

APPENDIX 5A, SECTION E
MODELING TECHNICAL APPENDIX –
ATTACHMENT 3 – SALMOD MODEL RESULTS
FOR NO PROJECT ALTERNATIVE AND
ALTERNATIVES AT 2040

5A-E. Appendix 5A, Section E Modeling Technical Appendix – Attachment 3 – SALMOD	
Model Results for No Project Alternative and Alternatives at 2040.....	E-1
E.1 Production Results	E-2
E.1.1 Fall-Run Chinook Salmon Production	E-2
E.1.2 Late Fall-Run Chinook Salmon Production.....	E-7
E.1.3 Spring-Run Chinook Salmon Production.....	E-11
E.1.4 Winter-Run Chinook Salmon Production.....	E-15
E.2 Mortality Results.....	E-19
E.2.1 Fall-Run Chinook Salmon Mortality	E-19
E.2.2 Late Fall-Run Chinook Salmon Mortality	E-28
E.2.3 Spring-Run Chinook Salmon Mortality	E-37
E.2.4 Winter-Run Chinook Salmon Mortality	E-46
E.3 References	E-55

Tables

Table 5A-E3.1.1.1-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), No Project Alternative	E-2
Table 5A-E3.1.1.1-B. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2040)	E-2
Table 5A-E3.1.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-2
Table 5A-E3.1.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-3
Table 5A-E3.1.1.2-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2040)	E-3
Table 5A-E3.1.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-3
Table 5A-E3.1.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-3
Table 5A-E3.1.1.3-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2040)	E-4
Table 5A-E3.1.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2040) minus No Project Alternative.....	E-4
Table 5A-E3.1.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2040) minus No Project Alternative	E-4
Table 5A-E3.1.1.4-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2040).....	E-4

1	Table 5A-E3.1.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Production	
2	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative.....	E-5
3	Table 5A-E3.1.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production	
4	(percentage), Alternative 2a/4a (2040) minus No Project Alternative	E-5
5	Table 5A-E3.1.1.5-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per	
6	year), Alternative 5 (2040).....	E-5
7	Table 5A-E3.1.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Production	
8	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-5
9	Table 5A-E3.1.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production	
10	(percentage), Alternative 5 (2040) minus No Project Alternative	E-6
11	Table 5A-E3.1.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish	
12	per year), No Project Alternative	E-7
13	Table 5A-E3.1.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish	
14	per year), Alternative 2b/4b (2040).....	E-7
15	Table 5A-E3.1.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Production	
16	(number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-7
17	Table 5A-E3.1.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
18	Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-7
19	Table 5A-E3.1.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish	
20	per year), Alternative 2c/4c (2040).....	E-8
21	Table 5A-E3.1.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production	
22	(number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-8
23	Table 5A-E3.1.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
24	Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-8
25	Table 5A-E3.1.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish	
26	per year), Alternative 1/3 (2040)	E-8
27	Table 5A-E3.1.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production	
28	(number of fish per year), Alternative 1/3 (2040) minus No Project Alternative.....	E-9
29	Table 5A-E3.1.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
30	Production (percentage), Alternative 1/3 (2040) minus No Project Alternative.....	E-9
31	Table 5A-E3.1.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish	
32	per year), Alternative 2a/4a (2040)	E-9
33	Table 5A-E3.1.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production	
34	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative.....	E-9
35	Table 5A-E3.1.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
36	Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative.....	E-10
37	Table 5A-E3.1.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish	
38	per year), Alternative 5 (2040).....	E-10
39	Table 5A-E3.1.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production	
40	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-10
41	Table 5A-E3.1.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
42	Production (percentage), Alternative 5 (2040) minus No Project Alternative	E-10

1	Table 5A-E3.1.3.1-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish	
2	per year), No Project Alternative	E-11
3	Table 5A-E3.1.3.1-B. Spring-Run Chinook Salmon, Annual Average Production (number of fish	
4	per year), Alternative 2b/4b (2040)	E-11
5	Table 5A-E3.1.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Production	
6	(number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-11
7	Table 5A-E3.1.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
8	Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-11
9	Table 5A-E3.1.3.2-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish	
10	per year), Alternative 2c/4c (2040)	E-12
11	Table 5A-E3.1.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
12	(number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-12
13	Table 5A-E3.1.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
14	Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-12
15	Table 5A-E3.1.3.3-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish	
16	per year), Alternative 1/3 (2040)	E-12
17	Table 5A-E3.1.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
18	(number of fish per year), Alternative 1/3 (2040) minus No Project Alternative	E-13
19	Table 5A-E3.1.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
20	Production (percentage), Alternative 1/3 (2040) minus No Project Alternative	E-13
21	Table 5A-E3.1.3.4-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish	
22	per year), Alternative 2a/4a (2040)	E-13
23	Table 5A-E3.1.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
24	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative	E-13
25	Table 5A-E3.1.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
26	Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative	E-14
27	Table 5A-E3.1.3.5-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish	
28	per year), Alternative 5 (2040)	E-14
29	Table 5A-E3.1.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Production	
30	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-14
31	Table 5A-E3.1.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
32	Production (percentage), Alternative 5 (2040) minus No Project Alternative	E-14
33	Table 5A-E3.1.4.1-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish	
34	per year), No Project Alternative	E-15
35	Table 5A-E3.1.4.1-B. Winter-Run Chinook Salmon, Annual Average Production (number of fish	
36	per year), Alternative 2b/4b (2040)	E-15
37	Table 5A-E3.1.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Production	
38	(number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-15
39	Table 5A-E3.1.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
40	Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-15
41	Table 5A-E3.1.4.2-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish	
42	per year), Alternative 2c/4c (2040)	E-16

1	Table 5A-E3.1.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
2	(number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-16
3	Table 5A-E3.1.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
4	Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-16
5	Table 5A-E3.1.4.3-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish	
6	per year), Alternative 1/3 (2040)	E-16
7	Table 5A-E3.1.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
8	(number of fish per year), Alternative 1/3 (2040) minus No Project Alternative.....	E-17
9	Table 5A-E3.1.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
10	Production (percentage), Alternative 1/3 (2040) minus No Project Alternative.....	E-17
11	Table 5A-E3.1.4.4-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish	
12	per year), Alternative 2a/4a (2040)	E-17
13	Table 5A-E3.1.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
14	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative.....	E-17
15	Table 5A-E3.1.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
16	Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative.....	E-18
17	Table 5A-E3.1.4.5-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish	
18	per year), Alternative 5 (2040).....	E-18
19	Table 5A-E3.1.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Production	
20	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-18
21	Table 5A-E3.1.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
22	Production (percentage), Alternative 5 (2040) minus No Project Alternative	E-18
23	Table 5A-E3.2.1.1-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per	
24	year), No Project Alternative	E-20
25	Table 5A-E3.2.1.1-B. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per	
26	year), Alternative 2b/4b (2040)	E-20
27	Table 5A-E3.2.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number	
28	of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-21
29	Table 5A-E3.2.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality	
30	(percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-21
31	Table 5A-E3.2.1.2-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per	
32	year), Alternative 2c/4c (2040)	E-22
33	Table 5A-E3.2.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number	
34	of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-22
35	Table 5A-E3.2.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality	
36	(percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-23
37	Table 5A-E3.2.1.3-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per	
38	year), Alternative 1/3 (2040)	E-23
39	Table 5A-E3.2.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number	
40	of fish per year), Alternative 1/3 (2040) minus No Project Alternative	E-24
41	Table 5A-E3.2.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality	
42	(percentage), Alternative 1/3 (2040) minus No Project Alternative	E-24

