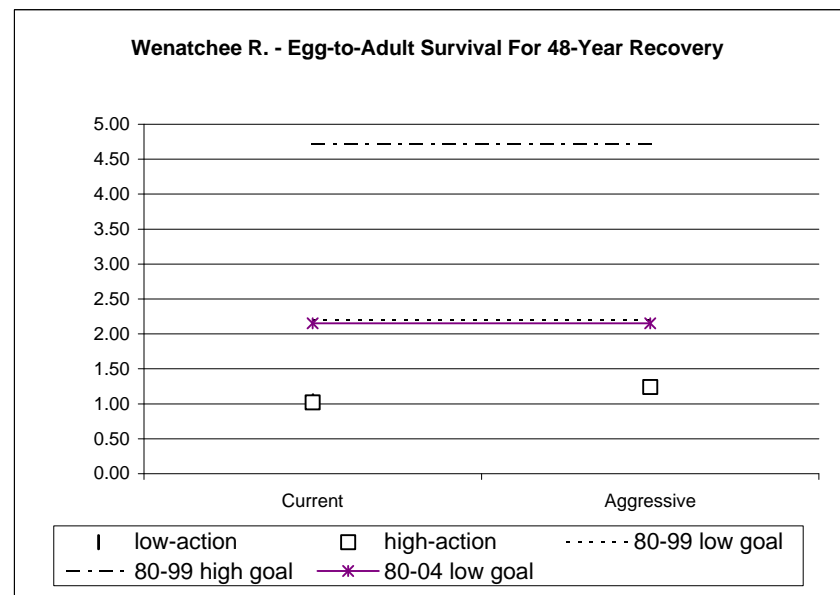
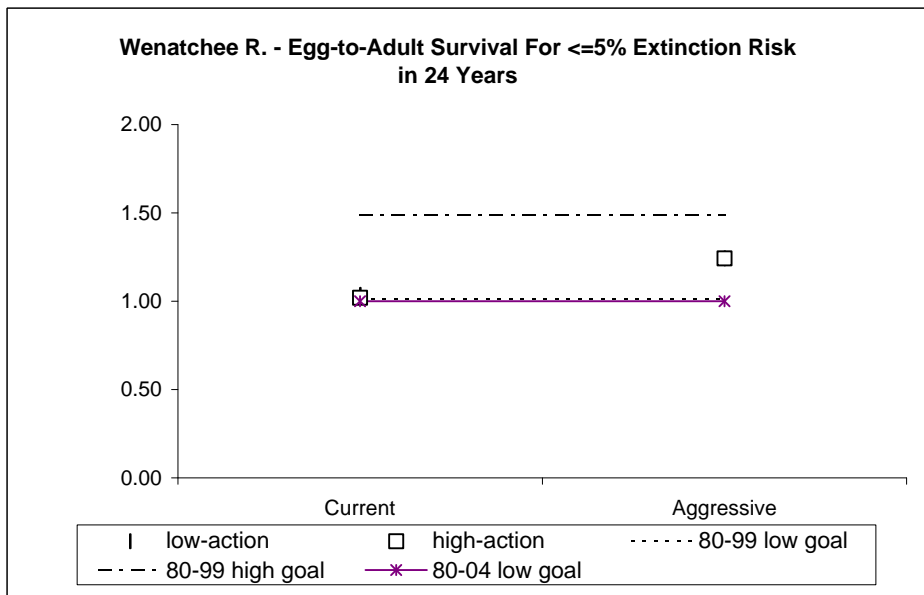
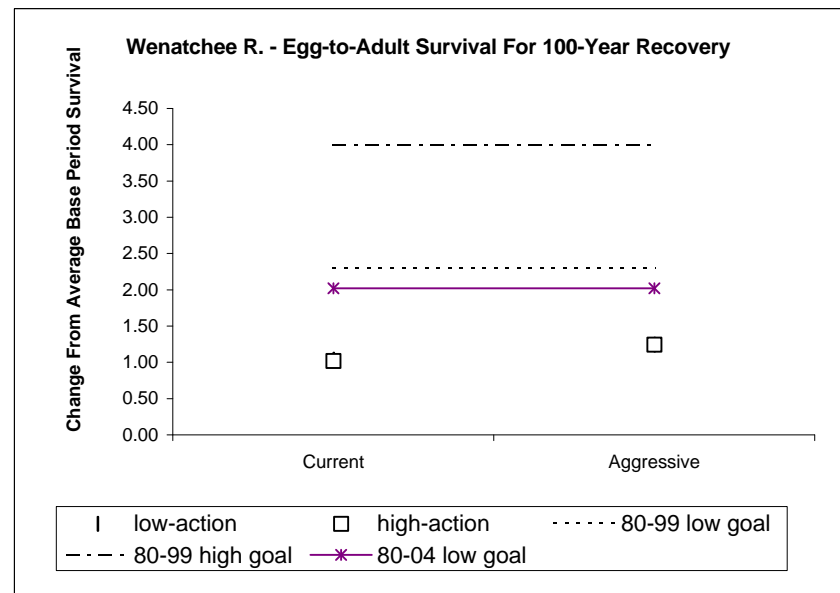
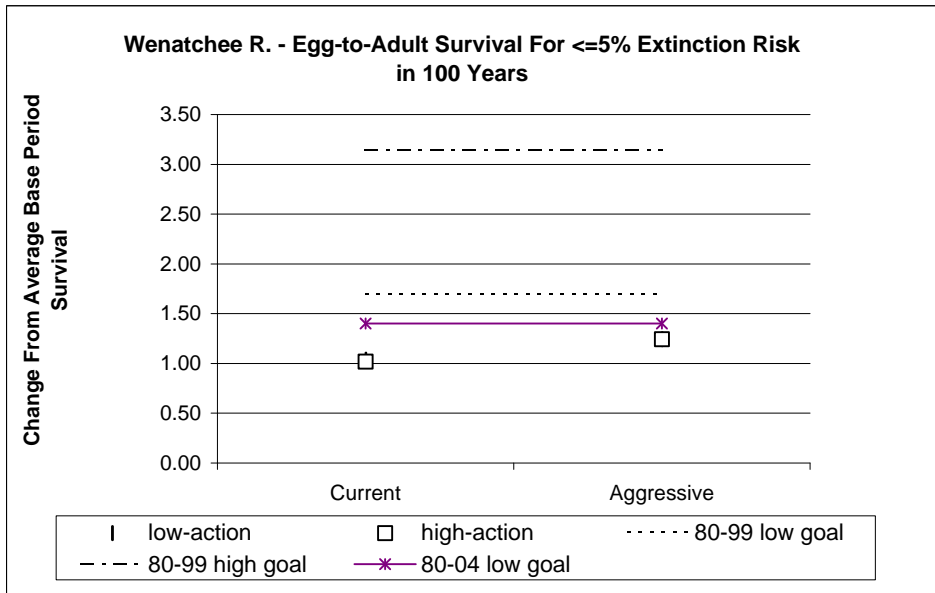


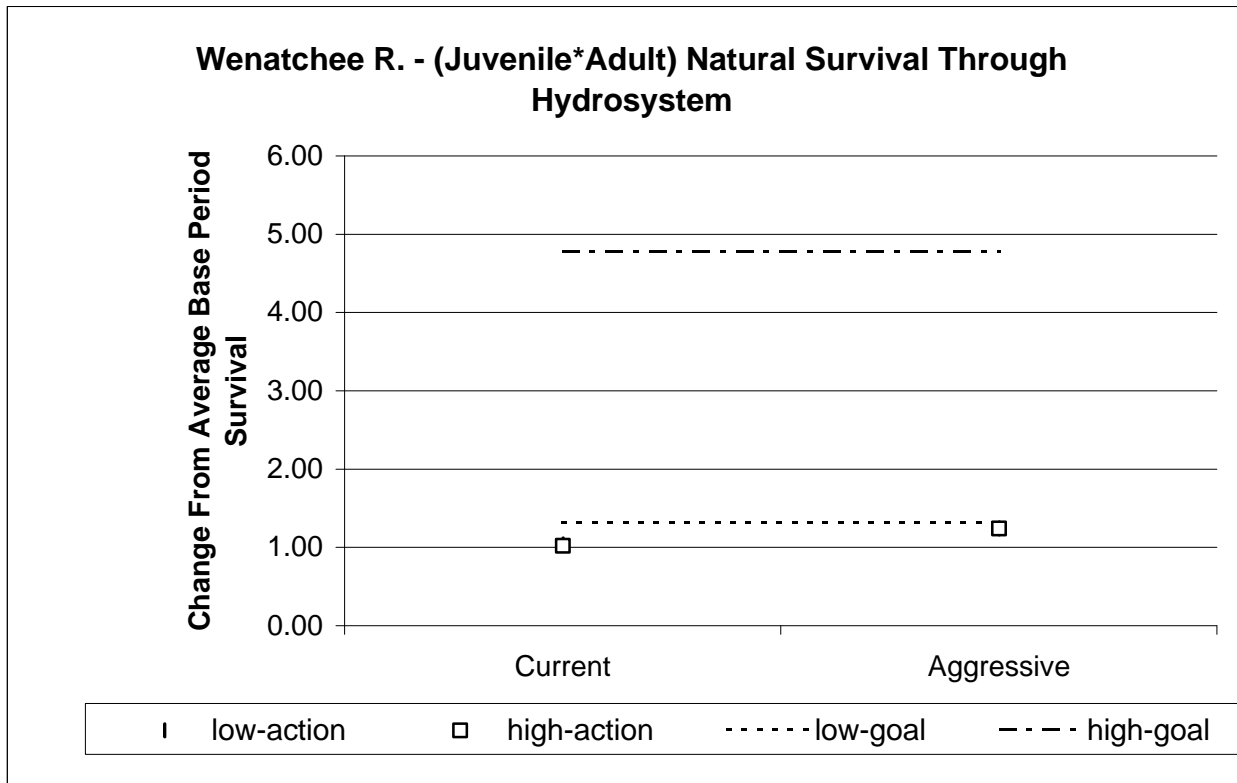
Table C-A2-39. Proposed action matrices for the UCR steelhead Methow River population, given EM = 0.743

Methow Steelhead		9/1/00	Base (1980-99)				HCP Actions + Current FCRPS			
			Relative Effectiveness of Hatchery Spawners				Relative Effectiveness of Hatchery Spawners			
Rel. effectiveness of hatch spawners		Heff	0.25	0.5	0.75	1	0.25	0.5	0.75	1
Average fecundity	mx		5000	5000	5000	5000	5000	5000	5000	5000
Prespaw Mortality	ps		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Upriver Harvest (Adj to post 95)	harv_sb_mean		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Mainstem Harvest (1980+avg)	harv_ms_mean		0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
	Conv. Rte Mid C		0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
	Conv. Rte FCRPS		0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
.97 per project - 9 projects	convers_mean		0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
