



## AGENDA ITEM SUMMARY

### BACKGROUND

The commercial market squid fishery is a relatively new and welcome opportunity in Oregon, and the Commission adopted several rules in March 2021 to promote sustainability of the resource and fishery. Uncertainty about appropriate catch and participation levels and other questions remain, therefore additional regulation changes are proposed and information for future consideration is presented.

Most commercial market squid fishing in Oregon has occurred since 2016 (Figure 1), although it has long been a substantial fishery in California. Catcher vessels use purse seines to encircle and capture market squid in relatively nearshore waters, often as they aggregate to spawn. Light boats sometimes work together with the catcher vessels to attract squid. Details on the history and operation of the fishery in Oregon and biology of the resource are described in Exhibit F, Commercial Market Squid Management Measures Agenda Item Summary, March 2021

[https://www.dfw.state.or.us/agency/commission/minutes/21/03\\_Mar/index.asp](https://www.dfw.state.or.us/agency/commission/minutes/21/03_Mar/index.asp).

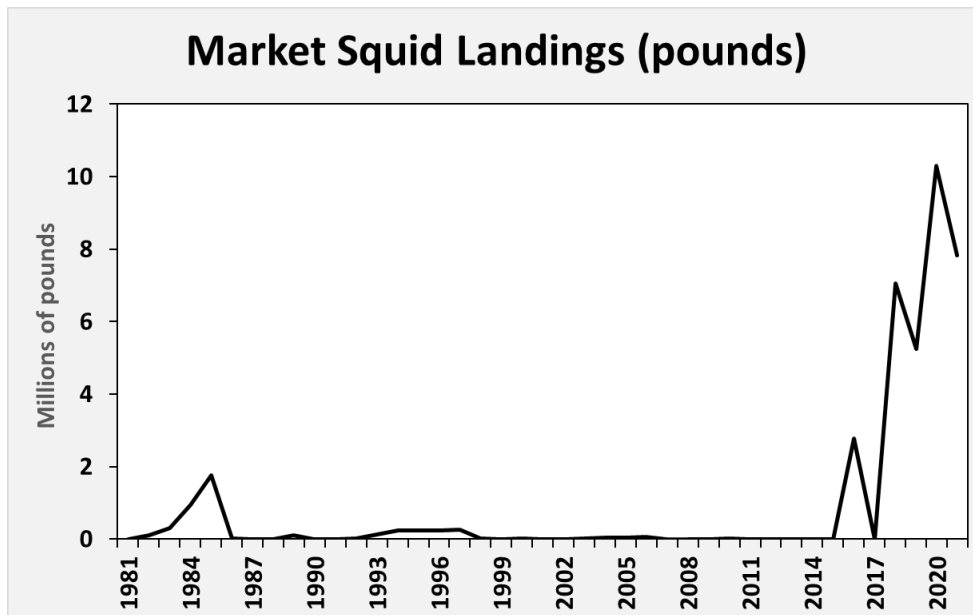


Figure 1. Market squid landings into Oregon ports, Oregon Department of Fish and Wildlife fish receiving tickets data, 1981-2021 (downloaded 1-8-2022)

The distribution and abundance of market squid are associated with ocean temperature, and increased squid fishery catches in Oregon have usually coincided with warm water events like large El Niños and the recent marine heatwaves. A recent analysis of fishery-independent surveys conducted by National Marine Fisheries Service from 1998 through 2019 found that the market squid resource off Oregon has increased during that period, based on encounter rate and squid densities (Chasco et al. 2022). La Nina conditions that generally bring cooler waters off the Oregon coast are expected through at least spring of 2022 and the most recent marine heat wave that is lingering in the North Pacific is not

currently affecting nearshore waters off Oregon. Therefore, it is not clear if market squid abundance off Oregon will remain at high levels in 2022 or decline, perhaps precipitously, with changing ocean conditions that may result in a more southerly squid distribution. The latest information about El Nino/Southern Oscillation status can be found at [https://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/ensodisc.shtml](https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml) and the latest information about California Current marine heatwaves can be found at <https://www.integratedecosystemassessment.noaa.gov/regions/california-current/cc-projects-blobtracker>.

