SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION: QUESTIONS FOR THE RECORD

NOMINATIONS HEARING
MARCH 11, 2020

Written Questions Submitted to Neil Jacobs, Nominee to be Under Secretary of Commerce for Oceans and Atmosphere

Submitted by Chairman Roger Wicker

Question. NOAA Fisheries has announced a decision to reopen for commercial fishing two areas in the Gulf of Mexico that were previously closed during April-May, to protect spawning bluefin tuna. Can you explain why the agency made this decision, given that removing these seasonal closures could negatively impact the already depleted bluefin tuna population without securing any significant socioeconomic gain?

Response: *NOAA Fisheries recently announced measures that provide more fishing opportunities for vessels targeting Atlantic swordfish and some tuna species. We will continue under these measures to protect bluefin tuna from overfishing. The changes give fishermen using pelagic longlines access to new fishing areas originally closed to reduce the number of bluefin caught unintentionally.*

Regardless of where or when they fish, longline fishermen are still not allowed to target bluefin tuna. They can keep some caught unintentionally, but they have to stay within their individual allocation of the U.S. bluefin quota. This allows them to fish for economically valuable species like swordfish and other tunas while protecting bluefin. The measures are in part a response to the success of the Individual Bluefin Quota (IBQ) Program in reducing bluefin bycatch. We also designed the measures to help reverse a trend of under-harvesting the U.S. swordfish quota.

Submitted by Senator Deb Fischer

Question 1. As you know, Nebraska experienced historic flooding in 2019. To prepare for future flooding, we need to know that federal agencies are in sync and providing accurate, timely data to state stakeholders. Can you tell me how you will work to coordinate with other agencies, particularly the U.S. Army Corps of Engineers, the US Geological Survey, and USDA's Natural Resource Conservation Service to improve weather and climate forecasts developed by NOAA? How is data gathered by the above agencies utilized and shared, and is it integrated into NOAA modeling and forecasting?

Response: *As part of regional efforts to enhance federal agency support for the historic flooding in Nebraska, on February 13, NOAA chaired the Missouri River Basin Interagency Roundtable (MRBIR) in Omaha, NE. MRBIR is a federal interagency collaboration, including USGS and*

the USACE, to mitigate the impacts of weather, water and climate extremes in protecting lives, property, economic prosperity and natural resources in the Missouri River Basin. NOAA is also working with USGS and USACE through the Forecast- Informed Reservoir Operations (FIRO). FIRO is a management strategy that uses data from watershed monitoring and modern weather and water forecasting to help water managers selectively retain or release water from reservoirs in a manner that reflects current and forecasted conditions in the Russian River Basin. While participating in FIRO and chairing MRBIR, NOAA has worked with the states, tribes and federal agencies to maximize the use of NOAA operational and experimental products and services to more effectively balance flood and drought risks in the Missouri River Basin and Russian River Basin.

While USGS, USACE, and NRCS data are critically important to NWS water and flood prediction, their data do not impact our weather and climate forecasts. USGS stream and river gauges are an essential component of information for NOAA NWS operational river and flood forecasting and warning. It is also critical for the NWS to work with the USACE as they control the release of water from several federal dams. Without these critical data and information, NWS river and flood forecasts and warnings would not be as accurate or timely as they have been. NOAA has a strong and effective working arrangement with both USGS and USACE to obtain the information we need to support our operations. It is mostly an automated process to ingest the data, especially with USGS stream gauge data and we are working with the USACE to similarly receive their dam release information. These data are integrated into NWS River Forecast Models to provide the stream and flood forecasts. NOAA/NWS also use other essential data, such as soil moisture from NRCS, as well as seasonal snowpack information and how much "liquid" is held in that snow, which will melt and release into the streams and rivers.

It is a complex process to assimilate all the available data into our hydrologic prediction models and it is only through our excellent working partnerships that allow the NWS to produce timely and accurate river and flood forecasts and warnings. I will continue to support the working agreements NOAA has in place with USGS, USACE and NRCS to ensure we continue to use these critical data in our water forecast models.

Question 2. The National Drought Mitigation Center, housed at the University of Nebraska at Lincoln, provides critical drought forecasting information to people across the country, including those in the agriculture community. Additionally, the High Plains Regional Climate Center, also located at UNL, provides valuable information to stakeholders on past and current climate conditions. As NOAA administrator, will you continue to support both the National Drought Mitigation Center and the Regional Climate Centers program? Additionally, are there ways NOAA can better coordinate its work with these programs going forward to improve weather and climate forecasting?

Response: *The President's FY 2021 Budget Request continues funding support for the National Integrated Drought Information System (NIDIS), which funds the National Drought Mitigation Center (NDMC). NOAA's regional research and services collaborations offer valued opportunities for coordination across our place-based entities, such as our Weather Forecast Offices, River Forecast Centers, National Centers, and our university and federal agency partners. One past project, funded at the High Plains Regional Climate Center through NOAA*

climate research funding supported a project on increasing the capacity for municipal climate adaptation planning in the Lower Missouri River Basin States. The multidisciplinary team worked with cities across Nebraska, Kansas, Missouri and Iowa and produced interactive web tools accessible to local and state decision makers. Continued support for programs like these will help improve our weather and climate forecasting and stakeholder accessibility to this valuable information.

