North Pacific Fishery Management Council

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Senator Maria Cantwell
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Dear Senator Cantwell:

Pursuant to a request from your office (via email from Valerie Cleland dated 5/22/2019) to provide comment to the Senate Committee on Commerce, Science, and Transportation Subcommittee on Science, Ocean, Fisheries, and Weather, regarding HR 2236, the Forage Fish Conservation bill, I am responding on behalf of the North Pacific Fishery Management Council (Council). The following comments are not intended to provide support for or against this legislation. Rather these initial comments are based on the Council's ability to meet its conservation and management goals under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). As the bill goes through the legislative process, we will be pleased to provide additional comments if requested.

Existing Management of Forage Fish in the North Pacific

The North Pacific Council has a successful record of science-based, sustainable fisheries management since the MSA was implemented 1976. Each year, vessels homeported in Alaska, Washington, and Oregon harvest over 2,200,000 metric tons of groundfish in the North Pacific, worth approximately $2.5 billion first wholesale. The abundance of groundfish stocks is high, and most stocks are well above the abundance levels that produce maximum sustainable yield. In the past 40 plus years, no groundfish stocks have been overfished or have been subject to overfishing. Ecosystem considerations are incorporated into the analysis and development of all fishery management measures, and nearly all of the fisheries in the North Pacific are certified as sustainable by the Marine Stewardship Council and the Responsible Fisheries Management Certification Program.

For the most part, the existing management program for forage fish in the North Pacific appears to meet the intent of this bill. What we consider forage fish species, as designated in our groundfish fishery management plans (smelt, capelin, sand lance, lanternfish, krill, etc.), are already protected by regulations established by the Council. All directed fishing for these forage fish species in Federally managed waters is prohibited. Additionally, the sale, barter, trade, or processing of forage fish, grenadiers, and squids is prohibited, except that limited amounts of forage fish that are incidentally caught in other groundfish fisheries may be processed into fishmeal. A summary of existing forage fish management and protection measures in the North Pacific is attached.

Because forage fish and ecosystem concerns are adequately addressed by the existing North Pacific management programs developed under existing MSA provisions, HR 2236 does not appear to enhance the Council's ability to meet the MSA's conservation and management goals for forage fish species. Additionally, new definitions and requirements contained in this bill may create uncertainty and confusion, leading to substantial additional Council work on addressing forage fish issues, as well as possible litigation, which could negatively affect the Council's ability to achieve optimum yield and other MSA management goals in our region, as described in the next section.

Impacts of HR 2236 on Ability of the Council to Meet Conservation and Management Goals

The bill would amend the MSA to create a new definition for forage fish, require assessment and management considerations for forage fish, and limit new fisheries from developing until ecological importance is evaluated. Section 4 defines the term 'forage fish' to mean: "(A) any fish that throughout its life cycle -- (i) is at a low trophic level, (ii) contributes significantly to the diets of other fish, marine mammals or birds; and ''(iii) serves as a conduit for energy transfer to species at a higher trophic level; or (B) any other fish specified as a forage fish for purposes of this paragraph in a fishery management plan or amendment that is transmitted by a Council and approved by the Secretary in accordance with section 304(a)." Further, "lower trophic level" is defined in Section 4 as a position in the marine food web in which the fish generally consume plankton. Note that the Section 4 definition of forage fish does not include the descriptive language "generally small to intermediate-sized species, occurring in schools or dense aggregations" mentioned in Section 3.

Most commercially harvested fish species in the North Pacific would not be considered as forage fish in this draft of the bill, as they are clearly not low trophic level species throughout their life cycles. However, three very important and highly valuable commercially harvested fish species -- Alaska pollock, Atka mackerel, and sockeye salmon -- may or may not meet the proposed definition of forage fish, depending on how the exact wording is interpreted:

- Atka mackerel feed on lower trophic level prey as well as other prey throughout their life cycle. Their diets consist of copepods (a tiny crustacean that is considered a zooplankton), euphausiids (krill), and other prey. Would the language be interpreted to mean that this fish species *generally or primarily* consume plankton? Also, in some areas, Atka mackerel can be a substantial component of the diets for Steller sea lions, based on scat samples. Would that be interpreted to mean that Atka mackerel contribute *significantly* to the diets of marine mammals and serve as a conduit for energy transfer to species at higher trophic levels? The Council has addressed concerns about Atka mackerel as prey for Steller sea lions with seasonal allocations and area closures, rather than reducing catch limits or establishing an outright ban on the harvest of this species.

