

Squid Fishery Advisory Committee Meeting 7
November 15, 2023, 9am-4pm
via Zoom teleconference

KEY OUTCOMES MEMORANDUM

OVERVIEW

The Squid Fishery Advisory Committee (SFAC or Committee) held its seventh meeting on November 15, 2023. The goals of the meeting were to:

- Review and discuss changes in fishing gear, habitat impacts, bycatch and interactions with wildlife since the FMP;
- Review SFAC goals for gear/habitat and discuss potential changes to the management framework; and
- Begin the discussion of small-scale fishery access.

PARTICIPANTS

The following SFAC members attended: Caitlin Allen-Akselrud, Richie Ashley, Ryan Augello, John Barry, Ken Bates, Joe Cappuccio, David Crabbe, Mark Fina, Russell Galipeau, Corbin Hanson, Greg Helms, Porter McHenry, Tom Noto, Brian Susi-Blair, Pete Guglielmo (alternate for Ken Towsley), Joe Villareal, Anthony Vuoso, Anna Weinstein and Dan Yoakum.

Katie Grady, Briana Brady, John Ugoretz, Dianna Porzio and Trung Nguyen with the CDFW convening team participated. Todd Van Epps of CDFW participated as a representative of the Law Enforcement Division. Scott McCreary and Debbie Schechter with CONCUR served as neutral facilitators.

The SFAC Meeting 7 Agenda was provided.

KEY OUTCOMES

Below is a summary of the main topics discussed during the SFAC meeting. This summary provides an overview of the main topics, primary points and options raised in discussions, and next steps. It is neither a detailed transcript nor a decision document.

1. Welcome, Agenda Review

Katie Grady of CDFW welcomed SFAC members and shared the schedule of SFAC meeting dates and topics. Scott McCreary of CONCUR reviewed the agenda. Key topics include (1) a continuation of the previous meeting's discussion of gear use, bycatch, wildlife interactions and habitat impacts; (2)

review and discussion of SFAC goals for gear/habitat and potential management changes and (3) initiate a discussion of small-scale fishing access.

2. Review and Discuss Changes in Fishing Gear, Habitat Impacts, Bycatch and Interactions with Wildlife

Katie reviewed key changes in fishing gear since the FMP based on landings data, logbooks and dockside sampling that were discussed during the October SFAC meeting. She showed a food web diagram illustrating that squid interact with many species including fish, birds, and marine mammals. CDFW would like to get feedback on what types of interactions are occurring with the squid fishing fleet and what can be done from a management perspective. Katie noted that marine mammal interactions with squid fishing that lead to mortality or serious injury are rare. NMFS categorizes the squid purse seine fishery as Category 3, meaning there is a remote likelihood or no known interaction with marine mammals (sea lions and dolphins).

Lighting

Katie reviewed current lighting regulations and highlighted research on the impacts of lighting on seabirds from fishing , including the effects of light shielding and use of different light intensities. Katie showed a map of fishing activity (vessel sets) at the Channel Islands from 2005 through 2022 in relation to marine protected areas (MPAs). From ongoing discussions, Katie noted that CDFW does not currently see a need for changes to the existing lighting regulations, though there are some enforcement challenges with noncompliant shielding and use of lights during closed times/areas. The use of electronic logbooks could allow for documentation of lighting changes on vessels closer to real-time and improve monitoring of lighting activity.

SFAC members shared the following comments, observations, and concerns regarding lighting:

- Shielding of lights is working to minimize impacts.
- Practical experience suggests that forward-facing lights should not be used while fishing and should only be used for safety while transiting. The SFAC could make a recommendation about this as a best practice.
- There is a concern about the impacts of lighting on nesting storm petrels in the northwest corner of Santa Cruz Island where there is no established MPA. A small amount of light can cause disruption to fledglings and aid predators in finding nests. Consider ways to protect them.
- The night sky is impaired at Santa Cruz and Anacapa Islands due to lighting from squid fishing. Consider the value and importance of night sky.
- Electronic logbooks could improve monitoring of seabird interactions and

could employ cooperative efforts

Bycatch

Katie provided dockside sampling program data that indicate the presence or absence of bycatch in randomly sampled loads of California market squid from 2018 to 2022. Species found as bycatch primarily include coastal pelagic finfish like sardine, mackerel, and anchovy, and small amounts of benthic organisms (associated with sea floor). The presence of benthic species is one indicator that nets may have impacted spawning or bottom habitat. Squid egg cases were present in bycatch about 30% of the time.

