

Table AQ-02-8a-1

Annual Potential Production for Fall-Run Chinook Salmon	
Long-term Average and Average by Water Year Type Annual Production	
Analysis Period	Annual Potential Production (# of Fish/year)
<b>Long-term</b>	
<b>Full Simulation Period<sup>1</sup></b>	
WSIP 2070 Without Project	27,506,156
WSIP 2070 With Project (051617)	28,961,125
Difference	1,454,968
Percent Difference <sup>3</sup>	5.3
<b>Water Year Types<sup>2</sup></b>	
<b>Wet (31.7%)</b>	
WSIP 2070 Without Project	25,412,923
WSIP 2070 With Project (051617)	25,480,397
Difference	67,474
Percent Difference	0.3
<b>Above Normal (13.4%)</b>	
WSIP 2070 Without Project	29,812,869
WSIP 2070 With Project (051617)	30,256,786
Difference	443,918
Percent Difference	1.5
<b>Below Normal (15.9%)</b>	
WSIP 2070 Without Project	31,245,608
WSIP 2070 With Project (051617)	32,632,236
Difference	1,386,628
Percent Difference	4.4
<b>Dry (24.4%)</b>	
WSIP 2070 Without Project	29,025,341
WSIP 2070 With Project (051617)	31,600,086
Difference	2,574,746
Percent Difference	8.9
<b>Critical (14.6%)</b>	
WSIP 2070 Without Project	23,728,415
WSIP 2070 With Project (051617)	27,155,649
Difference	3,427,234
Percent Difference	14.4
1 Based on the 80-year simulation period	
2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.	
3 Relative difference of the annual average	

Table AQ-02-8a-2

Annual Production of Listed Life-stages for Fall-Run Chinook Salmon					
Long-term Average and Average by Water Year Type Annual Production					
Analysis Period	Annual Production (# of Fish/year)				
	Eggs	Fry	Pre-Smolt	Immature-Smolt	Juvenile (Pre & Immature Smolt)
<b>Long-term</b>					
<b>Full Simulation Period<sup>1</sup></b>					
WSIP 2070 Without Project	66,802,729	39,745,462	29,738,072	27,506,157	57,244,229
WSIP 2070 With Project (051617)	70,469,314	41,700,760	31,341,021	28,961,123	60,302,144
Difference	3,666,584	1,955,298	1,602,949	1,454,966	3,057,915
Percent Difference <sup>3</sup>	5.5	4.9	5.4	5.3	5.3
<b>Water Year Types<sup>2</sup></b>					
<b>Wet (31.7%)</b>					
WSIP 2070 Without Project	57,688,581	35,849,822	26,954,465	25,412,922	52,367,387
WSIP 2070 With Project (051617)	57,908,428	35,816,967	27,037,528	25,480,390	52,517,918
Difference	219,847	-32,855	83,063	67,468	150,531
Percent Difference	0.4	-0.1	0.3	0.3	0.3
<b>Above Normal (13.4%)</b>					
WSIP 2070 Without Project	79,133,395	42,164,394	31,719,612	29,812,866	61,532,478
WSIP 2070 With Project (051617)	80,504,051	42,644,584	32,235,112	30,256,787	62,491,899
Difference	1,370,656	480,190	515,501	443,921	959,421
Percent Difference	1.7	1.1	1.6	1.5	1.6
<b>Below Normal (15.9%)</b>					
WSIP 2070 Without Project	80,795,468	45,240,251	33,853,155	31,245,608	65,098,764
WSIP 2070 With Project (051617)	83,952,001	46,680,104	35,174,583	32,632,231	67,806,814
Difference	3,156,533	1,439,853	1,321,428	1,386,623	2,708,051
Percent Difference	3.9	3.2	3.9	4.4	4.2
<b>Dry (24.4%)</b>					
WSIP 2070 Without Project	70,971,933	42,370,664	31,610,881	29,025,347	60,636,228
WSIP 2070 With Project (051617)	77,502,762	46,142,480	34,532,123	31,600,087	66,132,210
Difference	6,530,830	3,771,816	2,921,242	2,574,740	5,495,983
Percent Difference	9.2	8.9	9.2	8.9	9.1
<b>Critical (14.6%)</b>					
WSIP 2070 Without Project	55,194,579	36,043,794	26,703,713	23,728,412	50,432,125
WSIP 2070 With Project (051617)	63,829,854	40,943,956	30,523,160	27,155,656	57,678,816
Difference	8,635,275	4,900,161	3,819,447	3,427,244	7,246,690
Percent Difference	15.6	13.6	14.3	14.4	14.4
1 Based on the 80-year simulation period					
2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.					
3 Relative difference of the annual average					

