

Appendix 2. Population viability analysis results for quasi-extinction at time step 50, intrinsic growth rate, and median abundance at time step 50. Simulations were run for six aggregations.

Aggregation	K	%K	Inits	Quasi-extinction		Median abundance		Intrinsic growth rate	
				Ungrazed	Grazed	Ungrazed	Grazed	Ungrazed	Grazed
Bravo	30	10	3	NA	NA	NA	NA	NA	NA
		25	8	0.59	0.97	0	0	0.012	-0.019
		50	15	0.40	0.90	18	0	0.001	-0.037
		75	22	0.31	0.85	30	0	-0.005	-0.043
		90	27	0.28	0.82	30	0	-0.009	-0.046
		100	30	0.26	0.80	30	0	-0.010	-0.047
Cutrale	78	10	8	0.59	0.97	0	0	0.018	-0.019
		25	20	0.33	0.86	28	0	0.006	-0.041
		50	39	0.22	0.75	57	0	-0.002	-0.049
		75	58	0.18	0.67	78	0	-0.007	-0.052
		90	70	0.16	0.63	78	0	-0.010	-0.053
		100	78	0.15	0.60	78	0	-0.011	-0.054
DeltaOQ	109	10	11	0.63	0.98	0	0	0.003	-0.040
		25	27	0.43	0.93	12	0	-0.008	-0.060
		50	54	0.30	0.85	28	0	-0.014	-0.068
		75	82	0.25	0.79	43	0	-0.018	-0.071
		90	98	0.22	0.76	51	0	-0.020	-0.072
		100	109	0.21	0.74	58	0	-0.021	-0.073
Echo	303	10	30	0.26	0.80	43	0	0.009	-0.046
		25	76	0.15	0.61	113	0	0.002	-0.053
		50	152	0.11	0.46	233.5	7	-0.004	-0.056
		75	227	0.09	0.38	303	11	-0.009	-0.058
		90	273	0.09	0.34	303	13	-0.011	-0.059
		100	303	0.08	0.32	303	15	-0.012	-0.059
TLWMA	1250	10	125	0.28	0.97	22	0	-0.033	-0.113
		25	312	0.16	0.90	53	0	-0.036	-0.117
		50	625	0.10	0.80	107	0	-0.037	-0.119
		75	938	0.08	0.73	159	0	-0.039	-0.121
		90	1125	0.07	0.69	190	0	-0.039	-0.122
		100	1250	0.07	0.67	213.5	0	-0.039	-0.122
KPPSP	1852	10	185	0.08	0.11	1852	176	0.034	-0.002
		25	463	0.07	0.07	1852	445	0.021	-0.006
		50	926	0.07	0.06	1852	908	0.010	-0.010
		75	1389	0.07	0.06	1852	1327	0.002	-0.014
		90	1667	0.07	0.06	1852	1614	-0.001	-0.015
		100	1852	0.07	0.06	1852	1779	-0.003	-0.016