



Brevig Mission Diomede Elim Gambell Golovin Koyuk Nome Saint Michael Savoonga Shaktolik Stebbins Teller Unalakleet Wales White Mountain

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Contact: Laureli Ivanoff / laureli@nsedc.com

NSED C Board Urges ADF&G to Close 2020 Norton Sound Red King Crab Commercial Fishery

In a difficult decision, NSSP will not purchase crab in 2020 due to the stock's reproductive failure

NOME—The Norton Sound Economic Development Corporation (NSED C) Board of Directors made a difficult decision at the 2019 4th Quarter Board Meetings in Nome to suspend Norton Sound Seafood Products' (NSSP) Norton Sound red king crab buying operations for the 2020 winter and summer seasons. In the unprecedented decision, the board also voted to have NSED C advocate to the Alaska Department of Fish and Game (ADF&G) and the Alaska Board of Fisheries to close the fishery for the 2020 fishing season for the preservation of the Norton Sound red king crab stock.

"We are going to see a decline in reproduction," Northern Norton Sound ADF&G Advisory Committee Chair Charlie Lean told the board. "Trawl surveys can't find male crab. Commercial and subsistence crabbers can't find male crab. Female crab can't find male crab. I am concerned." In 2019, for the first time since 2012, ADF&G observer data showed there were more female crab with no or few eggs than there were with large clutches of eggs. Many females with no eggs indicate there aren't enough male crab to fertilize females. Lean worked as ADF&G Nome Area Management Biologist for 15 years and assisted in management of the Norton Sound red king crab fishery in its early years. "The same situation happened in 1982 with the Norton Sound red king crab stock. Crab were overfished and the fishery crashed. It took 15 years for the population to recover. If we continue to make it worse, we could suffer for a long time," he said.

ADF&G plans to open the 2020 Norton Sound Red King Crab fishery with an anticipated Guideline Harvest Level (GHL) of 170,000 pounds, an increase from last year's quota. ADF&G's current regional management expressed its reticence to alter the current harvest strategy or quota without seeing another year of harvest data. NSED C's biologists and board members believe the red king crab stock may not weather another year of commercial harvest.

Lean and biologists from NSED C's Norton Sound Fisheries Research & Development (NSFR&D) department fear another year of commercial fishing could put the fishery unacceptably at risk and have it face a similar fate to those crab fisheries that were wiped out in Kodiak, the Gulf of Alaska, and most recently for the St. Matthews Island blue king crab stock. These crashes were due to lack of conservative management action. "The department (ADF&G) is relying too heavily on the prediction of the Norton Sound red king crab model," NSFR&D Director Wes Jones said. "They're not looking close enough at all the other indicators that show a stock in stress."

Historically, Norton Sound red king crab populations crashed in three other time periods since the fishery began in the late 1970s. In the last crab crash in 1999, it took three generations for the crab populations to recover. "There will be impacts of the 2019 crab fishery crash, but those impacts will be worse, and perhaps irreversible, if commercial fishing continues," Jones said. "There are numerous examples from across the state that prove that crab stocks, once overfished, may never recover."

The 2019 Norton Sound commercial red king crab fishery was devastating for regional fishermen, with 82,335 pounds harvested in the combined winter and summer commercial fisheries compared with an average harvest of more than

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460,000 pounds the five previous years. With the 2019 GHL of 150,600 pounds, crab fishers fell far short of the expected harvest—and not for a lack of effort. Fishermen reported fishing in a 100-mile area, from the middle of the Norton Sound to west of Sledge Island and not finding crab or financially breaking even for the season.

“As staff we recognize this isn’t an easy or simple decision,” NSED C CEO Janis Ivanoff said. “We realize there will be fishermen who would prefer to have the fishery open and try to earn some money. We’ve heard from our biologists that preserving the fishery and doing no further harm on the stock today could mean there’s a fishery in the future. We wish, as staff members, the local ADF&G management had taken steps and measures to preserve the fishery. At this time, this is the right step.”

