

December 5, 2021

Submitted by the Alaska Department of Fish and Game at the request of Board Members Mitchell and Wood.

Substitute Language for Proposal 75

5 AAC 35.308 Registration Area E Tanner crab harvest strategy.

Adopt a new Prince William Sound Area (PWS; Area E) Tanner crab harvest strategy to align with new proposed districts, as follows:

5 AAC 35.308 is repealed and readopted to read:

[(A) IF ADEQUATE DATA ARE AVAILABLE, THE DEPARTMENT SHALL ESTIMATE THE ABUNDANCE OF MALE TANNER CRAB IN THE PRINCE WILLIAM SOUND AREA, AND SHALL ESTABLISH A GUIDELINE HARVEST LEVEL FOR LEGAL MALE TANNER CRAB IF THE CURRENT ESTIMATED ABUNDANCE OF TH IS ABOVE THE MINIMUM STOCK THRESHOLD FOR OPENING A FISHERY.

(B) THE COMMERCIAL FISHERY MAY OPEN ONLY IF THE CURRENT ESTIMATED ABUNDANCE OF TH IS GREATER THAN OR EQUAL TO 200,000 CRAB (50 PERCENT OF AH). IF THE COMMERCIAL FISHERY HAS BEEN CLOSED FOR THREE OR MORE CONSECUTIVE YEARS, THEN THE ESTIMATED ABUNDANCE OF TH MUST BE GREATER THAN OR EQUAL TO 200,000 CRAB FOR TWO OR MORE YEARS BEFORE THE COMMERCIAL FISHERY MAY OPEN. THE COMMERCIAL GUIDELINE HARVEST LEVEL WILL BE DETERMINED AS FOLLOWS:

(1) THE GUIDELINE HARVEST LEVEL FOR TL MAY NOT EXCEED 15 PERCENT OF AC(TH) IF AC(TH) IS GREATER THAN OR EQUAL TO 200,000 CRAB, BUT LESS THAN 300,000 CRAB;

(2) THE GUIDELINE HARVEST LEVEL FOR TL MAY NOT EXCEED 20 PERCENT OF AC(TH) IF AC(TH) IS GREATER THAN OR EQUAL TO 300,000 CRAB, BUT LESS THAN 400,000 CRAB;

(3) THE GUIDELINE HARVEST LEVEL FOR TL MAY NOT EXCEED 25 PERCENT OF AC(TH), IF AC(TH) IS GREATER THAN OR EQUAL TO 400,000 CRAB; AND

(4) THE GUIDELINE HARVEST LEVEL FOR LEGAL MALE TANNER CRAB MAY BE REDUCED OR THE COMMERCIAL FISHERY CLOSED, IF THE ESTIMATED COMMERCIAL HARVEST WOULD CAUSE THE ESTIMATED ABUNDANCE OF TH TO FALL BELOW THE MINIMUM STOCK THRESHOLD.

(C) IN THIS SECTION,

(1) "TL" MEANS MALE TANNER CRAB THAT ARE 127 MM (5.0 INCHES) OR GREATER IN CARAPACE WIDTH, WHICH IS THE LEGAL SIZE OF TANNER CRAB ALLOWED TO BE RETAINED FOR HARVEST;

(2) "TH" MEANS MALE TANNER CRAB THAT ARE 135 MM (5.3 INCHES) OR GREATER IN CARAPACE WIDTH, WHICH WAS THE HISTORICAL LEGAL SIZE OF TANNER CRAB IN THE PRINCE WILLIAM SOUND AREA;

(3) "AH" MEANS THE AVERAGE HISTORICAL ABUNDANCE OF TH; AH IS AN ESTIMATE OF THE BIOMASS THAT WILL PRODUCE MAXIMUM SUSTAINED YIELD;

(4) "AC(TH)" MEANS THE CURRENT ESTIMATED ABUNDANCE OF TH.

