

# Commercial Dungeness Crab Rules – Coastal Comprehensive Line Marking Rules – (Decision)

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## Fish and Wildlife Commission Presentation Summary Sheet

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### Meeting date:

4/3-4/2025; Fish Committee, Fish and Wildlife Commission

### Agenda item:

Coastal Dungeness Crab - Comprehensive Line Marking, Decision

### Presenter(s):

Lorna Wargo, Intergovernmental Ocean Policy Coordinator

Megan Hintz, Coastal Marine Fisheries Whale Entanglement Coordinator

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### Introduction

Since 2019, the Fish and Wildlife Commission has adopted a series of regulations aimed at reducing entanglement risks between marine mammals and commercial Dungeness crab gear. In March, we introduced new requirements for comprehensive gear marking in Washington's non-treaty fixed-gear fisheries. While the proposed rule changes encompass both the coastal and Puget Sound commercial Dungeness crab fisheries, modifications in Puget Sound are primarily administrative. For the coastal fishery, the proposed changes serve two key objectives:

1. **Improving Gear Visibility and Traceability** – Comprehensive line marking enhances the ability to identify entangled gear, addressing a major data gap. Currently, 50% of whale entanglements along the West Coast cannot be traced to a specific fishery due to insufficient identifying information. Closing this gap will help assess the extent of entanglements involving Washington's coastal gear and guide effective risk-reduction measures.
2. **Reducing Whale Entanglement Risk** – The proposal sets limits on surface gear, including line length and the number of buoys, to minimize entanglement risks.

The new requirements will be phased in, starting with a critical part of the line – the surface gear – first. The surface gear limits would go into effect December 1, 2025 for the upcoming crab season. The existing 12-inch red mark on vertical line will remain in effect until December 1, 2028 at which time a minimum of 15 fathoms of vertical line must be marked. The phased approach recognizes the compliance costs for crabbers and the time required for dual-colored manufactured line which is a new product to be widely available.

Public comment raised a safety issue with the proposed limit on the length of surface line. Operators of large vessels are concerned that the permissible length is insufficient for crew to safely pull the pot from the seafloor. Due to insufficient data to establish exemption criteria in the rule, WDFW is adding to the proposed language provision for a permit to assess exemptions on a case-by-case basis.

Beyond regulatory actions, WDFW has implemented a multi-faceted approach to address the rise in whale entanglements observed in the state's coastal crab fishery. This effort includes collaboration with federal

scientists, consultation with whale experts, and the development of a Conservation Plan (CP)—an essential component of an Incidental Take Permit (ITP) application under the Endangered Species Act. WDFW also works closely with Oregon and California fishery managers, engages with environmental organizations, and conducts extensive outreach with commercial crabbers.

The Washington coastal Dungeness crab fishery is also included in the [West Coast Take Reduction Team](#) (TRT) the National Marine Fisheries Service is forming under the Marine Mammal Protection Act (MMPA). The TRT, composed of representatives from the fishing industry, state and federal resource managers, scientists, and conservationists, will develop a take reduction plan through consensus. The plan has two primary objectives:

- **Short-term goal:** Within six months of implementation, reduce incidental mortality and serious injury of marine mammals from commercial fishing to levels below the potential biological removal (PBR) threshold. [see next section for explanation of PBR]
- **Long-term goal:** Within five years, further reduce incidental mortality and serious injury to near-zero levels, while considering economic impacts, available technology, and existing fishery management plans.

Collectively, the existing risk reduction/gear marking regulations and the new ones proposed in this rule action form the foundation with which Washington will meet its federal conservation obligations. The regulations are key elements of Washington’s CP – the framework for risk reduction measures and adaptive management strategies intended to achieve compliance with the ESA. These regulations not only support Washington’s conservation goals under the ESA but will also contribute to broader regional efforts through the TRT under the MMPA.

### **Whale-Fishery Interactions and Understanding Risk**

Since 2014, the U.S. West Coast has seen an increase in large whale entanglements in fishing gear. The Washington coastal Dungeness crab fishery has been linked to 21 entanglements involving both humpback and gray whales (Figure 1) between 2015 and 2024.

Three distinct **humpback whale** populations feed off the Washington coast.

- 69% - [Hawaiian population](#) (not listed under the ESA).
- 25% - [Mexico population](#) (ESA-listed as threatened)
- 6% - [Central American population](#) (ESA-listed as endangered)

**Gray whales** feeding off the Washington coast belong to the [Eastern North Pacific \(ENP\) population](#), which is not endangered.

While other endangered and non-endangered whale species have been observed off the Washington coast, there have been no documented entanglements involving Washington’s coastal Dungeness crab gear.

To assess and manage the risks that fisheries pose to whale populations, NMFS employs the **Potential Biological Removal (PBR)** framework. PBR is a key metric for evaluating human impacts on whale populations. Defined under the MMPA, it represents the maximum number of individuals that can be removed from a stock—due to human activities—while still allowing the population to reach or maintain its optimal size. If human-caused mortality and serious injury (M/SI) exceed a stock’s PBR, it signals the need for additional protective measures to mitigate threats.

The Washington coastal Dungeness crab fishery’s average annual impact remains below the PBR for each whale stock with documented interactions (Table 1). Across all U.S. fisheries, total impacts remain within PBR limits for

all but one stock—the endangered Central American humpback whale population. The Washington Dungeness crab fishery accounts for only 1.3% of the Central American humpback allowable PBR annually and contributes less than 1% of the total U.S. fishery impact.

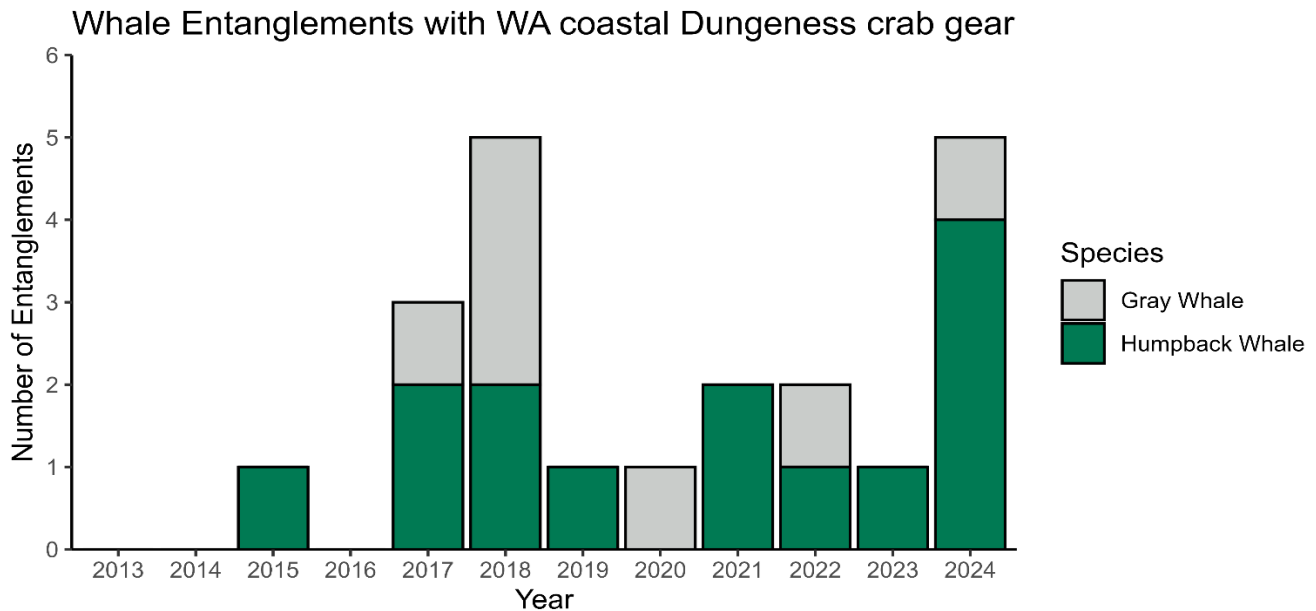


Figure 1. Confirmed whale entanglements by species with identified gear from the Washington Coastal Dungeness crab fishery from 2013-2024.

Table 1. All whale species with documented fishery entangled gear from the WA coastal Dungeness crab fishery with the Potential Biological Removal (PBR) level and mean annual mortality and serious injury (M/SI) value for that fishery and all U.S. fisheries combined. [Data are from the 2023 U.S. Pacific Marine Mammal Stock Assessment Reports]

Species	Population / stock	Potential Biological Removal (PBR)	WA coastal Dungeness crab M/SI	U.S. Fishery total M/SI
Gray Whale	Eastern North Pacific (ENP)	801	0.95	9.3
	Pacific Coast Feeding Group (PCFG)	3.5	0.35	1.1
Humpback Whale	Central America - CA/OR/WA	5.2	0.065	8.1
	Mexico - CA/OR/WA	43	0.28	11.4
	Hawaii stock	127	0.76	3.2

As described above, the proposed regulations build on existing measures to reduce entanglement risks in the Washington coastal Dungeness crab fishery. Key provisions include:

- **Pot limits:** From **May 1 to September 15**, pot limits per license are reduced by **33%** to mitigate entanglement risks during peak whale migration. The total number of coastal licenses is capped at **223**, with **76 licenses** allowing up to **300 pots** and **147 licenses** allowing up to **500 pots**.
- **Taut line requirement:** All gear must be set with taut lines to minimize slack that could entangle whales.
- **Lost pot restrictions:** Lost pots **cannot be replaced** during the same season.
- **Derelict gear recovery program:** From **May 1 to September 15**, WDFW-permitted crabbers may retrieve and retain derelict commercial crab pots along the Washington coast. Only state-licensed gear **without summer buoy tags** may be retrieved—this includes pots bearing a winter buoy tag that were not retrieved

by the start of the summer fishing period (i.e., May 1) or those missing buoy tags. **Starting September 16**, all state-licensed gear is eligible for recovery. Recreational and tribal gear **cannot** be recovered.

Years with higher observed entanglements is concerning. However, it's important to recognize that the likelihood of entanglements is dynamic due to changes in whale abundance, migration patterns and timing, variables in the interaction between crab abundance, season timing, price, and corresponding fishing effort, therefore risk is evaluated as an average over a period of time and not by discrete years.

## **Proposed Changes WAC 220-340-430 Commercial crab fishery—Gear requirements**

Below is a summary of the proposed amendments to **WAC 220-340-430**, including relevant subsections and the rationale for each change.

Subsequent to publicly posting the proposed rule in January 2025, staff identified language in the rule that would benefit from further refinement. These new changes improve terminology definitions and consistency in usage. In addition, stakeholders raised a safety concern with the surface gear limitations; in response, staff recommend a new provision wherein WDFW may issue a permit under the Director's authority to exempt a vessel from the surface gear limitations. These **new changes** are summarized in Table 2 and captured in track changes in the draft WAC attached.

The proposed updates are organized as follows:

1. **Changes affecting both the coastal and Puget Sound Dungeness crab fisheries** – These are primarily administrative, aimed at improving rule clarity and compliance accountability. The only substantive change is prohibiting the use of gear marking required in another non-treaty fishery (**Gear Marking Prohibitions**).
2. **Changes specific to the coastal fishery** – These updates are essential for improving **gear traceability** and **reducing entanglement risks**. Most introduce new requirements with financial implications for fishery participants, except for the prohibition on using treaty tribal buoy brands on coastal non-treaty crab gear, which does not carry additional costs.

*Changes affecting both the coastal and Puget Sound Dungeness crab fisheries.*

- **“Unlawful to” [5(d), 6(c)]**: Shift from language that describes what is unlawful to directly describing the action necessary to achieve compliance.
- **Compliance Responsibility Shift [5(d), 6(a), 5(d)(i)]**: This rule change transfers compliance responsibility from the license holder to the operator of a vessel designated on the crab license. Since many license holders lease their licenses and do not operate vessels, this change ensures that those actively engaged in fishing are accountable for gear compliance.
- **Annual Buoy Registration Requirement [5(d)]**: Buoy registration is an existing requirement. The proposed changes clarify that vessel operators must register buoy brands and color combinations **annually** and **before** commencing fishing. This ensures consistency in traceability efforts across seasons.
- **Buoy Brand Registration [5(d)(i)]**: Improved clarity in buoy brand number registration by specifying that buoys must be branded with the buoy brand number registered with the department.
- **Gear Marking Prohibitions [6d]**: Fishery participants in both regions will be prohibited from using line markings associated with other non-treaty fisheries. This ensures clear distinctions across jurisdictions and enhances the ability to trace entangling gear back to its source fishery.

*Changes specific to the coastal commercial Dungeness crab fishery.*

- **Fishing Line Marking Requirements [6(c)]:** Vessel operators must ensure that their fishing line is marked with a distinctive red and black color scheme. Compliance can be achieved using dual-colored manufactured line or manually applied durable marks. Marking requirements will be phased in:
  - Surface gear must be marked by **December 1, 2025**.
  - Vertical lines must be marked by **December 1, 2028**.
  - A “sunset” provision mandates that manually applied marks will no longer be compliant after **December 1, 2035**, unless extended.
- **Surface Gear Limitations [7]:** The length of surface gear (including buoy and trailer lines) is capped at **36 feet**, and the number of trailer buoys is limited to **two**. These measures reduce the risk of entanglement by minimizing excess surface gear in the water.
- **Tribal Buoy Prohibition [5(d)(v)]:** Washington coastal Dungeness crab operators of vessels designated on the crab license being fished are prohibited from registering or fishing with a buoy brand that is used in a treaty tribal fishery.

Table 2. Changes subsequent to the CR 102 to improve clarity and to add a permit provision.

Purpose	CR 102 Language	Updated Language	Sections
Consistent terminology; improve definition	Designated operator Vessel operator License holder	Operator, or alternate operator, as outlined in RCW 77.65.130	(5)(d) (5)(d)(ii) (5)(d)(iii) (5)(d)(iv) (5)(v) (6)(a) (6)(b) (6)(c)
Consistent terminology	Buoy color or color combinations	Buoy color scheme	(5)(d)(iii) (5)(v)
Improve clarity	Commercial fishery	fishery	(6)(b)
Improve clarity	Effective immediately	-	(6)(c)(ii)(A)
Improve clarity	-	also	(6)(c)(ii)(A)
Improve clarity	Buoy gangion exemption from line marking	Moved language to end of sentence for clarification	(6)(c)(ii)
Provide an exemption permit	Surface gear limited to 36 feet	Exemption permit for demonstrated safety risk	(7)(c) (7)(c)(i)

**Staff recommendation:**

Staff recommend the Commission adopt the proposed revisions to WAC 220-340-430.

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**Policy issue(s) and expected outcome:**

The proposed amendments represent another step in balancing necessary conservation objectives with the economic sustainability of Washington’s commercial Dungeness crab fishery. The Commission’s newly adopted [Coastal Dungeness Crab Policy](#) includes the directive to provide for the economic viability of the coastal Dungeness crab resource, while also implementing measures consistent with addressing entanglement risks to marine life pursuant to the ESA and the MMPA and to achieve and maintain federal coverage for ESA listed marine mammal impacts in the coastal fishery. Consistent with this policy, implementation of the proposed rule amendments improves the traceability of entangled coastal crab gear, reduces entanglement risks, and improves compliance with federal conservation mandates. The phased implementation and cost-mitigation strategies aim to minimize financial impacts on crabbers as small businesses. WDFW will continue collaborating with stakeholders to facilitate a smooth transition and evaluate the effectiveness of these measures over time.

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**Fiscal impacts of agency implementation:** None

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**Public involvement process used and what you learned:**

Since 2022, WDFW has actively engaged industry stakeholders in developing this rule. Washington coastal crabbers do not want to entangle whales and support measures that reduce potential impacts to endangered whale populations that are both effective and economically viable. Many coastal crabbers report business operations with thin profit margins even as the total fishery value has seen record highs in recent years.

While conceptually crab pots are rigged similarly, in practice fishing operations are diverse (shallow, deep, ocean, bay) and gear preferences (line type, surface buoy configuration, etc.) across the fleet mean the line marking specifications needed to accommodate these as well as manufacturing limitations (e.g., some line cannot take dye). About 30 crabbers representing much of this diversity participated in the workshops and provided technical insights as well as general perspectives which were very helpful in crafting the rule.

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**Action requested and/or proposed next steps:**

Staff request the Commission adopt the proposed changes to WAC 220-340-430, including the newest changes to improve clarity and respond to public input.

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**Draft motion language:**

I move to adopt WAC 220-340-430 Commercial crab fishery—Gear requirements as presented by staff.

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**Post decision communications plan:**

WDFW staff will continue to communicate with stakeholders during the remainder of this rule making process, i.e., through April to keep them informed of its progress and after April to inform stakeholders of the final outcome.

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*Form revised 1-20-21*



# Washington Coastal Dungeness Commercial Crab Fishery

## Line Marking Compliance Guide



### Washington Department of **FISH & WILDLIFE**

This compliance guide was prepared by WDFW to provide a summary of how vessel operators can comply with regulations implementing line marking requirements in the Washington coastal Dungeness crab fishery (WAC 220-340-430). The statements in this document are intended solely as guidance. Any discrepancies between this guide and WAC 220-340-430 will be resolved in favor of WAC 220-340-430.

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Washington Coastal Dungeness Crab Fishery  
Line Marking Compliance Guide  
Version 1  
Updated April 1, 2025

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# 1 Introduction

The purpose of this guide is to help participants in the Washington coastal Dungeness crab fishery understand how to comply with line marking regulations (WAC 220-340-430) adopted in 2025. This guide is incorporated by reference in WAC 220-340-430 Commercial crab fishery – Gear requirements at 6(c)(iii).

## 1.1 What is line marking?

Line marking is a tool used to aid in identifying the fishery and origin of gear observed on entangled marine life. Washington Department of Fish and Wildlife (WDFW) first required line marking in the commercial coastal Dungeness crab fishery in 2020 to provide a tool for identifying the origin of gear observed on entangled marine life. This was the first requirement of line marking in West Coast fisheries and was adopted by the Fish and Wildlife Commission with additional entanglement risk reduction measures. Line marking is required in U.S. and Canadian fisheries on the East Coast for the same purpose, to be able to identify the origin of gear on entangled marine life. WDFW adopted updated comprehensive line marking requirements in 2025 in coordination with other West Coast fisheries to improve fishery identification.

## 1.2 Who is responsible for compliance?

The vessel operator designated to the commercial coastal Dungeness crab license is responsible for ensuring all gear and line is marked according to regulations when fishing under the WDFW issued license.

## 1.3 When is line marking required?

There have been line marking requirements in the Washington coastal Dungeness crab fishery since 2020. There is a phased implementation timeline for the updated line marking requirements adopted in 2025. This is to provide operators time to transition from the initial line marking requirements to the updated comprehensive line marking requirements. The implementation schedule is in Section 2.1.

