

# ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF COMMERCIAL FISHERIES NEWS RELEASE



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## 2015 NORTON SOUND SUMMER COMMERCIAL RED KING CRAB OUTLOOK

The Norton Sound Section (Q3) consists of all waters in Statistical Area Q north of the latitude of Cape Romanzof ( $61^{\circ} 49'$  N latitude), east of the International Dateline, and south of  $66^{\circ}$  N latitude (Figure 1). In 2010, the National Marine Fisheries Service (NMFS) closed all federal waters above Cape Prince of Wales to commercial fishing.

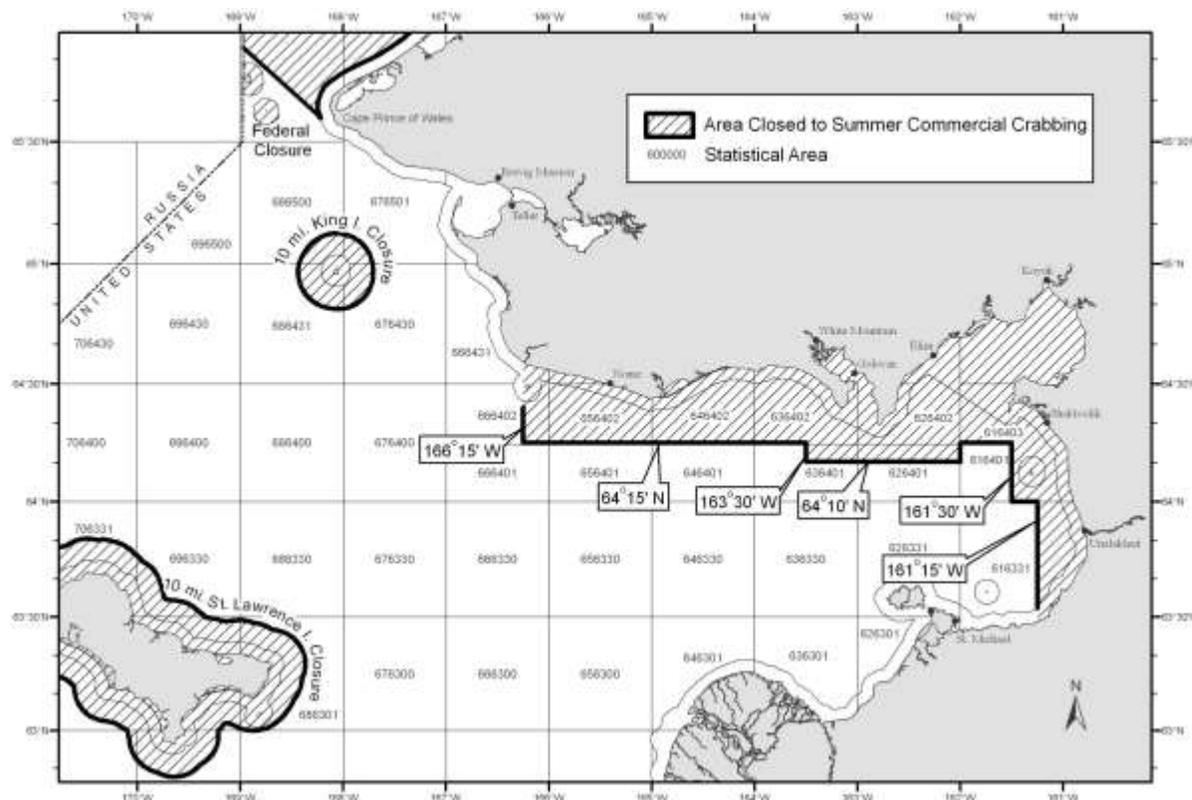


Figure 1.—Map showing Norton Sound Section commercial red king crab statistical fishing areas, and state and federal waters closed to summer commercial crab fishing.

### ***NSRKC Stock Assessment & Research Background***

A simulative length-based predictive model is used to determine acceptable harvest levels for the upcoming fishing season. The model is a male-only age/size-structured model that combines multiple sources of survey (trawl and pot gear), catch, and mark-recovery data using a maximum likelihood approach to estimate abundance, recruitment, catchability of the commercial pot gear, and parameters for selectivity and molting probabilities. Abundances are converted to biomass for guideline harvest level (GHL) estimations using an average weight of legal red king crab of 3 pounds. Every time new data are incorporated into the population model, it estimates current abundance as well as revises prior years' abundances.