Rules adopted by the Commission in March 2021 included a two day per week closure, a requirement to purse nets above the lead line (18” effective April 9, 2021 and increasing to 36” on January 1, 2022), a requirement for a lightboat logbook, and prohibiting use of light boats to draw squid out of Marine Protected Areas where commercial squid fishing or fishing with nets are not allowed (). The Department maintains a “Frequently Asked Questions” document which describes the requirements in detail ([https://www.dfw.state.or.us/MRP/regulations/commercial\\_fishing/docs/Market%20Squid%20FAQ.pdf](https://www.dfw.state.or.us/MRP/regulations/commercial_fishing/docs/Market%20Squid%20FAQ.pdf)).

The Commission also directed staff to evaluate or act on the following items that came up in March 2021 during public testimony or Commission discussion and return with information and recommendations in about a year:

- Consider forming an advisory body to help inform the Department about the potential impacts and benefits of regulatory proposals;
- Consider a control date for future consideration of a restricted participation permit system (also referred to as limited entry);
- Evaluate net size restrictions;
- Evaluate a Vessel Monitoring System (VMS) requirement;
- Assess whether the two day per week closure is sufficient to maintain fishery sustainability; and
- Assess the potential impact of the fishery on the marine food web.

Staff have made significant progress on several of these items, as described below.

## **PUBLIC INVOLVEMENT**

Oregon’s Harvest Guideline (HG) rule requires the Department to hold a public meeting to evaluate the fishery when the annual HG is approached. This occurred in 2016 and in 2018 through 2021. Squid fishers, processors, and buyers, commercial fishers that participate in other fisheries that interact with the squid fishery, and representatives of environmental non-governmental organizations (eNGOs) attended. All the issues addressed in this exhibit were discussed and input from these meetings informed staff recommendations.

In December 2020, staff sent a brief online survey to fishery participants to obtain more detailed input on the regulations recommended in March 2021. Some information provided in the responses was also relevant to the issues considered in this exhibit and informed the current recommendations. ([Commission Exhibit F, March 19, 2021, Attachment 5](#))

After the March 2021 Commission meeting, staff formed the Market Squid Advisory Panel (MSAP). Applications were sent to the mailing and email addresses of record for all vessel licenses and wholesale fish dealers that had participated in the market squid fishery to date. Staff evaluated applications and selected 10 applicants representing the range of participant types (catcher vessels, processors, light boats, recent entrants, longer-term participants) and location (Oregon, out-of-state) to serve as advisors. ODFW held two MSAP meetings in the fall of 2021 to discuss the current issues and inform development of regulations on a control date and net specifications. More information on the MSAP, including membership and meeting agendas and summaries, can be found on the ODFW website at [https://www.dfw.state.or.us/MRP/market\\_squid/index.asp](https://www.dfw.state.or.us/MRP/market_squid/index.asp).

## ISSUE 1

### Commercial Market Squid Regulation Recommendations

## ANALYSIS

#### License Limitation Control Date

Since 2016, some fishery participants have advocated for limiting the number of vessels allowed to participate in the commercial market squid fishery through a limited entry permit system. Such systems usually allocate an initial number of permits to vessels or individuals based on some type of qualifying criteria, and tightly restrict the distribution of any new permits to specific circumstances such as through a lottery if participation falls below a predetermined level.

Limited Entry permits usually require annual renewal, and are often transferable, meaning they can be bought and sold on the open market. Transferable permits that are in high demand carry a high monetary value, resulting in a wealth windfall for those who are initially eligible. Most often, no new permits are issued after initial distribution and the only way to obtain a permit is to buy an existing transferable permit or through a lottery if one is held.

There are several ways that initial distribution has been implemented in U.S. fisheries including by lottery, auction, proof of investment, record of participation, or a combination of these. In Oregon, limited entry permits have typically been initially distributed based on a record of participation from landing receipts, or “fish tickets,” which are a state-mandated record of the initial transaction between the catching vessel and a wholesale fish dealer.

