OCEANA Protecting the World's Oceans

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Mr. Dan Hull, Chair
North Pacific Fishery Management Council
605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Dr. James Balsiger, Regional Administrator
NOAA Fisheries, Alaska Region
709 West Ninth Street
Juneau, AK 99802-1668

RE: C6, Squid Management

Dear Chairman Hull, Dr. Balsiger, and Council Members,

We write to encourage you to think more broadly about management of squid. We recognize that management of the lesser-studied species, such as squid, that interact with the federal groundfish fisheries can be challenging, and that the Council's need to address that challenge has led to the draft EA/IR/RIR/IRFA evaluating options to amend the Groundfish Fishery Management Plans as they address squid management. We have reviewed the draft materials and encourage you to think beyond the needs of the groundfish fisheries, abide your obligations to minimize bycatch, and to consider an ecosystem-based fishery management approach and set ecosystem-based catch limits for squid.

Squid are an important forage species that figure prominently in North Pacific marine food web. Squid are a major component of the diets of northern fur seals, Chinook salmon, and many groundfish species. There are at least 15 species of squid in the NPFMC management region, but most of the squid taken as bycatch are likely the medium-sized magistrate armhook squid, *Berryteuthis magister*. *B. magister* is known to form enormous spawning aggregations in the Bering Sea, and these spawning aggregations are likely important feeding hotspots for predators.

Initially, it does not appear that squid may be managed as "Ecosystem Component" species. The regulations implementing National Standard 1 direct that a species may be classified as an Ecosystem Component species only if it a non-target species that is not generally retained for sale or other use. Squid caught during the groundfish fisheries are retained "in substantial amounts", processed by fishing companies and sold as bait, fishmeal, and other products.[1] These squid have economic value, are routinely retained, and are currently correctly managed "in the fishery" in the FMPs.

Moreover, it is not clear that moving squid to the Ecosystem Component category would be consistent with the directive to minimize bycatch.

[1]INITIAL REVIEW DRAFT EA/IR/RIR/IRFA: Moving Squid to the Ecosystem Component. Pg. 8.

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The purpose and need statement in the EA states that management of squids in the Ecosystem Component category will "alleviate unnecessary constraints on the groundfish fisheries." This justification is not sufficient to override bycatch minimization measures that are otherwise feasible.

Both the SSC and the Plan team acknowledge that the squid biomass is likely to be larger than estimates from the trawl surveys would suggest. That in itself is not a reason to move squid into a management category with no catch limit. Instead, the Council and NMFS could use food web production models to better estimate the biomass and production rates of the squid populations, similar to the effort made to estimate the biomass of octopus using predator consumption rates. In 2012, a new methodology to estimate octopus biomass based on consumption of octopus by Pacific cod was introduced (Conners et al. 2012); this method was accepted and used for 2013-2015 and was recommended for use in 2016-2017.[2] The predation-based biomass estimates were sufficient to support setting overfishing limits and acceptable biological catches for octopus; a similar method could be used for squid. Using this method to set overfishing and acceptable biological catch of squid may be a more appropriate ecosystem-based fishery management approach than the current Tier 5 method of using average historical catch.

As a step toward implementing this more precautionary approach, the Council and NMFS should add an alternative though which an ecosystem-based biomass estimate for squid would be developed to inform squid management "in the fishery." Improving the biomass estimates and understanding of the population dynamics of squid will lead to better ecosystem-based management and appropriate utilization of the squid resource.

Sincerely,

Jon Warrenchuk
Senior Scientist and Campaign Manager
Oceana

[2] http://www.afsc.noaa.gov/REFM/Docs/2015/BSAIocto.pdf