“We’re trying to manage our operations in a timely manner, for Norton Sound fishermen and the organization,” NSED C Vice Chair Dan Harrelson said. “We need to make our fishermen aware of our decision to not purchase crab, so they can transition to halibut or cod. I’d hate to say to fishermen on June 1 we’re not buying crab this year and not give them time to plan,” he said. “From the information we received, I’d rather err in favor of the crab population instead of a few hundred thousand dollars on what might make a poor fishery. There are not crab around, and I’m afraid we’re going to lose the resource.”

Moratorium instituted on all new loans for Norton Sound red king crab commercial fishers

With NSSP Norton Sound red king crab operations suspended for the 2020 winter and summer commercial crabbing seasons, the NSED C Board of Directors also voted to institute a moratorium until further notice on all new loans for Norton Sound red king crab fishermen, including fishermen’s receivables, revolving loans, and large vessel loans.

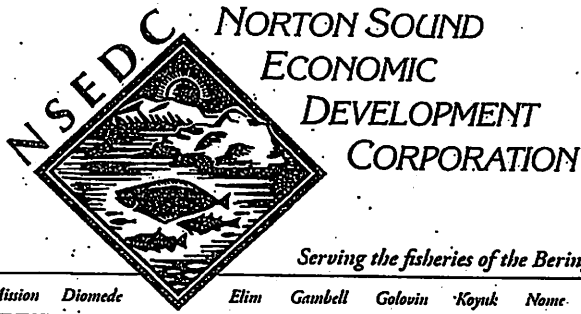
NSED C will also extend for an additional year the loan deferral or waiver options that were offered to Norton Sound red king crab fishermen in 2019, when it was determined that the low quota that year would have an adverse impact on the fleet.

If you have any questions regarding decisions from NSED C’s 2019 4th Quarter Meeting, contact NSED C Chief Operating Officer Tyler Rhodes at (907) 443-2477 or tyler@nsedc.com.

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About NSED C: Norton Sound Economic Development Corp. is a private 501(c)4 non-profit corporation representing 15 member communities and more than 8,700 people in the Bering Strait Region of Northwestern Alaska. NSED C is one of six Community Development Quota organizations in Alaska. NSED C maintains a balance between distant-water fisheries in the Bering Sea and Aleutian Islands. Key to that balance is the establishment of programs designed to provide immediate benefits to the residents of the region along with the continued pursuit of longer-term investments that provide a stable source of economic strength. For more information, see www.nsedc.com.

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February 28, 2020

Mr. Sam Rabung, Director
Division of Commercial Fisheries
Alaska Department of Fish and Game
1255 W. 8th Street
Juneau, AK 99811-5526

Re: 2020 Norton Sound Red King Crab Commercial Fishery

Dear Director Rabung,

I am writing on behalf of the Norton Sound Economic Development Corporation (NSEDCC) to request that the Alaska Department of Fish and Game (ADF&G) reconsider its decision to allow for commercial winter and summer fisheries in 2020 for Norton Sound red king crab. We believe that a number of factors, both biological and economic, warrant the closure of the fishery for the long-term health of the stock and preservation of future opportunity for the small-boat fleet that depends on it.

The risks of commercial fishing on the resource in its current state greatly outweigh the potential economic benefits to fishery participants. The NSEDCC board of directors recently made the unprecedented move to cease red king crab buying operations for the 2020 winter and summer seasons. This difficult decision was made in response to concerns expressed by stakeholders and information presented by NSEDCC biologists that showed: 1) very little recruitment into the legal male crab population for the next two years; 2) recent poor fishery performance; and 3) very low fertilization rates among mature female crab. Taken altogether, the NSEDCC board concluded that the information available suggests the Norton Sound red king crab resource is strained to the brink of collapse.

We are unaware of another circumstance where the major buyer and many users of the resource pushed for a closure of the commercial fishery while ADF&G has permitted a more liberal approach; if anything, the opposite positions would typically be the norm. The lack of urgency shown by ADF&G in reaction to the current state of the fishery and the same biological information upon which NSEDCC has primarily based its decision is perplexing and extremely concerning. This is clearly a stock in crisis. Allowing and promoting successive seasons of commercial harvest upon the stock in its state is negligent at best and potentially catastrophic at its worst.

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While I have enclosed a more detailed analysis of the biological data and how it warrants much more drastic conservation measures than those proposed by ADF&G, I would like to highlight the primary indicators that led to NSEDC's decision to suspend buying operations and request that ADF&G and/or the BOF act to close the commercial fishery in the name of conservation.