Figure AQ-02-8a

Annual Potential Production for Fall-Run Chinook Salmon

— WSIP 2070 Without Project

— WSIP 2070 With Project (051617)

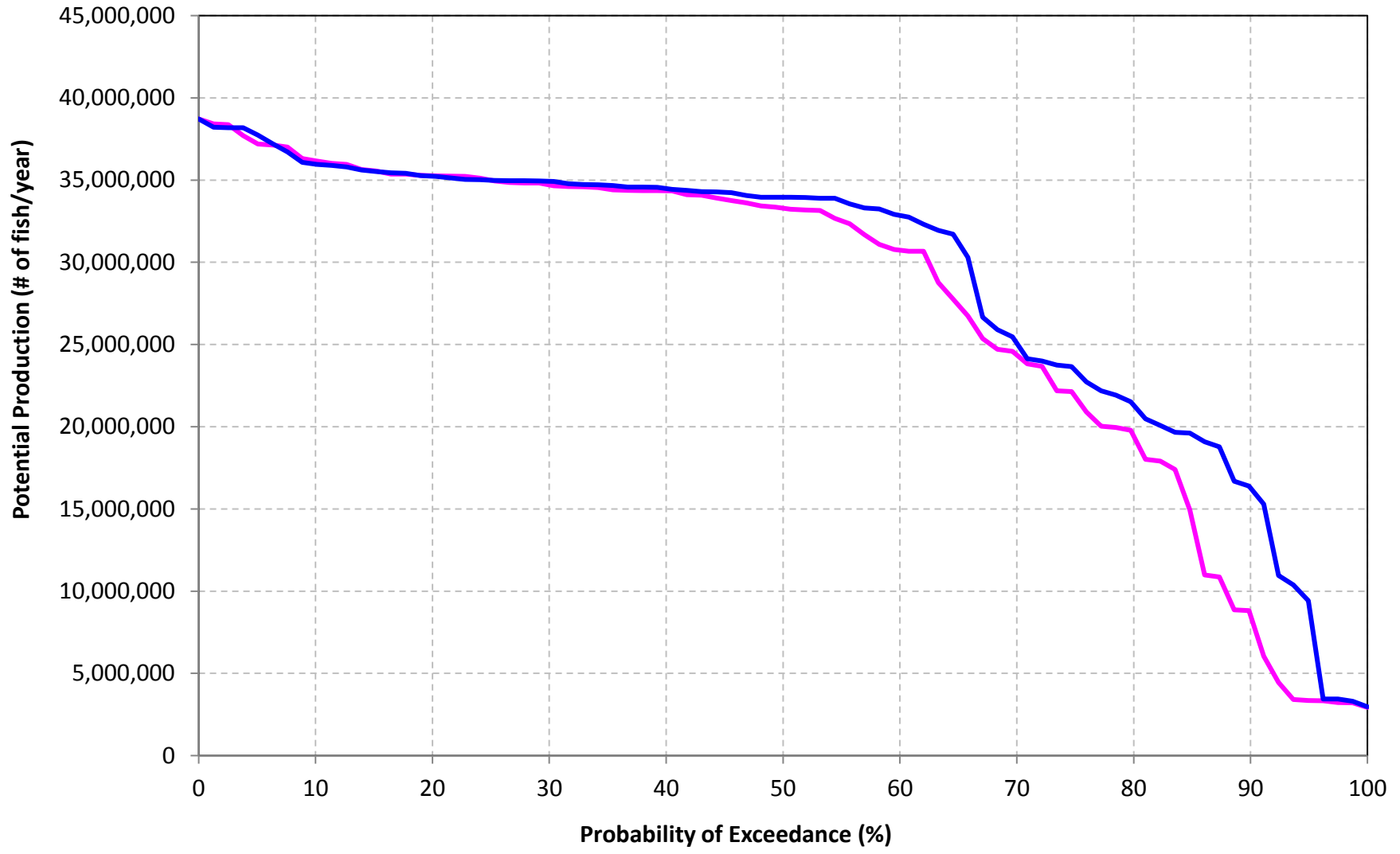


Table AQ-02-8b-1

<b>Annual Potential Production for LateFall-Run Chinook Salmon</b>	
<b>Long-term Average and Average by Water Year Type Annual Production</b>	
<b>Analysis Period</b>	<b>Annual Potential Production (# of Fish/year)</b>
<b>Long-term</b>	
<b>Full Simulation Period<sup>1</sup></b>	
WSIP 2070 Without Project	7,525,505
WSIP 2070 With Project (051617)	7,761,100
Difference	<b>235,595</b>
Percent Difference <sup>3</sup>	<b>3.1</b>
<b>Water Year Types<sup>2</sup></b>	
<b>Wet (31.7%)</b>	
WSIP 2070 Without Project	7,192,368
WSIP 2070 With Project (051617)	7,198,300
Difference	<b>5,932</b>
Percent Difference	<b>0.1</b>
<b>Above Normal (13.4%)</b>	
WSIP 2070 Without Project	7,907,833
WSIP 2070 With Project (051617)	7,982,971
Difference	<b>75,138</b>
Percent Difference	<b>1.0</b>
<b>Below Normal (15.9%)</b>	
WSIP 2070 Without Project	8,424,622
WSIP 2070 With Project (051617)	8,499,441
Difference	<b>74,820</b>
Percent Difference	<b>0.9</b>
<b>Dry (24.4%)</b>	
WSIP 2070 Without Project	8,391,552
WSIP 2070 With Project (051617)	8,561,417
Difference	<b>169,866</b>
Percent Difference	<b>2.0</b>
<b>Critical (14.6%)</b>	
WSIP 2070 Without Project	5,543,102
WSIP 2070 With Project (051617)	6,680,369
Difference	<b>1,137,267</b>
Percent Difference	<b>20.5</b>
<sup>1</sup> Based on the 80-year simulation period <sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD. <sup>3</sup> Relative difference of the annual average	

Table AQ-02-8b-2

Annual Production of Listed Life-stages for LateFall-Run Chinook Salmon					
Long-term Average and Average by Water Year Type Annual Production					
Analysis Period	Annual Production (# of Fish/year)				
	Eggs	Fry	Pre-Smolt	Immature-Smolt	Juvenile (Pre & Immature Smolt)
