

Final Regulatory Impact Review for Proposed Regulatory Amendment under the Pacific Coast Groundfish Fishery Management Plan

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For further information contact: Kit Dahl, Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220

Keeley Kent, National Marine Fisheries Service West Coast Region
7600 Sand Point Way NE, Seattle, WA 98044
Phone: 206-526-4655

Abstract: The proposed action is to require commercial groundfish longline vessels 26 feet length overall (LOA) and longer managed under the Pacific Coast Groundfish Fishery Management Plan (PCGFMP) to deploy streamer lines or to set longlines between civil dusk and civil dawn (approximated in this analysis) when fishing in Federal waters north of 36° North latitude. The action is necessary to fulfill the terms and conditions of a 2017 Biological Opinion published by the United States Fish and Wildlife Service (USFWS) to minimize incidental take of Endangered Species Act-listed short-tailed albatross (*Phoebastria albatrus*) by vessels in the Pacific Coast groundfish fishery. The proposed action also extends and modifies current requirements for vessels 55 feet LOA and longer. .

List of Acronyms and Abbreviations

B.O.	Biological opinion
BPUE	Bycatch per unit of effort
Council	Pacific Fishery Management Council
E.O.	Executive Order
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
ESA	Endangered Species Act
FMP	Fishery management plan
FR	<i>Federal Register</i>
GMT	Groundfish Management Team
IFQ	Individual fishing quota
FRFA	Final Regulatory Flexibility Analysis
LOA	Length overall
m	meter or meters
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
NAICS	North American Industry Classification System
NMFS	National Marine Fishery Service
PCGFMP	Pacific Coast Groundfish Fishery Management Plan
PPA	Preliminary preferred alternative
PacFIN	Pacific Fishery Information Network
RCA	Rockfish Conservation Area
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SBA	Small Business Act
Secretary	Secretary of Commerce
STAL	Short-tailed albatross
USFWS	United States Fish and Wildlife Service
WCGOP	West Coast Groundfish Observer Program

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Executive Summary

The proposed action is to require commercial groundfish longline vessels 26 feet LOA and longer managed under the PCGFMP to deploy streamer lines or to set longlines between civil dusk (defined as one hour after local sunset) and civil dawn (one hour before local sunrise) when fishing in Federal waters.

Purpose and Need

The purpose and need for this proposed action is an extension of the action taken in 2013 to apply streamer line requirements to vessels 55 feet LOA and longer, as described in the final EA prepared by NMFS (2013):

- The purpose of the proposed action is to further reduce interactions between ESA-listed seabirds and groundfish longline gear relative to current levels of take.
- The proposed action is needed to comply with the 2017 USFWS Biological Opinion by minimizing endangered short-tailed albatross take to levels judged not to jeopardize the continued existence of the species.

Alternatives

In November 2018 the Council adopted an action alternative in addition to the No Action Alternative. The alternatives are:

No Action: Vessels 26 feet to 55 feet LOA are not required to use seabird bycatch mitigation measures. Current seabird mitigation requirements for vessels 55 feet and above would stay in effect.

Alternative 1: Require that vessels 26 feet to 55 feet LOA using longline gear either use streamer lines or begin setting gear only after civil dusk and before civil dawn (approximated by one hour after local sunset/before local sunrise) when fishing in Federal waters. Alternative 1 also includes these additional measures:

- When fishing south of 36° N latitude, vessels would be exempted from the requirement to deploy streamer lines or night set.
- When fishing shoreward of the 250 fathom depth contour, vessels would be exempted from the requirement to deploy streamer lines or night set.
- Vessels using floated mainline gear would be required to begin setting gear after civil dusk (i.e. the streamer line option would not be available to these vessels).
- A weather safety exemption different than the one currently established for vessels 56 feet LOA and longer would be established for vessels 26 feet to 55 feet LOA.

Alternative 2 (Preliminary Preferred Alternative): Require that vessels 26 feet to 55 feet LOA using longline gear either use streamer lines or begin setting gear only after civil dusk and before civil dawn (approximated by one hour after local sunset/before local sunrise) when fishing in Federal waters. Alternative 2 also includes these additional measures:

- When fishing south of 36° N latitude, vessels 26 feet LOA and longer would be exempted from the requirement to deploy streamer lines or night set.

- Vessels using floated mainline gear would be restricted to setting gear between one hour after local sunset and one hour before local sunrise if not using a streamer line at least 300 feet in length.
- For vessels 26-55 feet LOA, deploying streamer lines would be discretionary when a small craft wind advisory is declared, or higher wind speeds, in the area where the vessel is fishing or in an area adjacent to such an area.

Alternative 3 (Final Preferred Alternative): Require that vessels 26 feet to 55 feet LOA using longline gear either use streamer lines or begin setting gear only after civil dusk and before civil dawn (approximated by one hour after local sunset/before local sunrise) when fishing in Federal waters. Alternative 3 also includes these additional measures:

- When fishing south of 36° N latitude, vessels 26 feet LOA and longer would be exempted from the requirement to deploy streamer lines or night set.
- For vessels 26-55 feet LOA, deploying streamer lines would be discretionary when a small craft wind advisory is declared, or higher wind speeds, in the area where the vessel is fishing or in an area adjacent to such an area.

Regulatory Impact Review

Alternative 1 would result in an unquantified net benefit to the Nation by reducing the likelihood of incidental take of short-tailed albatross, contributing to the population's recovery compared to No Action. The area exemption south of 36° N latitude and the weather safety exemption contribute to net benefit by modestly decreasing costs to fishery participants with a low risk of increasing the likelihood of incidental take of short-tailed albatross. The 250 fathom depth-based exemption may reduce net benefit; while reducing costs for vessels fishing shoreward of 250 fathoms, this exemption could increase the risk of incidental take of short-tailed albatross.

Alternative 2 would result in an unquantified net benefit to the Nation compared to No Action, which would be similar to Alternative 1. Allowing vessels deploying a floated mainline to use a streamer line at least 300 feet in length instead of night setting, while reducing costs to fishermen, is likely to increase the risk of short-tailed albatross take compared to always requiring night setting. Compared to Alternative 1, not exempting vessels fishing shoreward of the 250 fathom depth contour from mitigation requirements would impose additional costs to fishing vessels but would also produce benefits by reducing the risk of albatross take resulting from this exemption.

Alternative 3, the final preferred alternative, would result in an unquantified net benefit to the Nation compared to No Action, which would be similar to Alternative 1. However, not requiring vessels to set at night when deploying a floated mainline, while reducing costs to fishermen, is likely to increase the risk of short-tailed albatross take. Compared to Alternative 1, not exempting vessels fishing shoreward of the 250 fathom depth contour from mitigation requirements would impose additional costs to fishing vessels but would also produce benefits by reducing the risk of albatross take resulting from this exemption.

Comparison of Alternatives for Decision-making

The tables below summarize the measures included in each alternative and the impacts of implementing them.

Summary of the features of the alternatives.

	No Action	Alternative 1	Alternative 2	Alternative 3 (FPA)
Mitigation requirements	Streamer line requirement for vessels ≥55 ft	Streamer line requirement with night setting option for vessels ≥26 ft	Streamer line requirement with night setting option for vessels ≥26 ft	Streamer line requirement with night setting option for vessels ≥26 ft
Latitude-based Exemption	None	S. of 36°N lat.	S. of 36°N lat.	S. of 36°N lat.
Depth-based Exemption	None	Shoreward of 250 fm depth contour	None	None
Floated Mainline Mitigation	None	Only night setting for floated longline gear	Can use streamer lines (>300 feet) or night set	None
Severe Weather Safety Exemption	Streamer line use by vessels ≥55 ft discretionary when Gale Warning in effect	Large vessel exemption plus streamer lines discretionary for vessels 26-55 ft when sustained winds exceed 21 knots [small craft wind advisory]	Large vessel exemption plus streamer lines discretionary for vessels 26-55 ft when sustained winds exceed 21 knots [small craft wind advisory]	Large vessel exemption plus streamer lines discretionary for vessels 26-55 ft when sustained winds exceed 21 knots [small craft wind advisory]

Summary of the Effects of the Alternatives

	No Action	Alternative 1	Alternative 2	Alternative 3 (FPA)
Effectiveness of general mitigation requirements	Effective mitigation for vessels ≥55 ft when not using floated mainline	Effective mitigation for vessels ≥26 ft when not using floated mainline	Effective mitigation for vessels ≥26 ft when not using floated mainline	Effective mitigation for vessels ≥26 ft when not using floated mainline
Effectiveness of mitigation requirements when using floated mainline	No effective mitigation	Night setting requirement provides more effective mitigation than current streamer line specifications	Option to use streamer line >300 ft instead of night setting may provide partial mitigation	No effective mitigation; streamer line may provide partial mitigation
Costs	No new costs	Cost of acquiring streamer lines* and equipment upgrades to meet night setting requirement when using floated mainline	Cost of acquiring streamer lines* if operating during the day	Cost of acquiring streamer lines* if operating during the day
Vessel operations and safety	No change	Steamer line deployment and night setting requirement when using floated mainline complicates setting gear and could create safety issues, especially for inexperienced operators	Steamer line deployment complicates setting gear and could create safety issues, especially for inexperienced operators; no additional complications when using floated mainline because night setting optional	Steamer line deployment complicates setting gear and could create safety issues, especially for inexperienced operators

*This may be mitigated by free streamer lines available through Sea Grant and NMFS.

Summary of proposed seabird streamer line requirements applicable under all the action alternatives. Unless they are engaging in night setting, vessels using bottom longline gear would need to follow the requirements in the table below when operating north of 36° N. latitude.

Vessel Length Overall (LOA)	Bottom longline gear type	Number of streamer lines	Length of streamer lines	Streamer line aerial extent	Weather Safety Exemption
26-55 feet with masts, poles, and rigging	Snap	1	At least 147 feet 7 inches (45 m)	minimum of 65 ft 7 in (20 m) aft of the stern and within 6 ft 7 in (2 m) horizontally of the point where the main groundline enters the water before the first hook is set	Small Craft Advisory for Wind or greater
≥55 feet with masts, poles, and rigging	Not-snap (regular bottom longline)	2	At least 300 feet (91.4 m)	minimum of 131 ft (40m) aft of the stern for vessels under 100 ft (30.5 m) LOA. At least one streamer line must be deployed before the first hook is set and a second streamer line must be deployed within 90 seconds thereafter	Gale Warning
26-55 feet with masts, poles, and rigging	Not-snap (regular bottom longline)	1	At least 300 feet (91.4 m)	minimum of 131 ft (40m) aft of the stern for vessels under 100 ft (30.5 m) LOA and within 6 ft 7 in (2 m) horizontally of the point where the main groundline enters the water before the first hook is set	Small Craft Advisory for Wind or greater
≥55 feet with masts, poles, and rigging	Snap	1	At least 147 feet 7 inches (45 m)	minimum of 65 ft 7 in (20 m) aft of the stern and within 6 ft 7 in (2 m) horizontally of the point where the main groundline enters the water before the first hook is set	Gale Warning
26-55 feet without masts, poles, and rigging	Snap or not-snap	No streamer lines, only buoy bag requirement with no performance requirements			Small Craft Advisory for Wind or greater

Streamer line performance measures that are the same across gear types and vessel lengths:

- Have streamers spaced a maximum of every 16 ft 5 in (5 m).
- Have individual streamers that hang attached to the mainline to 10 in (0.25 m) above the waterline in the absence of wind.
- Have streamers constructed of material that is brightly colored, UV-protected plastic tubing or 3/8 inch polyester line or material of an equivalent density.

1 Introduction

As determined by the Groundfish Endangered Species Act Workgroup, estimated take of endangered short-tailed albatross in groundfish longline fisheries exceeded the incidental take level in the applicable biological opinion (USFWS 2012) in 2015. Therefore, National Marine Fisheries Service (NMFS) reinitiated consultation with the USFWS on the operation of the fisheries managed under the PCGFMP pursuant to Section 7 of the Endangered Species Act (ESA). On May 2, 2017 USFWS published its Biological Opinion (B.O.) (USFWS 2017). The Pacific Fishery Management Council (Council) was briefed on the contents of the B.O. in November 2017 (Agenda Item F.7). The Incidental Take Statement in the B.O. lists nondiscretionary terms and conditions, one of which mandates amending current PCGFMP regulations to require vessels fishing for groundfish in Federal waters that use longline gear to:

- i) Employ streamer lines in the commercial longline fishery of the Pacific Coast Ground Fishery consistent with the Alaska streamer line regulations for Federal waters, including the use of single streamer lines on boats 26-55 feet in length,¹ OR
- ii) Set longlines after civil sunset.

NMFS must implement these regulation changes as soon as practical, but initiation of implementation shall not exceed a three-year period after the B.O. issuance date, or May 2, 2020. Current regulations (50 CFR 660.21) require the use of streamer lines for PCGFMP longline vessels 55 feet LOA and longer.

The Council adopted a range of alternatives to address this requirement in November 2018, identified a preliminary preferred alternative in April 2019, and chose its final preferred alternative in June 2019.

This document is a Regulatory Impact Review (RIR/). NMFS has concluded that this action is a technical correction or a change to a fishery management action or regulation, which does not result in a substantial change in any of the following: fishing location, timing, effort, authorized gear types, or harvest levels, and therefore can be categorically excluded from further analysis under the National Environmental Policy Act. NMFS documents its rationale for this conclusion in a memo to file.

An RIR/provides assessments of the economic benefits and costs of the action alternatives, as well as their distribution (the RIR), and the impacts of the action on directly regulated small entities (the). This RIR/addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Presidential Executive Order 12866, and the Regulatory Flexibility Act.

1.1 Purpose and Need

The purpose and need for this proposed action is an extension of the action taken in 2013 to apply streamer line requirements to vessels 55 feet LOA and longer, as described in the final EA prepared by NMFS (2013):

- The purpose of the proposed action is to further reduce interactions between ESA-listed seabirds and groundfish longline gear relative to current levels of take.

¹ Current regulations apply to vessels 55 feet and longer so the extension of requirements would apply to vessels 26 feet LOA and longer but less than 55 feet LOA.

- The proposed action is needed to comply with the 2017 USFWS B.O. by minimizing endangered short-tailed albatross take to levels judged not to jeopardize the continued existence of the species.