A control date is a regulatory mechanism that establishes a cutoff date, after which landings may not be considered for initial permit eligibility. Control dates are used to discourage speculative participation in a fishery when a management entity has signaled an intent, or possible intent, to implement a limited entry permit system. Control dates do not specify any criteria for permit eligibility other than the cutoff date for considering historical participation.

At the March 2021 Commission meeting, the Commission heard from staff about rapid growth in participation in the market squid fishery and public testimony advocating for

developing a limited entry permit system, starting with establishing a control date. The Commission directed staff to evaluate a control date recommendation over the next year. Staff have evaluated the number of vessels participating, how often they participated, and cumulative landings by each vessel since 2016. Staff also discussed a control date at the April 2021 public meeting and at both MSAP meetings.

Participation by seine vessels has ranged from 11 to 40 with a generally increasing trend since 2016, although participation declined to 32 vessels in 2021. A total of 57 unique vessels have made at least one landing with seine gear in this period. The number of new entrants each year has been variable, ranging from 6 to 17 vessels with the highest number of new entrants in 2020 (Table 1). Only two vessels have made landings in every year that landings were made, and 25 vessels (near half the total) have only made landings in one year (Table 2). The high number of single-year participants may reflect speculative fishing behavior by fishers hoping to qualify for a future limited entry permit in anticipation that a permit system will eventually be implemented in Oregon. Alternatively, single-year participants may simply be taking advantage of an opportunity between other seine fisheries they participate in with seasons and profitability that change year to year. Cumulative landings by individual vessels from 2016 to 2021 range from a high of just over four million pounds to a low of 223 pounds. Ten vessels have landed over one million pounds each, while 5 vessels have landed less than ten thousand pounds (Figure 2). The number of landings by individual vessel shows a similar pattern with 13 vessels having 20 or more landings and 9 vessels with only a single landing (Figure 3).

Year	Count of unique vessels		
	By year	Cumulative	New participants
2016	14	14	14
2017	0	14	0
2018	11	20	6
2019	23	32	12
2020	40	49	17
2021	32	57	8

Table 1. Count of unique vessels with commercial landings of market squid using seine gear by year, cumulatively since 2016, and only new participants (no prior landings since 2016). There were no seine gear landings in 2017.

Years with landings	Count of Vessels
1	25
2	12
3	11
4	7
5	2
Total	57

Table 2. Count of vessels by number of years with commercial landings of market squid using seine gear.

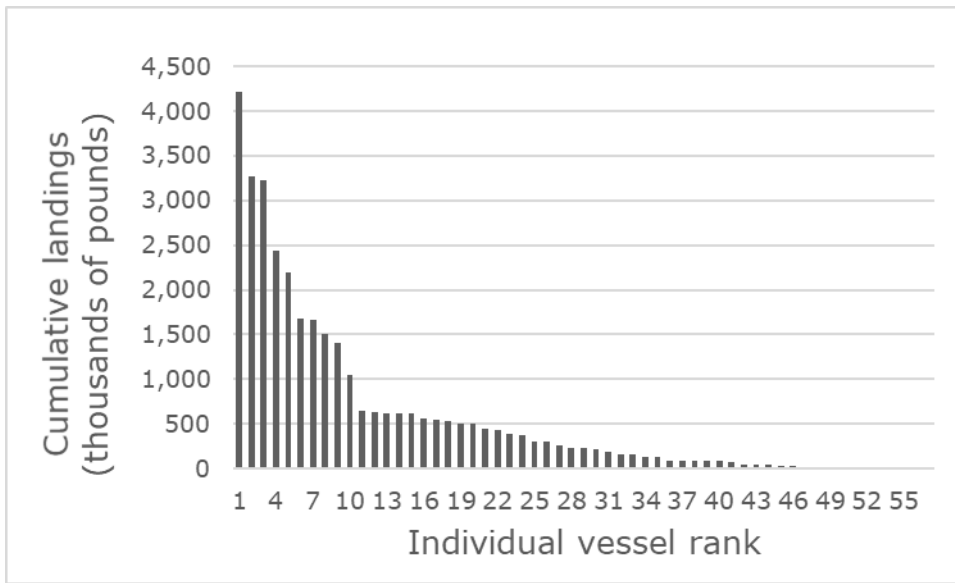


Figure 2. Cumulative pounds landed from 2016 to 2021 by individual vessel using seine gear, ranked from highest total landings to lowest

