

***NON-TRAWL SECTOR MANAGEMENT MEASURES: ANALYSIS TO
SUPPORT THE DEVELOPMENT OF A
RANGE OF ALTERNATIVES***

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1. Introduction

In November 2019, the Pacific Fishery Management Council (Council) directed the Groundfish Advisory Subpanel (GAP) to develop the scope of action and draft a purpose and need statement for non-trawl area management during the GAP's March and April 2020 meetings. The GAP then submitted [Informational Report 4](#) in June 2020 for Council consideration and scheduling of further scoping of the issues. In April 2021, the Council initiated a scoping process to address modifying existing the Non-Trawl Rockfish Conservation Area (NT_RCA) and developing measures to allow groundfish fishing inside the NT_RCA using only select gears that minimize bottom contact ([Agenda Item F.3, Attachment 2](#)).

At that meeting, the Council adopted a draft [purpose and need statement](#) and directed staff to analyze items related to relaxing restrictions in the NT_RCA as specified in [Agenda Item F.3 Motion 3](#) to: 1) allow limited entry fixed gear (LEFG) and/or open access (OA) fishery sectors to operate within the current boundaries of the NT_RCA with approved hook-and-line gear, and; 2) modify the current seaward and shoreward boundaries of the NT_RCA in specific management areas and allow LEFG vessels to fish within those boundaries.

In [November 2021](#), the Council further refined the purpose and need statement as well as the range of alternatives (ROAs). The Council expanded the action to include changes to the Cowcod Conservation Areas off California (CCA, including commercial and recreational fisheries), added specific measures that would include access to the NT_RCA off Washington, and included potential changes to essential fish habitat conservation area (EFHCA) designations that may be exposed to fishing activity under the alternatives. This document provides some discussion of the current range of alternatives and includes preliminary analyses to assist the Council in continued refinement of those alternatives or for further development of additional alternatives that would meet the purpose and need statement. We include maps that will assist the Council and the public to see the current area management measures available (i.e., NT_RCA, yelloweye rockfish conservation areas [YRCAs], EFHCAs, and CCAs) as well as proposed areas that would be opened under all alternatives. Additionally, we provide maps and some statistics that show the overlap between the NT_RCA and the CCA with EFHCAs and habitat substrate that may be exposed to fishing if portions or all of the NT_RCA and CCA are removed.

2. Purpose and Need with a Range of Alternatives

2.1 Revised Purpose and Need Statement

The Council adopted the following revised purpose and need statement at the [November 2021 Council meeting](#) under Agenda Item E.6:

“The purpose of these proposed actions is to provide access to additional areas that are currently closed to groundfish fishing inside the Non-Trawl Rockfish Conservation Area (RCA) and Cowcod Conservation Area (CCA). The Non-Trawl sector is presently unable to access many target species where they are most abundant. The actions are needed to provide increased access to non-overfished shelf rockfish stocks and other important target stocks that can be found in the existing non-trawl groundfish conservation areas (GCAs), thereby

increasing the overall potential economic value of the groundfish fishery. The actions are also needed to help diversify fishing strategies in light of restrictive opportunities in other groundfish and non-groundfish fisheries, and to provide more stable, year-round fishing opportunity, expand opportunities to supply seafood, and increase potential financial benefit to fishermen, communities, and the infrastructures they support. The additional access might be provided by actions such as 1) moving and/or modifying the existing Non-Trawl RCA and/or CCA boundaries, and/or 2) allowing groundfish fishing inside the Non-Trawl RCA and/or CCA using only select gears that minimize bottom contact.”

2.2 Current Range of Alternatives

The Council adopted a revised range of alternatives (ROAs) that would meet the purpose and need statement. It’s possible that all alternatives may be further refined. For example, Alternatives 5 and 6 are still being developed by the constituents of California and Washington, respectively. These alternatives are not mutually exclusive.

The following ROAs would apply between 46°16’ - 34° 27’ N. Lat.:

Alternative 1: Allow Open Access (OA) vessels targeting groundfish to fish in the non-trawl RCA (NT_RCA) using approved hook & line gear.

- Allow OA vessels targeting groundfish to operate inside the NT_RCA with hook-and-line gear except bottom longline, vertical hook and line that is anchored to the bottom, and dinglebar gear are types of hook and line gear that are not allowed. Fixed gear types other than hook and line are not allowed. Vessels must declare their intent to fish within the NT_RCA prior to departure.
- Fishing Area: Vessels may fish inside and outside the NT_RCA on the same trip.
- Gear On-Board: Vessels shall only carry approved hook-and-line gear on-board vessel when fishing occurs in the NT_RCA.

Alternative 2: Allow Limited Entry Fixed Gear (LEFG) vessels targeting groundfish to fish in the NT_RCA using approved hook & line gear up to LEFG trip limits.

- Allow LEFG vessels targeting groundfish to operate inside the NT_RCA and fish up to the LEFG trip limits with hook-and-line gear except that bottom longline, vertical hook and line that is anchored to the bottom, and dinglebar gear are not allowed. Fixed gear types other than hook and line are also not allowed. Vessels must declare their intent to fish within the NT_RCA prior to departure.
- Fishing Area: LEFG vessels may fish inside and outside the NT_RCA on a trip.
- Gear On-Board: LEFG vessels can only carry approved hook-and-line gear on-board a vessel when fishing occurs in the NT_RCA. Vessels shall not switch gears during a fishing trip.

Alternative 3: Reconfiguration of NT_RCA boundaries.

- The seaward NT_RCA boundary will be 75 fathoms
- Suboption 1: Prohibit all bottom contact groundfish gear in groundfish EFHCAs that would otherwise be reopened under this action

Alternative 4: Remove the NT RCA.

- Suboption 1: Prohibit all bottom contact groundfish gear in groundfish EFHCAs that would otherwise be reopened under this action

The following alternative is specific to the Cowcod Conservation Area (CCA).

Alternative 5: Repeal the Cowcod Conservation Areas For Commercial and Recreational Fisheries.

- Waypoint analyses for areas within the CCA are contained in [E.5.a., Supplemental CDFW Report 1](#)

The following alternative is specific to the area off Washington (north of 46° 16' N. latitude):

Alternative 6: Open Limited Areas of the Non-trawl RCA to Pot Gear Only.

- The open areas would be generally located seaward of the 75 fathom (fm) line but may be defined by coordinates that do not necessarily follow a single depth contour. This alternative will be refined in the future to ensure the open areas would satisfy the following objectives:
 - Allow only minimal increases of yelloweye bycatch.
 - Avoid direct and indirect conflicts with recreational and other fisheries currently fishing within 100 fm.
 - Avoid impacts to sensitive habitats.
 - Are distinct enough from the 100 fm seaward boundary to be enforceable by the existing Vessel Monitoring System.

The Council also provided direction to staff regarding the analysis of Alternatives 1 through 4. Specifically, the Council's November 2021 motion asked staff to:

1. Prioritize the analysis of the draft ROA in this order: 1, 2, 3, 4. Analysis and future Council action should allow for adoption of preliminary preferred and final alternatives for Alternatives 1 and 2 as soon as possible and this may occur before those steps for other Alternatives under this item. In addition, the Council may consider action on Alternative 3 prior to Alternative 4. And alternatives may be combined; alternatives are not mutually exclusive.
2. For all action alternatives, logbooks will be required to collect data on fishing effort, location, gear, catch, releases/discards, and other information determined to be necessary.
3. For all action alternatives, block area closures (BACs) may be used in the non-trawl sector to control catch of groundfish or protected species by restricting fishing by gear type and sector within specific latitudes and depth contours. BACs could be implemented inseason or preseason.

4. For all action alternatives, identify potential Yelloweye Rockfish Conservation Areas (if any) that could be used to mitigate impacts to yelloweye rockfish resulting from this action, which could be implemented in biennial management measures or inseason action.

During the March 2022 Council meeting, the Council took action to clarify which fisheries need to comply with the logbook requirements (see further discussion in Section 3.9). The Council's motion expanded the requirements for logbooks to all non-trawl fisheries that target groundfish; therefore, the fisheries¹ that are being considered under this action would be subject to the logbook requirements.

As part of this analysis and continued scoping the range of alternatives, items three and four regarding BACs and YRCAs would need to be added to the ROAs as alternatives for further Council consideration and adoption. These items could be used as tools to mitigate or control catch and bycatch. While the motion on BACs and YRCAs pertained to Alternatives 1-4, these could also be considered by the Council in developing Alternatives 5 and 6.

In November 2021, the Council added a new management measure for analysis under the 2023-2024 Groundfish Specifications and Management Measures action that includes allowing "non bottom contact hook and line gear" to be used in the NT_RCA from the U.S./Mexico border to 46° 16' N. lat. (OR/WA border; i.e. proposal 12e). In March 2022, the Council signaled its intent to adopt a more restrictive version of this alternative (described in [Agenda Item E.9.a., Supplemental NMFS Report 1, March 2022](#)) which would limit the gear types permitted within the NT_RCA. At the April 2022 meeting under Agenda Item F.4., the Council will select a preliminary preferred alternative (PPA) for management measures during the 2023-24 biennium. Depending on the outcomes of that decision, elements of Alternative 1 and 2 may be put into regulation through the biennial specifications process rather than through this package. Sections 4.1, 4.2 and 5 provides some questions for Council consideration on potential pathways forward on Alternatives 1 and 2 depending on the Council action under Agenda Item F.4.

3. Background

This section provides background information on three main topics relevant to this action: 1. Area based management measures, 2. Non-trawl fishery sectors, and 3. Data collection, monitoring, and enforcement.

3.1 Area-based management measures

The Council has several different management measures that are based on closing defined areas off to specific fishing activities (i.e., gear types, sectors) to mitigate impacts to groundfish, protected species, or habitat. This section provides an overview of the two main area-based management measures that are proposed for change under this agenda item (NT_RCA and CCA)

¹ Note that salmon troll vessels subject to NT_RCA requirements that may be affected by Alternatives 3 and 4 would not be required to submit logbooks, even if retaining groundfish.

as well as three other area-based tools that are used for mitigating impacts to certain groundfish or protected species (BACs and YRCAs) and habitat (EFHCAs).

3.1.1 Non-Trawl Rockfish Conservation Area

The NT_RCA is a coastwide, contiguous area bounded by specific latitude and longitude coordinates that approximate depth contours along the West Coast continental shelf and around the islands off California.² NT_RCA boundaries are not consistent along the coast, varying by management area (Table 1 and Figure 1) with some portions in state waters. At present, the NT_RCA covers approximately 13,651 sq. mi. of the West Coast continental shelf, where it largely prohibits LEFG and OA fishing operations from fishing on groundfish stocks, mainly midwater and shelf rockfish stocks. Unless specified, figures in this document are shown by map areas that correspond to the management areas as listed in Table 1.

The depth range covered by the NT_RCA varies by management area. Washington has the widest depth closure range, from 0 to 100 fm; whereas the area south of 34° 27' N. lat has the narrowest closure range, from 100-150 fm. However, as shown in Table 1, the depth range does not necessarily equate to area coverage as shelf width varies along the coast. For example, just south of Cape Mendocino, CA, the NT_RCA is approximately 0.75 mile wide whereas at Pt St. George, CA, the NT_RCA is approximately 10 miles wide. These two geographic points are within the same management area, approximately 90 miles apart.

Table 1. Non-trawl management areas and the current (2022) NT_RCA boundaries.

Management Area	Current NT_RCA boundaries a/	Approximate Area of NT_RCA (sq mi)	Map Area
North of 46°16' N. lat.	Shoreline (0 fm) to 100fm	4,320	1
46°16' N. lat. to 42° N. lat. b/	30 fm to 100 fm	5,151	2
42° N. lat. to 40°10' N. lat. b/	30 fm to 100 fm	1,003	3
40°10' N. lat. to 38°57.5' N. lat.	30 fm to 125 fm	587	4
38°57.5' N. lat. to 34°27' N. lat.	50 fm to 125 fm	2,023	5
South of 34°27' N. lat.: c/	100 fm to 150 fm	567	6

a/ Current NT_RCA boundary coordinates at 86 FR 14379, see Tables 2 & 3 -coordinates at §§ 660.71-660.74

b/ between 46°16' N. lat. and 40°10' N. lat., 30 to 40 fm fishing is only allowed with hook and line gear except bottom longline and dinglebar (§660.11)

c/also applies around islands

The NT_RCA was initiated as part of an [emergency rule in January 2003](#) to mitigate impacts to overfished groundfish species (Section 6.8 of the Groundfish Fishery Management Plan (FMP)). As of March 2022, with one exception, the groundfish species that were the main driver for creation of the NT_RCA have been rebuilt. The only species currently under a rebuilding plan is yelloweye rockfish and, based on the most recent stock assessment, is projected to be rebuilt by 2029. Additionally, while the NT_RCA was not designed to mitigate impacts to habitat, it is likely this closure is a positive impact on habitat.

² NT_RCA coordinates that approximate depth contours specified at [CFR 50 §§ 660.71-660.74](#).

In the 18 years since implementation, the seaward and shoreward depth boundaries of the NT_RCA have been modified multiple times (see [Appendix 1 of Agenda Item E.6, Attachment 1, November 2021](#)) with the most recent changes occurring as part of the 2021-2022 harvest specifications and management measure process. The most recent changes were primarily off California. One notable change in recent years relevant to this action was in the area between 40°10 N. lat and 46°16' N. lat. where the 30 to 40 fm depth bin within the NT_RCA was opened to non-trawl vessels. However, participants can only operate in this area with select hook-and-line gear, as the use of bottom longline and dinglebar are prohibited in this depth range. In March 2022, the Council clarified that if the 12e proposal to allow vessels using non bottom contact hook and line gear into the NT_RCA from 46° 16' to the US/Mexico border were adopted, those regulations would supersede the current 2021-2022 regulations for the 30-40 fathom bin between 40° 10' and 46° 16' N. lat. ([Agenda Item E.9 Council Motions](#)) In other words, the gear types, sectors, and other regulations would be consistent throughout the action range.