- It is assumed Alaska pollock is not intended to be included as a forage fish, as the bill explicitly lists Alaska pollock as a higher tropic level predator. However, Alaska pollock also eat copepods and euphausiids (as well as other prey) throughout their life cycle. As with Atka mackerel, pollock are also eaten by marine mammals, and the Council has fully addressed concerns about pollock as prey for Steller sea lions by other measures.

- Sockeye salmon, unlike other species of Pacific salmon, feed extensively on zooplankton throughout their life cycle. Upper tropic level species such as sharks, birds, and mammals all prey on sockeye salmon at every life stage. Like Alaska pollock, sockeye salmon can also occur in schools or dense aggregations. Would this iconic species be considered a forage fish under this legislation?

We believe the definition of forage fish is too broad to be unambiguously applied to species already managed under a fishery management plan or fishery regulations. While likely not intended, it is not clear if some of the most commercially valuable fish species in Alaska (e.g., Alaska pollock, Atka mackerel, and sockeye salmon) could be determined to be forage fish under this definition. A few other notes on the definition of forage fish are as follows:

- Even large-sized fish can eat 'plankton' throughout their life cycle, and not just at the juvenile stage, including the largest fish species in the world, the whale shark.
- The term 'plankton' covers a mixture of plants and animals (including small crustaceans, and the eggs and larval stages of fish) that drift throughout the water column. Although many planktonic species are microscopic in size, plankton includes organisms over a wide range of sizes, from the smallest phytoplankton to large organisms such as jellyfish.
- A forage fish definition based on plankton consumption means that species such as clams, scallops, and sockeye salmon could be considered as forage fish under this language, but other species that are an important food sources for fish and mammals -- such as squid and octopus – would not be considered as forage fish because they don't consume plankton.
- All finfish species serve as a conduit of energy transfer to higher tropic levels throughout their life cycle. Even large size fish predators (e.g., Chinook salmon, sharks) are eaten by marine mammals such as orca whales.

The Council is concerned that such a broad definition of forage fish will allow for various interpretations by different interested parties. This ambiguity, particularly with respect to species that are currently caught in target fisheries (e.g., Alaska pollock, Atka mackerel, sockeye salmon, scallops) may invite lawsuits that would ultimately be decided by the courts. **We believe that the bill could lessen the burden on councils and the likelihood of litigation by clarifying that the regional fishery management councils (though their fishery management plans) shall make final determinations of which species are considered as forage fish.**

Section 7 would require that when setting catch limits for forage fish fisheries, the Council must assess, specify, and reduce such catch limits by the diet needs of fish species and other marine wildlife, such as marine mammals and birds, for which forage fish is a significant part of their diet. This mandatory requirement could negatively impact a Council's ability to fulfill its responsibilities under MSA and affect conservation and management of marine resources and resource users in two different ways:

First, understanding the dietary needs of fish and other marine wildlife is an enormous research task. Assessing and projecting the exact amount of individual prey needed so as to reduce annual catch limits for individual stocks would be impossible. We are concerned that this requirement may cause the National Marine Fisheries Service to divert limited research monies away from critical research needs such as surveys and stock assessments for harvested stocks. We are also concerned that in the absence of this information, catch limits would need to be extremely restricted to account for this uncertainty. **Given these concerns, the language in Section 7 of the legislation might be more appropriate in section 303(b) of the MSA.** This would provide the councils discretion to adjust catch limits for forage fish to account for dietary needs, rather than make it a required provision of FMPs. As the Council Coordination Committee previously noted, the current language in the MSA regarding Optimum Yield considerations already provides the Council with the authority to address forage fish concerns. Predator needs and other forms of natural mortality are already accounted for in the stock assessments and specification of acceptable biological catch limits, within the constraints of the best scientific information available. Greater specificity is unlikely to be appropriate given the rapid evolution of ecosystem science and the high degree of uncertainty that remains regarding interactions among species.

