
Wenatchee	100	-	-	-	-	100

In-River Tag Recovery Levels by Species and Location (hatchery only)

(based on 10-year average of commercial and sport fishery CWT data)

Required tagging:	Chinook:	Chinook:				Grand
	spring and summer	fall and other	Coho	Steelhead	Sockeye	Total
Lower Columbia	1,500	500	2,500	-	-	4,500
Middle Columbia-Hood	700	800	400	300	-	2,200
Lower Columbia-Clatskanie	300	100	400	100	-	800
Lower Columbia-Sandy	400	200	100	-	-	700
Middle Columbia-Lake Wallula	100	-	-	300	-	400
Lower Willamette	100	-	-	-	-	100
Lower Grande Ronde	-	-	-	200	-	200
Lower Deschutes	100	-	-	-	-	100
Lower Snake-Tucannon	100	-	-	-	-	100
Wenatchee	-	-	-	-	-	-

Sampling rates implied from CWT data (actual; hatchery only)

(based on 10-year average of commercial and sport fishery CWT data)

	Chinook:	Chinook:				Grand
	spring and summer	fall and other	Coho	Steelhead	Sockeye	Total
Lower Columbia	47%	36%	33%	0%		
Middle Columbia-Hood	24%	32%	25%	30%	0%	
Lower Columbia-Clatskanie	21%	25%	36%	33%		
Lower Columbia-Sandy	22%	33%	50%	0%		
Middle Columbia-Lake Wallula	50%			21%		
Lower Willamette	20%					
Lower Grande Ronde				33%		
Lower Deschutes	50%					
Lower Snake-Tucannon				0%		
Wenatchee	0%					

Summary of assumptions about tagging costs for LP model

Indicates educated guess:

Cost per tag inserted		Recovery costs
Coded Wire Tags	\$ 0.18	
		Per sampled commercial harvest (ocean) \$ 12.00
		Per sampled harvest in-river \$ 9.00
		Adult return to hatchery \$ 5.00
		Spawned carcass \$ 5.00
Capital costs		

Cost per tag inserted		Detection cost	Recovery cost
PIT tags	\$ 4.00		
		Large dam: \$0.00	Per sampled commercial harvest (ocean) \$20
		Tributary: \$0.00	Per sampled harvest in-river \$10
		Hand held: \$10	Adult return to hatchery
			Spawned carcass
Capital costs			

Cost per "tagged" smolt		Recovery costs
PBT (hatchery)	\$ 0.03	
		Per sampled commercial harvest (ocean) \$40
		Per sampled harvest in-river \$40
		Adult return to hatchery \$40
		Spawned carcass \$40
Capital costs		

Cost per "tagged" smolt		Recovery costs
CSI (hatchery)	\$ 0.03	
		Per sampled commercial harvest (ocean) \$40
		Per sampled harvest in-river \$40
		Adult return to hatchery \$40
		Spawned carcass \$40
Capital costs		

Here is more detail on how those costs were calculated.

1. For GSI baseline costs (GSI "tagging"), a simple example is BPA project 2010-026-00 "Chinook and steelhead genotyping for GSI at LGR". CRITFC has a line item to genotype 5,500 samples. The cost for lab supplies, lab tech. salaries, and scientist salaries for this work is ~\$40/fish. Note that most of the 5,500 samples for this project are being genotyped for tag recovery rather than tagging (baseline) purposes. We target about 1,000 samples per species each year for GSI baseline tagging purposes, so \$40 per fish X 1,000 fish = \$40,000.

2. For PBT tagging costs, we also estimate ~\$40 for genotyping each broodstock parent. (\$40 includes lab supplies, lab tech. labor, and

Model Assumptions:

Escapement (estimated) based on CWT data, annual av

* If the model replicates smolts, juvenile survival, ocean harvest and survival, and return survival should come close to these numbers. Thus, these numbers are for calibration purposes only.

Sum of rr2_estimated_total Subbasin	Chinook: spring and	Chinook: fall and other	Coho	Steelhead
Lower Willamette	120	420	6,000	-
Lower Columbia-Clatskanie	2,890	3,210	2,250	-
Lower Columbia-Sandy	10	440	3,200	-
Middle Columbia-Lake Wallula	20	2,960	-	400
Lower Deschutes	2,910	2,620	-	150
Middle Columbia-Hood	580	2,470	450	-
Lewis	660	610	1,810	-
Lower Columbia	820	1,360	750	10
Chief Joseph	2,140	1,930	-	-
Wenatchee	1,640	1,470	-	-
Upper Columbia-Entiat	1,450	1,300	-	-
Lower Cowlitz	-	80	1,220	-
Clackamas	40	30	750	180
Methow	910	820	-	10
Wallowa	220	200	-	650
Okanogan	820	740	-	-
Lower Snake-Tucannon	370	530	-	10
Umatilla	100	360	110	60
Clearwater	230	210	-	230
Hells Canyon	330	300	-	-
Klickitat	310	280	-	-
Lower Grande Ronde	160	140	-	120
South Santiam	240	220	-	-
Upper Grande Ronde	190	170	-	-
North Santiam	160	160	-	-
Imnaha	10	10	-	130
Upper Columbia-Priest Rapids	-	120	-	-
Lake Chelan	110	100	-	-
Walla Walla	90	80	-	10
Middle Fork Clearwater	80	80	-	10