Historically, the winter test fishery project provided size composition and growth increment data that was incorporated into the model, but the project ended in 2012. Since 2012, these data have been collected using an extensive June pot survey conducted in nearshore waters from Cape Nome to Elim. In addition to providing information incorporated in the model, these data provide insight into the relative abundance of size cohorts. However, absolute abundance of legal crabs is what managers ultimately need to know to establish annual harvest quotas, which is obtained using triennial trawl survey estimates.

The following estimates are based on the model's results from January 2015 with the latest data from the 2014 trawl survey, the 2014 summer fishery, and the 2014 spring pot survey. From the latest trawl survey conducted in 2014, the midpoint estimate of legal male biomass (LMB) was 1.7 million crabs, or 4.89 million pounds. The 2014 estimate was 133% of the 2011 estimate of LMB, and was the second highest on record. For prerecruit-1 and prerecruit-2 male abundances, the 2014 estimates were roughly 725% and 260% of corresponding estimates from 2011. However, 2014 trawl survey estimates of biomass also had the highest standard errors of any trawl survey estimates and almost one-half of all male red king crabs captured during the survey came from one station, and this station alone accounted for one-half of the total male abundance estimate. Pre-recruit-2, pre-recruit-1, and legal male crab abundance estimates had standard errors of 42%, 57%, and 52%, respectively. In contrast, average standard error estimates from all prior trawl surveys were 18%, 14%, and 10% for the same size classes. Ultimately, trawl survey estimate uncertainty translates into similarly high uncertainty in biomass estimates derived from the predictive model. While it is likely that the true estimate of LMB falls within the range of estimates derived from the model, the range is extensive (2.98–5.8 million pounds) and all estimates in the range, not just the midpoint, may be true.

Based on the model, the 2015 midpoint estimate of legal male biomass (LMB) is 4.38 million pounds, but the range includes values between 2.98–5.8 million pounds. The North Pacific Fishery Management Council (NPFMC) accounted for some of this uncertainty when they implemented an additional 10% buffer to the over fishing limit (OFL) of 721,000 pounds, resulting in an allowable biological catch (ABC) of 577,000 pounds for Norton Sound red king crab.

### ***2015 Summer Guideline Harvest Level***

Norton Sound red king crab harvest strategy regulations allow for a harvest rate of up to 15% when the estimate of LMB is 3 million pounds or more. These regulations also direct the department to consider reliability of abundance estimates and other factors with respect to setting harvest rates. Additionally, federal policy requires that all sources of fishing-related mortality remain sufficiently below ABC levels set by the NPFMC. Considering the high level of uncertainty associated with 2015 RKC abundance estimates, preliminary estimates of winter harvests, and the size of the ABC, the department will apply a precautionary harvest rate of 9% to the midpoint LMB estimate of 4.38 million pounds. A 9% harvest rate equates to a summer GHL of 394,000 pounds. The CDQ fishery is allocated 7.5% of the GHL, resulting in quotas of 365,005 and 29,595 pounds for the open access and CDQ fisheries, respectively. The 2015 summer commercial GHL coupled with winter commercial harvest (98,330

pounds) and subsistence harvest estimates (20,000–30,000 pounds) results in fishing-related mortality estimates 8–11% below the ABC. The 2015 summer GHL is similar to previous 10-year (2005–2014) average GHL (402,985 pounds) and continues the trend of relatively stable harvests observed since the mid-2000s (Figure 2).

