



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

September 24, 2009

Mr. Eric Olson, Chair
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, Alaska 99601

Mr. Denby S. Lloyd, Commissioner
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, Alaska 99811-5526

Dear Chairman Olson and Commissioner Lloyd:

This letter provides notification of changes in the status of four crab stocks: (1) St. Matthew blue king crab (*Paralithodes platypus*) is now rebuilt, (2) Tanner crab (*Chionoecetes bairdi*) is approaching an overfished condition, and (3) the rebuilding plan for snow crab (*C. opilio*) and the rebuilding plan for Pribilof Islands blue king crab have not resulted in adequate progress toward rebuilding these stocks. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires amendments to the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (FMP) to prevent overfishing and rebuild these three crab stocks. The attached memorandum from the Alaska Fisheries Science Center provides a report of the status of all crab stocks under the FMP.

St. Matthew blue king crab is rebuilt because mature male biomass (MMB) was estimated to be above the level of biomass estimated to produce maximum sustainable yield for the fishery (noted as B_{MSY}) in 2007/2008 and 2008/2009. Additionally, MMB is projected to be above B_{MSY} again in 2009/2010. The St. Matthew blue king crab fishery has been closed since 1999. The Alaska Board of Fisheries may modify the harvest strategy in regulation to allow the fishery to open in 2009/2010.

Tanner crab is approaching a condition of being overfished because MMB is projected to drop below the minimum stock size threshold (MSST) of 94.9 million pounds of MMB next crab fishing year. The Tanner crab stock is projected to decline from an estimated 118.23 million pounds of MMB in 2008/2009 to 70.16 million pounds of MMB in 2009/2010. To comply with section 304(e)(3) of the Magnuson-Stevens Act, the North Pacific Fishery Management Council (Council) has two years from this notification to prepare and implement a rebuilding plan for Tanner crab.

Snow crab MMB was below B_{MSY} last February and is projected to be below B_{MSY} again in 2009/2010, the last year of the ten-year rebuilding period specified in the FMP. Therefore, it is



not possible to rebuild the stock within the rebuilding period. While this stock has not made adequate progress towards rebuilding within the rebuilding period, the stock assessment model shows that MMB has increased from a low of 146 million pounds of mature male biomass in 2002 to 241 million pounds of MMB in 2008/09. MMB in 2008/2009 is 74 percent of the B_{MSY} . The stock assessment model projects MMB to increase next year to 251 million pounds assuming harvest is equal to the overfishing level, which would amount to a total catch of 73 million pounds. To comply with section 304(e)(7) of the Magnuson-Stevens Act, the Council has two years from this notification to prepare and implement an amended snow crab rebuilding plan.

As prescribed by section 304(e)(7) of the Magnuson-Stevens Act, we recommend the following conservation and management measures for the Council to consider in amending the snow crab rebuilding plan. We recommend that the Council consider specifying a 5-year time period for rebuilding that ends in the 2013/2014 crab fishing year, assuming that rebuilt is defined as MMB above B_{MSY} for two consecutive years. In comparison, closing the fishery is projected to rebuild the stock in the 2011/2012 fishing season.

Based on the September 2, 2009, draft stock assessment of eastern Bering Sea snow crab, a 5-year time period appears to balance competing requirements under section 304(e)(4) of the Magnuson-Stevens Act to rebuild the stock in as short a time as possible and to account for the status and biology of the stock and the needs of fishing communities. The stock assessment provides a preliminary analysis of various rebuilding scenarios. Analysis in the stock assessment indicates that allowing five years for rebuilding rather than three years would provide the fishing communities an estimated average harvest of 54 million pounds per year during the 5-year rebuilding period. Additionally, at 74 percent of the B_{MSY} and with biomass projected to continue to increase, the status of this stock indicates it can support a fishery during this rebuilding period.