1.2 Incidental Take Limits for Short-Tailed Albatross

The 2017 USFWS B.O. (USFWS 2017) includes the following estimate of incidental take in the commercial groundfish longline fishery:

The USFWS anticipates take of no more than one short-tailed albatrosses in two years or an average estimated take (calculated via the Bayesian model described in sections 6.3 and 6.4, pages 40-39) of no more than five birds per two-year period as a result of this continuing action. The incidental take is expected to be in the form of injury and mortality, due to bird injured or drowned as a result of encounters with hook and line groundfish gear, or taken by collision with trawl gear, including the third wire and warp cables.

To account for interannual variability in actual take levels, a floating two-year period beginning on January 1, 2017, will be used to quantify the observed and estimated total reported take in each two-year period. Incidental take should not exceed an estimated five albatross in a two-year period or 1 observed albatross in a two-year period.

1.3 History of this Action

NMFS and Council staffs began discussions with the USFWS in 2008 on the need to develop measures to minimize incidental take of short-tailed albatross (*Phoebastria albatrus*), an endangered species, in fisheries managed under the PCGFMP. Subsequently, in 2011, the first take was observed in the sablefish longline fishery. NMFS then initiated formal consultation with the USFWS under Section 7 of the ESA. In response, USFWS issued its B.O. on November 12, 2012 (USFWS 2012). Non-discretionary terms and conditions in the B.O. required NMFS to promulgate regulations within two years mandating the use of streamer lines by longline vessels 55 feet LOA or greater, patterned on the Alaska streamer line regulations. Seabirds are known to dive on the baited hooks near the surface when the longline gear is being deployed. Birds can become entangled with or hooked by the gear and drown. Streamer lines have been shown to deter seabirds from the fishing gear mainline for a distance beyond the stern of the vessel sufficient for the mainline to sink to a depth where bait is no longer accessible to diving or surface foraging birds.

NMFS presented a draft environmental assessment (EA) to the Council at its June 2013 meeting, which evaluated implementation of the aforementioned mandated regulatory measures (NMFS 2013). The Council took final action on proposed regulations at its November 2013 meeting. The final rule implementing these measures was published on November 18, 2015 ([80 FR 71975](#)) with an effective date of December 18, 2015. The rule established the following requirements:

- Requires the use of streamer lines in the commercial longline fishery of the Pacific Coast Groundfish Fishery for non-tribal vessels 55 feet LOA and longer;
- Requires vessels to deploy one or two streamer lines depending on the type of longline gear being set;
- Requires that streamer lines meet technical specifications and be available for inspection; and
- Allows for a rough weather exemption from using streamer lines for safety purposes. The threshold for the rough weather exemption is a Gale Warning as issued by the National Weather Service.

The Council's Groundfish Endangered Species Workgroup biennially reviews bycatch estimates for certain ESA-listed species taken in PCGFMP fisheries including short-tailed albatross. The Workgroup

may make recommendations on management actions necessary to minimize incidental take of these species. At its 2015 meeting the Workgroup reviewed updated short-tailed albatross take estimates and concluded that the threshold in the 2012 B.O. Incidental Take Statement had been exceeded in two of the four years between 2010 and 2013, the most recent period for which estimates were available at that time.² The Workgroup reported this finding along with a recommendation to reinitiate consultation at the June 2015 Council meeting (Agenda Item D.4.a, Supplemental Groundfish ESA Workgroup Report). The Workgroup also reported an analysis of night setting as an alternative to deploying streamer lines, which was prepared in response to a public comment during the rulemaking process. NMFS subsequently reinitiated consultation and the USFWS published a new B.O. on May 2, 2017 (USFWS 2017). An overview of this B.O. was presented to the Council at its November 2017 meeting (the B.O. was disseminated as [Agenda Item F.7, Attachment 1](#)).

1.4 Description of Management Area and Affected Fisheries

The management area for this action is the Exclusive Economic Zone (EEZ)—defined as 3–200 nautical miles from state baselines along the coasts of Washington, Oregon, and California—and communities that engage in fishing in waters off these states. PCGFMP Figure 3-1 depicts this management area and is incorporated by reference.

In the 2017 B.O. the USFWS considered the proposed action to be the fisheries managed by the PCGFMP, including the Federal groundfish longline fisheries. The state-managed nearshore groundfish fisheries, which occur in state waters, were not considered to be part of the proposed action in the 2017 B.O. Therefore, vessels exclusively fishing in the nearshore groundfish fisheries are excluded from the action under consideration in this analysis.

² These estimates were based on a ratio estimation method that has since been superseded by statistical modeling approach determined to produce more accurate estimates of annual bycatch. Retrospective analysis shows that the incidental take level in the 2012 B.O. was probably not exceeded during that time period.

2 Description of Alternatives

The alternatives in this chapter were designed to accomplish the stated purpose and need for the action. The alternatives are designed to address Term and Condition #1 from the USFWS 2017 B.O., while taking into account more recent information about the distribution of short-tailed albatross and the operation of the groundfish longline fishery presented to the Council in November 2018.

The Council adopted the following alternatives for analysis in November 2018 based on a recommendation from its Groundfish Management Team (GMT). The GMT proposed the alternatives to represent a broad suite of possible options that include extending the streamer line use requirement to small vessels (26 feet LOA and longer but less than 55 feet LOA), area and seasonal exemptions to the streamer line requirement, and requiring vessels to fish during the night if streamers are not used. There are three action alternatives including the Council's final preferred alternative.

2.1 No Action

No regulatory amendment to address the requirements of Term and Condition #1 in the 2017 USFWS B.O. is implemented. This alternative would be out of compliance with the 2017 USFWS B.O. Existing streamer line requirements for vessels 55 feet LOA and longer described at 50 CFR 660.21 would remain in effect.

2.2 Alternative 1: Extension of the Streamer Line Requirement to Vessels 26-55 feet and Other Measures

When fishing in Federal waters commercial groundfish longline vessels 26 LOA and longer but less than 55 feet LOA would have to employ streamer lines in a manner consistent with Alaska streamer line regulations (50 CFR 679.24(e)). As an alternative to using a streamer line, vessels could instead set gear between civil dusk and civil dawn (when the sun angle $>6^\circ$ below horizon). For the purpose of enforcing this requirement, a standard time interval of one hour after local sunset and before local sunrise would be used.³ Vessels would be required to use one of these two mitigation measures when fishing in the commercial groundfish longline fishery in Federal waters.

Following Alaska regulations, the streamer line requirements for vessels between 26 and 55 feet LOA would be as follows (see 50 CFR 679.24(e)(2)):⁴

Vessels with masts, poles, and rigging and not using snap gear: a single streamer with the following configuration

1. Be a minimum of 300 feet (91.4 m) in length;
2. Have streamers spaced every 16.4 ft (5 m);
3. Be deployed before the first hook is set in such a way that streamers are in the air for a minimum of 131.2 ft (40 m) aft of the stern and within 6.6 ft (2 m) horizontally of the point where the main groundline enters the water. A minimum of 8 streamers should be out of the water aft of the stern.

³ The longest duration of twilight (sunset/sunrise to civil dusk/dawn), at the northernmost extent of the west coast EEZ, approximated by 48°30' N latitude, at the summer solstice, is 42 minutes.

⁴ Illustrations of these requirements may be found at <https://www.fisheries.noaa.gov/alaska/bycatch/seabird-avoidance-gear-and-methods>.

4. Have individual streamers that hang attached to the mainline to 10 in (0.25 m) above the waterline in the absence of wind.
5. Have streamers constructed of material that is brightly colored, UV-protected plastic tubing or 3/8 inch polyester line or material of an equivalent density.

Vessels with masts, poles, and rigging and using snap gear: a single streamer deployed as follows

1. Be deployed before the first hook is set in such a way that streamers are in the air for 65.6 ft (20 m) aft of the stern and within 6.6 ft (2 m) horizontally of the point where the main groundline enters the water.
2. Have a minimum length of 147.6 ft (45 m).

Vessels without masts, poles, and rigging: deploy at least one buoy bag line

In addition to the general streamer line requirements described above, Alternative 1 includes the following measures.

When fishing south of 36° N latitude, vessels 26 feet LOA and longer would be exempted from the requirement to deploy streamer lines or night set.

All commercial groundfish longline vessels would be exempt from the seabird mitigation measures requirement when fishing south of 36° N latitude. An analysis of available data on the distribution of albatrosses off the west coast (Guy et al. 2013) found that short-tailed albatross rarely occur south of 36° N. latitude. Note the current regulations for large vessels (≥ 55 feet LOA) do not include this exemption.

When fishing shoreward of the 250 fathom depth contour, vessels 26 feet LOA and longer would be exempted from the requirement to deploy streamer lines or night set.

All commercial groundfish longline vessels would be exempt from the seabird mitigation measures requirement when fishing shoreward of the 250 fathom (457 m) depth contour represented by waypoints published at 50 CFR 660.74(m). Note the current regulations for large vessels do not include this exemption.

Short-tailed albatrosses prefer ocean areas at the continental shelf break (Guy et al. 2013). The continental shelf break represents the transition from the continental shelf with an average gradient of approximately one degree to the continental slope with an average gradient of approximately four degrees. Guy et al. (2013) define the shelf break as the region between 201 and 1,000 m (109-547 fathoms).

The nearshore component of the commercial groundfish longline fishery targets rockfish and does not catch sablefish. To target these species it operates primarily, but not exclusively, in state waters (within three nautical miles of the territorial sea baseline). The 250 fathom depth contour best represents the operational footprint of this nearshore fishery. However, the 250 fathom depth contour falls within the continental shelf break region as defined by Guy, et al (2013), see Figure 5.

Vessels 26 feet LOA and longer using floated mainline gear would be required to begin setting gear after civil dusk (i.e. the streamer line option would not be available to these vessels).

Under this option all commercial longline 26 feet LOA and longer would be required to set at night (one hour after local sunset and one hour before local sunrise) when using floated mainline gear rather than having the option of using a streamer line.

A specific weather safety exemption would be established for vessels 26-55 feet LOA.

Current seabird avoidance regulations for Alaska and the west coast do not require the use of streamer lines when severe weather conditions are in effect. The current west coast regulations (50 CFR 660.21©(2)(iii)) exempt large vessels (≥ 55 feet LOA) from the streamer requirements when a National Weather Service Gale Warning is in effect (winds 34 to 47 knots). Seabird avoidance regulations for the Alaska Region have a different weather safety exemption for small vessels versus large vessels. Use of seabird avoidance gear for small vessels is discretionary when winds exceed 30 knots (50 CFR 679.24(e)(4)(v)). This threshold or a lower wind threshold could be adopted for west coast regulations for small vessels. The National Weather Service Small Craft Advisory could be used as a threshold, since it is a standardized and broadcast threshold. For the west coast a Small Craft Advisory is issued when sustained winds are 21 to 33 knots, and/or wave heights exceed 10 feet.

2.3 Alternative 2: Preliminary Preferred Alternative

The Council chose a preliminary preferred alternative at its April 2019 meeting. Alternative 2 incorporates elements of Alternative 1.

Commercial groundfish longline fishery in Federal waters would be required to deploy streamer lines according to the design specifications in Alaska streamer line regulations (50 CFR 679.24(e)). This would extend current PCGFMP regulations for vessels 55 feet LOA and longer to vessels 26 feet LOA and longer but less than 55 feet LOA. These smaller vessels would be required to deploy a single streamer line with specifications varying based on vessel and gear configuration as described above under Alternative 1. As an alternative to using a streamer line, vessels could instead set gear between one hour after local sunset and one hour before local sunrise (approximating dusk and civil dawn). Vessels would be required to use one of these two mitigation measures when fishing in the commercial groundfish longline fishery in Federal waters.

All commercial groundfish longline vessels would be exempt from the seabird mitigation measures requirement when fishing south of 36° N latitude.

All commercial longline vessels greater than or equal to 26 feet LOA and longer would be required to set at night (one hour after local sunset and one hour before local sunrise) when using floated mainline gear if not deploying a streamer line that is at least 300 feet in length.

Deployment of streamer lines by vessels 26 feet LOA and longer but less than 55 feet LOA would be discretionary when sustained winds are 21 knots or greater. This threshold accords with wind speeds associated with a National Weather Service Small Craft Advisory for west coast waters.

2.4 Alternative 3: Final Preferred Alternative

The Council chose a final preferred alternative at its June 2019 meeting. Alternative 3 incorporates elements of Alternative 1.

Commercial groundfish longline fishery in Federal waters would be required to deploy streamer lines according to the design specifications in Alaska streamer line regulations (50 CFR 679.24(e)). This would extend current PCGFMP regulations for vessels 55 feet LOA and longer to vessels 26 feet LOA and longer but less than 55 feet LOA. These smaller vessels would be required to deploy a single streamer line with specifications varying based on vessel and gear configuration as described above under Alternative 1. As an alternative to using a streamer line, vessels could instead set gear between one hour after local sunset and one hour before local sunrise (approximating dusk and civil dawn). Vessels would

be required to use one of these two mitigation measures when fishing in the commercial groundfish longline fishery in Federal waters.

All commercial groundfish longline vessels would be exempt from the seabird mitigation measures requirement when fishing south of 36° N latitude.

Deployment of streamer lines by vessels 26 feet LOA and longer but less than 55 feet LOA would be discretionary when sustained winds are 21 knots or greater. This threshold accords with wind speeds associated with a National Weather Service Small Craft Advisory for west coast waters.

2.5 Comparison of Alternatives

The tables below summarize the measures included in each alternative and the impacts of implementing them.

Table 1 Summary of the features of the alternatives.