# 2 Line marking requirements

WAC 220-340-430 requires all gear fished in the Washington coastal Dungeness crab fishery to use line that is marked sufficiently to identify it to the fishery. Coastal Dungeness crab fishery vessel operators are required to use line marking to identify gear used exclusively to the fishery as described in this section.

## 2.1 Timeline

The phased implementation timeline for the updated comprehensive line marking is shown in Table 1.

**Table 1. Phased implementation timeline for comprehensive line marking requirements adopted in 2025.**

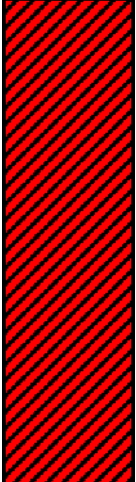
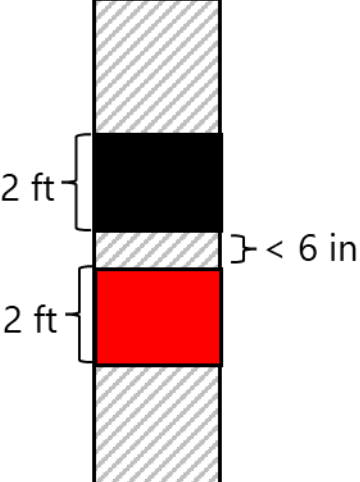
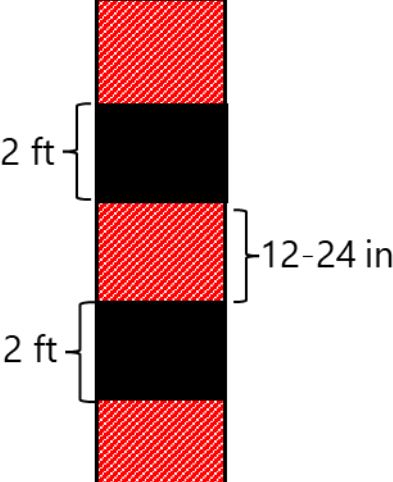
When	Requirement
At time of rule adoption	12-inch continuous red mark on the line connecting the main (diver) buoy to the shellfish pot, no more than one fathom (6 feet) from the main (diver) buoy
December 1, 2025	All line connecting two buoys must be marked, except the buoy gangion lines which are exempt from marking.
December 1, 2028	The top 15 fathoms of main (vertical) line connecting the main (diver) buoy to the shellfish pot must be marked
November 30, 2035	The allowance of solid markings as an alternative to manufactured line sunsets

## 2.2 Marking methods

The Washington coastal Dungeness crab fishery red and black line marking requirements can be met one of two ways, with state fishery specific manufactured line or with sets of solid marks (Table 2). The allowance of solid markings is set to sunset in 2035, prior to the sunset WDFW will evaluate the effectiveness of solid markings and manufactured line and consider how best to move forward. WDFW initially considered requiring more sets of solid marks and allowing the markings indefinitely, but after input from industry decided to reduce the number of sets of solid marks required and implement a deadline to evaluate this approach. Prior to the sunset of solid marks WDFW will evaluate if the current solid marking scheme is sufficient, if more sets of marks should be required to continue to allow solid markings, or other alternative options based on the evaluation of their effectiveness.

Definitions, explanations, and examples for the line marking methods are described in the subsequent sections.

**Table 2.** Diagram of marking methods for the WA commercial coastal Dungeness crab fishery.

<p><b>Manufactured Line</b> 3 strands: 2 strands red and 1 strand black Tracer line permissible</p>	<p><b>Solid markings, on line of any color, other than red and black</b> A set of marks consists of 2 ft of black within 6 inches of 2 ft of red. Marks must cover the entire circumference of line</p>	<p><b>Solid markings on red line:</b> A set of marks consists of 2 ft of black within 12 - 24 inches of 2 ft of black. Marks must cover the entire circumference of line</p>
		

**2.2.1 Manufactured line**

The Washington coastal Dungeness crab fishery specific manufactured line is a dual colored red and black line where 2/3 of the strands are colored red and at least 1/3 strands are colored black. Tracer line in state/fishery specific manufactured line is lawful. Tracer line is defined as a minority color or mark within a single strand. Tracer line is used commonly to indicate line type, diameter, or manufacturer.

Table 3 lists current manufactures and available suppliers of state-fishery specific manufactured red and black line for the Washington coastal Dungeness crab fishery. Table 4 shows examples of currently manufactured line that meets the definition in WAC 220-340-430. This table is not a complete list of all manufactured line that is acceptable, additional manufacturers can produce line that meets the definition.

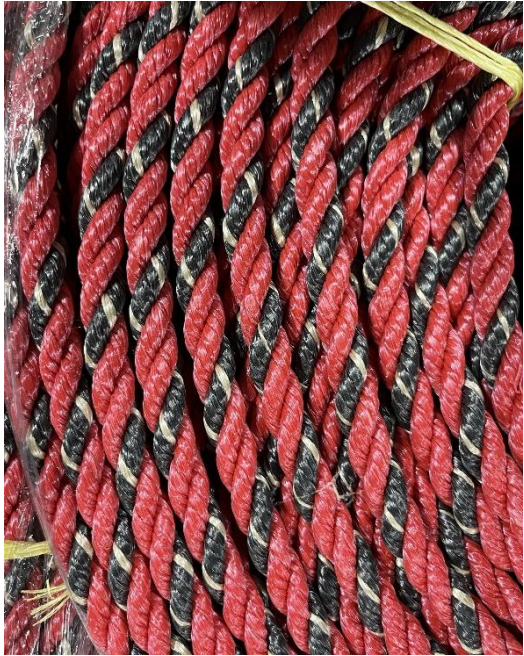
**Table 3. Manufactures producing dual colored red and black manufactured line to be used exclusively in the Washington coastal Dungeness crab fishery to meet line marking requirements.**



Line Manufacturer	Types of line	Suppliers
Polysteel	Floating	Englund Marine, Seattle Marine & Fishing Supply
Blue Steel	Floating	Englund Marine, Seattle Marine & Fishing Supply
Silver Pacific	Floating	Englund Marine

Line Manufacturer	Types of line	Suppliers
Hydro pro	Neutrally buoyant	Englund Marine
Everson Cordage Works	Floating, neutrally buoyant, and sinking line	Seattle Marine & Fishing Supply
ManHo / Hi-Man	Floating & Neutrally buoyant	LFS Commercial Fishing Gear, Seattle Marine & Fishing Supply

This list is not comprehensive and other state fishery specific line manufactures may be available and there may be other suppliers of state fishery specific line. To be added to this list contact: 360-249-6522


**Table 4. Table of currently manufactured red and black line produced exclusively for the WA coastal Dungeness crab fishery line marking requirements. Each of these lines is approved for use to meet the line marking requirements of WAC 220-340-430. This is not a complete list, other manufactured lines can meet the requirements and definition in WAC.**

Line description	Photo
<p>Type of line: Floating Tracer line: One small white-ish tracer line woven through the black strand of line</p>	

Line description	Photo
<p>Type of line: Floating Tracer line: Red tracer line woven through the black strand of line</p>	
<p>Manufacture: ManHo Type of line: Floating Tracer line: None</p>	

Line description	Photo
<p>Manufacture: Hydropro  Type of line: Neutrally buoyant  Diameter line: ½ inch  Tracer line: White neutrally buoyant core woven throughout all red and black strands</p>	
<p>Manufacture: Hydropro  Type of line: Neutrally buoyant  Diameter line: 3/8 inch  Tracer line: White neutrally buoyant core woven throughout all red and black strands</p>	



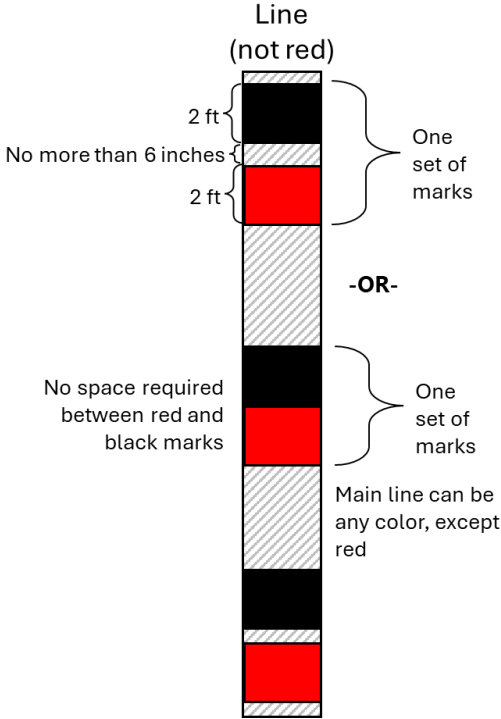
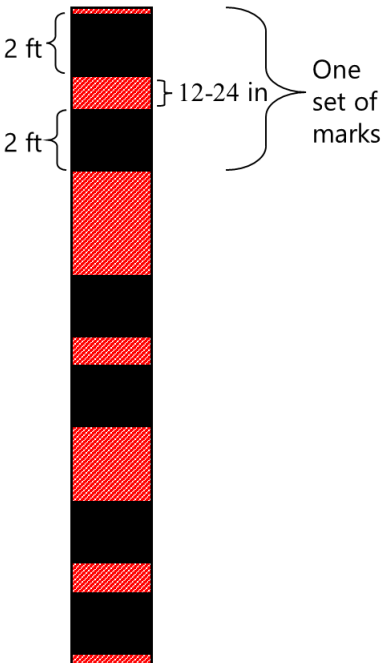
Line description	Photo
<p>Manufacture: ManHo  Type of line: Neutrally buoyant  Tracer line: White neutrally buoyant core woven throughout all red and black strands</p>	

### 2.2.2 Solid markings

Sets of solid marks are allowed as an alternative to manufactured line to meet the line marking requirements. The allowance of solid markings is set to sunset in 2035. WDFW will evaluate the effectiveness of solid markings and manufactured line and consider how best to move forward.

All solid marks must cover the entire circumference of the line and be regularly serviced and maintained in a condition to be able to identify the mark to the marking scheme. One set of solid marks consists of 2 marks of specific colors spaced apart on the line at a specified distance, the color of marks and spacing depends on the starting line color. Table 5 describes the two options for sets of solid markings, depending on the starting line color. Table 6 shows examples of sets of solid marks painted.

**Table 5. Coastal Dungeness crab fishery requirements for sets of solid marks to meet the line marking requirements.**

Diagram of a set of solid marks	Requirements for solid marks
 <p>Line (not red)</p> <p>2 ft</p> <p>No more than 6 inches</p> <p>2 ft</p> <p>One set of marks</p> <p>-OR-</p> <p>No space required between red and black marks</p> <p>One set of marks</p> <p>Main line can be any color, except red</p>	<p>On line of any color, other than red and black, a set of solid marks consists of one red mark and one black mark spaced no more than 6 inches apart. The red and black mark do not need to have any space separating them, but there cannot be more than 6-inches of unmarked line between each mark. Each mark must be 2-feet in length and cover the entire circumference of the line.</p>
 <p>Red line</p> <p>2 ft</p> <p>2 ft</p> <p>12-24 in</p> <p>One set of marks</p>	<p>On red line a set of solid marks consists of two black marks spaced 12-24 inches apart. The sets of black marks require a space of red line between them in order for the red and black color scheme to be visible. Each mark must be 2-feet in length and cover the entire circumference of the line.</p>

**Table 6. Examples of a sets of solid marks painted on line that meet the requirements in WAC 220-340-430**

**Set of solid marks on any color line, besides red and black**

12 inch red mark spaced 6 inches from a 12 inch black mark



**Set of solid marks on any color line, besides red and black**

12 inch red mark spaced zero inches from a 12 inch black mark



**Set of solid marks on red line**

12 inch red mark spaced 12 inches from a 12 inch red mark



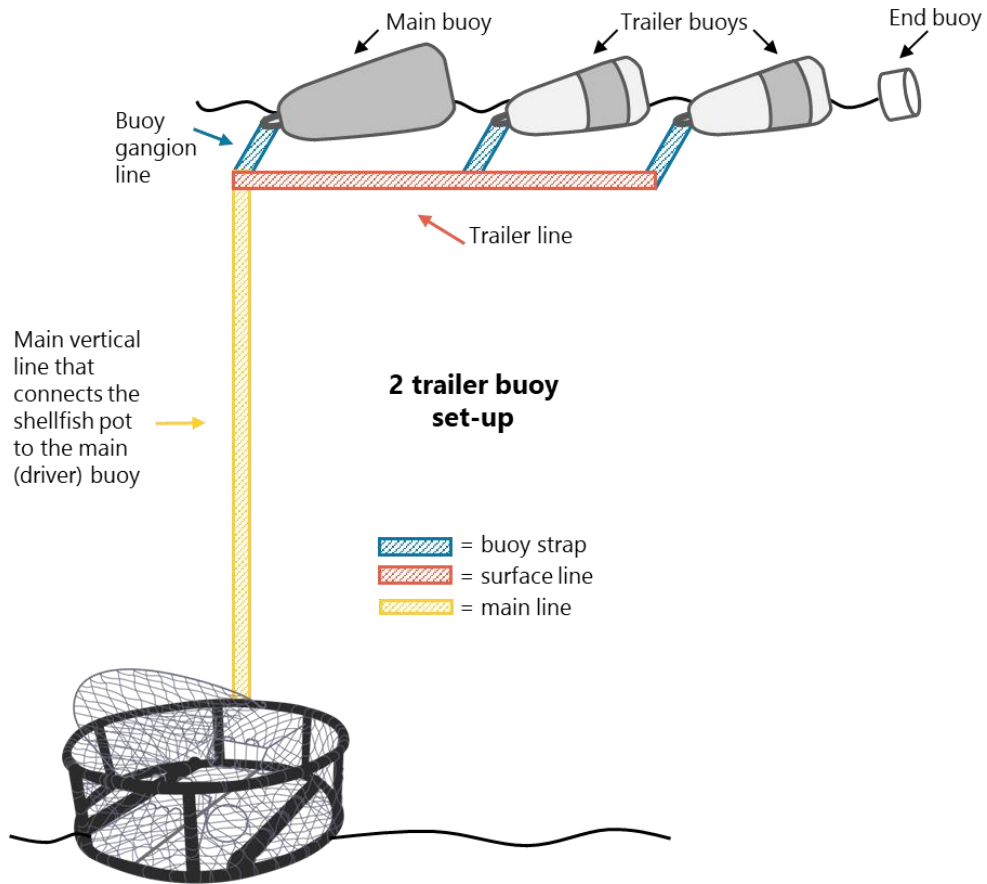
## 2.3 What line has to be marked?

Upon full implementation, the trailer or surface line and the top 15 fathoms of main vertical line are required to be marked. Each stage of the phased implementation of line marking requires a different portion of line to be marked.

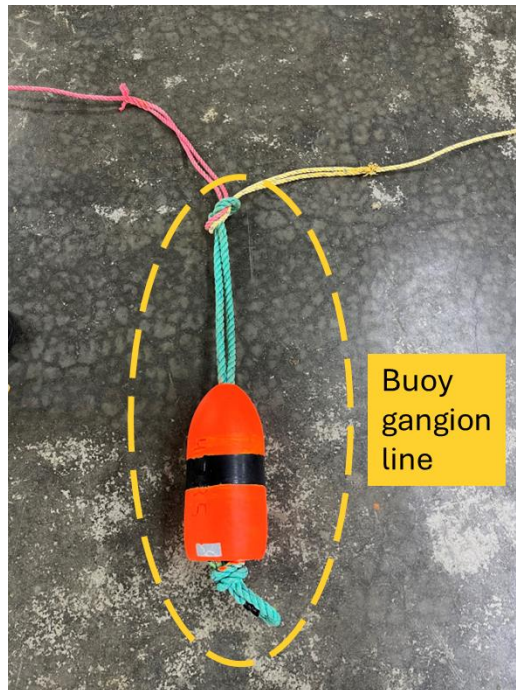
There are multiple terms used to describe the various components of a gear set up used to fish for crab. To provide clarity we have included a diagram and photos of gear components and the terms we are using to refer to each component below (Table 7, Figure 1, Figure 2).

**Table 7. Definitions of the various components of a shellfish pot rigged with gear to fish for crab as they pertain to this compliance guide.**

Term	Also known as	Definition
Buoy gangion line	Buoy strap	The line that passes through the buoy and is affixed to the buoy forming loops at either end to connect the buoy to other lines.
Trailer line	Surface line, gangion line	Line used to connect the main (diver) buoy to additional trailer buoys. A gear set up can include one trailer line that connects to multiple trailer buoys, or multiple trailer lines that are used between each buoy.
Main vertical line	Vertical line, main line, line	The line connecting the shellfish pot to the main (diver) buoy.
Main (diver) buoy	Buoy, main buoy, diver buoy	The first buoy on the crab pot buoy line defined as the buoy closest to the crab pot, sometimes the only buoy used.
Trailer buoy	–	Additional buoys attached either directly to the main (diver) buoy directly or by a trailer or surface line.
Tracer Line	–	Tracer line is defined as a minority color or mark within a single strand. Tracer line is used commonly to indicate line type, diameter or manufacturer.



**Figure 1. Diagram of a shellfish pot rigged to fish for crab with the names of various components referred to in this compliance guide.**



**Figure 2. Phone example of a buoy gangion line.**

The coastal Dungeness crab fishery designated operator is required to use line marking to identify it as gear used exclusively to the Washington coastal Dungeness crab fishery as follows:

### 2.3.1 Effective immediately

Effective at rule adoption, each shellfish pot rigged with line and fished in the Washington coastal commercial Dungeness crab fishery must have a 12 continuous inch red mark on the main line connecting the main (diver) buoy directly to the shellfish pot (Figure 3). The mark must be within the top fathom closest to the buoy.

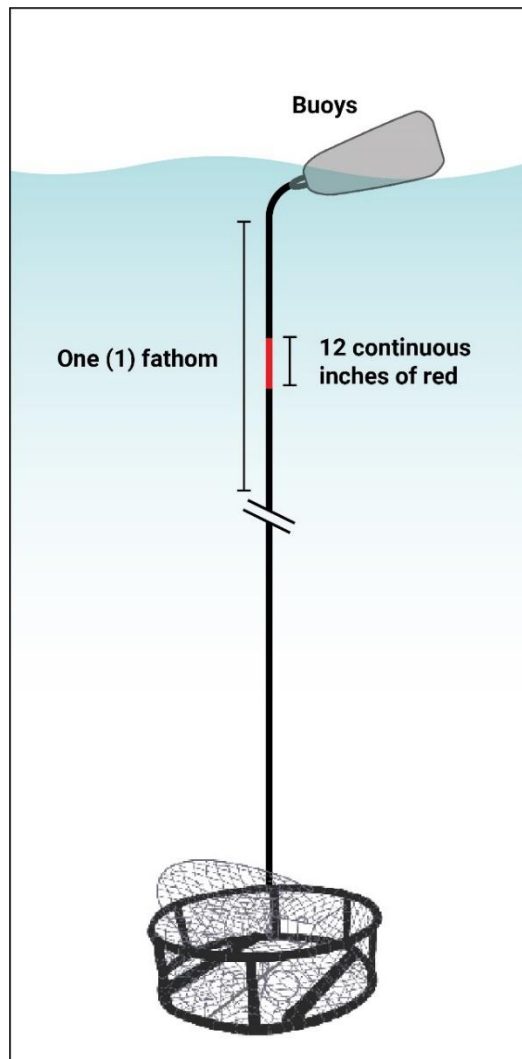


Figure 3. Diagram of line marking requirements effective immediately.