1	Table 5A-E3.2.1.4-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per	
2	year), Alternative 2a/4a (2040).....	E-25
3	Table 5A-E3.2.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number	
4	of fish per year), Alternative 2a/4a (2040) minus No Project Alternative.....	E-25
5	Table 5A-E3.2.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality	
6	(percentage), Alternative 2a/4a (2040) minus No Project Alternative	E-26
7	Table 5A-E3.2.1.5-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per	
8	year), Alternative 5 (2040)	E-26
9	Table 5A-E3.2.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number	
10	of fish per year), Alternative 5 (2040) minus No Project Alternative	E-27
11	Table 5A-E3.2.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality	
12	(percentage), Alternative 5 (2040) minus No Project Alternative	E-27
13	Table 5A-E3.2.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
14	per year), No Project Alternative	E-29
15	Table 5A-E3.2.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
16	per year), Alternative 2b/4b (2040).....	E-29
17	Table 5A-E3.2.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
18	(number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-30
19	Table 5A-E3.2.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
20	Mortality (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-30
21	Table 5A-E3.2.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
22	per year), Alternative 2c/4c (2040).....	E-31
23	Table 5A-E3.2.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
24	(number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-31
25	Table 5A-E3.2.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
26	Mortality (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-32
27	Table 5A-E3.2.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
28	per year), Alternative 1/3 (2040)	E-32
29	Table 5A-E3.2.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
30	(number of fish per year), Alternative 1/3 (2040) minus No Project Alternative.....	E-33
31	Table 5A-E3.2.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
32	Mortality (percentage), Alternative 1/3 (2040) minus No Project Alternative	E-33
33	Table 5A-E3.2.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
34	per year), Alternative 2a/4a (2040)	E-34
35	Table 5A-E3.2.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
36	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative.....	E-34
37	Table 5A-E3.2.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
38	Mortality (percentage), Alternative 2a/4a (2040) minus No Project Alternative	E-35
39	Table 5A-E3.2.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish	
40	per year), Alternative 5 (2040).....	E-35
41	Table 5A-E3.2.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality	
42	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-36

1	Table 5A-E3.2.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average	
2	Mortality (percentage), Alternative 5 (2040) minus No Project Alternative	E-36
3	Table 5A-E3.2.3.1-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per	
4	year), No Project Alternative	E-38
5	Table 5A-E3.2.3.1-B. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per	
6	year), Alternative 2b/4b (2040)	E-38
7	Table 5A-E3.2.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
8	(number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-39
9	Table 5A-E3.2.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
10	Mortality (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-39
11	Table 5A-E3.2.3.2-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per	
12	year), Alternative 2c/4c (2040)	E-40
13	Table 5A-E3.2.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
14	(number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-40
15	Table 5A-E3.2.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
16	Mortality (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-41
17	Table 5A-E3.2.3.3-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per	
18	year), Alternative 1/3 (2040)	E-41
19	Table 5A-E3.2.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
20	(number of fish per year), Alternative 1/3 (2040) minus No Project Alternative	E-42
21	Table 5A-E3.2.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
22	Mortality (percentage), Alternative 1/3 (2040) minus No Project Alternative	E-42
23	Table 5A-E3.2.3.4-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per	
24	year), Alternative 2a/4a (2040)	E-43
25	Table 5A-E3.2.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
26	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative	E-43
27	Table 5A-E3.2.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
28	Mortality (percentage), Alternative 2a/4a (2040) minus No Project Alternative	E-44
29	Table 5A-E3.2.3.5-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per	
30	year), Alternative 5 (2040)	E-44
31	Table 5A-E3.2.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality	
32	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-45
33	Table 5A-E3.2.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average	
34	Mortality (percentage), Alternative 5 (2040) minus No Project Alternative	E-45
35	Table 5A-E3.2.4.1-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per	
36	year), No Project Alternative	E-47
37	Table 5A-E3.2.4.1-B. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per	
38	year), Alternative 2b/4b (2040)	E-47
39	Table 5A-E3.2.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
40	(number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative	E-48
41	Table 5A-E3.2.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
42	Mortality (percentage), Alternative 2b/4b (2040) minus No Project Alternative	E-48

1	Table 5A-E3.2.4.2-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per	
2	year), Alternative 2c/4c (2040)	E-49
3	Table 5A-E3.2.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
4	(number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative	E-49
5	Table 5A-E3.2.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
6	Mortality (percentage), Alternative 2c/4c (2040) minus No Project Alternative	E-50
7	Table 5A-E3.2.4.3-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per	
8	year), Alternative 1/3 (2040)	E-50
9	Table 5A-E3.2.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
10	(number of fish per year), Alternative 1/3 (2040) minus No Project Alternative.....	E-51
11	Table 5A-E3.2.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
12	Mortality (percentage), Alternative 1/3 (2040) minus No Project Alternative	E-51
13	Table 5A-E3.2.4.4-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per	
14	year), Alternative 2a/4a (2040).....	E-52
15	Table 5A-E3.2.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
16	(number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative.....	E-52
17	Table 5A-E3.2.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
18	Mortality (percentage), Alternative 2a/4a (2040) minus No Project Alternative	E-53
19	Table 5A-E3.2.4.5-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per	
20	year), Alternative 5 (2040).....	E-53
21	Table 5A-E3.2.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality	
22	(number of fish per year), Alternative 5 (2040) minus No Project Alternative	E-54
23	Table 5A-E3.2.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average	
24	Mortality (percentage), Alternative 5 (2040) minus No Project Alternative	E-54
25		

Appendix 5A, Section E
Modeling Technical Appendix – Attachment 3 –
SALMOD Model Results for No Project Alternative and
Alternatives at 2040

This attachment provides a summary of SALMOD results for simulations conducted for the Delta Conveyance Project Final Environmental Impact Report (EIR).