<b>Long-term</b>					
<b>Full Simulation Period<sup>1</sup></b>					
WSIP 2070 Without Project	17,320,979	11,552,665	8,525,730	7,525,505	16,051,235
WSIP 2070 With Project (051617)	17,423,148	11,661,940	8,705,389	7,761,100	16,466,489
Difference	102,170	109,275	179,659	235,595	415,254
Percent Difference <sup>3</sup>	0.6	0.9	2.1	3.1	2.6
<b>Water Year Types<sup>2</sup></b>					
<b>Wet (31.7%)</b>					
WSIP 2070 Without Project	14,468,941	10,106,996	7,663,658	7,192,368	14,856,026
WSIP 2070 With Project (051617)	14,513,491	10,129,672	7,684,042	7,198,300	14,882,341
Difference	44,550	22,677	20,384	5,932	26,315
Percent Difference	0.3	0.2	0.3	0.1	0.2
<b>Above Normal (13.4%)</b>					
WSIP 2070 Without Project	16,294,129	11,178,837	8,480,413	7,907,833	16,388,246
WSIP 2070 With Project (051617)	16,337,543	11,317,107	8,584,625	7,982,971	16,567,596
Difference	43,414	138,270	104,212	75,138	179,350
Percent Difference	0.3	1.2	1.2	1.0	1.1
<b>Below Normal (15.9%)</b>					
WSIP 2070 Without Project	18,895,626	12,234,839	9,314,698	8,424,622	17,739,320
WSIP 2070 With Project (051617)	18,947,648	12,288,131	9,362,074	8,499,441	17,861,515
Difference	52,022	53,292	47,376	74,820	122,195
Percent Difference	0.3	0.4	0.5	0.9	0.7
<b>Dry (24.4%)</b>					
WSIP 2070 Without Project	19,144,710	12,450,690	9,486,442	8,391,552	17,877,994
WSIP 2070 With Project (051617)	19,319,273	12,643,389	9,634,702	8,561,417	18,196,119
Difference	174,564	192,698	148,259	169,866	318,125
Percent Difference	0.9	1.5	1.6	2.0	1.8
<b>Critical (14.6%)</b>					
WSIP 2070 Without Project	19,525,110	12,729,589	7,971,637	5,543,102	13,514,739
WSIP 2070 With Project (051617)	19,729,859	12,926,357	8,748,617	6,680,369	15,428,985
Difference	204,749	196,769	776,980	1,137,267	1,914,247
Percent Difference	1.0	1.5	9.7	20.5	14.2

<sup>1</sup> Based on the 80-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.