### 2.3.2 Effective December 1, 2025

All line connecting two buoys, often referred to as trailer line, must be marked with red and black with either manufactured line or sets of solid marks. If using dual colored manufactured state-fishery specific

line, the line must be used to connect all buoys. If using solid marks, one set of solid marks as defined in [section 2.2.2](#) is required on any segment of trailer line connecting two buoys.

Buoy gangion lines or buoy straps are exempt from the line marking requirements (Figure 2). Buoy gangion lines are defined as the line that passes through the buoy and is affixed to the buoy forming loops at either end to connect the buoy to other lines. The buoy gangion lines can be no longer than 4 feet long as measured from opposing loop ends. Buoy gangion lines can be any color.

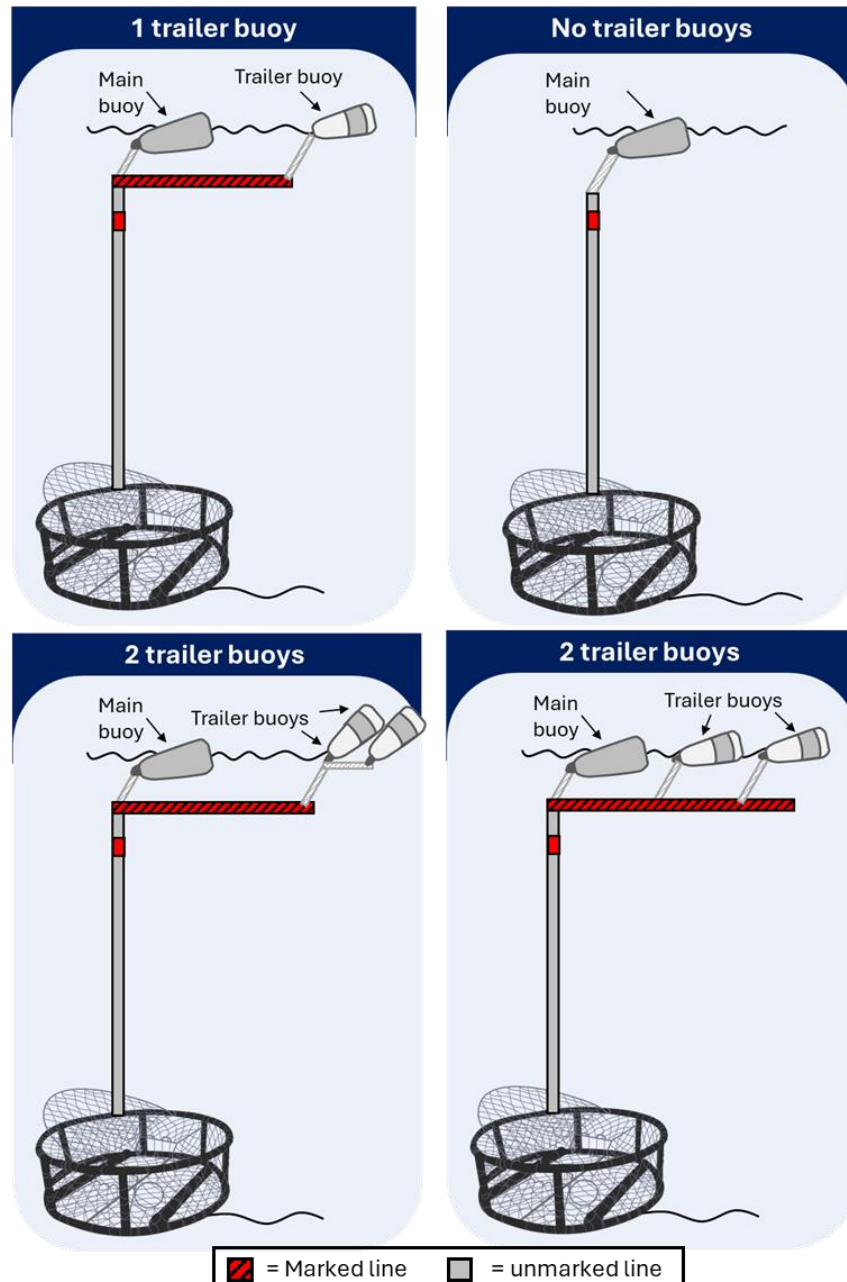
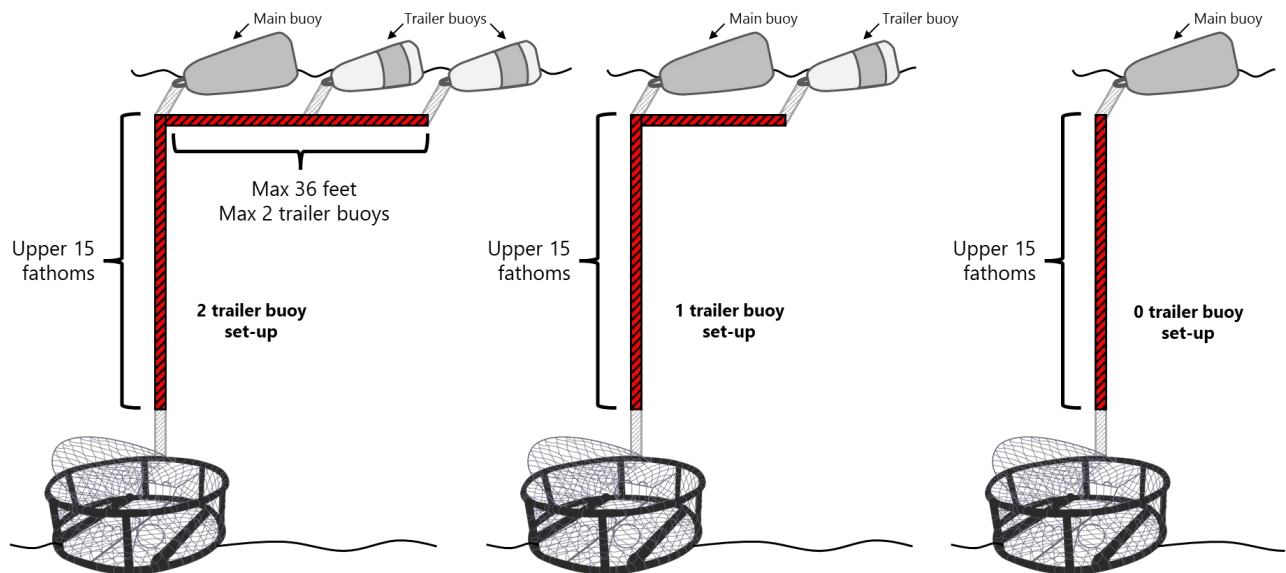


Figure 4. Diagram showing the location of line marking requirements effective December 1, 2025.

### 2.3.3 Effective December 1, 2028

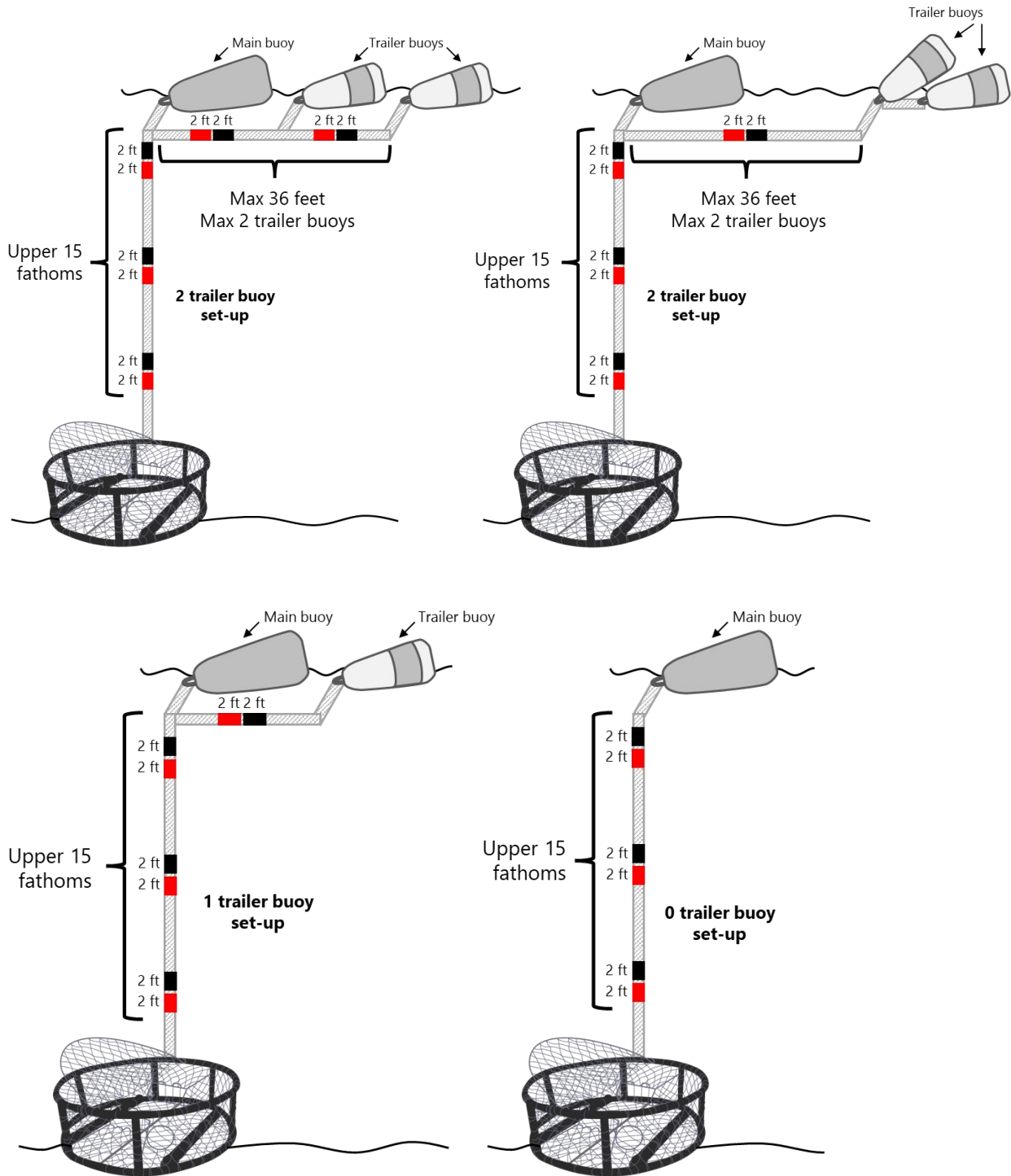
The top 15 fathoms (90 feet) of the main vertical line connecting the shellfish pot to the main buoy must be marked with red and black with either manufactured line or sets of solid marks in addition to the trailer/surface line marking requirements (Figure 5). If using dual colored manufactured state-fishery specific line, this requirement can be met with one 15-fathom shot of line or two shorter shots of line as long as a minimum of 15 fathoms of line is marked sufficiently. While regulation requires that the top 15 fathoms of line be marked sufficiently, the requirement is a minimum and state-fishery specific manufactured line can be used throughout gear used in the fishery.

If marking vertical main line with sets of solid marks, 3-sets of solid marks are required in the 15 fathoms of line (Figure 6). Sets of marks must be distributed such that one set of marks is within one fathom of the main buoy, one set of marks is within one fathom of the end of the 15 fathom segment, and one set of marks is near the middle length of the line segment required to be marked. Requirements for sets of solid marks are defined in [section 2.2.2](#).



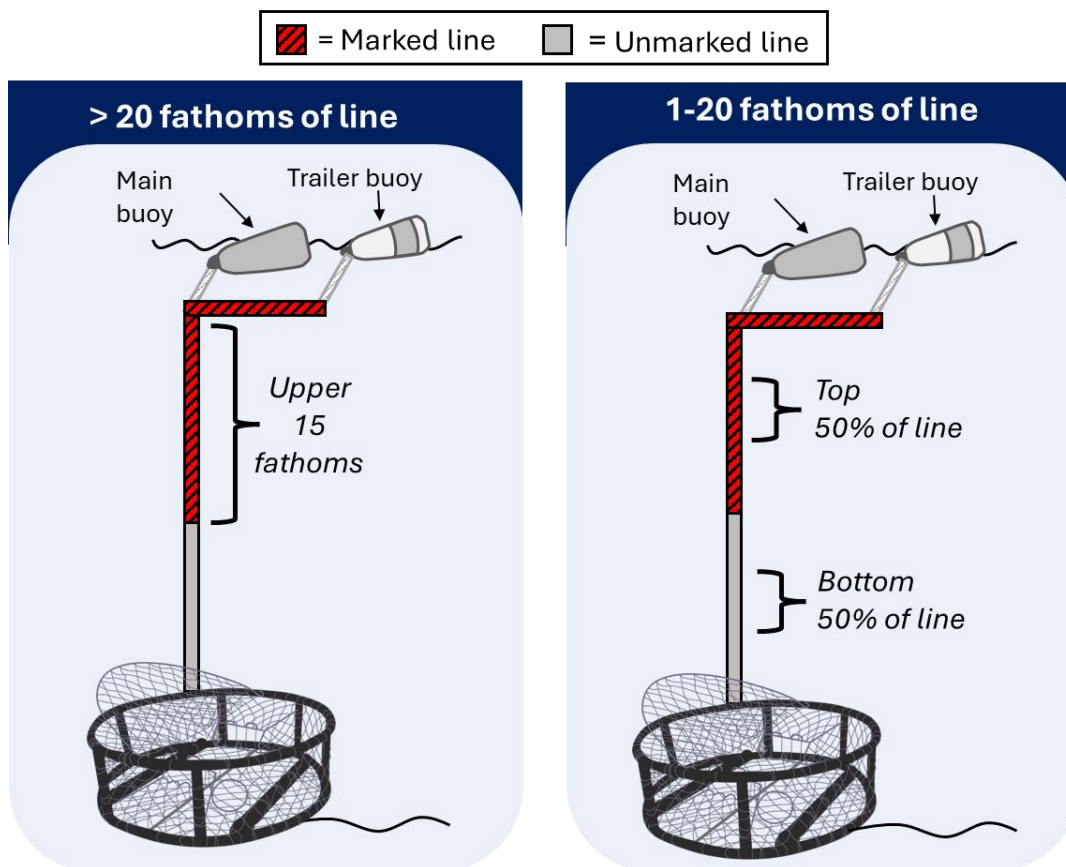
**Figure 5. Diagrams showing a shellfish pot gear set up with different numbers of trailer buoys with line marking requirements met with manufactured dual colored red and black line used for all trailer line the upper 15 fathoms of the main vertical line.**





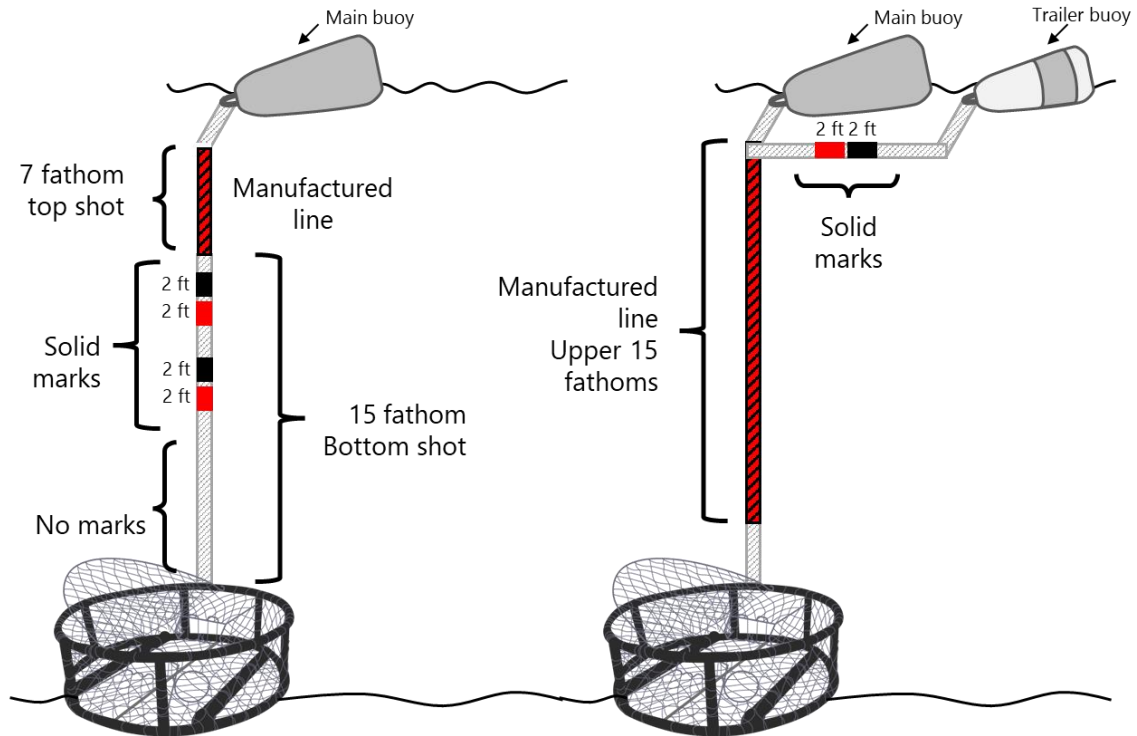
**Figure 6. Diagrams showing a shellfish pot gear set up with different numbers of trailer buoys with line marking requirements met with sets of red and black solid marks for all trailer line the upper 15 fathoms of the main vertical line.**

Shallow depth provisions allow less than 15 fathoms of line to be marked when fishing with less than 20 fathoms of line. When fishing with less than 20 fathoms of line, the top 50% of the line must be marked. For example, if fishing with only 15 fathoms (90 feet) of line the top 7.5 fathoms (45 feet) of line must be marked (Figure 7). If marking less than 15 fathoms of vertical line with sets of solid marks, the same number distribution of solid marks is required.



**Figure 7. Diagram of line marking shallow depth provision.**

The two methods approved for meeting the line marking requirements, dual colored state fishery specific manufactured line and sets of solid marks, can both be used in a gear set up to meet the requirements. For example, solid marks could be used on the trailer/surface line and manufactured line could be used for the main vertical marking requirements (Figure 8). Another example would be using a combination of manufactured line and solid marks in the top 15 fathoms of vertical main line, e.g. a shellfish pot is rigged with a 15 fathom bottom shot marked with sets of solid marks and then to move that gear into deeper water a 7 fathom top shot of manufactured line is added to the top, collectively the top 15 fathoms of line is marked by combining two shots of line marked with different methods (Figure 8).