- **Egg clutch data reveals a stock without enough males to support future recruitment.** The egg clutch data clearly show that current mature male reproductive potential is greatly impaired. Considering that recruitment of mature males is not expected until 2022, fishing on the few remaining adult males appears reckless and could further endanger the stock's ability to recover.
- **The actual level of legal male biomass (LMB) could be much lower than the projected LMB from the stock assessment model.** Thus, real LMB could be at or near threshold levels of LMB. The length-based stock assessment model projected abundance tends to overestimate actual abundance when new data is fed into the model in subsequent years.
- **Despite what some have stated, near record low commercial CPUE was not unique to 2019.** This indicates that real LMB may be lower than what the model is projecting. Summer commercial fishery CPUE dropped precipitously in mid-July of 2018 and has only gotten worse since.
- **Current ice conditions are a serious red flag that significant pot loss will occur in a winter fishery.** The Department's recent announcement opening the winter through-the-ice commercial fishery coincided with a massive shore ice release that began in Unalakleet and worked its way to Nome a week later. This event eliminated the possibility of pot fishing in most of the areas where the winter fishery normally occurs. The retreating shore ice edge creates a situation encouraging fishers to flirt with the possibility of pot loss as they have for the last five years. Opening a fishery with the likelihood of pot loss violates management policy (Policy on King and Tanner Crab Management, Management Measures, 8) and it runs counter to common sense.

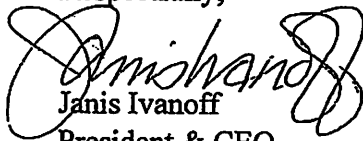
NSEDC is not alone in its concern for the future of the Norton Sound red king crab fishery. The Northern and Southern Norton Sound Fish and Game Advisory Committees (NNSAC & SNSAC) voted unanimously to support an emergency petition submitted to the BOF by NNSAC to close commercial Norton Sound red king crab fisheries for the 2020 season. Additionally, subsistence users from several Norton Sound communities report abysmal catch rates of legal crab in crab pot gear despite long soak times. Residents of Koyuk report that for the first time in many years, fishermen from neighboring Elim have not visited their community to barter crab for other items. While anecdotes are not a perfect substitute for data, reports of widespread very poor subsistence crabbing in Norton Sound have not occurred since the mid-1990s, the last time the stock went through a dramatic downturn.

NSEDC's decision to suspend red king crab buying operations this season was based entirely on conservation concerns and the short and long-term economic impacts to resident fishermen. To be sure, the 2019 crab season presented fishermen and NSEDC's seasonal processing workforce with significant economic adversity. Our organization is prepared to assist our fishermen in weathering their individual economic impacts by providing waivers/deferments to vessel loan payments, as well as infrastructure, financial assistance, and markets to incentive their participation in alternative fisheries (e.g., cod or halibut) until the crab resource rebounds. However, long-term socio-economic impacts resulting from a sustained and possibly irreversible fishery collapse would be catastrophic for NSEDC's mission, our member communities, and resident subsistence and commercial fishermen. Disaster relief funds, research funding, help from NSEDC, or any other measures would be meaningless if the Norton Sound red king crab stock is pushed past the point of no return.

At a minimum, NSEDC asks the department to strongly reconsider its intent to open the fishery on February 29. It would be prudent for the department to wait for guidance from the BOF when it weighs in on the emergency petition submitted by the NNSAC. A positive finding of an emergency by the BOF a week after ADF&G opening the fishery would be hard to reconcile with affected stakeholders, especially if the stock continues to plummet.

Thank you for considering our request. Should you have questions on NSEDC's position on this matter or the data that we be justifies our request, please feel free to contact NSEDC's Fisheries Research and Development Director Wes Jones at (907) 624-3190 or wes@nsedc.com.

Respectfully,


Janis Ivanoff
President & CEO

cc Frank Katchatag, NSEDC Board Chairman
Wes Jones, FR&D Director

APPENDIX: DATA ANALYSIS

A. REPRODUCTIVE FAILURE

In recent public statements, department biologists have qualified the alarming egg clutch data as being in part due to prepubescent females being included in the samples. This is incorrect as the data presented by NSEDC biologists only included females 75 mm or larger in carapace length. In other words, the analysis of clutch fullness was specific to morphologically mature females.