Sampling of squid eggs during dockside collections began in 2009 and eggs were observed at a slightly higher frequency in the North compared to the South (36.6% vs. 31.6%). Squid lay multiple egg cases over the course of a potentially week-long spawning window, but most are laid within the first 48 hours. Egg laying can happen at any time during fishing activity—on the bottom, in the net, in the hold, or during offload. So the presence of egg cases in the offload is not necessarily evidence that the net interacted with the spawning bed.

CDFW aged eggs collected during dockside sampling and categorized them as beginning stage (less than 24 hours old), intermediate stage (more than 24 hours old) and unknown (eggs are observed but can't be accessed). Intermediate eggs would indicate that they came from the spawning beds and that the net interacted with the beds. In the majority of loads there are no eggs present. CDFW compared 2010-2014 (a more prolific period for squid) to 2018-2022 in the two regions, North and South of Point Conception. Eggs were observed in a slightly higher percentage in recent years. This could be due to a number of reasons such as effort shifts or the location of fishing sites closer to port, so transit time is shorter. Ten to 15% of loads had intermediate eggs, which indicates interaction with egg beds for those loads. It's difficult for CDFW analysts to determine if eggs in the beginning stage came from the bottom because they could have been freshly laid in the net, during transit or offload.

SFAC members had the following comments regarding bycatch and eggs:

- Co-occurrence of seagrass or other benthic species and egg cases may provide a better understanding of what is going on. But seagrass can be caught from being suspended in the current rather than from the pulled from the bottom.
- Consider whether data from gear with bottom contact sensors would be useful.

- Most of the eggs come from when the squid is already in the net, get stressed and release the eggs, especially with larger sets.

Net Depth and Fishing Depth

Katie provided data on average net depth and fishing depth over time, based on dockside interviews. Net depth fluctuates but, on average, nets are deeper in the North especially in recent years. Average fishing depth also fluctuates but beginning in 2019 it is deeper in the South and shallower in the North. CDFW compared the difference between average fishing depth and average net depth. This comparison shows multiple examples of average excess net greater than -60 feet, especially in the North, which could indicate that nets are contacting the bottom. CDFW invited SFAC members to comment on this. SFAC members provided the following comments:

- The graph of net depth and fishing depth is misleading. In practice, the net doesn't go straight down and lay on the bottom. The current reduces the depth of the net; excess net is bowed out in the current. Effective net depth can be reduced by 25 to 30% when fishing due to ocean conditions, currents and the speed of pursuing.
- Fishermen don't intend for the nets to contact the bottom and will take a number of steps to keep the net off the sea floor (hold the purse line back, pull it faster, etc.).
- Fishermen use multiple nets and net depth differs over time based on fishing location. It's important to be clear about what type of information is being gathered dockside and fishermen need to give the most precise information possible. With the use of a ribline, the net can lay on the bottom without having harmful impacts.
- The leadline is what has the contact with the bottom, not the net. Focus on the leadline and how it is drawn across the sea floor.
- The data seem to indicate there is bottom contact and this should be mitigated. Consider riblines and bottom contact sensors. Consider refining this analysis by combining it with benthic bycatch data (i.e., root structure of surfgrass).

Katie compared the difference between net depth and fishing depth with dockside sampling data on egg stage. There are instances where it looks like a greater difference between net depth and fishing depth is associated with beginning and intermediate stage eggs. While most fishing events appear to pose low or no risk to spawning habitat, a portion of fishing activity has these multiple lines of evidence for potential disturbance to spawning habitat. CDFW believes that based on available data, fishing has the ability to impact spawning habitat and this may require mitigation.