Question 3. NOAA's FY 2021 budget justification says NOAA wants to establish a Tornado Warning Improvement and Extension Program. Can you elaborate on the need NOAA has for this program, provide additional details on how the program would work, and the goals of the program?

Response: *Improving the accuracy and timeliness of tornado forecasts, predictions, and warnings is a priority for NOAA. The Weather Research and Forecast Improvement Act directs NOAA to establish a Tornado Warning Improvement and Extension Program (TWIEP) and the FY 2021 request includes an increase of $3.2 million to accomplish this. With this increase, the TWIEP will carry out research and leverage existing resources to advance NOAA's tornado observing systems, thunderstorm-scale computer models, and risk communication approaches. The overarching goal of TWIEP is to reduce the loss of life and economic losses from tornadoes. To this end, TWIEP will work to improve assimilation of data from observing systems, including conventional and advanced radar technology, provide high resolution, convection-allowing (thunderstorm-scale) computer prediction models, including the High Resolution Rapid Refresh (HRRR) and Warn-on-Forecast systems, and modernize NOAA's approach to risk communication, informed by social sciences, and delivered to decision makers, the public, and weather enterprise stakeholders before, during, and after tornado events.*

Submitted by Senator Dan Sullivan:

Preface: Alaska comprises about 60% of the nation's total fisheries landings. In Alaska, historically, we have had five groundfish survey vessels annually to cover the North Pacific. Projections by the Alaska Fishery Science Center are clear that future funding scenarios result in a reduction to either three or four survey vessels, notwithstanding a recent critical need to expand survey effort (one vessel) into the Northern Bering Sea on an annual basis.

Question 1. In the Gulf of Alaska in particular there have historically been 3 survey vessels to conduct bottom trawl groundfish survey every other summer (odd years). In recent years, survey effort has been cut to 2 vessels. To accommodate two vessels, some survey stations have been dropped completely and others have been reduced. This increases uncertainty and reduces robustness in groundfish biomass estimates and creates the possibility of reduced quotas when factoring in the uncertainty. In addition, the Pacific cod fishery in the Gulf of Alaska has experienced higher than normal natural mortality and poor recruitment due to the marine heatwave that occurred across the Gulf of Alaska in 2014 – 2016. This heatwave resulted in such low stock status that it required the closure of all federal Gulf of Alaska cod fisheries in 2020. The Gulf of Alaska fisheries support many rural Alaska communities, fishermen and processors. How can you balance NOAA's core mission to conserve and manage marine resources if these essential surveys are not adequately funded?

Response: *Maintaining the Alaska Fisheries Science Center (AFSC)'s research surveys and staffing to support stock assessment, and management of fisheries, and protected resources is a priority for NOAA because the fishery is critical.*

In FY 2019, NOAA Fisheries prioritized existing nation-wide base resources to provide nearly $2.0 million in additional surge funds to Alaska Seafood Cooperative specifically to fund one of the five charter vessels needed to conduct the bottom trawl survey for that particular year. In FY 2020, NMFS was appropriated an additional $2.0 million to maintain historical surveys for Alaska and West Coast groundfish. With these funds, both prioritized within NMFS base resources, and increases from FY 2020 appropriations, the AFSC plans to utilize six vessels to conduct three bottom trawl surveys in FY 2020. However, in light of the coronavirus pandemic, all NOAA ships have been recalled to port, and all planned surveys for FY 2020 are currently on-hold. We are now evaluating each survey (OMAO and charter vessels) to determine target restart dates to resume operations.

NOAA and NOAA Fisheries mission support costs, such as inflationary costs associated with facilities maintenance, rent, and labor are also a constraint that impact our available operational funding. While the overall budget for NOAA Fisheries increased in FY 2020, these necessary mission support costs have also continued to increase. To the extent possible, NOAA Fisheries tries to anticipate, plan for, and mitigate potential survey impacts from these resource constraints.

Additionally, the AFSC has taken a number of steps including cutting lower priority research activities and managing federal staffing to further minimize impacts of rising costs. We also continue to investigate novel ways and scientific innovations to maximize our existing resources. In Alaska, this includes development of innovative acoustic data collection systems to supplement ship-based sampling, high resolution coupled bio-physical ocean models to inform stock assessments and management, increasing cooperative research partnerships with industry and subsistence-based communities, and quantitative analyses of the effects of spatial coverage on survey uncertainty.

