

2017 Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) Fishery Performance Reports (FPRs)

The Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) met May 1, 2017 to develop the Fishery Performance Reports (FPRs) below. These FRPs do not represent a consensus but rather a summary of the perspectives and ideas that were raised at the meeting.

The meeting was conducted via internet webinar and facilitated by Jason Didden, the MSB Fishery Management Plan (FMP) coordinator. The MSB advisors who participated were:

Katie Almeida	Peter Kaizer
Joseph Gordon	Peter Moore
Greg DiDomenico	Jim Gartland
Meade Amory	Vito Calomo
Jeff Reichle	Peter Kaizer
Emerson Hasbrouck	Chris Roebuck
Rob Ruhle	

Other attendees included:

Gray Redding
Purcie Bennett-Nickerson
Scott Curatolo-Wagemann
Jay Hermsen
Howard King
Doug Christel
Tara Froehlich
Peter Hughes
Lou Goodreau
Dave Secor

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The fishery performance reports' primary purpose is to contextualize catch histories for the Scientific and Statistical Committee (SSC) because of the potential importance of catch histories for considering Acceptable Biological Catches (ABCs) in cases of fisheries with high levels of assessment uncertainty. The goal is to record information about fishery conditions and characteristics that may influence catches. A series of trigger questions was posed to the AP. The questions are based on the discussion and results of the 2011 fishery performance meeting that focused on 2010 and prior catches. The meeting seeks to generate discussion of direct observations by knowledgeable individuals involved in the fisheries in some fashion, especially as related to factors that may have influenced catches. The trigger questions were:

1. Are you aware of market issues that influenced MSB catches? For example: Fish prices, fuel prices, overall economy, etc...
2. Are you aware of environmental/ecological issues that influenced MSB catches? For example: Weather, sea temperature, climate, etc...
3. Are you aware of management issues that influenced MSB catches? For example: management induced effort shifts, management prohibiting directed fishing, etc...
4. Are you aware of other fishing behavior issues that influenced MSB catches? For example: refrigerated sea water (RSW) vs. at-sea freezing activity, vessels focusing on other fisheries, etc...
5. What other issues/concerns does the AP wants to highlight? For example: lack of U.S. mackerel allocation, forage concerns, calibration issues, fishery conflicts, regulatory concerns, etc...

The charge to the AP was thus to provide input on factors that may have influenced catch levels over time as well as any other observations and ideas that could prove useful to the SSC and/or Council as specifications for 2018 and beyond are considered. For organizational purposes, the summary is broken down by species and several thematic categories (per the above trigger questions). Some general points were also raised by AP members, as noted immediately below. Like the fishery-specific summaries, these do not reflect a consensus but rather a summary of the various ideas presented by the AP members. Many ideas are carried forward from last year. Staff noted that some management issues raised by the AP are out of the scope of specifications and/or this call, and that individuals should write to the Council or talk to their Council members to have such issues considered by the Council.

General

-The AP appreciates the Biological Updates provided by the NMFS Northeast Fisheries Science Center (NEFSC) as a concise summary of what is known (or not known) about the status of each of the species.

-Spiny Dogfish abundance could be severely impacting MSB and other fisheries, in terms of predation, interference (loading nets), and/or as an ecological barrier (e.g. maybe mackerel or squid won't go into areas with high dogfish concentrations). As dogfish have come back it seems like everything else has gone down and this issue should be an important component of ecosystem management.

-Consumption of forage stocks by marine mammals likely dwarfs mortality from fishing.

-Need to keep looking at consumption issue – try to build connections between fishery management plans.

-Shifting of thermal habitat suitability is likely impacting the distribution and/or productivity of MSB species. This is being looked at for mackerel in the upcoming mackerel assessment collaboratively with industry.

-There is concern that effort has shifted North/inshore – consideration of possible impacts is warranted.

-Regulations impact opportunities for all fisheries, including new National Monument – see discussions in species' sections below.

-It would be useful to get discard info as #s of fish, in addition to weight, to better understand impacts.