Figure 1 compares the percentage of mature females with clutches 0–25%, 25–50%, and 50–100% full since 2012 based on data collected by observers in the summer commercial red king crab fishery. The first thing that jumps out from observer data is the percentage of mature females with 0–25% full egg clutches (51%), which exceeds the percentage of females with egg clutches $\geq 25\%$ full. It is obvious that there are no prior years remotely comparable to 2019 clutch fullness indices. The percentage of gravid females and aggregate fecundity is at a record low, which indicates a severe deficiency in mature male reproductive potential. Considering that recruitment of mature males is not expected until at least 2022, commercial fishing on the few remaining adult males now can only be described as reckless and risks permanently impairing the reproductive viability of the stock.

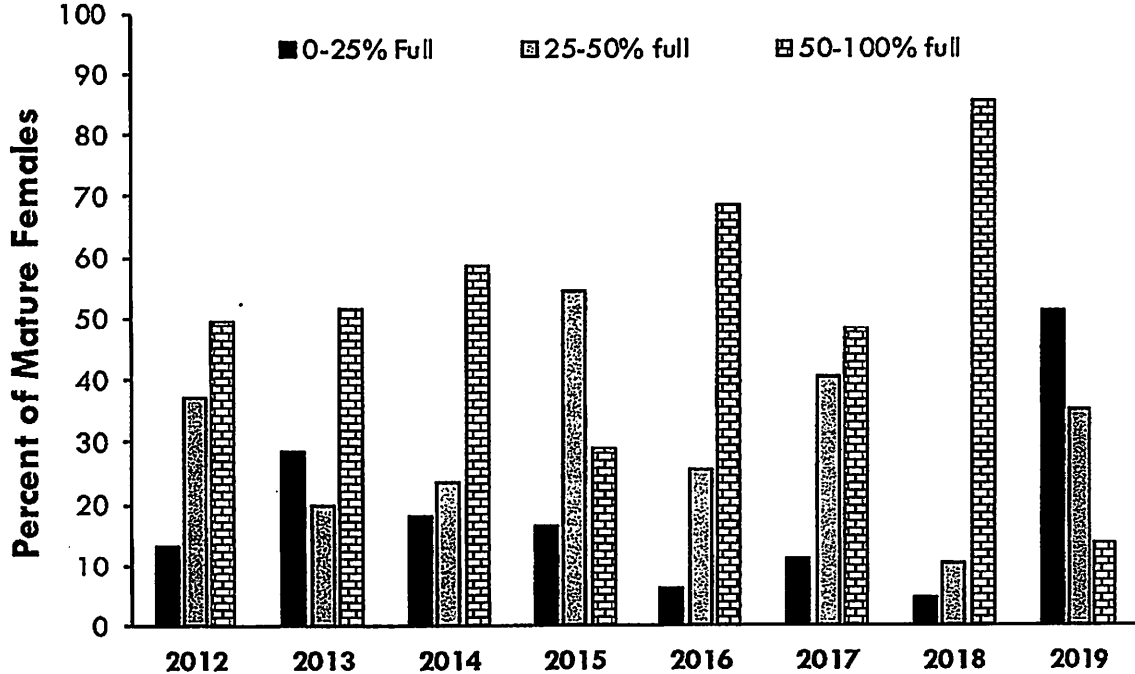


Figure 1.—Annual percentage of mature females (≥ 75 mm carapace length) with egg clutch sizes 0–25% full, 25–50% full, and $\geq 50\%$ full based on summer commercial Norton Sound red king crab fishery observer data, 2012–2019.

B. MODEL RETROSPECTIVE PATTERN

The Norton Sound red king crab length-based stock assessment model has a tendency of overestimating legal male biomass (LMB) with respect to projected LMB. For example, the most recent model runs revised 2017 and 2018 LMB levels down 16% and 19% from projected LMB levels for those years (Figure 2). Furthermore, the percent overestimation tends to increase with subsequent model runs. As an example, the projected LMB used for the 2017 fishery was retrospectively revised downward by 5% in the following year’s model run, 13% when re-run in 2019, and to a total of 16% decrease in 2020 retrospective analysis (Table 1). Therefore, it is likely that the true LMB level for 2020 could turn out to be much lower than the level the model is currently projecting. It is also noteworthy that concerning retrospective pattern was one of the factors the SSC considered when they added another 5% to buffer the ABC.