**Figure 8. Examples of marking line with both sets of solid marks and state fishery specific manufactured line to meet the line marking requirements of WAC 220-340-430.**

### 3 Prohibition of other fishery markings

WAC 220-340-430 prohibits the use of any other fishery specific line marking scheme to be used in the Washington coastal Dungeness crab fishery. This includes any fishery specific colored manufactured line or other marking methods approved by regulation for any West Coast fishery operating in the U.S. Exclusive Economic Zone (EEZ) or the states of Washington, Oregon, or California. Gear must be marked exclusively for use in the Washington coastal Dungeness crab fishery. Below is a table of the currently adopted and proposed line marking schemes in U.S. West Coast fisheries (Table 5). Additional line marking schemes may be adopted at anytime and the prohibitions in Table 5 might be incomplete. Additional up to date resources on current adopted line marking schemes are available on the WDFW website and by contacting Megan Hintz at [Megan.Hintz@dfw.wa.gov](mailto:Megan.Hintz@dfw.wa.gov) or 564-215-1757.

**Table 5. Fishery specific line marking requirements adopted on the West Coast and prohibited in the Washington coastal Dungeness crab fishery.**

Fishery	Color Scheme	Manufactured line	Non-manufactured markings	Photo Example
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Fishery	Color Scheme	Manufactured line	Non-manufactured markings	Photo Example
Oregon Dungeness crab	Yellow & Black	2/3 of line yellow and 1/3 of line black	2-foot solid black and 2-foot solid yellow marks	
California Dungeness crab	Purple & Black	2/3 of line purple and 1/3 of line black	Painted in alternating solid color mark of 6-12 inches in length of purple and black	



# PROPOSED RULE MAKING

**CR-102 (June 2024)**  
**(Implements RCW 34.05.320)**  
Do **NOT** use for expedited rule making

CODE REVISER USE ONLY

OFFICE OF THE CODE REVISER  
STATE OF WASHINGTON  
FILED

DATE: January 21, 2025  
TIME: 10:55 AM

WSR 25-03-125

**Agency:** Washington Department of Fish and Wildlife P2024-13

- Original Notice**
- Supplemental Notice to WSR** \_\_\_\_\_
- Continuance of WSR** \_\_\_\_\_

- Preproposal Statement of Inquiry was filed as WSR 24-20-058 September 25, 2024; or**
- Expedited Rule Making--Proposed notice was filed as WSR \_\_\_\_\_; or**
- Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1); or**
- Proposal is exempt under RCW \_\_\_\_\_.**

**Title of rule and other identifying information:** (describe subject) Amending commercial crab gear requirements and implementing comprehensive line marking in the coastal Dungeness crab fishery.

**Hearing location(s):**

Date:	Time:	Location: (be specific)	Comment:
March 20-22, 2025	8:00am	In-person Kennewick (Tri-Cities) and virtually	Visit our website at <a href="https://wdfw.wa.gov/about/commission/meetings">https://wdfw.wa.gov/about/commission/meetings</a> or contact the Commission office at (360) 902-2267 or email: <a href="mailto:commission@dfw.wa.gov">commission@dfw.wa.gov</a> for instructions on how to join the meeting.

**Date of intended adoption:** Not before April 1, 2025 (Note: This is **NOT** the **effective** date)

**Submit written comments to:**

Name Agency Rules Coordinator  
 Address PO Box 43200 Olympia, WA 98501  
 Email [commercial\\_crab\\_rules\\_cr102@publicinput.com](mailto:commercial_crab_rules_cr102@publicinput.com)  
 Fax  
 Other [https://publicinput.com/commercial\\_crab\\_rules\\_cr102](https://publicinput.com/commercial_crab_rules_cr102)  
 To leave voice comments, please call 855-925-2801 and enter code 11027.  
 Beginning (date and time) January 23, 2025 12:00pm  
 By (date and time) March 24, 2025 11:59am

**Assistance for persons with disabilities:**

Contact VI/ADA Compliance Coordinator  
 Phone 360-902-2349  
 Fax  
 TTY 711  
 Email [Title6@dfw.wa.gov](mailto:Title6@dfw.wa.gov)  
 Other  
<https://wdfw.wa.gov/accessibility/requestsaccomodation>  
 By (date) March 17, 2025

**Purpose of the proposal and its anticipated effects, including any changes in existing rules:**

The proposed changes include both non-administrative and administrative amendments and are described below. The non-administrative changes are presented first followed by administrative changes.

**Non-Administrative**

**Comprehensive line marking in the Coastal Dungeness Crab Fishery (WAC 220-340-430)**

Proposed changes would require that line marking must be sufficient to identify the line as being exclusive to the coastal Dungeness crab fishery with dual-colored state fishery specific manufactured line or sets of solid marks with a phased implementation. With rule adoption, the current continuous 12-inch red mark within one fathom of the buoy would be required, for the 2025-2026 fishing season all trailer/surface line must be marked, and for the 2028-2029 season the uppermost 15 fathoms of the main vertical line must be marked. These changes advance the intended purpose of line marking to increase gear visibility in marine mammal entanglements and thus traceability to the fishery.

**Surface gear limitations in the Coastal Dungeness Crab Fishery (WAC 220-340-430)**

Proposed rule changes would limit the overall length of surface gear to no more than 36 feet of line and limit the number of buoys to no more than three which includes the main(diver) buoy and up to two trailer buoys. A small end marker buoy

is permissible and does not count towards the total. This proposed measure limits the length of surface gear allowed on each pot to reduce entanglement risk.

**Prohibition to register or use buoy brand required by a treaty tribal fishery in the Coastal Dungeness Crab Fishery (WAC 220-340-430)**

Proposed changes would prohibit a buoy brand required by a treaty tribal fishery to be used or registered for the non-treaty Coastal Dungeness Crab fishery. The effect of the proposed rule is to not allow fishers to use buoy brands used in a treaty tribal fishery to support the traceability of entangled gear to the non-treaty fishery.

**Prohibit the use of line marks or colors required in another fishery (WAC 220-340-430)**

Proposed changes would prohibit the use of line marks or manufactured color combinations in Washington commercial crab fisheries that are required for other West Coast state or federal fisheries. The effect of the proposed rule change is to disallow fishers to use line marked or manufactured to marking specifications required in another fishery and to further support the traceability of line in marine life entanglements to the fishery of origin. Line marking prohibitions were adopted for all other Washington fixed gear fisheries in prior rulemaking; the proposed changes expand the prohibition to the commercial Dungeness crab fisheries for consistency and comprehensive coverage.

**Administrative**

**Update language in commercial crab fisheries to describe what is lawful (WAC 220-340-430)**

Proposed changes would shift from language that described what is unlawful to language that describes what is required with regards to buoy brand registration and coastal line marking requirements. The effect of the change is to improve clarity regarding what action is required for compliance.

**Designated operator in commercial crab fisheries is responsible for compliance (WAC 220-340-430)**

Proposed changes would clarify the natural person who is responsible for compliance with regulations. Changes shift responsibility from the license holder to the designated vessel operator for buoy brand registration and fishing with buoys not registered. Changes clarify the vessel operator is responsible for using only the amount of line reasonably necessary, where the current rule does not specify a responsible party.

**Clarify buoy registration requirements (WAC 220-340-430)**

Proposed changes would clarify that required annual buoy brand and color combinations must be completed prior to fishing each season. Existing rules require the registration of a unique buoy color scheme and buoy brand each season, but do not specify when in the season registration is required. Additionally, proposed rule changes would clarify that buoys fished under a single license must be uniformly marked with the buoy brand number submitted during registration.

**Reasons supporting proposal:**

The adoption of these proposed rules will enhance fishery monitoring in marine life entanglements and clarify existing rules. Overall, these rule amendments will accomplish conservation objectives, advance achieving orderly fisheries, and improve enforceability of current rules.

**Comprehensive line marking in the Coastal Dungeness Crab Fishery (WAC 220-340-430); Prohibition to register or use buoy brand required by a treaty tribal fishery in the Coastal Dungeness Crab Fishery (WAC 220-340-430); Prohibit the use of line marks or colors required in another fishery (WAC 220-340-430)**

These regulatory changes enhance compliance with federal laws, specifically the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). Large whales and marine turtles are among those species most affected by fishing gear entanglements, and these animals are federally protected. To address entanglements with marine mammals where the entangling gear is visible but cannot be used to confidently confirm the associated fishery, the National Marine Fisheries Service has indicated that lines and buoys marked in a manner that is unique to each fishery would aid in achieving compliance with the MMPA and ESA. This proposed rule aims to contribute to the coordinated efforts to improve traceability of entangled fishing lines to their source fishery along the U.S. West Coast by prohibiting the use of line marks required in other fisheries, prohibiting the use of treaty tribal buoy brands, and requiring the use of red and black line marking in the Washington coastal Dungeness crab fishery. Comprehensive gear marking is necessary to meet the monitoring needs of fisheries gear entanglements in marine life and will aid in fishery attribution. Comprehensive line marking requirements have been developed in collaboration with other West Coast fisheries.

**Surface gear limitations in the Coastal Dungeness Crab Fishery (WAC 220-340-430)**

The proposed rule also aims to directly address entanglement risk by setting new limits in the coastal fishery on the overall length of surface gear, including main(diver) and trailer buoys, and capping the number of trailer buoys at two per pot. This is necessary because the risk of whale entanglement can be reduced by setting standards that limit surface gear.

**Update language in commercial crab fisheries to describe what is lawful (WAC 220-340-430); Designated operator in commercial crab fisheries is responsible for compliance (WAC 220-340-430); Clarify buoy registration requirements (WAC 220-340-430)**

The proposed changes improve management and enforcement of coastal and Puget Sound commercial Dungeness crab fisheries. Current regulations often assign the compliance responsibility to the license holder; however, license holders often lease their licenses and may not participate in the fishery. The rule language fails to specify the responsible party at times. The proposed changes provide clarity by shifting responsibility to the designated vessel operator, who is specified on the license. The changes clarify that it is the vessel operator who must register buoy brands and color combinations and that registration is required annually and prior to the start of fishing.

**Statutory authority for adoption:** RCWs 77.04.012, 77.04.013, 77.04.055, 77.12.045, 77.12.047

**Statute being implemented:** RCWs 77.04.012, 77.04.013, 77.04.055, 77.12.045, 77.12.047

**Is rule necessary because of a:**

- Federal Law?  Yes  No
- Federal Court Decision?  Yes  No
- State Court Decision?  Yes  No

If yes, CITATION:

**Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:** None

**Name of proponent:** (person or organization) Washington Department of Fish and Wildlife

**Type of proponent:**  Private.  Public.  Governmental.

**Name of agency personnel responsible for:**

	Name	Office Location	Phone
Drafting	Megan Hintz	1111 Washington St. SE Olympia, WA 98501	564.215.1757
Implementation	Lorna Wargo	1111 Washington St. SE Olympia, WA 98501	360.581.5611
Enforcement	Chief Steve Bear	1111 Washington St. SE Olympia, WA 98501	360-902-2605

**Is a school district fiscal impact statement required under [RCW 28A.305.135](#)?**  Yes  No

If yes, insert statement here:

The public may obtain a copy of the school district fiscal impact statement by contacting:

- Name
- Address
- Phone
- Fax
- TTY
- Email
- Other

**Is a cost-benefit analysis required under [RCW 34.05.328](#)?**

Yes: A preliminary cost-benefit analysis may be obtained by contacting:

- Name
- Address
- Phone
- Fax
- TTY
- Email
- Other

No: Please explain:

**Regulatory Fairness Act and Small Business Economic Impact Statement**

Note: The [Governor's Office for Regulatory Innovation and Assistance \(ORIA\)](#) provides support in completing this part.

**(1) Identification of exemptions:**

This rule proposal, or portions of the proposal, **may be exempt** from requirements of the Regulatory Fairness Act (see [chapter 19.85 RCW](#)). For additional information on exemptions, consult the [exemption guide published by ORIA](#). Please check the box for any applicable exemption(s):

This rule proposal, or portions of the proposal, is exempt under [RCW 19.85.061](#) because this rule making is being adopted solely to conform and/or comply with federal statute or regulations. Please cite the specific federal statute or regulation this rule is being adopted to conform or comply with, and describe the consequences to the state if the rule is not adopted.

Citation and description:

This rule proposal, or portions of the proposal, is exempt because the agency has completed the pilot rule process defined by [RCW 34.05.313](#) before filing the notice of this proposed rule.

This rule proposal, or portions of the proposal, is exempt under the provisions of [RCW 15.65.570\(2\)](#) because it was adopted by a referendum.

This rule proposal, or portions of the proposal, is exempt under [RCW 19.85.025\(3\)](#). Check all that apply:

[RCW 34.05.310](#) (4)(b)  
(Internal government operations)

[RCW 34.05.310](#) (4)(e)  
(Dictated by statute)

[RCW 34.05.310](#) (4)(c)  
(Incorporation by reference)

[RCW 34.05.310](#) (4)(f)  
(Set or adjust fees)

[RCW 34.05.310](#) (4)(d)  
(Correct or clarify language)

[RCW 34.05.310](#) (4)(g)  
((i) Relating to agency hearings; or (ii) process requirements for applying to an agency for a license or permit)

This rule proposal, or portions of the proposal, is exempt under [RCW 19.85.025\(4\)](#). (Does not affect small businesses).

This rule proposal, or portions of the proposal, is exempt under RCW \_\_\_\_\_.

Explanation of how the above exemption(s) applies to the proposed rule:

**(2) Scope of exemptions:** *Check one.*

The rule proposal: Is fully exempt. (*Skip section 3.*) Exemptions identified above apply to all portions of the rule proposal.

The rule proposal: Is partially exempt. (*Complete section 3.*) The exemptions identified above apply to portions of the rule proposal, but less than the entire rule proposal. Provide details here (consider using [this template from ORIA](#)):

The rule proposal: Is not exempt. (*Complete section 3.*) No exemptions were identified above.

**(3) Small business economic impact statement:** *Complete this section if any portion is not exempt.*

If any portion of the proposed rule is **not exempt**, does it impose more-than-minor costs (as defined by RCW 19.85.020(2)) on businesses?

No Briefly summarize the agency's minor cost analysis and how the agency determined the proposed rule did not impose more-than-minor costs. \_\_\_\_\_

Yes Calculations show the rule proposal likely imposes more-than-minor cost to businesses and a small business economic impact statement is required. Insert the required small business economic impact statement here:

**Small Business Economic Impact Statement**  
**Pursuant to Regulatory Fairness Act (Chapter 19.85 RCW)**

Commercial Fisheries Rules

**Chapter 220-340-430 WAC**

Commercial crab fishery—Gear requirements

**This proposal mandates the use of fishing line marked in a specific manner when fishing for Dungeness crab in the Washington Coastal Commercial Dungeness Crab Fishery.**

Washington Department of Fish and Wildlife  
Intergovernmental Ocean Policy  
Olympia, Washington  
January, 2025

**Introduction and Consideration of the Need for a Small Business Economic Impact Statement**

**Purpose of this rulemaking**



The Washington Department of Fish and Wildlife proposes amendments to WAC 220-340-430 Commercial crab fishery – Gear requirements. Detailed background is provided in Section 1. In summary, these changes aim to improve fishing gear traceability, reduce marine life (whales and sea turtle) entanglement risks, and support compliance with federal conservation laws. To meet these objectives, the proposed rule requires new fishing line marking, limits surface gear, and shifts compliance responsibility from license holders to designated vessel operators. Additionally, it prohibits the use of line markings or buoy brands associated with other fisheries so that clear distinctions across fisheries and jurisdictions are ensured.

Central to this rulemaking is the need to address entanglements in the coastal commercial Dungeness crab fishery involving endangered marine species, such as humpback whales, protected under the Endangered Species Act (ESA). Under Section 9 of the ESA, entanglements of listed species are considered a “take”. The ESA imposes liability for a take on both the crab vessel operator and the state. To address this liability, the Washington Department of Fish and Wildlife (WDFW) is pursuing an Incidental Take Permit (ITP) pursuant to Section 10 of the ESA and a required companion Conservation Plan (CP). The CP framework includes comprehensive gear marking to facilitate accountability and strengthen the state’s ability to demonstrate compliance with federal conservation mandates. In addition, the National Marine Fisheries Service is establishing a West Coast Take Reduction Team (TRT) under the Marine Mammal Protection Act (MMPA) with the Washington crab fishery as one of the fisheries that will be under evaluation. Comprehensive gear marking is expected to be a necessary element of the TRT’s take reduction plan.

Proposed amendments to WAC 22-340-430 also affect the Puget Sound commercial Dungeness crab fishery. However, the changes are administrative and none require action by affected fishery participants. The primary need is to complement comprehensive gear marking by prohibiting fishery participants in this fishery from using line or buoys marks designated in rule for use by another fishery.

### **Overview of the Small Business Impact Statement**

This Small Business Impact Statement (SBEIS) is prepared under the state Regulatory Fairness Act (RFA). The RFA was created out of concerns that regulations “can have a disproportionate impact on the state’s small businesses” and based on the finding that such an impact “reduces competition, innovation, employment, and new employment opportunities, and threatens the very existence of some small businesses.”<sup>1</sup>

To minimize disproportionate impacts on small businesses, the RFA requires agencies to complete a set of evaluations, such as whether costs imposed by the rule are more than minor, whether the impacted businesses are considered large or small, and whether small businesses would be disproportionately impacted by the rule compared to large ones.<sup>2</sup> These threshold evaluations are ultimately focused on identifying when an SBEIS is required, and most significantly, when agencies must reduce the costs imposed on small businesses (i.e. “cost mitigation”). The RFA also includes a number of exemptions to the SBEIS requirement including one for rules that are adopted “solely for the purpose of conformity or compliance, or both, with federal statutes or regulations.”<sup>3</sup> Given that this rulemaking is aimed at compliance with the federal ESA and MMPA, an SBEIS may not be required. However, WDFW views cost mitigation as a key part of the process and sees additional information on costs and revenues provided in this SBEIS as valuable information for those commenting on the proposed rule.