	No Action	Alternative 1	Alternative 2	Alternative 3 (FPA)
Mitigation requirements	Streamer line requirement for vessels ≥55 ft	Streamer line requirement with night setting option for vessels ≥26 ft	Streamer line requirement with night setting option for vessels ≥26 ft	Streamer line requirement with night setting option for vessels ≥26 ft
Latitude-based Exemption	None	S. of 36°N lat.	S. of 36°N lat.	S. of 36°N lat.
Depth-based Exemption	None	Shoreward of 250 fm depth contour	None	None
Floated Mainline Mitigation	None	Only night setting for floated longline gear	Can use streamer lines (>300 feet) or night set	None
Severe Weather Safety Exemption	Streamer line use by vessels ≥55 ft discretionary when Gale Warning in effect	Large vessel exemption plus streamer lines discretionary for vessels 26-55 ft when sustained winds exceed 21 knots [small craft wind advisory]	Large vessel exemption plus streamer lines discretionary for vessels 26-55 ft when sustained winds exceed 21 knots [small craft wind advisory]	Large vessel exemption plus streamer lines discretionary for vessels 26-55 ft when sustained winds exceed 21 knots [small craft wind advisory]

Table 2 Summary of the Effects of the Alternatives

	No Action	Alternative 1	Alternative 2	Alternative 3 (FPA)
Effectiveness of general mitigation requirements	Effective mitigation for vessels ≥ 55 ft when not using floated mainline	Effective mitigation for vessels ≥ 26 ft when not using floated mainline	Effective mitigation for vessels ≥ 26 ft when not using floated mainline	Effective mitigation for vessels ≥ 26 ft when not using floated mainline
Effectiveness of mitigation requirements when using floated mainline	No effective mitigation	Night setting requirement provides more effective mitigation than current streamer line specifications	Option to use streamer line >300 ft instead of night setting may provide partial mitigation	No effective mitigation; streamer line may provide partial mitigation
Costs	No new costs	Cost of acquiring streamer lines* and equipment upgrades to meet night setting requirement when using floated mainline	Cost of acquiring streamer lines* if operating during the day	Cost of acquiring streamer lines* if operating during the day
Vessel operations and safety	No change	Steamer line deployment and night setting requirement when using floated mainline complicates setting gear and could create safety issues, especially for inexperienced operators	Steamer line deployment complicates setting gear and could create safety issues, especially for inexperienced operators; no additional complications when using floated mainline because night setting optional	Steamer line deployment complicates setting gear and could create safety issues, especially for inexperienced operators

*This may be mitigated by free streamer lines available through Sea Grant and NMFS.

Table 3. Summary of proposed seabird streamer line requirements applicable under all the action alternatives.

Vessel Length Overall (LOA)	Bottom longline gear type	Number of streamer lines	Length of streamer lines	Streamer line aerial extent	Weather Safety Exemption
26-55 feet with masts, poles, and rigging	Snap	1	At least 147 feet 7 inches (45 m)	minimum of 65 ft 7 in (20 m) aft of the stern and within 6 ft 7 in (2 m) horizontally of the point where the main groundline enters the water before the first hook is set	Small Craft Advisory for Wind or greater
≥55 feet with masts, poles, and rigging	Not-snap (regular bottom longline)	2	At least 300 feet (91.4 m)	minimum of 131 ft (40m) aft of the stern for vessels under 100 ft (30.5 m) LOA. At least one streamer line must be deployed before the first hook is set and a second streamer line must be deployed within 90 seconds thereafter	Gale Warning
26-55 feet with masts, poles, and rigging	Not-snap (regular bottom longline)	1	At least 300 feet (91.4 m)	minimum of 131 ft (40m) aft of the stern for vessels under 100 ft (30.5 m) LOA within 6 ft 7 in (2 m) horizontally of the point where the main groundline enters the water before the first hook is set	Small Craft Advisory for Wind or greater
≥55 feet with masts, poles, and rigging	Snap	1	At least 147 feet 7 inches (45 m)	minimum of 65 ft 7 in (20 m) aft of the stern and within 6 ft 7 in (2 m) horizontally of the point where the main groundline enters the water before the first hook is set	Gale Warning
26-55 feet without masts, poles, and rigging	Snap or not-snap	No streamer lines, only buoy bag requirement with no performance requirements			Small Craft Advisory for Wind or greater

Streamer line performance measures that are the same across gear types and vessel lengths:

- Have streamers spaced a maximum of every 16 ft 5 in (5 m).
- Have individual streamers that hang attached to the mainline to 10 in (0.25 m) above the waterline in the absence of wind.
- Have streamers constructed of material that is brightly colored, UV-protected plastic tubing or 3/8 inch polyester line or material of an equivalent density.

Vessels using bottom longline gear would need to follow these requirements when operating north of 36° N. latitude, depending on vessel length and gear use, unless engaging in night setting.

2.6 Alternatives Considered but not Analyzed Further

At the November 2018 Council meeting the GMT recommended that the option of a seasonal exemption be explored further based on information presented in [Agenda Item G.5, Attachment 1](#). They noted that “[s]ome research suggests that [short-tailed albatross] is present throughout the year, while other analysis suggests that the sub-adult population is only present in winter and spring.” They recommended further exploration of risks associated with a seasonal exemption. The following information is provided by Dr. Tom Good, NMFS Northwest Fisheries Science Center and seabird specialist on the Council’s Groundfish Endangered Species Workgroup. Dr. Good’s review of reported telemetry and observer data show that while there may be a seasonal pattern in abundance, short-tailed albatross occur off the west coast year round. Thus, a seasonal exemption is likely to result in an unacceptable risk of take and is not considered further as a potential management measure under this action.

Telemetry Data on the Distribution of Short-Tailed Albatross

As referenced in Agenda Item G.5, Attachment 1, November 2018, Orben et al. (2018) suggest some seasonality to the use of the California Current by tagged short-tailed albatross, they also emphasized that the patterns resulted from fairly small sample sizes of tags that lasted long enough to get year-round location data. They also state “...of the birds tracked from May to January during the first flight year (n = 13), 85% visited the Canadian EEZ and 69% visited the EEZ off the US west coast.”

The authors also suggest that the use of the west coast of North America was common and broadly supported previous tracking studies and summaries of at-sea observations (Guy et al. 2013; Suryan et al. 2006). The one bird that entered the Mexican EEZ near Baja was not “...surprising given that short-tailed albatrosses were regularly seen in Mexican waters prior to 1900, and in more recent years a few individuals have been seen” (Grinnell 1928; L and Sada 1991).

The authors also suggest that observations of immature short-tailed albatrosses off the west coast of North America likely constitute reoccupation of historical foraging areas. The short-tailed albatross is one of the most common seabirds found in archaeological sites on the Channel Islands in California, and stable isotope mixing models show that these ancient short-tailed albatross spent more time in the California Current than their modern congeners (Vokhshoori et al. 2019). If the growing population of short-tailed albatrosses continues to re-occupy historical California Current foraging areas, observations in all seasons may be expected to increase.

West Coast Groundfish Observer Interactions of Short-Tailed Albatross

Observer data from 2002-2016 demonstrate short-tailed albatross (STAL) have been observed from west coast groundfish fishing vessels, regardless of gear type, throughout the year.

For all gear types combined, winter/spring observations account for around 74% of interactions and 71% of all STAL, while summer/fall observations account for around 26% of interactions and 29% of all STAL (Table 4a and Table 5a).

For hook and line gear, spring observations (no winter observations) account for around 57% of interactions and 57% of all STAL, while summer/fall observations account for around 43% of interactions and 43% of all STAL (Table 4b and Table 5b).

For trawl gear, winter/spring observations account for 80% of interactions and 77% of all STAL, while summer/fall observations account for 20% of interactions and 23% of all STAL (Table 4c and Table 5c).

For pot gear, winter/spring observations account for 64% of interactions and 47% of all STAL, while summer/fall observations account for 36% of interactions and 53% of all STAL (Table 4d and Table 5d).

The extent of short-tailed albatross interactions (primarily sub-adults) with groundfish fishing vessels appears to represent much greater visitation in summer and fall months (20% of interactions in trawl fisheries up to 43% and 53% of interactions in hook and line and pot fisheries, respectively) than data collected in tagging studies. This is not surprising, as fishing vessels act as attractants for seabirds in general.

Table 4. Short-tailed albatross interactions with west coast groundfish fisheries vessels summarized as count and percentage of interactions. Data are raw counts from observer data and not expansions.

a. All gear	WINTER	SPRING	SUMMER	FALL	Total
Count of Interactions	34	65	20	14	133
% of Interactions	25.6%	48.9%	15.0%	10.5%	
b. Hook and Line	WINTER	SPRING	SUMMER	FALL	Total
Count of Interactions		13	7	3	23
% of Interactions		56.5%	30.4%	13.0%	
c. Trawl	WINTER	SPRING	SUMMER	FALL	Total
Count of Interactions	32	47	12	8	99
% of Interactions	32.3%	47.5%	12.1%	8.1%	
d. Pot	WINTER	SPRING	SUMMER	FALL	Total
Count of Interactions	2	5	1	3	11
% of Interactions	18.2%	45.5%	9.1%	27.3%	

Table 5. Short-tailed albatross interactions with west coast groundfish fisheries vessels summarized as sum and percentage of all STAL encountered. Data are raw counts from observer data and not expansions.

a. All gear	WINTER	SPRING	SUMMER	FALL	Total
Sum of STAL	54	71	20	30	175
% of STAL	30.9%	40.6%	11.4%	17.1%	
b. Hook and Line	WINTER	SPRING	SUMMER	FALL	Total
Sum of STAL		13	7	3	23
% of STAL		56.5%	30.4%	13.0%	
c. Trawl	WINTER	SPRING	SUMMER	FALL	Total
Sum of STAL	51	53	12	19	135
% of STAL	37.8%	39.3%	8.9%	14.1%	
d. Pot	WINTER	SPRING	SUMMER	FALL	Total
Sum of STAL	3	5	1	8	17
% of STAL	17.6%	29.4%	5.9%	47.1%	

3 Regulatory Impact Review

This Regulatory Impact Review (RIR)⁵ examines the benefits and costs of a proposed regulatory amendment to require the use of single streamer lines on boats 26 feet LOA and longer but less than 55 feet LOA, or set longlines between civil dusk and civil dawn as required by the 2017 USFWS B.O.

The preparation of an RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and Benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be “significant.” A “significant regulatory action” is one that is likely to:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this Executive Order.

3.1 Statutory Authority

Under the Magnuson-Stevens Act (16 U.S.C. 1801, *et seq.*), the United States has exclusive fishery management authority over all marine fishery resources found within the EEZ. The management of these marine resources is vested in the Secretary of Commerce (Secretary) and in the regional fishery management councils. In the West Coast Region, the Council has the responsibility for preparing fishery management plans (FMPs) and FMP amendments for the marine fisheries that require conservation and management, and for submitting its recommendations to the Secretary. Upon approval by the Secretary, NMFS is charged with carrying out the Federal mandates of the U.S. Department of Commerce with regard to marine and anadromous fish.

⁵ The proposed action has no potential to affect the human environment, individually or cumulatively. The only effects of the action are economic, as analyzed in this RIR/FRFA. As such, it is categorically excluded from the need to prepare an Environmental Assessment.

The commercial groundfish longline fishery in the EEZ off Washington, Oregon and California is managed under the PCGFMP. The proposed action under consideration would amend Federal regulations at 50 CFR 660. Actions taken to amend FMPs or implement other regulations governing these fisheries must meet the requirements of Federal law and regulations.

3.2 Purpose and Need for Action

The purpose and need for the proposed action is described in Section 1.1.

3.3 Alternatives

The range of alternatives is described in Chapter 2.

3.4 Methodology for Analysis of Impacts

The evaluation of impacts in this analysis is designed to meet the requirement of E.O. 12866, which dictates that an RIR evaluate the costs and benefits of the alternatives, to include both quantifiable and qualitative considerations. Additionally, the analysis should provide information for decision-makers “to maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.” The costs and benefits of this action with respect to these attributes are described in the sections that follow, comparing the No Action Alternative with the three action alternatives. The analyst then provides a qualitative assessment of the net benefit to the Nation of each alternative, compared to No Action.

This analysis was prepared using data from the Pacific Fishery Information Network (PacFIN), the NMFS West Coast Groundfish Observer Program (WCGOP), and the Oregon Department of Fish and Wildlife fixed gear logbook program. These sources provide the best available data on fishery participation and vessel characteristics.

Current regulations for vessels 55 feet and longer LOA state that seabird avoidance measures are applicable to “commercial fishing for groundfish with bottom longline gear” excluding vessels participating in Pacific Coast treaty Indian fisheries and anglers engaged in recreational fishing for groundfish. For the purpose of evaluating the proposed action vessels may be divided between small vessels between 26 and less than 55 feet LOA and large vessels 55 feet LOA and longer. The USFWS 2017 B.O. (USFWS 2017) Term and Condition #1 mandates extending streamer line requirements, consistent with NMFS Alaska Region regulations, to the small vessel category. However, the components of the proposed action, including allowing night setting as an alternative to the use of streamer lines, options for area exemptions, and a requirement to set at night when using a floated mainline, would also affect large vessels. Therefore, the description of vessel characteristics below includes and distinguishes between these size categories.

For the purposes of analysis, potentially affected vessels are defined based on data from the PacFIN database using the following criteria:

- Commercial vessels that used bottom longline gear (does not include tribal or recreational vessels) and
- Fished in Federal waters and

- Made at least one groundfish landing between 2013 and 2017 (the baseline period)⁶ within either the non-nearshore or shoreside IFQ nontrawl sectors defined in the PacFIN database,⁷ and
- Vessel length is between 26 and 54 feet LOA for “small vessels” or
- Vessel length greater than or equal to 55 feet LOA or “large vessels.”

3.5 Description of the West Coast Groundfish Longline Fishery

3.5.1 Management Pursuant to the Pacific Coast Groundfish FMP

The management regime for affected vessels is described in the EA prepared for the 2013 action leading to implementation of streamer line requirements for large vessels (NMFS 2013). This information is summarized below.

From a management perspective vessels catching groundfish with longline gear can be described as follows:

- Vessels with a sablefish fixed gear endorsed Federal groundfish limited entry permit may participate in the primary sablefish fishery with vessel-specific sablefish catch limits assigned according to permit possession. Vessels with the Federal permit but without the sablefish endorsement and vessels without a Federal permit are subject to daily and weekly trip limits for groundfish species. Vessels without a Federal permit are still subject to state permitting requirements.
- Vessels with a trawl endorsed groundfish limited entry permit participate in the shoreside individual fishing quota (IFQ) fishery and may use any legal groundfish gear. A significant portion of vessels possessing these endorsed permits and the necessary quota pounds use fixed gear to catch sablefish (“gear switchers”).⁸ From an operational standpoint these vessels are comparable to the limited entry category described above.
- Overlapping with these permit categories, vessels may be described as participating in the non-nearshore or nearshore fishery. The non-nearshore fishery principally targets sablefish on the continental slope and may also land other associated species such as thornyheads. The nearshore fishery, as the name implies, fishes closer to shore, principally landing various rockfish species. Vessels that fished exclusively in the nearshore fishery are excluded from the estimates of the number of affected vessels, because it is presumed they primarily fished in state waters and the 2017 B.O. does not apply to state fisheries.