Question 2. In Alaska, we are seeing the nation's highest volume fisheries (wild Alaska pollock and Pacific cod) shift to the Northern Bering Sea. In last year's (2019) Bering Sea surveys, 41% of the total Pacific cod biomass was in the Northern Bering Sea, and in the past two years, 18% to 30% of the pollock biomass was in the Northern Bering Sea. These significant changes from the historical time series suggest that we must make the Northern Bering Sea survey a core, annual survey of NMFS; currently it is not considered core and is subject to temporary and uncertain funds. Can NOAA commit to expanding our core surveys to the Northern Bering Sea in order to respond to ecosystem and climate-driven changes? What solutions can NOAA leadership generate to meet historical and expanded definitions of core surveys?

Response: *With the additional challenge of a rapidly changing marine environment and the subsequent expansion of species distributions, the complexity and geographic scope of the NMFS mission in Alaska has also increased. The northern Bering Sea bottom trawl survey was first accomplished in 2010, and due to changing environmental conditions (e.g., loss of sea ice), has*

been conducted annually from 2017 to 2019. This survey was planned to be conducted in 2020 before the coronavirus pandemic. We will conduct it if possible, as this and the survey of the southeastern Bering Sea are a very high priority.

In the last three years, due to the expansion of commercial species such as cod and Pollock into the northern Bering Sea (and possibly the southern Chukchi Sea), the AFSC added survey coverage and 276-person sea days to bottom trawl survey efforts of the 198,858 km^2 northern Bering Sea. NMFS is continuing work through options to retain historical surveys and prioritize core surveys within funds available. We are also exploring novel observation techniques, such as eDNA and autonomous UxS platforms, as ways to supplement the surveys with additional data.

Question 3. NOAA ships provide important survey data. In the North Pacific, the Oscar Dyson has had to cut survey days due to delays in the shipyard, supply deliveries, and staffing. How can NOAA ships more efficient to maximize survey days?

Response: *NOAA has made specific changes to address shipyard and maintenance delays to our vessels: The 2018, 2019 and 2020 Consolidated Appropriations Acts provided increased funding to address the nearly $32 million deferred fleet maintenance backlog and enabled significant improvements in fleet maintenance practices.*

Actions include:

- *Developed detailed 10-year maintenance plans for all ships to better plan and fund ship maintenance*
- *Conducting yearly material condition assessments to inform maintenance planning, providing increased competition, better pricing and economies of scale*
- *Implementing maintenance improvements identified in the "Marine Operations Maintenance Benchmark Study" – a detailed analytical study of NOAA, academia, and international research fleets' maintenance practices*
- *Created 15-person acquisition team with specialized ship experience; established IDIQs for dockside and dry dock repairs and shipyard lodging contracts*
- *Using a supplemental maintenance team for preventative maintenance repairs*

Additionally, OMAO has worked with other NOAA line offices to ensure that the NOAA vessels are multi-mission capable. For example, in FY19 Dyson was delayed in a shipyard and NOAA Ship Bell M. Shimada was able to quickly reconfigure and conduct the National Marine Fisheries Service Walleye Pollock Shelikof/Chirikof Shelf-break Pre-spawning survey, traditionally completed on Dyson.

Question 4. Congress provided additional survey funds (FY20 enacted) and report language was clear that those funds were intended to support maintaining historical survey capacity in Alaska. Can you explain how decisions are made that leave core Alaska survey work unmet, even when Congress increases funds? Given cost-benefit considerations of the Alaska commercial fishery and environmental changes, how do Alaska's core surveys not become a clear priority?

Response: *A high priority for NMFS and the Alaska Fisheries Science Center (AFSC) continues*

to be staffing and securing vessel time for research surveys that support stock assessments, and management of fisheries, and protected resources. NMFS' ability to execute all high priority research is based on available funding and constrained by increasing fixed costs and changing environmental conditions that have significantly increased the scope of our mission. With the increase of $2.0 million provided for NMFS to maintain historical surveys in Alaska and the West Coast, $1.1 million was distributed to AFSC, and $0.9 million to the Northwest Fisheries Science Center. These funds were critical in allowing the AFSC to utilize six vessels to conduct three bottom trawl surveys in FY 2020.

Question 5. Similar to the last question, given efforts by Congress to increase appropriations to collect these core data, can NOAA verify how much in funding would be needed to fully fund core surveys in Alaska going forward? All things considered, what is the realistic price tag and how can we ensure survey funds are spend as Congress intended?

Response: *NMFS has a variety of surveys planned for FY 2020. As part of a national level effort, all NMFS science centers are compiling estimated costs for all surveys conducted, and these estimates should be available in by Summer 2020. The Alaska bottom trawl surveys, one group of surveys focused commercial fish species in Alaska, is estimated to cost approximately $12 million utilizing six vessels in FY 2020. This estimate includes both the contract costs for the survey vessel, as well as NMFS staff time for preparations, surveys, and data analysis. We very much appreciate Congress' interest and are grateful for the support for NMFS' survey and stock assessment enterprise, and we will continue to provide updates to the Committee and our plans and resource requirements.*