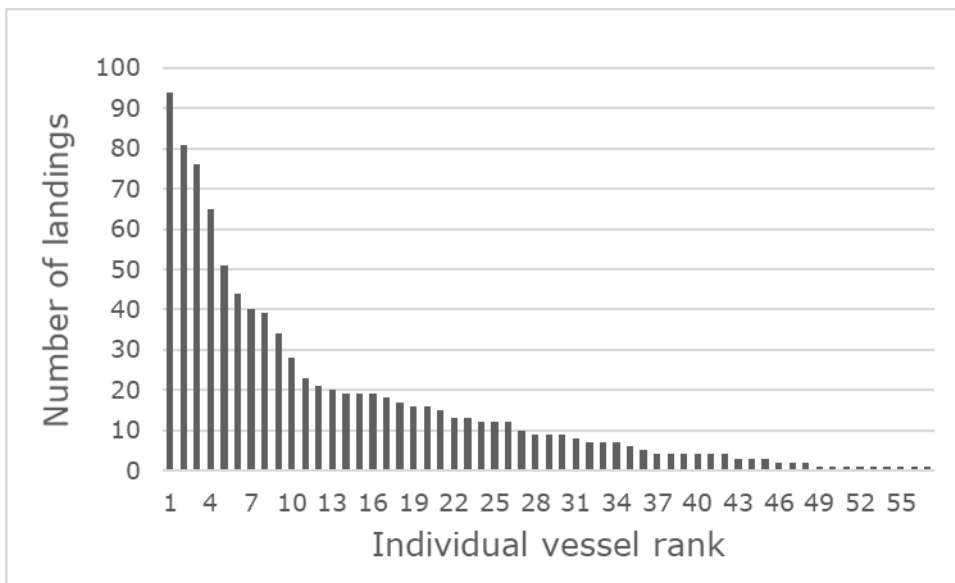


Figure 3. Number of landings from 2016 to 2021 by individual vessel using seine gear, ranked from highest to lowest

One factor to consider when deciding whether to pursue a limited entry system is the capacity of current fishery participants to harvest the available resource. When the capital investment in fishing vessels and gear exceeds that needed to harvest the available resource, the fishery is considered “over-capitalized”. With no fishery-independent estimate of total squid biomass off Oregon, it is difficult to objectively evaluate whether the fishery has already become over-capitalized. However, many participants have stated at public meetings and via the MSAP that they believe the current productivity of the market squid population off Oregon should consistently support 25 to 30 vessels annually. Participation exceeded that level in 2020 and 2021. Participation by 57 unique vessels in total since 2016 shows the potential for participation by more than 25 to 30 vessels in future years.

Some Oregon commercial fishers who have not participated in the fishery to date oppose establishing a control date. These fishers would like to see the opportunity remain open to anyone, or alternatively any Oregonian, who has the desire and capacity to invest in and participate in the fishery. This opposition extends, in part, from the fact that most vessels participating in the fishery to date are not historically based in Oregon but are participants in other West Coast or Alaska seine fisheries such as California market squid and Alaska herring and salmon seine fisheries. On the other hand, most commercial vessels that traditionally participate in other Oregon commercial fisheries are not currently set up to operate seine gear, which requires a substantial investment of money, time, and effort. There is also a steep learning curve to operate the gear effectively. Those opposed to setting a control date at this time worry that it will lead to a fishery that is primarily prosecuted by out-of-state vessels and reduce the economic benefits flowing to Oregon's coastal communities by preventing more Oregon-based vessels from entering the fishery in the future.