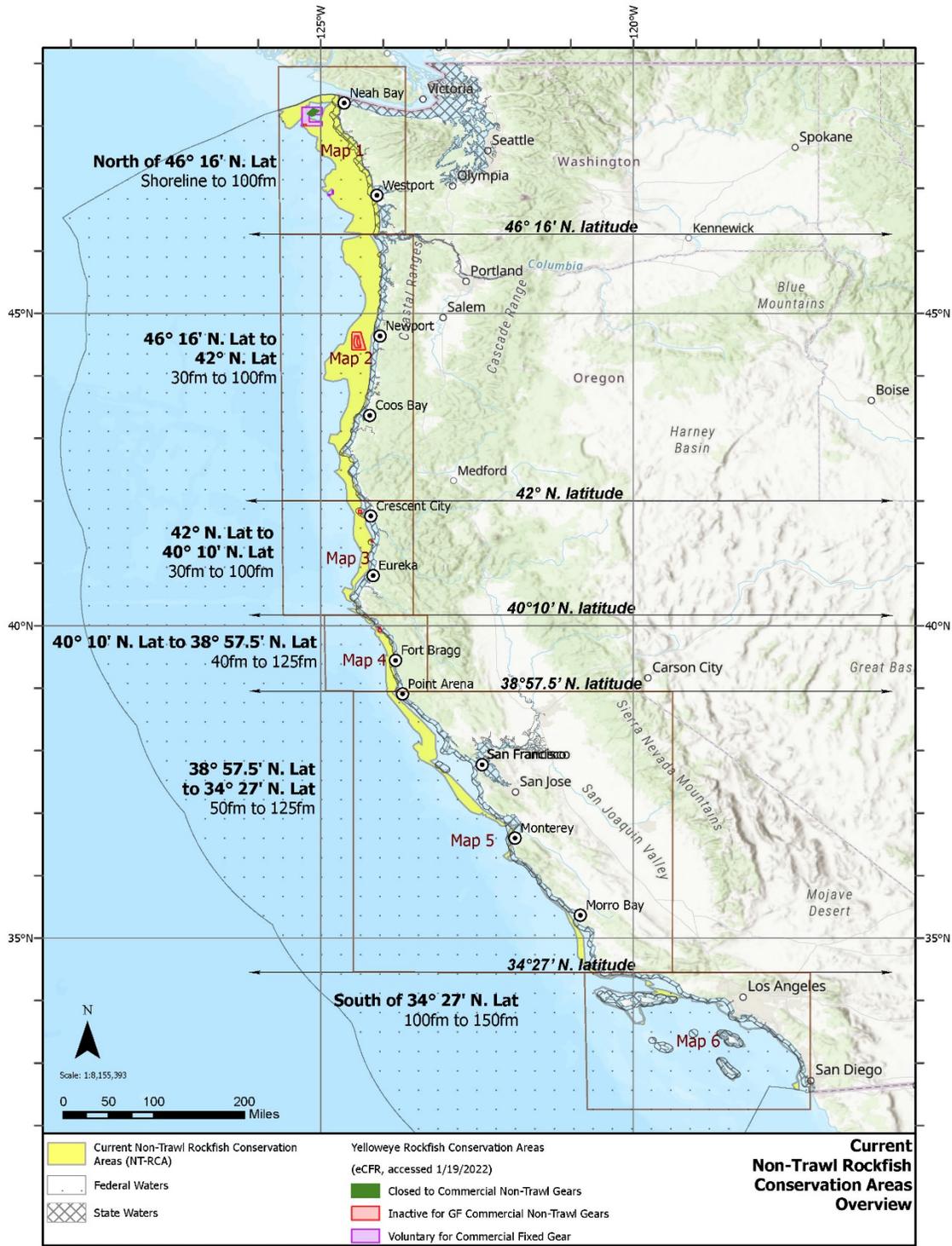


Figure 1. Current NT_RCA boundaries as of 2022.

3.1.2 Cowcod Conservation Area

The Cowcod Conservation Area (CCA) is composed of two distinct areas- the Western and Eastern CCA Figure 2. In 2001, both CCAs were first established in federal regulations as an overfished species rebuilding measure. They were then formally incorporated into the FMP (Section 4.5.4.6) via Amendment 16-3 and established in Federal regulation in 2005 to reduce the bycatch of cowcod taken incidentally in all commercial and recreational fisheries for groundfish. Boundaries of the CCA have not changed since their implementation.

Within the CCA, recreational and commercial vessels are prohibited from fishing outside of 40 fathoms from the islands. Similar to the NT_RCA, the species that caused the implementation (i.e., cowcod) was declared rebuilt in 2019 and while the CCA was not designed for habitat mitigation, it has also resulted in habitat protection for these areas for nearly two decades. [Agenda Item G.6.a, Supplemental CDFW Report 1, June 2021](#) notes that the current boundaries of the CCA “include a considerable portion of the Southern California Bight, and many species of healthy fish stocks live there that could be accessed if the CCAs are repealed.”

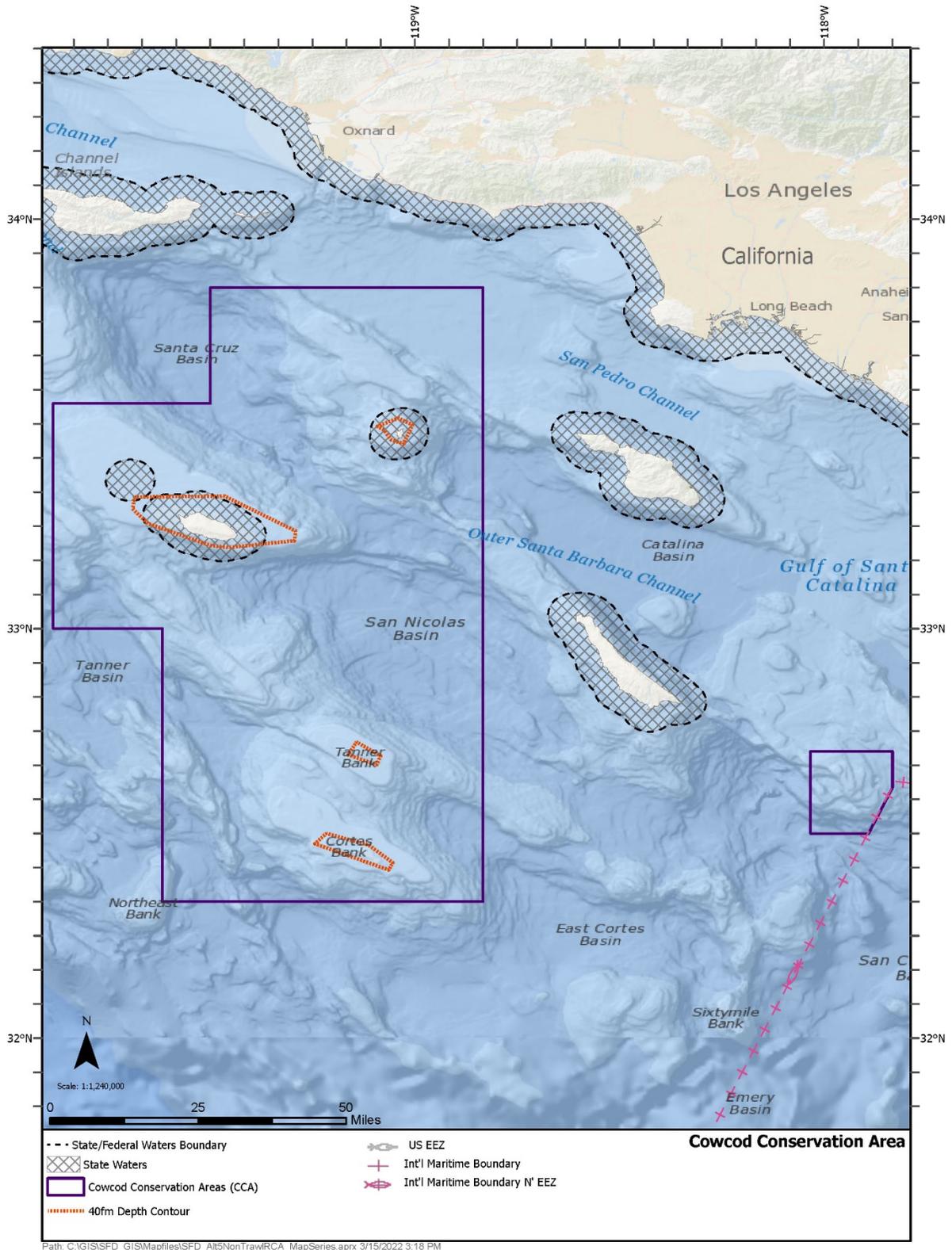


Figure 2. Current CCA boundaries as of 2022.

3.1.3 Block Area Closures

At the November 2021 Council meeting, the Council added Block Area Closures (BACs) to the list of potential tools that could be implemented along with the proposed Alternatives. Note that the motion was specific to Alternatives 1-4, which covers the area from 34° 27' N. lat. to 46° 16' N. lat.; however, the Council could choose to develop BACs for non-trawl fisheries coastwide.

The Council should consider adding BACs as an option within an alternative(s) for further consideration and analysis. BACs are a type of groundfish conservation area, defined at § 660.11, bounded on the north and south by commonly used geographic coordinates and on the east and west by the Exclusive Economic Zone (EEZ), and boundary lines approximating depth contours. The concept of BACs was initially developed under Amendment 28 for the bottom trawl fishery ([see Final Environmental Impact Statement \(FEIS\) for Amendment 28](#) (PFMC 2019)). BACs were also developed in response to the National Marine Fishery Service (NMFS) 2017 biological opinion on salmon to address incidental salmon bycatch in the whiting and non-whiting sectors of the fishery.

Currently, BACs are only available for use with bottom trawl gear off Oregon and California for mitigating groundfish or protected species (i.e., salmon) catch and are available coastwide for midwater gear for mitigating salmon bycatch. BACs may be implemented or modified as routine management measures, per regulations at § 660.60(c). BACs may close areas to specific trawl gear types (e.g., closed for midwater trawl, bottom trawl, or bottom trawl unless using selective flatfish trawl) and/or specific programs within the trawl fishery (e.g., Pacific whiting fishery or MS Coop Program). To date, BACs have not been used to mitigate catch for bottom trawl or midwater trawl fisheries. The Council's motion in November specified that BACs for non-trawl fisheries could be used to control catch of groundfish or protected species through the current regulatory framework for BACs (i.e., could be sector specific, preseason or inseason, etc.).

While BACs could provide a mechanism for reducing impacts to groundfish or other species, like salmon, it is important to consider the inseason data that is, or rather isn't, available for non-trawl fisheries. Unlike the at-sea whiting fisheries, there is no inseason reporting of set-level data that could be used to determine areas of high bycatch by non-trawl vessels. The earliest that data could be analyzed to determine potential areas of high bycatch would be the following fall when West Coast Groundfish Observer Program (WCGOP) data is released. However, the non-trawl sectors (outside of IFQ gear switching vessels) are not required to have 100 percent observer coverage; therefore, the Council would be assessing implementing BACs on a limited data set, particularly if the concern was in the OA fisheries (see 3.3.1 for observer coverage rates). While forthcoming logbook data may provide some additional insight into bycatch locations, further investigation into the timeliness of that data being available would need to occur once logbooks are implemented in the fishery. BACs, if developed coastwide, could be used to restrict activity within the current bounds of the NT_RCA or CCA to curb mortality closer to that seen under the current state of the fisheries and no changes to the regulations (i.e., status quo).

3.1.4 Yelloweye Rockfish Conservation Areas

YRCAs were first established via Federal Register notice in 2003 and then formally established in the groundfish FMP and Federal regulation in 2005 to assist in the conservation and rebuilding of

yelloweye rockfish as an overfished species rebuilding measure. While the primary purpose for these closures is yelloweye protection, they may also provide additional conservation benefits to protect other depleted species.

The first YRCA to be established was the “C-Shaped” North Coast Recreational YRCA off the north Washington coast for recreational fisheries in 2004. A YRCA has been in place on Stonewall Bank off Oregon since 2006 and was expanded under the 2009-2010 biennial specifications ([2009-2010 FEIS](#)); currently, the Stonewall Bank YRCAs only prohibit recreational fishing for groundfish and Pacific halibut in the area. The North Coast Commercial YRCA was implemented in 2007 and fixed gear vessels have been prohibited from fishing in this area since that time. The South Coast and Westport Recreational YRCAs were developed during the 2007-2008 harvest specifications. In addition, the Council developed the salmon troll YRCA off Washington in the southeast corner of the North Coast Recreational YRCA that only prohibits salmon trolling at the same time ([2007-2008 FEIS](#)). In 2008, four YRCAs (Point St. George, South Reef, Reading Rock, and Point Delgada North & South) were adopted as a management tool in the 2009-2010 biennial specifications. However, these area management measure has never been implemented in California.

Under the 2021-2022 groundfish specifications package, the South Coast and Westport Offshore YRCAs off Washington were re-opened to allow for year-round recreational fishing for groundfish and Pacific halibut. However, the commercial fixed gear fisheries are still asked to voluntarily avoid these areas to prevent impacts to yelloweye rockfish.