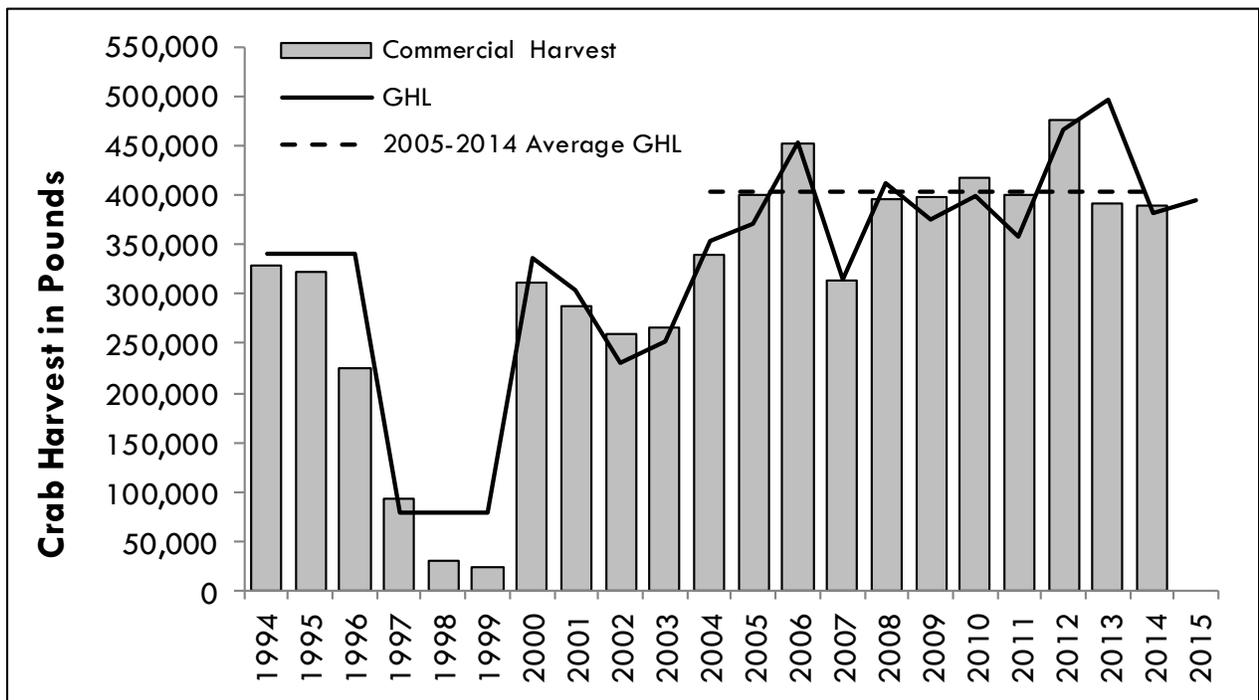


Figure 2.—Annual red king crab summer commercial guideline harvest level (GHL) compared to actual summer commercial harvests and previous 10-year (2005–2014) average GHL, 1994–2015, Norton Sound Section.

### *Inseason Management*

The Nome office will continue to be the center of management for the summer commercial fishery. The Norton Sound open access crab fishery may be opened on a date established by emergency order on or after June 15. The open access fishery season is expected to be finished by September 3, but usually closes sometime in August when the harvest approaches the guideline harvest level. The CDQ crab fishery will also open by emergency order and may occur earlier than or during the open access fishery, or after the open access fishery is complete. Open access and CDQ fishery opening dates will be determined when respective buyers are ready to purchase crab.

Fishermen must register with the ADF&G office in Nome or Unalakleet and obtain pot tags prior to setting gear in either the CDQ or open access fishery. Vessels that have a salt water circulation system in its holds or live tanks must also receive a tank inspection from either the Nome or Unalakleet ADF&G office. The pot limit is 40 pots per registered vessel, and at least one buoy on each pot must be legibly marked with the permanent ADF&G vessel license number of the king crab vessel operating the gear. All crab pots must have an escape mechanism and be fitted with either four escapement rings with minimum inside diameter of 4.5 inches, or at least one-half of one side wall composed of not less than 6.5 inches stretched mesh webbing. To replace lost tags a statement signed by the vessel operator describing how they were lost must be submitted to the Nome office. Fishermen wishing to use storage pots, of which five are allowed in addition to the 40-pot limit, to hold crabs offshore prior to delivery, must contact ADF&G in Nome to obtain storage pot tags and have the pots inspected prior to deployment. These storage pots must be unbaited with doors sewn closed, and have an escape mechanism. Permit holders are allowed to harvest up to one ton of herring or groundfish for use as bait in the commercial fishery

for which the permit is held. These fish may not be sold and must be reported on a fish ticket. If a vessel travels outside the section to deliver their catch they must advise the Nome ADF&G office and agree to a reporting time and method prior to departure from the section.

Since the opening of a crab processing plant in Nome in 2002, most of the crabs caught have been landed in Nome or delivered by tender vessels to the Nome. No floating crab processor is expected to operate in Norton Sound this season. At the Norton Sound Seafoods processing plant, there will be samplers on hand to take biological as well as legal measurements from crabs delivered during the CDQ and open access fisheries. If non-residents participate in the open access fishery, their catch will be sampled at the delivery dock before shipment to Anchorage.

All processors, including catcher-sellers, must register with the ADF&G office in Nome. All buyers must submit daily catch reports either by fax or email to the Nome ADF&G office with total catch by number of crabs, number of pounds, and pots pulled for the previous day. Fish tickets must be submitted weekly by buyers and catcher-sellers. All deadloss and crabs kept for home use out of the commercial harvest must also be reported on fish tickets in the personal use section. Catcher-sellers are also advised that their final fish tickets must be turned in within 24 hours of the final delivery of their catch within Norton Sound.

For more information on regulations pertaining to this fishery, please contact Joyce Soong in the Nome ADF&G office at 443-5167 or 1-800-560-2271.