

Update to the 2015 Stock Assessment and Fishery Evaluation Report for the Tanner Crab Fisheries of the Bering Sea and Aleutian Islands Regions

William T. Stockhausen
Alaska Fisheries Science Center
15 September 2015

The CPT chose a snow crab assessment model today for setting OFL. Because the Tanner crab OFL and ABC calculations depend on the snow crab OFL, I have (again) recalculated the values reported in the Tanner crab SAFE chapter released to the CPT and provide updated tables here.

The following updates Table 28 in the SAFE chapter and provides the snow crab F_{OFL} and effective F for Tanner crab bycatch used in the Tanner crab projection model. The row highlighted in yellow is based on the new preferred snow crab model (J. Turnock's Model 0):

Model	Snow Crab Model	Snow Crab F_{OFL}	Effective Snow Crab F	Projection Approach	Average Recruitment	B	Fmsy	Bmsy	B/Bmsy	OFL	ABC P-star	ABC (20% buffer)
2014 Model	--			2014	187.90	63.80	0.58	29.82	2.14	31.48	31.43	25.18
Model A	Model 0	1.32	0.049	2014	179.37	53.70	0.58	26.79	2.00	27.19	27.15	21.75
Model A	Model 5	1.26	0.034	2014	179.37	53.35	0.60	26.79	1.99	27.40	27.36	21.92
Model A	Preferred	0.89	0.012	2014	179.37	52.80	0.64	26.79	1.97	27.73	27.70	22.19
Model A	Preferred	0.89	0.012	new (1)	179.37	52.80	0.64	26.79	1.97	27.73	27.70	22.19
Model A	Preferred	0.89	0.012	new (2)	179.37	55.91	0.44	26.79	2.09	24.78	24.75	19.82
Model A	2014	1.01	0.021	2014	179.37	53.02	0.62	26.79	1.98	27.60	27.56	22.08
Model A	2014	1.01	0.021	new (1)	179.37	53.02	0.62	26.79	1.98	27.60	27.56	22.08
Model A	2014	1.01	0.021	new (2)	179.37	56.02	0.43	26.79	2.09	24.76	24.72	19.80
Model C	Preferred	1.01	0.012	2014	180.95	54.53	0.44	25.62	2.13	26.27	26.24	21.02
Model C	2014	0.89	0.021	2014	180.95	54.88	0.41	25.62	2.14	26.15	26.12	20.92

The following tables update the "Management Performance" tables in the Executive Summary:

Units in 1000's t.

Year	MSST	Biomass (MMB)	TAC (East + West)	Retained Catch	Total Catch Mortality	OFL	ABC
2011/12	11.40	58.59	0.00	0.00	1.24	2.75	2.48
2012/13	16.77	59.35	0.00	0.00	0.71	19.02	8.17
2013/14	16.98	72.70	1.41	1.26	2.78	25.35	17.82
2014/15	13.40	71.57	6.85	6.16	9.16	31.48	25.18
2015/16		53.70				27.19	21.75

Units in millions lbs.

Year	MSST	Biomass (MMB)	TAC (East + West)	Retained Catch	Total Catch Mortality	OFL	ABC
2011/12	25.13	129.17	0.00	0.00	2.73	6.06	5.47
2012/13	36.97	130.84	0.00	0.00	1.57	41.93	18.01
2013/14	37.43	160.28	3.11	2.78	6.14	55.89	39.29
2014/15	29.53	157.78	15.10	13.58	20.19	69.40	55.51
2015/16		118.38				59.94	47.95

The following tables update the “Basis for the OFL” tables in the Executive Summary.

Biomass units in 1000’s t.

Year	Tier	B_{MSY}	Current MMB	B/B_{MSY} (MMB)	F_{OFL}	Years to define B_{MSY}	Natural Mortality
2012/13	3a	33.45	58.59	1.75	0.61 yr ⁻¹	1982-2012	0.23 yr ⁻¹
2013/14	3a	33.54	59.35	1.77	0.73 yr ⁻¹	1982-2013	0.23 yr ⁻¹
2014/15	3a	29.82	63.80	2.14	0.61 yr ⁻¹	1982-2014	0.23 yr ⁻¹
2015/16	3a	26.79	53.70	2.00	0.58 yr ⁻¹	1982-2015	0.23 yr ⁻¹

Biomass units in millions lbs.

Year	Tier	B_{MSY}	Current MMB	B/B_{MSY} (MMB)	F_{OFL}	Years to define B_{MSY}	Natural Mortality
2012/13	3a	73.74	129.17	1.75	0.61 yr ⁻¹	1982-2012	0.23 yr ⁻¹
2013/14	3a	73.94	130.84	1.77	0.73 yr ⁻¹	1982-2013	0.23 yr ⁻¹
2014/15	3a	65.74	140.66	2.14	0.61 yr ⁻¹	1982-2014	0.23 yr ⁻¹
2015/16	3a	59.06	118.38	2.00	0.58 yr ⁻¹	1982-2015	0.23 yr ⁻¹