Figure 3 through Figure 8 below show the YRCAs available to the Council in three general categories: 1) YRCAs that are closed to commercial groundfish non-trawl gear; 2) YRCAs that are areas to be voluntarily avoided by commercial fixed gear fishermen; and 3) YRCAs that are available, but not active, for commercial groundfish non-trawl gear. Only one YRCA is currently active for the fisheries affected by this action; the North Coast Commercial YRCA (Figure 3). This YRCA is located outside of the NT_RCA and would not be affected by any of the proposed alternatives. Also, it is important to note that the Stonewall Bank YRCA is within the boundaries of the NT_RCA and currently not listed as an available YRCA for commercial non-trawl gear. If the NT_RCA were opened in this area, then this YRCA could be incorporated into the federal regulations for LEFG and OA fisheries as an available mitigation measure to protect yelloweye rockfish. Map areas noted on the upper right corner of each map correspond to the coastwide map in Figure 1.

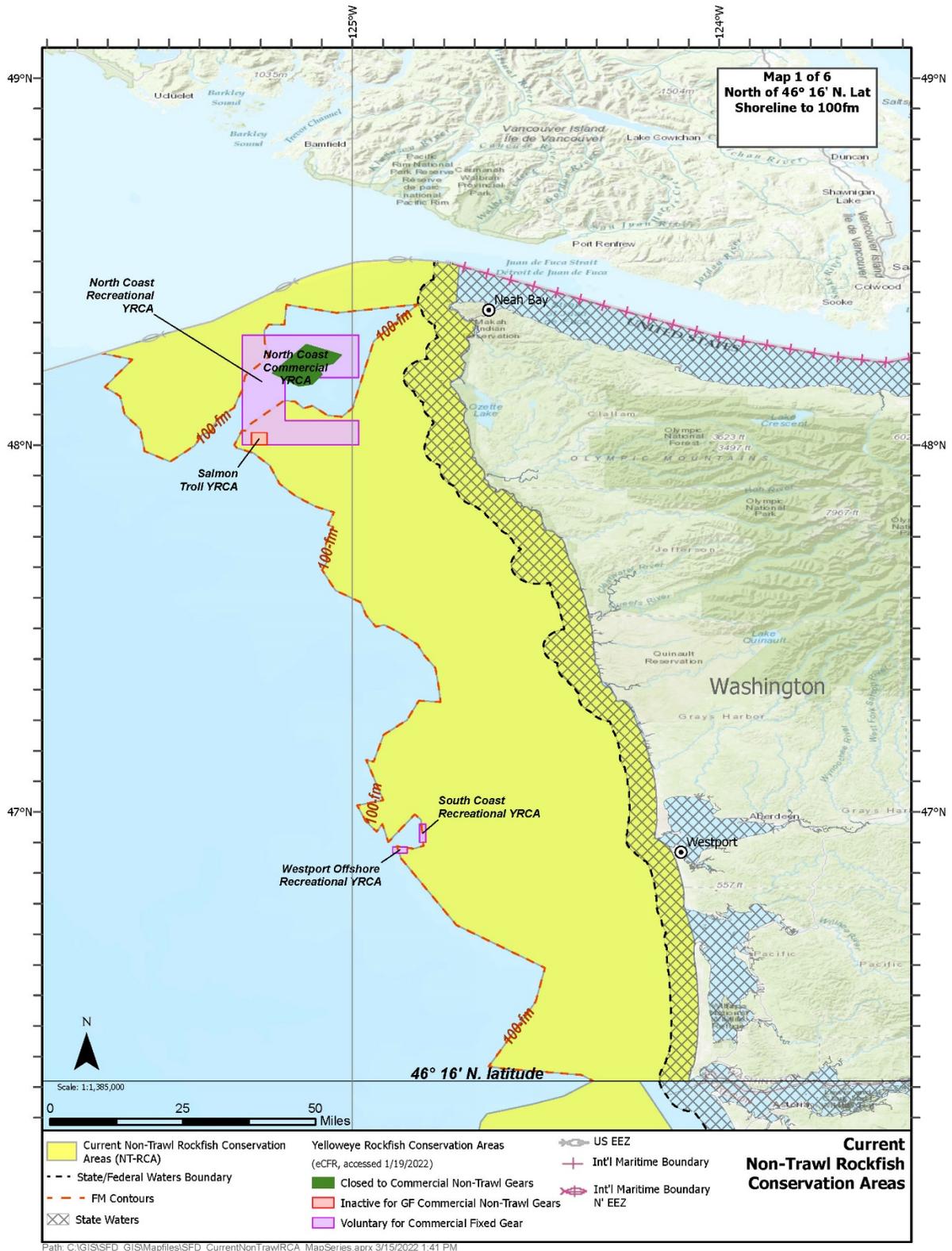


Figure 3. NT_RCA and YRCAs off Washington (2022).

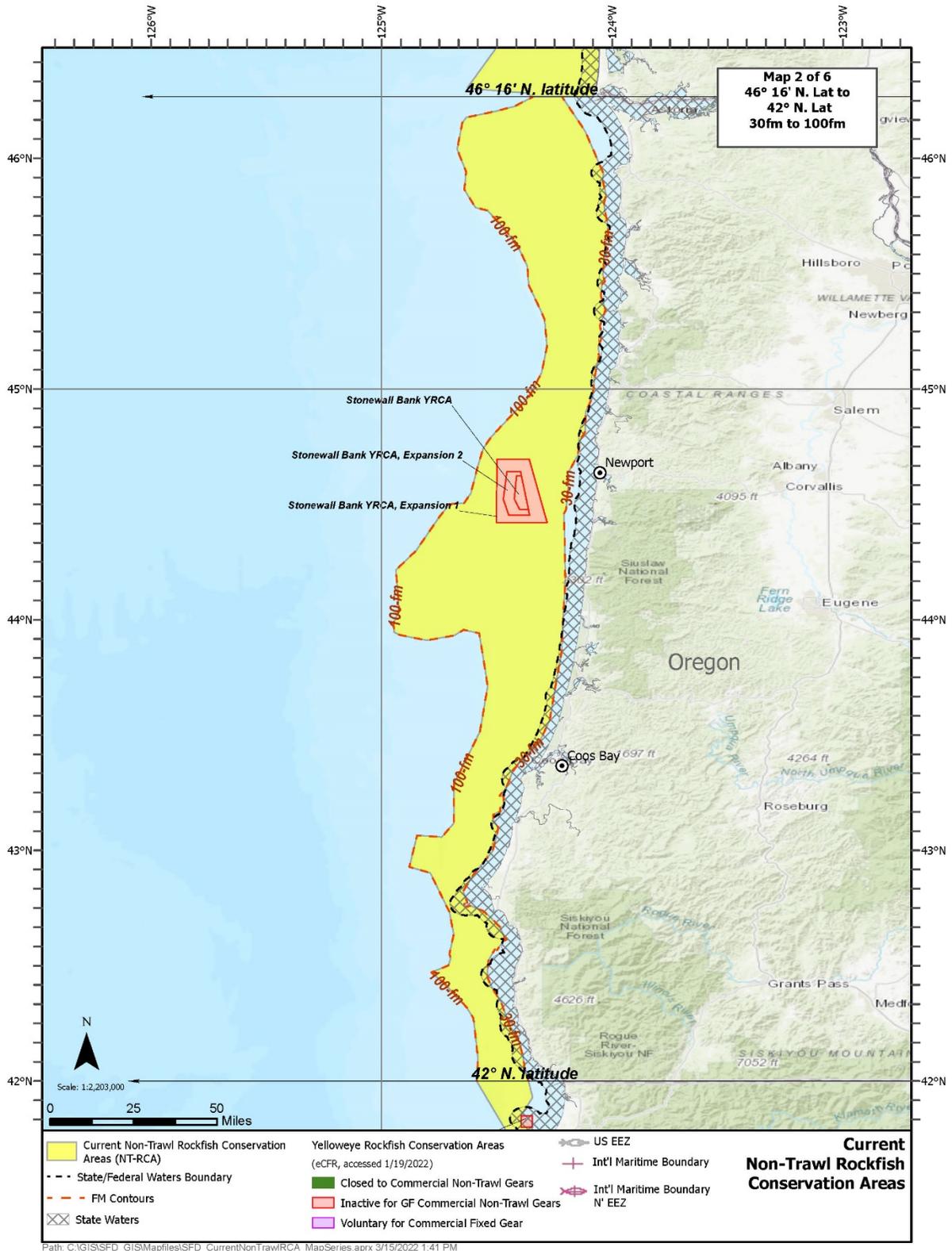


Figure 4. NT_RCA boundary and YRCAs off Oregon (2022).

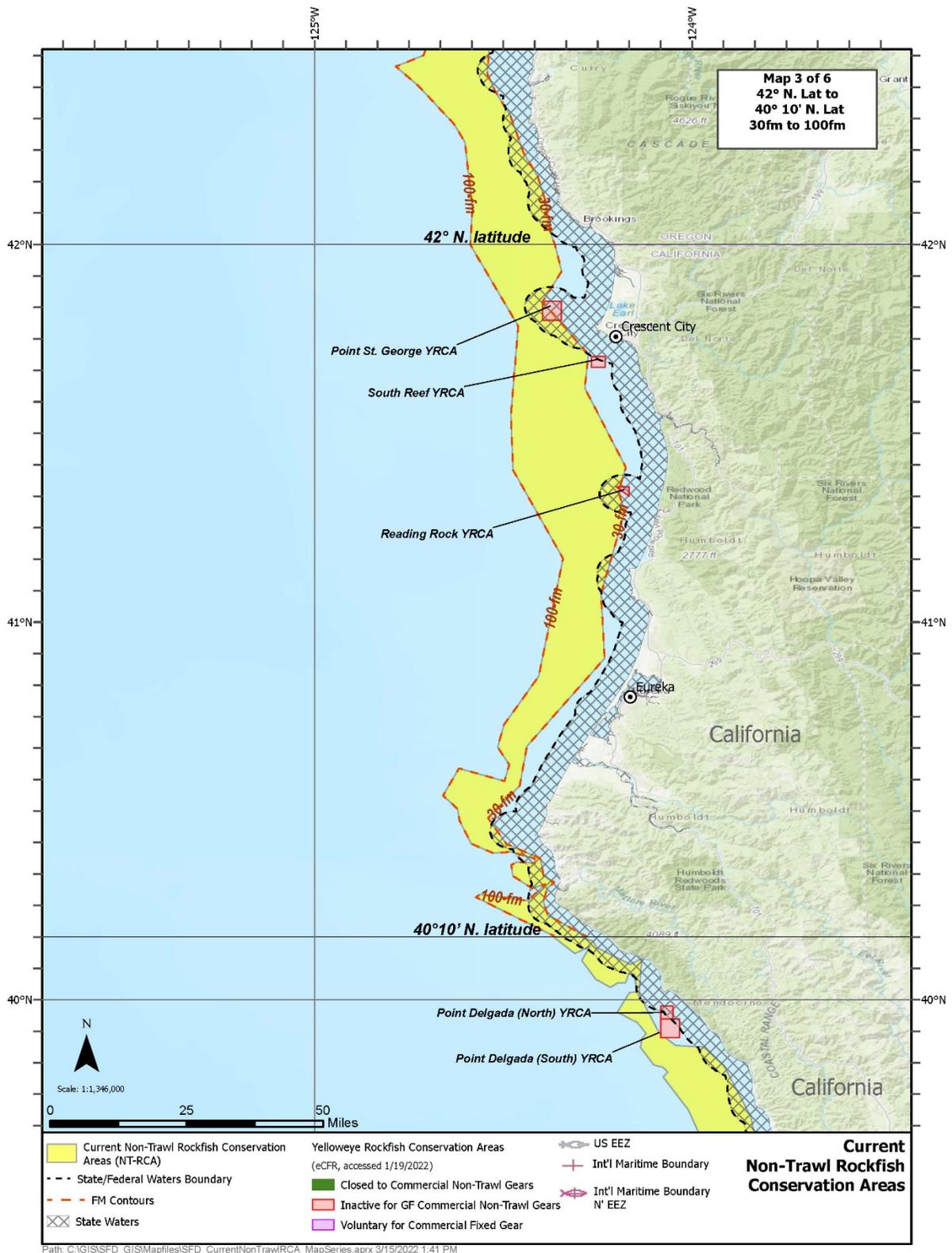


Figure 5. NT_RCA boundaries and YRCAs off California, from 42° N. lat. to 40° 10' N. lat.

