



Squid Fishery Advisory Committee

Review of California Market Squid Fishery Management and Proposed Recommendations

07 November 2024

Presented to:

**Marine Resources Committee
Fish and Game Commission**

Presented by:

**Trung Nguyen
Environmental Scientist
Marine Region**



Objectives

1. Review Squid Fishery Advisory Committee (SFAC) process and resulting Department recommendations
2. Address questions and discussion topics from July 2024 MRC Meeting
3. FMP Amendment/Rulemaking proposed timeline



Squid Fishery Advisory Committee (SFAC)

SFAC Charge

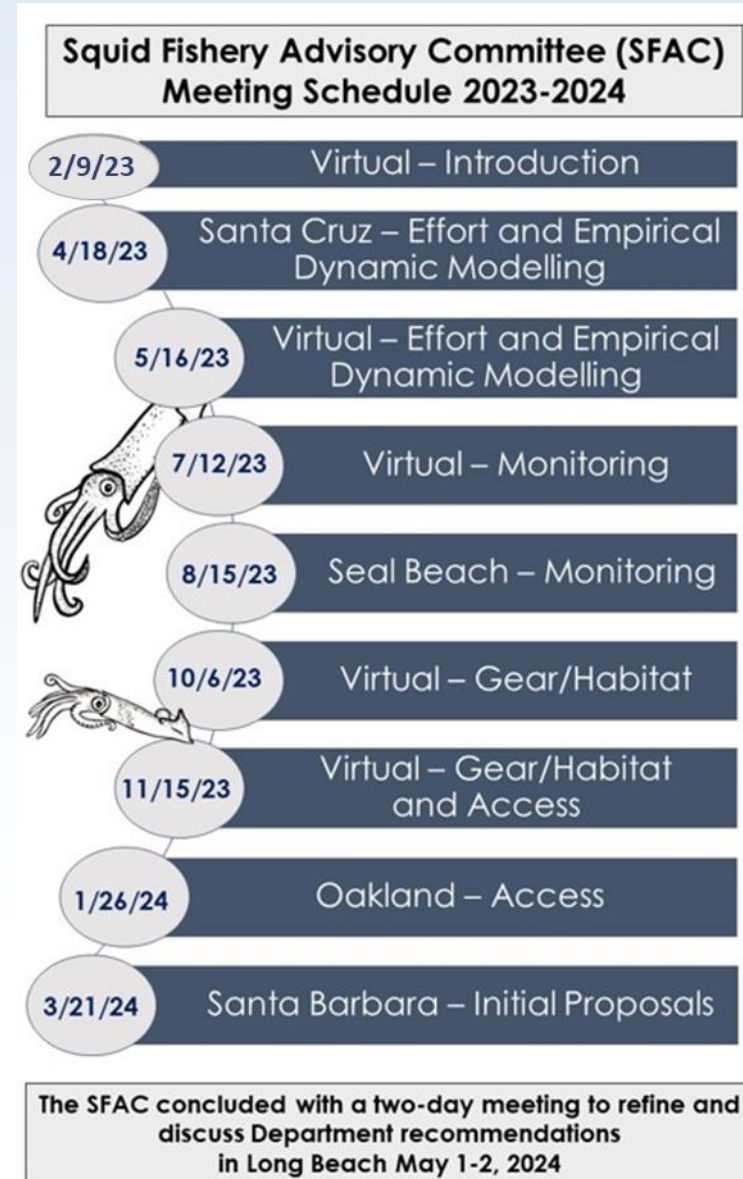
Review and advise the California Department of Fish and Wildlife (CDFW or Department) on potential changes to California market squid fishery management

