

2017 PWS Trawl Survey Summary (draft)

Joshua Mumm

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The 2017 Prince William Sound large-mesh bottom trawl survey was conducted between June 9th and 16th. A total of 48 successful 1 nmi tows were completed, including 5 in Valdez Arm (Figure 1). A total of 1,350 male and 1,040 female Tanner crab were captured.

Although the legal size was reduced from 135 mm (5.3 in) to 127 mm (5.0 in) in 2017, the historical legal size of 135 mm was redefined as preferred legal and will continue to be used for achieving minimum stock size thresholds and setting total allowable catch (5 AAC 35.308). Catch can be retained so long as it is larger than the legal size (127 mm). The threshold for opening the commercial fishery is 200,000 preferred legal males.

The 2017 catch included 189 preferred legal males. Mean preferred legal male CPUE was 3.94 crab/nmi (SE = 0.92; CV = 152%) and ranged from 0 to 20. The estimated abundance of preferred legal males was 149,481 crabs (95% CI = +/- 70,117), slightly greater than the previous 2 surveys in 2014 and 2015, but less than the 2 high years in 2011 and 2013 (Table 1, Figure 2). The estimated abundance of prerecruit-1 males (113-134 mm) was the second greatest in the history of the survey. This dominant cohort first appeared in the survey as a record abundance of pre-4's in 2013, and is anticipated to contribute to an increased abundance of preferred legal males in 2018.

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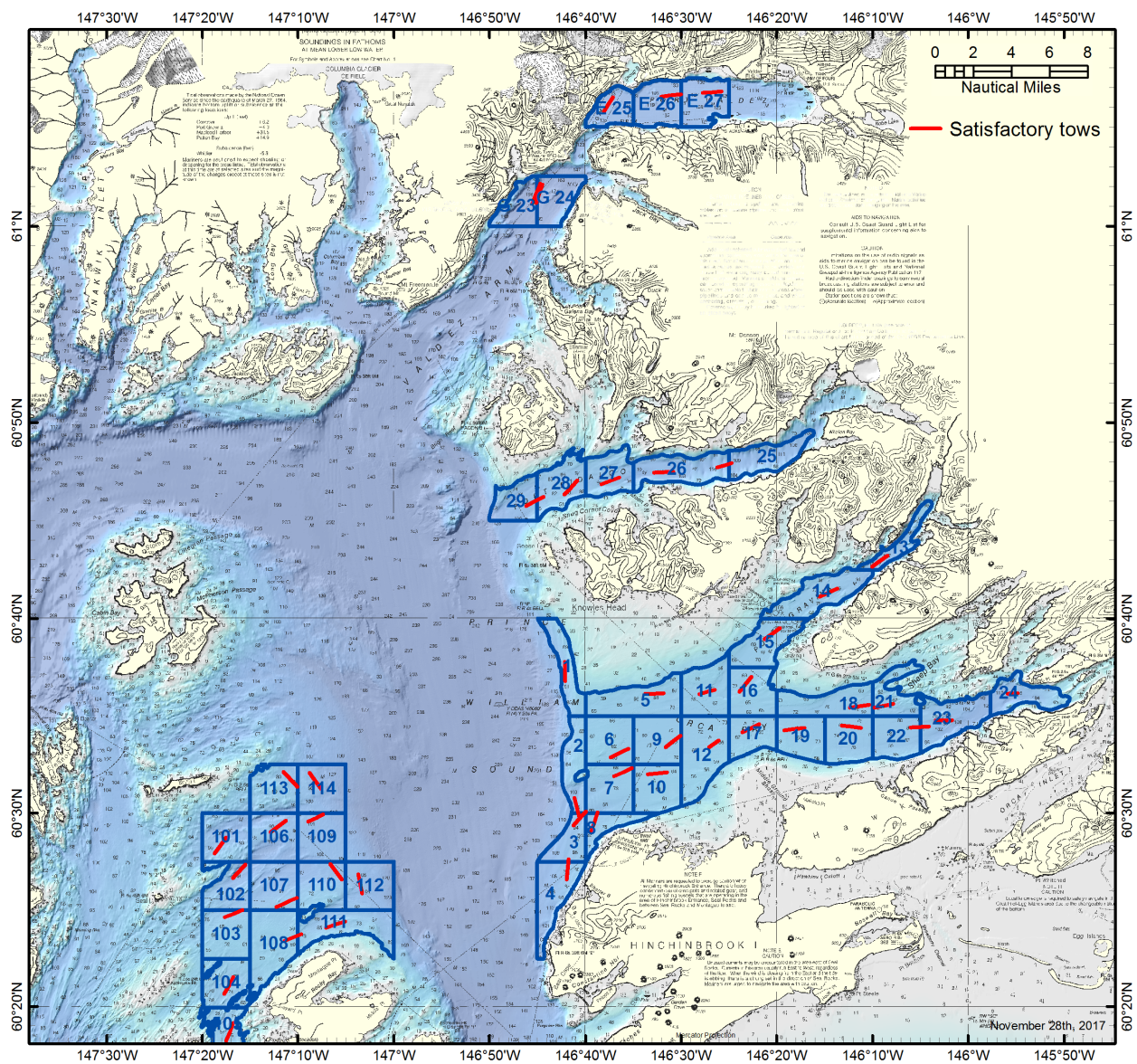