As described in detail below, the costs imposed by this rule are uncertain and expected to vary business by business and over time. This and other circumstances make the evaluation of the RFA’s threshold questions less than clear-cut. For example, the presence of large processing companies that also operate fishing vessels muddies the evaluations of whether all fishery participants qualify as small businesses and whether they are disproportionately impacted by the rule. For purposes of this SBEIS, WDFW views the answer to that question, and to those of the other RFA threshold questions, as being of less interest than the content provided on costs and cost mitigation. WDFW proceeds through the SBEIS in the view that the fishing operations are essentially all small businesses for purposes of the RFA even though, for example, not every business may meet the statutory definition of “small”.<sup>4</sup>

Lastly, while the RFA’s cost mitigation mandates are limited to methods that are “legal and feasible in meeting the stated objectives of the statutes upon which the rule is based”<sup>5</sup>, it does require agencies to consider “without limitation” a list of cost reduction methods, such as reducing substantive regulatory requirements, delaying compliance timetables, and simplifying reporting requirements.<sup>6</sup> This list also includes a catch-all for “mitigation techniques . . . suggested by small businesses or small business advocates.”<sup>7</sup> As described below, WDFW has prioritized cost mitigation through phased implementation and flexible compliance options. It should be recognized that WDFW’s ability to reduce costs on small businesses is limited by the effectiveness of the gear marking

measures at achieving their objectives. Moreover, with those objectives driven largely by the ESA and MMPA, it will be the federal processes where the ultimate judgement over the legal adequacy of the measures occurs. NMFS has made it clear to WDFW that the fishery will not receive an ITP without comprehensive gear marking rules in place.

## **Section 1 Describe Rule and Compliance Requirements**

### **1.1 Background**

The Washington commercial Dungeness crab fishery, divided into “coast” and “Puget Sound” regional fisheries, holds significant economic and cultural value. The coastal fishery spans 157 miles of Washington’s Pacific coastline, including Grays Harbor, Willapa Bay, and the Columbia River estuaries. Operating primarily in winter and spring, it accounts for the majority of the state’s crab harvest. This fixed-gear pot fishery is often Washington’s most valuable, averaging \$61.8 million in ex-vessel revenue over the past decade (1989–99 to 2023–24; inflation-adjusted to 2024 dollars), with a peak of \$94.7 million in 2021–22.<sup>8</sup> The coastal fishery operates in both state (0–3 nm) and federal (3–200 nm) waters, supported by a diverse fleet employing varied harvest strategies. Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Congress granted Washington authority to manage the fishery in federal waters.

The coastal and Puget Sound fisheries have distinct management histories and regulatory frameworks. For this report, unless otherwise noted, “crab” refers to Dungeness crab, and “Dungeness crab fishery” refers to the coastal commercial fishery.

Although addressing coastal fishery needs is the impetus for this rulemaking, changes are also proposed that affect the Puget Sound. For both regions, these changes seek to improve enforceability or clarity of existing requirements and to implement comprehensive line marking in the coastal fishery (Table 1). Some changes such as those described in this paragraph are administrative and are not anticipated to impose new compliance costs (See Section 3). Specifically, the current regulation assigns compliance responsibility to the license holder, which is effective when they also operate the vessel. However, license holders often lease their licenses and may not participate in the fishery, and the rule language sometimes fails to specify the responsible party. The proposed change clarifies this by shifting responsibility to the designated vessel operator who is actively fishing and better positioned to ensure gear compliance. The operator must also be designated on the license, establishing a clear link between the two. The rule changes also clarify that vessel operators must register buoy brands and color combinations annually, and prior to the start of fishing.

The key focus of this rulemaking is addressing entanglements in the coastal commercial Dungeness crab fishery involving endangered marine species, such as humpback whales, which are protected under the Endangered Species Act (ESA). Since 2014, an elevated number of marine life entanglements in fishing gear have occurred along the U.S. West Coast. Large whale and marine turtle species are among those most impacted by these fishing gear entanglements and these animals are federally protected under the Endangered Species Act (ESA) and/or the Marine Mammal Protection Act (MMPA). Biological impacts to covered species occur when an individual animal becomes entangled in a portion of the crab fishing gear, either the vertical lines connecting pots (traps) to the surface buoys and/or the surface gear (main buoy and additional buoys connected by line) itself. While 43 percent of entangled gear remains unidentified in terms of the fishery of origin, commercial crab fishing gear collectively makes up the largest portion of identifiable gear found in West Coast entanglement cases (Saez et. al., 2021). The coastwide increase in entanglements has been driven primarily by an increase in interactions with humpback whales. Of the three populations of humpback whales observed off the coast of Washington, two are ESA listed. The majority of animals are thought to belong to the unlisted population (Wade 2021). The National Marine Fisheries Service (NMFS) recommends using proportional estimates for the contributions of each humpback population as follows: 5.9% Central America Distinct Population Segment (DPS) (endangered), 25.4% Mexico DPS (threatened), and 68.8% Hawai’i DPS (not ESA listed; Carretta et. al. 2022). No entanglements with sea turtles in Washington coastal crab gear have been documented, however, the critical habitat designated for the endangered leatherback sea turtles extends from shore to 2,000 meters off the Washington coast and therefore overlaps completely with the coastal fishery. WDFW knows there is a non-zero risk and commits to monitoring and risk reduction along with other covered species.

As noted in the Introduction, non-federal entities are subject to liability under Section 9 of the ESA if an activity they undertake or authorize results in a take of a species covered by that section. An incidental take permit (ITP) issued under Section 10 of the ESA is needed to ensure that the fishery complies with the law. WDFW is preparing a Conservation Plan (CP), outlining risks and mitigation measures for protected species, as a necessary

component of the ITP application. NMFS grants an ITP if statutory criteria are met, including that the take will be incidental; the impacts of incidental take will be minimized and mitigated to the maximum extent practicable; adequate funding for the CP and unforeseen circumstances procedures are in place; the take will not appreciably reduce the likelihood of survival and recovery of the species in the wild; the applicant will provide additional measures that NMFS requires as being necessary or appropriate; and NMFS has received assurances that the CP will be implemented. The ITP process is lengthy. Rather than wait for approval of the CP, WDFW began implementing regulatory changes in 2020 to proactively reduce entanglement risk.

The MMPA also addresses entanglements, requiring NMFS to document human-caused mortality, serious injury (SI), and non-serious injury (NSI) of marine mammals. When an entanglement is reported, NMFS investigates and applies specific criteria to accurately document each case. This process allows NMFS to confirm most reports (~83% on average; Saez et al. 2021). However, identifying the fishery of origin remains challenging in most cases. To address this, modifying fishing gear so that it can be traced back to its fishery of origin through “gear marking” has been determined to be an important step. Gear marking assigns specific colors for buoys and/or line or by requiring buoy tags to facilitate fishery identification. Since entangling gear cannot always be retrieved, markings must be distinctive and prominent enough for visual attribution, either directly or through photographs or videos.

WDFW first required line to be marked in the coastal fishery effective for the 2020-21 season. The rule requires line connecting the main buoy (closest to the crab pot) and the pot to be marked with a “continuous 12-inch red mark” in two places: 1) within one fathom of the main buoy and 2) within one fathom of the pot. NMFS guidance during the ensuing years signaled that this marking scheme is insufficient. Furthermore, NMFS has stated that lines marked in a way that supports attribution of entangling gear to a particular West Coast crab fishery, i.e., Washington, Oregon, or California, will be required for issuance of an ITP. Consequently, crab managers from the three states have coordinated with each other and through facilitation by the Pacific States Marine Fisheries Commission to define fishery and state specific marking schemes and to meet other joint needs. This coordination extended to federally managed commercial fixed gear (longline and pot) groundfish and halibut fisheries through the Pacific Fishery Management Council and directly with NMFS.

This proposed rule aims to contribute to the coordinated efforts to improve attribution of entangled fishing lines to their source fishery along the U.S. West Coast by:

1. Prohibiting the use of line markings required by other West Coast fisheries on Washington Dungeness crab non-treaty fishing gear.
2. Requiring red and black dual-colored lines or specified applications of red or black solid marks for non-treaty coastal Dungeness crab fishing gear.
3. Prohibiting non-treaty coastal Dungeness crab vessel operators from using buoy brands associated with treaty tribal fisheries.

The proposed rule also aims to directly address entanglement risk by setting new limits in the coastal fishery on the overall length of surface gear, including diver and trailer buoys, and capping the number of trailer buoys at two per vessel.

**Table 1. Summary of Proposed Rule Amendments or Changes within WAC 22-340-430 affecting the Puget Sound and Coastal Commercial Dungeness Crab fisheries.**

Category	Description
<b>Puget Sound and Coastal Commercial Dungeness Crab Fisheries</b>	
<b>General Administrative Changes</b>	<ul style="list-style-type: none"> <li>-Modifies terminology format from using “Unlawful to” or what cannot be done legally to describing the action necessary to achieve compliance.</li> <li>-Transfer responsibility for compliance from license holders to designated vessel operators actively fishing under the license.</li> <li>- Clarify that compliance responsibilities, including buoy registration, fall on the vessel operator rather than the license holder.</li> <li>- Prohibit marking or color schemes used by other fisheries to avoid cross-jurisdictional overlap.</li> </ul>
<b>Buoy Brand and Color Regulations</b>	<ul style="list-style-type: none"> <li>- Prohibit non-treaty coastal Dungeness crab vessel operators from using buoy brands associated with treaty tribal fisheries.</li> <li>- Require vessel operators to register buoy brands and color combinations annually, prior to the start of fishing.</li> </ul>

## Coastal Commercial Dungeness Crab Fishery

### Fishing Line Marking Requirements

- Mandate the use of red and black dual-colored line or manually applied red and black marks for gear identification.
- Require marking surface gear by December 1, 2025, and vertical lines by December 1, 2028.
- Specify that manually applied marks must cover the entire circumference of the line and be durable (e.g., paint).
- Require marking the top 15 fathoms of vertical lines when fishing with 20 fathoms or more of vertical line.
- For vertical lines shorter than 20 fathoms, require marking the top 50% of the line.
- Includes a “sunset” provision ending the acceptability of manually marked lines after December 1, 2035, unless extended.

### Surface Gear Limitations

- Limits surface gear length to 36 feet, including buoy lines and trailer buoys.
- Caps the number of trailer buoys at two per vessel.

## 1.2 Compliance requirements of the proposed rule

*RCW 19.85.040(1) “A small business economic impact statement must include a brief description of the reporting, recordkeeping, and other compliance requirements of the proposed rule, and the kinds of professional services that a small business is likely to need in order to comply with such requirements.”*

Compliance requirements associated with the proposed rule vary depending on the change. To comply with the marking prohibition, Washington crab fishery vessel operators in both the Puget Sound and coastal crab fisheries will need to ensure fished line is not marked in a manner required by another jurisdiction and to comply with buoy registration requirements, must complete the registration annually and before beginning to fish. Additionally, vessel operators in the coastal crab fishery are prohibited from registering or using a buoy brand associated with a treaty tribal fishery.

To comply with the rule, individuals operating a vessel designated on a Washington coastal Dungeness crab license and participating in the fishery must use fishing line marked in a particular manner and must ensure surface gear, including buoys and line, does not exceed a maximum length of 36 feet.

The rule allows line marking in two ways: using dual-colored, specially manufactured line or applying solid color marks with durable materials like paint. U.S. West Coast states, through their fish and wildlife agencies, agreed on a two-color scheme: one color represents the state, and the other denotes the fishery type (commercial Dungeness crab). Washington chose red as its state color, while black will signify commercial Dungeness crab gear across all three states by informal agreement.

To facilitate the description of requirements presented here, the following definitions are provided.

1. Surface gear: Surface gear includes the main (diver) buoy that is closest to the pot/trap, any additional trailer buoys, any end marker buoys, and all line connecting these buoys.
  - a. Buoy gangion line: Line that passes through and is affixed to the buoy forming loops on each end of the buoy, that are less than four feet long as measured from opposing loop ends.
2. Vertical gear: Vertical gear includes the line connecting the main buoy (closest to the crab pot) to the pot.
3. Line mark: dual-color manufactured line (red and black for Washington) or manually applied red or black segments using paint (or similar durable material) that covers the entire circumference of the line. Each segment must be two feet in length.
4. Tracer line: A strand of line, usually white or off-white that indicates the line type and diameter.
5. Set of marks: A single set of marks is comprised of two manually applied segments.
  - a. For line of any original color, excluding red or black, a set of solid marks consists of one red mark spaced at a distance of no more than six inches from one black mark.
  - b. For line originally red, a set of marks consists of one black mark spaced at a distance of 12 to 24 inches from a second black mark.

The new comprehensive line marking scheme will be implemented in phases to reduce cost impacts and address potential supply chain bottlenecks, as manufacturing dual-colored line may lag behind demand. These considerations are detailed further in Section 6, *Steps to Reduce Costs to Individuals or Small Businesses*. The first compliance milestone is December 1, 2025 (to align with the 2025-2026 commercial season). By this date, all

actively fished pots must be rigged with surface lines that are marked. As noted above, compliance can be achieved in two ways: using dual-colored red/black manufactured line or any line with manually applied marks between any two buoys. Buoy gangion lines are exempt from marking requirements and can be of any color. The second compliance milestone is December 1, 2028. From this date, when fishing with 20 fathoms (120 feet) or more of vertical line, connecting the main buoy to the pot, the top 15 fathoms (90 feet) must be marked; For vertical lines shorter than 20 fathoms (i.e., 120 feet), the top 50% of line must be marked.

Compliance with vertical line marking requirements can be met using manufactured dual-colored red/black line of the specified length/percentage.<sup>9</sup> To achieve compliance when using manually applied marks, three sets of marks must be distributed along the length of the vertical line such that the one set is within one fathom of each end (main buoy and pot, respectively) and one set of marks is near the middle.

The proposed rule reflects agency policy aimed at providing flexible compliance options, recognizing that unforeseen circumstances (e.g., manufacturing or supply chain disruptions, or gear loss due to fire) could limit the availability of manufactured line. While maintaining a manual marking method offers significant merit, the rule includes a “sunset” provision: manually marked surface or vertical lines will no longer be compliant after December 1, 2035, unless a new rule extends or modifies this provision. The sunset clause establishes a defined period to evaluate the effectiveness of manual line marking. At or before its expiration, the rule may be extended as-is or revised based on new information, federal requirements, or insights from fishery participants, field biologists, enforcement officers, or other unforeseen factors.

### 1.3 Professional Services Required

Compliance will not require any new reporting or recordkeeping, and obtaining professional services is not required. Washington coastal crabbers have been marking line since the 2020-21 season and this work is typically done by the license holder, vessel owner/operator, and/or vessel crew as part of routine gear preparation in advance of the season or as part of regular gear maintenance. Fishery participants may choose to outsource gear preparation, but doing so will not be required to achieve compliance with the proposed rule.

## Section 2 Identify Affected Businesses

*RCW 19.85.040(2)(c) “Provide a list of industries that will be required to comply with the rule. However, this subsection (2)(c) shall not be construed to preclude application of the rule to any business or industry to which it would otherwise apply.”*

*RCW 19.85.020(1) “‘Industry’ means all of the businesses in this state in any one four-digit standard industrial classification as published by the United States department of commerce, or the North American industry classification system as published by the executive office of the president and the office of management and budget.’*

The universe of businesses affected by the proposed rule include those engaged in the non-tribal commercial harvest of Dungeness crab on the Washington coast. These businesses fall within the North American Industry Classification (NAICS) code 114112, Shellfish Fishing. However, as this code includes a substantial number of other types of fisheries and businesses (e.g., oyster, clam, shrimp), the number of businesses identified under this code is not representative of the affected industry. WDFW license and fish ticket information can identify the small businesses affected by the rule more precisely.

The coastal Dungeness crab fishery is a limited entry fishery with a hard cap of 223 licenses. Some of these licenses are fished by the license holder while others are leased to other individuals who generally fish the license using their own vessel. Industry representatives identified that it is most likely the vessel owner who would incur the costs of gear modification and maintenance necessary to comply with the proposed rule. Current WDFW license data shows that 216 of the 223 active WA licenses have a vessel designated on the license. Under state law, a vessel must be designated on the license in order for crab to be taken or delivered using the license.<sup>10</sup> And, an individual vessel can only be reported on one WA coastal crab license per season.<sup>11</sup> Although only 216 individual vessels are currently identified in the WA coastal Dungeness crab fishery, up to 223 vessels could be active in the fishery in any given season. Thus, WDFW considers the number of affected businesses to be 223 vessels.

Out of the 216 vessels reported on active WA coastal Dungeness crab permits, fish ticket data shows ex-vessel revenue data for 213 of them within the last five years.<sup>12</sup> It is unknown why the additional three vessels that were designated on a crab license were inactive during this time. For the cost impact analysis in this SBEIS, ex-vessel

revenue data from those 213 vessels is used to represent annual business income for calculating the minor cost threshold and estimating cost impacts. That analysis is assumed to reflect likely cost impacts to all future potentially affected vessels, with some exceptions that cannot be fully accounted for.

Small businesses are defined as those that employ fewer than 50 people.<sup>13</sup> Industry representatives indicate that affected businesses (i.e., vessel owners) may employ between one and three crew seasonally. WDFW is aware that at least one large processing company owns a vessel and crab license and would not meet the definition of a small business. However, this SBEIS does not delve further into whether the other fishery participants would be disproportionately impacted relative to this or like companies based on the view that it would only distract from the core purpose of considering cost mitigation measures. There is no reason to believe that costs or cost mitigation to the fishing operations run by processing companies would differ substantially from the rest of the fleet. WDFW also assumes that the cost and revenue structure of fishing operations run by such large companies are different enough from their main line of business activity to justify separate attention.<sup>14</sup> As noted in the introduction, WDFW proceeds through the remaining analysis based on the view that all affected fishing operations are small businesses for the purposes of the SBEIS.

### Section 3 Cost of Compliance

*RCW 19.85.040(3) "To obtain information for purposes of this section, an agency may survey a representative sample of affected businesses or trade associations and should, whenever possible, appoint a committee under RCW 34.05.310(2) to assist in the accurate assessment of the costs of a proposed rule, and the means to reduce the costs imposed on small business."*

Compliance costs imposed by the proposed rule vary depending on the change. Clarifying the responsibility for rule compliance and prohibiting the use of marks/colors required in other fisheries impose no costs since neither require gear purchases or labor. Restricting non-treaty operators from using treaty tribal buoy brands may affect a small number of vessels. At the time of this proposal, only one non-treaty vessel had registered a tribal buoy brand. Compliance would require rebranding or purchasing new buoys, but given the minimal impact to the fleet, these costs were not assessed. Similarly, downstream impacts to operations by the surface gear limitation proposal are not evaluated. While compliance involves no cost, the new limit could adversely affect fishing operations in cases where gear longer than 36 feet might otherwise have been used to maintain surface visibility in deep waters or strong tidal currents. Comments by fishery participants during the series of meetings (see Section 8) to seek input on rule development indicated most surface gear in use was less than 36 feet; only one interviewee indicated they used surface gear longer than 36 feet. **Error! Reference source not found.** **Error! Reference source not found.** lists rule changes thematically that are not expected to result in costs and explains the rationale for this conclusion. Grammar and sentence structure modifications resulting solely due to proposed rule changes are not detailed.