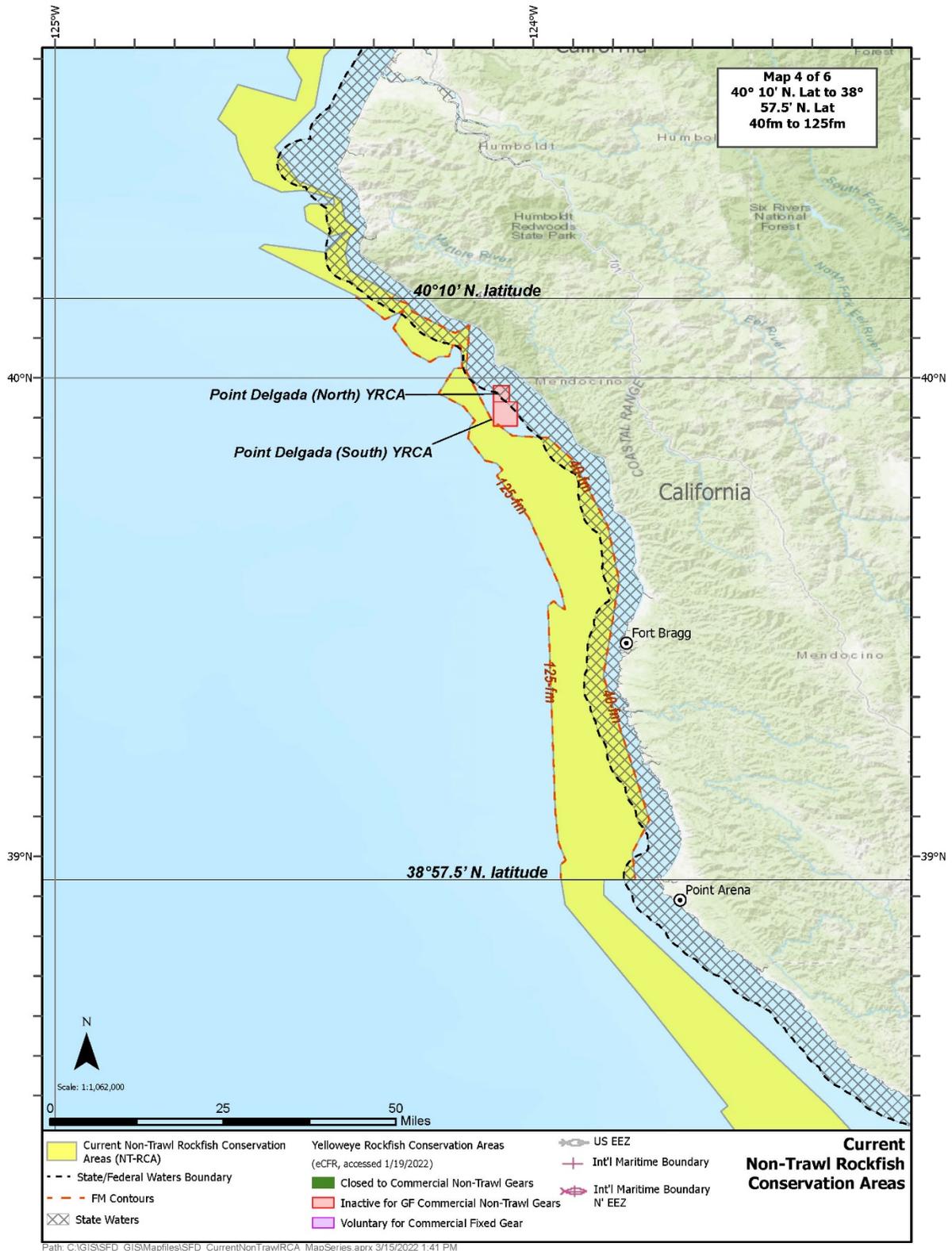


Figure 6. NT_RCA boundaries and YRCAs off California, from 40° 10' N. lat. to 38° 57.5' N. lat.



Figure 7. NT_RCA boundaries and YRCAs off California, from 38° 57.5' N. lat. to 34° 27' N. lat.

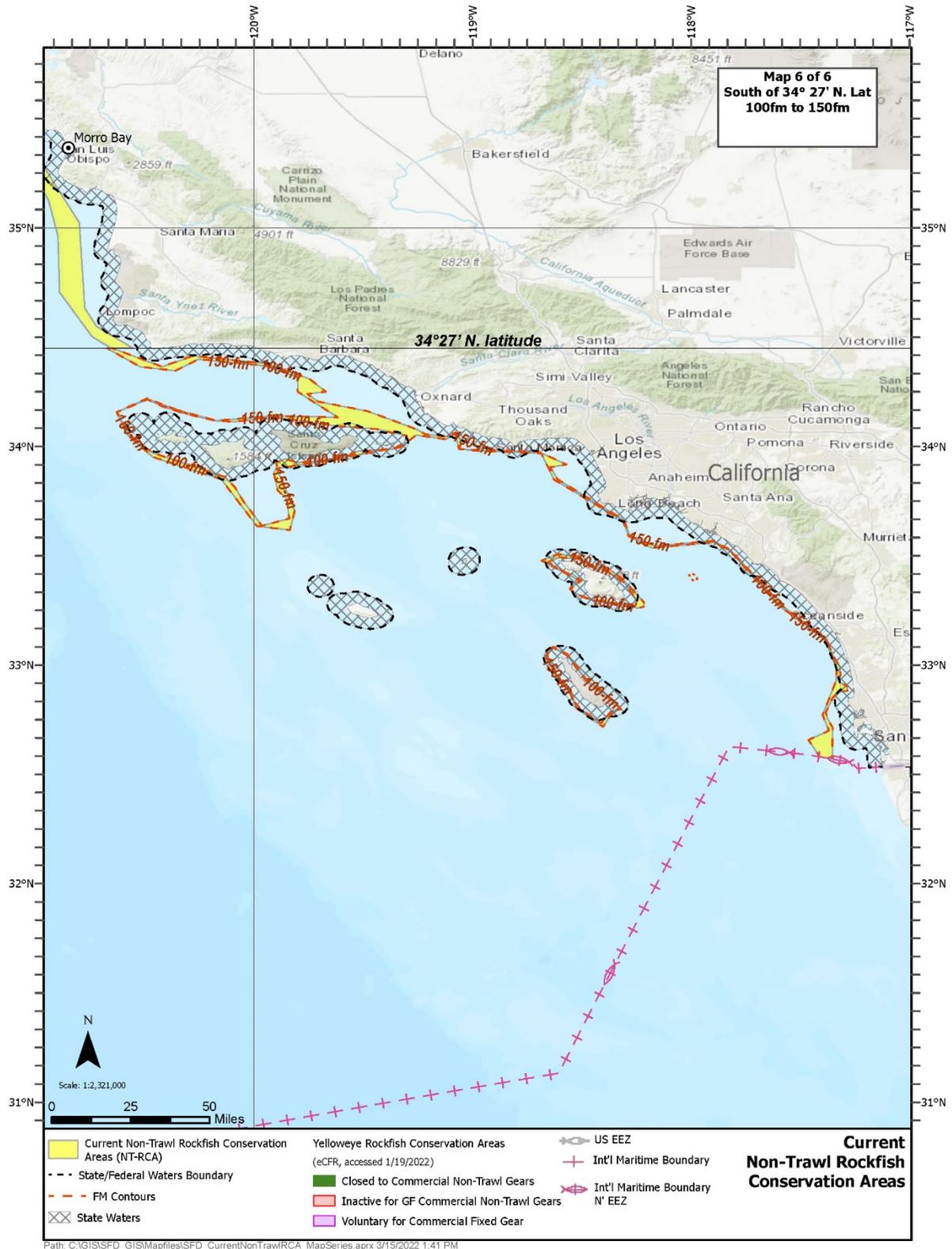


Figure 8. NT_RCA boundaries and YRCAs off California, south of 34° 27' N. lat.

3.1.5 Essential Fish Habitat Conservation Areas (EFHCAs)

While the NT_RCA and CCA were designed to mitigate impacts to overfished groundfish species each management area has provided some degree of habitat protection for approximately two decades. Yet, with Alternatives proposed to narrow or eliminate these closures, there may be sensitive habitats that the Council and stakeholders are interested in continuing to protect. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires Councils to identify fishing activities that may adversely affect essential fish habitat (EFH) for each FMP and to minimize adverse effects of those activities to the extent practicable.

Non-trawl gears can impact habitat to varying degrees, depending on the gear type, the type of benthic habitat in which they are deployed, and the concentration and intensity of fishing effort. The more common gears used in the non-trawl fisheries and their potential impacts are shown in Table 2 below. As detailed in [Appendix C](#) to the groundfish FMP, fixed gear types can adversely affect bottom habitat through a variety of means, such as undercutting/overturning emergent organisms (e.g., sponges, corals), smothering, entanglement, etc. In general, gear types that are designed to fish via lengthy bottom contact (i.e., longline, pot, etc.) may impact bottom habitats more than hook-and-line gear types, due to how the gear fishes. Longline and pot gear lay on the bottom, and therefore can land on or be dragged via current movement over biogenic substrate and damage habitat forming invertebrates (HFI) by crushing, damaging, or breaking. Dinglebar gear includes a weight that is dragged along the bottom with trailing hooks but this gear type's impacts, however, are uncertain as there is a paucity of information on its use as there is no direct mention of habitat impacts of dinglebar technique in Appendix C ([Agenda Item F.1.a., Supplemental GMT Report 4, June 2020](#)). However, it is reasonable to expect dinglebar gear may impact HFIs (e.g., corals, sponges, etc.) through such potential mechanisms as crushing, snagging, displacement by hooking, and breaking of coral arms.

In Appendix C, habitat related impacts of hook-and-line gear are only listed in the recreational sections, though this gear type is an analog of the commercial hook-and-line gear. Impacts of recreational hook-and-line gear may not be representative of how commercial hook-and-line gear may impact habitat as recreational anglers may specifically target several species of groundfish and use fewer hooks; whereas the commercial industry has indicated it wishes to specifically target mid-water stocks (depending on the alternative) and use more hooks. Hook-and-line gear types, such as rod and reel, vertical longline, etc., are generally fish by a vertical set of hook(s) attached to a weight at, or near, the terminal end of fishing gear. The gear is deployed to fishing depth and 'jigs' up and down to attract fish. This gear can, however, strike the bottom in the course of being deployed or if lost and can impact biogenic habitats by crushing/breaking from weight strikes or entangle or hook HFI. Derelict gear of any type can also adversely affect bottom habitat by such means as physical harm, occupying space that would otherwise support biota, and quality of environment. Hooks remaining attached to lost gear can "ghost fish" and become a source of hidden mortality.

In terms of habitat type and risk from fixed gear, biogenic substrates (e.g., HFIs, kelp beds) are most at-risk followed by hard bottom then soft sedimentary bottom. Impacts are likely proportional to effort. Overall, impacts to biogenic substrates are likely proportional to effort and gear type. Each gear type has a different impact and recovery time on bottom substrate types. Across all bottom types, average impacts in terms of both habitat sensitivity for all types of fixed

gear fall under the “minor impacts” category. Of the three general bottom type categories (hard, mixed, soft), hard bottom experiences is the most sensitive to fixed gear compared to the other two bottom types. Though counter to sensitivity, recovery time is lowest for hard substrates and highest for soft bottom. As noted in Appendix C, habitat recovers at a faster rate from fixed gear than it does from trawl gear and is also, in general, less sensitive to fixed gear. However, Appendix C shows that in terms of fixed gear types, habitat is more sensitive and incurs a longer recovery time from longline and pot gear than other types of fixed gear types (e.g., hook-and-line). Figure 9 shows an overview of the seafloor substrate types coastwide compared to the proposed areas for opening under each Alternative. Under Alternative 3, approximately 138 square miles of hard substrate would be potentially exposed to fishing compared to 518 square miles under Alternative 4 with the NT_RCA removed between 46° 16’ N. lat. and 34° 27’ N. lat. Alternative 5 would open up an estimated 307 square miles to fishing with removal of the CCA. Alternative 6 would expose the least amount of hard substrate at less than 11 square miles.

Table 2. Summary of non-trawl gears used in the groundfish fishery and their effects on groundfish habitat, from Appendix C-1 of the Groundfish FMP.

Gear types subject to the NT_RCA	Method of fishing	Gear components that impact substrate	Substrates generally fished	Potential effects to habitat
Bottom longline	deployed on bottom	Anchors, weights, mainline.	Soft and hard bottom	Overturn, undercut, crush, break habitat and organisms, displace/disturb biogenic habitat
Pots/traps	deployed on bottom	pot, line.	Soft and hard bottom	Smother organisms, crush, biogenic habitat
Hook-and-line gears				
Dinglebar gear	Bounces on bottom	Dinglebar, hooks, line	Hard bottom, rocky reef	Overturn, undercut, crush, break habitat and organisms, displace/disturb biogenic habitat
Troll Gear	Trolling in upper water column	Weights	Primarily fished in water column	Crush/break biogenic habitat (from weights), entanglement
Vertical Longline (single or multi hook gangion, and weight)	Drift fishing “jigging” or trolled	Weights, hooks, line	All bottom types and water column	Damage to and displacement of biogenic habitat damage; entanglement