3.5.2 Number of Vessels Affected by the Proposed Action

Based on PacFIN landings information, 37 large vessels and 387 small vessels participated in the non-nearshore fishery using longline gear during the 2013-2017 baseline period. Of these vessels 42 small vessels and one large vessel also participated in the nearshore fishery. There are an additional 34 small vessels that fished exclusively in the nearshore sector. WCGOP observed 273 hauls by 28 vessels fishing

⁶ Participation in the fishery varies from year to year, so the longer the time period, the more vessels will be in the population, although the rate of increase generally decreases as years are added to the time frame. While the choice of five years to characterize fishery participation is arbitrary, it is a compromise between a census of all vessels that may have participated in the fishery and recent participation.

⁷ See http://pacfin.psmfc.org/wp-content/uploads/2015/10/PacFIN_groundfish_sector_codes.pdf

⁸ During the 2013-2017 baseline period used in this analysis 16 vessels in the non-trawl IFQ sector (29%) used longline gear. Vessels using fish pot gear accounted for a further 45% of the vessels with the remainder of vessels using various other hook-and-line gear types. (PacFIN comprehensive_ft, 5/23/2019)

longline gear in the nearshore fishery from 2013-2017. The nearshore fishery occurs primarily, although possibly not exclusively, in state waters. For that reason this analysis focuses on vessels fishing in the non-nearshore fishery. Due to the small sample size and the potential error when analyzing haul location data at small spatial scales, fishing effort by nearshore vessels in Federal waters cannot be precisely estimated from WCGOP data, but approximately 8% of observed hauls by these nearshore vessels occurred partially or wholly in Federal waters. A small number of vessels accounted for the majority of these hauls; only 3 vessels (approximately 11% of those observed) fished more than one haul outside of state waters.

Table 6 presents a breakdown of vessel participation in the non-nearshore fishery by year for the 2013-2017 baseline period based on PacFIN landings data. On average, 22 large vessels and 199 small vessels participated in the fishery annually. The smaller number of vessels participating in any one year compared to the total number of vessels suggests that many vessels move in and out of the fishery over time.

Table 6. Number of commercial longline vessels with groundfish landings in the non-nearshore fishery by size category, 2013-2017.

Year	Large vessels	Small vessels
2013	21	172
2014	19	166
2015	20	200
2016	25	235
2017	25	224

This action also considers special provisions for vessels using floated mainline gear. WCGOP data on the use of floated mainline gear are available for 2016 and 2017 and reported in Table 7.

Table 7. Proportion of observed groundfish longline vessels using a floated mainline at any time during 2016-2017. The panel on the right shows the proportion of observed vessels that switched between floated and unfloat gear during this period. (Source: WCGOP.)

Year	Fished with floated mainline		Switched between floated and unfloat mainline	
	26 - 55 ft.	> 55 ft.	26 - 55 ft.	> 55 ft.
2016	35%	58%	4%	8%
2017	37%	55%	4%	9%
2016-17 combined	34%	56%	8%	13%

3.5.3 Fishery Participation and Revenue

Table 8 provides summary statistics for participation in the non-nearshore fishery by vessels size measured by the average number of trips. For both size classes the distributions are positively skewed indicating that observations are concentrated near the lower end of the distribution. Kurtosis is a measure of the number of observations in the tails relative to the central tendency. For small vessels it is highly positive or “leptokurtic,” suggesting more outlier observations, while it is near to zero for large vessels, or “platykurtic,” suggesting a flatter distribution of observations. Taken together these statistics show that most vessels make few trips in the fishery while a few vessels have a high level of participation. Ex-vessel revenue show a similar highly skewed pattern as shown in Table 9.

Table 8. Summary statistics of annual average number of trips in the non-nearshore fishery for small and large vessels.

Size	Mean	Standard Deviation	Median	Minimum	Maximum	Skew	Kurtosis
Small vessels (n = 387)	7.5	13.4	2.0	0.2	93.8	3.0	10.5
Large vessels (n = 37)	3.5	3.8	1.8	0.2	13.2	1.1	0.1

Table 9. Summary statistics for annual average ex-vessel revenue (current dollars) by vessel size by fishery sector.

Sector	Mean	Standard Deviation	Median	Minimum	Maximum	Skew	Kurtosis
Small (n = 387)							
Non-Nearshore	\$24,275	\$42,631	\$4,796	\$3	\$242,404	2.3	5.2
Nearshore	\$783	\$4,476	\$0	\$0	\$51,300	8.1	74.3
Other	\$2,575	\$7,484	\$0	\$0	\$61,603	4.2	20.1
Large (n= 37)							
Non-Nearshore	\$103,854	\$157,325	\$46,479	\$760	\$704,567	2.3	5.4
Nearshore	\$2	\$13	\$0	\$0	\$79	5.6	30.2
Other ⁹	\$8,324	\$19,148	\$0	\$0	\$85,147	2.5	5.9

The skewed distribution of these two metrics is illustrated graphically, in Figure 1.

⁹ Groundfish landings with fixed gear not attributable to non-nearshore or nearshore sectors.

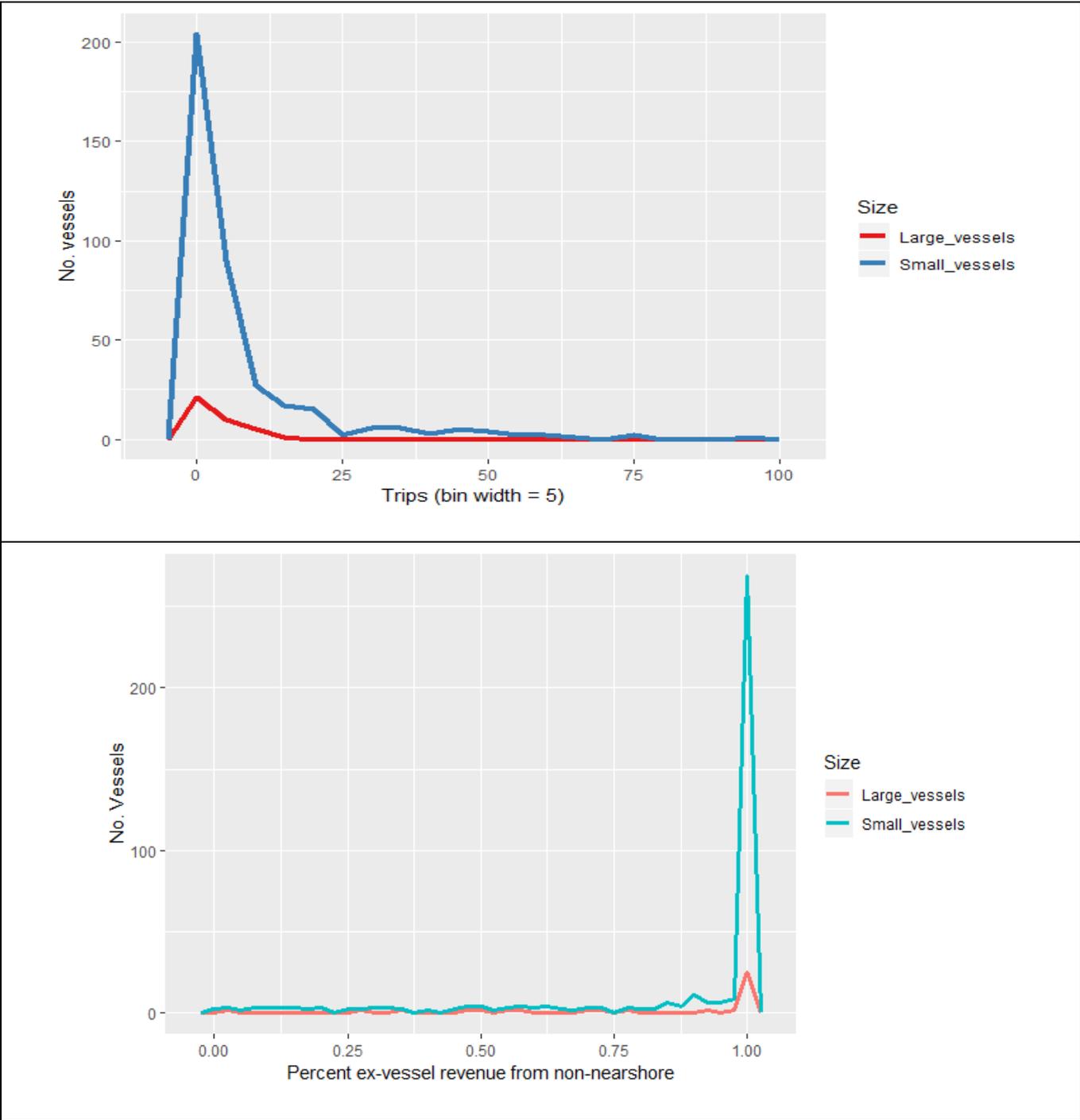


Figure 1. Frequency distribution of participation in the non-nearshore groundfish fishery as measured by average number of trips per year (top) and ex-vessel revenue from the non-nearshore fishery as a percentage of total revenue (bottom), 2013-2017, by size class.

3.5.4 Vessel Engagement and Dependency

The statistics presented in Figure 1 can be used to assess vessel engagement in the non-nearshore fishery (using average annual number of trips) and dependency (using the percent of total ex-vessel revenue

derived from landings in this fishery). Engagement and dependency are metrics that can provide information about the nature of participation in a fishery. Engagement is a measure of frequency of participation in a fishery, and dependency is a measure of participation in a particular fishery relative to that vessel’s entire fishery portfolio. The distribution of these two metrics is illustrated in Figure 2. Vessels represented by points in the upper right quadrant are both highly engaged and dependent; conversely, vessels represented by points in the lower left quadrant are not very engaged or dependent on the fishery.

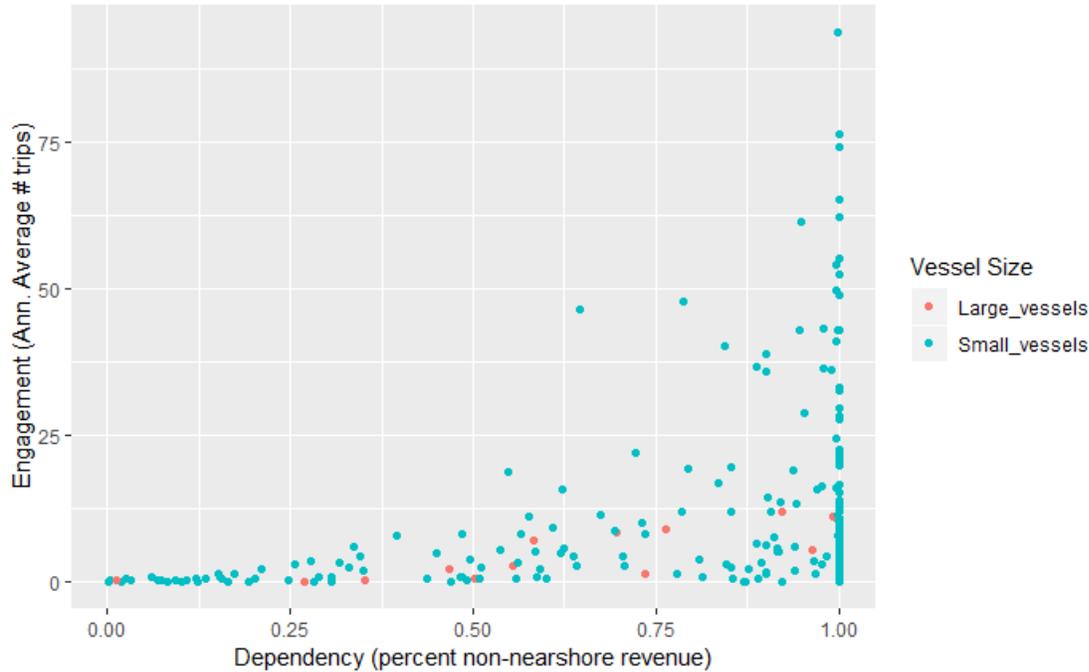


Figure 2. Vessel dependence and engagement in the non-nearshore fishery.

Because the two statistics are skewed in contrasting ways, overall it can be said that these vessels are overwhelmingly dependent on the non-nearshore fishery but many are not highly engaged in the sense that they make relatively few trips. The median value for the percentage of total revenue derived from the non-nearshore fishery is 100%; put another way 77% of small vessels and 73% of large vessels derive 90% or more of total ex-vessel revenue from the non-nearshore fishery. In terms of participation, the median for average annual number of trips is two. This compares to a maximum value of 94. In terms of the frequency distribution of trips; 80% of small vessels and 90% of large vessel make 10 or fewer trips per year. If we class vessels greater than or equal to the mean value for these statistics as highly engaged and highly dependent, and those below the mean as having low dependence and engagement, it is possible to produce the matrix shown in Table 10. For both vessel size classes and using this typology most vessels are categorized as high dependence and low engagement.

Table 10. Matrix of dependence and engagement in the non-nearshore fishery by vessel size class. (Mean values for metrics used as cut-off.)

		Engagement			
		Large Vessels		Small Vessels	
Depen dence		Low	High	Low	High

	Low	7 (19%)	3 (8%)	65 (17%)	20 (5%)
	High	23 (62%)	4 (11%)	225 (58%)	77 (20%)

3.5.5 Vessel trip length

The vessels participating in this fishery that would be affected by this action differ based on trip length characteristics. Trip length and typical gear setting characteristics are particularly relevant to the night-setting portion of the action and how much of an operational shift or burden night setting would be for a particular vessel. During the development of this analysis, the Council heard from participants in the fishery that some vessels in the fleet leave port early in the morning, reach the fishing grounds in daylight, make one or two sets, and return to port in the evening. These vessels are referred to as day boats.

Comprehensive coastwide data on trip length for this fleet was not available for this analysis, nor was gear setting time. Data on the number of vessels that take one day trips was gathered from PacFIN, WCGOP, and the Oregon fixed gear logbook database, each covering a different component of the fleet, to present an outline of the potential population of vessels that could be affected by the night setting requirement. The data between the three sources are not comparable but are still informative. Trip length is only presented for vessels that made more than 20 trips during a 5-year period for each data source in order to limit the evaluation of trip length to those vessels that are engaged in the fishery (i.e., active participants) (as described in Section 3.5.4). The applicability of this data is constrained though, because a vessel could make a one day trip, but be setting their gear at night.