SFAC Members

Fishing Community, Conservation, Non-Consumptive, Research

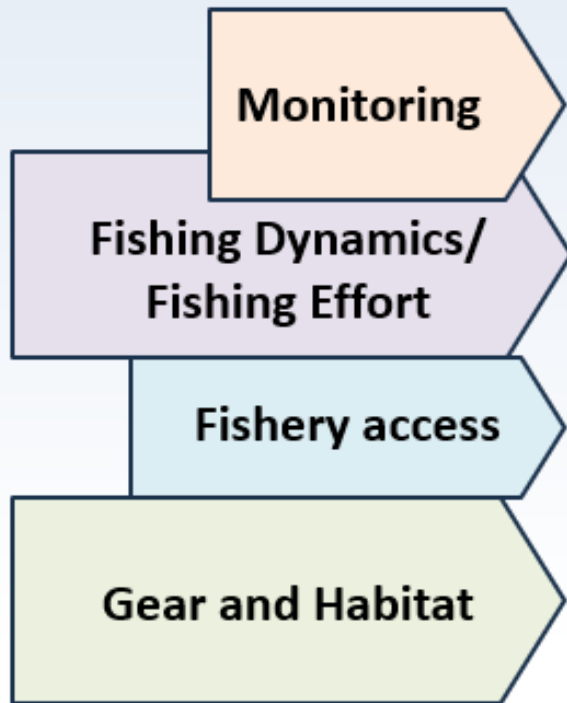
Squid Fishery Management Web Page

<https://wildlife.ca.gov/Conservation/Marine/MSFMP>





Recommendation Topics



- Monitoring
- Empirical Dynamic Modelling (EDM)
- Fishing effort and temporal closures
- Small-scale fishery access
- Nets and squid spawning habitat
- Lighting and seabird habitat



Monitoring

Department Recommendation:

- Electronic logbook
 - Market squid e-logs as pilot for Department-wide effort
 - Once funded, ideally start pilot in 2025

Sample E-log Interface

RECORD A FISHING EVENT

SEARCHING	Start	Stop
LIGHTING	Start	Stop
BRAILING	Start	Stop
SEINING	Start	Stop

Additional event questions ...

The START and STOP buttons would automatically generate timestamps and record GPS locations

The mockup shows a form titled "RECORD A FISHING EVENT" with a dashed line underneath. It contains four rows of buttons. Each row has a large white button with a black border on the left, and two smaller buttons (one purple "Start" and one orange "Stop") on the right. A large orange bracket on the right side of the "Start" and "Stop" buttons points to a text box that says "The START and STOP buttons would automatically generate timestamps and record GPS locations". At the bottom of the form is a dark grey button with white text that says "Additional event questions ...".

Mockup by Kate Wing



How Existing Monitoring Data Are Used?

Scientific Basis for Squid Fishery Management, 2005:

- Egg Escapement Method
 - Department dockside biological sampling (1998 – present)
 - Proportional eggs escaped with proxy for Maximum Sustainable Yield (MSY) set at 30% escapement (Dorval et al. 2024)



New Use for Monitoring Data

Exploring Predictive Modelling, 2022:

- Empirical Dynamic Modelling (EDM)
 - Fishery logbook and Sea Surface Temperature (SST) data (1999 – present)
 - Informed extension to weekend closure



EDM and Future Planning

Department Recommendation:

- Continue forecasts with EDM (2024 onward):
 - Test forecasting for industry and management planning
 - After testing period and development of electronic log explore the potential use of EDM for management procedures and further evaluation under climate change





Fishing Effort Recommendation

Department Recommendation:

- Extend weekend closure
 - 7am Friday to noon Sunday, Statewide



- Monterey Bay Area extends to Sunday at midnight

- Alternative Areas: (A) Include Half Moon Bay (B) North of Point Conception





Northern Weekend Closure – Potential Areas

Department Proposed:

“Monterey Bay Area”

Point Lobos to Pigeon Point



Alternative A:

Point Lobos to Point Arena



Alternative B:

North of Point Conception





Gears Currently Allowed/Used

Restricted Access Program Permit Types:

- Seine
 - Can seine, light, and brail
- Brail (hand or power)
 - Can brail and light
- Light
 - Can only light
 - No landings

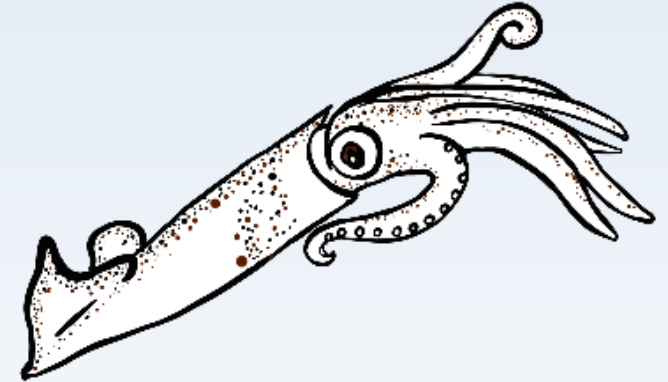




Small-Scale Fishery Access

Department Recommendation:

- Experimental Fishing Permit (EFP)
 - Small scale/low volume
 - Develop local markets
 - Dead bait, farmers markets, local restaurants
 - Outside current major fishing areas

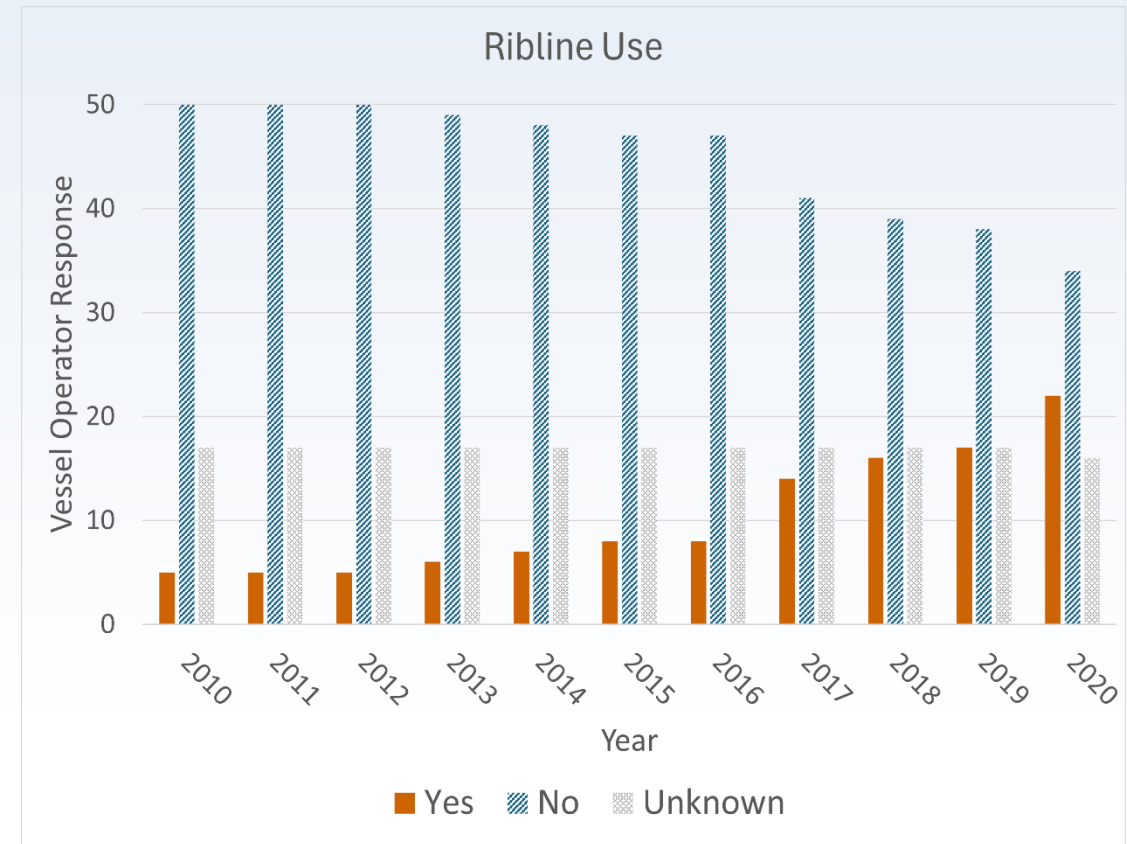




Nets and Squid Spawning Habitat

Department Recommendation:

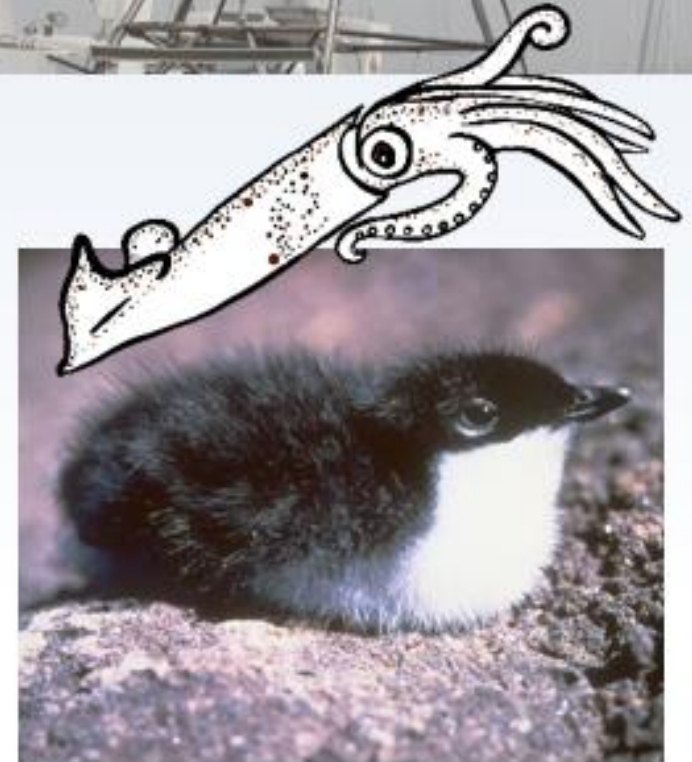
- Require a ribline AND rope purse line.
 - Ribline use continues to increase in the fleet
 - Department dockside sampling