	mu		0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Ocean survival	age 2-3	s3	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	age 3-4	s4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	age 4-5	s5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	age 5-6	s6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Proportion of McNary Smits Transp.	Pt		0.5	0.5	0.5	0.5	0	0	0	0
McNary Pool X barge survival	Sb		0.83	0.83	0.83	0.83				
Surv. To below PRIEST RAPIDS	Mid C projects		0.55	0.55	0.55	0.55	0.69	0.69	0.69	0.69
Surv. MCN TO BELOW BONN	Lower Projects		0.55	0.55	0.55	0.55	0.575	0.575	0.575	0.575
Downstream Passage Survival	Sd		0.30	0.30	0.30	0.30	0.40	0.40	0.40	0.40
Survival to below Bonn.	direct_hydro		0.38	0.38	0.38	0.38	0.40	0.40	0.40	0.40
Prop. Below Bonn by barge	Pbt		0.60	0.60	0.60	0.60	0.00	0.00	0.00	0.00
	(1-Delayed Mort.)		0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Delayed effect of barging	D		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
FCRPS Only	direct_ind_FCRPS		0.178	0.178	0.178	0.178	0.148	0.148	0.148	0.148
Total, Including Mid-C	direct_indirect		0.098	0.098	0.098	0.098	0.102	0.102	0.102	0.102
Total, Including Mid-C	indirect_m		0.859	0.859	0.859	0.859	0.822	0.822	0.822	0.822
	juv*adult									
Total survival Bonn to Adult	se		0.036	0.023	0.017	0.014	0.045	0.029	0.021	0.018