Second, forage fish are considered as ecosystem component species in the North Pacific groundfish FMPs, and by definition, are not subject to a directed fishery. Accordingly, annual catch limits are not established for these species, consistent with the National Standard 1 guidelines. It is not clear how the bill would address ecosystem component species. **The bill could be clarified that *unless subject to a directed fishery*, the SSC and Council should not be required to make catch limit recommendations**

for forage fish. Because of the uncertainty regarding the impact of the legislation on ecosystem component species, clarification in the bill regarding ecosystem component species and those species subject to a directed fishery would lessen the burden on Council of revising its FMPs to comply with new requirements for these species, and reduce the likelihood of litigation regarding this uncertainty.

General Comments

The following bullets represent some general tenets developed by the regional fishery management councils that would improve the ability of the councils to develop appropriate conservation and management measures, and should be considered relative to any change in the MSA:

- Avoid across the board mandates which could negatively affect one region in order to address a problem in another region. Make provisions region-specific where necessary, or couch them as optional tools in the management toolbox rather than mandates.
- Legislation should allow for flexibility in achieving conservation objectives, but be specific enough to avoid lengthy, complex implementing regulations or 'guidelines.'
- Legislation should be in the form of intended outcomes, rather than prescriptive management or scientific parameters.
- Legislation should avoid unrealistic/expensive analytical mandates relative to implementing fishery closures or other management actions.
- Legislation should avoid constraints that limit the flexibility of Councils and NMFS to respond to changing climates and shifting ecosystems.
- Avoid unfunded mandates, and/or ensure that Councils and NMFS have the resources to respond to provisions of legislation.
- The Councils are already pressed to meet the current requirements of the MSA and additional mandates will likely hinder existing activities.
- Preservation and enhancement of stock assessments and surveys should be among the highest priorities when considering any changes to the Act.

Once again, thank you for the opportunity to review this draft legislation, and to provide these comments to you on behalf of the North Pacific Fishery Management Council. We would be more than willing to offer additional comments on revisions or drafts of this bill as it moves through the legislative process. We look forward to our continued dialogue on these critically important issues.

Sincerely,

Simon Kinneen
Chairman
DW

Enclosure: A summary of forage fish management and protection measures in the North Pacific

cc: Alaska, Washington, and Oregon Congressional Delegations
Chris Oliver, AA NOAA Fisheries
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Forage Fish Management

DRAFT (May 31, 2019)

Forage Fish Species in the North Pacific

Forage fish are species whose primary ecosystem role is as prey, serving a critical link between lower and upper trophic levels as a food source for many marine mammal, seabird, and fish species. For the Federally managed fisheries off Alaska, forage fish are generally considered to be low trophic level species throughout their life cycle and are an important food source for species at higher trophic levels.

The "forage fish species" category[1] in the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA) FMPs includes species in the following taxonomic groups:

- Osmeridae family (eulachon, capelin, and other smelts)
- Myctophidae family (laternfishes)
- Bathylagidae (deep-sea smelts)
- Ammodytidae family (Pacific sandlance)
- Trichodontidae family (Pacific sand fish)
- Pholidae family (gunnels)
- Stichaeidae family (pricklebacks, warbonnets, eel blennys, cockscombs, shannys)
- Gonostomatidae family (bristlemouths, lightfishes and anglemouths)
- Order Euphausiacea (krill)

Management of Forage Fish

The "forage fish species" category within the BSAI and GOA groundfish FMPs exists to manage these species in a manner that prevents the development of a Federal commercial directed fishery for forage fish. Forage fish species are classified as "Ecosystem Component" species, which includes species or species groups that are not: 1) targeted for harvest; 2) likely to become overfished or subjected to overfishing; and 3) generally retained for sale or personal use. In addition to forage fish species, Ecosystem Component species also include grenadiers and squids. Annual catch limits are not established for these species, but catches are closely controlled and monitored.