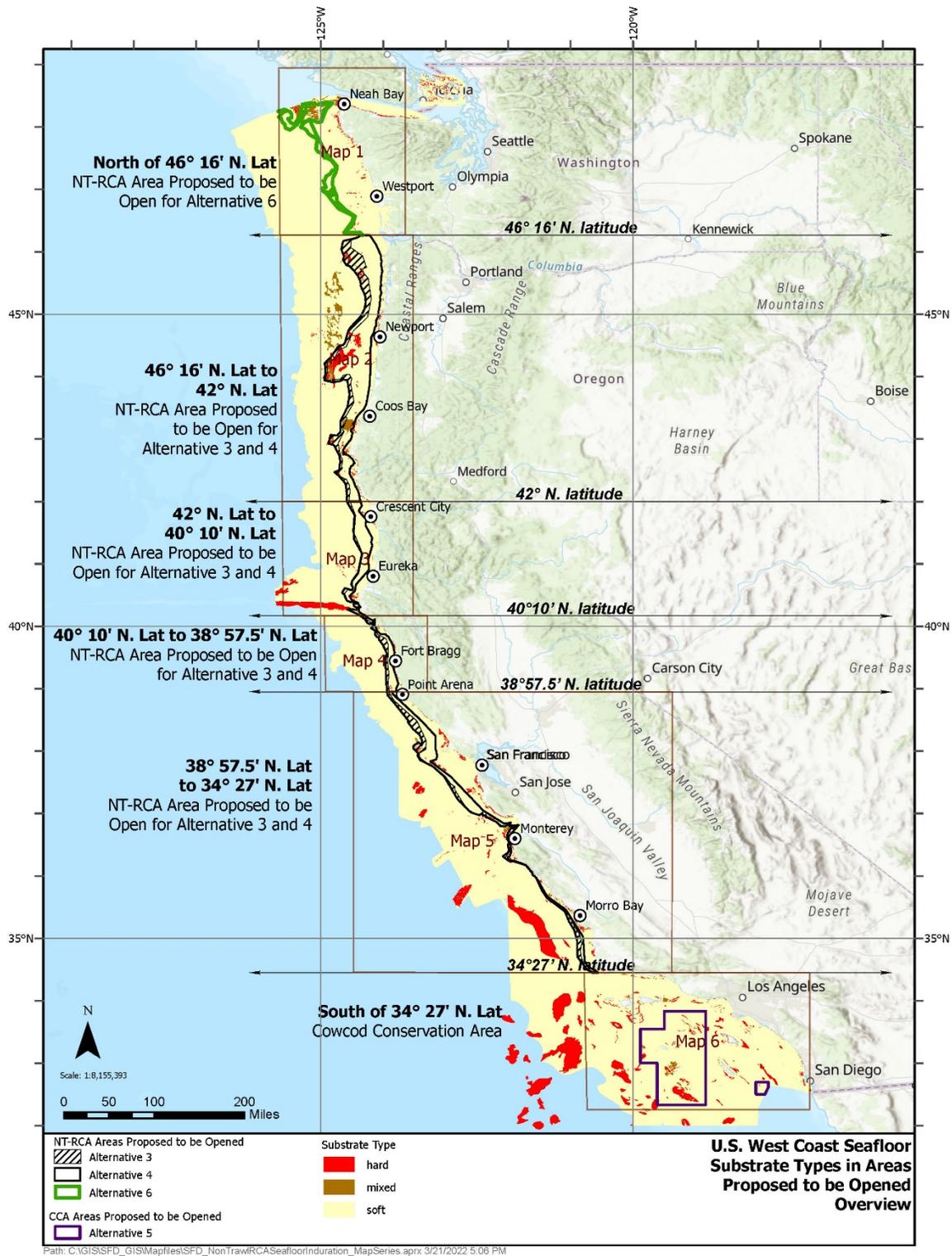


Figure 9. Overview of range of proposed alternatives compared to substrate type.

The Council has a primary tool available for use to mitigate habitat impact, EFH Conservation Areas (EFHCAs). EFHCAs are areas closed to certain types of fishing for the purpose of conserving and protecting designated EFH. The Council has identified and created these discrete areas closures starting in 2005 to mitigate the adverse effects of fishing on groundfish EFH ([FMP Section 6.86](#)), established under [Amendment 19](#).

There are two types of EFHCAs that are currently in place on the West Coast- bottom trawl and bottom contact. Bottom trawl fishing is prohibited in EFHCAs³ defined at 50 CFR 660.112(a)(5)(v) and 50 CFR 660.112(a)(5)(vi) and were most recently assessed during Amendment 28. The fisheries under consideration in this package would be permitted to fish in these areas if the area were opened to fishing under an Alternative. Bottom contact gear as defined at § 660.11 is prohibited in the following EFHCAs (defined at §§ 660.78 and 660.79): Thompson Seamount, President Jackson Seamount, Cordell Bank (50-fm (91-m) isobath), Harris Point, Richardson Rock, Scorpion, Painted Cave, Anacapa Island, Carrington Point, Judith Rock, Skunk Point, Footprint, Gull Island, South Point, and Santa Barbara and deeper than 500-fm (914-m), within the Davidson Seamount. Bottom contact EFHCAs would be opened to only to non-bottom contact gears (e.g., troll gear). In other words, if a bottom contact EFHCA were opened through a boundary change to the NT_RCA, pot or longline gear would not be allowed to be fished in that area. There are only a select number of bottom contact EFHCAs currently defined in regulation and were last looked at during Amendment 19. The Council is expected to take up a holistic view of EFHCAs during the next review process which is estimated to be sometime in 2025. However, as described in Section 2.2 and will be discussed further in Section 4, the Council is considering changing the designation of certain bottom trawl EFHCAs into bottom contact EFHCAs to provide continued habitat protection for select areas. In those considerations, the Council may want to look at the proposed substrate types that may be opened to fishing activity and what elements within current bottom trawl EFHCAs should continue to be protected (see Figure 10 through Figure 15).

³ Olympic 2, Biogenic 1, Biogenic 2, Quinault Canyon, Grays Canyon, Willapa Canyonhead, Willapa Deep, Biogenic 3, Astoria Deep, Astoria Canyon, Nehalem Bank/Shale Pile, Garibaldi Reef North, Garibaldi Reef South, Siletz Deepwater, Daisy Bank/Nelson Island, Newport Rockpile/Stonewall Bank, Hydrate Ridge, Heceta Bank, Deepwater off Coos Bay, Arago Reef, Bandon High Spot, Rogue Canyon, and Rogue River Reef, Brush Patch, Trinidad Canyon, Mad River Rough Patch, Samoa Deepwater, Eel River Canyon, Blunts Reef, Mendocino Ridge, Delgada Canyon, Tolo Bank, Navarro Canyon, Point Arena North, Point Arena South Biogenic Area, The Football, Gobbler's Knob, Point Reyes Reef, Cordell Bank/Biogenic Area, Rittenburg Bank, Farallon Islands/Fanny Shoal/Cochrane Bank, Farallon Escarpment, Half Moon Bay, Pescadero Reef, Pigeon Point Reef, Ascension Canyonhead, South of Davenport, Monterey Bay/Canyon, West of Sobranes Point, Point Sur Deep, Big Sur Coast/Port San Luis, La Cruz Canyon, West of Piedras Blancas State Marine Conservation Area, East San Lucia Bank, Point Conception, Hidden Reef/Kidney Bank (within Cowcod Conservation Area West), Catalina Island, Potato Bank (within Cowcod Conservation Area West), Cherry Bank (within Cowcod Conservation Area West), Cowcod EFHCA Conservation Area East, and Southern California Bight.

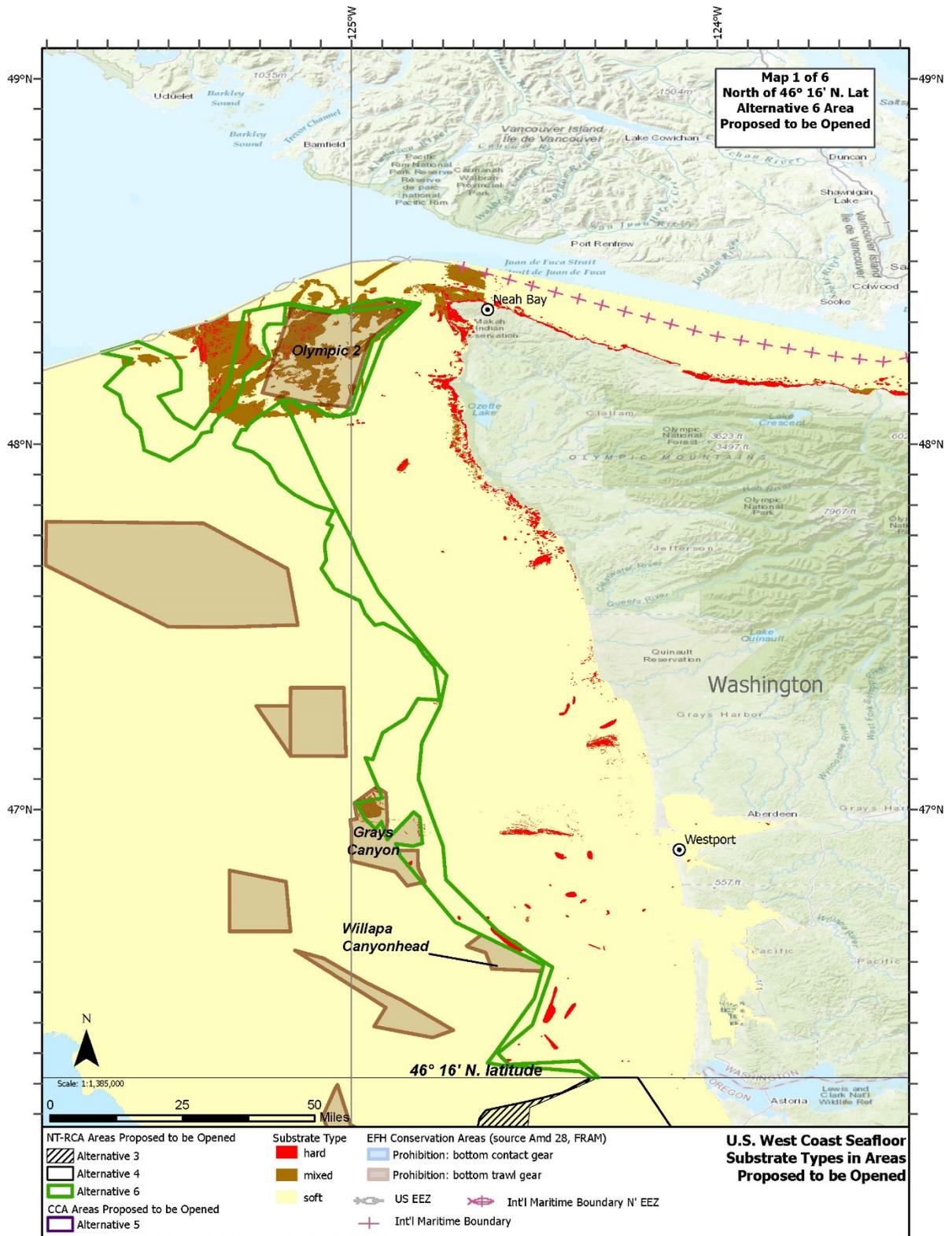


Figure 10. Substrate type compared to EFHCAs and proposed NT_RCA changes under Alternative 5 off Washington.

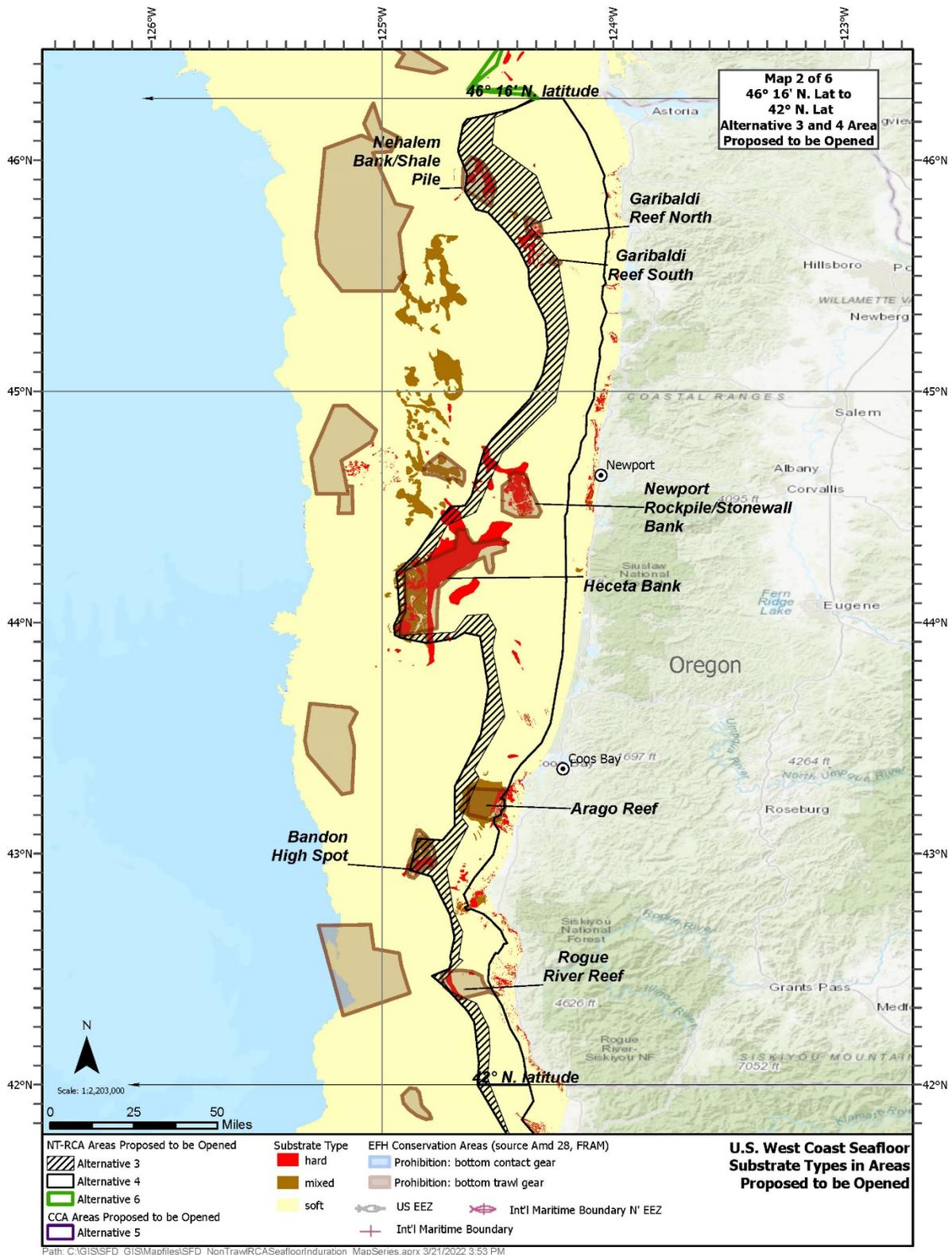


Figure 11. Substrate type compared to EFHCAs and proposed NT_RCA changes under Alternatives 3 and 4 off Oregon.