Relative Survival - Hydro effect	hydro_se		0.141	0.141	0.141	0.141	0.178	0.178	0.178	0.178
Survival in absence of Hydro	natural_se		0.254	0.163	0.120	0.099	0.254	0.163	0.120	0.099
Includes D mortality	s2 (calculated here)		0.014	0.009	0.006	0.005	0.018	0.011	0.008	0.007
From smolt at RI data	(smits/spawner)		157.6	118.6	95.4	89.8	173.36	130.46	104.94	98.78
Corresponding egg-smolt	s1		0.063	0.047	0.038	0.036	0.069	0.052	0.042	0.040
	Ocean survival		0.668	0.668	0.668	0.668	0.668	0.668	0.668	0.668
Prop. Maturing at age 2	b2		0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Prop. Maturing at age 3	b3		0.330	0.330	0.330	0.330	0.330	0.330	0.330	0.330
Prop. Maturing at age 4	b4		0.693	0.693	0.693	0.693	0.693	0.693	0.693	0.693
Prop. Maturing at age 5	b5		0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923
Matrix Cells	R1		0	0	0	0	0	0	0	0
	R2		0	0	0	0	0	0	0	0
	R3		30.29	22.79	18.33	17.26	33.32	25.07	20.17	18.98
	R4		63.66	47.91	38.54	36.27	70.03	52.70	42.39	39.90
	R5		84.75	63.78	51.30	48.29	93.23	70.16	56.43	53.12
	R6		91.85	69.12	55.60	52.34	101.04	76.03	61.16	57.57
	a12		0.014	0.009	0.006	0.005	0.018	0.011	0.008	0.007
	a23		0.793	0.793	0.793	0.793	0.793	0.793	0.793	0.793
