North Pacific Fishery Management Council

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Dr. Doug DeMaster
Director, Alaska Fisheries Science Center
TSMRI Auke Bay Laboratory
Juneau, Alaska 99801
Via Email: douglas.demaster@noaa.gov

Dear Dr. DeMaster,

The North Pacific Fishery Management Council would like to express its support for AFSC research in the Northern Bering Sea (NBS) region, specifically studies to understand the population structure of groundfish in both the Eastern Bering Sea and NBS regions, as well as additional surveys in the NBS region. Results from the 2017 NBS survey showed a large increase in the biomasses of pollock (1.3 million t) and Pacific cod (288,000 t) as compared with the previous survey in 2010. Length frequencies from the pollock and Pacific cod in the NBS area were comparable with the fish from the Eastern Bering Sea survey in 2017 where the Pacific cod survey biomass estimate dropped substantially (37%) from 2016. This raises critical questions regarding the potential within-year population movement of these stocks between the two surveyed areas, and the overall northwestern distribution of groundfish in the Bering Sea. Additional surveys may be essential for understanding changes in the abundance of individual stocks as well as changes to the overall ecosystem.

The Council is very interested in projects (such as proposed by Dr. Spies and Dr. Hauser) that would provide for genetic analysis of Pacific cod from the Northern Bering Sea. The Council appreciates the importance of research to elucidate if the Pacific cod from the NBS region represents a distinct population, or reflects a population shift to the north. This research was strongly supported by both the BSAI Groundfish Plan Team as well as the Scientific and Statistical Committee (SSC) at their recent meetings (see attached minutes of the December 2017 SSC meeting). Genetics studies will help to best understand the population structure of groundfish in the North Pacific, and may have critical implications for stock assessment and management decisions.

The Council very much appreciates the research done by the AFSC to support the conservation and management of fisheries in the North Pacific.

Sincerely,

David Witherell
Executive Director

Excerpt from the SSC meeting minutes, December 2017

Bering Sea Chapter:

In the EBS Chapter, the "Hot Topics" section included an excellent discussion of large biomasses of Pacific cod and walleye pollock in the northern Bering Sea. The presence of these fish in large numbers that far north raises important questions about their persistence there and their relationship to the stocks in the eastern Bering Sea. Although in 2017 there may have been a wider pathway north in the inner shelf than usual, an important question is now whether the fish observed in the north are a separate stock and, if they are not a separate stock, will the population return south prior to winter. Likewise, high numbers of age-0 pollock were observed in the northern Bering Sea. It is not known what proportion of these fish will return to the southeastern Bering Sea.

Our best information is that both walleye pollock and Pacific cod lack the antifreeze proteins needed to prevent tissues from freezing at the sub-zero water column temperatures almost certain to occur over the shelf in the coming winter. Observations around Norton Sound of the presence of cod and pollock and their condition this winter could be most helpful in evaluating the implications of this new distribution pattern. It would be of interest to survey local communities in the northern Bering Sea to obtain information about their past experiences with groundfish in these waters, and when they have been observed to arrive and depart. Specifically, the authors should investigate whether data from the Norton Sound winter king crab fishery is useful. With regard to Pacific cod in particular, results from the 2017 northern Bering Sea survey, in concert with the observed decline in biomass from the EBS bottom trawl survey, suggest that we might need to be adaptive not only in our management, but also in our surveying of commercial fish stocks. **The SSC strongly supports conducting additional surveys in the northern Bering Sea.**

- **The SSC strongly supports the proposal for renewed genetics work to investigate the degree to which the cod observed in the NBS represent a separate genetic pool from those observed in the EBS.** However, the SSC was concerned that mixing samples collected over several decades, and the apparent lack of samples from the EBS shelf could be problematic. They encourage the PIs of this study to consider the sample distribution over time and space and work with fishery or other sources to provide the clearest test possible of this very specific question concerning Bering Sea cod.