For the 2009/2010 snow crab fishery, the harvest rate must be reduced from the current rebuilding harvest strategy. As discussed in our letter dated July 21, 2009, the National Standard 1 Guidelines specify a default maximum limit on the harvest rate when a stock fails to rebuild within the specified rebuilding period. As provided in the Guidelines, the total fishing mortality for the 2009/2010 snow crab fishery, including bycatch, should be no greater than the default limit of 75 percent of the overfishing level. This would equate to a maximum total allowable catch of 50.5 million pounds.

The harvest rate may vary each year during the rebuilding period based on the most recent information available to enable us to meet our recommended goal of being rebuilt in the 2013/2014 crab fishing year. Allowing the maximum catch this year may result in a potentially greater reduction in the harvest rate in future years to meet the rebuilding goal. Conversely, a more conservative harvest rate this year may allow for a higher harvest rate in the future and still meet this goal.

We also recommend that the Council consider maintaining the requirement that MMB remain above B_{MSY} for two consecutive years for the stock to be rebuilt. This definition of rebuilt is unique to rebuilding plans for crab stocks under this FMP and was implemented as a

precautionary measure to account for the inherent and dynamic variability in crab stock abundance. If the Council decides to change the definition of rebuilt to MMB above B_{MSY} in one year, then we recommend that the Council consider reducing the rebuilding time period to four years.

Additionally, we recommend that the Council consider revising the snow crab prohibited species catch (PSC) measures for the Bering Sea groundfish fisheries. One measure to consider would be to remove the minimum PSC limit of 4,350,000 snow crab to allow the limit to decrease when snow crab abundance decreases.

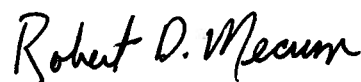
Pribilof Islands blue king crab remains overfished. The current rebuilding plan has not achieved adequate progress to rebuild the stock by 2014. The rebuilding plan was approved on March 18, 2004. The 2008/2009 estimated MMB of 0.25 million pounds was below the MSST of 4.65 million pounds. While Pribilof Islands blue king crab biomass is projected to increase to 1.13 million pounds in 2009/2010, the stock will remain overfished. The Pribilof Islands blue king crab fishery has remained closed since 1999 and bycatch in 2008/2009 was below the overfishing level. To comply with section 304(e)(7) of the Magnuson-Stevens Act, the Council has two years from this notification to prepare and implement an amended Pribilof Islands blue king crab rebuilding plan.

As prescribed by section 304(e)(7) of the Magnuson-Stevens Act, we recommend the following conservation and management measures for the Council to consider in amending the Pribilof Islands blue king crab rebuilding plan. Based on the Crab Plan Team's recommendations, we recommend the Council examine the following alternative measures to restrict blue king crab bycatch in the groundfish fisheries and protect habitat:

- Close the existing Pribilof Islands Habitat Conservation Zone to either the Pacific cod pot fishery or all groundfish fisheries;
- Close ADF&G's existing crab fishery area closure to either the Pacific cod pot fishery or all groundfish fisheries;
- Close an area that covers the entire distribution of the Pribilof Islands blue king crab stock; and
- Analyze modifications to Pacific cod pot gear that could reduce blue king crab bycatch.

We look forward to working with the Council and ADF&G to develop, analyze, and implement rebuilding plan amendments for the Tanner crab, snow crab, and Pribilof Islands blue king crab stocks.

Sincerely,



Robert D. Mecum
Acting Administrator, Alaska Region

Attachment: Memorandum from Douglas P. DeMaster, Science and Research Director, Alaska Region, regarding the 2009 status of the stocks, rebuilding progress, and overfishing levels for Bering Sea and Aleutian Islands Crab Stocks



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

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September 21, 2009

MEMORANDUM FOR:

Robert D. Mecum

FROM:

Douglas P. DeMaster,

Science and Research Director, Alaska Region

SUBJECT:

2009 status of stocks, rebuilding progress, and overfishing levels
for Bering Sea and Aleutian Island Crab Stocks

This memorandum provides the current status of stocks, progress towards rebuilding, and the Alaska Fisheries Science Center's recommendations for the 2009/2010 overfishing levels for ten eastern Bering Sea crab stocks.