	a34		0.536	0.536	0.536	0.536	0.536	0.536	0.536	0.536
	a45		0.246	0.246	0.246	0.246	0.246	0.246	0.246	0.246
	a56		0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062
Hit Control-B	Lambda		0.952	0.787	0.689	0.647	1.0482	0.8645	0.7562	0.7089
	equation		(0.00)	(0.00)	(0.00)	(0.00)	1.10	1.10	1.10	1.10
	Survival Change from Action						1.44	1.44	1.44	1.44
	Lambda Change (s^(1/3.8))						1.10	1.10	1.10	1.10
							0.26	0.26	0.26	0.26
	Needed Survival Change for 5% Extinction in 100 Years (QAR)		1.00		2.15		0.694		1.493	
	Needed Survival Change for 5% Extinction in 100 Years (CRI)		4.32		50.37		3.002		34.975	
	Needed Survival Change for 5% Extinction in 24 Years (QAR)		1.00		1.00		0.694		0.694	
	Needed Survival Change for 5% Extinction in 24 Years (CRI)		1.67		20.36		1.162		14.135	

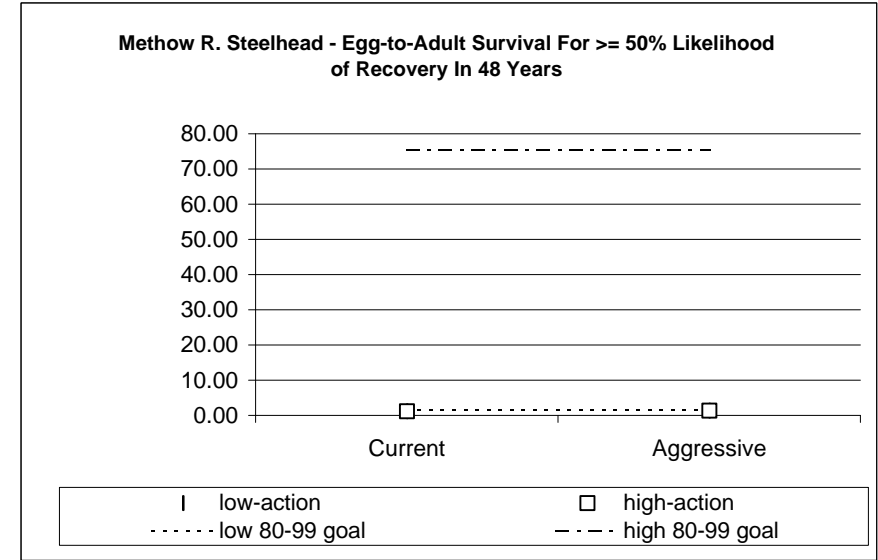
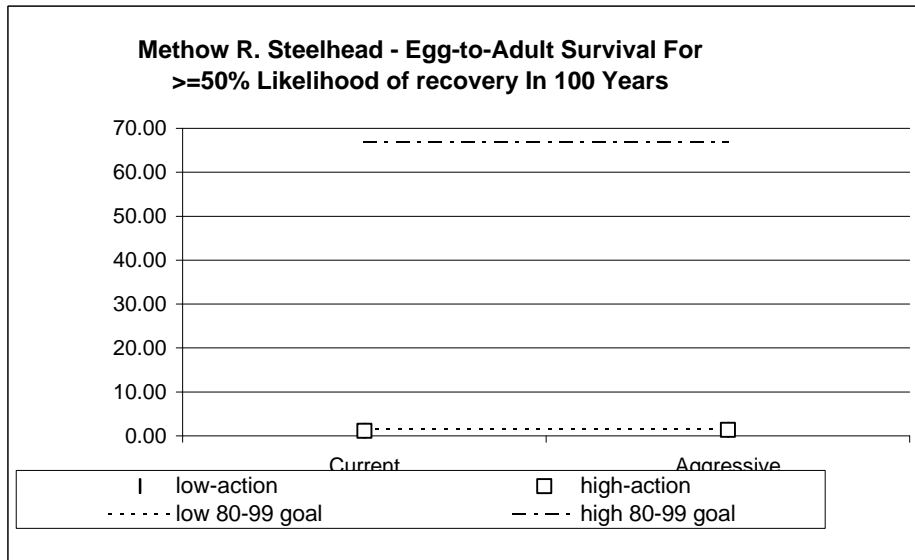
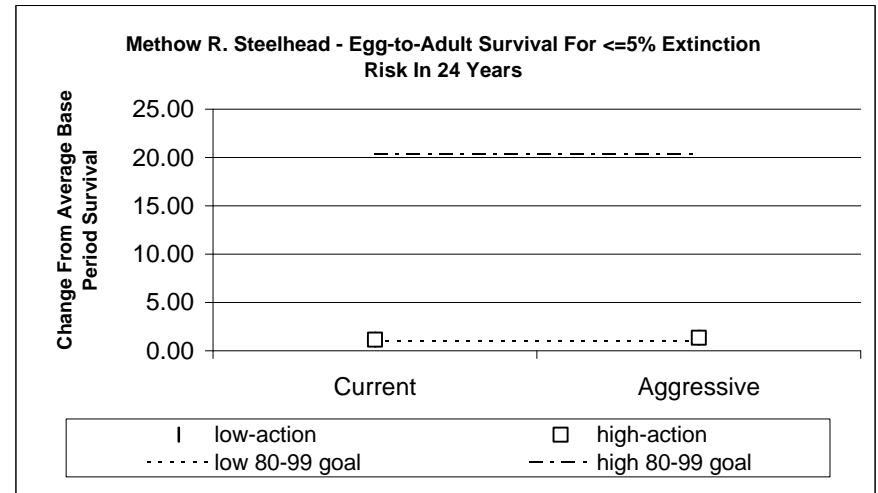
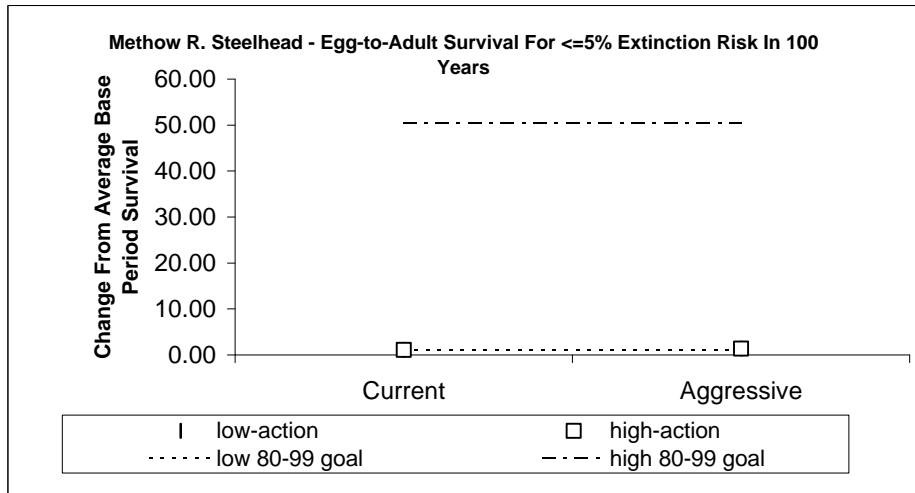
Figures C-A2-41 through C-A2-44. Needed survival changes from base period to achieve survival and recovery goals (horizontal lines) and changes from base period that are expected as a result of two actions for the UCR spring chinook Wenatchee River population.