E.1 Production Results

E.1.1 Fall-Run Chinook Salmon Production

Table 5A-E3.1.1.1-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), No Project Alternative

Average	Annual Potential Production
Full Simulation Period	14,095,921
Wet Water Years	13,378,425
Above Normal Water Years	15,172,867
Below Normal Water Years	14,778,016
Dry Water Years	14,704,461
Critical Water Years	13,163,233

Table 5A-E3.1.1.1-B. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2040)

Average	Annual Potential Production
Full Simulation Period	14,120,869
Wet Water Years	13,425,300
Above Normal Water Years	15,128,491
Below Normal Water Years	14,798,162
Dry Water Years	14,688,989
Critical Water Years	13,231,660

Table 5A-E3.1.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	24,948
Wet Water Years	46,875
Above Normal Water Years	-44,376
Below Normal Water Years	20,146
Dry Water Years	-15,472
Critical Water Years	68,427

Table 5A-E3.1.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

Table 5A-E3.1.1.2-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2040)

Average	Annual Potential Production
Full Simulation Period	14,116,054
Wet Water Years	13,398,817
Above Normal Water Years	15,119,944
Below Normal Water Years	14,793,778
Dry Water Years	14,691,547
Critical Water Years	13,279,388

Table 5A-E3.1.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	20,134
Wet Water Years	20,393
Above Normal Water Years	-52,923
Below Normal Water Years	15,762
Dry Water Years	-12,914
Critical Water Years	116,155

Table 5A-E3.1.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

Table 5A-E3.1.1.3-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2040)

Average	Annual Potential Production
Full Simulation Period	14,217,889
Wet Water Years	13,495,263
Above Normal Water Years	15,116,197
Below Normal Water Years	14,794,043
Dry Water Years	14,789,988
Critical Water Years	13,690,453

Table 5A-E3.1.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	121,968
Wet Water Years	116,838
Above Normal Water Years	-56,670
Below Normal Water Years	16,027
Dry Water Years	85,528
Critical Water Years	527,220

Table 5A-E3.1.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	1%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	1%
Critical Water Years	4%

Table 5A-E3.1.1.4-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2040)

Average	Annual Potential Production
Full Simulation Period	14,234,988
Wet Water Years	13,518,040
Above Normal Water Years	15,181,873
Below Normal Water Years	14,782,809
Dry Water Years	14,742,908
Critical Water Years	13,795,818

Table 5A-E3.1.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	139,067
Wet Water Years	139,615
Above Normal Water Years	9,006
Below Normal Water Years	4,793
Dry Water Years	38,448
Critical Water Years	632,585

Table 5A-E3.1.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	1%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	5%

Table 5A-E3.1.1.5-A. Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2040)

Average	Annual Potential Production
Full Simulation Period	14,218,123
Wet Water Years	13,493,561
Above Normal Water Years	15,116,422
Below Normal Water Years	14,801,236
Dry Water Years	14,768,140
Critical Water Years	13,706,703

Table 5A-E3.1.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	122,202
Wet Water Years	115,136
Above Normal Water Years	-56,445
Below Normal Water Years	23,220
Dry Water Years	63,679
Critical Water Years	543,470

1 **Table 5A-E3.1.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Production**
2 **(percentage), Alternative 5 (2040) minus No Project Alternative**

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	1%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	4%

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E.1.2 Late Fall-Run Chinook Salmon Production

Table 5A-E3.1.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), No Project Alternative

Average	Annual Potential Production
Full Simulation Period	2,295,416
Wet Water Years	2,219,589
Above Normal Water Years	2,355,940
Below Normal Water Years	2,390,456
Dry Water Years	2,438,387
Critical Water Years	2,090,873

Table 5A-E3.1.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2040)

Average	Annual Potential Production
Full Simulation Period	2,293,216
Wet Water Years	2,208,738
Above Normal Water Years	2,358,019
Below Normal Water Years	2,390,091
Dry Water Years	2,429,227
Critical Water Years	2,113,751

Table 5A-E3.1.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	-2,200
Wet Water Years	-10,851
Above Normal Water Years	2,079
Below Normal Water Years	-364
Dry Water Years	-9,160
Critical Water Years	22,879

Table 5A-E3.1.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

Table 5A-E3.1.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2040)

Average	Annual Potential Production
Full Simulation Period	2,296,344
Wet Water Years	2,217,308
Above Normal Water Years	2,371,737
Below Normal Water Years	2,396,084
Dry Water Years	2,426,291
Critical Water Years	2,095,725

Table 5A-E3.1.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	928
Wet Water Years	-2,281
Above Normal Water Years	15,797
Below Normal Water Years	5,629
Dry Water Years	-12,096
Critical Water Years	4,853

Table 5A-E3.1.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	1%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	0%

Table 5A-E3.1.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2040)

Average	Annual Potential Production
Full Simulation Period	2,297,651
Wet Water Years	2,213,717
Above Normal Water Years	2,335,210
Below Normal Water Years	2,398,962
Dry Water Years	2,405,454
Critical Water Years	2,158,151

Table 5A-E3.1.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	2,234
Wet Water Years	-5,872
Above Normal Water Years	-20,731
Below Normal Water Years	8,506
Dry Water Years	-32,933
Critical Water Years	67,279

Table 5A-E3.1.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	-1%
Critical Water Years	3%

Table 5A-E3.1.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2040)

Average	Annual Potential Production
Full Simulation Period	2,304,673
Wet Water Years	2,225,853
Above Normal Water Years	2,339,659
Below Normal Water Years	2,392,827
Dry Water Years	2,401,581
Critical Water Years	2,194,049

Table 5A-E3.1.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	9,257
Wet Water Years	6,264
Above Normal Water Years	-16,282
Below Normal Water Years	2,371
Dry Water Years	-36,807
Critical Water Years	103,176

Table 5A-E3.1.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	-1%
Below Normal Water Years	0%
Dry Water Years	-2%
Critical Water Years	5%

Table 5A-E3.1.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2040)

Average	Annual Potential Production
Full Simulation Period	2,300,550
Wet Water Years	2,216,849
Above Normal Water Years	2,344,821
Below Normal Water Years	2,390,410
Dry Water Years	2,412,921
Critical Water Years	2,175,419

Table 5A-E3.1.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	5,134
Wet Water Years	-2,740
Above Normal Water Years	-11,120
Below Normal Water Years	-46
Dry Water Years	-25,466
Critical Water Years	84,547

Table 5A-E3.1.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	-1%
Critical Water Years	4%

E.1.3 Spring-Run Chinook Salmon Production

Table 5A-E3.1.3.1-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), No Project Alternative

Average	Annual Potential Production
Full Simulation Period	425,455
Wet Water Years	430,656
Above Normal Water Years	464,969
Below Normal Water Years	441,477
Dry Water Years	434,375
Critical Water Years	339,689

Table 5A-E3.1.3.1-B. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2040)

Average	Annual Potential Production
Full Simulation Period	426,238
Wet Water Years	431,092
Above Normal Water Years	464,648
Below Normal Water Years	442,354
Dry Water Years	434,566
Critical Water Years	342,651

Table 5A-E3.1.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	783
Wet Water Years	436
Above Normal Water Years	-321
Below Normal Water Years	877
Dry Water Years	191
Critical Water Years	2,962

Table 5A-E3.1.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

Table 5A-E3.1.3.2-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2040)

Average	Annual Potential Production
Full Simulation Period	426,305
Wet Water Years	430,853
Above Normal Water Years	463,987
Below Normal Water Years	442,811
Dry Water Years	435,007
Critical Water Years	342,759

Table 5A-E3.1.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	850
Wet Water Years	197
Above Normal Water Years	-981
Below Normal Water Years	1,334
Dry Water Years	631
Critical Water Years	3,070

Table 5A-E3.1.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	1%

Table 5A-E3.1.3.3-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2040)

Average	Annual Potential Production
Full Simulation Period	426,673
Wet Water Years	430,963
Above Normal Water Years	464,191
Below Normal Water Years	442,755
Dry Water Years	435,133
Critical Water Years	345,150