**Table 2. The Proposed Changes within WAC 220-340-430 Not Expected to Impose Monetary Costs for Compliance.**

	<b>Proposed Rule Change Action</b>	<b>Subject ion</b>	<b>Affected Fishery</b>	<b>Rationale</b>
<b>1</b>	Shifting from language that describes what is unlawful to language that instead describes what must be done	5(d) 6(c)	Puget Sound Coastal	Improves regulatory clarity
<b>2</b>	Prohibits the use of other line marking schemes in Washington Dungeness crab fisheries	6(b)	Puget Sound Coastal	Supports positive and negative attribution of entangled gear to the appropriate fishery.
<b>3</b>	Shifting responsibility from license holder to vessel operator	5(d) 5(d)(iii) 6(a)	Puget Sound Coastal	License holders may not be on the vessel; the operator of the vessel is actively fishing.
<b>4</b>	Requires vessel operator to register buoy brand and buoy color combinations each crab season, prior to the commencement of fishing	5(d)	Puget Sound Coastal	Registration each season is an existing requirement; change clarifies that registration must be done prior to participating in the fishery for that season.

5	Removes responsibility for compliance from license holder and stipulates that buoys fished under a single license must be uniformly marked with the buoy brand number submitted during registration	5(d)(i)	Puget Sound Coastal	Registration is an existing requirement; change clarifies that the buoy number appearing on the buoys must match the registered number to ensure traceability to vessel.
6	Prohibition to register or use buoy brand required by a treaty tribal fishery ( <b>New</b> )	5(d)(v)	Coastal	Supports positive and negative attribution of entangled gear to the appropriate fishery.
7	Surface Gear Limitation ( <b>New</b> )	7	Coastal	This is an entanglement risk reduction measure; limits the total length of buoy and trailer line.

Compliance cost analysis relied on information gathered through structured interviews with coastal Dungeness crab fishery participants conducted in November and December 2024. To provide a fair portrayal of the costs, WDFW identified 17 individuals representative of a cross-section of the fishery with some redundancy in case some were not available or chose not to participate. Selection criteria included key attributes such as vessel size (large, small), primary fishing area (ocean, bay), license status (owner, lessee), vessel/gear ownership (owner, lessee), and length of time in fishery. Each individual was contacted via an initial text/email/phone call and second or third attempts were made when necessary. A total of 11 interviews were completed using a set of standard questions ([Appendix 1](#)). Some interviewees were subsequently contacted to refine or fill gaps in the information collected.

The proposed rule language places responsibility on the vessel operator for ensuring each crab pot deployed in the fishery is rigged with line that meets the marking/color requirements. The cost associated with achieving compliance includes the expense of purchasing manufactured line and/or the outlay for materials and labor to mark the line.

For the purposes of this SBEIS, when considering the cost of marking line with sets of solid marks as an alternative to manufactured line, we assume paint (spray paint or liquid oil-based paint) is used. The current rule specifies a 12-inch continuous red mark (in two locations). Other than an amendment in 2023 (which added “continuous” to prohibit the rare practice of attaching a 12-inch long “zip-tie” on the line), the rule has not stipulated the method of marking. Given that marking was a new endeavor, the intent was to allow different approaches to be tested. Coastal crabbers have variously used paint (oil-based liquid paint, spray paint), duct tape, or tubing spliced or woven into the line. The proposed rule language narrows the options for marking by specifying that the mark must cover the entire circumference of the line for the length of the mark. Interwoven tubing cannot meet this requirement. Further, crabbers have shared that taping is not effective as it does not withstand the rigors of fishing. Therefore, the analysis for manual line marking considers paint only. This analysis also estimates costs of manually applied marks without considering the current cost crabbers incur in materials and labor to apply the 12-inch continuous red mark. As a result, *new* costs to meet the expanded line marking requirements may be somewhat over-stated here but still reasonable.

Based on information<sup>15</sup> gathered during interviews with participants and outreach to distributors of manufactured line, the estimated cost to comply as of December 1, 2025 (surface gear only) with manufactured line is \$1,434-\$3,676 for a vessel using 300 pots and \$2,347-\$6,016 for a vessel using 500 pots (**Error! Reference source not found.**). Ranges are calculated due to variable prices for different types of line (e.g., neutrally buoyant vs. floating). For the cost calculation, the amount of line needed to build surface gear was assumed to be 42 feet, based on the proposed rule requirement that surface gear does not exceed 36 feet. An additional 6 feet were included to account for any extra line needed to rig the gear. To comply as of December 1, 2028, the estimated cost for manufactured vertical line is \$3,129-\$8,021 for a vessel using 300 pots and \$5,215-\$13,368 for a vessel using 500 pots. After the phased-in implementation, the full estimated cost of compliant manufactured line is \$4,563-\$11,697 for a vessel using 300 pots and \$7,562-\$19,384 for a vessel using 500 pots, depending on the type of line purchased. Detailed descriptions of how these cost estimates were calculated are provided in Appendix 2

The proposed rule permits using liquid paint or spray paint to mark line, with a sunset date scheduled for 2035. This allowance is a cost-effective alternative to purchasing manufactured line and provides vessels time to mark the line they are currently using with paint until their existing line is ready for replacement, at which point they

could purchase compliant manufactured line. Most interviewees indicated that their line needs to be replaced every 5-11 years, with year-round fishing necessitating more frequent line replacement and some specific types of line lasting up to 20 years. However, interviewees indicated that manufactured red and black line may need to be replaced more frequently so that the colors are visible to enforcement and maintain their purpose of entanglement identification, compared to manufactured line that is replaced only for durability reasons.

For a vessel with 300 pots, the cost to mark line with liquid paint is \$330 for surface line that does not exceed 36 feet and \$495 for vertical line with three sets of compliant marks in the top 15 fathoms, for a total of \$825. For a vessel with 500 pots, the cost to mark line with liquid paint is \$550 for surface line and \$825 for vertical line, for a total of \$1,375. The estimated costs to mark a 300-pot vessel with spray paint are \$240 for surface gear and \$360 for vertical gear, totaling \$600, and the estimated costs to mark a 500-pot vessel with spray paint are \$400 for surface gear and \$600 for vertical gear, totaling \$1,000. These cost estimates assume that a single can of liquid paint costs \$55 and a single can of spray paint costs \$10, based on feedback from coastal crabbers. Vessels will likely need to re-paint their line more frequently than they would need to replace manufactured line, so the costs to paint would likely be incurred on a more frequent basis.

The costs of this proposed rule are expected to impact different vessel operations differently and may not reflect every possible case. For example, vessels that replace their line more frequently due to shallower fishing—which creates more wear and tear on the line—may have fewer net costs as a result of the proposed rule, compared to vessels that replace their line less frequently and would not have replaced their line if not for the proposed rule. Additionally, new vessels entering the fishery will likely need to purchase all new gear upon entering, and therefore, costs for compliant line may not differ greatly from startup costs they would incur even without the line marking requirement.

**Table 3. Estimated costs to comply with the proposed rule for vessels using either 300 or 500 pots.**

	Cost to Comply	
	300 pots	500 pots
<b>Manufactured surface line</b>	\$1,434 - \$3,676	\$2,347 - \$6,016
<b>Manufactured vertical line</b>	\$3,129 - \$8,021	\$5,215 - \$13,368
<b>Manufactured surface and vertical line</b>	\$4,563 - \$11,697	\$7,562 - \$19,384
<b>Dip painting surface line</b>	\$350	\$550
<b>Dip painting vertical line</b>	\$495	\$825
<b>Dip painting surface and vertical line</b>	\$825	\$1,375
<b>Spray painting surface line</b>	\$240	\$400
<b>Spray painting vertical line</b>	\$360	\$600
<b>Spray painting surface and vertical line</b>	\$600	\$1,000

Interview respondents provided estimated labor costs for replacing their manufactured line to comply or painting their existing line with compliant sets of marks. Additional financial costs of labor (i.e., paying their crew) estimated by interviewees range from \$4,000 to \$15,000 to replace manufactured line and approximately \$6,000 for painting line. Some vessel owners/operators do not pay their employees extra for manual labor to maintain or modify gear and instead consider gear rigging part of the baseline job expectations. The additional labor costs in terms of time spent replacing or painting line were estimated to be from 25 to 1,000 hours, with one participant estimating that it would require months of additional labor.

Information gathered through interviews, along with data on vessels' operating costs collected by The National Marine Fisheries Service (NMFS)<sup>16</sup>, indicate that typical Dungeness crab vessels incur total annual operating costs of around \$200,000-\$400,000 per vessel. About 4-10% of those costs are estimated to be costs associated with purchasing and maintaining crab gear. The maximum compliance cost (\$19,384) amounts to 5-10% of the estimated total operating costs for a typical Dungeness crab vessel. The EDC data only includes 36 Dungeness crab vessels and is a rough estimate of crab gear-specific costs, because data on gear costs are not available at the fishery level and are therefore allocated to each fishery based on proportion of revenue. Nevertheless, comparing estimated costs to comply with the NMFS data on overall operating costs provides an approximate scale of impact from the proposed rule. The costs to comply with this proposed rule are expected to account for no more than 10% of the typical vessel's total operating costs expressed by industry participants and reflected in NMFS' economic data.

## Section 4 More than Minor Costs



*RCW 19.85.030(1)(a) "In the adoption of a rule under chapter 34.05 RCW, an agency shall prepare a small business economic impact statement: (i) If the proposed rule will impose more than minor costs on businesses in an industry; ..."*

*RCW 19.85.020(2) "'Minor cost' means a cost per business that is less than three-tenths of one percent of annual revenue or income, or one hundred dollars, whichever is greater, or one percent of annual payroll..."*

In addition to information collected through participant interviews, the analysis incorporates economic data from the Pacific States Marine Fisheries Commission PacFIN fish ticket database, comprised of landings data collected and submitted by state fish and wildlife agencies. Specifically, ex-vessel revenue data from 213 vessels on active WA coastal crab licenses were compiled to estimate impacts from costs to comply with this proposed rule. Data from PacFIN indicates that the median ex-vessel revenue per vessel derived from coastal commercial crabbing for the past five years (excluding 2020) is \$344,402 per year for those affected businesses. However, all but one fishery participant interviewed described that activity in other fisheries also contributes to their business revenues. Eight of the 11 interviewees identified a range of annual revenues of between \$250,000-\$500,000 for their business participating in both Dungeness crabbing and other fisheries, with the remaining 3 interviewees identifying revenues either below or above that range. PacFIN data indicates that the average annual ex-vessel revenue for a typical Dungeness crab vessel (i.e., a vessel with median revenue streams) from all West Coast fisheries in which they participate is \$372,857 within the past five years, excluding 2020. Revenues across all fisheries may be underestimated, because some of the vessels that participate in the WA coastal Dungeness crab fishery may also participate in fisheries off Alaska. Revenue data from their participation in Alaska fisheries was not available to include in this analysis. RCW 19.85.020(2) specifies that the minor cost threshold must be calculated as "three-tenths of one percent of annual revenue or income, or one hundred dollars, whichever is greater." Thus, the minor cost threshold is calculated as three-tenths of one percent (0.003%) of the estimated average annual ex-vessel revenue for a typical Dungeness crab vessel (\$372,857). **Based on the typical ex-vessel revenue in all West Coast fisheries, the minor cost threshold is estimated to be \$1,118.57 for affected businesses. Given costs of compliance between \$4,498 and \$19,384 for manufactured line, the proposed rule is expected to result in more than minor costs to businesses, necessitating the development of an SBEIS.**

Additionally, pursuant to RCW 19.85.040(2)(c), the industry code 114112 (Shellfish Fishing), along with the maximum estimated cost associated with compliance for businesses (which is detailed in Section 3 above), was entered into the Minor Cost Threshold Calculator provided by [Governor's Office for Regulatory Innovation and Assistance \(ORIA\)](#). The minor cost threshold for the Shellfish Fishing industry, which includes more than Dungeness crab, is estimated at \$1,175.62. Based on this minor cost threshold and the costs of compliance for manufactured line described above, the proposed rule is expected to result in more than minor costs to businesses, necessitating the development of an SBEIS.

## **Section 5 Disproportionate Impact on Small Businesses<sup>17</sup>**

*RCW 19.85.040(1) "...To determine whether the proposed rule will have a disproportionate cost impact on small businesses, the impact statement must compare the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules using one or more of the following as a basis for comparing costs: (a) Cost per employee; (b) Cost per hour of labor; or (c) Cost per one hundred dollars of sales."*

As described in Section 3 Cost of Compliance above, the estimated costs to comply with the proposed rule range from \$4,563 to \$19,384 for manufactured line, depending on the type of line purchased and the number of pots owned by the business. Estimated costs to comply using liquid or spray paint range from \$600 to \$1,375, depending on the type of paint used and the number of pots owned. RCW 19.85.040(1) requires that an SBEIS analyze cost impacts between small businesses affected by the proposed rule and the largest 10% of affected businesses to determine if the proposed rule will result in a disproportionate impact on small businesses. All businesses affected by this proposed rule are considered small businesses, but given the wide range of revenue portfolios across the 213 identified active vessels (i.e., businesses) in the fishery, impacts to vessels with the largest 10% of revenue streams (i.e., top 10% of total sales revenue over five years) were compared against cost impacts to all other vessels in the fishery (Table 4). Comparing the cost of compliance (per employee, per hour of labor, or per one hundred dollars of sales) for businesses in these two groups form the basis for determining whether the proposed rule may disproportionately impact small businesses in the state of Washington. Due to difficulties associated with estimating number of employees in each potentially impacted business and the availability of estimated revenue data, this analysis compares the maximum estimated cost of compliance per one

hundred dollars of sales (i.e., ex-vessel revenue) between the largest 10% of affected businesses (22 vessels) and the remaining affected businesses (191 vessels). The maximum cost reflects a vessel that opts to purchase the most expensive type of manufactured line for a 500-pot operation. Therefore, the difference in impacts between the two groups described here may be overestimated for most cases.

Ex-vessel revenue data from fish receiving tickets from 2019-2024, excluding 2020, were used to calculate total and average annual revenue of the two business categories (top 10% and bottom 90%), which were then used to calculate the cost of compliance per one hundred dollars of sales. The maximum cost to comply with the rule would have roughly one-third of the impact on the vessels with the largest 10% of revenue streams compared to the remaining 90% of vessels in the fishery (Table 4). However, this difference does not put any of the vessels in the fishery at a competitive disadvantage, because all vessels in the fishery are considered small businesses, use similar gear, and employ relatively similar numbers of crewmembers. Furthermore, ex-vessel revenues alone do not account for total net profits for a vessel, because the larger the vessel operation, the larger the operating costs tend to be. Thus, the vessels in the top 10% category may have greater overall costs compared to those in the bottom 90%. Given this analysis, and the nature of all affected businesses qualifying as small businesses, this proposed rule is not expected to have a disproportionate impact on any small businesses or give any of the affected businesses a competitive advantage over any other affected businesses.

**Table 4. Cost impacts, represented as the cost of compliance per \$100 of sales, for active Dungeness crab vessels (i.e., businesses) with the top 10% of ex-vessel revenue streams in the last five years compared to the remaining 90% of vessels in the fishery.**

	Bottom 90% of Businesses	Top 10% of Businesses
<b>Estimated number of businesses</b>	191	22
<b>All fisheries revenues (Median) <sup>a/</sup></b>	\$359,119	\$1,132,327
<b>All fisheries revenues (Average) <sup>b/</sup></b>	\$379,867	\$1,356,761
<b>Estimated maximum cost of compliance</b>	\$19,384	\$19,384
<b>Estimated maximum annual cost of compliance <sup>c/</sup></b>	\$6,461	\$6,461
<b>Total 5-year ex-vessel revenue averaged across businesses</b>	\$1,766,984	\$6,766,088
<b>Cost of compliance per \$100 sales <sup>d/</sup></b>	\$1.10	\$0.29
<b>Annual cost of compliance per \$100 sales <sup>e/</sup></b>	\$1.83	\$0.48

a/ The median of the recent 5-year annual average revenue per business, excluding 2020

b/ The average of the recent 5-year annual average revenue per business, excluding 2020

c/ Estimated annual cost of compliance was calculated as the maximum cost to purchase all new manufactured line (\$19,384) every three years (total cost to purchase line divided by three years), which is the minimum replacement time reported by interviewees.

d/ Total revenues in the last 5 years per vessel (previous row), excluding 2020, were used to calculate cost of compliance per \$100 of sales.

e/ Average annual revenues in the last 5 years per vessel, excluding 2020, were used to calculate annual cost of compliance per \$100 of sales.

## **Section 6 Steps to Reduce Costs to Individuals or Small Businesses**

*RCW 19.85.030(2) "Based upon the extent of disproportionate impact on small business identified in the statement prepared under RCW 19.85.040, the agency shall, where legal and feasible in meeting the stated objectives of the statutes upon which the rule is based, reduce the costs imposed by the rule on small businesses. The agency must consider, without limitation, each of the following methods of reducing the impact of the proposed rule on small businesses:*

- (a) Reducing, modifying, or eliminating substantive regulatory requirements;*
- (b) Simplifying, reducing, or eliminating recordkeeping and reporting requirements;*
- (c) Reducing the frequency of inspections;*
- (d) Delaying compliance timetables;*
- (e) Reducing or modifying fine schedules for noncompliance; or*
- (f) Any other mitigation techniques including those suggested by small businesses or small business advocates.*

*RCW 19.85.030 (3) "If a proposed rule affects only small businesses, the proposing agency must consider all mitigation options defined in this chapter."*

The Department is obligated the RFA to consider whether and how costs on small businesses imposed by a rule may be reduced. RCW 19.85.030 lays out six cost reduction methods the agency must consider. In preparing the rule, WDFW evaluated these methods and found that easing substantive regulatory requirements, delaying the compliance timetable, and "other mitigation techniques..." were relevant.

The proposed rule reflects direct and indirect methods or measures WDFW incorporated to minimize costs for fishery participants. These measures were informed through the outreach process (See Section 8, Table 5) and informal communication with fishery participants.

Initially the Department contemplated structuring vertical line marking requirements by fishing depth, divided into three bins, i.e., deeper than 20 fm, 5-20 fm, or shallower than 5 fm. For each depth bin the required amount of marked line was different. Fishery participants expressed significant concerns about this approach; they deemed it logistically complicated and were fearful it left them vulnerable to falling out of compliance because storms and strong currents can move pots to different depths. Because gear configurations vary significantly by fishery participant as do fishing their patterns through a season, mitigating this risk would push some to mark a substantial portion, if not all of, their vertical line. In response, WDFW restructured the approach to be based on vertical line length and not fishing depth.