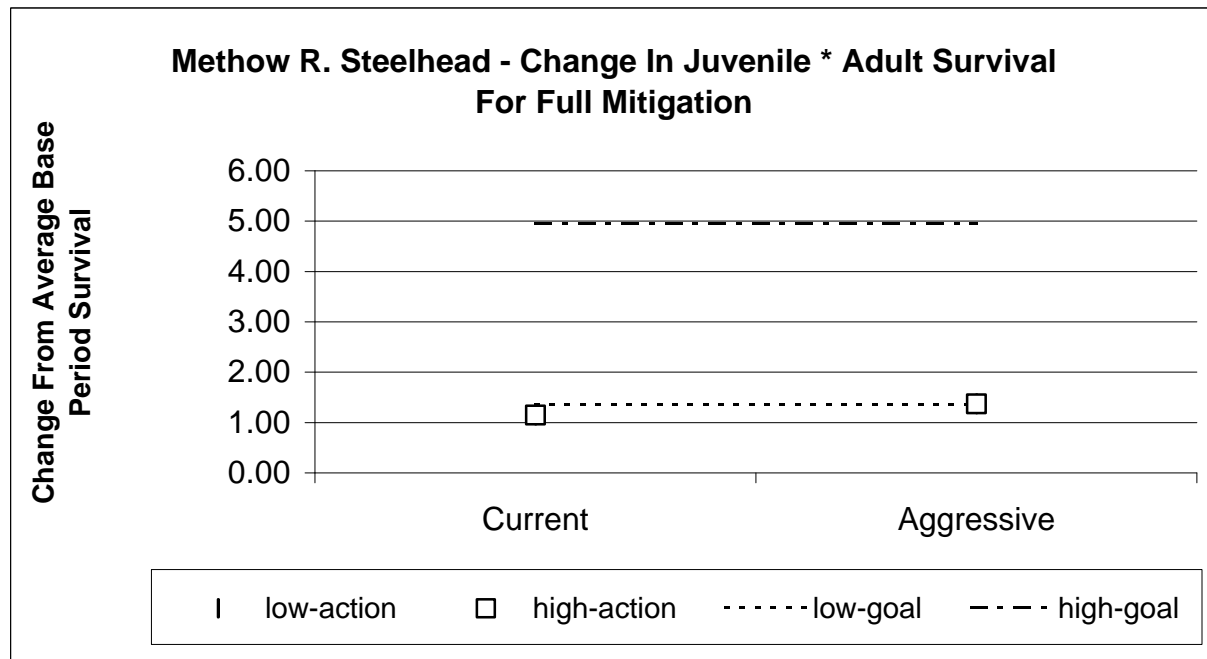
Figures C-A2-45. Needed survival changes form base period to achieve full mitigation goals (horizontal lines) and changes from base period that are expected as a result of two actions for the UCR spring chinook Wenatchee River population.