-The Council should direct the SSC to consider forage needs though a forage-based ABC control rule. AP Member Pam Gromen could not attend but requested the following be added to the report: With the upcoming SSC meeting, one request I have is a fuller discussion/write-up of the ecological considerations term of reference, so we understand what ecological factors were part of the assessment model (if any). In terms of the role of squid, mackerel, and butterfish as forage, it would be helpful to understand if/how the resulting ABC accounts for predator needs. What is the confidence in providing adequate prey for predators in the ABC recommendation? What are sources of uncertainty in meeting forage demands? Is biomass being maintained at a level above Bmsy in the long term as suggested by NS1 guidelines? While this may seem redundant from last year, I think it is important to recognize the forage policy goal in the EBFM Guidance Document, the shortcomings of current practices and the steps that will need to be taken to realize the policy goal.

Mackerel

The key points (not consensus positions) were:

Market Issues

-Mackerel prices are sufficient to stimulate directed activity if fish are available.

-Price is mostly driven by world prices/demand/supply.

Environmental/Ecological Issues

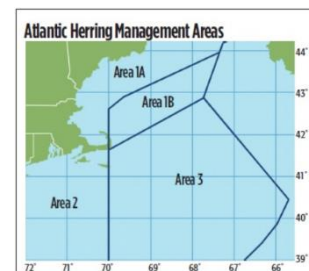
-Availability is the primary driver for catches, and availability is likely highly variable and highly sensitive to external environmental factors, making catch a poor indicator of stock status. Fishery not even looking much given low availability and other issues (see regulatory issues below). Water was too warm in spring (throughout range).

-Can't catch what's not here - and mackerel that did appear in 2014-2016 were north. Can't hurt a stock that's not here - need to figure out where it is (ctenophore research, Labrador Current, etc.). The fish are not gone, just not swimming here.

- Both availability and the size of fish have been low in recent years, both offshore and inshore. The size issue appears to apply to other forage species like Atlantic Herring and *Illex*, possibly due to warming waters - see Ohlberger 2013, Kingsolver & Huey 2008, Conover et. al. 2002, Forster et. al. 2012).
- There's been a lack of mature mackerel. Some of the advisors have provided size information to the NEFSC. 1999/2000 seemed to be a turning point, with small mackerel dominating catches since. Spawning must be taking place somewhere given age-1s...the question is what happens to them?
- Would be useful to see long-term consumption trends. We don't have knowledge base to set aside fish for ecosystem services at this time.
- The low landings and Canadian assessment should give pause for concern and warrant consideration of a further lowering of the ABC. If a shift north was the primary issue Canadian landings should have remained strong.
- Canadian landings are inshore purse seine, so the animals may be offshore in deep water and not encountered in Canadian fishery.
- The survey appears to have no connection to landings. More science needs to be conducted to figure out what is really going on with mackerel, including communicating with Iceland about mackerel's recent abundance there.
- Based on the size of mackerel seen in Canada (larger) and U.S. (smaller) and presumed migration pattern (Canada to U.S.), it appears that the Canadian and U.S. stocks are different (fish don't shrink).
- If catches that are occurring are concentrated in few times/locations then Council should look at impacts of that catch pattern – are the catches that are still occurring preventing recovery of mackerel (i.e. allowing high-volume fishing on spawning fish). What information is available re: mackerel spawning?
- Would be useful to look at distribution trends over time. i.e. impacts of climate shifts & ecosystem changes.

Management Issues & Management Induced Effort Shifts

- Herring management limits mackerel fishing :
 - Annual herring gear closures in Gulf of Maine (1A) limit ability to explore/catch in that area. MWT cannot fish in 1A from Jun 1-Sept 30.
 - Georges Bank Haddock AM closed Georges Bank herring fishing October 22 2015-April 30, 2016.
 - Herring 1A Closed Oct 18, 2016, 1B Closed Nov 18, 2016.
- Had good runs in late 2014/2015/2016 which had been rare.
- The observer call-in requirements may limit opportunistic fishing.
- Need to leave some amount of mackerel quota so that fishery can capitalize on availability when it occurs. There is a concern that once a quota is reduced it will never be restored given the current state of mackerel science. Recent catches of mackerel should not be used as an indicator of what the catch should be next year.