The MSAP discussed these concerns and recognized that a control date would only be one component of limited entry eligibility criteria. A control date does not, by itself, guarantee that any vessel would or would not be able to participate in the fishery in the future. Initial eligibility criteria, or the permit system itself, could include specifications such as a minimum number or amount of landings, and one or more mechanisms to allocate permits through lottery, auction, proof of investment, or other means that would not require any past participation. This would need to be balanced with achieving the goal of limiting participation to a sustainable level.

During the first MSAP meeting, members quickly reached a consensus to recommend a control date for historical participation in the seine fishery of January 1, 2022. Due to potential over-capitalization and to reduce additional speculative fishing activity, **staff recommend establishing a control date of January 1, 2022, for consideration of historical participation in the Oregon market squid seine fishery.**

Whether or not staff recommend implementation of a limited entry permit system in the future will depend on how the fishery unfolds in the coming years. If fishing effort and harvest continues at recent highs or increases, limited entry may be a valuable management tool. On the other hand, if fishing effort and harvest stabilizes or declines, continuing open access may be justified. If a limited entry system is pursued in the future, staff recommend undertaking an additional and focused public process to arrive at recommendations for complete initial eligibility criteria, program components, and whether any such mechanisms would be included.

Many issues will need to be considered both by the public and by the Commission before a limited entry system could be implemented. Some of these include overcrowding, safety, inter- and intra- fishery conflict, the relationship between participation and opportunities (or lack thereof) in other seine fisheries such as California market squid and Alaska herring and salmon, increased stewardship by fishers who are invested in the long-term health of the fishery as permit holders, and an established and limited number of vessels for management and enforcement to track.

## Seine Net Specifications

Limitations or specifications on the size, type or configuration of seine nets are commonly used to reduce habitat impacts or bycatch, control catch rates for quota management, mitigate conflicts within or between fisheries, or other objectives.

Recommendations to limit net length or depth in the Oregon squid fishery have been discussed at public meetings, during one-on-one conversations, in public testimony at the March 2021 Commission meeting, and at both 2021 MSAP meetings. Net length considerations include harvest efficiency and crab pot interactions. While efficient operation is desirable to some degree, increasingly long nets could allow more harvest by fewer vessels, potentially disadvantaging other vessels, or the resource, or both. In addition, some participants contend that shorter nets are more easily fished around crab pots due to their smaller footprint. However, MSAP members felt that longer nets can more easily be set among crab pots since they can be “bent” around the pots rather than set in a tighter, more perfect circle, and therefore felt that reducing the length of nets from those currently in use could be counter to the goal of reducing interactions with crab pots. Net depth limits are advocated by some who worry that fishing in deeper waters than the current Oregon fishery may damage resource sustainability by targeting squid before they have reached their shallow water spawning grounds and begin egg deposition.

This topic was the subject of robust discussion at both 2021 MSAP meetings, with members eventually supporting a “cap” approach that would allow continued use of most if not all nets used in the Oregon squid fishery to-date, but not allow longer or deeper nets than that. To effectively regulate net depth, the MSAP recommended a measurement based on mesh size, which requires specification of a maximum mesh size. In addition, chaffing strips (heavier and larger web used at the bottom of the net to reduce wear) and cork line strips (similar but at the top of the net) are commonly used but could feasibly be used to extend net depth, so it is necessary to set minimum standards for these as well. Based on these discussions and detailed MSAP recommendations, **staff recommend the following limitations for the size of seine nets used to take market squid off Oregon:**

- No longer than 1,800 feet
- No deeper than 2,600 meshes
- Mesh size no greater than 1 ¾ inches, excluding chaffing strip and cork line strip
- No chaffing or cork line strip (at the bottom and top of the net, respectively) more than 25 meshes wide

In addition to net size, MSAP members requested discussion of prohibiting steel cable purse lines. Cable purse lines are used by some vessels off California but have not been used off Oregon to date (to the best of staff’s and MSAP members’ knowledge). Cable purse lines are heavier and can be pursed much more rapidly and aggressively than traditional rope lines. The use of cable purse lines is likely to increase benthic habitat impacts, bycatch of crab and other bottom dwelling species, and disturbance of squid egg cases that have already been deposited. Using steel cable purse lines also reduces the effectiveness of recently adopted rib line regulations (see below) because the weight of a steel cable causes the purse line to dig into the bottom despite being attached above the lead line. MSAP members quickly reached a consensus recommendation to prohibit steel cable purse lines off Oregon.