Table 5A-E3.1.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1,218
Wet Water Years	307
Above Normal Water Years	-777
Below Normal Water Years	1,278
Dry Water Years	758
Critical Water Years	5,461

Table 5A-E3.1.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E3.1.3.4-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2040)

Average	Annual Potential Production
Full Simulation Period	427,797
Wet Water Years	430,787
Above Normal Water Years	464,845
Below Normal Water Years	443,021
Dry Water Years	435,305
Critical Water Years	353,126

Table 5A-E3.1.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	2,341
Wet Water Years	131
Above Normal Water Years	-124
Below Normal Water Years	1,544
Dry Water Years	930
Critical Water Years	13,437

Table 5A-E3.1.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	4%

Table 5A-E3.1.3.5-A. Spring-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2040)

Average	Annual Potential Production
Full Simulation Period	426,641
Wet Water Years	430,977
Above Normal Water Years	464,145
Below Normal Water Years	442,725
Dry Water Years	435,170
Critical Water Years	344,912

Table 5A-E3.1.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1,186
Wet Water Years	321
Above Normal Water Years	-824
Below Normal Water Years	1,248
Dry Water Years	795
Critical Water Years	5,223

Table 5A-E3.1.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

E.1.4 Winter-Run Chinook Salmon Production

Table 5A-E3.1.4.1-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1,547,206
Wet Water Years	1,551,521
Above Normal Water Years	1,644,968
Below Normal Water Years	1,583,435
Dry Water Years	1,559,904
Critical Water Years	1,376,857

Table 5A-E3.1.4.1-B. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2b/4b (2040)

Average	Annual Potential Production
Full Simulation Period	1,551,854
Wet Water Years	1,551,333
Above Normal Water Years	1,644,043
Below Normal Water Years	1,586,893
Dry Water Years	1,565,801
Critical Water Years	1,399,636

Table 5A-E3.1.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	4,647
Wet Water Years	-188
Above Normal Water Years	-924
Below Normal Water Years	3,458
Dry Water Years	5,897
Critical Water Years	22,779

Table 5A-E3.1.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2b/4b (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E3.1.4.2-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2c/4c (2040)

Average	Annual Potential Production
Full Simulation Period	1,549,706
Wet Water Years	1,548,457
Above Normal Water Years	1,646,750
Below Normal Water Years	1,586,490
Dry Water Years	1,555,489
Critical Water Years	1,401,998

Table 5A-E3.1.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	2,499
Wet Water Years	-3,064
Above Normal Water Years	1,782
Below Normal Water Years	3,055
Dry Water Years	-4,415
Critical Water Years	25,140

Table 5A-E3.1.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2c/4c (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	0%
Wet Water Years	0%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	0%
Critical Water Years	2%

Table 5A-E3.1.4.3-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 1/3 (2040)

Average	Annual Potential Production
Full Simulation Period	1,570,144
Wet Water Years	1,564,995
Above Normal Water Years	1,652,700
Below Normal Water Years	1,587,105
Dry Water Years	1,578,042
Critical Water Years	1,483,302

Table 5A-E3.1.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	22,937
Wet Water Years	13,474
Above Normal Water Years	7,733
Below Normal Water Years	3,670
Dry Water Years	18,138
Critical Water Years	106,445

Table 5A-E3.1.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 1/3 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	1%
Wet Water Years	1%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	1%
Critical Water Years	7%

Table 5A-E3.1.4.4-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 2a/4a (2040)

Average	Annual Potential Production
Full Simulation Period	1,575,647
Wet Water Years	1,575,066
Above Normal Water Years	1,650,904
Below Normal Water Years	1,588,355
Dry Water Years	1,576,910
Critical Water Years	1,498,069

Table 5A-E3.1.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	28,441
Wet Water Years	23,545
Above Normal Water Years	5,937
Below Normal Water Years	4,920
Dry Water Years	17,006
Critical Water Years	121,212

Table 5A-E3.1.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 2a/4a (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	2%
Wet Water Years	2%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	1%
Critical Water Years	9%

Table 5A-E3.1.4.5-A. Winter-Run Chinook Salmon, Annual Average Production (number of fish per year), Alternative 5 (2040)

Average	Annual Potential Production
Full Simulation Period	1,571,133
Wet Water Years	1,566,387
Above Normal Water Years	1,650,764
Below Normal Water Years	1,587,740
Dry Water Years	1,581,356
Critical Water Years	1,483,193

Table 5A-E3.1.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Production (number of fish per year), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	23,927
Wet Water Years	14,865
Above Normal Water Years	5,796
Below Normal Water Years	4,305
Dry Water Years	21,452
Critical Water Years	106,336

Table 5A-E3.1.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Production (percentage), Alternative 5 (2040) minus No Project Alternative

Average	Annual Potential Production
Full Simulation Period	2%
Wet Water Years	1%
Above Normal Water Years	0%
Below Normal Water Years	0%
Dry Water Years	1%
Critical Water Years	8%

- 1 **E.2 Mortality Results**
- 2 **E.2.1 Fall-Run Chinook Salmon Mortality**

1 **Table 5A-E3.2.1.1-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,758,209	1,223,512	87,696	4,047,006	8,116,423
Wet Water Years	2,361,379	2,579,729	147,752	4,074,203	9,163,063
Above Normal Water Years	154,628	378,169	59,879	4,548,567	5,141,243
Below Normal Water Years	1,702,739	495,528	52,692	4,231,525	6,482,484
Dry Water Years	1,991,065	564,107	61,186	4,207,850	6,824,208
Critical Water Years	8,767,062	404,083	47,859	3,050,395	12,269,400

2 **Table 5A-E3.2.1.1-B. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,670,467	1,223,440	88,811	4,054,094	8,036,811
Wet Water Years	2,260,874	2,578,387	149,058	4,052,712	9,041,031
Above Normal Water Years	149,458	378,227	60,992	4,605,972	5,194,649
Below Normal Water Years	1,653,090	484,550	54,745	4,236,114	6,428,499
Dry Water Years	1,991,674	581,420	63,163	4,240,229	6,876,487
Critical Water Years	8,473,759	410,761	45,410	3,078,440	12,008,370

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1 **Table 5A-E3.2.1.1-C. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-87,742	-72	1,115	7,088	-79,612
Wet Water Years	-100,505	-1,342	1,307	-21,491	-122,032
Above Normal Water Years	-5,170	58	1,113	57,405	53,405
Below Normal Water Years	-49,649	-10,978	2,053	4,589	-53,985
Dry Water Years	610	17,314	1,976	32,379	52,279
Critical Water Years	-293,304	6,678	-2,449	28,045	-261,030

3 **Table 5A-E3.2.1.1-D. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2040) minus**
4 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-3%	0%	1%	0%	-1%
Wet Water Years	-4%	0%	1%	-1%	-1%
Above Normal Water Years	-3%	0%	2%	1%	1%
Below Normal Water Years	-3%	-2%	4%	0%	-1%
Dry Water Years	0%	3%	3%	1%	1%
Critical Water Years	-3%	2%	-5%	1%	-2%