Figure 1: 2017 Prince William Sound large-mesh trawl survey grid and tow paths.

Table 1: Male Tanner crab abundance estimates from trawl surveys in Prince William Sound, 1991-2017. Parenthetical size limits are carapace width in millimeters.

Year	Tows	Pre-Recruits				Preferred Legal Males		Total Males	
		Pre-4 (<73)	Pre-3 (73-92)	Pre-2 (93-112)	Pre-1 (113-134)	Abund. (>135)	± 95% CI	Abund.	± 95% CI
1991	29	832,376	697,768	326,658	275,497	134,820	106,043	2,267,119	1,420,647
1992	37	601,934	319,988	487,459	318,010	68,119	39,590	1,795,511	606,398
1993	38	470,946	118,931	226,671	266,073	121,184	39,588	1,203,805	433,640
1994	38	669,317	79,685	123,373	182,595	55,544	23,511	1,110,513	484,107
1995	32	294,093	41,317	71,749	100,786	24,820	15,535	532,765	171,825
1996	-	-	-	-	No_Survey	-	-	-	-
1997	39	209,713	55,957	51,115	34,283	11,336	11,048	362,403	158,018
1998	-	-	-	-	No_Survey	-	-	-	-
1999	40	116,969	7,717	27,531	16,792	3,677	3,574	172,686	64,516
2000	-	-	-	-	No_Survey	-	-	-	-
2001	40	1,364,121	407,171	223,047	59,143	6,626	6,655	2,060,109	784,610
2002	-	-	-	-	No_Survey	-	-	-	-
2003	40	495,341	113,424	195,928	94,758	15,882	17,969	915,333	360,036
2004	-	-	-	-	No_Survey	-	-	-	-
2005	40	279,702	80,563	142,569	117,450	28,940	25,743	649,224	291,641
2006	-	-	-	-	No_Survey	-	-	-	-
2007	32	747,359	201,817	219,781	225,888	17,749	14,290	1,412,595	423,048
2008	-	-	-	-	No_Survey	-	-	-	-
2009	43	1,009,676	509,029	256,459	337,161	43,836	30,505	2,156,161	883,720
2010	-	-	-	-	No_Survey	-	-	-	-
2011	43	984,555	403,755	537,706	574,852	186,422	87,727	2,687,291	1,732,997
2012	-	-	-	-	No_Survey	-	-	-	-
2013	43	5,986,794	1,024,721	429,215	322,264	184,993	74,780	7,947,986	2,332,125
2014	41	817,801	634,475	421,009	329,437	134,929	80,188	2,337,652	647,317
2015	43	611,044	466,331	609,544	302,250	102,789	46,797	2,091,958	882,128
2016	-	-	-	-	No_Survey	-	-	-	-
2017	43	219,496	75,278	253,599	444,370	149,481	70,117	1,142,224	290,506

Table 2: Female Tanner crab abundance estimates in Prince William Sound.