Staff agree with the MSAP recommendation and rationale and **recommend prohibiting the use of steel cable purse lines off Oregon.**

MSAP members also expressed concern about vessels circumventing the requirement to use a rib line which purses the seine net a minimum of distance above the lead line by, for example, having a rib line installed that meets the requirements, but still using a purse line near or at the lead line when the risk of a violation being seen by enforcement is low. **Staff recommend amending the rib line requirement to prohibit any purse line or ring bridle from being affixed less than 36 inches above the lead line.**

## ISSUE 2

### Informational Progress Report

## ANALYSIS

### Vessel Monitoring System (VMS)

Squid fishing areas substantially overlap with crab fishing grounds, and interactions between squid vessels or seine nets and commercial crab gear have been the subject of several complaints received by ODFW from commercial crab fishers. Crab pots can be moved or lost when tangled in seine nets that are set near or around them, and squid vessels sometimes cut off crab pot buoys when searching for squid. Oregon has strong laws and regulations that protect commercial crab pots from being tampered with or moved, but enforcement can be difficult and labor intensive. In March 2021, the Commission asked if Vessel Monitoring Systems (VMS) for squid vessels could help mitigate interactions with crab gear by providing information on which squid vessels were in an area where interactions with crab gear were reported and asked ODFW to evaluate this approach.

A VMS tracks a vessel's location at set time intervals and reports that data to management agencies for enforcement and fishery analysis. Currently, there are no state requirements for VMS in Oregon. Federal regulations require VMS for vessels that hold federal groundfish permits, for vessels that take groundfish or use trawl gear in federal waters, as well as for large vessels that take highly migratory species such as tunas in certain offshore areas. As of October 2021, 11 of the 57 vessels that have participated in the Oregon market squid fishery carry a federal VMS due to participation in other fisheries. It is unclear whether or how a state-mandated VMS might be integrated with the federal system. A state system would likely take at least 3 to 5 years to develop and would incur significant initial and ongoing costs to ODFW, Oregon State Police, and to fishery participants (at least those who have not already purchased VMS equipment and monthly service for other fisheries).

ODFW is in the early trial stages of developing a state VMS for the crab fishery as a tool for assessing whale entanglement risk. ODFW plans to develop and implement such a system by the 2026-27 crab season as part of the draft whale and turtle Conservation Plan (Commission Exhibit C, September 2021). Should that effort prove successful, expansion to the squid fishery may be feasible but the cost cannot be reasonably estimated at this time.



The utility of VMS for mitigating crab gear interactions by squid vessels was discussed at the 2021 public meeting and the first MSAP meeting. Squid fishery participants consistently felt that VMS would be ineffective for this purpose because the squid fleet tends to be concentrated in small areas over short periods; therefore, any attempt to evaluate which vessels were in an area where crab gear interactions were reported would only reveal that most of the squid fleet was there. Staff agree with this assessment.

Due to the uncertain potential for VMS to mitigate crab gear interactions, and the effort and expense involved in developing and implementing a system for this purpose, **staff do not recommend adopting a VMS requirement for squid vessels at this time.**

### **Weekly closures**

The Commission accepted the staff recommendation in March 2021 to close the fishery for two days per week. This equates to closing the fishery about 30% of the time, which is a proxy for allowing 30% egg escapement, the sustainability goal set by the Pacific Fishery Management Council's Coastal Pelagic Species Fishery Management Plan. However, the Commission also requested that staff attempt to evaluate whether the closure would achieve a 30% egg escapement goal.