<sup>3</sup> Relative difference of the annual average

Figure AQ-02-8b

Annual Potential Production for LateFall-Run Chinook Salmon

WSIP 2070 Without Project

WSIP 2070 With Project (051617)

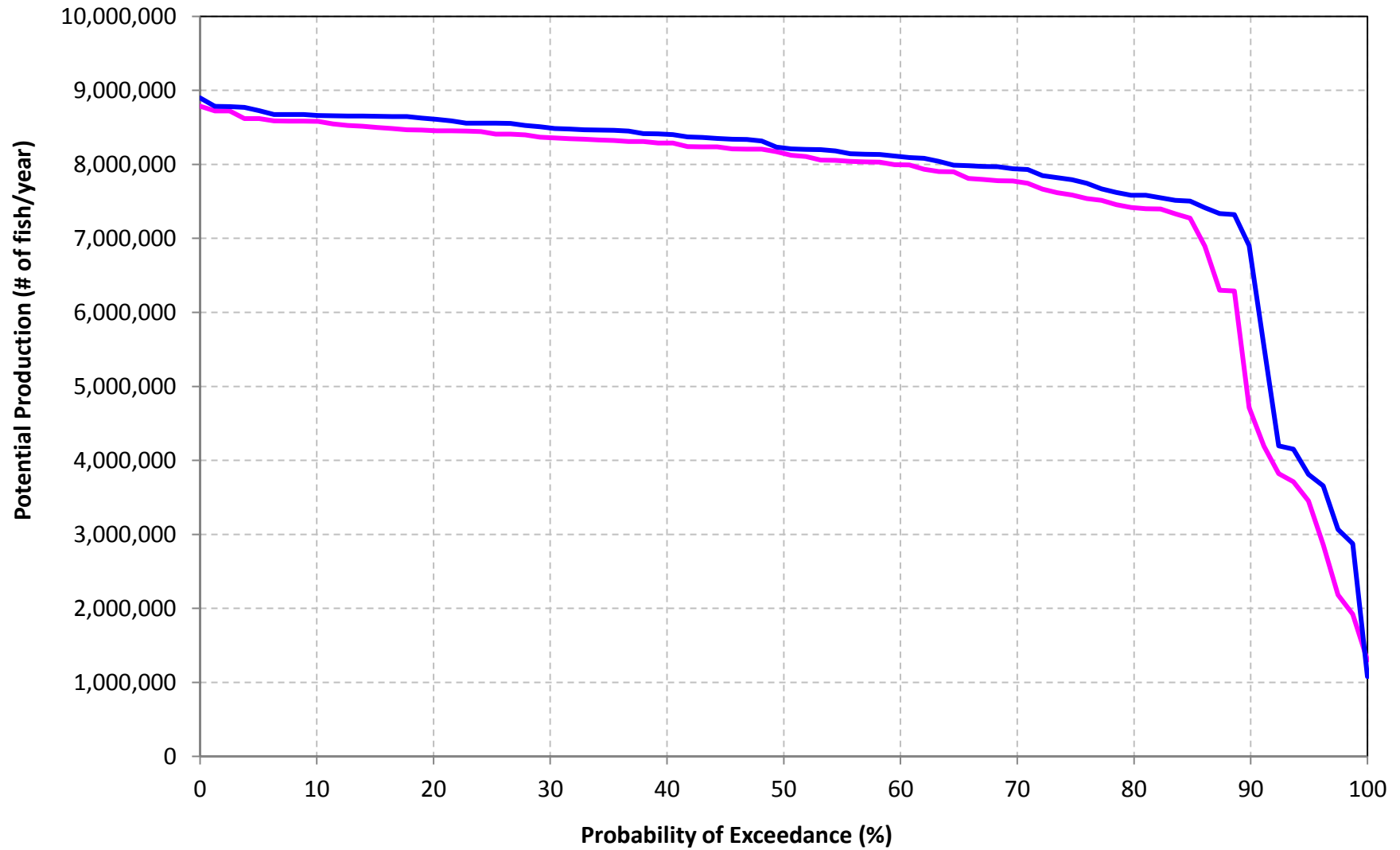


Table AQ-02-8d-1

Annual Potential Production for Spring-Run Chinook Salmon	
Long-term Average and Average by Water Year Type Annual Production	
Analysis Period	Annual Potential Production (# of Fish/year)
<b>Long-term</b>	
<b>Full Simulation Period<sup>1</sup></b>	
WSIP 2070 Without Project	688,048
WSIP 2070 With Project (051617)	735,116
Difference	47,068
Percent Difference <sup>3</sup>	6.8
<b>Water Year Types<sup>2</sup></b>	
<b>Wet (31.7%)</b>	
WSIP 2070 Without Project	841,504
WSIP 2070 With Project (051617)	880,853
Difference	39,348
Percent Difference	4.7
<b>Above Normal (13.4%)</b>	
WSIP 2070 Without Project	940,188
WSIP 2070 With Project (051617)	940,334
Difference	145
Percent Difference	0.0
<b>Below Normal (15.9%)</b>	
WSIP 2070 Without Project	824,432
WSIP 2070 With Project (051617)	893,867
Difference	69,435
Percent Difference	8.4
<b>Dry (24.4%)</b>	
WSIP 2070 Without Project	661,298
WSIP 2070 With Project (051617)	730,899
Difference	69,601
Percent Difference	10.5
<b>Critical (14.6%)</b>	
WSIP 2070 Without Project	53,644
WSIP 2070 With Project (051617)	96,619
Difference	42,975
Percent Difference	80.1
1 Based on the 80-year simulation period	
2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.	
3 Relative difference of the annual average	

Table AQ-02-8d-2

Annual Production of Listed Life-stages for Spring-Run Chinook Salmon					
Long-term Average and Average by Water Year Type Annual Production					
Analysis Period	Annual Production (# of Fish/year)				
	Eggs	Fry	Pre-Smolt	Immature-Smolt	Juvenile (Pre & Immature Smolt)
<b>Long-term</b>					
<b>Full Simulation Period<sup>1</sup></b>					