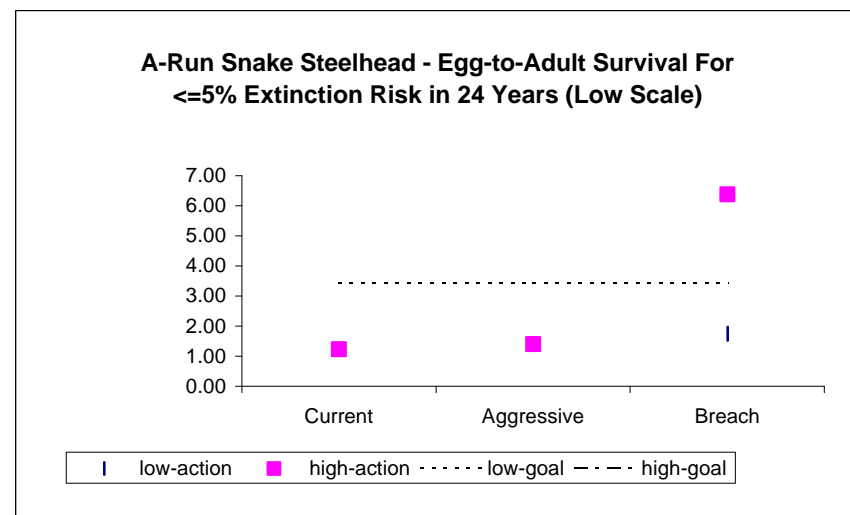
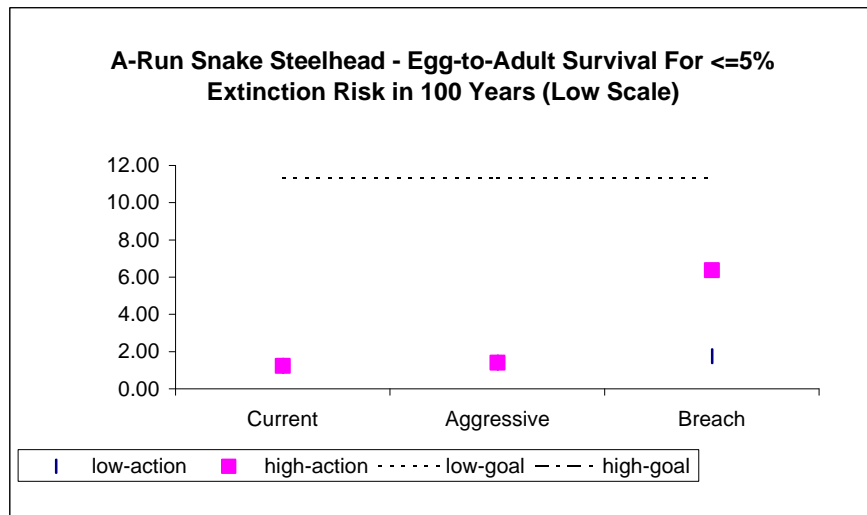
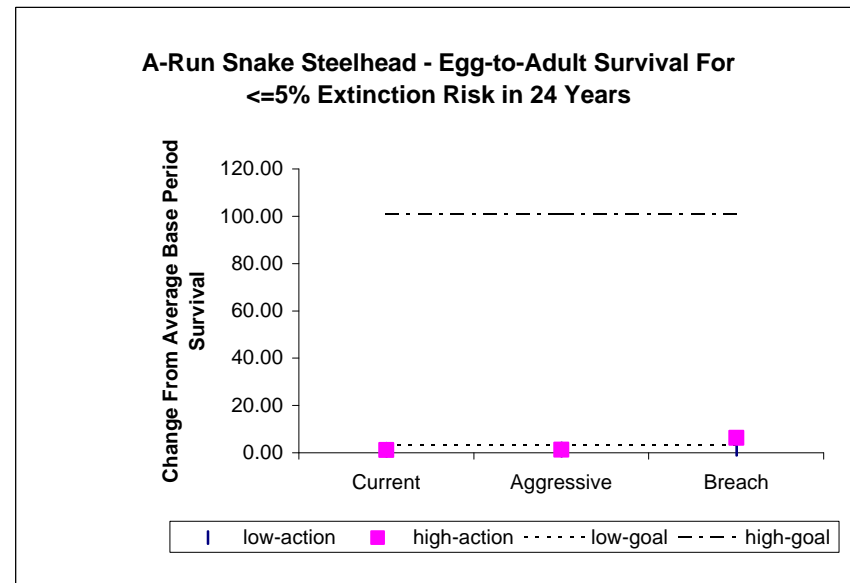
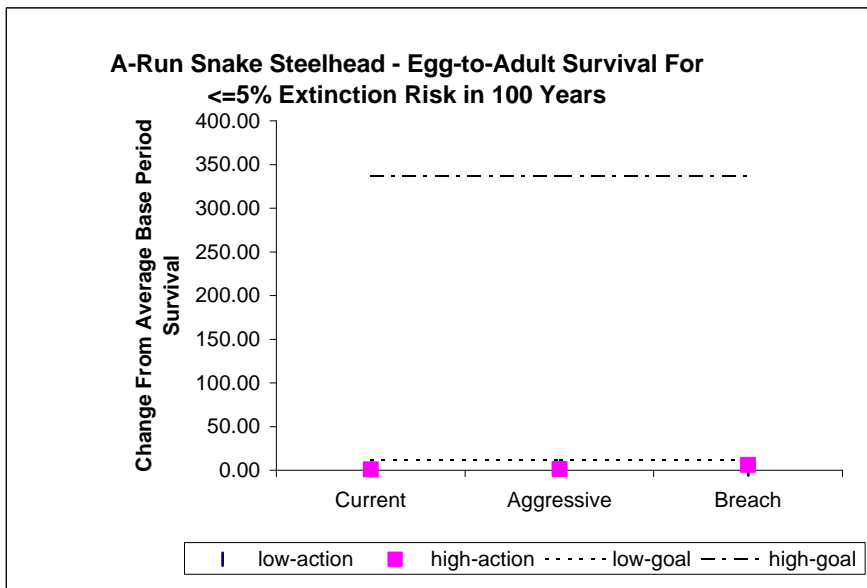
Figures C-A2-46 through C-A2-49. Needed survival changes from base period to achieve survival and recovery goals (horizontal lines) and changes from base period that are expected as a result of two actions for the UCR steelhead Methow River population.