Staff resources to pursue this question are limited; there is no dedicated funding for squid fishery sampling or research and this work is absorbed by existing programs and projects to the degree possible. Directly estimating egg escapement would require the time-consuming collection of fecundity (i.e., egg counts), mantle condition, and other data elements. To accomplish this, existing staff time would need to be redirected from other responsibilities, reducing sampling rates in other fisheries. Processing and analysis of the resulting data would be needed to produce model estimates, which would not be available in time for real-time management.

For context, in California where market squid is the state's largest and most valuable commercial fishery, estimates of egg escapement are not routinely conducted and those that exist have been carried out by academic or federal researchers (e.g., Macewicz et al. 2004, Maxwell et al. 2005, and Dorval et al. 2013) using data collected by the California Department of Fish and Wildlife. Those evaluations have found that the California fishery, which includes a similar two day per week closure, usually, but not always, achieves the 30% egg escapement goal.

Some evidence suggests that egg escapement occurs from spawning activity in waters deeper (farther offshore) than the fishery occurs off California, which may increase total egg escapement. If spawning and egg escapement also occur off Oregon in waters deeper than fishing has occurred to date, the net depth restrictions recommended by staff under Issue 1 should help ensure that this additional egg escapement continues.

Fishermen and members of the MSAP pointed out that suitable weather for fishing with seine gear is more of a factor in Oregon than in California. Weather effects vary between seasons and years and the impacts on egg escapement are difficult to quantify. Nevertheless, it is likely that periods of weather unsuitable for market squid fishing off Oregon increase overall egg escapement.

Considering the challenge and expense associated with generating a direct estimate of egg escapement, staff propose to evaluate the two day per week closure using fishery metrics such as active fishing days and days in a row without fishing activity. However, such an evaluation would not be meaningful at this time given that the closure has only been in place for part of one fishing season so far (since April 9, 2021) and the timing and intensity of the fishery from year to year is variable due to natural weather windows and other factors. **Staff recommend continuing the two day per week closure as an appropriately precautionary measure to allow uninterrupted periods for market squid to deposit eggs.** Staff will conduct an evaluation of this management measure when adequate data are available.

### **Food web and ecosystem context**

The Commission asked staff to analyze the impact of the market squid fishery on the marine food web, and whether fishery management measures were adequate to protect predators of market squid in the context of changing climate and ocean conditions. Commissioners specifically asked about potential impacts on Chinook salmon and large whale species. A comprehensive review of food web and ecosystem information related to market squid would require a significant effort. As additional staff resources were unavailable and an invitation for a 2021 Oregon Sea Grant Natural Resource Policy Fellow to address this question was unsuccessful, development of a comprehensive report was not possible. Instead, staff focused on the specific questions asked by the Commission and provide the information below.

The most comprehensive analysis of forage species in predator diets in the California Current ecosystem that staff found was published by Szoboszlai et al. 2015. These authors created a California Current Predator Diet Database that encompasses 190 published records from over 100 predator species and 32 categories of forage taxa. In these records, the top five forage taxa consumed by most predators were juvenile rockfish, northern anchovy, euphausiid krill, Pacific herring, and market squid; these species were consumed by 51 to 61 different predators. Next in rank came right-eyed flounders, lanternfishes, sanddabs, sculpins, gonatid squid, surfperches, Pacific hake, Pacific saury, smelts, Pacific sardine, and Pacific sand lance (31 to 41 predators). Limitations of these data and overall analysis include a lack of predator diet data samples from winter months, limited spatial resolution and data particularly for birds and cetaceans in the Northern California Current, and limited diet data for some predators. Predator species for which the most diet data were available were Pacific hake, common murre, and California sea lion.

