

## **Squid to Ecosystem Component analysis (initial review June 2016)**

Note current schedule for Council is initial review in February 2017 in order to incorporate any changes in assessment methodology to the analysis.

### **Council motion (June 2016)**

#### **North Pacific Fishery Management Council Agenda Item C6 -- Squid to Ecosystem Component 6/11/2016**

*The Council requests an additional initial review of the Analysis to move squid to the Ecosystem Component category. For clarity, the Council replaces the purpose and need statement and revises Alternative 2. Staff should address the SSC recommendations as practicable in the next initial review draft.*

### **Purpose and Need**

Squid are short-lived, highly productive, and an important prey species. No conservation concerns exist for squid populations in the BSAI and GOA. Squid are thought to be substantially more abundant than can be estimated from trawl survey data. Trawl surveys do not employ the proper gear or sample in locations that can provide reliable biomass estimates for most squids. Limited information hinders the development of reliable biological reference points, particularly OFLs and ABCs. As a result, current OFLs for squid are based on average catch calculations that are poorly linked to abundance. OFLs that are not representative of abundance do not achieve management goals for squid and could constrain groundfish fisheries unnecessarily. There are no directed fisheries for squid in either the BSAI or GOA, however squid bycatch is retained in some fisheries and often utilized to prevent waste. Given these factors, conservation and management “in the fishery” for squid may not be required in the BSAI and GOA FMPs. Under the National Standard 1 guidelines, the Council and NMFS could place squid into the “ecosystem component” category. Moving squid to the ecosystem component category would maintain the recordkeeping and reporting requirements and constrain bycatch while alleviating unnecessary constraints on other groundfish fisheries.

**Alternative 2:** Move squid in both BSAI and GOA FMPs into the ‘Ecosystem Component’. Catch specifications (OFL, ABC, TAC) will no longer be required.

Implement regulations for the groundfish fishery that:

- Prohibit directed fishing for squid
- Establish a squid maximum retainable amount (MRA) when directed fishing for groundfish species at a level to discourage retention while allowing flexibility to prosecute groundfish fisheries
  - Option 1 MRA = 2%

- Option 2 MRA = 10%
- Option 3 MRA = 20%
- Require recordkeeping and reporting to monitor and report catch of squid species annually.

Encourage the Alaska Fisheries Science Center to continue to explore methods to estimate squid abundance and assess the squid stocks.

## **SSC report (June 2016):**

### **C-6 Squid to Ecosystem Component**

The SSC received a presentation from Diana Stram and John McCracken (NPFMC). Public testimony was provided by Brent Paine (United Catcher Boats).

The SSC appreciates the care and dedication of the Council Staff in the preparation of this EA/RIR/IRFA. **Nevertheless, the SSC recommends that the document not yet be released for public review for the following reasons:**

1. The description of the Alternatives and Options as described are somewhat confusing. There are a large number of permutations and combinations of options, with important implications if one option, but not another, is chosen. All of the possible combinations need to be evaluated with similar care, with their potential for both positive and negative impacts discussed. These evaluations should include comparisons with the status quo, and the RIR should provide more detail about whether moving squids to the EC will change Net Benefits to the Nation due to the redistribution of total allowable catch to other fisheries.
2. As pointed out by the analysts, under Alternative 2, if Option 2 is not selected, then the Council would need to define what is considered to be directed fishing, as an EC determination requires that a species is not targeted. Analysis of this scenario cannot be conducted, since directed fishing is undefined. It is likely not a minor issue to re-define directed fishing, and any such definition would need to be evaluated for its impacts. This is a major deficiency in the analysis.
3. Squid retention and sale by the BSAI pollock fleet appear not to be “insignificant” under the present NS1 rules for designating a species as EC. The BSAI pollock fleet retains squid, which is subsequently sold. Annual mean retention rates are 31-71% in the BSAI and 13-92% in the GOA. Is there a biomass or a monetary threshold for determining whether the retention and sale of squid is significant? Do the limitations on retention and sale apply to conditions before a species is moved into the EC, or only when it is an EC? Public testimony indicated that the pollock fleet would be willing to stop selling retained squid if squid were designated as EC. The proposed rule for revised NS1 guidelines was published January 20, 2015 and the Final Rule is to be published in the near future. The analysis should briefly indicate whether this revision is expected to impact the analytical conclusions. The Council may need to revisit the Purpose and Need Statement because of the amount of squid retained in the BSAI pollock fishery.
4. Given the concerns raised above, it is unclear whether the proposed actions will have no significant impacts, either beneficial or adverse. In some places the document states that: “There are no significant (beneficial or adverse) impacts on squid stocks, salmon PSC, or significant (beneficial or adverse) socio-economic impacts on the groundfish fisheries.” (Page 1, last sentence of