WSIP 2070 Without Project	1,100,788	934,223	695,287	688,048	1,383,336
WSIP 2070 With Project (051617)	1,172,288	995,815	742,841	735,116	1,477,957
Difference	71,500	61,592	47,554	47,068	94,622
Percent Difference <sup>3</sup>	6.5	6.6	6.8	6.8	6.8
<b>Water Year Types<sup>2</sup></b>					
<b>Wet (31.7%)</b>					
WSIP 2070 Without Project	1,337,752	1,135,643	848,268	841,504	1,689,772
WSIP 2070 With Project (051617)	1,398,534	1,186,464	887,857	880,853	1,768,710
Difference	60,782	50,822	39,590	39,348	78,938
Percent Difference	4.5	4.5	4.7	4.7	4.7
<b>Above Normal (13.4%)</b>					
WSIP 2070 Without Project	1,492,664	1,266,374	949,214	940,188	1,889,403
WSIP 2070 With Project (051617)	1,491,883	1,268,031	950,507	940,334	1,890,841
Difference	-781	1,657	1,293	145	1,438
Percent Difference	-0.1	0.1	0.1	0.0	0.1
<b>Below Normal (15.9%)</b>					
WSIP 2070 Without Project	1,330,477	1,127,004	833,056	824,432	1,657,488
WSIP 2070 With Project (051617)	1,431,812	1,216,078	902,685	893,867	1,796,553
Difference	101,335	89,074	69,629	69,435	139,065
Percent Difference	7.6	7.9	8.4	8.4	8.4
<b>Dry (24.4%)</b>					
WSIP 2070 Without Project	1,067,309	906,233	670,389	661,298	1,331,687
WSIP 2070 With Project (051617)	1,172,648	996,742	740,234	730,899	1,471,133
Difference	105,338	90,509	69,846	69,601	139,446
Percent Difference	9.9	10.0	10.4	10.5	10.5
<b>Critical (14.6%)</b>					
WSIP 2070 Without Project	86,911	74,891	55,953	53,644	109,597
WSIP 2070 With Project (051617)	155,637	134,086	100,084	96,619	196,703
Difference	68,725	59,195	44,131	42,975	87,106
Percent Difference	79.1	79.0	78.9	80.1	79.5
1 Based on the 80-year simulation period					
2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.					
3 Relative difference of the annual average					



Figure AQ-02-8d

Annual Potential Production for Spring-Run Chinook Salmon

— WSIP 2070 Without Project

— WSIP 2070 With Project (051617)