Other Fishing Behavior Issues

- In recent years much of the mackerel catch has been retained incidental catch from herring fishing.

-With relatively high fuel prices, high catches of mackerel will only occur if fish are abundant (gas price not as substantial recently). Economics will self-regulate this fishery and the fishery has not impacted the mackerel stock.

Other Issues for Council/SSC Consideration as Appropriate

-Despite reluctance by the Canadians, joint research should be pushed and U.S. research should proceed where appropriate relative to the 2010 TRAC recommendations (especially on the influence of environmental factors and on mackerel's stock structure).

-In terms of buffering against U.S. ACL overages, management uncertainty buffer seems excessive given the monitoring that occurs in the mackerel fishery and the apparently low level of mackerel discarding.

-There is concern about what exactly an MSE (Management Strategy Evaluation that generated ABC/quota) means and consists of.

-Specifications should consider allowing a roll-over of unused quota in a similar fashion as occurs with Atlantic Herring.

-Council should consider increasing the mesh size (or requiring square mesh codends) to allow more fish to get to spawning size/age.

-Concern about uncertainty in general.

-Concern that catch of small fish not allowing sufficient number of fish to reach spawning maturity.

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Illex Squid

The key points (not consensus positions) were:

Market Issues

-Price and demand are mostly dependent on S. Atlantic (e.g. Falkland Islands) landings and international market, which drive world trade prices and/or demand for U.S. *Illex*. Availability must be sufficient to overcome any market/fuel price issues to drive interest in fishing for *Illex* for most vessels. Strong dollar may impact price/sales/demand.

-Demand drives the fishery and participation. Market demand for *Illex* was robust in 2016.

Environmental/Ecological Issues

-Availability changes from year to year and also very quickly within a year (waves of squid “come up onto the bank” in an unpredictable fashion). Understanding migration is key to understanding *Illex*, and we don't fully understand the migration behavior. Real-time assessment would be optimal.

-2016 was a late season with relatively low availability and small size, especially early in season. Some vessels dropped out given low initial landings.

-The recent low landings and decline in indices should give the SSC some pause for concern.

Management Issues & Management Induced Effort Shifts

Deep-Sea Coral measures may impact ability of vessels in fishery to operate.

Other Fishing Behavior Issues

-For refrigerated sea water vessels to participate, they need high densities to fish to drive participation because they have to return to the dock within two days of starting to put *Illex* in the tank due to spoilage issues.

Other Issues for Council/SSC Consideration as Appropriate

-Research should continue into how to determine *Illex* productivity. Current management is not sensitive to actual *Illex* productivity or impact of fishery on the stock. The fishing community should be an integral part of this effort, which should proceed in a very methodical fashion. "If it ain't broke don't fix it." Proceed carefully before you make any changes.

-Summer & fall longfin closures can lead to discarding of longfin in the *Illex* fishery. A higher incidental limit for *Illex* vessels during longfin closures or a more gradual slowing of longfin fishing could avoid regulatory longfin discarding. The new higher limit in 2014 is better but may not totally solve this problem.

-Concern was reiterated about re-entry of latent permits. Entry of latent effort could disrupt smooth operation of the fishery. [Staff noted there is an amendment looking at this.]

Longfin Squid

The key points (not consensus positions) were:

Market Issues

-Recent ex-vessel prices are sufficient to drive increased effort if squid are available. 2016 prices were very good and fuel prices have been relatively low. The international market will currently take whatever the U.S. can produce so no demand glut factor exists.

-High effort in summer can cause closures and high landings volume/gluts. Concern by at least one advisor that it is being exacerbated by high capacity.

Environmental/Ecological Issues

-Longfin squid has variable productivity and availability both within a year and between years and between inshore and offshore.

-Weather not cited as unusual issue for 2016/2017. Low availability causing low 2017 landings to date.

-Dogfish continue to make some areas unfishable and are a reason why landings can turn off. The restraint on the dogfish fishery correlates with lower squid landings.