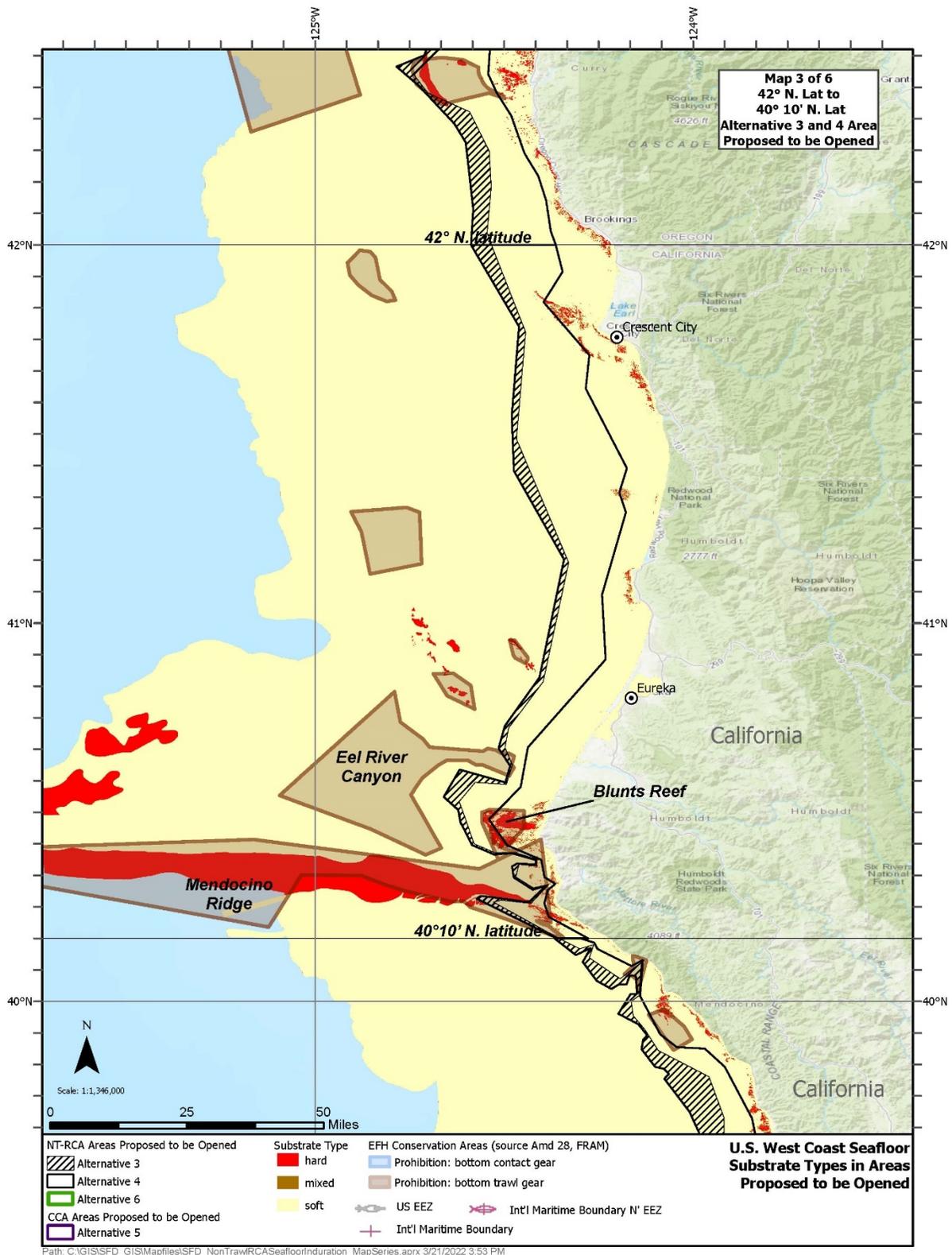


Figure 12. Substrate type compared to EFHCAs and proposed NT_RCA changes under Alternatives 3 and 4 off California from 42° to 40° 10' N. lat.

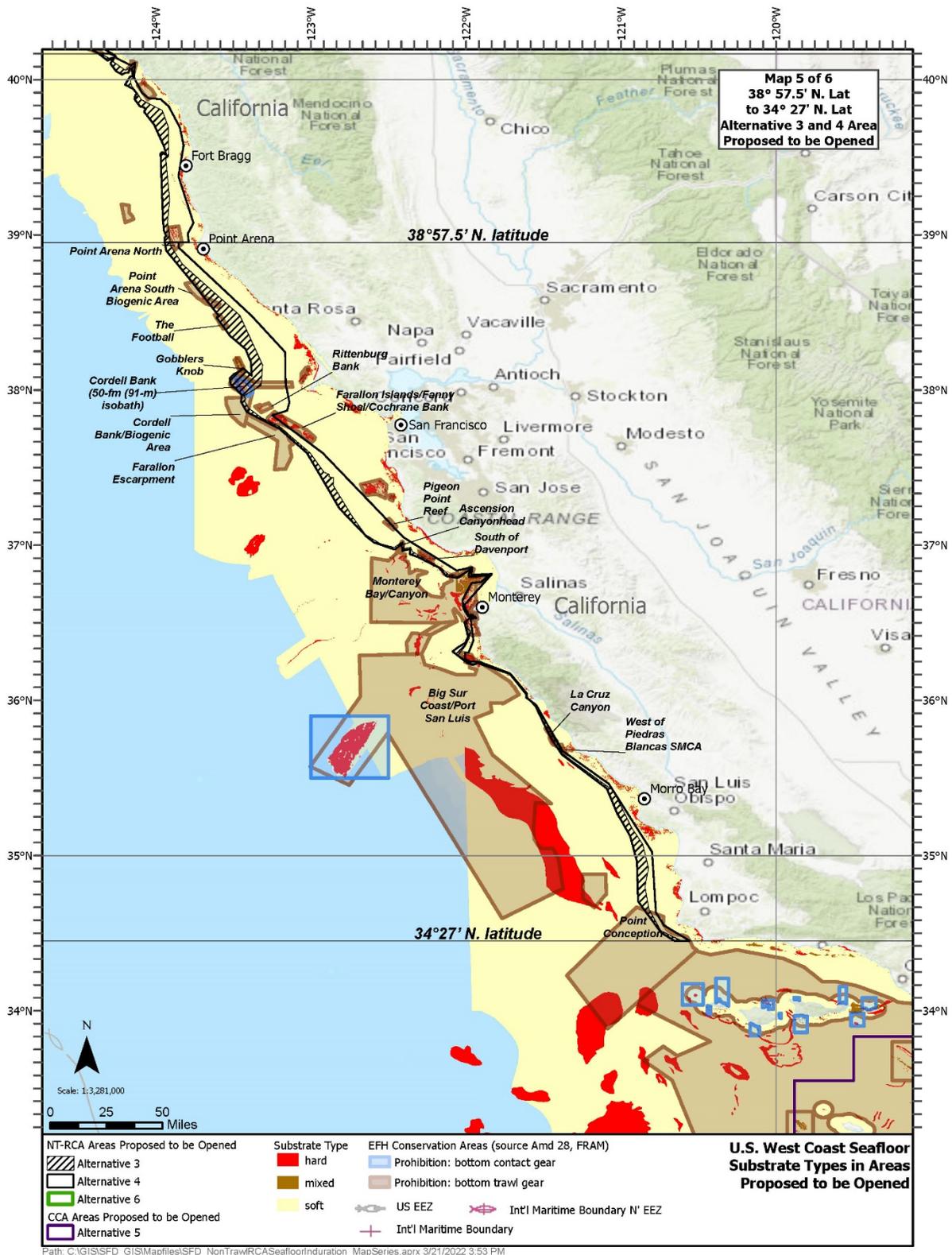


Figure 14. Substrate type compared to EFHCAs and proposed NT_RCA changes under Alternatives 3 and 4 off California from 38° 57.5' to 34° 27' N. lat.

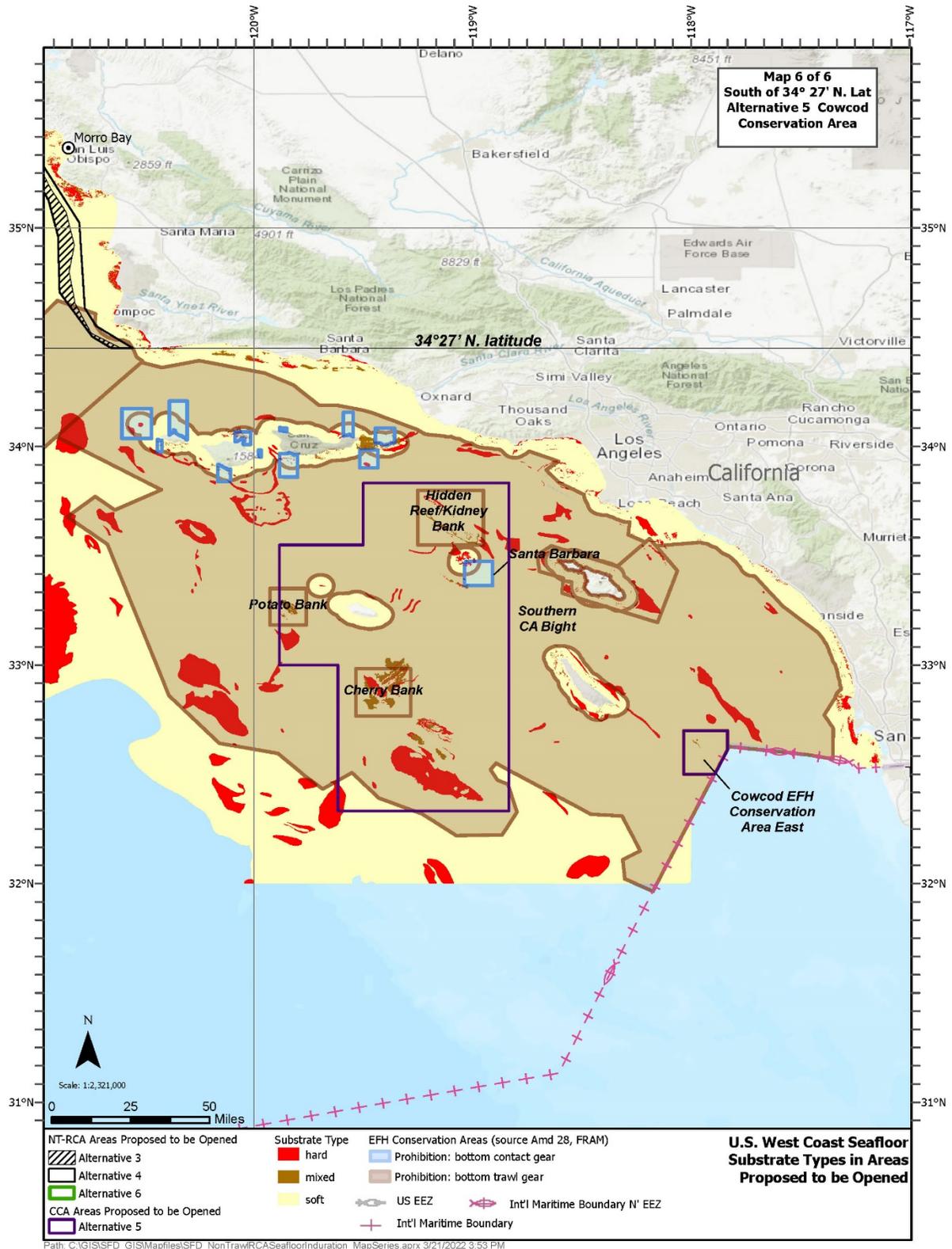


Figure 15. Substrate type compared to EFHCAs and proposed CCA changes under Alternative 5.

At the November 2021 Council meeting the [Habitat Committee report](#) recommended that the Council consider several analytical approaches if EFHCAs were to be redesignated under an alternative. Specifically, the HC asked that the analysis:

1. Include new survey data from the Deep Sea Coral Research and Technology Program (DSCRTP) on coral and sponge distribution and seek assistance from DSCRTP to identify sensitive coral/sponge areas in the non-trawl RCA.
2. Include new seafloor mapping data for the habitat analysis, and apply a substrate classification scheme that groups seafloor substrates into ecologically-relevant habitats (e.g., rock, boulder, cobble, gravel, sand, mud) to identify diverse habitats that can be more susceptible to disturbance (FMP Appendix C).
3. Estimate the amount of anticipated fishing effort by bottom-contact gear type, habitat type, and EFHCA in areas proposed to be opened by Alternative 3, and summarize the analysis by gear type, habitat type, and EFHCA within CCE biogeographic subregions.

If the Council chooses to move forward with the redesignation of EFHCAs, more analysis could be brought forward based on the HC’s recommendations.

3.2 Fishery Sector Overview

Within the broader non-trawl sector, there are multiple fishery sectors that may be affected by this action. This section attempts to characterize each of those sectors and provide an overview of key management measures that regulate those sectors.