Use of Riblines

Katie provided data on the use of riblines based on the findings of a 2020 questionnaire. There has been an increase in ribline use since 2010. Katie showed a slide on ribline use compared to the presence of bycatch species associated with the sea floor (benthic species). There is a reduction in egg case bycatch with the use of the ribline but no noticeable difference for other bycatch. SFAC members provided the following comments regarding the use of riblines:

- Riblines can reduce bottom contact. The ribline will draw the net through the water column above the sea floor. Net depth does not matter.
- With a ribline, the leadline is hung long and is not tight. Otherwise, it's tight and has more bottom contact. The goal is to avoid bottom contact so we don't damage our nets.
- The diagram showing the ribline is inaccurate. It would be helpful to see a video of how the nets actually work in fishing. Ribline must be scaled appropriately for fishing depth
- It could be helpful to see data on volume or count of eggs/bycatch in addition to presence/absence. CDFW updated sampling procedures to include these changes in 2020, but there's not enough data yet to inform analysis.

3. Review SFAC Goals for Gear/Habitat and Discuss In-Depth

Katie reminded the SFAC that at the last two meetings, members discussed how they would propose to change the existing squid fishery management framework. This was captured in a table (see Meeting 6 Summary). At this meeting, the objective was to have a more in-depth discussion about the goals and ideas listed in the Gear/Habitat category of the table. Specific questions for discussion were as follows:

- What protections already exist?
- If a regulation exists, are there ways to improve compliance or enforcement?
- Is there evidence to support a management change?
- What are potential options for a management change?
- What are the unintended consequences of a management change, if any?

SFAC members discussed these questions for goals related to gear and habitat.

SFAC Goal: Gear alterations to protect bottom habitat (e.g., ribline):

The ESR explicitly mentions the need to protect egg beds. The Marine Life

Management Act (MLMA) also specifically addresses impacts to fish habitat. The SFAC discussed this goal using the framework provided above.

What protections already exist? There are no gear restrictions related to protection of spawning habitat. MPAs do exist, which allow for uninterrupted spawning.

Is there evidence to support the need for a management change? There are individual accounts of bottom contact and observations of average net depth substantially deeper than average fishing depth, but as discussed, net depth may not be a significant issue. There is evidence of benthic organisms and older eggs in fishery offloads and a reduced likelihood of this with riblines and potentially a shorter net. Katie asked what other evidence could support the need for a management change? Responses were as follows:

- The ribline controls the shape of the net so bottom contact is reduced.
- There is no evidence to-date that bottom contact impacts squid biomass or reproductive effectiveness or has an impact on the fishery.
- We set in the same places each year and the squid keep coming back, so there is not a problem with bottom contact and impacts on the fishery.
- Is bottom contact impacting the fishery management goal of 30% egg escapement?
- Is there a correlation between seagrass and landings that indicates impacts on seagrass habitat? There are many species of seagrass, and there's no indication that sensitive species (i.e., eelgrass) are present in locations where the squid fishery is operating.

What are potential options for a management change? Katie listed potential options, some of which are mentioned in the ESR: use of a ribline, net depth restriction, fishing depth restriction, or more area closures. She invited comments from the SFAC on these options. Comments are as follows:

Net depth restriction: Many SFAC members were not in favor of a net depth restriction, noting the following concerns:

- Net depth is not a problem; there is no evidence of detrimental bottom impact.
- CDFW does not have the ability to enforce a net depth restriction.
- Consider the use of best practices rather than a regulation.
- Requiring shorter nets will reduce access to deeper water and will put more pressure on shallower fishing areas.
- Rely on best practices regarding net depth.

Ribline: Many SFAC members supported the use of a ribline:

- A ribline makes sense and is feasible for the fleet.
- A ribline will reduce bottom impact.
- Many fishermen have already taken the initiative to install a ribline.

Fishing depth restriction: Many SFAC members did not support this idea:

- Fishing depth restriction is unnecessary. Enforcing it is very challenging as bottom depths are highly variable. This would reduce the fishing grounds.
- Additional restrictions on fishing will have negative economic impacts on boats and processors.
- This could be a best practices, nonregulatory approach rather than a regulatory change.

SFAC Goal: Additional area closures and gear restrictions to protect seabirds

Katie noted that there is significant overlap between this goal and the goals regarding gear near/through closed areas and lighting regulation compliance. Key comments from the discussion of these goals are below.

What protections already exist? MPAs, special closures, light shielding and wattage requirements already exist.