Management Issues & Management Induced Effort Shifts

-Scup, Tilefish, and Fixed/Mobile Gear Restricted Areas (GRAs) have made *Longfin squid* fishing more difficult/less profitable, likely leading to somewhat less effort overall. Recent modifications to scup GRAs have been helpful for flexibility.

-The mistaken April 2012 closure may have substantially impacted 2012 Trimester 1 landings because landings were on the upswing immediately prior to the closure.

-Annual landings would have been higher in some recent years if not for the Trimester 2 closures. Any seasonal closures likely depress annual landings (there were no seasonal closures in 2013/2015 and 3 weeks in August 2014). 2016 landings may have been substantially higher if the summer closure had not occurred.

-The 2 1/8" mesh requirement may be harming productivity and causing the relatively low landings in recent years (landings have been lower since 2007). Squid that go through 2 1/8" are marketable and likely have high mortality. 2 1/8" may appear practicable for fishery but may be increasing squid mortality and is unlikely to allow substantial escapement of other fish. Should be examined in detail. Multiple AP members questioned the value of the 2 1/8" mesh. Some fishery participants would prefer 1 7/8" year round.

-2 1/8" mesh should be extended to the summer trimester 2 fishery. Use of strengtheners reduces effective mesh sizes – consider eliminating the use of strengtheners. Consider impact of strengtheners on retention/bycatch and the use of square-mesh. Some advisors voiced concern that a net without a strengthener could not withstand pressure during towing/splitting, and going to a 2-inch mesh only would require much stronger/larger twine...that type of material might not currently exist. A larger strengthener may or may not be feasible depending on vessel configuration and fishery, and could be much more inconvenient for some vessels.

-Need to find out if landing more squid (normal trimester plus Trimester 1 roll-over) in summer is negatively impacting fall/winter productivity. Staff notes that this issue is being evaluated in the squid amendment.

-There was concern about what the new VMS reporting requirements are being used for. Staff noted they were used for Trimester 2 monitoring in 2016.

Other Fishing Behavior Issues

-Some vessels have been focusing on other species (other quotas increased or fisheries more valuable - e.g. scallops; some vessels were retrofitted for pelagic fishing). Several participants have left the fishery and those vessels are unlikely to return.

Other Issues for Council/SSC Consideration as Appropriate

-Research should continue into how to determine longfin productivity. Current management is not sensitive to actual longfin productivity or impact of fishery on the stock. The fishing community should be an integral part of this effort, which should proceed in a very methodical fashion.

-The lack of proper NMFS notification for the 2012 Trimester 2 longfin closure needs to continue to be avoided in the future.

-Concern was reiterated about reentry of latent permits. Entry of latent effort could disrupt smooth operation of the fishery. [Staff noted there is an amendment looking at this.]

-The issue of additional flexibility between trimesters was raised again, and staff noted that this is an issue being considered in the squid amendment. Related concerns that were voiced included:

- Need to consider fairness and access issues. For example, there is a smaller group of vessels that can access state waters in NY.

- Want quota caught, but do it right way – higher effort in spawning areas not good for fishery.

-There are times of substantial local directed recreational effort and catch, which may not be reflective of overall abundance. Recreational catch is likely very small compared to the overall quota. Sense that recreational fishery is increasing. See more squid tackle in stores. There is also a traveling recreational contingent that uses social media/internet to spread the word about varying local availability. 2014 spring fishery in MA drove towns to enact regulations to address high participation. May be approaching a level that needs to be accounted for.

-Concern was voiced over area of catch issues, but staff noted this will be an issue addressed in detail in an upcoming action later this year or next year. The Council should consider near-shore buffer area, especially for rolled-over squid.