indicates that riblines reduce the incidence of bycatch for most benthic species



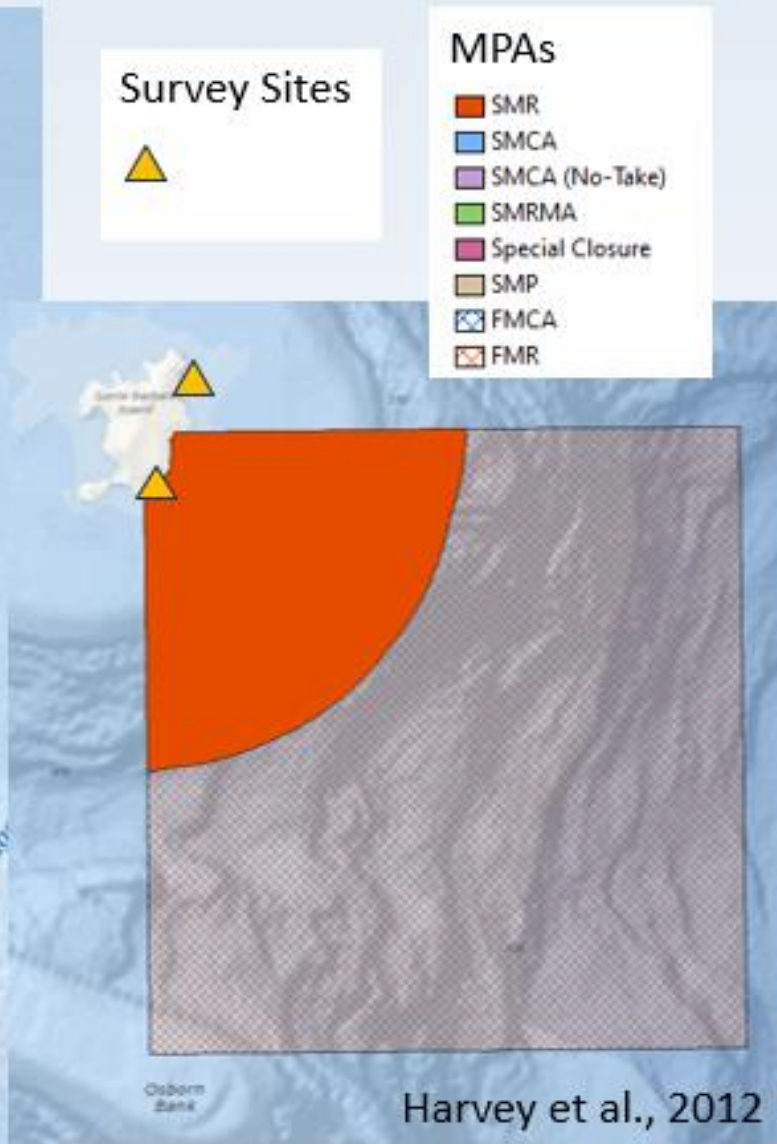
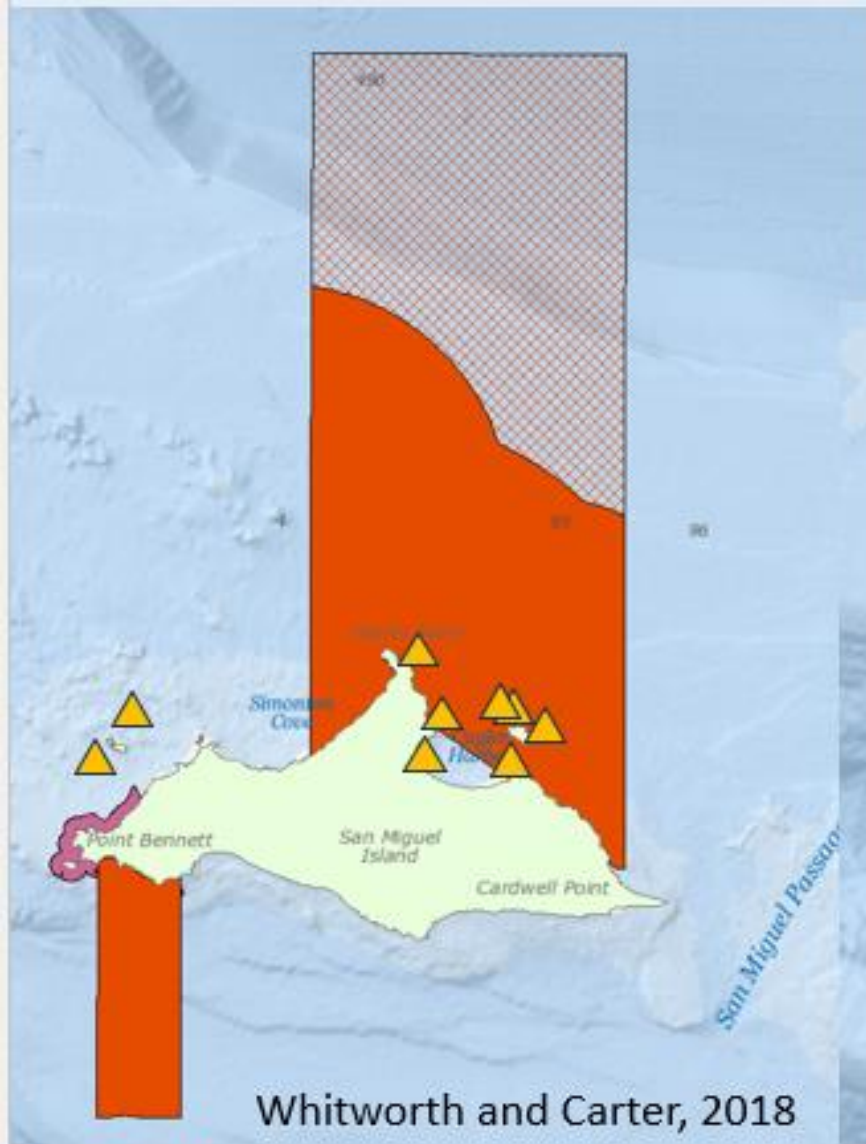