(5) IF THE COMMERCIAL FISHERY OPENS UNDER THIS SECTION, THE SPORT FISHERY WILL OPEN AS PROVIDED IN 5 AAC 55.022(b)(3)]

- a. In the Prince William Sound Area an estimate of the abundance of mature male Tanner crab (T_M) for each district will be used to establish a guideline harvest level (GHL) for legal size male Tanner crab (T_L), if the current estimated abundance of T_M is above the minimum stock threshold for opening a fishery.

1. The commercial fishery may open in the Northeastern District only if T_M is greater than or equal to 217,800 crab. The GHL will be determined as follows:
 - A. the GHL for T_L may not exceed 10 percent of the estimated abundance of T_M if T_M is greater than or equal to 217,800 but less than 326,700 crab;
 - B. the GHL for T_L may not exceed 15 percent of the estimated abundance of T_M if T_M is greater than or equal to 326,700 but less than 435,700 crab;
 - C. the GHL for T_L may not exceed 20 percent of the estimated abundance of T_M if T_M is greater than or equal to 435,700 crab;
 - D. the GHL for T_L may not exceed 20 percent of T_L abundance;
 - E. the GHL for T_L may be reduced or the commercial fishery closed, if the estimated commercial harvest would cause the estimated abundance of T_M to fall below the minimum threshold.
2. The commercial fishery may open in the Central District only if the current estimated abundance of T_M is greater than or equal to 246,700 crab;

- A. the GHL for T_L may not exceed 10 percent of the estimated abundance of T_M if the T_M abundance is greater than or equal to 246,700 but less than 370,100 crab;
 - B. the GHL for T_L may not exceed 15 percent of the estimated abundance of T_M if the T_M abundance is greater than or equal to 370,100 but less than 493,500 crab;
 - C. the GHL for T_L may not exceed 20 percent of the estimated abundance of T_M if the T_M abundance is greater than or equal to 493,500 crab;
 - D. the GHL for T_L may not exceed 20 percent of T_L abundance;
 - E. the GHL for T_L may be reduced or the commercial fishery closed, if the estimated commercial harvest would cause the estimated abundance of T_H to fall below the minimum threshold;
- 3. The commercial fishery may open in the Southwestern District only if the current estimated abundance of T_M is greater than or equal to 327,000 crab. The GHL will be determined as follows:
 - A. the GHL for T_L may not exceed 10 percent of the estimated abundance of T_M if T_M abundance is greater than or equal to 327,000 but less than 490,400 crab;
 - B. the GHL for T_L may not exceed 15 percent of the estimated abundance of T_M if the T_M abundance is greater than or equal to 490,400 but less than 653,900 crab;
 - C. the GHL for T_L may not exceed 20 percent of the estimated abundance of T_M if T_M is greater than or equal to 653,900 crab;
 - D. the GHL for T_L may not exceed 20 percent of T_L abundance;
 - E. the GHL for T_L may be reduced or the commercial fishery closed, if the estimated commercial harvest would cause the estimated abundance of T_H to fall below the minimum threshold.
- 4. In the Northwestern and Southeastern Districts, if there is adequate data available, the department shall determine if there is a harvestable surplus of Tanner crab for the Northwestern and Southeastern Districts, and either district may open.
 - b. In implementing this harvest strategy, the board directs the department to use the best scientific information available and to consider the reliability of estimates of Tanner crab *C. bairdi*, the manageability of the fishery, and any other factors the department determines necessary to be consistent with the sustained yield principle.
 - c. For the purposes of this section:

1. **“T_M” means male Tanner crab that are 4.4 inches (113 mm) or greater in carapace width, which is the size of mature male Tanner crab in the Prince William Sound Area;**
 2. **“T_L” means male Tanner crab that are 5.0 inches (127 mm) or greater in carapace width, which is the legal size of Tanner crab allowed to be retained for harvest in the Prince William Sound Area;**
 3. **“GHL” means guideline harvest level.**
- d. **If a commercial fishery opens under this section in any district(s), a sport fishery will open in the same district(s) as provided in 5 AAC 55.022(b)(3).**

Note: If Proposal 75 substitute language is adopted, the regulatory language under 5 AAC 55.022(b)(3)(E) will need to be updated to reference **5 AAC 35.308 (d)** (instead of 5 AAC 35.308[(c)(5)]).