Management measures for forage fish in the BSAI and GOA Groundfish fisheries are established in Federal regulations at 50 CFR 679.20. Directed fishing for "forage fish species", grenadiers, and squids is prohibited. Catches are limited by the maximum amount a vessel can retain relative to the weight of retained target species, such as Pacific cod, pollock, and flatfish. These maximum retainable amounts, as a percentage of retained catch, are established for each species group: 2% for forage fish species, 8% for grenadiers, and 20% for squids.[2] The sale, barter, trade, or processing of forage fish, grenadiers, and squids is prohibited, except any retained catch of these species not exceeding the maximum retainable amount may be processed into fishmeal. Catches of forage fish, grenadiers, and squids are recorded by

[1] Prior to 1998, forage fishes were either managed as part of the Other Species group (nontarget species caught incidentally in commercial fisheries) or were classified as "nonspecified" in the FMP, with no conservation measures. In 1998, BSAI Amendment 36/GOA Amendment 39 created a separate forage fish category, with conservation measures that included a ban on directed fishing. Beginning in 2011, members of this forage fish group are considered "ecosystem component" species.

[2] The maximum retainable amounts were established to eliminate directed fishing for these species and to accommodate existing levels of retention that were believed to be sustainable.

observers, electronic monitoring, and industry reports and monitored during the season to ensure compliance with maximum retainable amount limits.

Other Species that Serve as Forage (at some point in their life cycle)

Virtually every species of fish and invertebrate in the North Pacific is preyed upon during some phase of their life cycle, particularly in the larval and juvenile stages. Many of these are goundfish species subject to target fisheries on adult fish. These species undergo regular assessments to estimate stock size, and the fisheries are managed to maintain stock sizes at or above the population levels that produce maximum sustainable yield. As such, the abundance of juveniles to serve as prey remains high and the abundance is monitored and managed using a conservative, ecosystem approach to management.

Data and Monitoring

Several efforts exist to assess forage fish abundance in the North Pacific. The NOAA Fisheries Alaska Fisheries Science Center prepares a report on the status of forage species on a biennial basis which is presented to the Groundfish Plan Teams, the Scientific and Statistical Committee, and the Council (even years for the GOA, odd years for the BSAI). This status report is not intended as a formal stock assessment, although forage populations are analyzed if data are available. The two main objectives of the report are to 1) investigate trends in the abundance and distribution of forage populations, and 2) describe interactions between federal fisheries and species that make up the forage base (i.e. to monitor potential impacts of bycatch). The report also includes survey biomass estimates and total catch estimates for smelts, shrimps, herring, squids, krill, and other forage species. The NOAA Fisheries Alaska Regional Office also produces a weekly report of forage fish catch in the groundfish fisheries using landings and observer data (see https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports). The Council and its Scientific and Statistical Committee also receive a separate Ecosystem Status Report, which includes indirect indicators of forage species abundance and prey availability, such as seabird breeding success and groundfish predator diets.

Forage fish abundance data in the North Pacific is primarily collected by the NOAA Fisheries Alaska Fisheries Science Center trawl and acoustic surveys (see the NMFS Alaska Research Surveys page). Although not all of these surveys are designed to sample forage fish, many provide data on forage fish as it is available:

- Summer juvenile pollock and forage fish survey- annual midwater trawl and oceanographic surveys conducted to examine distribution, abundance, size, diet, and density of juvenile walleye pollock, Pacific cod, sablefish and forage fishes. Surveys occur in the southeastern Bering Sea slope and shelf and western GOA on alternating years.
- Annual winter and summer pollock acoustic-trawl surveys in the Bering Sea and GOA provide data on krill and other forage fish species
- Annual bottom trawl surveys provide an abundance index for many fish and invertebrate species, and groundfish stomachs are examined for prey composition and diet analysis.
- Bering Arctic Subarctic Integrated Surveys (BASIS) combine surface trawl and midwater acoustics to collect indices on fish size, relative abundance, energetic status, distribution, and diet. Information on the distribution and abundance of forage fish species allows scientists to understand how forage fish population dynamics affect the food chain to apex predators and harvested fish populations that prey on forage fish.
- Seabird-Derived Forage Fish Indicators from Middleton Island (GOA): prey relative occurrence in regurgitated food samples from nesting black-legged kittiwakes and the percent biomass of capelin from rhinocerous auklet chick diets.