2009 Status of Stocks Determinations

At the September 2009 meeting of the North Pacific Fishery Management Council's Bering Sea/Aleutian Islands Crab Plan Team, the status of the ten Fishery Management Plan (FMP) crab stocks were reviewed and their status relative to overfished and overfishing determined (Table 1). A stock is determined to be overfished if the 2008/2009 annual biomass estimate of mature male biomass on February 15, 2009 (MMB_{mating}) was below the minimum stock size threshold (MSST) or $0.5 B_{\text{MSY}}$. The status was found to be approaching an overfished condition if the projected 2009/2010 MMB_{mating} is below the projected 2009/2010 MSST. ***Note that Tanner crab is approaching an overfished condition and Pribilof Islands blue king crab remains overfished.***

Overfishing is occurring if the total crab catch exceeds the 2008/2009 overfishing level (OFL) for the stock. The 2008/2009 overfishing determinations for the ten FMP crab stocks were reviewed by the Crab Plan Team in September 2009. The OFL is based on total catches including retained and discard mortalities except where noted. ***As shown in Table 1, there were no stocks where overfishing occurred in 2008/2009.***



Table 1. 2009 Status of stocks relative to the 2008/2009 overfishing determination and the current overfished status for ten Bering Sea/Aleutian Islands crab stocks. Additional information on status and catch specifications can be found in the 2008 and 2009 Stock Assessment and Fishery Evaluation Reports for the King and Tanner Crab Fisheries in the Bering Sea and Aleutian Islands

Stock	Tier	MSST (10 ⁶ lbs)	2008/2009* MMB _{matng} (10 ⁶ lbs)	Overfished status	2008/2009 OFL (10 ⁶ lbs)	2008/2009 Total catch (10 ⁶ lbs)	2008/2009 Overfishing status
Bristol Bay red king crab	3	34.3	87.8	No	24.2	23.1	No
Eastern Bering Sea snow crab	3	163.4	241	No	77.3	69.5	No
Eastern Bering Sea Tanner crab	4	94.9	118.0	Approaching	15.52	4.96	No
Pribilof Islands red king crab	4	4.39	11.06	No	3.32	0.021	No
Pribilof Islands blue king crab	4	4.5	0.24	Yes	0.004	0.001	No
St Matthew Island blue king crab	4	4.0	10.74	No	1.63 [retained]	0.20	No
Pribilof Island golden king crab	5	NA	NA	NA**	0.17 [retained]	0.001	No
Adak red king crab	5	NA	NA	NA**	0.46 [retained]	0.0	No
Norton Sound red king crab	4	1.54	5.83	No	0.7125 [retained]	0.42	No
Aleutian Island golden king crab	5	NA	NA	NA**	6.93 [retained]	6.3	No

*MMB as estimated during the 2009 assessment.

**For Tier 5 stocks, it is not possible to set an MSST to determine overfished status because there are no reliable estimates of biomass.

2009 Progress Towards Stock Rebuilding

In 2008/2009 there were three Bering Sea/Aleutian Islands King and Tanner crab stocks still under rebuilding plans: Eastern Bering Sea snow crab, Pribilof Islands blue king crab, and St. Matthew Island blue king crab. A review of the status of these stocks relative to rebuilding found that:

1. The St. Matthew Island blue king crab stock MMB_{mating} was greater than B_{MSY} for the second year in a row and is now, therefore, considered rebuilt.
2. The Pribilof Islands blue king crab stock is not making adequate progress towards the 2012/2013 target rebuilding date. As a result, a revised rebuilding plan will be considered in 2009/2010. A low total catch OFL was recommended by the Crab Plan Team in September 2009 to account for low bycatch levels expected to occur in 2009/2010.
3. The eastern Bering Sea snow crab stock is not making adequate progress towards the 2009/2010 target rebuilding period. In order to be considered rebuilt by the established 10 year time period, MMB_{mating} would have needed to be greater than B_{MSY} in 2008/2009 and again in 2009/2010 in order to meet the two year standard above B_{MSY} required for rebuilding. The MMB_{mating} in 2008/2009 (241.1 million lbs) was determined to be below B35% (326.7 million lbs) and the projected MMB_{mating} in 2009/2010 if fished at $F=0$ would also be below B35% at 316.8 million lbs. As a result, a revised rebuilding plan will need to be developed by the North Pacific Fisheries Management Council (NPFMC) in collaboration with the National Marine Fisheries Service Alaska Region and the Alaska Department of Fish and Game (ADF&G) in 2009/2010. In the interim, to make faster progress towards rebuilding of the stock, the AFSC recommends taking a more conservative approach between $F=0$ and the maximum permissible under the National Standard Guidelines of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) to best meet the MSFCMA (Section 304(e)(4)) requirements for rebuilding time periods that are as short as possible, taking into account the needs of fishing communities. Four stock projections for F were considered in the 2009 stock assessment of eastern Bering Sea snow crab: $F=0$, 55% $F_{35\%}$ which would result in exploitation rates below or consistent with the 1999 to 2008 average, maximum permissible 75% $F_{35\%}$ under the MSFCMA (Section 304(e)(4)), and the current rebuilding strategy. The rebuilding times under these projections range from 3 years to 9 years starting from the 2009/2010 fishing season. The 55% $F_{35\%}$ interim rebuilding strategy appears to best meet the MSFCMA requirements mentioned above, allowing for the possibility of a 5 year additional rebuilding time frame from 2009/2010 and fishery harvests comparable to or above those during the period 2000-2006. This interim rebuilding strategy is also recommended to address the following conservation concerns: 1) it provides a Spawning Exploitation Rate that is at or below recent levels, 2) it provides additional protection to Tanner crab, which is caught in the directed snow crab fishery and which is now approaching an overfished condition, and 3) it reduces the possibility that snow crab will experience the crab stock collapses observed in the Gulf of Alaska. More details regarding this interim strategy can be found in the 2009 EBS Snow Crab Stock Assessment and Fishery Evaluation (SAFE) document.

Recommended 2009/2010 Overfishing Level Definitions

OFL definitions for Norton Sound red king crab and Aleutian Island golden king crab stocks were reviewed by the NPFMC Crab Plan Team and the Scientific and Statistical Committee in June 2009. These two stocks are considered in June due to their early fishery start date in the July 2009 to June 2010 crab fishing year cycle. Stock assessments for the remaining eight stocks were discussed and reviewed at the September Crab Plan Team meeting and recommendations were made for OFLs (Table 2). Total allowable catch and guideline harvest levels are set by the ADF&G consistent with the FMP for the Bering Sea/Aleutian Islands King and Tanner crab and the State/Federal Action Plan for Management of Commercial King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands. For all ten stocks, SAFE reports which present the stock data, model estimates, and biological reference points have been prepared for review by the SSC and NPFMC in October.

Table 2. 2009/2010 Overfishing Levels for ten Bering Sea/Aleutian Islands crab stocks. Additional information on status and catch specifications can be found in the 2009 Stock Assessment and Fishery Evaluation Report for the King and Tanner Crab Fisheries in the Bering Sea and Aleutian Islands

Stock	Tier	2009/2010 MMB _{mating} (10 ⁶ lbs)	F _{OFL}	2009/2010 OFL (10 ⁶ lbs)
Bristol Bay red king crab	3a	95.17	0.32	22.56
Eastern Bering Sea snow crab	3b	251.0	0.52	73.00
Eastern Bering Sea Tanner crab	4b	70.20	0.07	5.57
Pribilof Islands red king crab	4b	4.46	0.08	0.50
Pribilof Islands blue king crab	4c	1.13	0	0.004
St Matthew Island blue king crab	4a	12.47	0.18	1.72*
Pribilof Island golden king crab	5	NA	NA	0.18**
Adak red king crab	5	NA	NA	0.50**
Norton Sound red king crab	5	5.83	0.18	0.71**
Aleutian Island golden king crab	5	NA	NA	6.93**

NA = not applicable

*total male catch; **retained only