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1 **Table 5A-E3.2.1.2-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,693,332	1,218,572	87,749	4,051,755	8,051,407
Wet Water Years	2,321,590	2,574,856	147,359	4,068,587	9,112,392
Above Normal Water Years	167,598	378,294	59,722	4,603,584	5,209,198
Below Normal Water Years	1,653,642	479,360	53,703	4,241,757	6,428,462
Dry Water Years	2,026,657	569,328	61,591	4,208,598	6,866,174
Critical Water Years	8,429,894	408,052	46,791	3,042,925	11,927,661

2 **Table 5A-E3.2.1.2-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-64,877	-4,940	53	4,749	-65,015
Wet Water Years	-39,789	-4,873	-393	-5,617	-50,671
Above Normal Water Years	12,970	125	-157	55,017	67,955
Below Normal Water Years	-49,097	-16,168	1,010	10,232	-54,022
Dry Water Years	35,592	5,221	405	748	41,966
Critical Water Years	-337,169	3,969	-1,068	-7,471	-341,738

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1 **Table 5A-E3.2.1.2-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2040) minus**
2 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2%	0%	0%	0%	-1%
Wet Water Years	-2%	0%	0%	0%	-1%
Above Normal Water Years	8%	0%	0%	1%	1%
Below Normal Water Years	-3%	-3%	2%	0%	-1%
Dry Water Years	2%	1%	1%	0%	1%
Critical Water Years	-4%	1%	-2%	0%	-3%

3 **Table 5A-E3.2.1.3-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,355,506	1,224,630	91,590	4,067,352	7,739,078
Wet Water Years	2,010,952	2,583,390	151,174	4,071,114	8,816,630
Above Normal Water Years	167,300	378,305	61,316	4,633,020	5,239,941
Below Normal Water Years	1,627,070	476,691	52,594	4,253,443	6,409,798
Dry Water Years	1,755,650	567,026	65,768	4,204,424	6,592,869
Critical Water Years	7,039,947	439,997	62,530	3,116,780	10,659,254

4

1 **Table 5A-E3.2.1.3-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2040) minus**
2 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-402,702	1,118	3,893	20,346	-377,345
Wet Water Years	-350,427	3,660	3,423	-3,089	-346,433
Above Normal Water Years	12,672	136	1,437	84,453	98,698
Below Normal Water Years	-75,669	-18,836	-98	21,918	-72,686
Dry Water Years	-235,414	2,920	4,582	-3,427	-231,339
Critical Water Years	-1,727,116	35,914	14,670	66,385	-1,610,146

3 **Table 5A-E3.2.1.3-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2040) minus No**
4 **Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-15%	0%	4%	1%	-5%
Wet Water Years	-15%	0%	2%	0%	-4%
Above Normal Water Years	8%	0%	2%	2%	2%
Below Normal Water Years	-4%	-4%	0%	1%	-1%
Dry Water Years	-12%	1%	7%	0%	-3%
Critical Water Years	-20%	9%	31%	2%	-13%

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1 **Table 5A-E3.2.1.4-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,288,164	1,234,675	93,345	4,068,347	7,684,531
Wet Water Years	1,936,378	2,595,868	152,386	4,065,861	8,750,492
Above Normal Water Years	155,574	378,366	61,446	4,536,758	5,132,143
Below Normal Water Years	1,634,002	494,350	58,581	4,252,448	6,439,381
Dry Water Years	1,847,241	570,036	63,996	4,214,051	6,695,323
Critical Water Years	6,609,069	441,719	61,811	3,194,034	10,306,634

2 **Table 5A-E3.2.1.4-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-470,044	11,163	5,649	21,341	-431,891
Wet Water Years	-425,002	16,139	4,634	-8,342	-412,571
Above Normal Water Years	946	197	1,567	-11,810	-9,100
Below Normal Water Years	-68,738	-1,177	5,889	20,923	-43,103
Dry Water Years	-143,824	5,929	2,809	6,201	-128,884
Critical Water Years	-2,157,994	37,637	13,952	143,639	-1,962,766

4

1 **Table 5A-E3.2.1.4-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2040) minus**
2 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-17%	1%	6%	1%	-5%
Wet Water Years	-18%	1%	3%	0%	-5%
Above Normal Water Years	1%	0%	3%	0%	0%
Below Normal Water Years	-4%	0%	11%	0%	-1%
Dry Water Years	-7%	1%	5%	0%	-2%
Critical Water Years	-25%	9%	29%	5%	-16%

3 **Table 5A-E3.2.1.5-A. Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	2,356,170	1,224,558	91,560	4,065,140	7,737,428
Wet Water Years	2,009,916	2,583,351	151,177	4,071,480	8,815,923
Above Normal Water Years	171,268	378,274	61,369	4,628,787	5,239,698
Below Normal Water Years	1,629,686	476,446	52,233	4,243,968	6,402,332
Dry Water Years	1,755,334	567,133	66,211	4,238,684	6,627,362
Critical Water Years	7,039,992	439,974	62,527	3,082,009	10,624,502

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1 **Table 5A-E3.2.1.5-B. Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2040) minus**
2 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-402,039	1,046	3,864	18,134	-378,995
Wet Water Years	-351,463	3,621	3,425	-2,723	-347,140
Above Normal Water Years	16,640	106	1,490	80,220	98,455
Below Normal Water Years	-73,054	-19,082	-460	12,443	-80,152
Dry Water Years	-235,731	3,026	5,025	30,834	-196,846
Critical Water Years	-1,727,071	35,891	14,668	31,614	-1,644,898

3 **Table 5A-E3.2.1.5-C. Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2040) minus No**
4 **Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-15%	0%	4%	0%	-5%
Wet Water Years	-15%	0%	2%	0%	-4%
Above Normal Water Years	11%	0%	2%	2%	2%
Below Normal Water Years	-4%	-4%	-1%	0%	-1%
Dry Water Years	-12%	1%	8%	1%	-3%
Critical Water Years	-20%	9%	31%	1%	-13%

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1 E.2.2 Late Fall-Run Chinook Salmon Mortality

1 **Table 5A-E3.2.2.1-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	329,332	177,935	39,765	1,359,646	1,906,678
Wet Water Years	374,679	453,014	1,893	1,249,994	2,079,580
Above Normal Water Years	374,754	38,545	629	1,400,303	1,814,230
Below Normal Water Years	323,201	23,362	6,252	1,433,634	1,786,449
Dry Water Years	328,176	20,631	4,674	1,378,039	1,731,521
Critical Water Years	161,538	17,992	280,241	1,339,010	1,798,782

2 **Table 5A-E3.2.2.1-B. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	338,398	178,077	37,601	1,361,749	1,915,826
Wet Water Years	373,110	453,057	1,880	1,269,057	2,097,104
Above Normal Water Years	386,784	38,341	626	1,388,066	1,813,817
Below Normal Water Years	339,193	23,594	5,776	1,418,381	1,786,944
Dry Water Years	359,907	21,673	4,251	1,382,908	1,768,739
Critical Water Years	155,666	17,389	265,214	1,338,240	1,776,508

3

1 **Table 5A-E3.2.2.1-C. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b**
2 **(2040) minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	9,066	143	-2,164	2,104	9,148
Wet Water Years	-1,568	42	-13	19,063	17,524
Above Normal Water Years	12,030	-204	-3	-12,236	-413
Below Normal Water Years	15,992	231	-476	-15,253	495
Dry Water Years	31,731	1,042	-423	4,869	37,218
Critical Water Years	-5,872	-603	-15,028	-771	-22,274