The estimates of vessels making exclusively one-day trips from the three data sources are 9% from the PacFIN data for Washington landings (vessels ≥ 26 feet that made at least 20 trips in 5 years), 17% from the Oregon fixed gear logbook data (vessels of any size making at least 20 trips in 5 years), and 62% from the WCGOP data (vessels 26-55 feet, using floated mainline, making trips shorter than 24 hours, and all sets between civil dawn and dusk). To the degree that the WCGOP data are representative of the overall vessel population, it may be that a higher proportion of vessels using a floated mainline exclusively make one-day trips. Further description of each data source and the information available from each is below.

The PacFIN database includes a field to record the number of days fished per trip but this information has only been provided for landings in Washington. Additionally, this data only includes bottom longline gear and does not collect information on floated mainline gear. A total of 23 vessels made the requisite number of trips during the 2013-2017 baseline period. Only two vessels (both small) out of 23 exclusively made one day trips, or 9%.

The Oregon fixed gear logbook provides information on trip length for vessels off of Oregon and was provided by the Oregon Department of Fish and Wildlife fixed gear logbook database (Patrick Mirick, ODFW). The data cover the period 2014-2018 and this data set does not include vessel length data to distinguish small and large vessels. Additionally, this data only includes bottom longline gear and does not collect information on floated mainline gear. A total of 29 vessels met the number of trips criteria and five of these vessels only made one-day trips, or 17%. Figure 3 shows the distribution of trip length. This illustrates that there were eight vessels where 90% of their trips were one day in length (which includes the five vessels only making one-day trips). There were also eight vessels where less than 10% of their trips were one day and six of these vessels made no one-day trips.

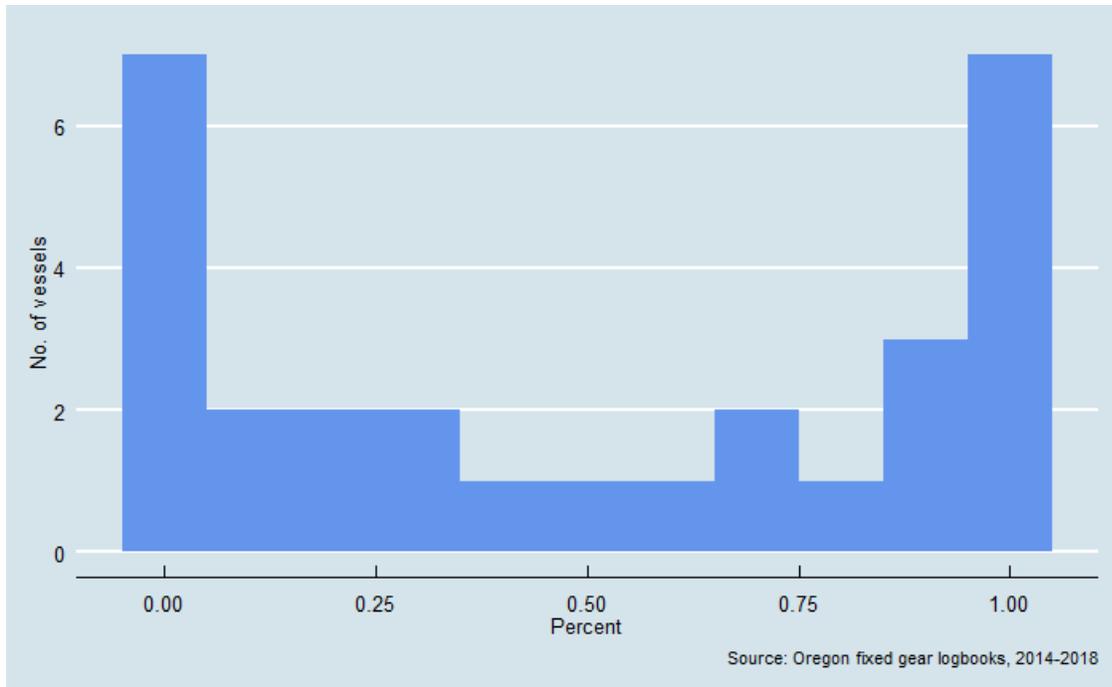


Figure 3. Proportion of one day trips as percent of total trips by vessels reported in Oregon fixed gear logbooks, 2014-2018.

WCGOP had the most specific data to both trip length and time of day gear setting occurred, coupled with use of floated mainline gear. WCGOP provided data on the number and proportion of observed sets and trips for hook-and-line vessels using a floated mainline, fishing inside Federal waters during day trips, by small vessels (26-55 feet) for the period 2016-2017. Day trips were defined as trips that departed and returned to port within a 24 hour period *and* all gear deployments and retrievals occurred between civil dawn and civil dusk. Twenty-one small vessels were observed using a floated mainline and fishing in Federal waters; 3 of these vessels made multi-day trips exclusively and the remaining 18 made at least some one-day trips (defined as occurring within a 24-hour period). Of these 18 vessels, 13 only made one-day trips as defined above while 5 vessels made some one-day trips. Thus in this sample 62% (13 out of 21) made only one-day trips. Looking at sets, 10 of the vessels made all their sets during the day while the remaining 8 vessels made at least some, but not all, of their sets during the day. Using a strict definition of a day boat to mean a vessel only making sets between civil dawn and civil dusk, 48% (10 out of 21) qualify. Overall, for the 18 vessels making at least some day trips 74% of sets were made during the day and 85% of trips were one-day trips as defined above.

While all these data sets inform the question of the portion of the fleet making one-day trips, it is not possible to combine the results to make a single, definitive conclusion about this proportion. First, these are samples of different, although possibly overlapping, vessel populations, each defined somewhat differently in terms of vessel characteristics. Second, while WCGOP uses an explicit definition of a day trip, the definitions used in the other two data sources are ambiguous. (For example, is a trip length equal to one a trip less than 24 hours or one falling entirely in one calendar day?)

3.5.6 Communities

Table 11 shows the distribution of the total number of groundfish longline vessels making landings, average annual fishing effort (trips, as measured by landings receipts) and ex-vessel revenue (current dollars) for commercial groundfish longline vessels by the port area. These statistics are reported separately for large and small vessels. For reference, the ports from Morro Bay southward are south of 36° N latitude; under the action alternatives vessels fishing south of that line would be exempted from the seabird bycatch mitigation requirements. Landings and revenue from large vessels is concentrated in relatively few port areas: Puget Sound, ports at the entrance of the Columbia River, Newport, Coos Bay, and Fort Bragg. In contrast, small vessel landings and revenue are highest in the Southern California ports of Morro Bay and Santa Barbara but occur in every port area on the coast.

Table 11. Distribution of number of non-nearshore longline vessels making landings, average annual non-nearshore longline fishing effort (trips), and ex-vessel revenue (current dollars) by small and large vessels by port areas, 2013-2017. Ports south of 36° N latitude shown in bold.

Port	Total No. Vessels		Average Annual Trips		Average Annual Revenue	
	Large vessels	Small vessels	Large vessels	Small vessels	Large vessels	Small vessels
Puget Sound	11	7	23	15	\$1,367,123	\$425,742
North WA Coast	1	20	*	115.8	*	\$606,031
South And Central WA Coast	9	44	18.2	107	\$853,034	\$592,604
Astoria	3	12	1.2	14.2	\$33,499	\$199,239
Tillamook	1	2	*	*	*	*
Newport	13	45	32.2	116.2	\$827,685	\$813,555
Coos Bay	8	61	30	104.6	\$336,474	\$361,687
Brookings	1	37	*	216	*	\$692,883
Crescent City	1	4	*	11.2	*	\$36,431
Eureka	1	25	*	137.2	*	\$402,737
Fort Bragg	3	43	19	137	\$364,657	\$238,195
Bodega Bay	-	25	-	108.2	-	\$407,564
San Francisco	1	26	*	65.8	*	\$223,743
Monterey	-	44	-	277	-	\$493,379
Morro Bay	-	27	-	514.4	-	\$1,212,525
Santa Barbara	-	37	-	478.4	-	\$1,917,311
Los Angeles	1	15	*	134.6	*	\$196,904
San Diego	-	20	-	338.2	-	\$566,492

*Excluded due to data confidentiality requirements.

- No data

3.6 Impacts of No Action

Under No Action regulations requiring the use of streamer lines on commercial groundfish longline vessels less than 55 feet LOA would not be implemented. These vessels would not have to change their fishing operations to accommodate streamer lines (or to set at night) and would not bear the cost of acquiring streamer lines. Under this alternative, the Pacific Coast groundfish fishery would be out of compliance with the B.O.

3.7 Impacts of Alternative 1

Alternative 1 extends streamer line requirements to small vessels consistent with current requirements in the NMFS Alaska Region. For small vessels there are different standards for vessels 1) with masts, poles, and rigging not using snap gear; 2) with masts, poles, and rigging and using snap gear;¹⁰ and 3) without masts, poles, and rigging. As referenced in Section 2.2, Alaska regulations include a weather exemption specific to small vessels. It also includes area-based exemptions from the streamer line requirement; a night setting requirement when using a floated mainline, and a lower weather safety exemption threshold for small vessels compared to the current threshold for large vessels.

3.7.1 Effectiveness in Reducing Short-Tailed Albatross Bycatch

3.7.1.1 General Requirements for Streamer Lines or Night Setting

Streamer Lines

The 2013 EA (NMFS 2013) describes a research program led by Washington Sea Grant and Oregon State University in collaboration with the fishing industry to develop effective and practical tools to reduce the mortality of albatrosses and other seabirds in the west coast longline fishery targeting sablefish. This research program responds to the 2012 B.O. (USFWS 2012) requirement for an adaptive management process that includes a research component to find “new or improved methods of reducing bycatch of short-tailed albatross that are safe and effective for the Fishery to use...” (USFWS 2017, p. 35). Such new information could be used to revise the regulations.

Although the abundance and assemblage of seabirds in the North Pacific is somewhat different than off the west coast, a recent paper by Melvin et al. (2019) shows that the use of streamer lines in Alaska longline fisheries led to a very substantial reduction in seabird bycatch. Across four target fisheries using longline gear (sablefish, Pacific cod, turbot, and Pacific halibut) albatross bycatch-per-unit-of-effort (BPUE) in observed sets declined by 88.7% (the effect on short-tailed albatross bycatch could not be separately estimated, because too few occurrences of incidental take were observed). However, this analysis of observer data reveals that a very small proportion of vessels account for the balance of seabird bycatch. For example in the Alaska sablefish fishery, of the 178 vessels monitored from 2013 to 2015, three vessels accounted for 46% of albatross bycatch and only 28% of these 178 vessels had any seabird bycatch at all. The authors suggest that targeted outreach is necessary to understand why relatively few vessels account for a larger fraction of bycatch and to encourage them to alter their fishing practices to reduce seabird bycatch.

A recent peer-reviewed publication by Gladics, et al. (2017) reports the results of the west coast research program mandated by the 2012 B.O. It assesses the efficacy of seabird avoidance gear and methods (including streamer lines, called bird scaring lines in the paper, and night setting) based on the standards established in Alaska regulations. The researchers collaborated with seven vessels in the limited entry sablefish endorsed longline sector. Four of the seven vessels studied were small vessels. Fishing occurred along the Southern Washington, Oregon, and Northern California coasts. To understand how long baited hooks were available to seabirds (which is a determinant of bycatch risk), fishing gear was fitted with time-depth recorders to obtain gear sink profiles. The time it took the recorders to sink below 2 m and 5 m was obtained and the distance behind the vessel was calculated using vessel speed. The two depth thresholds reflect the diving capabilities of different types of seabirds. Albatrosses are surface foraging birds, not diving below 2 m. A linear mixed-effects model was constructed to estimate the distance astern

¹⁰ With snap gear the gangion and hook are attached to the groundline by means of a mechanical fastener, usually during gear deployment.

the average floated and non-floated mainline sank below these diving depth limits. On floated mainline gear, floats are attached to the mainline at the midpoint between the weights that sink the gear to keep it on the seafloor. The combination of floats and weights can be different for each vessel. The floats elevate the mainline off the seafloor to minimize depredation by “sea lice” (isopods) and hagfish, which can occur when fish are immobile on the seafloor. Attack rates on baited hooks were observed as a proxy for bycatch risk, because actual bycatch events are rare. This allowed an assessment of attack rates for the portion of the gear below the bird scaring line and that portion beyond the bird scaring line.

The research confirmed that the Alaska regulations are sufficient to protect baits from bird attacks on longlines without floats on the mainline. But an important finding reported in the paper is that streamer lines, as currently configured at least, are less effective in mitigating seabird bycatch when floats are attached to the mainline. With floated gear, that portion adjacent to the float, having the slowest sink rate, sank below the threshold depths at more than twice the distance astern compared to the slowest sinking portion of non-floated gear. The estimated distance astern when the 2 m threshold (relevant to surface foraging birds including albatrosses) was reached was 157.7 m (+/- 44.8 m) for floated gear compared to 68.8 m (+/- 37.8 m) for non-floated gear. The distances are greater for the 5 m threshold. The slowest sinking portion of floated gear is thus exposed to seabird attacks well beyond the extent of the streamer lines. Black-footed albatrosses attack rates under bird scaring lines (0–40 m astern) and beyond bird scaring lines (40–90 m astern) were compared. Overall, attack rates were higher on floated longlines compared to non-floated lines. While the difference in attack rates for the portion of the gear that was under bird scaring lines was not statistically significant between the two gear types, the difference in attack rates was significant for the area of floated gear that extended beyond the extent of the bird scaring line.

Night Setting

Gladics et al. (2017) also report a retrospective analysis of seabird bycatch using WCGOP data. Observer data were available across different sectors using hook-line-gear but most data came from the limited entry sablefish fishery, because of the variation in observer coverage across different fishery sectors and the amount of fishing effort actually expended in different sectors. The authors conclude that “results show that night setting reduced bycatch of albatrosses without increasing the bycatch of non-albatross seabirds, increased retained sablefish catch, and had little effect on the total amount of discarded catch” (p. 93). Differences between sets using floated versus non-floated mainline were not reported, because at the time of this study observers were not recording information on these different gear configurations. It is likely that the conclusions about seabird bycatch would hold true across these gear configurations, because bycatch reductions are function of seabird species diurnal activity patterns. Albatross in particular are inactive at night so would not attack baited hooks no matter the mainline configuration. No conclusion can be reached from this paper on any difference between retained and discarded catch rates of floated versus non-floated mainline, but there is a possibility that these gear configuration could affect catch. (For example, differences in depredation could affect reported bycatch rates.)