5 AAC 55.022. General provisions for seasons, bag, possession, and size limits, and methods and means for the Prince William Sound Area.

5 AAC 55.022(b)(3)(E) is amended to read:

(b) Unless otherwise specified in 5 AAC 55.023, or by an emergency order issued under AS 16.05.060, the following are the seasons, bag, possession, and size limits, and methods and means that apply to sport fishing for shellfish in the Prince William Sound Area:

...

(3) Tanner crab may be taken as follows:

...

(E) the Tanner crab sport fishery will only occur as provided in **5 AAC 35.308(d)** [5 AAC 35.308(c)(5)];

The Alaska Department of Fish and Game is proposing to set thresholds for Areas 1, 2, and 3 using abundance of mature male crab ($\geq 4.4''$), a similar strategy used in the rest of the state. Developing thresholds of mature males using information from 1983-2015 is representative of current stock status, removing abundance estimates derived from prior to the North Pacific Regime Shift. The GHL will be based on mature male crab with stair-step harvest rates (10%, 15%, 20%) and includes a harvest cap of 20% of legal male ($\geq 5''$) crab abundance. Based on this proposed method, in 2022, the Northeastern District (New proposed district designation, Area 1) would open for a harvest of 61,800 lb (32,882 crab).

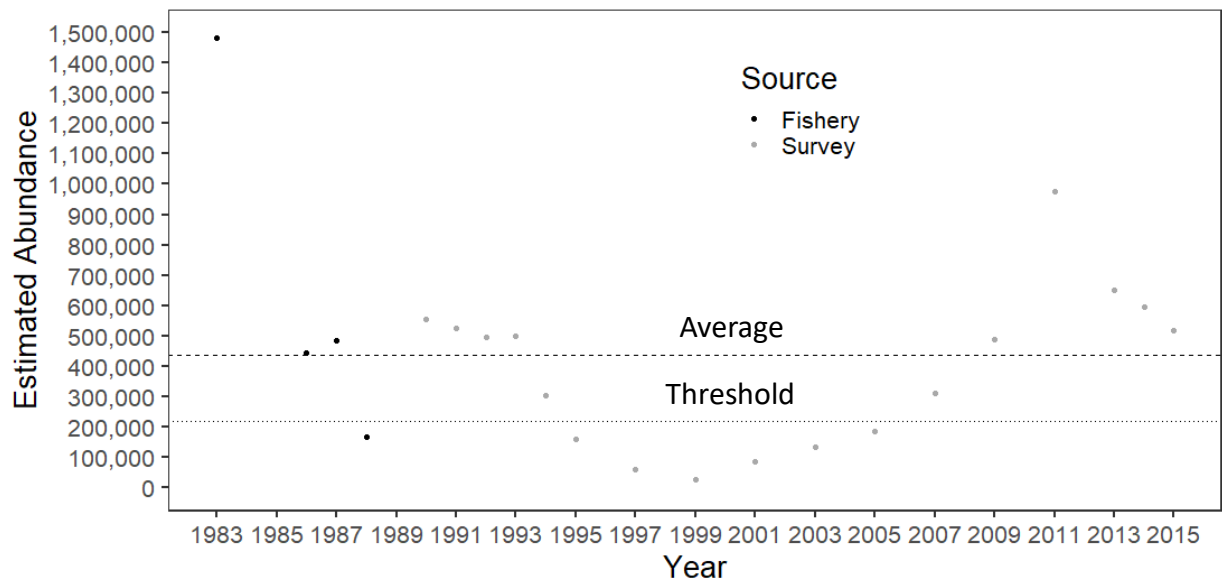
In addition, the department plans to conduct a test fishery, using historical pot survey fishing locations in Areas 2 and 3 in 2022.

In order to implement this harvest strategy the board would need to **adopt Proposals 73-78**.