The National Marine Fisheries Service (NMFS) produces an annual report on the ecosystem status of the California Current which compiles many indicators of ecosystem status, including climate and ocean drivers, forage conditions, trends in fish, seabird and marine mammal populations, and measures of human wellbeing. The most recent report (Harvey et al, 2021) gives a high-level summary of forage indicators and productivity in the California Current in recent years. From 2014 to 2016, productivity and foraging conditions were generally poor for many species, likely related to the prominent marine heatwave known as “the warm blob.” From 2017 to 2018, key indicators began to return to more average conditions but there was also evidence of residual effects. In 2019 to 2020, most indicators implied average to above average foraging conditions.

There is an active debate among researchers regarding the food web implications of exploiting forage fish populations. Using various ecosystem or food web models, several scientific papers, workshop reports, and other publications in the last decade have suggested limiting forage fish exploitation to well-below Maximum Sustainable Yield (MSY) to support predator populations (e.g., Cury et al, 2011, Pikitch et al 2012). On the other hand, Hillborn (2017) argues that the analyses of the effects of forage fish fisheries on predator populations have been flawed and the effects of these fisheries on predator populations is less than estimated by trophic models, and suggests methods and factors that should be included in future analysis. Free et al (2021) recently conducted an analysis showing that increasing forage fish abundance broadly would only increase predator abundance in 6 of 45 predator populations studied because the availability of forage fish to predators at specific times and places (e.g., near rookeries) is a more important factor than overall abundance of forage fish across the ecosystem.

Chinook salmon consume squid regularly. Diet studies often do not identify squid prey to species, but squid in the family Gonatidae (armhook squid, not including market squid) are important to Chinook in the maturing oceanic phase (Brodeur, 1990). Some studies indicate that squid (not identified to species) rank third in terms of mass for Chinook salmon diets off Oregon and Washington (Ainley et al, 2014). Further evaluation of the spatio-temporal overlap of the market squid fishery and Chinook salmon distribution may be valuable; ODFW does not currently have resources for such an effort but could support other researchers by providing fishery data.

Baleen whales (humpback, blue, gray) may eat market squid occasionally, but it is not known to be a primary component of their diet. Resident gray whales that feed off Oregon during the summer, known as the Pacific Coast Feeding Group, primarily rely on small crustaceans such as mysid shrimp (Newell and Cowles, 2006; Sullivan, 2017) or amphipods and other small benthic organisms. Humpback whales prefer krill as prey but may switch to a piscivorous diet when krill are not abundant. The [2021 Critical Habitat designation](#) for humpback whale populations off the U.S. West Coast, including Oregon, designated prey as the primary habitat component needing protection, and named specific prey species that included krill and a variety of small schooling fishes, but not market squid.

A direct evaluation of the impact of the Oregon market squid fishery on available forage for predators would require high-resolution spatio-temporal comparisons of removals by the squid fishery and distribution of predators with a high reliance on market squid, particularly sensitive, threatened, or endangered populations, such as Chinook salmon and marbled murrelets. Such an effort would require substantial staff time and resources and the relative need and potential benefit should be considered together with other priority needs for staff resources. As evidenced by the papers cited, there is considerable interest by the larger community of scientists in the topic of the effects of forage fish fisheries on predator populations, which continues to be pursued. Staff suggest that allowing these research efforts to play out and keeping up with these efforts will likely be the most efficient and cost-effective way to resolve these questions.

## OPTIONS

1. Adopt staff recommendations for commercial market squid fishery management measures:
  - a. Set a limited entry control date of January 1, 2022
  - b. Specify maximum net size regulations
  - c. Prohibit steel cable purse lines
  - d. Strengthen rib line regulation
2. Modify staff recommendation for one or more items
3. Status quo

## STAFF RECOMMENDATION

1. Adopt commercial market squid fishery management measures:
  - a. Set a limited entry control date of January 1, 2022
  - b. Specify maximum net size regulations
  - c. Prohibit steel cable purse lines
  - d. Strengthen rib line regulation

## DRAFT MOTION

I move to amend OAR 635 Division 004 to adopt the commercial market squid fishery management measures as proposed by staff in Attachment 3.

EFFECTIVE DATE: Upon filing

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