Similarly, early iterations of the line marking concept envisioned marking the uppermost 20 fathoms of vertical line, either through the use of manufactured red/black dual-color line or the application of five (5) sets of manually applied marks (each set is comprised of two two-foot sections) to line of any other color. However, fishery participants noted that requiring 20 fathoms of marked line would be financially burdensome and was excessive relative to achieving marking of the uppermost portion of the line. Based on this input from crabbers, the length to be marked was decreased from 20 to 15 fathoms. This decrease translates into savings of about \$1,043-\$2,674 for a 300-pot license and about \$1,695-\$4,345 for a 500-pot license, depending on the type and width of line used. And to accommodate shallow-depth fishing – where shots (i.e., segments) less than 15 fm are used – a separate marking requirement based on percent of line fished was added to reduce costs. Similarly, the number of sets of manually applied marks in the uppermost 15 fm of vertical line is fewer, dropping from five early on to three in the proposed rule, which equates to eight fewer feet of line to paint, or savings of about \$240-\$550. Cost savings estimates are calculated using the same methodology as used for costs to comply, which are described in Appendix 2. The only difference is the amount of line or manual markings used to make the calculation (5 fathoms or 8 feet for cost savings). The final estimate is then characterized as a cost savings rather than a cost to comply. Under the proposed rule, fishery participants can mix marking methods, such as manually marking surface gear and using red/black manufactured line for vertical lines. This flexibility will enable crabbers to make incremental changes and choose the most cost-effective method for their operation.

Fishery participants also shared that some were beginning to use red or red/black colored lines ahead of regulatory requirements. Anticipating new rules and aiming to avoid unnecessary costs, crabbers began purchasing red line under the reasonable assumption that it would denote the Washington crab fishery, based on WDFW's 2020 rule making. And once Washington, Oregon, and California managers agreed on using black exclusively for the Dungeness crab fisheries, coastwide manufacturers began producing dual-colored line for testing by the states and which was subsequently made available for retail sale. Because line with differing diameters and buoyancies is used to rig a crab pot, a variety of line configurations have been fabricated which appear to be red, black, and white in varying proportions since some components, e.g., the core, cannot be dyed or due to the presence of a tracer which commonly is white or off-white.

To avoid 'penalizing' early adopters, WDFW framed the proposed rule to accommodate the line configurations on the market and already in use. Recognizing that the standard is to be able to identify line as distinctly red and black visually and sufficiently as Washington coastal crab gear, the proposed language defines lawful manufactured line as being red and black with "two strands colored red and at least one strand colored black." In contrast, initial iterations of the rule included more exact proportions (e.g., two-thirds) which could have led to a narrower interpretation of legal line. Faced with the difficulty of accurately and adequately capturing the nuances of line colors in the text of the rule and the need to be responsive to future line manufacturing advancements, WDFW created a Compliance Guide, incorporated by reference in the rule. The Compliance Guide does not reduce costs but aims to ease compliance but by providing detailed diagrams and photographs of acceptable line

types and configurations, and other information to assist crabbers. Importantly the Compliance Guide can be readily updated.

Finally, WDFW proposes a phased approach to achieve comprehensive line marking implementation. Surface gear must be marked effective December 1, 2025 or about six to seven months after anticipated adoption of the proposed rule in spring 2025. Compliance for vertical line marking begins with the 2028-2029 crab season, three full seasons or “years” after the rule’s anticipated adoption.

The interval between rule adoption (spring 2025) and the effective date for vertical line marking (2028-2029 crab season) serves several purposes. First, the need for state specific dual-colored line is new and only with adoption of this proposed rule will the line specifications be certain. With this certainty in place, time is necessary for the manufacturing and retailing sectors to adapt to meet to the demand. Time can also help mitigate or minimize financial impacts of marking either 300 or 500 vertical lines by allowing the costs to be spread over multiple years. To a degree the time interval enables the natural replacement of worn line with requirement-compliant line. Most interviewees indicated that their vertical line needs to be replaced every 5-11 years and some crabbers said line that is fished “shallow” may be replaced as frequently as every three years due to greater contact with the bottom. In contrast, marking surface gear requires less material (dual-color line or paint) compared to vertical line marking and therefore would put less pressure on supplies and is relatively less costly. As described in Section 1 participants in the coastal fishery have been required to mark vertical line since 2020-2021 and expanding requirements to include surface gear sooner or more quickly, i.e., at the start of the 2025-2026 season was generally supported as reasonably feasible by attendees of the public meetings and workshops, Coastal Dungeness Crab Advisory Board (Advisory Board)<sup>18</sup> members, and interviewees. In sum, the proposed timeline balances the need to obtain an ITP and the economic and practical realities associated with changing over essential equipment to be compliant (i.e., line) for 223 businesses.

## **Section 7 Number of jobs created or lost**

*RCW 19.85.040(2) “A small business economic impact statement must also include... (d) An estimate of the number of jobs that will be created or lost as the result of compliance with the proposed rule.”*

Measurable gains or losses in the number of jobs in the coastal crab fishery are not anticipated as a result of this rule drawing from conducted interviews and anecdotal feedback from fishery participants at public and Advisory Board meetings. Painting line to meet new requirements will require more time, hence more labor. To meet this need, crabbers most likely will simply increase the number of hours existing crew are expected to work during the preseason gear preparation period. It is possible additional individuals may be hired but the work would be of short duration, i.e., less than a few weeks. New jobs could be created should participants in the crab fishery (or any other fishery that falls under similar requirements) choose to out-source gear marking to established companies at a greater rate in the future compared to present practice.

## **Section 8 Involving stakeholders in rule development**

*RCW 19.85.040(2) “A small business economic impact statement must also include...: (b) A description of how the agency will involve small businesses in the development of the rule.”*

To inform coastal Dungeness crab fishery management, WDFW routinely hosts industry-wide meetings for license holders, crab buyers, processors, and other stakeholders to gather input on critical issues. Communication with the industry also occurs via annual newsletters, mass texts, emails, and mailed notices.

Beginning in 2022 through 2024 WDFW held several meetings that included expanded line marking on the agenda (Table 5). At these meetings conceptual line marking approaches were presented for feedback. Two workshops were held June 4 and 5, 2024 at Westport and Ilwaco, respectively, to refine the conceptual designs for practical application. The workshops engaged the expertise of fishery participants who represented a cross-section of the crab fishery e.g., vessel owners, vessel operators, owner/operators, large boat/small boat operations, long-time crabbers and newer entrants, etc. Combined, about 30 attendees shared valuable insights into the scope of fishing practices (deep, shallow, bay, dual permits) and gear configurations (shot lengths, splicing methods, marking methods). WDFW staff also interacted with stakeholders through informal communication via phone calls and emails. Advisory Board members were regularly kept up to date on the line marking rule development during board meetings where they could provide feedback; most of those routine Board meetings are not listed in Table 5.

The list of fishery participants identified as interview candidates for the preparation of this SBEIS were also chosen using criteria to reflect the unique characteristics and diversity of businesses operating in the coastal fishery such as primary “home” port, the primary area fished, license ownership, vessel ownership, years of crab fishing experience, annual fishing income, and vessel size (proxy for business size). Insights and specific information gained through the interviewee’s responses were used to confirm rule elements or flag ones for further refinement. As a final step, WDFW staff presented the proposed rule at the December 20, 2024 Advisory Board meeting and did a line-by-line walk-through of the text.

**Table 5. List of Key Meetings, Workshops, and Outreach Involving Coastal Dungeness Crab Fishery Participants in Rulemaking Development.**

Date	Activity	Who
Aug. 31, 2022	Coastal Crab Industry Meeting	Fishery participants (license holders and vessel operators)
Sept. 21, 2022	Coastal Crab Industry Meeting	Fishery participants (license holders and vessel operators)
Oct. 13, 2022	Coastal Crab Industry Meeting	Fishery participants (license holders and vessel operators)
May 11, 2023	Electronic Monitoring Industry Meeting (PDF)	Fishery participants (license holders and vessel operators)
June 4, 2024	Westport Workshop; Review line marking technical detail, gather input on rule construction	Cross-section of fishery participants
June 5, 2024	Ilwaco Workshop; Review line marking technical detail, gather input on rule construction	Cross-section of fishery participants
September 12, 2024	Public Meeting	Fishery participants (license holders and vessel operators)
December 20, 2024	Advisory Body Meeting Review draft rule language	WA D. Crab Advisory Board Members
Annual Newsletters	1 <sup>st</sup> Edition: 2021-2022 Season 2 <sup>nd</sup> Edition: 2022-2023 Season 3 <sup>rd</sup> Edition: 2023-2024 Season	Fishery participants (license holders and vessel operators), processors, fishery supply retailers, other state and federal fishery managers, posted to WDFW website

## Section 9 Summarize results of small business analysis

In summary, the proposed rule amendments aim primarily to improve gear marking in Washington's coastal Dungeness crab fishery to enhance marine life protection, reduce regulatory risk, and ensure compliance with federal laws, including the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA). These changes are designed to facilitate gear traceability, helping to identify entangled gear by its fishery of origin, thus enhancing conservation efforts and liability protections for fishery participants and the state. The proposed rule changes affecting the Puget Sound fishery are primarily administrative and aim to enhance clarity and compliance as well as improve enforceability without imposing new compliance costs.

The analysis evaluates the proposed rule's financial implications for the approximately 223 affected vessels in the coastal commercial fishery, which are considered small businesses under state law and finds the proposed regulations may impose more-than-minor costs on businesses actively fishing in the coastal Dungeness crab fishery. The estimated costs to comply with the proposed rule range from \$4,563 to \$19,384 for manufactured line, depending on the type of line purchased and the number of pots owned by the business. Estimated costs to comply using liquid or spray paint to mark the line range from \$600 to \$1,375, depending on the type of paint used and the number of pots owned. Costs to paint line are expected to be incurred more frequently than for manufactured line. All of these costs to comply are expected to account for 10% or less of the total operating costs incurred by affected businesses. The proposed rule is not expected to disproportionately impact any of the affected businesses in a way that results in a competitive disadvantage, as all affected businesses are considered “small” and use similar gear. For the largest 10% of affected businesses, the costs to comply may have roughly a third of the impact compared to all other affected businesses, but the largest vessel operations tend to incur the largest overall operating costs and are therefore not expected to have a competitive advantage as a result of the proposed rule. The proposed rule allows for the cost-effective alternative of painting gear with specified marks

rather than purchasing manufactured line. The costs associated with painting compliant marks amounts to less than 2% of those associated with purchasing compliant manufactured gear.

WDFW has emphasized stakeholder engagement through workshops, public meetings, and consultations with the Advisory Board for this rulemaking. Adjustments to the proposed rule, such as reducing the required length of marked line and simplifying marking protocols, were made based on industry feedback to mitigate costs, balancing conservation goals with the operational realities of small businesses. While increased labor for line marking may require short-term adjustments, no significant job losses are anticipated.

In conclusion, the proposed rule amendments represent a critical step toward balancing conservation with the economic sustainability of the Washington coastal Dungeness crab fishery. By adopting a flexible, phased, and stakeholder-informed approach, the Washington Department of Fish and Wildlife aims to meet federal conservation requirements while minimizing economic impacts on small businesses.

## Section 10 Report Preparation

This report was prepared by:

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## Section 11 References

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## Footnotes

<sup>1</sup> RCW 19.85.011

<sup>2</sup> This set of evaluations can be visualized using the [Governor's Office for Regulatory Innovation and Assistance's RFA SBEIS Decision Tree](#).

<sup>3</sup> RCW 19.85.061.

<sup>4</sup> RCW 19.85.020(3) defines a small business “as any business entity . . . that is owned and operated independently from all other businesses, and that has fifty or fewer employees.”

<sup>5</sup> RCW 19.85.030(2).

<sup>6</sup> RCW 19.85.030(2).

<sup>7</sup> RCW 19.85.030(2)(f).

<sup>8</sup> Ex-vessel revenue refers to the money earned by the fishing operation for the first sale of the catch. It is the only metric of value collected from commercial fisheries and is reported on fish landing receipts also known as “fish tickets.” Ex-vessel revenues do not reflect the full value to the economy (for example, they do not capture the revenues that fish buyers earn from processing and bringing the seafood to market).

<sup>9</sup> Tracer line of another color, typically white or off-white, and used to denote manufacturer or line type will be permissible. Specifications and examples of permissible red/black line with tracer line will be detailed in a compliance guide.

<sup>10</sup> RCW 77.65.100(3).

<sup>11</sup> RCW 77.70.350(1)(b).

<sup>12</sup> Ex-vessel revenues were taken from PacFIN (or “Pacific Fisheries Information Network”), which is a database managed by the Pacific States Marine Fisheries Commission that compiles and summarizes WDFW fish ticket data with data from the corresponding databases in Oregon and California. The PacFIN database and summary reports can be accessed at <https://reports.psmfc.org/pacfin/f?p=501:1000:::>

<sup>13</sup> See citation to the RCW in footnote **Error! Bookmark not defined.**

<sup>14</sup> WDFW does recognize that there are important differences in that processing companies do avoid the cost of paying for the catch from their own boats. However, WDFW does not believe that further evaluation of whether independent fishing vessels are disproportionately impacted by the rule because of this would be the best way to proceed with the analysis.

<sup>15</sup> Information gathered includes but is not limited to length of line required to build a compliant 15-fathom top shot of vertical line, prices for coils of compliant line, and frequency of line replacement. The full list of interview questions is provided in Appendix 1.

<sup>16</sup> The NMFS Economic Data Collection Program interviews vessels catching groundfish in West Coast fisheries to compile economic data, which is publicly available in NOAA's FISHEyE data exploration tool found at: <https://connect.fisheries.noaa.gov/fisheye/fisheyelandingpage.html>

<sup>17</sup> RCW 19.85.020(2) defines a small business as, "any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees."

<sup>18</sup> The Coastal Dungeness Crab Advisory Board, established in 1999, advises WDFW on key measures. This 15-member board, appointed by the WDFW Director, represents fishery participants.

## Appendix 1. Interview Questionnaire

### Comprehensive Line Marking

Interviewer: \_\_\_\_\_ Primary port: \_\_\_\_\_  
Date: \_\_\_\_\_ Primary fishing area (ocean – depth; bay;  
Interviewee: \_\_\_\_\_ River): \_\_\_\_\_  
Vessel name(s): \_\_\_\_\_

#### Introduction

1. What is your understanding of the purpose for marking line?
2. How many years have you participated in the WA coastal D. crab fishery?
3. What other commercial fisheries have you or do you participate in?
4. Do you own or lease a Washington D. crab license? How many? Do you own or lease a D. crab license from another state (which ones)?
5. Do you own or lease a vessel(s)?
6. Do you own the gear that you fish (if not, who owns the gear)?
7. What is your annual income from crabbing (range, typical)? Other fishery income (yes/no)?
  - a) Less than \$250,000
  - b) \$250,000 to \$499,999
  - c) \$500,000 to \$749,999
  - d) \$750,000 to \$1,000,000
  - e) More than \$1,000,000
8. What is your annual approximate operating cost (crew, fuel, bait, regulatory compliance, etc.)?
9. Who is most likely to bear the costs of line marking (license owner, boat owner, other)?
10. How are you currently meeting the 12-inch continuous line marking requirement?
  - a) Paint (describe)
  - b) Tape (describe)
  - c) Twine (describe)
  - d) And what has been your experience with this approach?
11. How many years does line last typically?
  - a) How often do you replace existing line?
  - b) Do different types of line or shots of line need to be replaced at different time intervals?
12. Have you already purchased manufactured line?
  - a) What color(s)?
  - b) What type of line (floating, neutrally buoyant, diameter)?
  - c) Color of tracer line? Black tracer
  - d) Cost?
13. What length of top shot do you use?
  - a) How much line is needed to build this length?
14. How much line do you need to build one 15-foot top shot?
15. How much line do you need to build surface gear that doesn't exceed 36 feet in length.
16. What type of line do you use? What is the thickness?
  - a) Surface gear:
  - b) Vertical line:
17. What do you estimate to be the material cost for your operation to comply with the rule? [Need input on manufactured line and/or solid mark costs separately]
  - a) For surface gear?
  - b) For vertical line?
18. What do you estimate the labor costs will be? [number of hours would be helpful as well as overall monetary outlay]
19. How much does staggering surface gear and vertical line implementation impact your costs (including labor as a cost)?
20. Do you foresee any other potential costs that might result from the rule?
21. Do you have any general comments regarding the expansion of line-marking?

## Appendix 2. Costs to Comply - Methodology

There are two types of coastal Dungeness crab permits which allow for either 300 pots or 500 pots to be used. Costs to comply with the proposed rule were calculated for both types of permits by calculating costs based on whether an operation uses 300 or 500 pots. Additionally, there are different prices for different types of manufactured line, depending on the size, buoyancy, and brand of the line. Manufactured line can be purchased in coils of 200 fathoms each, which is the most cost-effective way to purchase large quantities of line. Table 6 below shows current prices per coil of line that were provided by a distributor of red/black dual-colored line that complies with the proposed rule. Some vessels may opt to liquid or spray paint their line instead of purchasing manufactured line. Industry participants indicated that oil-based paint costs about \$50-\$60 per gallon, and 2 gallons can rig about 400 pots. Using spray paint, a single can costs about \$10 and can mark about 50 pots. The following section provides details on how estimated costs to comply with the proposed rule were calculated, based on our understanding of current prices.

**Table 6. Price per coil of manufactured line that would comply with the proposed rule, provided by a distributor of red/black dual-colored line that complies with the rule.**

Size and Buoyancy	Brand of Manufactured Line			Average Price per Coil Across Brands	
	Polysteel	Hydropro	Blue Steel	Silver Pacific	
3/8" floating	\$142	-	\$130	\$119	\$130
7/16" floating	\$186	-	\$170	\$160	\$172
1/2" floating	\$230	-	\$218	\$206	\$218
3/8" neutrally buoyant	-	\$227	-	-	\$227
7/16" neutrally buoyant	-	\$277	-	-	\$277
1/2" neutrally buoyant	-	\$334	-	-	\$334

#### Manufactured Line - Surface Gear Calculation

To calculate the cost of fully switching to compliant manufactured line for surface gear, we assumed that every vessel would build the surface gear on a single pot using 42 feet (7 fathoms) of line, which equates to the maximum length of surface gear allowed under this proposed rule (36 feet) plus 6 additional feet of line to tie off the ends and attach buoys as needed. A vessel using 300 pots would need to replace a total of 2,100 fathoms of surface gear line to comply with the rule (300 pots X 7 fathoms), and a vessel using 500 pots would need to replace a total of 3,500 fathoms of surface gear line to comply (500 pots X 7 fathoms). Since a single coil is made up of 200 fathoms of line, a 300-pot vessel would need to purchase 11 coils (2,100 fathoms / 200 fathoms per coil), and a 500-pot vessel would need to purchase 18 coils (3,500 fathoms / 200 fathoms per coil). While this calculation comes out to 10.7 coils and 17.5 coils, respectively, we assume that vessels will purchase whole coils and round up to the nearest integer. Finally, by multiplying the number of coils needed by the minimum (\$130) and maximum (\$334) average prices per coil across the different types of line shown in Table 6 above, the range of estimated costs to comply with the surface gear portion of the proposed rule are calculated as \$1,434-\$3,676 for a vessel using 300 pots and \$2,347-\$6,016 for a vessel using 500 pots, depending on the type of line used.