Abstract). Yet, on page 10, bottom, it states “Alternative 2, moving squid to EC, has the potential to reduce the adverse impact on chum and Chinook salmon...”. And on page 52 it is stated that Alternative 1 “... has an adverse impact on salmon.” Since PSC of salmon is considered a significant problem, it seems that Alternative 2 would potentially have a significant beneficial impact. Likewise, the release of the pollock fishery from the need to avoid squid bycatch, and the resultant ability to continue fishing in areas of high pollock CPUE despite high bycatch of squid, would seem to be a significant economic advantage, especially as this ability to remain in high squid bycatch regions may allow the fleet to avoid salmon PSC. The possibility of localized depletion is also discussed. Given these statements, it is hard to reconcile them with the conclusion that the impacts of this action are “...not sufficient to require the preparation of an EIS...” (Page 26, bottom of 3<sup>rd</sup> paragraph). What is the threshold of “sufficient”?

The SSC also had the following comments on the document:

The proposed actions, to move squid to EC was proposed because of the difficulty to assess squid stocks, and the management problems associated with constraining squid catch in the BSAI. The SSC requests that the history of the issues be more fully described: i.e., the issues in setting specifications for squid, what alternate methods have been considered, and why they were deemed unworkable. Such documentation is important to fully evaluate whether some option could render Alternative 1 more viable. It would seem that methods could include: 1) redefining the time period over which catches are averaged, 2) biomass estimation using ecosystem models, 3) biomass estimation using hydroacoustic surveys such as shown in the BSAI squid SAFE for 2016, and 4) methods used in a recent analysis of global increases in cephalopods using survey and fishery data (Doubleday et al. 2016; Current Biology 26(10):R406-R407).

Throughout the document, terms used should be carefully defined in the context of the proposed action. Also care is needed to maintain a clear differentiation of what is known (data-based), what is assumed, and what may happen.

The SSC requests additional information describing issues pertaining to Maximum Retainable Amount (MRA) regulations, including descriptions of “directed fishing” and “prohibited status”, and a very general description of how MRA’s are calculated. Specifically, are MRAs determined on a haul-by-haul basis or on a trip-by-trip basis? Haul-specific estimation of the proportion of squid may be possible in the factory trawlers, but it is not clear how a haul-specific squid bycatch could be determined on catcher vessels with no at-sea sorting. This difference suggests a need to examine the ramifications of the proposed action on both the catcher fleet and on the catcher-processor fleet.

The analysis correctly points out that Alternative 2 may facilitate the pollock fishery to avoid salmon PSC. The document presently examines only the impacts on chum salmon PSC. There should be a similar evaluation of impacts on Chinook salmon and herring PSC.

Consider whether lessons can be learned from examining the actions with grenadiers in the NPFMC, and with squid in the PFMC? What will be the impact on other sources of bait if bycaught squid cannot be retained and sold?

There is some apparent contradiction as to the potential for localized depletion of squid. The figures show that most of the BSAI catch of squid occurs in the vicinity of Bering Canyon and the northwest corner of Unimak Pass over a very short time period (although it is unclear if the short window is due to the subsequent squid closure, or changes in squid behavior). Where possible, it would be good to report squid catches to species. It is not clear if localized depletions are sufficient to be of concern. While the conclusion of no depletion may well be correct, the lack of evidence in this case is not the same as a lack of effect.

How does the amount of squid caught by the fishery relate to the amount of squid present in the BSAI? To evaluate the potential for depletion, it would be useful to know more about the species composition of the squid being removed from the area of Bering Canyon by the fishery.

It is not clear whether catch accounting of squid bycatch will be performed under all of the proposed alternatives. On page 18, bottom, it states “Absent selection of Option 1, no catch monitoring of squids (sic) species in either FMP would occur and no stock assessment would occur.” In the paragraph above, it states “The catch of EC species is required to be reported for monitoring purposes and directed fishing for EC species is prohibited.” These statements seem to be in contradiction. As acknowledged in the middle of page 24, the SSC minutes of October 2015 are quoted as stating: “...it will be important to continue tracking squid catch, retaining tools to limit squid catch if necessary...”. The SSC reaffirms their opinion on this issue.

It would be of value in assessing the potential impact of the proposed actions to know which species of predators consume squid, and the proportion of the predators’ diets that are squid when they are foraging in the Bering Canyon region. The prey database can be queried for fish diet data by area and time of year. There are also some data on the predator diets (Aydin et al., 2002) and on squid as prey used by seabirds and fur seals (Sinclair et al.). Many of the fur seal data were collected from animals along the shelf slope between the Pribilofs and Unimak Pass. It would be useful, when looking at dietary habits, to be specific as to the species of squid involved, where possible.