3.2.1 Limited Entry Fixed Gear Fishery Sector

In order to fish in the LEFG sector, vessels are required to be registered to a LEFG permit. Each LEFG permit has a gear endorsement which designates the allowable gear type(s), longline or pot/trap ([§660.25\(3\)\(ii\)](#)), that can be used by the vessel. Meaning, if a LEFG vessel is to harvest the LEFG trip limit for a particular species or complex, it must use the gear for which it is endorsed. Specific management measures for the LEFG sector are defined at [50 CFR subpart E](#) with LEFG groundfish trip limits found under the same subpart in Table 2 [North](#) and [South](#).⁴ There are two fisheries within the LEFG sector:

1. LEFG sablefish primary (tier) fishery, which is managed with tier limits ([§660.25\(b\)\(vi\)\(A\)](#)) rather than cumulative trip limits ([§660.231](#))
2. LEFG trip limit fishery, which is managed by cumulative trip limits.⁵

In addition to endorsed longline and pot gear, LEFG vessels can fish with non-trawl “open access gear to target groundfish, such as vertical hook-and-line” ([§660.11](#)⁶, [§660.330 \(b\)](#)). For clarity, OA gear is defined under [§660.11](#) as “all gear types except 1) longline or trap (or pot) gear fished with a vessel that has a limited entry permit affixed with a gear endorsement for that gear 2) Groundfish trawl.” However, if a LEFG vessel switches to an OA gear when fishing, or only fishes OA gear on a trip, crossover provisions apply ([§660.60\(h\)\(7\)](#)). This means that if vessels registered to a LEFG permit fish with OA gear at any time, they would be subject to the lower,

⁴ See [§660.11 Conservation Measures 1\(vi\)\(B\)](#)

⁵ See [Agenda Item G2, Attachment 1, June 2021](#) for a complete description of the primary tier fishery and its relationship with other fisheries, including the daily trip limit (DTL) fisheries.

⁶ Refer to open access gear in the definitions list

more restrictive trip limit. In most cases, this would be the OA trip limits ([§660.230 \(b\)\(2\)](#)). In select situations, if the OA trip limit is higher than the LEFG limit, LEFG vessels would be restricted to the LEFG trip limit([§660.60\(h\)\(7\)\(ii\)](#)).

Regardless of the gear type used by a vessel registered to an LEFG permit, any groundfish retained while using OA gear and/or during a crossover trip would count against the LEFG trip limit for that vessel in the designated period ([§660.60\(h\)\(7\)\(ii\)\(A\)](#)). Finally, vessels are not allowed to retain two separate (i.e., LEFG and OA) trip limits (§660.60(h)(7)(ii)(A)) on the same trip. For example, if a LEFG vessel targets sablefish using its endorsed gear (e.g., longline) and then switches to OA gear (e.g., hook-and-line gear) to target yellowtail rockfish on the same trip, the vessel could only retain the OA trip limit of yellowtail and sablefish (if applicable) (§660.60(h)(7)(ii)(A)).

LEFG fishery participants are prohibited from operating within the boundaries of the NT_RCA and other specified Groundfish Conversation Areas (GCAs) and EFHCAs regardless of gear type, unless transiting (§§660.212(c) and 660.230(d)(11)(iii)) or fishing for the “other flatfish complex” in the NT_RCA (§660.330(d)(12)(iv)). Vessels may also fish within the CCA boundaries shoreward of the 40 fathom depth contour for rockfish and lingcod. Under [§660.230\(d\)](#), LEFG vessels allowed to operate “within a GCA (e.g., fishing for “other flatfish” with hook and line gear only) may not simultaneously have other gear on board the vessel that is unlawful to use in the [LEFG] fishery.” LEFG vessels are required to use vessel monitoring systems (VMS; [§660.14\(b\)\(1\)](#)) as a well as carry an observer if selected for coverage ([§660.18](#)).

3.2.2 Open Access Fishery Sector

OA commercial fishing vessels are those that are not registered to a LE permit “which takes and retains, possesses or lands groundfish.”⁷ The OA sector is poorly delineated as this sector is comprised of vessels fishing multiple gear types ([§660.330\(b\)](#)), ranging from non-groundfish trawl gear to fixed gear and includes both targeted groundfish operations (e.g., sablefish DTL) and incidental open access fisheries (IOA), e.g., salmon troll, etc. Therefore, any vessel certified to commercially fish on the West Coast can fish under the OA trip limit regulations. Additionally, each state may have specific licensing requirements for OA vessels (e.g., state nearshore permits, salmon troll) that may further classify vessels in those states.

The following fisheries that fall under the category of OA are:

1. Targeted or directed
2. Incidental
 - a. Directed non-tribal halibut Fishery
 - b. Incidental Salmon Troll
 - c. Non groundfish trawl - pink shrimp ridgeback prawns, California halibut and sea cucumbers

⁷ [§660.11](#) Open Access fishery means the fishery composed of commercial vessels using open access gear fished pursuant to the harvest guidelines, quotas, and other management measures governing the harvest of open access allocations (detailed in §660.55) or governing the fishing activities of open access vessels (detailed in subpart F of this part). Any commercial vessel that is not registered to a limited entry permit and which takes and retains, possesses or lands groundfish is a participant in the open access groundfish fishery.

The OA sector has specific trip limits that, in general, are lower than LEFG trip limits; however, the OA sector can fish to those limits with a wider variety of gear types (§660.30(b)). The current OA sector management measures and regulations are found at [50 CFR 660 subpart F](#) with trip limits found in Table 3 [North](#) and [South](#) under the same subpart. OA vessels are also subject to crossover provisions (§660.60(h)(7)) though vessels cannot fish to LEFG limits without an LEFG permit.

Similar to LEFG vessels, directed groundfish OA vessels are prohibited from operating within the NT_RCA, and applicable GCAs (§660.330(d)(1-11) unless transiting (§660.33(d)(12)(i & ii), or fishing for “other flatfish” complex (§660.330(d)(12)(iv)) with hook-and-line gear, or operating within the 30 to 40 fm depth bin of the NT_RCA from 40° 10’ N. lat. to 46° 16’ N. lat. with hook-and-line gear as described above. Vessels may also fish within the CCA boundaries shoreward of the 40 fathom depth contour for rockfish and lingcod. Additionally, OA vessels are required to carry an observer when fishing groundfish in the EEZ ([§660.14\(b\)\(3\)](#)) if selected for coverage by WCGOP ([§660.18](#) and [§660.316](#)) and must also use a VMS if fishing in federal waters ([§660.14](#)).

Incidental Open Access (IOA) fisheries are fisheries that do not directly fish on or target groundfish but can retain groundfish incidentally caught. Apart from the directed commercial halibut, these fisheries may operate in either portions of the NT_RCA (CA halibut, sea cucumber and ridgeback prawn are restricted from fishing in EFHCAs) or in the entire NT_RCA (pink shrimp trawl and salmon troll can fish inside EFHCAs). For the pink shrimp, sea cucumber, ridgeback prawn, and CA halibut fisheries, this action as currently written is not expected to have any impacts as vessels in these fisheries operate with non-groundfish trawl gear and therefore, these vessels are not subject to the NT_RCA. We therefore eliminate these fisheries from further discussion.

Two IOA fisheries may be impacted through this action with potential modifications of the NT_RCA boundaries - salmon troll and commercial halibut. Salmon troll vessels are allowed retain incidental limits of yellowtail rockfish while fishing both inside and outside the NT_RCA coastwide, lingcod while fishing in the NT_RCA north of 40° 10’ N. lat., and are subject to OA trip limits when retaining groundfish on trips completely outside of the NT_RCA. Salmon troll vessels cannot participate in the salmon troll fishery within the NT_RCA and then fish in the OA groundfish fishery or retain groundfish other than lingcod or yellowtail on the same trip (660.330(d)(12)(iii)). If retaining groundfish, vessels are required to have VMS. Alternatives 3 and 4 would change the boundaries or completely remove the NT_RCA between 34° 27’ N. lat. and 46° 16’ N. lat. As will be discussed under Sections 4.3 and 4.4 below, depending on the Alternative selected, it may affect the trip limits that salmon troll vessels would be subject to. For example, if the NT_RCA was removed, then salmon troll vessels would be able to retain all OA limits in the area opened to fishing.

The directed commercial, non-tribal Pacific halibut fishery currently operates on 56-hour openings every other week starting the 4th week in June. If the Council adjusted the NT_RCA boundaries for groundfish fisheries, vessels participating in the directed halibut fishery would still be subject to the current NT_RCA. As with salmon trollers, if the vessel retains any groundfish, they must have VMS.

3.2.3 Shorebased Individual Fishing Quota (IFQ) Gear Switching

Shorebased individual fishing quota (IFQ) trawl vessels utilizing fixed gear (i.e., “gear switchers”) may also be impacted by this action ([§660.24\(k\)](#)). These vessels may use any legal non-trawl gear to participate in the non-trawl groundfish fishery but do not need gear endorsements as do LEFG vessels. Gear switching vessels are required to follow the same prohibitions ([§616.212](#)) and management measures([§660.230\(d\)](#)) in place for LEFG, including any applicable gear restrictions ([§§660.219](#) and [660.230\(b\)](#)). These vessels are subject to GCA fixed gear provisions, including the NT_RCA, when fishing with the non-trawl gear. However, gear switching vessels are subject to other provisions that are required of the Shorebased IFQ program, including 100 percent monitoring (see [660.140\(k\)](#)).

3.2.4 Recreational Fishery off California

While recreational fisheries are not subject to the NT_RCA described in Section 3.1.1 above, recreational vessels participating in southern California would be impacted by Alternative 5 and are therefore discussed here. Recreational vessels may be private vessels or commercial passenger fishing vessels (CPFVs) . Currently, recreational fishing is prohibited within the CCA, except for petrale sole, starry flounder, and the other flatfish complex (as specified in 50 CFR 660.360(c)(3)(iv)). Similar to commercial vessels, recreational participants may fish within the 40 fathom depth contours when permitted for nearshore rockfish, cabezon, kelp greenling, lingcod, California scorpionfish, and shelf rockfish. State regulations also permit the retention of California sheephead, ocean whitefish and all greens of the genus *Hexagrammos* in this area when the rockfish-cabezon-greenling (RCG) complex is open for fishing.

3.2.5 Applicable Gear Types

The NT_RCA is applicable to vessels utilizing any legal non-trawl gear, including fixed gears and hook and line gear. While Alternatives 1 and 2 are applicable to only non-bottom contact hook and line gear and Alternative 6 for pot gear, Alternatives 3-5 would allow additional fishing opportunity for all non-trawl gear types shown in Table 3 below.

Table 3. Fixed gear and hook-and-line gear as defined at [660.11](#) under Fishing Gear

Gear	Definition	Types
Bottom Contact Gear	Gear designed, or modified, to make contact with the bottom	Includes, but not limited to: <ul style="list-style-type: none"> • Trawl gear • Fixed gear • Set net • Dinglebar gear • Experimental gear designed/modified to make contact with the bottom
Fixed Gear	Anchored non-trawl gear	<ul style="list-style-type: none"> • Longline • Trap or pot • Set net • Stationary hook-and-line (includes vertical hook-and-line)
Hook and Line Gear	Gear with one or more hooks attached to one or more lines, may be stationary or trolled.	<ul style="list-style-type: none"> • Bottom longline a/ b/ • Commercial vertical hook-and-line • Dinglebar • Troll gear

a/ means a stationary, buoyed, and anchored groundline with hooks attached, so as to fish along the seabed. It does not include pelagic hook-and-line or troll gear.

b/ Snap gear means a type of bottom longline gear where the hook and gangion are attached to the groundline using a mechanical fastener or snap

With respect to Alternatives 1 and 2, only select hook and line types would be permitted in the NT_RCA including troll gear or jig gear- i.e., gears that would not contact the seafloor. However, as discussed in Agenda Item F.4, Attachment 2, April 2022, there is a lack of clarity on the definitions of these types of gears within federal regulation. The Council is considering a proposal under Agenda Item F.4 to define these gear types based on EFPs that have been occurring within the recent biennial specifications. Depending on that action and as well be discussed under Section 4.1 and 4.2, the Council may want to consider further clarifications on the gears to be permitted under these alternatives if they move forward.

3.3 Data Collection and Enforcement

One of the biggest concerns around permitting vessels to fish within the NT_RCA or CCA or modifying or removing the boundaries of the NT_RCA or CCA is the amount of monitoring and data available to assess vessel activity. The following section provides an overview of the data collection processes available currently (fish tickets and observer coverage) or that are expected to be available by the time this package is implemented (logbooks) as well as enforcement concerns.

3.3.1 Data Collection and Monitoring

All non-trawl commercial groundfish fleets are subject to landing records (i.e., fish ticket) requirements, some degree of observer coverage by the WCGOP, and must use declarations and VMS while retaining groundfish. Sablefish landings, which may include other groundfish, are reported, via electronic tickets, within 24 hours of landing. All three states utilized electronic fish

tickets for groundfish landings, although the timing requirements can vary by state. However, landings data reveals only those species retained by the fishery. A key element lacking from these data are at-sea discards. WCGOP is, in part, designed to collect data on catch composition, focusing on at-sea discards, protected species interactions, and fishing effort. Non-catch shares fixed gear fisheries such as the LEFG and OA sectors are not observed at 100 percent, unlike gear switching vessels in the IFQ fishery. On average, the LEFG sablefish fishery has average 34 percent coverage rate in the last decade, with non-sablefish endorsed trips seeing only six percent coverage⁸ (Table 4). As there are fewer non-sablefish endorsed landings overall, this trend makes sense. OA landings are observed even less at five percent (Table 4). It is important to note, many OA vessels are unable to safely carry an observer due to size and other constraints.

Table 4. Limited Entry Fixed Gear (LEFG) and Open Access (OA) Observer Coverage Rates, 2010-2019 (Somers et al. 2021). Coverage rates are computed as the observed proportion of total groundfish landings, summarized from fish ticket landing receipts.