3 **Table 5A-E3.2.2.1-D. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2040)**
4 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	3%	0%	-5%	0%	0%
Wet Water Years	0%	0%	-1%	2%	1%
Above Normal Water Years	3%	-1%	-1%	-1%	0%
Below Normal Water Years	5%	1%	-8%	-1%	0%
Dry Water Years	10%	5%	-9%	0%	2%
Critical Water Years	-4%	-3%	-5%	0%	-1%

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1 **Table 5A-E3.2.2.2-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	337,986	177,902	37,836	1,356,307	1,910,031
Wet Water Years	370,958	452,784	1,864	1,257,406	2,083,013
Above Normal Water Years	382,342	38,199	635	1,369,837	1,791,011
Below Normal Water Years	334,400	23,337	5,817	1,411,106	1,774,660
Dry Water Years	367,160	20,473	4,104	1,381,849	1,773,586
Critical Water Years	163,314	18,842	267,131	1,357,711	1,806,998

2 **Table 5A-E3.2.2.2-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	8,654	-33	-1,929	-3,338	3,354
Wet Water Years	-3,720	-230	-28	7,412	3,433
Above Normal Water Years	7,588	-346	6	-30,466	-23,219
Below Normal Water Years	11,199	-25	-434	-22,528	-11,789
Dry Water Years	38,983	-158	-570	3,810	42,066
Critical Water Years	1,775	850	-13,110	18,701	8,216

4

1 **Table 5A-E3.2.2.2-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	3%	0%	-5%	0%	0%
Wet Water Years	-1%	0%	-1%	1%	0%
Above Normal Water Years	2%	-1%	1%	-2%	-1%
Below Normal Water Years	3%	0%	-7%	-2%	-1%
Dry Water Years	12%	-1%	-12%	0%	2%
Critical Water Years	1%	5%	-5%	1%	0%

3 **Table 5A-E3.2.2.3-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	338,579	178,118	28,770	1,368,721	1,914,189
Wet Water Years	371,411	453,299	1,933	1,263,980	2,090,623
Above Normal Water Years	388,377	38,363	627	1,427,827	1,855,194
Below Normal Water Years	321,130	23,207	5,825	1,419,013	1,769,175
Dry Water Years	405,861	21,193	3,981	1,383,773	1,814,809
Critical Water Years	146,192	18,416	197,572	1,376,770	1,738,951

4

1 **Table 5A-E3.2.2.3-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	9,247	184	-10,994	9,076	7,512
Wet Water Years	-3,268	285	41	13,985	11,043
Above Normal Water Years	13,623	-182	-2	27,525	40,964
Below Normal Water Years	-2,071	-155	-426	-14,621	-17,274
Dry Water Years	77,685	562	-693	5,734	83,289
Critical Water Years	-15,347	424	-82,669	37,760	-59,831

3 **Table 5A-E3.2.2.3-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2040)**
4 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	3%	0%	-28%	1%	0%
Wet Water Years	-1%	0%	2%	1%	1%
Above Normal Water Years	4%	0%	0%	2%	2%
Below Normal Water Years	-1%	-1%	-7%	-1%	-1%
Dry Water Years	24%	3%	-15%	0%	5%
Critical Water Years	-10%	2%	-29%	3%	-3%

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1 **Table 5A-E3.2.2.4-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	343,227	180,074	28,791	1,350,563	1,902,655
Wet Water Years	370,518	457,983	1,935	1,241,788	2,072,224
Above Normal Water Years	395,599	37,499	621	1,410,069	1,843,788
Below Normal Water Years	344,334	23,850	5,322	1,408,459	1,781,966
Dry Water Years	400,427	22,012	3,897	1,395,420	1,821,756
Critical Water Years	135,528	18,759	198,921	1,319,698	1,672,905

2 **Table 5A-E3.2.2.4-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a**
3 **(2040) minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	13,895	2,139	-10,974	-9,083	-4,023
Wet Water Years	-4,160	4,969	42	-8,206	-7,356
Above Normal Water Years	20,845	-1,046	-8	9,767	29,558
Below Normal Water Years	21,133	488	-930	-25,175	-4,484
Dry Water Years	72,250	1,381	-778	17,381	90,236
Critical Water Years	-26,011	767	-81,321	-19,312	-125,877

4

1 **Table 5A-E3.2.2.4-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	4%	1%	-28%	-1%	0%
Wet Water Years	-1%	1%	2%	-1%	0%
Above Normal Water Years	6%	-3%	-1%	1%	2%
Below Normal Water Years	7%	2%	-15%	-2%	0%
Dry Water Years	22%	7%	-17%	1%	5%
Critical Water Years	-16%	4%	-29%	-1%	-7%

3 **Table 5A-E3.2.2.5-A. Late Fall-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	338,705	178,045	29,063	1,363,409	1,909,222
Wet Water Years	370,407	453,101	1,935	1,260,033	2,085,475
Above Normal Water Years	388,796	38,364	623	1,409,066	1,836,849
Below Normal Water Years	322,150	23,205	5,743	1,435,293	1,786,391
Dry Water Years	407,320	21,190	4,021	1,369,287	1,801,817
Critical Water Years	145,724	18,411	199,950	1,341,029	1,705,114

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1 **Table 5A-E3.2.2.5-B. Late Fall-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	9,373	110	-10,702	3,763	2,545
Wet Water Years	-4,272	86	42	10,039	5,895
Above Normal Water Years	14,042	-181	-6	8,763	22,619
Below Normal Water Years	-1,051	-157	-509	1,659	-58
Dry Water Years	79,143	559	-654	-8,752	70,296
Critical Water Years	-15,815	419	-80,292	2,019	-93,668

3 **Table 5A-E3.2.2.5-C. Late Fall-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2040) minus**
4 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	3%	0%	-27%	0%	0%
Wet Water Years	-1%	0%	2%	1%	0%
Above Normal Water Years	4%	0%	-1%	1%	1%
Below Normal Water Years	0%	-1%	-8%	0%	0%
Dry Water Years	24%	3%	-14%	-1%	4%
Critical Water Years	-10%	2%	-29%	0%	-5%

5

1 E.2.3 Spring-Run Chinook Salmon Mortality

1 **Table 5A-E3.2.3.1-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	110,307	8,377	57	2,030	120,771
Wet Water Years	13,707	7,015	48	2,072	22,841
Above Normal Water Years	10,642	10,518	42	2,234	23,436
Below Normal Water Years	23,061	8,558	65	2,140	33,825
Dry Water Years	39,798	15,141	119	2,571	57,628
Critical Water Years	777,603	1,675	0	790	780,068

2 **Table 5A-E3.2.3.1-B. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	108,306	8,285	54	2,051	118,696
Wet Water Years	13,381	6,603	49	2,092	22,125
Above Normal Water Years	10,494	10,477	48	2,263	23,283
Below Normal Water Years	21,617	8,861	63	2,183	32,724
Dry Water Years	31,165	15,147	97	2,666	49,073
Critical Water Years	776,188	1,446	0	660	778,294