Melvin et al. (2019) also evaluated observer data for the Alaska longline fisheries to assess the effect of night setting. Albatross BPUE declined by 91% while catch-per-unit-of-effort for the target species in the sablefish fishery increased by 6.7% while non-target catch increased by 4.7%. An increase in non-target catch could result in increased levels of finfish bycatch if the species are unmarketable or retention is prohibited by regulation. While seabird BPUE declined overall with night setting, rates for some non-albatross species increased, in particular Northern fulmar. While Northern fulmar are present off the west coast, they are much less abundant than in waters off Alaska. Estimated Northern fulmar mortality in U.S. west coast groundfish fishery sectors 2010-2016 for groundfish vessels fishing with hook-and-line gears, reported in Jannot et al. (2018, see Table 4), ranged from a high of 9.15 in 2012 to a low of 1.52 in 2013.

Furthermore, the population of Northern fulmar is relatively large, presenting less of a conservation concern than the potential bycatch of short-tailed albatross (and other albatross species).

3.7.1.2 Area Exemption South of 36° N. Latitude

An analysis of overlap between the distribution of albatrosses off the west coast and west coast groundfish fisheries (Guy et al. 2013) found that black-footed albatrosses, used as a proxy for short-tailed albatrosses, rarely occur south of 36° N. latitude. (Black-footed albatrosses were used as a proxy, because short-tailed albatrosses are relatively rare, making statistically valid inferences on fisheries overlap impossible.) Guy et al. (2013) computed an overlap index for black-footed albatross by fishery and region. The index value for the shelf break domain south of 36° N. latitude is well below the mean value and zero or near-zero for continental shelf and slope domains. Also, no short-tailed albatross have been observed south of 36° N. latitude in surveys.

While this exemption could slightly elevate the risk of short-tailed albatross take compared requiring the use of streamer lines throughout the west coast EEZ, as Melvin and Wainstein (2006) note, based on risk analysis “seabird mitigation requirements should be adjusted or eliminated wherever risk of seabird mortalities is minimal or absent.” This exemption merits consideration based on the associated low risk of seabird overlap in the area meaning the extra burden of seabird bycatch reduction methods may not be warranted.

3.7.1.3 Area Exemption Shoreward of 250 Fathoms

The aforementioned overlap analysis (Guy et al. 2013) also found that black-footed albatross overlap, and by extension short-tailed albatross, was low in the continental shelf, or nearshore, domain. As noted above, the index value for longline fisheries is zero for the shelf domain. However, as shown in Figure 5, using the 250 fathom contour to define the exemption would allow the fishery to operate in the shelf break region defined in the overlap analysis as between 201 and 1,000 m depth contours (109-547 fathoms). While this exemption is intended to encompass the operational area of the nearshore (non-sablefish) fishery, it would present an elevated risk of short-tailed albatross take in the region north of 36° N. latitude. It should be noted that the current Non-trawl Rockfish Conservation Area (RCA) has a seaward boundary varying between 100 and 150 fathoms and a shoreward boundary varying between the shoreline and 75 fathoms depending on latitude, as depicted in Figure 5. This means that any vessel not fishing relatively close to shore would be obligated to fish in the shelf break region. As noted in Section 3.5.2, 34 small vessels fished exclusively in the nearshore fishery. This fishery operates primarily in state waters but these vessels may occasionally fish beyond state waters in the small open area shoreward of the non-trawl RCA.

Operational data derived from WCGOP show that the proportion of annual estimates of fishing effort by all non-nearshore groundfish longline vessels, measured by observed hauls, occurring shoreward of the 250 fathom depth contour varied between 46% and 71% during the baseline period. This suggests that a substantial proportion of fishing effort would not be subject to the mitigation requirements (streamer lines, night setting) under this exemption. Therefore, this exemption would be expected to have a higher risk of short-tailed albatross bycatch and would likely not meet the purpose and need of this action.

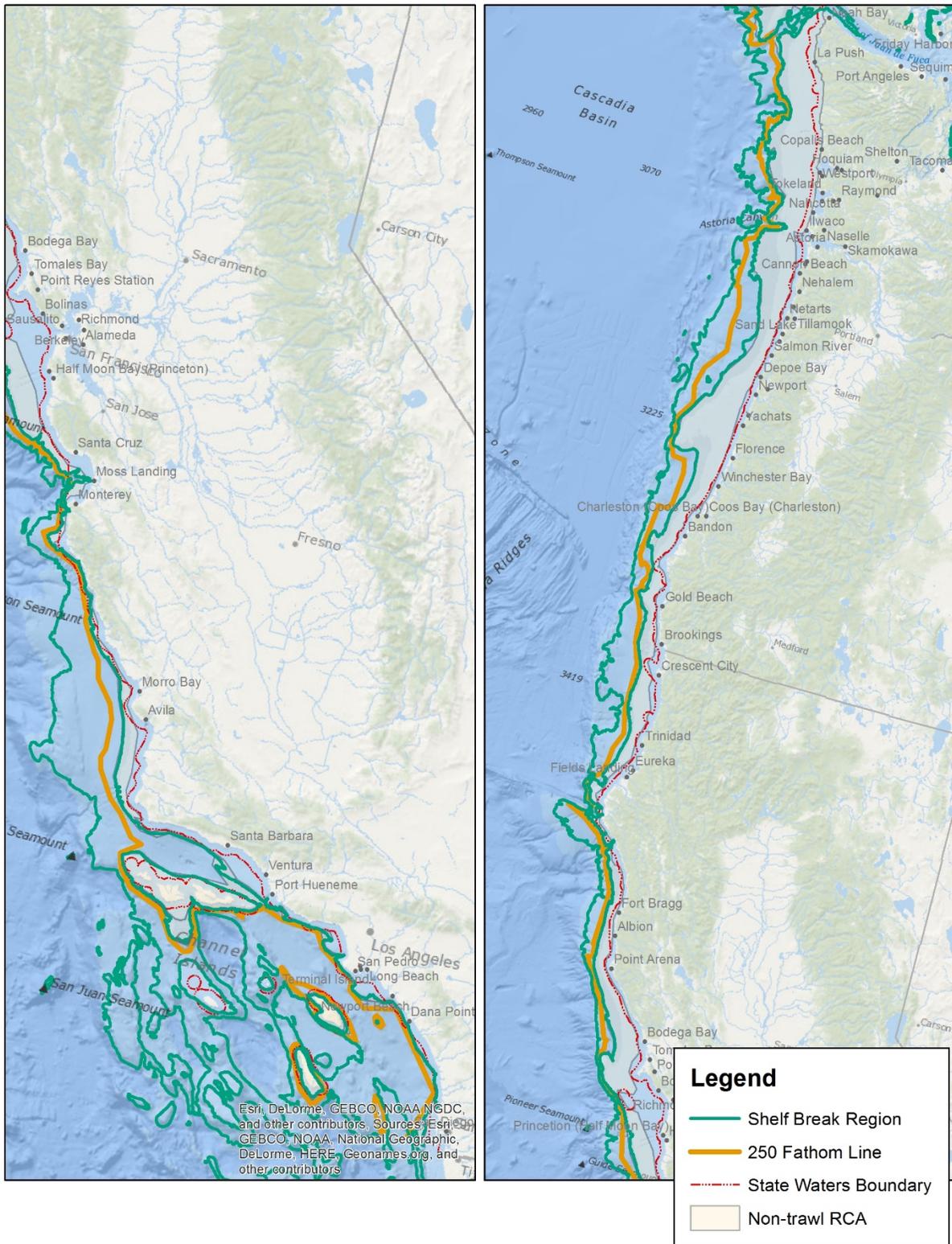


Figure 4. Comparison of shelf break region and 250 fathom contour as defined in Federal regulations.

3.7.1.4 Require Vessels Using Floated Mainline to Fish at Night

Many vessels attach floats to the mainline of the longline at the midpoint between the weights that sink the gear to keep it on the seafloor. The floats elevate the mainline off the seafloor to minimize depredation by “sea lice” (isopods) and hagfish, which can occur when fish are immobile on the seafloor. The actual configuration of floats and weights varies by vessel.

As summarized in Section 3.7.1.1, research reported by Gladics et al. (2017) demonstrates that current seabird avoidance measures are less effective in mitigating seabird bycatch when floats are attached to the mainline.

As discussed above, a retrospective analysis of observer data shows that albatross bycatch is significantly reduced at night, especially if gear is set between civil dusk and dawn. Requiring gear setting during this time interval would therefore more effectively mitigate against albatross bycatch when a floated mainline is used, compared to requiring the use of streamer lines; and therefore better meet the purpose and need for action described in Section 1.1.

3.7.1.5 Different Weather Safety Exemption for Small Vessels

If vessel operators decide to continue fishing during daylight hours when sea conditions are above the weather safety exemption threshold, streamer lines would not need to be used, and the risk of incidental take of short-tailed albatross would increase. A lower threshold weather safety exemption for small vessels could potentially increase the range of conditions when streamer lines would not have to be deployed, increasing this risk compared to applying the current weather safety exemption for large vessels to small vessels. However, most small vessels would anyway cease fishing well below the current weather safety exemption threshold for large vessels. Albatross are visual hunters so foraging behavior may be affected by rough weather, however, there is no research that specifically addresses this behavior.

3.7.2 Costs

3.7.2.1 General Requirements for Streamer Lines or Night Setting

A single streamer line costs about \$125 in materials and labor. As part of its outreach program, Washington Sea Grant has distributed streamer lines to groundfish longline vessels in the past. While this effort focused on the limited entry sector, and especially participants in the primary fishery, some streamer lines were distributed to small vessels. The USFWS Coastal Program has also been granted \$23,000 (sufficient to cover the cost of distributing about 130 streamer lines) to distribute streamer lines to small longline vessels in Washington, Oregon, and Northern California, with Oregon Sea Grant coordinating the distribution. Finally, NMFS obtained funding to distribute 28 streamer lines as of November 2018, and pending interest, NMFS may pursue further funding and/or support efforts to provide subsidized streamer lines through partner groups such as Sea Grant and partner agencies such as U.S. Fish and Wildlife Service.

If all the small vessels that fished in the 2013-2017 baseline period continued to participate in the commercial longline fishery after this alternative was implemented, 387 vessels would have to acquire and deploy streamer lines or restrict themselves to night-setting (see Section 3.5.2). The direct cost, whether borne by the vessels themselves or other entities distributing streamer lines to them, would be \$48,375 based on the estimated cost per streamer line of \$125. This would be the maximum cost under the assumption that all vessels chose the streamer line option. Based on PacFIN landings data, there were an additional 34 small vessels that made landings exclusively in the nearshore fishery during the baseline period. If these vessels only fish in state waters they would not have to acquire or deploy streamer lines but if any of these vessels also fish in Federal waters they would be subject to the requirements. There is

also the indirect cost, in terms of the effect on vessel operations, of having to deploy the streamer lines, which cannot be quantified.

Additionally, streamer lines may occasionally get entangled in fishing gear either due to inexperience in the use of streamer lines or windy conditions. Streamer line deployment would result in a modest increase in indirect cost (any additional labor involved) and could reduce fishing time and thus catch if the streamer lines entangle in the fishing gear if deployed improperly.

Most vessels make relatively few trips in the non-nearshore fishery per year (81% make 10 or fewer trips annually). In Section 3.5.4 this was used as a metric of engagement in the fishery and it was suggested that the majority of vessels exhibit low engagement and high dependence (measured by the percentage of total ex-vessel revenue derived from the non-nearshore fishery). Vessel operators with low participation rates (noting that the median value is two trips per year) could decide to stop participating entirely rather than comply the streamer line requirement.

The Coast Guard requires navigation lights for all power driven vessels (33 CFR 83), regardless of whether they exclusively operate during the day. Some vessels subject to the proposed action may not have additional deck lighting for conducting fishing operations at night. However, vessels could instead choose streamer lines as their preferred seabird bycatch mitigation measure if they wanted to avoid incurring any associated equipment costs associated with fishing at night.

3.7.2.2 Area Exemption South of 36° N. Latitude

Vessels operating exclusively south of 36°N latitude would not need to acquire streamer lines, a cost saving. Using PacFIN landings data, of the 387 small vessels in the fishery during the 2013-2017 baseline period, 65 vessels only made landings south of this line based on the port of landing. Only one of the 37 large vessels in the fishery made all of its landings in the south during the baseline period.

For all commercial groundfish longline vessels (i.e., in both size categories) the average proportion of observed vessels fishing south of 36°N latitude was 27% according to WCGOP. The proportion varied annually from 40% to 13%. However, some of these vessels switched between the two areas, varying from none in 2016-2017 to slightly more than 3% in 2013. WCGOP data show that 19% of fishing effort, measured by observed hauls, occurred south of 36°N latitude during the baseline period.

This option would provide relief for vessels fishing only in the south. If fishing patterns in the future are like they were during the baseline period, 16% of small vessels would benefit from this exemption according to PacFIN landings data, while WCGOP data suggests the proportion could be as high as 40%. However, PacFIN landings data would not account for vessels that landed fish in a port north of 36°N latitude while fishing for all or part of a trip south of that line. WCGOP data suggests that overall slightly less than a third of observed fishing effort occurred south of this line. Vessels fishing both north and south of 36°N latitude would bear the cost of acquiring the gear but would only assume any indirect costs stemming from streamer line deployment (or night setting) when fishing north of the line.

3.7.2.3 Area Exemption Shoreward of 250 Fathoms

Vessels operating exclusively shoreward of the 250 fathom depth contour line would not need to acquire streamer lines, a cost saving. The 250 fathom depth contour is intended to encompass the operational area of the nearshore fishery. However, for this analysis it is assumed that the nearshore fishery operates exclusively in state waters and would be exempt from the streamer line requirement. Therefore, the estimated number of affected vessels presented here (424 in total) do not include vessels operating exclusively in the nearshore fishery. In the PacFIN database trips are classified as nearshore based on landings including any one of a number of nearshore species.