Is there evidence to support the need for a management change? SFAC members had the following comments:

- There is evidence that light cast on the ocean can impact nocturnal birds.
- There are no data indicating that seabirds are in decline.
- There is no clear evidence that squid lights now in use have a negative impact on seabirds.
- There is evidence that light shields have mitigated the impact of squid lights.
- There is no clear evidence to support the need for additional area closures.
- There is a need to better understand the impact of lights on nesting birds.

What are potential options for a management change? The following options were mentioned by SFAC members:

- Gather more information on lighting and seabirds:
 - Improve monitoring of interactions with seabirds and pinnipeds using electronic logbooks or observers to capture information about interactions and precise fishing location data.
 - Use satellite data to see where the squid fleet/lights are present.

- A “best practices” document distributed to squid permit holders could help improve some of the lighting issues and alleviate some concerns.
- Improve enforcement of lighting regulations.
- Consider changing lighting regulations to clarify that no part of the illumination device can extend below the cover. There was a response that this would be an added cost with no known benefit since the light-producing element is covered.
- Work with the Channel Islands National Park authorities to identify the most critical seabird nesting areas and consider no nighttime fishing in those areas during a critical part of their lifecycle.
- Area closures: SFAC members in the fishing industry were not in favor of additional area closures.

SFAC Goal: Managing gear near and transit through closed areas

What protections already exist? Take (aka fishing) is defined in the Fish and Game Code as aggregation of squid or attempts to aggregate squid. This is not allowed in closed areas. Some SFAC members expressed an interest in more clearly defining what is considered fishing.

SFAC members discussed the use of forward-facing lights and whether they are impacting nocturnal birds. One member noted that forward facing lights are a problem on the entire coast, not just the squid fleet. Another member noted that lights should not be used in MPAs. The best practice is to turn most lights off while transiting MPAs then turn them back on in an area with hazards.

What are potential options for a management change? The following options were mentioned by SFAC members:

- Consider a best practice guide for lighting operations to minimize impacts to seabirds (e.g., don’t direct lights on cliffs and caves where seabirds are nesting, minimize use of forward-facing lights).
- As technology improves, consider alternative lights or lights that are closer to the water or potentially submerged (but near the surface) in the future.

SFAC Goal: Allow jigging for squid for commercial purposes

What protections already exist? Squid permits don’t allow for jigging currently.

Is there evidence to support the need for a management change? What are potential options for a management change? An SFAC member clarified that the reference to jigging was about small-scale hook and line jigging rather than large jigging machines. Allowing hook and line jigging would enable squid

fishermen to decide whether squid are large enough to make a set. By including this, it will avoid an enforcement problem.

CDFW staff noted that jigging is not currently a legal method of take so it could be an area for a regulatory change to allow the use of hand-operated, non-mechanical jigs when fishing for squid.

Use of seal bombs:

Katie explained that the use of seal bombs for deterring marine mammals has come up in interviews and otherwise with respect to research on the auditory impacts of these devices. As a state agency, CDFW does not have a direct role in regulating seal bombs; they are regulated by the federal Bureau of Alcohol, Tobacco and Firearms. Recommended use is regulated by the National Oceanic and Atmospheric Administration National Marine Fisheries Service, which circulated a proposed rule in 2020. Regulating seal bombs is largely outside the scope of the Fish and Game Commission's authority. One SFAC member expressed concern about the use of seal bombs and impacts on pinniped populations, noting that the Channel Islands National Park was established, in part, for pinniped populations and that there is a general prohibition on using explosives in national parks. Another SFAC member stated that seal bombs are important to prevent interactions between gear and marine mammals and they are highly effective. Katie reminded the SFAC that there was discussion in previous meetings about improving monitoring efforts, such as electronic logs, to better describe interactions with marine mammals.

4. Begin Discussion on Small-Scale Fishery Access

The intent of this agenda item is to begin the discussion of small-scale fishery access including the history of the restricted access program, the current permit structure, petitions for increased access, and feedback on the feasibility of increasing access. Katie reviewed a slide that depicts vessel, brail, and light boat permits over time and shows the number of permits related to capacity goals from the FMP, which are intended to provide for a moderately productive fleet. CDFW landings data indicate that over time, there has been a steady increase of active seiners in the north and a slight decline in the south. There is no brail activity in the north and little activity in the south. Fewer than 20 brail permits are utilized to brail for squid in a given fishing season even though more than 40 brail permits are listed in CDFW's licensing system. The use of brail permits tends to mirror the seiner count suggesting that many brail permits may be working to light for or support, and not independent of, seine operations. Most landings are from seiners and for a large export market. The ESR noted that

current operations could impede small-scale fishing opportunities, which may provide benefits for coastal communities.