3

1 **Table 5A-E3.2.3.1-C. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2,001	-91	-3	21	-2,075
Wet Water Years	-327	-411	1	20	-717
Above Normal Water Years	-148	-41	6	29	-154
Below Normal Water Years	-1,444	304	-2	42	-1,101
Dry Water Years	-8,634	6	-22	95	-8,555
Critical Water Years	-1,415	-229	0	-130	-1,774

3 **Table 5A-E3.2.3.1-D. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2040)**
4 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2%	-1%	-5%	1%	-2%
Wet Water Years	-2%	-6%	2%	1%	-3%
Above Normal Water Years	-1%	0%	15%	1%	-1%
Below Normal Water Years	-6%	4%	-4%	2%	-3%
Dry Water Years	-22%	0%	-18%	4%	-15%
Critical Water Years	0%	-14%	0%	-16%	0%

5

1 **Table 5A-E3.2.3.2-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	108,375	8,198	54	2,048	118,675
Wet Water Years	13,497	6,548	48	2,131	22,225
Above Normal Water Years	11,638	10,491	49	2,192	24,370
Below Normal Water Years	21,753	8,620	64	2,132	32,569
Dry Water Years	31,268	15,129	94	2,630	49,122
Critical Water Years	775,032	1,455	0	739	777,225

2 **Table 5A-E3.2.3.2-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-1,932	-178	-3	18	-2,096
Wet Water Years	-210	-466	0	60	-616
Above Normal Water Years	996	-27	7	-43	933
Below Normal Water Years	-1,309	63	-2	-8	-1,256
Dry Water Years	-8,530	-11	-24	59	-8,506
Critical Water Years	-2,571	-220	0	-51	-2,842

4

1 **Table 5A-E3.2.3.2-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2%	-2%	-6%	1%	-2%
Wet Water Years	-2%	-7%	0%	3%	-3%
Above Normal Water Years	9%	0%	17%	-2%	4%
Below Normal Water Years	-6%	1%	-2%	0%	-4%
Dry Water Years	-21%	0%	-21%	2%	-15%
Critical Water Years	0%	-13%	0%	-6%	0%

3 **Table 5A-E3.2.3.3-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	105,761	8,039	50	1,999	115,849
Wet Water Years	13,445	6,546	47	2,084	22,122
Above Normal Water Years	11,616	10,382	49	2,192	24,239
Below Normal Water Years	21,876	8,645	65	2,093	32,679
Dry Water Years	27,921	14,079	54	2,521	44,575
Critical Water Years	757,081	1,478	18	703	759,280

4

1 **Table 5A-E3.2.3.3-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-4,545	-338	-7	-31	-4,921
Wet Water Years	-262	-468	-1	12	-719
Above Normal Water Years	974	-136	7	-42	803
Below Normal Water Years	-1,185	87	0	-48	-1,145
Dry Water Years	-11,877	-1,062	-64	-51	-13,054
Critical Water Years	-20,521	-197	18	-87	-20,788

3 **Table 5A-E3.2.3.3-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2040) minus**
4 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-4%	-4%	-13%	-2%	-4%
Wet Water Years	-2%	-7%	-1%	1%	-3%
Above Normal Water Years	9%	-1%	17%	-2%	3%
Below Normal Water Years	-5%	1%	0%	-2%	-3%
Dry Water Years	-30%	-7%	-54%	-2%	-23%
Critical Water Years	-3%	-12%	0%	-11%	-3%

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1 **Table 5A-E3.2.3.4-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	102,819	8,237	57	2,032	113,145
Wet Water Years	13,553	6,806	67	2,030	22,456
Above Normal Water Years	10,921	8,950	48	2,271	22,190
Below Normal Water Years	21,238	9,551	64	2,177	33,030
Dry Water Years	27,408	13,975	58	2,592	44,034
Critical Water Years	734,615	1,535	17	785	736,952

2 **Table 5A-E3.2.3.4-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-7,487	-140	0	2	-7,625
Wet Water Years	-155	-208	20	-41	-385
Above Normal Water Years	279	-1,568	6	37	-1,247
Below Normal Water Years	-1,823	993	-1	37	-794
Dry Water Years	-12,390	-1,165	-60	21	-13,595
Critical Water Years	-42,988	-140	17	-5	-43,116

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1 **Table 5A-E3.2.3.4-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-7%	-2%	1%	0%	-6%
Wet Water Years	-1%	-3%	41%	-2%	-2%
Above Normal Water Years	3%	-15%	15%	2%	-5%
Below Normal Water Years	-8%	12%	-1%	2%	-2%
Dry Water Years	-31%	-8%	-51%	1%	-24%
Critical Water Years	-6%	-8%	0%	-1%	-6%

3 **Table 5A-E3.2.3.5-A. Spring-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	105,814	8,049	50	1,988	115,901
Wet Water Years	13,445	6,569	47	2,060	22,121
Above Normal Water Years	11,833	10,381	50	2,190	24,454
Below Normal Water Years	21,968	8,637	65	2,095	32,765
Dry Water Years	28,144	14,108	53	2,528	44,832
Critical Water Years	756,851	1,478	20	669	759,018

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1 **Table 5A-E3.2.3.5-B. Spring-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-4,492	-328	-7	-42	-4,869
Wet Water Years	-262	-446	-1	-12	-720
Above Normal Water Years	1,191	-137	8	-44	1,018
Below Normal Water Years	-1,094	79	0	-45	-1,060
Dry Water Years	-11,654	-1,033	-66	-43	-12,796
Critical Water Years	-20,751	-197	20	-121	-21,049

3 **Table 5A-E3.2.3.5-C. Spring-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2040) minus No**
4 **Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-4%	-4%	-13%	-2%	-4%
Wet Water Years	-2%	-6%	-2%	-1%	-3%
Above Normal Water Years	11%	-1%	18%	-2%	4%
Below Normal Water Years	-5%	1%	0%	-2%	-3%
Dry Water Years	-29%	-7%	-56%	-2%	-22%
Critical Water Years	-3%	-12%	0%	-15%	-3%

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1 E.2.4 Winter-Run Chinook Salmon Mortality

1 **Table 5A-E3.2.4.1-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	359,382	322,607	6,406	75,917	764,312
Wet Water Years	155,524	206,918	0	95,101	457,543
Above Normal Water Years	162,408	300,128	0	79,747	542,283
Below Normal Water Years	165,180	456,681	0	67,913	689,775
Dry Water Years	170,445	430,016	0	71,849	672,310
Critical Water Years	1,831,605	234,460	54,161	39,329	2,159,554

2 **Table 5A-E3.2.4.1-B. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	351,743	319,673	6,484	76,805	754,705
Wet Water Years	155,692	208,390	0	95,239	459,321
Above Normal Water Years	160,358	288,720	0	82,367	531,445
Below Normal Water Years	162,433	448,142	0	71,247	681,822
Dry Water Years	166,515	423,278	0	71,312	661,105
Critical Water Years	1,779,694	243,332	54,816	37,082	2,114,924