As noted above, a large proportion of observed fishing effort occurring shoreward of the 250 fathom contour during the baseline period. Fifty-three percent of observed vessels accounted for this fishing effort, although between 27% and 42% of these vessels fished both shoreward and seaward of the 250 fathom depth contour. Due to the depths closed to fishing within the non-trawl RCA, it is likely that a large proportion of the observed fishing effort shoreward of 250 fathoms occurred deeper than 100 fathoms, or in the shelf break region where albatrosses are more abundant, particularly north of 36° N. latitude.

Given the criteria used here, based on PacFIN data, all 387 small vessels would have to acquire streamer lines. To the degree that streamer line deployment represents an indirect cost (due the impact on vessel operations) costs could be avoided on those trips occurring shoreward of the 250 fathom contour. As shown in Figure 5, along a lot of the coast much of area between the 250 fathom contour and the state waters boundary is closed to the groundfish longline fishery, because it is within the non-trawl RCA. Operational costs would be avoided in in the remaining open area between the shoreward boundary of the non-trawl RCA and the state waters boundary.

3.7.2.4 *Require Vessels Using Floated Mainline to Fish at Night*

Section 3.5.5 summarizes available data on vessels that make one day trips and are most likely to fish exclusively during daylight hours. While PacFIN fish ticket data for Washington and the Oregon fixed gear logbook dataset provide separate estimates of the number or proportion of vessels only making one-day trips, only the WCGOP data set provides information on the use of a floated mainline. The use of floated longline is likely to vary by area and fishing strategy since vessels may choose to use it or not depending on depredation of the catch, which is likely site specific. Overall, WCGOP data, reported for 2016 and 2017 only, show that 56% of observed large vessels used a floated mainline in those years while 34% of observed small vessels did. However, 8% of observed small vessels and 12% of observed large vessels used both floated mainline and mainline without floats on different sets. Section 3.5.5 presents information from three data sources on vessels that exclusively make one day trips and only fish during the day. Testimony during the April 2019 Council meeting averred that these vessels would be adversely affected by this requirement.

If not already equipped with the equipment needed to fish at night, vessels using a floated mainline would have to incur that additional cost of purchasing such equipment. As discussed above, vessels fishing at night may experience higher catch rates, potentially increasing ex-vessel revenue. This could offset some or all of any additional costs associated with fishing at night.

3.7.2.5 *Different Weather Safety Exemption for Small Vessels*

A lower weather safety exemption for small vessels would result in a very modest or negligible reduction in operational costs. Other things being equal, small vessels would still need to acquire streamer lines but would not have to deploy them when sea conditions exceed the threshold. The indirect costs of deployment during rough seas could be higher compared to calmer sea conditions due to the greater risk of fouling with the gear or vessel.

3.7.3 *Vessel Operations and Safety*

3.7.3.1 *General Requirements for Streamer Lines or Night Setting*

This section discusses that some aspects of this alternative would create new complexities in gear deployment and vessel operation that initially, when vessels and crew are not experienced with the requirements could create new safety concerns as compared to status quo. It is not possible to quantify

this change, but it is expected that over time and with the accumulation of experience that these effects would be diminished.

Using streamer lines adds to the complexity of deploying the gear and raises potential safety issues. For example, streamer lines may become entangled in the propeller or the fishing gear during the setting of the longline and create a safety hazard. Entanglement is a greater risk when vessels are operating at slow speeds, although a slower speed allows the gear to sink to a depth inaccessible to surface diving birds before reaching the extent of streamer lines (Melvin and Wainstein 2006). Vessels using snap-on gear generally must operate at slower speeds; performance standards specific to this gear configuration are intended to provide sufficient protection from bird strikes and allow gear deployment to be conducted in a way to minimize the risk of fouling the streamer lines.

According to the 2013 EA (NMFS 2013), industry experts with experience in the Alaskan groundfish fisheries report safety issues are rare there, because of long-term experience using streamer lines and a regulatory exemption from using streamer lines in rough weather (50 CFR 679.24(e)). Initially after streamer lines were required, the fleet may experience more difficulties in deploying them correctly, however, over time, deployment difficulty is expected to dissipate similar to the trajectory in Alaska. Additionally, Sea Grant has engaged in campaigns supporting voluntary use of streamer lines for the small groundfish vessels since 2015, so an unknown portion of the fleet are already familiar with the use of streamer lines.

Further, low-tensile strength “break-aways” can be integrated into streamer lines so that if entanglements occur, the line breaks without creating a safety hazard such as entanglement in the prop (Melvin 2000). Outreach efforts (for example, by state Sea Grant extension programs) could reduce the risk of safety hazards by teaching fishermen safe deployment techniques.

Additionally, there may be added complexity for vessels that switch between gear types that have different streamer line configuration requirements. WCGOP data indicates that 3.7% of small vessels and 5.9% of large vessels observed in the baseline period used snap gear. However, these proportions include vessels that switched between using snap gear and other configurations; 1.5% of small vessels switched between snap gear and other configurations while all 5.9% of large vessels did so. Anecdotal information suggests that no groundfish longline vessels participating in the non-nearshore fishery lack the necessary masts, poles, and rigging to deploy streamer lines and would therefore have to deploy buoy bags. (It is possible that some vessels fishing exclusively in the nearshore fishery may lack masts, poles, and rigging but are unlikely to fish in Federal waters.) If there are in fact vessels without masts, poles, and rigging they would be less than 55 feet LOA.

Reduced visibility at night could make it more difficult to operate the vessel and conduct fishing operations if night setting was chosen as an alternative to using streamer lines. This could also increase the risk of injury to crew during gear deployment. Proper equipment such as deck lighting could mitigate these safety concerns. However, many of both small and large vessels participating in the fishery make multi-day trips (see Section 3.5.5) and some vessels already set gear at night, suggesting that the impact of voluntarily operating at night would be negligible.

Additionally, the retrospective analysis of observer data cited above (Gladics et al. 2017) found that “average retained catch per set was more than 40% greater during night-time sets (0.61 mt) compared with day sets (0.43 mt), which has clear biological as well as statistical significance. Discarded catch was only slightly higher at night (0.27 mt) compared with day sets (0.23 mt), which was statistically significant but of questionable biological significance” (p. 91). The increase in retained catch would translate into higher ex-vessel revenue on average. However, this research focuses on vessels targeting sablefish on the continental slope. Melvin et al. (2019) found a similar effect analyzing observer data

from Alaska hook-and-line fisheries for sablefish and Pacific cod, suggesting that the effect may apply across a range of fishery targets. No comparable analysis has been done for vessels targeting other west coast species assemblages (e.g., rockfish, thornyheads) although vessels or sets targeting these species likely represent a very small proportion of total groundfish longline fishing effort in Federal waters.

3.7.3.2 Area Exemption South of 36° N. Latitude

Vessels operating south of 36°N latitude would be exempt from using streamer lines, so vessel operations would be unaffected in that region and there would not be any potential changes to vessel operation and safety as compared to no action. Vessels fishing near or across this latitude boundary would need to ensure that the streamer lines are deployed when setting gear north of the line. Compliance would be slightly more complicated for these vessels if they do not monitor their exact position in relation to the boundary when setting gear.

3.7.3.3 Area Exemption Shoreward of 250 Fathoms

As with the latitude-based exemption, vessel operations would be unaffected in the exemption area and vessels would not encounter any elevated safety risks associated with their deployment. Vessels fishing both seaward and shoreward of the 250 fathom depth contour line would need to carry streamer lines and deploy them when required.

3.7.3.4 Require Vessels Using Floated Mainline to Fish at Night

Reduced visibility at night could make it more difficult to operate the vessel and conduct fishing operations and could increase the risk of injury to crew during gear deployment unless vessels are equipped with deck lighting for safe fishing operations to mitigate safety concerns. Many vessels participating in the fishery make multi-day trips and some portion of vessels already set gear at night. However, as discussed in Section 3.5.5, a portion of the fleet primarily or exclusively makes day trips, fishing during the day and returning to port each night. The estimates of the proportion of vessels exclusively making day trips varies across the data sets with only the WCGOP data set, covering a relatively small number of observed vessels, specific to vessels using floated mainlines. In that data set 10 of the 21 (48%) observed small vessels using floated mainline and fishing in Federal waters only made trips less than 24 hours long during which all sets occurred between civil dawn and civil dusk.

Vessels already making multi-day trips should be able to adapt to exclusively night fishing when using floated mainline gear but this option could adversely affect the day boat fleet that uses floated mainline gear. If making a single set, these vessels would have to leave port early enough to finish setting their gear at least one hour before local sunrise. If making two or more sets they would likely have to leave port in the late afternoon or early evening so as to finish deploying the gear on the final set at least one hour before local sunrise.

Since a floated mainline is integral to fishing in some regions as expressed during public comment at the Council meeting in April 2019, some fishery participants expressed concern over the inconvenience and potential safety risks for these day boats if required to set gear at night. The use of floated mainline gear is only collected on observed vessels, and trip length is collected inconsistently, as detailed in Section 3.5.5.

The Coast Guard requires navigation lights for all power driven vessels (33 CFR 83), regardless of whether they exclusively operate during the day. Additionally, the Coast Guard provides recommendations for determining safe speeds for daytime and nighttime operations (<https://www.navcen.uscg.gov/pdf/navRules/navrules.pdf>). While vessel crew on day boats may have limited experience with fishing at night, at least initially, by following these requirements and guidance these vessels should be able to operate safely at night with prudence. But there could be an increased

safety risk associated with requiring night setting until crew gained experience in deploying gear safely at night.

As noted by Melvin et al. (2019), in waters around Alaska, day lengths are long in the summer months making it difficult to set at night at that time of the year. This would be less of an issue off the west coast. The shortest nighttime period, approximating the northern-most location in the west coast EEZ (48° 30' N latitude), is 7 hours and 53 minutes (U.S. Naval Observatory, Astronomical Applications Department). (This is the duration from sunset to sunrise; the interval between civil dusk and civil dawn would be approximately two hours less.)

3.7.3.5 Different Weather Safety Exemption for Small Vessels

Smaller vessels are likely to have a harder time operating in rough seas. While many other vessel characteristics are factors, vessel length is a good proxy for seaworthiness. Generally, the smaller the vessel, the harder time it will have as weather deteriorates. As shown in Figure 6, vessel lengths of the potentially affected vessels (based on participation in the non-nearshore fishery during the baseline period) skew to smaller values. The smaller vessels are likely to benefit from a lower weather safety exemption threshold by avoiding more difficult operating conditions during rough weather.

A lower weather safety exemption threshold for smaller vessels would increase safety since there is a higher risk of fouling the gear or vessel when deploying streamer lines during rough weather. Smaller vessels may be less seaworthy in rough weather to begin with and thus confront these safety risks in more moderate sea conditions compared to larger vessels.

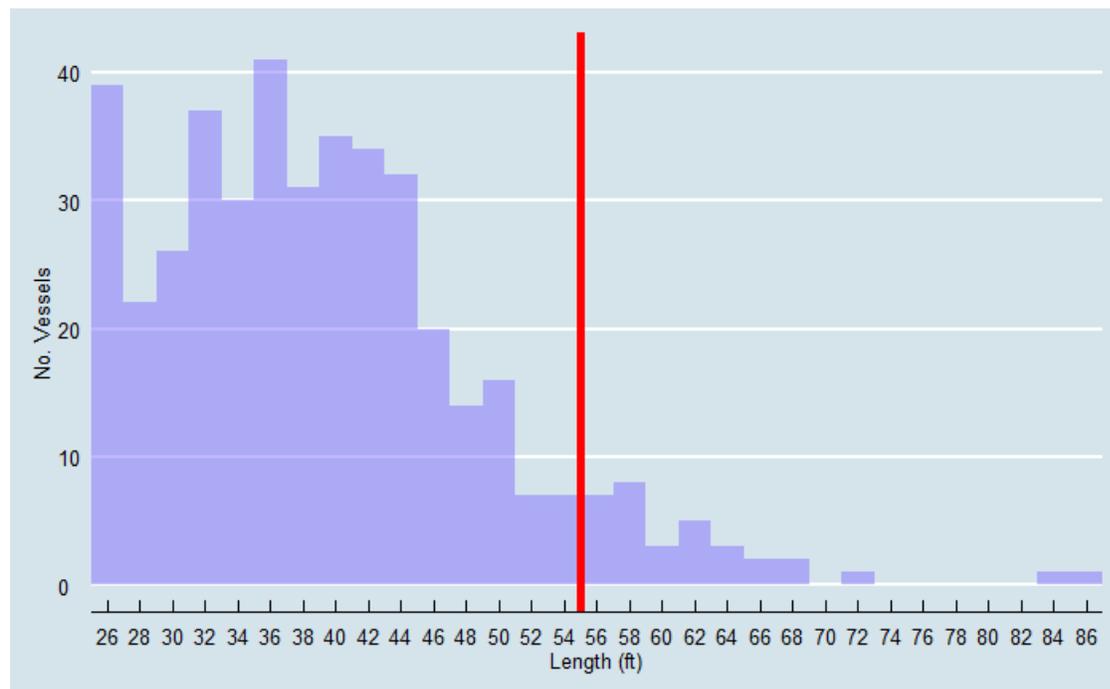


Figure 5. Distribution of vessel lengths during the baseline period. (Vessels in the non-nearshore fishery.)

3.8 Impacts of Alternative 2

Alternative 2 adopts the same streamer line requirements for small vessels as under Alternative 1, the exemption south of 36° N latitude described in Alternative 1, and a lower weather safety exemption

threshold for small vessels. Alternative 2 includes a variation on the requirement to night set when using a floated mainline under which a vessel using a floated mainline would not be required to night set when deploying a streamer line with a minimum length of 300 feet.

3.8.1 Effectiveness in Reducing Short-Tailed Albatross Bycatch

Except for the mitigation measures proposed when deploying a floated mainline, the measures proposed under Alternative 2 are equivalent to, and would be as effective as, Alternative 1 in deterring albatross from diving on baited hooks and potentially being killed when hooked or entangled, as discussed in Section 3.7.1.1.