#### Manufactured Line - Vertical Gear Calculation

The calculation used to estimate costs to comply with the vertical gear portion of this proposed rule are similar to that of the surface gear portion described above. The only difference is that instead of assuming 7 fathoms of line is needed per pot, we assume that 16 fathoms is needed to build a 15-fathom top shot on a single pot, with an extra fathom of line to tie off the ends or splice the line. Thus, a vessel using 300 pots would need to replace at total of 4,800 fathoms of vertical line to comply (300 pots X 16 fathoms), and a vessel using 500 pots would need to replace a total of 8,000 fathoms of vertical line (500 pots X 16 fathoms). With 200 fathoms of line per coil, a 300-pot vessel would need to purchase 24 coils, and a 500-pot vessel would need to purchase 40 coils. Applying the same minimum (\$130) and maximum (\$334) prices per coil, the range of estimated costs to comply with the vertical gear portion of the proposed rule are calculated as \$3,129-\$8,021 for a vessel using 300 pots and \$2,347-\$6,016 for a vessel using 500 pots.

#### Liquid Painting – Surface Gear Calculation

Industry participants indicated that oil-based paint costs about \$50-\$60 per gallon, so for our cost estimate calculation, we assume a single can costs \$55. A single gallon of oil-based paint can mark about 400 feet of line



based on the current 12-inch line marking requirement. The proposed rule allows for no more than 2 trailer buoys and 36 feet of surface line once rigged and requires that vessels make one set of two 2-foot marks between each pair of buoys on the surface gear. Assuming all vessels use the maximum of 2 trailer buoys and 36 feet of surface line, each pot would require a total of 8 feet of marked line on the surface gear to comply. This means that a vessel using 300 pots would need to mark a total of 2,400 feet of surface line to comply (8 feet X 300 pots), and a vessel using 500 pots would need to mark 4,000 feet to comply (8 feet X 500 pots). Assuming the ability to mark 400 feet per gallon, a 300-pot vessel would need to purchase 6 gallons (2,400 feet / 400 feet per gallon) and a 500-pot vessel would need to purchase 10 gallons (4,000 feet / 400 feet per gallon) to mark all required surface gear. Based on the approximate price per gallon of \$55 for oil-based paint, the estimated cost of liquid painting all surface gear is calculated as \$330 for a vessel using 300 pots and \$550 for a vessel using 500 pots. Since most interviewees commented that their current surface gear configuration is well under 36 feet, these cost estimates are likely overstated for most participants.

**Liquid Painting – Vertical Gear Calculation**

The method used to calculate the costs to mark vertical gear using oil-based paint is the same as that used to calculate marking surface gear with oil-based paint, but the amount of marked feet required per pot is 12 feet instead of 8 feet. This is because the proposed rule requires 3 sets of two adjacent 2-foot marks within the top 15 fathoms of vertical gear for a total of 12 feet of marked line. Using the same calculations for the rest, a 300-pot vessel would need to mark a total of 3,600 feet of line by purchasing 9 gallons of paint, and a 500-pot vessel would need to mark a total of 6,000 feet of line by purchasing 15 gallons of paint. With \$55 per gallon of oil-based paint, the estimated cost of liquid painting all vertical gear is calculated as \$495 for a vessel using 300 pots and \$825 for a vessel using 500 pots.

**Spray Painting – Surface and Vertical Gear Calculation**

Industry participants indicated that a can of spray paint for line-marking purposes costs about \$10 and can mark about 100 feet of line. When spray painting line markings, the same total length of line is required to be marked as when using liquid paint, as described above (e.g., for a 300-pot vessel, a total of 2,400 feet of surface line and 3,600 feet of vertical line must be marked). Assuming the ability to mark 100 feet of line per can of spray paint, a 300-pot vessel would need to purchase 24 cans for their surface gear (2,400 feet / 100 feet per can) and 36 cans for their vertical gear (3,600 feet / 100 feet per can). At \$10 per can, this translates to a total estimated cost of \$240 to spray paint surface gear markings and \$360 to spray paint vertical gear markings on a vessel using 300 pots. A vessel using 500 pots would need to purchase 40 cans to mark their surface gear (4,000 feet / 100 feet per can) and 60 cans to mark their vertical gear (6,000 feet / 100 feet per can). Thus, the total estimated cost for a vessel to spray paint 500 pots is \$400 for surface gear and \$600 for vertical gear. Again, these cost estimates are likely overstated for most participants in the fishery, considering the typical surface gear configurations described by interviewees.

The public may obtain a copy of the small business economic impact statement or the detailed cost calculations by contacting:

Name Lorna L. Wargo

Address 1111 Washington St. SE, Olympia, WA

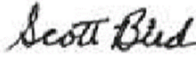
Phone 360.581.5611

Fax

TTY

Email Lorna.Wargo@dfw.wa.gov.

Other

<b>Date:</b> January 20, 2024	<b>Signature:</b> 
<b>Name:</b> Scott Bird	
<b>Title:</b> Rules Coordinator	

AMENDATORY SECTION (Amending WSR 23-22-110, filed 10/31/23, effective 12/1/23)

**WAC 220-340-430 Commercial crab fishery—Gear requirements. (1)**

**Buoy tag and pot tag required.**

(a) It is unlawful to place in the water, pull from the water, possess on the water, or transport on the water any crab buoy or crab pot without an attached buoy tag and pot tag that meet the requirements of this section, except as provided by (b) and (c) of this subsection. A violation of this subsection is punishable under RCW 77.15.520 Commercial fishing—Unlawful gear or methods—Penalty.

(b) Persons operating under a valid coastal gear recovery permit as provided in WAC 220-340-440 may possess crab pots or buoys missing tags or bearing the tags of another license holder, provided the permittee adheres to provisions of the permit. Failure to adhere to the provisions of the permit is a gross misdemeanor, punishable under RCW 77.15.750 Unlawful use of a department permit—Penalty.

(c) Persons operating under a valid coastal gear transport permit as provided in WAC 220-340-440 may possess crab pots or buoys bearing the tags issued by another state, provided the permittee adheres to

provisions of the permit. Failure to adhere to the provisions of the permit is a gross misdemeanor, punishable under RCW 77.15.750 Unlawful use of a department permit—Penalty.

(2) **Commercial crab fishery pot tag requirements:** Each shellfish pot used in the commercial crab fishery must have a durable, nonbiodegradable tag securely attached to the pot that is permanently and legibly marked with the license owner's name or license number and telephone number. If the tag information is illegible, or the tag is lost for any reason, the pot is not in compliance with state law. A violation of this subsection is punishable under RCW 77.15.520 Commercial fishing—Unlawful gear or methods—Penalty.

(3) **Commercial crab fishery buoy tag requirements.**

(a) The department issues crab pot buoy tags to the owner of each commercial crab fishery license upon payment of an annual buoy tag fee per crab pot buoy tag. Prior to setting gear, each Puget Sound crab license holder must purchase 100 tags, and each coastal crab fisher must purchase 300 or 500 tags, depending on the crab pot limit assigned to the license.

(b) In coastal waters, except if authorized by permit issued by the director, each crab pot must have the department-issued buoy tag securely attached to the first buoy on the crab pot buoy line (the

buoy closest to the crab pot), and the buoy tag must be attached to the end of the first buoy, at the end away from the crab pot buoy line.

(c) In Puget Sound, except if authorized by permit issued by the director, all crab buoys must have the department-issued buoy tag attached to the outermost end of the buoy line.

(d) If there is more than one buoy attached to a pot, only one buoy tag is required.

(e) All remaining, undeployed buoy tags per license per region must be onboard the designated vessel and available for immediate inspection by the department, except under the following conditions: The holder or alternate operator of a Puget Sound crab license has declared, as permitted under (f) of this subsection, that deployed tags have been lost and are unrecoverable, under penalty of perjury, and has been granted permission by the department to use undeployed buoy tags as a replacement.

(f) Replacement crab buoy tags.

(i) Puget Sound: Puget Sound commercial crab license holders are required to request permission to use undeployed buoy tags in the event deployed buoy tags are lost and are unrecoverable. Requests to use undeployed buoy tags must state the number of buoy tags lost, the

location and date where the licensee last observed lost gear or tags, and the presumed cause of the loss. Requests must be made using a department provided electronic form.

(ii) Coastal: The department only issues replacement buoy tags for the coastal crab fishery in the case of extraordinary loss or on a case-by-case basis. Replacement buoy tags will not be issued in excess of the license holder's permanent pot limit.

(4) A violation of subsection (3) of this section is a gross misdemeanor, punishable under RCW 77.15.520 Commercial fishing—Unlawful gear or methods—Penalty.

(5) **Commercial crab fishery buoy requirements.**

(a) All buoys attached to commercial crab gear must consist of a durable material and remain floating on the water's surface when ((5)) five pounds of weight is attached, unless otherwise authorized by permit issued by the director.

(b) It is unlawful to use bleach, antifreeze or detergent bottles, paint cans, or any other container as a buoy. The line attaching a buoy to shellfish gear must be weighted sufficiently to prevent the excess line from floating on the water's surface.

(c) No buoys attached to Puget Sound or coastal commercial crab gear may be both red and white in color unless a minimum of 30 percent

of the surface of each buoy is also prominently marked with an additional color or colors other than red or white. Red and white colors are reserved for personal use crab gear as described in WAC 220-330-020.

(d) ~~((It is unlawful for))~~ An operator or alternate operator of a vessel, as outlined in RCW 77.65.130, who operate a vessel designated to Aany coastal or Puget Sound commercial Dungeness crab fishery license ((holder)) ~~designated operator~~ must register the buoy brand number and buoy color or color combinations to be used with the license to fish for crab ((unless the license holder has registered the buoy brand and buoy color(s) to be used with the license. The license holder, or alternate operator, must register the buoy brand and buoy color(s) to be used with the license)) each crab season prior to the commencement of fishing using the WDFW online registration form. ~~((In the event that a license is transferred to another vessel or owner in the same season, the license holder must reregister the buoy brand and buoy color(s) to be used with the license for the remainder of that crab season. A license holder may register only one unique buoy brand and one unique buoy color scheme with the department per license. Persons holding more than one state license must register buoy color(s) for each license that are distinctly different. The buoy~~

~~color(s) will be shown in a~~) Buoy registration must provide color photographs that allows identification of the registered buoy brand number and all color or color combinations used on the buoy.

(i) All buoys fished under a single license must be marked in a uniform manner with ~~((one))~~ the buoy brand number registered ~~((by the license holder))~~ with the department and be of identical color or color combinations, unless otherwise authorized by permit issued from the director.

(ii) AThe vessel operator or alternate operator, as outlined in RCW 77.65.130, who operates the vessel designated on the license license holder may register only one unique buoy brand and one unique buoy color scheme with the department per license. Persons holding more than one state license must register buoy color(s) for each license that are distinctly different.

(iii) It is unlawful for a coastal Dungeness crab fishery ~~((license holder))~~ vessel operator or alternate operator, as outlines in RCW 77.65.130, to fish for crab using any other buoy brand ~~((or color(s)))~~ and buoy color schemeer-color combinations than ~~that~~ese registered with and assigned to the license by the department.

(iv) It is unlawful for a nontreaty coastal Dungeness crab fishery vessel operator or alternate operator, as outlined in RCW

77.65.130, to register a buoy brand or fish for crab using a buoy brand used in a treaty tribal fishery.

(v) In the event that a license is transferred to another vessel or owner in the same season, the ~~license holder vessel operator or alternate operator~~ as outlined in RCW 77.65.130, who operates the vessel designated on the license must reregister the buoy brand and buoy color ~~schemes or color combinations~~ to be used with the license for the remainder of that crab season.

**(6) Commercial crab fishery line requirements.**

(a) Vessel operators or alternate operators, as outlined in RCW 77.65.130, must set all crab pots used in any Dungeness crab fishery (~~shall be set up~~) to use only the amount of line reasonably necessary to compensate for tides, currents, and weather.

(b) (~~(i) It is unlawful for a~~) Vessel operators or alternate operators, as outlined in RCW 77.65.130, may not use line in any Puget Sound or coastal Dungeness crab fishery that features specific marking or color combinations required by regulation for any other state or federally managed ~~commercial~~ fishery in the U.S. West Coast Exclusive Economic Zone or required by regulation for any other fishery in the state waters of Washington, Oregon, or California.



(c) Vessel operators or alternate operators, as outlined in RCW 77.65.130, fishing or participating in the Washington coastal nontreaty Dungeness crab fishery ((license holder to)) must use line ((that connects the main buoy to the crab pot)) that is ((not)) marked sufficiently to identify it as gear used exclusively in ((the Washington coastal Dungeness crab)) that fishery.

~~((ii) For each shellfish pot used in the Washington coastal commercial Dungeness crab fishery and rigged with line, that line))~~

(i) Line must be marked as red and black. Dual-colored line must be marked through the manufacturing process and is defined as two strands colored red and at least one strand colored black. Tracer line may be used, see compliance guide for acceptable tracer lines (see subsection (6)(c)(iii) of this section).

(A) Through November 30, 2035, line with any of the following sets of solid marks may be substituted for manufactured dual-colored line. A solid mark must cover the entire circumference of the line and be regularly serviced and maintained in a condition to readily identify the required line marking scheme.

(I) On line of any color, other than red or black, a set of solid marks consists of one solid two-foot red mark spaced at a distance of no more than six inches from one solid two-foot black mark.

(II) On line originally red, a set of marks consists of one solid two-foot black mark spaced at a distance of 12 to 24 inches from a second solid two-foot black mark.

(ii) For each shellfish pot used in the fishery rigged with line, the line must be marked as follows:

(A) ~~Effective immediately, the~~The line connecting the main (diver) buoy closest to the shellfish pot must be marked with no less than 12 continuous inches of red ((~~in at least two places. At a minimum, 12 continuous inches of line must be marked in red,~~) no more than one fathom from the main (diver) buoy ((~~and no more than one fathom from the pot~~)). Red and black manufactured line described in subsection (6) (c) (ii) of this section ~~also~~ meets this requirement.

(B) Effective December 1, 2025, all line connecting two buoys ~~except the buoy gangion lines,~~ must be marked with red and black pursuant to subsection (6) (c) (ii) ~~of this section, except the buoy gangion lines.~~

(I) For the purpose of this section, buoy gangion lines are defined as a line that passes through and is affixed to the buoy forming loops on each end of the buoy, that are less than four feet long as measured from opposing loop ends.

(II) Through November 30, 2035, one set of solid marks on any line connecting two buoys, ~~except buoy gangion lines,~~ as defined in subsection (6) (c) (ii) (A) ~~of this section~~ may be substituted for dual-colored manufactured line.

(C) Effective December 1, 2028, the line connecting the main (diver) buoy to the shellfish pot must be marked with red and black pursuant to subsection (6) (c) (ii) of this section.

(I) When fishing with 20 fathoms (120 feet) or more of line connecting the main (diver) buoy to the shellfish pot, the top 15 fathoms (90 feet) of line must be marked.

(II) When fishing with less than 20 fathoms (120 feet) of line connecting the main (diver) buoy to the shellfish pot, the top 50 percent of line must be marked.

(III) Through November 30, 2035, on the portion of line connecting the main (diver) buoy to the shellfish pot three sets of solid marks as defined in subsection (6) (c) (ii) (A) of this section may be substituted for dual-colored manufactured line. Sets of marks shall be distributed such that one set of marks is within one fathom of each end and one set of marks is near the middle of the length of line required to be marked.

(iii) The department has published a compliance guide for the line marking which provided additional information and instructions to follow in complying with this regulation and is incorporated by reference herein. The guide can be obtained by contacting the Coastal Shellfish Manager: 48 Devonshire Road, Montesano, WA 98563; phone 360-249-4628; or [wdfw.wa.gov/fishing/commercial/crab/coastal](http://wdfw.wa.gov/fishing/commercial/crab/coastal).

**(7) Coastal commercial Dungeness crab fishery surface gear limitations.**

Surface gear is limited to one main (diver) buoy connected closest to the shellfish pot and the following:

(a) Two trailer buoys.

(b) One end marker buoy less than five inches in diameter can extend no more than three feet beyond the last trailer buoy. End marker buoys are not considered trailer buoys.

(c) The maximum distance between the leading edge of the main buoy and the trailing edge of the last trailer buoy, including all line connecting surface gear, must not exceed 36 feet~~-, unless the vessel is operating under the exemption provided under 7(c)(i) of this subsection.~~

(i) Vessel operators and alternate operators, as outlined in RCW 77.65.130, may request a surface gear length exemption permit from the

department prior to the commencement of fishing for a demonstrated safety risk. An exemption is only authorized for the period specified on the permit, for the surface gear length specified on the permit, and the fishing area and depth specified on the permit. Requests for exemption permits will be evaluated by the department on a case-by-case basis and granted at the department's discretion. Failure to adhere to the provisions of the permit is a gross misdemeanor, punishable under RCW 77.15.750 Unlawful use of a department permit—Penalty.

(8) Violation of subsection (5), (6), or (7) of this section is a gross misdemeanor, punishable under RCW 77.15.520 Commercial fishing—Unlawful gear or methods—Penalty.

[Statutory Authority: RCW 77.04.012, 77.04.013, 77.04.055, 77.12.045, and 77.12.047. WSR 23-22-110 (Order 2023-10), § 220-340-430, filed 10/31/23, effective 12/1/23. Statutory Authority: RCW 77.04.012, 77.04.020, 77.04-055 [77.04.055], 77.12.045, and 77.12.047. WSR 22-08-048, § 220-340-430, filed 3/31/22, effective 5/1/22. Statutory Authority: RCW 77.04.020, 77.12.045, and 77.12.047. WSR 21-24-031 (Order 21-259), § 220-340-430, filed 11/22/21, effective 1/1/22; WSR 20-04-066 (Order 20-15), § 220-340-430, filed 1/31/20, effective 3/2/20. Statutory Authority: RCW 77.04.012, 77.04.055, 77.12.045, and

77.12.047. WSR 17-17-104 (Order 17-207), § 220-340-430, filed 8/18/17, effective 9/18/17. Statutory Authority: RCW 77.04.012, 77.04.013, 77.04.020, 77.04.055, and 77.12.047. WSR 17-05-112 (Order 17-04), amended and recodified as § 220-340-430, filed 2/15/17, effective 3/18/17. Statutory Authority: RCW 77.04.012, 77.04.020, 77.04.055, 77.12.045, and 77.12.047. WSR 15-03-091 (Order 15-01), § 220-52-042, filed 1/21/15, effective 2/21/15. Statutory Authority: RCW 77.04.012, 77.04.013, 77.04.055, 77.12.045, and 77.12.047. WSR 12-23-016 (Order 12-267), § 220-52-042, filed 11/9/12, effective 12/10/12.]