Year	Tows	Juvenile		Mature		Total Females	
		Juvenile	\pm 95% CI	Abund.	\pm 95% CI	Abund.	\pm 95% CI
1991	29	1,491,508	1,068,760	647,057	253,271	2,138,565	1,199,315
1992	37	667,192	195,130	859,829	389,374	1,527,021	455,774
1993	38	460,476	223,580	304,666	130,179	765,142	256,815
1994	38	700,447	481,601	223,479	107,325	923,926	506,303
1995	32	257,603	118,930	97,336	44,093	354,938	130,055
1996	-	-	-	No_Survey	-	-	-
1997	39	223,738	109,838	99,705	70,201	323,443	159,290
1998	-	-	-	No_Survey	-	-	-
1999	40	107,444	47,079	22,788	13,549	130,231	50,243
2000	-	-	-	No_Survey	-	-	-
2001	40	1,634,795	555,504	630,644	328,247	2,265,440	769,155
2002	-	-	-	No_Survey	-	-	-
2003	40	424,736	223,746	516,506	332,555	941,242	393,196
2004	-	-	-	No_Survey	-	-	-
2005	40	349,601	213,607	258,566	141,310	608,167	284,636
2006	-	-	-	No_Survey	-	-	-
2007	32	760,869	321,407	711,987	380,483	1,472,856	518,408
2008	-	-	-	No_Survey	-	-	-
2009	43	771,105	448,728	1,050,207	622,541	1,821,312	714,539
2010	-	-	-	No_Survey	-	-	-
2011	43	1,035,740	730,891	654,548	390,494	1,690,288	835,235
2012	-	-	-	No_Survey	-	-	-
2013	43	6,103,293	2,102,140	1,093,875	605,695	7,197,168	2,213,381
2014	41	1,011,592	373,670	811,606	380,555	1,823,198	500,306
2015	43	400,355	209,237	690,873	298,312	1,091,229	371,458
2016	-	-	-	No_Survey	-	-	-
2017	43	374,558	226,429	564,903	198,038	939,461	318,317