Section 3.7.1.4 provides the rationale for requiring vessels using a floated mainline to set gear at night (between civil dusk and dawn). The exemption to night setting when using a floated mainline proposed under Alternative 2 is unlikely to be effective in deterring seabirds from attacking baited hooks. Vessels would be exempt from the requirement when deploying a streamer line with a minimum length of 300 feet. Note that this is part of the current streamer line specification for large vessels not using snap gear (50 CFR 660.24(c)(3)(iii)). However, the Council's intent in its preliminary preferred alternative was to denote a streamer line design that was longer than the current standard. The efficacy or even feasibility of extending the streamer line length longer than the current standard to deter seabirds diving on gear when deploying a floated mainline has not been researched or tested. The current design of streamer lines is the result of decades of research (Gladics et al. 2017; Melvin 2000; Melvin et al. 2019; Melvin and Wainstein 2006). Further research would be necessary to create and test design specifications for streamer lines or other mitigation measures besides night setting that effectively reduce the risk of albatross take when using a floated mainline.

Only the aerial extent of the streamer line is an effective bird deterrent. This aerial extent is a function of the height of the attachment point, vessel speed, the weight of the streamer line, and drag on the streamer line caused by the terminal buoy and any portion of the streamer line on the water surface. By itself, lengthening the streamer line would not result in an equivalent increase in its aerial extent, because the increased line weight would result in some portion of the increased length sagging into the water. Increasing the aerial extent would require adjusting the other forces acting on the line: the height of the attachment point, line weight, drag, or vessel speed. The current specifications assume that a large proportion of the streamer line will in fact sag into the water. For example Alaska regulations for small vessels not using snap gear require a minimum length of 300 feet (91.4 m) with streamers in the air for at least 131 feet (40 m). This specification thus makes an allowance of the total length being 2.3 times the effective aerial extent of the streamer line.

Gladics et al. (2017) used time-depth recorders to assess when the fastest and slowest portions of the mainline sank below the zone accessible to diving seabirds, which for albatrosses is 2 m. The mean distance astern at which the slowest sinking portion of floated mainlines sank below the 2 meter benchmark was 157.7 m with a 95% confidence interval of ± 44.8 m. They also found that birds attacked baited hooks beyond the aerial extent of the streamer line at significantly higher rates when a floated mainline was used compared to a non-floated mainline, reflecting the continued availability of the bait to them. The mean value for the distance astern suggests a specification for the aerial extent of the streamer line when using a floated mainline substantially longer than the current specification for vessels not using snap gear: an aerial extent of ~160 m (525 feet) versus 40 m (131 feet). It is unlikely that this increase in aerial extent could be achieved solely by increasing the overall length of the streamer line. Furthermore, a minimum length specification of 91.4 m (300 feet) is substantially shorter than the aerial extent required, 160 m (525 feet), necessary to fully cover the distance within which diving albatrosses could access baited hooks.

The proposed option of deploying a streamer line at least 300 feet long may provide partial coverage of a sinking mainline with floats and thus some level of deterrence. Any level of voluntarily night setting would also provide consequent mitigation of albatross bycatch. But compared to requiring night setting as under Alternative 1, this feature of Alternative 2 increases the risk of albatross bycatch.

Alternative 2 does not include an exemption from deploying streamer lines for vessels fishing shoreward of a line representing the 250 fathom depth contour. Compared to Alternative 1, this presents a lower risk of albatross take (see Section 3.7.1.3).

The risk associated with the exemption south of 36° N latitude is discussed in Section 3.7.3.2. Based on information on the distribution of short-tailed albatross off the west coast, the risk of not requiring streamer lines south of 36° N latitude is considered low.

The risk associated with setting a lower weather safety exemption threshold for small vessels is discussed in Section 3.7.1.5. Although streamer line deployment would not be required when sustained winds exceed 21 knots, albatross may be less likely to forage in windier conditions, potentially reducing this risk somewhat.

3.8.2 Costs

Costs associated with the requirements under Alternative 2 are likely to be similar to those described for Alternative 1, except that vessels using floated mainline could avoid any costs associated with fishing at night (required under Alternative 1) by instead deploying a streamer line at least 300 feet in length. Vessels would also avoid costs associated with the deployment of streamer lines due to the exemption from the requirement south of 36° N. latitude. Vessels fishing shoreward of 250 fathoms in Federal waters would have to deploy streamer lines, an additional cost compared to the depth-based exemption described under Alternative 1.

3.8.3 Vessel Operations and Safety

The impacts of Alternative 2 would be similar to those described for Alternative 1 on vessel operations except that streamer lines would have to be deployed in Federal waters shoreward of the 250 fathom depth contour north of 36°N latitude, which is not required under Alternative 1.

Alternative 2 specifies a lower weather safety exemption threshold of sustained winds above 21 knots, which for smaller vessels would increase safety since there is a higher risk of fouling the gear or vessel when deploying streamer lines during rough weather. Smaller vessels may be less seaworthy to begin with and thus confront these safety risks in more moderate sea conditions compared to larger vessels. As noted in Section 3.7.3, vessel length data indicate that the group of vessels less than 55 feet tends to skew towards shorter lengths, which may indicate more vulnerability to adverse weather conditions.

3.9 Impacts of Alternative 3 (FPA)

3.9.1 Effectiveness in Reducing Short-Tailed Albatross Bycatch

Except for the mitigation measures proposed when deploying a floated mainline, the measures proposed under Alternative 3 are equivalent to, and would be as effective as, Alternative 1 in deterring albatross from diving on baited hooks and potentially being killed when hooked or entangled, as discussed in Section 3.7.1.1. Alternative 3 also differs from Alternative 1 by not including the exemption from mitigation requirements for vessels fishing shoreward of the 250 fathom depth contour; this lowers the risk of albatross bycatch that is discussed in Section 3.7.1.3.

As discussed in Section 3.7.1.1 Gladics et al. (2017) and Melvin et al. (2019) found that night setting (between civil dusk and dawn) significantly reduced seabird bycatch based on retrospective analyses of observer data. Gladics et al. (2017) also found that the mean distance that the slowest portion of a floated mainline sank below the 2 meter zone in which baited hooks are accessible to surface foraging species including albatrosses ($157.8 \text{ m} \pm 44.8 \text{ m}$) was significantly beyond the required aerial extent of streamer lines (20 to 40 m depending on vessel length). Under Alternative 3 night setting is an optional alternative to the requirement to deploy streamer lines. Some vessels may prefer to set at night for operational reasons or because of the higher catch rates observed during night. Partial coverage of a sinking mainline with floats by streamer lines during daylight hours and any level of voluntarily night setting would provide partial mitigation of albatross bycatch but would not be as effective as requiring night setting for vessels using a floated mainline. Compared to the night setting requirement under Alternative 1, Alternative 3 increases the risk of albatross bycatch.

3.9.2 Costs

Costs associated with the requirements under Alternative 3 are likely to be similar to those described for Alternative 1 with respect to the acquisition and deployment of streamer lines and the exemption from streamer line deployment south of 36° N . latitude. Vessels fishing shoreward of 250 fathoms in Federal waters would have to deploy streamer lines, an additional cost compared to the depth-based exemption described under Alternative 1. A portion of the fleet fishes exclusively during daylight hours; this is especially true of the so-called day boats described in Section 3.5.5. Since night setting is a voluntary alternative to streamer line deployment under this alternative, vessel owners using a floated mainline that do not currently operate at night would not have to incur any new costs for equipment upgrades necessary to fish at night as would be the case under Alternative 1.

3.9.3 Vessel Operations and Safety

The impact of Alternative 3 on vessel operations and safety would be similar to those described for Alternative 1 on vessel operations except that streamer lines would have to be deployed in Federal waters shoreward of the 250 fathom depth contour north of 36° N latitude, which is not required under Alternative 1. This would mean that there would be additional area in which fishing would be subject to any additional vessel operation complexity or safety concerns due to the use of streamer lines. Since night setting is a voluntary option, vessels that currently operate and/or fish exclusively during daylight hours would not have to acquire the expertise necessary to operate at night as would be the case under Alternative 1 when using a floated mainline. This likely lowers the safety risk under this alternative, at least while these vessel operators become accustomed to fishing at night.

Alternative 3 specifies a lower weather safety exemption threshold of sustained winds above 21 knots, which for smaller vessels would increase safety since there is a higher risk of fouling the gear or vessel when deploying streamer lines during rough weather. Smaller vessels may be less seaworthy to begin with and thus confront these safety risks in more moderate sea conditions compared to larger vessels. As noted in Section 3.7.3, vessel length data indicate that the group of vessels less than 55 feet tends to skew towards shorter lengths, which may indicate more vulnerability to adverse weather conditions.

3.10 Management and Enforcement Considerations

Extending the streamer line requirement to small vessels would increase the management and enforcement burden because compliance would have to be monitored for a greater number of vessels than is the case under the current requirement for vessels 55 feet LOA and above. Streamer line configuration would also vary depending on vessel size and gear set up so enforcement personnel would have to be familiar with these requirements and determine which are required for a particular vessel under

observation. Area exemptions would complicate management and enforcement because enforcement personnel would have to determine whether a vessel was operating in an exempted or un-exempted area (i.e., north or south of 36° N latitude or shoreward/seaward of the 250 fathom depth contour).

Night setting either as a voluntary or mandatory alternative to streamer line use would require enforcement personnel to determine whether gear had been set after civil dusk and before civil dawn (e.g., at least one hour after local sunset/before sunrise). If required when using a floated mainline, enforcement personnel would also have to identify the gear configuration to decide whether the vessel operator was in compliance. This would not be possible during the period when the gear was on the seabed between gear deployment and retrieval. Enforcement personnel would have to observe the vessel when the gear is onboard or being set or retrieved.

3.11 Summation of the Alternatives with Respect to Net Benefit to the Nation

Alternative 1 would result in an unquantified net benefit to the Nation by reducing the likelihood of incidental take of short-tailed albatross, contributing to the population's recovery compared to No Action. The area exemptions south of 36° N latitude and the weather safety exemption contribute to net benefit by modestly decreasing costs to fishery participants with a low risk of increasing the likelihood of incidental take of short-tailed albatross. The 250 fathom depth-based exemption may reduce net benefit; while reducing costs for vessels fishing shoreward of 250 fathoms, this exemption could increase the likelihood of incidental take of short-tailed albatross.

Alternative 2 would result in an unquantified net benefit to the Nation compared to No Action, which would be similar to Alternative 1. Allowing vessels deploying a floated mainline to use a streamer line at least 300 feet in length instead of night setting, while reducing costs to fishermen, is likely to increase the risk of short-tailed albatross take. Compared to Alternative 1, not exempting vessels fishing shoreward of the 250 fathom depth contour from mitigation requirements would impose additional costs to fishing vessels but would also produce benefits by reducing the risk of albatross take resulting from this exemption.

Alternative 3, the final preferred alternative, would result in an unquantified net benefit to the Nation compared to No Action, which would be similar to Alternative 1. However, not requiring vessels to set at night when deploying a floated mainline, while reducing costs to fishermen, is likely to increase the risk of short-tailed albatross take. Compared to Alternative 1, not exempting vessels fishing shoreward of the 250 fathom depth contour from mitigation requirements would impose additional costs to fishing vessels but would also produce benefits by reducing the risk of albatross take resulting from this exemption.

4 Magnuson-Stevens Act National Standards

The 10 National Standards in Magnuson-Stevens Act Section 301 are listed below with a brief discussion of how the final preferred alternative is consistent with the National Standards, where applicable. In recommending a final preferred alternative, the Council must consider how to balance the national standards.

National Standard 1 — Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

The PCGFMP determines how overfishing and optimum yield are determined for all Pacific Coast groundfish stocks and provides measures by which the fisheries are managed in order to prevent overfishing and achieve optimum yield. Neither the no action nor the action alternatives including the final preferred alternative would change these measures.

National Standard 2 — Conservation and management measures shall be based upon the best scientific information available.

The proposed action analyzed in this document utilizes the best scientific information available on seabird bycatch and fishery operation off the west coast (see Section 3.4).

National Standard 3 — To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The PCGFMP manages stocks as a unit and utilizes stock complex designations and measures in order to manage interrelated stocks of fish as a unit. The proposed action does not affect the management of the stocks of PCGFMP management unit species.

National Standard 4 — Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be; (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The proposed action would apply to any commercial groundfish longline vessel authorized to fish in the west coast EEZ with specific requirements varying depending on vessel length. The proposed action would not allocate or assign fishing privileges.

National Standard 5 — Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

This proposed action would provide two options available to commercial groundfish longline vessels in order to allow each operator to choose the most efficient option for their purposes while achieving seabird bycatch mitigation.

National Standard 6 — Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The proposed action includes two main options for seabird bycatch mitigation measures, night setting and deployment of streamer lines. Within the streamer line option, this proposed action allows for multiple set-ups of streamer lines depending on whether a vessel has a masts, poles, and rigging or whether a vessel uses snap or non-snap gear. These different options allow for each vessel to determine the most efficient and effective seabird bycatch mitigation measure for their unique operation.

National Standard 7 — Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The proposed action does not create unnecessary duplication.

National Standard 8 — Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of National Standard 2, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

While not a direct component of this proposed action, the Oregon Sea Grant program in collaboration with the U.S. Fish and Wildlife Service are providing free streamer lines to fishermen affected by this action. This would be expected to help minimize any economic costs to small vessels and their communities posed by the requirement to obtain new equipment.

National Standard 9 — Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The intent of this proposed action is to mitigate and minimize seabird bycatch in the West Coast groundfish fisheries. This proposed action would bring the fishery into compliance with the 2017 USFWS B.O. on the subject of bycatch of endangered short-tailed albatross. This action would likely also have positive impacts by reducing the bycatch of other seabirds behaving similarly to short-tailed albatross that may interact with fishing vessels, such as black footed albatross.

National Standard 10 — Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

As part of this proposed action, the Council selected a weather safety exemption for vessels 26-55 feet LOA that makes streamer line use discretionary when sustained winds exceed 21 knots (Small Craft Wind Advisory) out of concern for the safety of these smaller vessels. Vessels may voluntarily set at night as an alternative to deploying streamer lines. As a voluntary measure it is assumed that any such vessel would have the requisite equipment and operators the experience to safely fish at night. Vessels are already required to have navigation lights and the Coast Guard provides recommendations on safe vessel speeds for different conditions.

5 Preparers and Persons Consulted

Preparers

Christopher Dahl, Pacific Fishery Management Council

Keeley Kent, National Marine Fisheries Service West Coast Region

Contributors

Jason Jannot, Northwest Fisheries Science Center

Tom Good, Northwest Fisheries Science Center

Todd Phillips, Pacific Fishery Management Council

Persons (and Agencies) Consulted

Ed Melvin, Washington Sea Grant

Amanda Gladics, Oregon Sea Grant

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