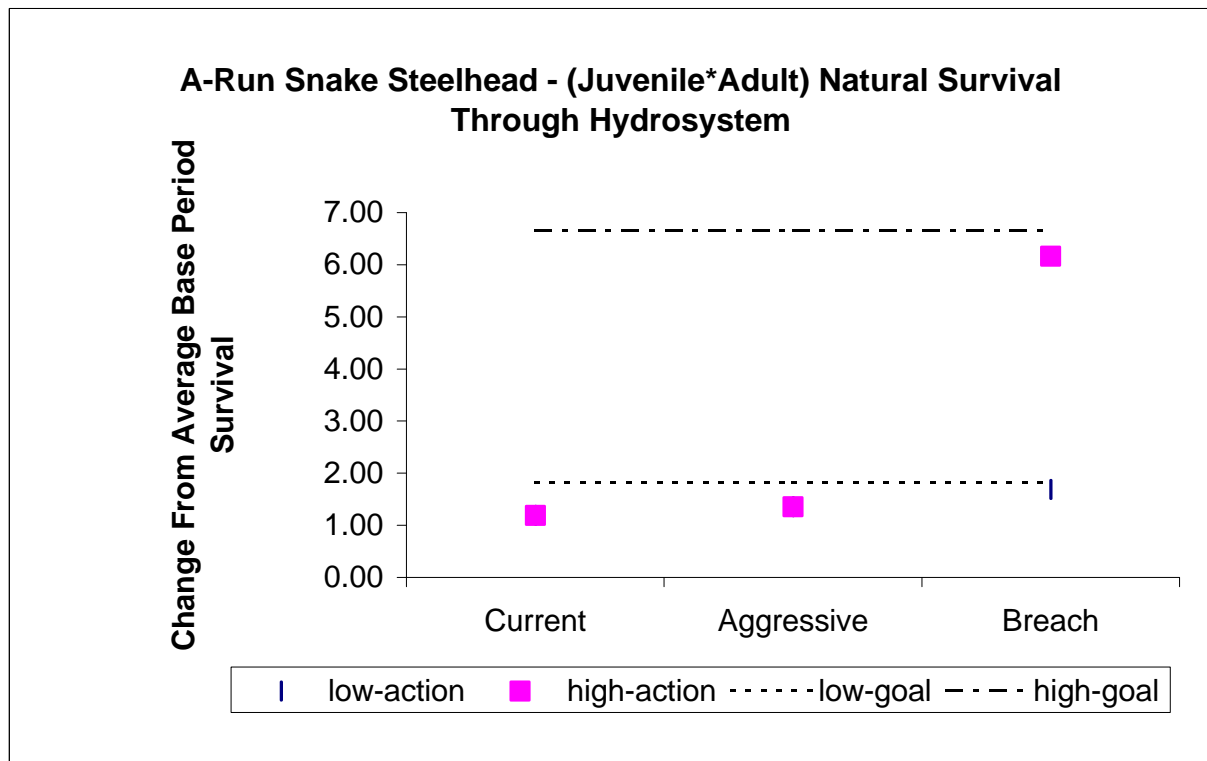
Figures C-A2-50. Needed survival changes from base period to achieve full mitigation goals (horizontal lines) and changes from base period that are expected as a result of two actions for the UCR steelhead Methow River population.



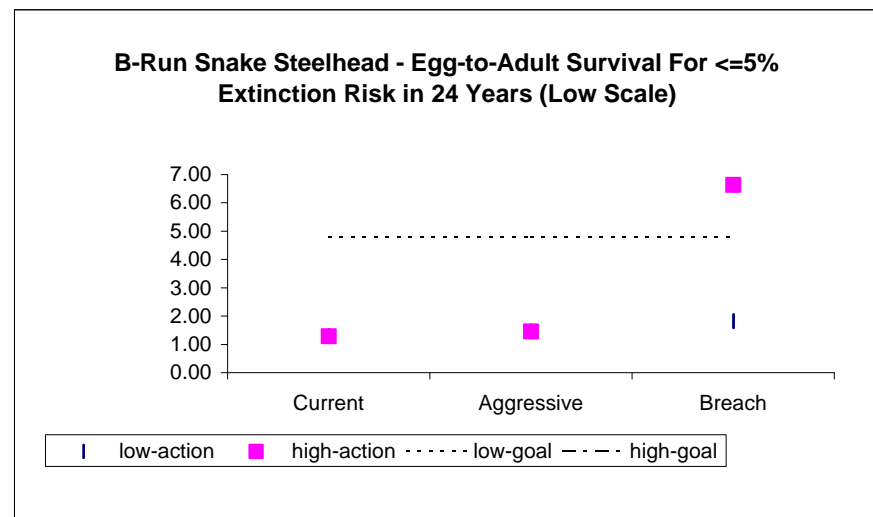
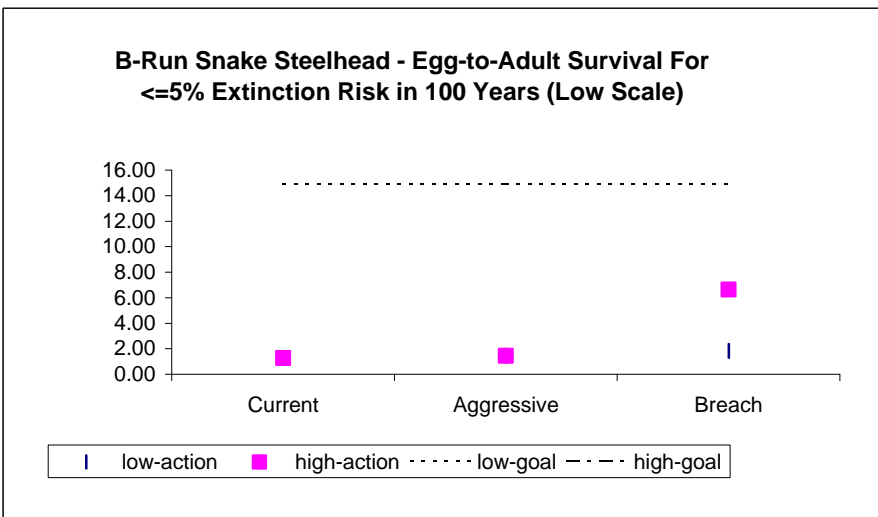
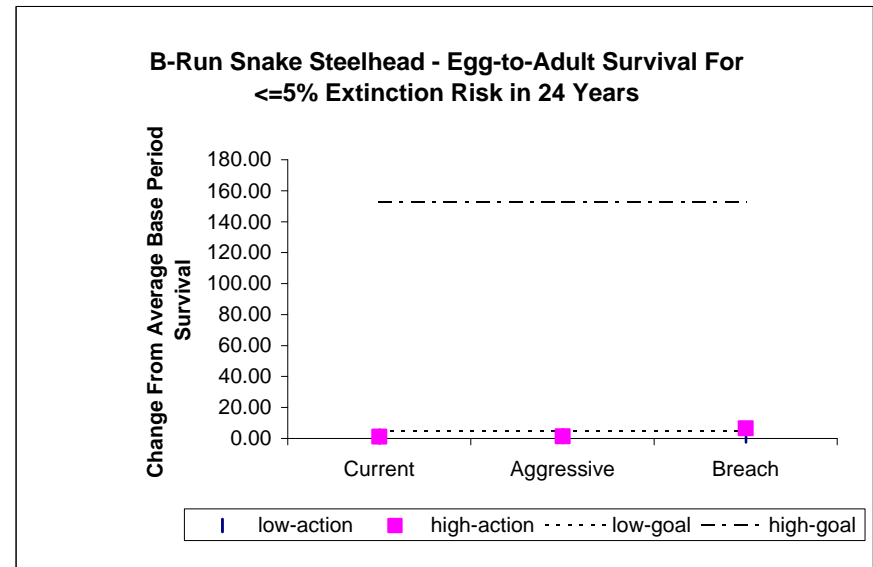
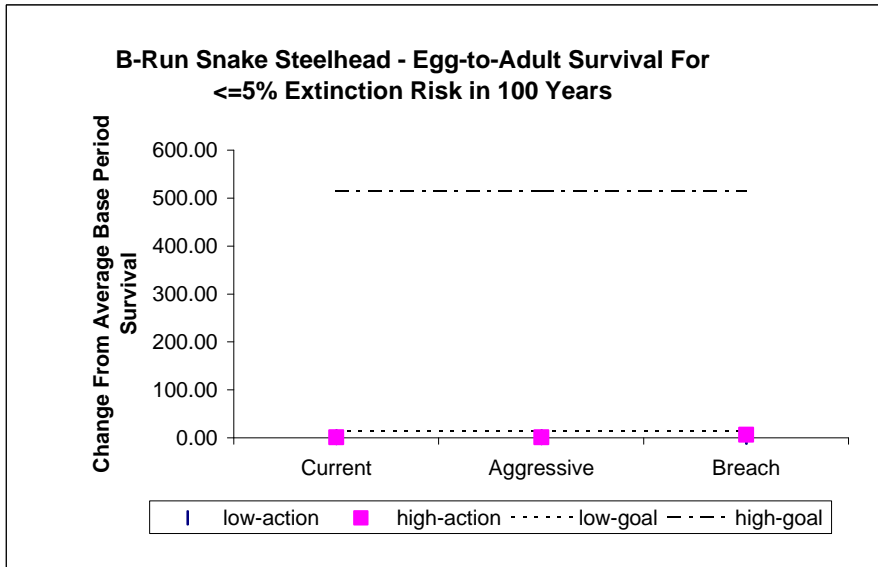
Figures C-A2-51 through C-A2-54. Needed survival changes from base period to achieve survival and recovery goals (horizontal lines) and changes from base period that are expected as a result of three actions for the Snake River Steelhead A Run.



Figures C-A2-55. Needed survival changes from base period to achieve full mitigation goals (horizontal lines) and changes from base period that are expected as a result of three actions for the Snake River SteelHead A-Run.



Figures C-A2-56 through C-A2-59. Needed survival changes from base period to achieve survival and recovery goals (horizontal lines) and changes from base period that are expected as a result of three actions for the Snake River Steelhead B Run.



Figures C-A2-60. Needed survival changes from base period to achieve full mitigation goals (horizontal lines) and changes from base period that are expected as a result of three actions for the Snake River SteelHead B-Run.