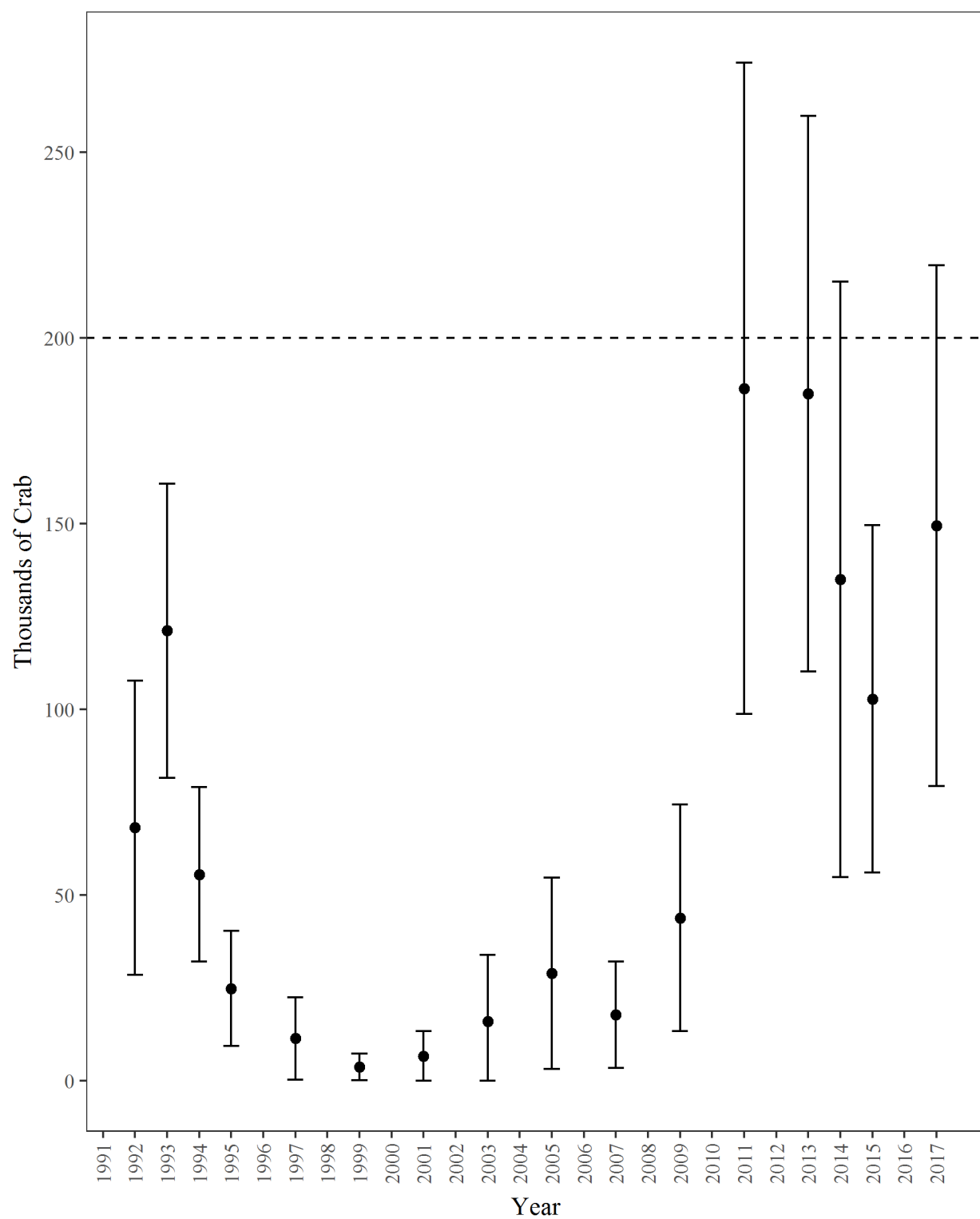


Figure 2: Preferred legal male Tanner crab (>135 mm) abundance estimates with 95% confidence intervals and commercial threshold in Prince William Sound.

Table 3: Male Tanner crab abundance estimates for Valdez Arm in Prince William Sound.

Year	Tows	Pre-Recruits				Preferred Legal Males		Total Males	
		Pre-4 (<73)	Pre-3 (73-92)	Pre-2 (93-112)	Pre-1 (113-134)	Abund. (>135)	± 95% CI	Abund.	± 95% CI
1999	4	1,463	0	4,684	11,274	22,163	21,000	39,583	37,525
2000	-	-	-	-	No_Survey	-	-	-	-
2001	4	109,773	20,244	7,255	12,990	25,852	42,158	176,114	186,362
2002	-	-	-	-	No_Survey	-	-	-	-
2003	1	-	-	-	-	-	-	-	-
2004	-	-	-	-	No_Survey	-	-	-	-
2005	4	12,960	14,394	43,269	60,472	50,481	80,221	181,576	180,302
2006	-	-	-	-	No_Survey	-	-	-	-
2007	7	18,369	17,484	41,431	53,740	21,654	18,868	152,679	102,003
2008	-	-	-	-	No_Survey	-	-	-	-
2009	7	31,585	18,626	21,776	37,738	30,201	36,304	139,926	86,926
2010	-	-	-	-	No_Survey	-	-	-	-
2011	5	16,694	49,096	32,495	60,549	86,682	134,802	245,516	409,752
2012	-	-	-	-	No_Survey	-	-	-	-
2013	5	31,303	18,635	15,722	31,423	36,402	66,403	133,485	223,501
2014	5	53,390	21,641	26,249	23,819	31,741	37,677	156,840	161,911
2015	5	48,123	54,094	46,685	37,978	31,406	44,898	218,284	195,568
2016	-	-	-	-	No_Survey	-	-	-	-
2017	5	2,346	8,690	32,857	48,441	44,283	52,182	136,617	144,486

^a Populations estimates were not calculated in 2003 due to insufficient sample size.

Table 4: Female Tanner crab abundance estimates for Valdez Arm in Prince William Sound.

Year	Tows	Juvenile		Mature		Total Females	
		Juvenile	\pm 95% CI	Abund.	\pm 95% CI	Abund.	\pm 95% CI
1999	4	1,463	4,653	45,121	119,290	46,583	117,992
2000	-	-	-	No_Survey	-	-	-
2001	4	104,664	91,733	17,432	30,897	122,096	117,820
2002	-	-	-	No_Survey	-	-	-
2003	1	-	-	-	-	-	-
2004	-	-	-	No_Survey	-	-	-
2005	4	4,344	13,820	26,022	16,046	30,366	13,966
2006	-	-	-	No_Survey	-	-	-
2007	7	11,650	12,936	31,253	19,170	42,903	29,478
2008	-	-	-	No_Survey	-	-	-
2009	7	42,290	15,495	37,622	34,539	79,913	34,755
2010	-	-	-	No_Survey	-	-	-
2011	5	21,729	41,117	20,542	19,437	42,272	58,123
2012	-	-	-	No_Survey	-	-	-
2013	5	29,725	29,369	1,177	3,266	30,902	28,139
2014	5	41,376	47,340	13,080	22,192	54,456	64,332
2015	5	52,179	84,884	41,051	67,046	93,230	141,400
2016	-	-	-	No_Survey	-	-	-
2017	5	0	0	10,580	19,415	10,580	19,415

^a Populations estimates were not calculated in 2003 due to insufficient sample size.