Butterfish

The key points (not consensus positions) were:

Market Issues

- Low butterfish availability/abundance resulted in low landings in the 1990s and it has been very difficult to re-establish a market. It might take several years to re-establish export markets, but there are some indications that demand may be higher than anticipated. Traditional export food markets want fish caught in December-March (fat/roe/feed issues).
- Boats have been increasing fresh butterfish production relatively slowly so as to not crash the price. Fresh market has been absorbing surprising quantity of fish without price dropping.
- It is too early to determine how the markets will respond to U.S. butterfish in the long run. Fishery is totally market driven.
- Early 2017 fishery was by a few vessels; the processor restricted landings. Low prices made it difficult for most to justify targeting butterfish. Good size but low fat content in early 2017 fish. 2017 could have been much higher already but processing any butterfish is still a speculative activity given the market. Export fish need to be either frozen at sea or brought in in refrigerated seawater to keep product quality high.
- No major changes observed in butterfish availability by participants from 2016 to early 2017.
- Dogfish continue a major problem.
- Overall mentality is still to avoid butterfish - focus has been on longfin squid given good 2016 longfin squid fishery/prices.
- Spring 2016 NEAMAP age 1s were 2nd highest ever.
- Vessels landing at Lund's typically retain butterfish as bycatch and low 2017 landings at Lund's not surprising given slow longfin squid fishery so far in 2017.

Environmental/Ecological Issues

- For 2016/2017 weather, typical mix of good and bad weather.
- Abundance has been relatively high in the last few years compared to the early 2000s, both inshore and offshore.
- Some advisors indicated that precaution is warranted given butterfish's important role in the ecosystem as part of the forage base and given butterfish catches have been very low compared to recent projection results (and possible future catches).
- Some advisors noted that butterfish's role as forage is already accounted for in the conservative reference point currently used for butterfish, which was specifically recommended in a paper (Patterson 1992) looking at harvest of forage species.
- There remains some concern about the age structure of butterfish. What is age range of recent butterfish catches?

Management Issues & Management Induced Effort Shifts

- Mesh requirement is holding landings back and causing regulatory discards. Need an analysis of any

discards to determine cause – regulatory discarding may be a primary cause of discarding. The 2,500 pound trip limit for using <3-inch mesh was causing regulatory discarding. If you are out squid fishing and happen to come across some butterfish, having to discard does not make any sense. Focused butterfish fishing will probably use 3-inch mesh anyway. Less than 3-inch mesh is probably targeting something else and hitting butterfish incidentally - why not keep? Note: Effective May 26, 2016, moratorium permits can retain up to 5,000 pounds butterfish with under 3” mesh. 5,000 pound limit is still likely to drive regulatory discards, a much higher limit would be necessary to totally eliminate regulatory discards. Staff noted they have plans to do this analysis after a couple of years at the higher trip limit. An advisor suggested using caution when using discard reason or species targeted to analyze bycatch due to observer protocols.

Need a better way to communicate changes to regulations – for example retention limit for butterfish – there remains a lot of confusion about what you can do with butterfish.

Other Fishing Behavior Issues

-Lower 2015/2016 catches not surprising given few participants and developmental phase of fishery and low prices compared to other species, especially given strong squid market in 2016.

-Poor longfin squid fishing and/or herring/mackerel fishing pushed the vessels that did butterfish in early 2017 into it as an alternative fishery.

Other Issues for Council/SSC Consideration as Appropriate

-Concern about focusing on 1-year of data to project out 3-years for 3-year specifications for a relatively short-lived species.

-For short lived, tightly schooling fish you need a targeted & dedicated survey - this is how the rest of the world assesses these kinds of stocks.

-Some but not all advisors think butterfish should qualify for an exemption to ACLs.

-Looking at only the Bigelow’s area sample misses a substantial amount of butterfish habitat.

-The need for a discard cap on the longfin squid fishery appears questionable given the current butterfish ABC.

-The ability to balance quotas (and increase butterfish landings if a substantial part of the discard cap has not been used) late in the year is important since good quality butterfish start being available in December. (Framework 8 allows this and it was used in 2014).

-Cornell is examining mesh issues – preliminary data suggest 8cm square mesh and 8cm T-90 mesh could be productive for eliminating small butterfish. More information should be available in final report (still pending).

-Squid trawl network still providing information on butterfish availability – negative reports are very important for operation of the avoidance network. (Network also provides bycatch updates for river herring/shad, yellowtail flounder, and windowpane flounder).