Katie described the two-ton allowance that existed before 2014 under which any commercial vessel could take up to two tons of squid per calendar day, not constrained by the seasonal catch limit. This led to continued fishing after the fishery closure, so this exemption was removed. SFAC members provided perspective on the two-ton allowance. One noted that it was intended for the small lampara fleet that would occasionally catch squid. Another thought that it was intended for live bait fishermen.

Katie reviewed the three small-scale petitions received by CDFW between 2017 and 2019 for limited access with trip/daily limits and tonnage quotas north of Point Arena. She asked for input from the SFAC on any new or modified proposals, the definition of small-scale, and potential options for improved small-scale fishery access. SFAC members provided the following input.

- A new proposal for small-scale access envisions a 10-ton per day and 10,000-ton overall limit from Point Arena north, while retaining existing management rules. Small-scale would need to be viable for the community in Northern California and the total tonnage assumes 10 vessels fishing for 100 days. This is based on the idea of allowing communities to fish what is available in their area and that the current catch limit is really focused on the area from San Francisco south, leaving a third of the state without access. Squid fished under this proposal could be used for bait, sold on the fresh market locally, or be shipped globally if processing facilities are available.
- Another SFAC member suggested that the definition of small-scale would be 1,000 pounds per day and 10 tons total, noting that the fishery is sometimes viable north of Point Arena and it's important not to devalue existing permits.
- Several SFAC members expressed concerns about allowing small-scale access:
 - The squid fishery is already oversubscribed due to the lack of other fisheries. There is concern about fishing every nook and cranny and impacting the biomass.
 - Small-scale access is not fair for permit holders who have invested a great deal; limited entry participants would have nothing to benefit from a fishery that directly competed with them.
 - The industry is already challenged with the economics of global markets, tariffs, and doing business in California, and the economics won't support more vessels.

- The existing fleet can catch squid in Northern California.
- Opening the door to small-scale access will exacerbate problems and encourage more requests for access elsewhere.
- There was a question about the cost of brail permits and a suggestion that if seiner permits are too costly, perhaps a brail permit is available and more feasible to purchase.

Katie explained that this meeting marks the beginning of the discussion of small-scale access. For the next meeting, she asked SFAC members to think about how they would define small-scale (e.g., based on tonnage, geography, market for squid, etc.). This also relates to the capacity goals for the fishery.

5. Public Comment

Seven members of the public provided comments at the meeting. Five spoke in support of opening access to the squid fishery, primarily in the Fort Bragg area, for small-scale fishing to provide opportunities for themselves or others to fish squid, including for crab bait, and to benefit the community. One suggested that CDFW consider a loan program to help fishermen get started, similar to one operated by the state of Alaska. One commenter was opposed to small-scale access because as a permit holder, it devalues his investment. He noted that permit holders need to be able to use their permits to fish throughout the state wherever squid are located.

SUMMARY, NEXT MEETING, NEXT STEPS

CDFW staff expressed appreciation for the feedback provided by the SFAC and members of the public.

Next Meeting:

- The next SFAC meeting will be held on Friday, January 26, 2024 in downtown Oakland, CA.
- CDFW is exploring options to add a meeting between January and May, 2024 to provide additional time for the SFAC to fully develop its recommendations.
- The final meeting is tentatively scheduled for May 1-2, 2024 in Southern California.

Next Steps:

Based on the Convening Team's deliberations, the following next steps were identified:

- **SFAC Members:**
 - Email sfac@wildlife.ca.gov if you have concerns with future meeting dates.

- Consider how you would define “small-scale”.
- Each SFAC member is asked to review the draft meeting summary after it is distributed and propose bounded edits to address key misstatements or omissions.
- **Facilitation Team/Conveners:**
 - Prepare and distribute draft meeting summary for review by SFAC members.
 - Share meeting presentations.

For questions regarding this meeting summary, please contact:

sfac@wildlife.ca.gov