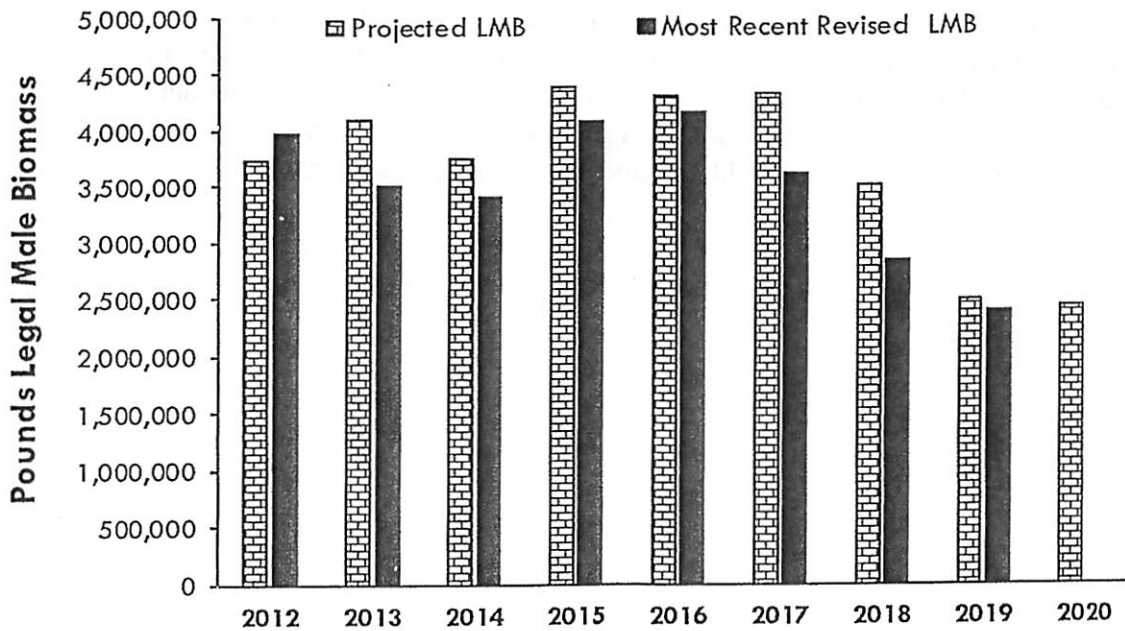


Figure 2.—Norton Sound red king crab annual model-projected LMB compared to model-revised LMB from 2020 stock assessment model, 2012–2020.

Table 1.—Comparison of model projected Norton Sound red king crab legal male biomass (LMB) during the 2017, 2018, and 2019 seasons with revised estimates of LMB for 2017, 2018, and 2019 generated from subsequent model runs.

LMB Year	Projected LMB Abundance	LMB Revised in 2018	Percent Change in LMB	LMB Revised in 2019	Percent Change in LMB	LMB Revised in 2020	Percent Change in LMB
2017	4,320,000	4,090,000	-5%	3,770,000	-13%	3,610,000	-16%
2018	3,500,000			3,000,000	-14%	2,840,000	-19%
2019	2,490,000					2,380,000	-4%

C. CPUE TRENDS

The notion that the near record low CPUE of the 2019 season is unique is misleading. Norton Sound red king crab summer commercial fishery CPUE actually began to drop dramatically in mid-July of 2018 and has not increased since. Over the 15-day period from June 26 to July 11, 2018, 74% of the GHL was landed, there were 141 landings, and CPUE averaged 13. It took an additional 17 days to harvest the remaining 26% of the GHL until the fishery closed on July 29; the average CPUE during this period was 5. CPUE for the 2019 summer commercial crab season also averaged 5. Persistently low CPUE since mid-2018 demonstrates a pervasive, multi-year problem and is indicative of a highly fragmented and diminished legal male population.