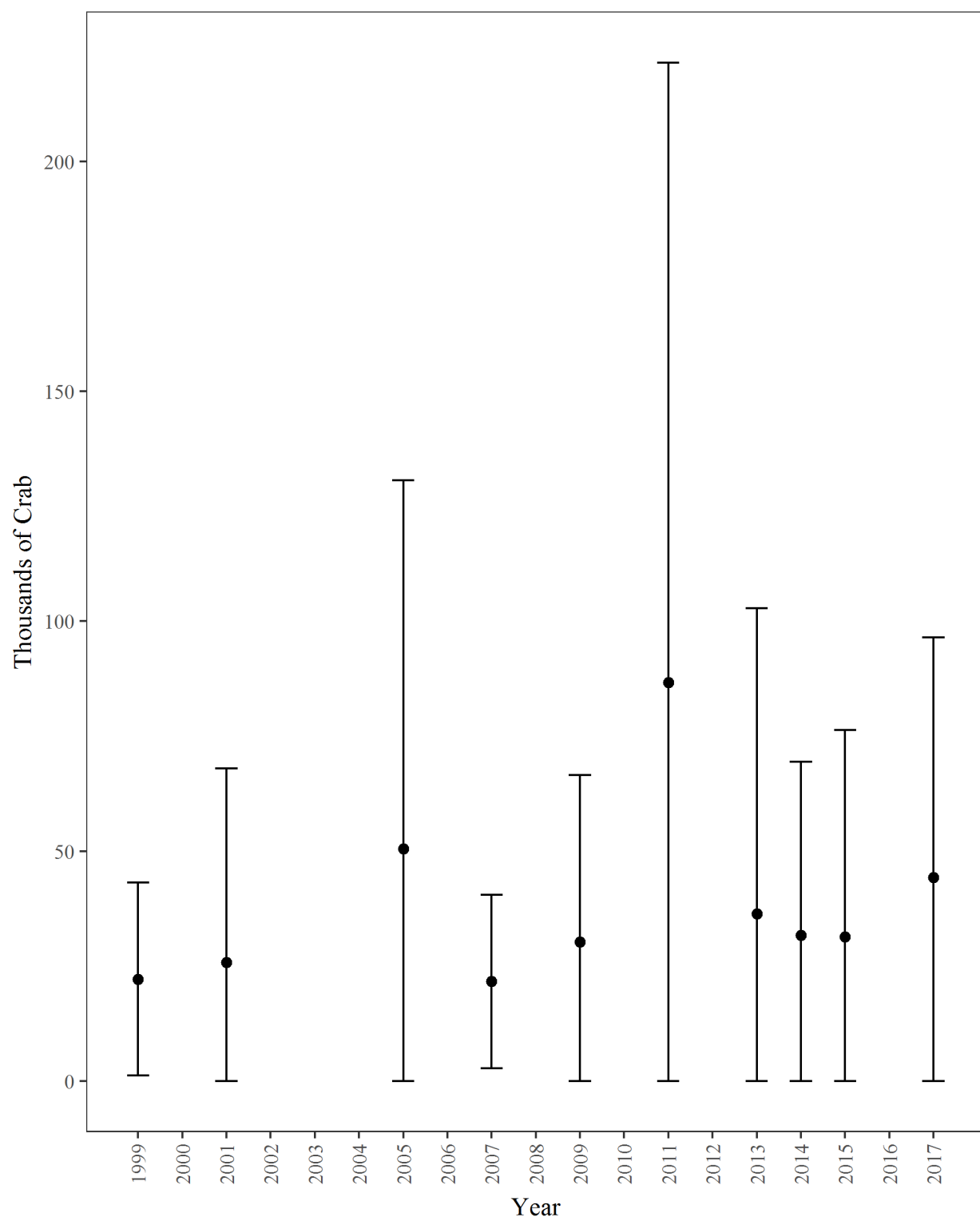


Figure 3: Preferred legal male Tanner crab (>135 mm) abundance estimates and 95% confidence intervals for Valdez Arm in Prince William Sound.