Lighting and Seabird Impacts

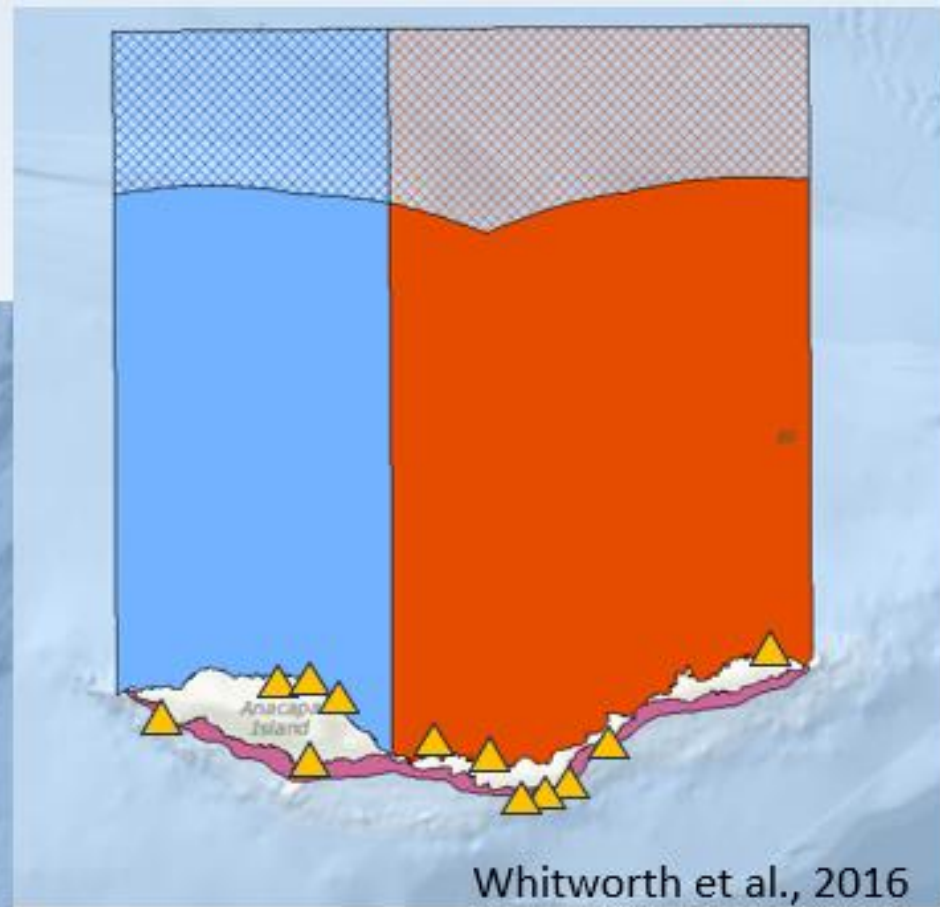
- Lighting regulations (wattage and shielding requirements) established during market squid FMP development late 1990's to 2005
- 2024 proposal to close night-time fishing on Anacapa, San Miguel, and Santa Barbara islands from February through October to provide additional protection for the breeding State-listed (Threatened) Scripps's murrelet.
- Scripps's murrelet population counts increased 150% and occupied nests increased over 5-fold on Anacapa from surveys in 2001 and 2014.



Scripp's Murrelet Cont.



- Survey Sites**
- ▲
- MPAs**
- SMR
 - SMCA
 - SMCA (No-Take)
 - SMRMA
 - Special Closure
 - SMP
 - FMCA
 - FMR





Lighting and Seabird Habitat Recommendation

Department Recommendation:

- Fishery “Best Practices”
- Evaluate potential wildlife interactions (primarily nocturnal seabirds at the Channel Islands National Park) with fishery logbook data

Best Practices for Market Squid Fishing

ILLUMINATE only downward facing lights

INSPECT lights and shields for compliance annually

MINIMIZE deck lights when at anchor or close inshore overnight

CONFIRM that squid lights illuminate downward and do not illuminate the shoreline

TURN OFF unnecessary lights

TURN OFF squid lights when fishing not permitted

DO NOT illuminate shoreline

DO NOT use forward facing lights (ie. crab lights) when lighting for squid

MINIMIZE the amount of weight used to sink nets and don't add additional weight in shallow water

Sea Bird Avoidance Tips
<https://www.fisheries.noaa.gov/national/resources-fishing/seabird-protection-and-avoidance-tips>

Proposed guidelines for safely deterring marine mammals ; <https://www.regulations.gov/document/NOAA-NMFS-2020-0109-0001>



Marine Mammal Deterrents

- Marine Mammals managed by the federal government
 - NOAA allows the use of pyrotechnics to deter marine mammals
 - NOAA has proposed regulations that further restrict that use
- Fish and Game code 5500 prohibits explosives except under terms and conditions set by the Commission
- Title 14 Section 225.1 allows the use of agricultural and wildlife fireworks
 - Health and Safety Code, Sections 12503 – 12678 describe and define the use of agricultural and wildlife fireworks



Summary – Department Recommendations

**Proposed
FMP
Amendment and/
or Regulatory
Changes**

- Electronic logbook
- Extend weekend closure Statewide to begin at 7am on Friday / Monterey Bay Area to Sunday midnight
- Require rib line and rope purse line

Outreach

- Provide a fishery “Best Practices” in 2024

**Continued
Research**

- Small-scale opportunities through EFP
- Continue forecasts with EDM (2024 onward)
- Evaluate potential wildlife interactions (primarily nocturnal seabirds) with squid fishery log data



FMP Amendment/Rulemaking

First Ever Commission FMP Amendment

Proposed Timeline:

**FGC Meeting
April 16-17, 2025**

- Notice Hearing
 - FMP Amendment/Rulemaking goes to notice

**FGC Meeting
June 18-19, 2025**

- Discussion Hearing

**FGC Meeting
August 13-14, 2025**

- Adoption Hearing

Thank You



For questions please contact:
SFAC@wildlife.ca.gov