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1 **Table 5A-E3.2.4.1-C. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2b/4b (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-7,639	-2,934	78	888	-9,607
Wet Water Years	167	1,472	0	138	1,778
Above Normal Water Years	-2,050	-11,408	0	2,620	-10,838
Below Normal Water Years	-2,748	-8,539	0	3,334	-7,953
Dry Water Years	-3,931	-6,738	0	-536	-11,205
Critical Water Years	-51,910	8,871	656	-2,247	-44,630

3 **Table 5A-E3.2.4.1-D. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2b/4b (2040)**
4 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-2%	-1%	1%	1%	-1%
Wet Water Years	0%	1%	0%	0%	0%
Above Normal Water Years	-1%	-4%	0%	3%	-2%
Below Normal Water Years	-2%	-2%	0%	5%	-1%
Dry Water Years	-2%	-2%	0%	-1%	-2%
Critical Water Years	-3%	4%	1%	-6%	-2%

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1 **Table 5A-E3.2.4.2-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	352,955	322,984	6,442	76,171	758,552
Wet Water Years	155,173	208,912	0	94,554	458,638
Above Normal Water Years	162,675	302,497	0	78,074	543,246
Below Normal Water Years	162,922	457,217	0	71,069	691,208
Dry Water Years	168,785	415,895	0	71,443	656,123
Critical Water Years	1,785,549	246,436	54,466	37,541	2,123,993

2 **Table 5A-E3.2.4.2-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2c/4c (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-6,428	378	36	254	-5,760
Wet Water Years	-351	1,995	0	-548	1,096
Above Normal Water Years	267	2,369	0	-1,673	963
Below Normal Water Years	-2,258	536	0	3,156	1,433
Dry Water Years	-1,661	-14,121	0	-406	-16,187
Critical Water Years	-46,055	11,976	306	-1,787	-35,561

4

1 **Table 5A-E3.2.4.2-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2c/4c (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-2%	0%	1%	0%	-1%
Wet Water Years	0%	1%	0%	-1%	0%
Above Normal Water Years	0%	1%	0%	-2%	0%
Below Normal Water Years	-1%	0%	0%	5%	0%
Dry Water Years	-1%	-3%	0%	-1%	-2%
Critical Water Years	-3%	5%	1%	-5%	-2%

3 **Table 5A-E3.2.4.3-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	312,329	325,030	6,376	77,092	720,827
Wet Water Years	155,506	208,732	0	94,764	459,002
Above Normal Water Years	160,657	303,545	0	79,142	543,344
Below Normal Water Years	164,893	452,507	0	70,682	688,082
Dry Water Years	168,779	413,990	0	70,568	653,337
Critical Water Years	1,438,080	276,972	53,906	45,856	1,814,815

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1 **Table 5A-E3.2.4.3-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 1/3 (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-47,053	2,423	-30	1,175	-43,485
Wet Water Years	-18	1,814	0	-337	1,459
Above Normal Water Years	-1,752	3,418	0	-605	1,061
Below Normal Water Years	-288	-4,174	0	2,768	-1,693
Dry Water Years	-1,666	-16,026	0	-1,281	-18,973
Critical Water Years	-393,524	42,512	-254	6,528	-344,740

3 **Table 5A-E3.2.4.3-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 1/3 (2040) minus**
4 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-13%	1%	0%	2%	-6%
Wet Water Years	0%	1%	0%	0%	0%
Above Normal Water Years	-1%	1%	0%	-1%	0%
Below Normal Water Years	0%	-1%	0%	4%	0%
Dry Water Years	-1%	-4%	0%	-2%	-3%
Critical Water Years	-21%	18%	0%	17%	-16%

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1 **Table 5A-E3.2.4.4-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	307,067	321,811	5,601	78,128	712,607
Wet Water Years	155,437	206,045	0	95,953	457,435
Above Normal Water Years	160,408	284,293	0	88,568	533,270
Below Normal Water Years	164,751	453,916	0	69,440	688,108
Dry Water Years	168,281	412,304	0	70,801	651,386
Critical Water Years	1,394,972	272,383	47,354	45,968	1,760,677

2 **Table 5A-E3.2.4.4-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 2a/4a (2040)**
3 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow-Based)	Fry and Juvenile Rearing (Temperature-Based)	Fry and Juvenile Rearing (Flow-Based)	Total
Full Simulation Period	-52,315	-796	-805	2,210	-51,705
Wet Water Years	-87	-872	0	852	-107
Above Normal Water Years	-2,000	-15,834	0	8,821	-9,013
Below Normal Water Years	-429	-2,765	0	1,527	-1,667
Dry Water Years	-2,164	-17,712	0	-1,048	-20,924
Critical Water Years	-436,632	37,922	-6,807	6,640	-398,877

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1 **Table 5A-E3.2.4.4-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 2a/4a (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-15%	0%	-13%	3%	-7%
Wet Water Years	0%	0%	0%	1%	0%
Above Normal Water Years	-1%	-5%	0%	11%	-2%
Below Normal Water Years	0%	-1%	0%	2%	0%
Dry Water Years	-1%	-4%	0%	-1%	-3%
Critical Water Years	-24%	16%	-13%	17%	-18%

3 **Table 5A-E3.2.4.5-A. Winter-Run Chinook Salmon, Annual Average Mortality (number of fish per year), Alternative 5 (2040)**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	312,379	323,737	6,366	77,320	719,802
Wet Water Years	155,497	208,824	0	94,766	459,087
Above Normal Water Years	160,686	293,062	0	81,596	535,344
Below Normal Water Years	164,910	451,359	0	70,558	686,828
Dry Water Years	168,813	413,993	0	70,808	653,614
Critical Water Years	1,438,420	277,050	53,825	45,748	1,815,044

4

1 **Table 5A-E3.2.4.5-B. Winter-Run Chinook Salmon, Difference in Annual Average Mortality (number of fish per year), Alternative 5 (2040)**
2 **minus No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-47,003	1,130	-40	1,402	-44,510
Wet Water Years	-27	1,907	0	-335	1,544
Above Normal Water Years	-1,722	-7,066	0	1,849	-6,939
Below Normal Water Years	-270	-5,322	0	2,645	-2,947
Dry Water Years	-1,632	-16,023	0	-1,040	-18,695
Critical Water Years	-393,184	42,590	-336	6,420	-344,510

3 **Table 5A-E3.2.4.5-C. Winter-Run Chinook Salmon, Percent Difference in Annual Average Mortality (percentage), Alternative 5 (2040) minus**
4 **No Project Alternative**

Average	Spawning, Egg, and Alevin Incubation (Temperature Based)	Spawning, Egg, and Alevin Incubation (Flow- Based)	Fry and Juvenile Rearing (Temperature- Based)	Fry and Juvenile Rearing (Flow- Based)	Total
Full Simulation Period	-13%	0%	-1%	2%	-6%
Wet Water Years	0%	1%	0%	0%	0%
Above Normal Water Years	-1%	-2%	0%	2%	-1%
Below Normal Water Years	0%	-1%	0%	4%	0%
Dry Water Years	-1%	-4%	0%	-1%	-3%
Critical Water Years	-21%	18%	-1%	16%	-16%

5

1 **E.3 References**

- 2 State Water Resources Control Board. 1995. Water Quality Control Plan for the San Francisco
3 Bay/Sacramento-San Joaquin Delta Estuary. May 1995.