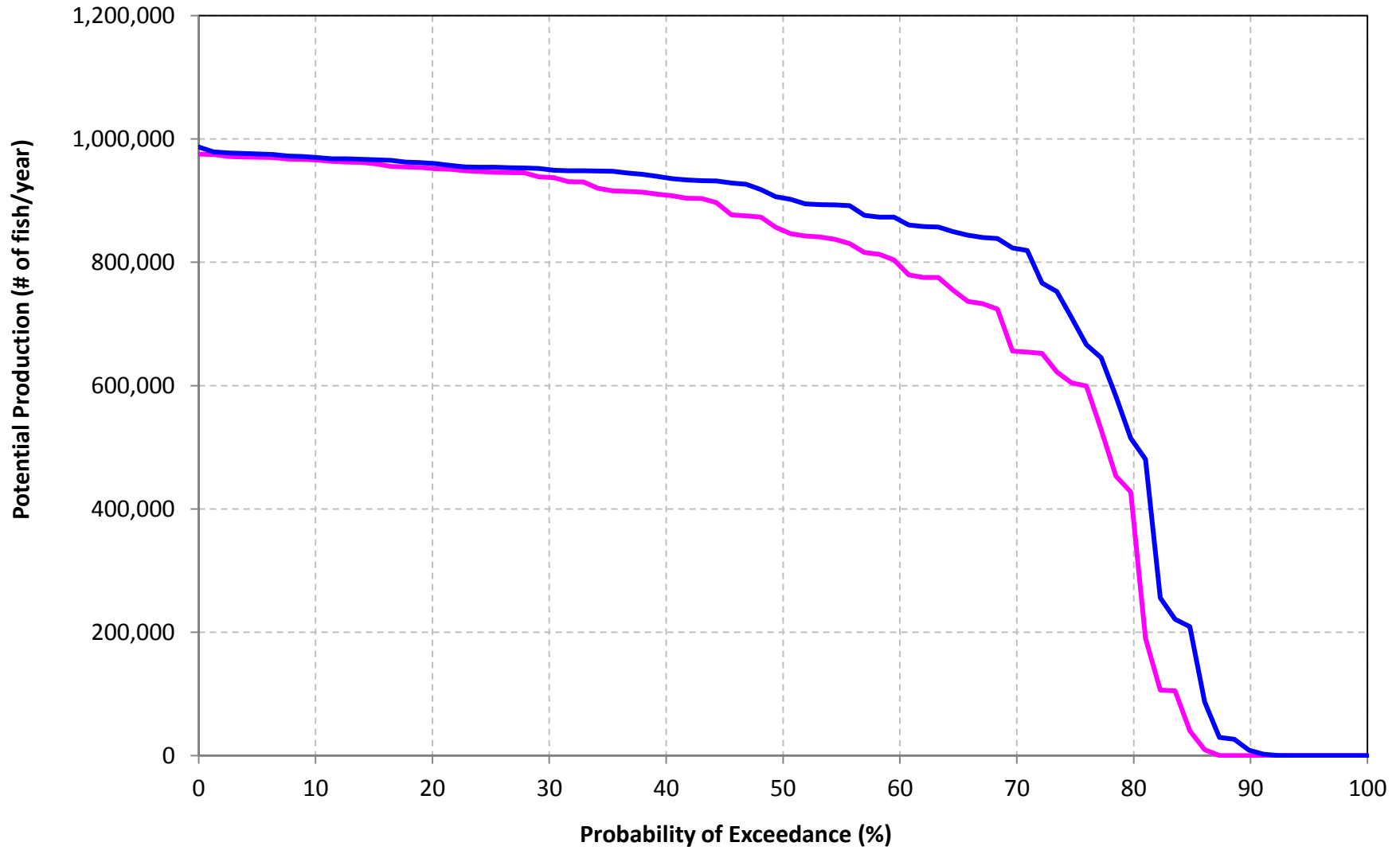


Table AQ-02-8c-1

Annual Potential Production for Winter-Run Chinook Salmon	
Long-term Average and Average by Water Year Type Annual Production	
Analysis Period	Annual Potential Production (# of Fish/year)
<b>Long-term</b>	
<b>Full Simulation Period<sup>1</sup></b>	
WSIP 2070 Without Project	3,711,513
WSIP 2070 With Project (051617)	3,795,947
Difference	84,433
Percent Difference <sup>3</sup>	2.3
<b>Water Year Types<sup>2</sup></b>	
<b>Wet (31.7%)</b>	
WSIP 2070 Without Project	3,797,785
WSIP 2070 With Project (051617)	3,811,750
Difference	13,965
Percent Difference	0.4
<b>Above Normal (13.4%)</b>	
WSIP 2070 Without Project	3,975,686
WSIP 2070 With Project (051617)	3,944,356
Difference	-31,330
Percent Difference	-0.8
<b>Below Normal (15.9%)</b>	
WSIP 2070 Without Project	4,138,983
WSIP 2070 With Project (051617)	4,045,042
Difference	-93,942
Percent Difference	-2.3
<b>Dry (24.4%)</b>	
WSIP 2070 Without Project	4,069,620
WSIP 2070 With Project (051617)	4,057,150
Difference	-12,471
Percent Difference	-0.3
<b>Critical (14.6%)</b>	
WSIP 2070 Without Project	2,280,132
WSIP 2070 With Project (051617)	2,953,599
Difference	673,467
Percent Difference	29.5
1 Based on the 80-year simulation period	
2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.	
3 Relative difference of the annual average	

Table AQ-02-8c-2

Annual Production of Listed Life-stages for Winter-Run Chinook Salmon					
Long-term Average and Average by Water Year Type Annual Production					
Analysis Period	Annual Production (# of Fish/year)				
	Eggs	Fry	Pre-Smolt	Immature-Smolt	Juvenile (Pre & Immature Smolt)
<b>Long-term</b>					
<b>Full Simulation Period<sup>1</sup></b>					
WSIP 2070 Without Project	7,093,004	5,269,738	3,920,296	3,711,513	7,631,810
WSIP 2070 With Project (051617)	7,240,949	5,346,659	4,013,690	3,795,947	7,809,637