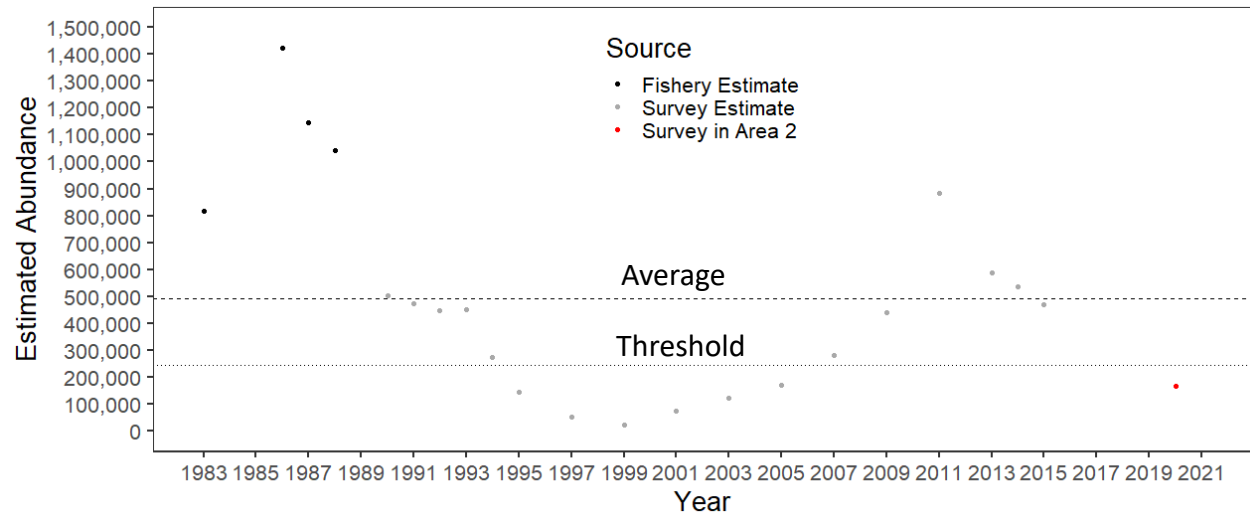
Updated thresholds, harvest rates, and guideline harvest levels

Fishing Area 1 Harvest Rates			
MSY _{proxy} = 435,700			
Min. Abund. Threshold = 217,800 mature males			
Abundance Estimate	% MSY _{proxy}	Harvest Rate	Harvest (# crab)
217,800 to <326,700	50% to <75%	10%	21,800 to 32,700
326,700 to <435,700	75% to <100%	15%	49,000 to 65,400
$\geq 435,700$	100%+	20%	87,100+
*Harvest cap of 20% legal male abundance			
Fishing Area 2 Harvest Rates			
MSY _{proxy} = 493,500			
Min. Abund. Threshold = 246,700 mature males			
Abundance Estimate	% MSY _{proxy}	Harvest Rate	Harvest (# crab)
246,700 to <370,100	50% to <75%	10%	24,700 to 37,000
370,100 to <493,500	75% to <100%	15%	55,500 to 74,000
$\geq 493,500$	100%+	20%	98,700+
*Harvest cap of 20% legal male abundance			
Fishing Area 3 Harvest Rates			
MSY _{proxy} = 653,900			
Min. Abund. Threshold = 327,000 mature males			
Abundance Estimate	% MSY _{proxy}	Harvest Rate	Harvest (# crab)
327,000 to <490,400	50% to <75%	10%	32,700 to 49,000
490,400 to <653,900	75% to <100%	15%	73,600 to 98,100
$\geq 653,900$	100%+	20%	130,800+
*Harvest cap of 20% legal male abundance			

Area 1 – Mature male abundance and thresholds (dashed line-average, dotted line-threshold)



Area 2 – Mature male abundance and thresholds (dashed line-average, dotted line-threshold)



Area 3 – Mature male abundance and thresholds (dashed line-average, dotted line-threshold)