Difference	147,945	76,921	93,394	84,433	177,827
Percent Difference <sup>3</sup>	2.1	1.5	2.4	2.3	2.3
<b>Water Year Types<sup>2</sup></b>					
<b>Wet (31.7%)</b>					
WSIP 2070 Without Project	7,236,467	5,199,552	3,948,294	3,797,785	7,746,079
WSIP 2070 With Project (051617)	7,313,715	5,230,802	3,966,296	3,811,750	7,778,046
Difference	77,248	31,250	18,002	13,965	31,967
Percent Difference	1.1	0.6	0.5	0.4	0.4
<b>Above Normal (13.4%)</b>					
WSIP 2070 Without Project	7,293,631	5,461,924	4,147,176	3,975,686	8,122,862
WSIP 2070 With Project (051617)	7,290,566	5,428,131	4,119,775	3,944,356	8,064,131
Difference	-3,066	-33,794	-27,401	-31,330	-58,731
Percent Difference	0.0	-0.6	-0.7	-0.8	-0.7
<b>Below Normal (15.9%)</b>					
WSIP 2070 Without Project	7,284,193	5,730,207	4,366,245	4,138,983	8,505,228
WSIP 2070 With Project (051617)	7,402,222	5,602,119	4,269,847	4,045,042	8,314,888
Difference	118,029	-128,088	-96,398	-93,942	-190,340
Percent Difference	1.6	-2.2	-2.2	-2.3	-2.2
<b>Dry (24.4%)</b>					
WSIP 2070 Without Project	7,426,183	5,704,789	4,356,553	4,069,620	8,426,173
WSIP 2070 With Project (051617)	7,502,088	5,660,478	4,341,637	4,057,150	8,398,786
Difference	75,905	-44,312	-14,916	-12,471	-27,387
Percent Difference	1.0	-0.8	-0.3	-0.3	-0.3
<b>Critical (14.6%)</b>					
WSIP 2070 Without Project	5,868,493	4,076,098	2,497,526	2,280,132	4,777,658
WSIP 2070 With Project (051617)	6,445,439	4,751,297	3,225,237	2,953,599	6,178,836
Difference	576,946	675,200	727,711	673,467	1,401,178
Percent Difference	9.8	16.6	29.1	29.5	29.3
1 Based on the 80-year simulation period					
2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB 1995). Water years may not correspond to the biological years in SALMOD.					
3 Relative difference of the annual average					

Figure AQ-02-8c

Annual Potential Production for Winter-Run Chinook Salmon

WSIP 2070 Without Project

WSIP 2070 With Project (051617)