Year	Sablefish LEFG			LEFG Non-sablefish	OA FG		
	All	Pot	LL		All	Pot	LL
2010	27%	28%	27%	10%	3%	3%	3%
2011	25%	37%	21%	10%	6%	7%	5%
2012	25%	35%	22%	5%	5%	7%	4%
2013	20%	14%	22%	7%	4%	9%	2%
2014	28%	31%	27%	5%	6%	8%	5%
2015	47%	35%	41%	7%	5%	7%	5%
2016	43%	14%	33%	4%	6%	7%	5%
2017	35%	31%	37%	3%	7%	12%	4%
2018	53%	72%	45%	4%	7%	10%	5%
2019	42%	49%	39%	4%	6%	11%	4%
2020	30%	47%	14%	2%	4%	7%	3%
Avg	34%	36%	30%	6%	5%	8%	4%

In 2008 the Council took action to require logbooks for the limited entry and open access fixed gear fleets; however, this action was not implemented. The Council then [took action in March 2022](#) to further clarify the need for logbooks and that the requirement would apply to the non-trawl groundfish fisheries that are subject to these proposed actions. We will incorporate those actions and specifications into this area management action as necessary for further Council consideration.

For recreational fisheries off California the CDFW monitors landings and collects data through observers on commercial passenger fishing vessel via methods described in the California Recreational Fisheries Survey ([CRFS](#)) document. CDFW then provides data to Pacific Fisheries

⁸ Coverage rates are defined as the proportion of targeted landings associated with observed trips to the total targeted landings across all trips in the fleet, based on fish ticket data from the Pacific Fishery Information Network (PacFIN) (Somers, et. al 2021).

Information Network for NMFS to develop annual total mortality estimates. Recreational fishing bag limits are adjusted via inseason or preseason actions by the Council as needed.

3.3.2 Enforcement

While the commercial fleet is required to have VMS when retaining groundfish and submit declaration reports, there are also enforcement concerns related to the action alternatives- and in particular Alternatives 1 and 2. The Enforcement Consultants (EC) have provided preliminary comments previously under Agenda Item [Agenda Item F.3.a, Supplemental EC Report 1, April 2021](#), [Agenda Item E.6.a, Supplemental EC Report 1, November 2021](#), and [Agenda Item E.9.a, Supplemental EC Report 1, March 2022](#). Regarding NT_RCA boundary modifications, the EC prefers boundary changes rather than allowing fishing within the NT_RCA and note concerns about enforceability in some areas where the inner and outer boundary depth contours are very close (e.g., along a steep bank/shelf with little separation), which makes monitoring with VMS ineffective. Further, if fishing is allowed within the NT_RCA, declaration codes should be developed for vessels permitted to fish within the NT_RCA. This aspect would simplify enforcement in distinguishing vessels that are allowed to fish within the NT_RCA and those that are transiting.

4. Analysis of the Range of Alternatives

This section provides a description of the current range of alternatives, preliminary impacts, and questions for clarification. We expect that the range of alternatives to be refined or additional alternatives to be added; however, we provide some preliminary impacts to assist the Council in its deliberations and continued development. After the Council has adopted a final range of alternatives, we will provide additional impact analyses for selection of preliminary preferred alternatives.

Table 6 provides a high-level overview of potential impacts to consider under each alternative. This list is preliminary and based on cursory look at the current information on hand. A comprehensive review along with current data sets will be conducted in the future. Therefore, this list will be updated and refined as the analysis and alternatives are developed.

Table 5. Summary of potential impacts for each alternative. (OFS=overfished species)

Alternative (Short Title)	Target species	Non-target species	Protected/Prohibited Species	Habitat	Socio-Economic
1- H&L allowed in NT RCA	Increased attainment	Low risk to OFS	Likely low risk to seabirds	Negligible	Positive
2 - H&L allowed in NT RCA with higher LEFG limits	Increased attainment	Low risk to OFS	Likely low risk to seabirds	Negligible	Positive
3 – Open NT RCA (75 fm off OR/CA)	Increased attainment	Uncertain	Potential risk to seabirds/whales	Potential impact	Positive
4 – Open entire NT RCA (OR/CA)	Increased attainment	Uncertain	Potential risk to seabirds/whales	Potential impact	Positive
5 – Repeal CCA	Increased attainment	Uncertain	Potential risk to seabirds/whales	Potentially impact	Positive
6 – Open 75-100 fm of NT RCA to Pot gear off WA	Increased attainment	Low risk to yelloweye	Potential risk to whales	Potential impact	Positive

4.1 Alternative 1: Allow OA vessels to use select hook and line gear in the NT_RCA

Allow Open Access (OA) vessels targeting groundfish to fish in the NT_RCA between 46°16' and 34° 27' N. lat. using approved hook & line gear.

- Allow OA vessels targeting groundfish to operate inside the NT_RCA with hook-and-line gear except bottom longline, vertical hook and line that is anchored to the bottom, and dinglebar gear are types of hook and line gear that are not allowed. Fixed gear types other than hook and line are not allowed. Vessels must declare their intent to fish within the NT_RCA prior to departure.
- Fishing Area: Vessels may fish inside and outside the NT_RCA on the same trip.

Gear On-Board: Vessels shall only carry approved hook-and-line gear on-board vessel when fishing occurs in the NT_RCA. Under this Alternative, vessels fishing in the directed OA sector for groundfish (defined as those vessels targeting groundfish; hereafter OA) to operate inside and outside the current NT_RCA boundaries (Table 1) on the same trip with only approved hook-and-line gear that is not anchored or touches the bottom. These measures would only apply in waters off Oregon and California. Bottom longline, vertical hook and line anchored to the bottom and dinglebar gears would be prohibited from use in these areas.

Based on Council and GAP discussions, we expect OA groundfish trip limits and species-specific retention prohibitions (e.g., yelloweye, cowcod, etc.) would remain consistent both inside and outside the NT_RCA. Additionally, regulations relating to VMS, declaration, observer coverage, etc. are expected to remain consistent with current regulation. Further, unless specified by the Council, regulations off Washington and south of 34° 27' N. lat. would remain the same as No Action (i.e., no fishing allowed within the NT_RCA).

OA vessels could fish both inside and outside the NT_RCA on the same trip but, when doing so, can only carry the approved hook and line gear to target groundfish. Limiting the use of hook and

line gear on a trip that occurs inside the NT_RCA will prevent confusion for enforcement when determining what gear was used by the vessels to catch fish in which area.

Forthcoming Federally permitted fixed-gear logbook⁹ would be required under Alternative 1. This will provide gear specific catch and bycatch information for spatial analysis and management. The OA fixed gear fishery would still be subject to monitoring requirements as discussed in Section 3.2.2.

Overall, the impacts from Alternative 1 would be similar to that described for OA vessels in Agenda Item F.4., Attachment 2, April 2022. Vessels would likely be able to increase overall attainment of midwater rockfish stocks, leading to positive economic benefits to coastal communities. Port groups most likely to benefit from Alternative 1 include Brookings and Morro Bay. Brookings and Morro Bay have been the most involved (measured as the ex-vessel value in a port as share of coastwide ex-vessel value) and dependent (measured as a percent of each port's total landings revenue from all fisheries) on OA non-sablefish fisheries from 2017-2020 (see Table 11-14 and Figure 11-2 of Attachment F.4., Attachment 2, April 2022).

Under the proposed alternative, the prohibited and protected species where there is some concern relative to the current Biological Opinions under which the groundfish fishery operates is seabirds. Other species of concern (whales, eulachon, salmon etc.) are not likely to interact with the selected hook-and-line gear types as a part of this measure as described in Section 3.2 of Agenda Item E.6., Attachment 1, November 2021 and therefore are not further discussed. Seabirds (including short tailed albatross) are known to strike baited hooks attached to longline and can become inadvertently hooked or entangled in the gear ([USFWS, 2017](#)). However, hook-and-line gear types proposed to be used under this action may be less likely to interact with seabirds depending on the configurations approved by the Council. Bait type also may influence seabird interactions. Hooks with natural bait are thought to attract seabirds more than artificial bait; yet, based on industry input, even with fishing longline with baited hooks (areas outside of 100 fm), there have been limited interactions even though this is the area where more seabirds are seen in general (Harrison Ibach, personal communication). Overall, impacts to seabirds under this alternative will depend on the final gear configurations allowed under this Alternative.

Impacts to habitat will vary by the gear type used under this Alternative and the gear configurations approved. Given that there is no clear definition of what gear type configurations would be permitted under this action (see Agenda Item F.4., Attachment 2), this analysis can only qualitatively describe the impacts of “non bottom contact hook and line gear” based on the intent of the gear (i.e., to not contact the bottom). While there could be incidental interactions with the bottom, as described in Table 3 with the troll gear (i.e., a non-bottom contact hook and line gear type), the likelihood appears to be low and was one of the primary reasons this gear type was supported by the Habitat Committee ([Agenda Item E.6.a, Supplemental HC Report, November 2021](#)).

Questions for Council Consideration

⁹ [Agenda Item E.5.a NMFS Report 1 March 2022.](#)

1. Under the 2023-24 harvest specification and management measure process, the Council is considering a similar action except that the scope of the action would extend to the US/Mexico border. Does the Council want to keep the southern border of this action at 34° 27' N. lat. or align the alternative with the measures proposed in the 2023-2024 biennial specifications management measures?
2. If the action as proposed in November 2021 goes through, this alternative would be already implemented through the harvest specifications process and therefore would not need to be further considered. However, if the Council chooses to modify the 2023-24 management measure to the proposed NMFS alternative 12e, then this Alternative would potentially include other non-bottom contact gear type configurations and the ability to use natural bait. Advisory bodies and the Council should consider if other gear configurations (e.g., rod and reel gear) or bait types (i.e., natural bait) are desired and provide some guidance to staff.

4.2 Alternative 2: Allow LEFG vessels to use select hook and line gear in the NT_RCA

Allow Limited Entry Fixed Gear (LEFG) vessels targeting groundfish to fish in the NT_RCA 46°16' and 34° 27' North Latitude using approved hook & line gear up to LEFG trip limits.

- Allow LEFG vessels targeting groundfish to operate inside the NT_RCA and fish up to the LEFG trip limits with hook-and-line gear except that bottom longline, vertical hook and line that is anchored to the bottom, and dinglebar gear are not allowed. Fixed gear types other than hook and line are also not allowed. Vessels must declare their intent to fish within the NT_RCA prior to departure.
- Fishing Area: LEFG vessels may fish inside and outside the NT_RCA on a trip.
- Gear On-Board: LEFG vessels can only carry approved hook-and-line gear on-board a vessel when fishing occurs in the NT_RCA. Vessels shall not switch gears during a fishing trip.

The intent of Alternative 2 is similar to Alternative 1 whereby it would allow vessels in the LEFG fishery to operate within current NT_RCA boundaries with approved hook-and-line gear from 46° 16' to 34° 27' N. lat.. This Alternative also prohibits the use of bottom longline, vertical hook and line gear anchored to the bottom, and dinglebar within the NT_RCA. However, LEFG vessels would be allowed to fish to their LEFG limits when using the approved hook-and-line gear in the NT_RCA, as opposed to No Action regulations, where they would be held to lower, more restrictive limits. LEFG trip limits would remain consistent with current regulations too; as would regulations specifying zero retention of prohibited species (e.g., cowcod, yelloweye rockfish, etc.). Additionally, regulations relating to VMS, declaration, observer coverage, etc. are expected to remain in place.

Under Alternative 2, vessels could fish both inside and outside the NT_RCA on the same trip but, when doing so, can only carry the approved hook and line gear to target groundfish. Limiting the use of hook and line gear on a trip that occurs inside the NT_RCA will prevent confusion for enforcement when determining what gear was used by the vessels to catch fish in which area.

Under current regulation, crossover provisions require LEFG to fish to the lower limits when fishing with OA gear. Therefore, if the Council were to allow LEFG to fish to their limits within the NT_RCA, crossover provisions ([50 CFR 660.60\(h\)\(7\)\(ii\)\(A\)](#)) would need to change.

Similar to Alternative 1, the impacts under Alternative 2 would be similar to those described in Agenda Item F.4., Attachment 2, April 2022. However, unlike that management measure proposal, LEFG vessels under Alternative 2 would be able to fish up to their LEFG trip limits. Therefore, there may be increased activity by LEFG vessels leading to greater catch amounts than in the 2023-24 proposed management measure. Port groups in the proposed area most likely to benefit from Alternative 2 are Crescent City, Brookings, and Morro Bay. Impacts to prohibited and protected species and habitat would be the same as those described under Alternative 1.

Questions for Council consideration:

1. As with Alternative 1, no changes were proposed south of 34° 27' N. lat. under this alternative; however, does the Council wish to align the alternative with the measures proposed in the 2023-2024 biennial specifications management measures?
2. Similar to Alternative 1, elements of Alternative 2 are being considered in the 2023-24 specifications. However, in addition to the questions raised in Alternative 1 related to gear configurations and bait, there is also the question of whether the Council would want to permit LEFG vessels to fish up to their LEFG trip limits (as proposed under Alternative 2 of this action). Does the Council want to consider changing the crossover provisions?

4.3 Alternative 3: Move the seaward boundary of the NT_RCA to 75 fm from 46° 16' to 34° 27' N .lat.

The seaward NT_RCA boundary will be 75 fathoms

Suboption 1: Prohibit all bottom contact groundfish gear in groundfish EFHCAs that would otherwise be reopened under this action

Under Alternative 3, the seaward boundary of the NT RCA would be moved to 75 fathoms from 46° 16' N. lat. to 34° 27' N. lat. (Figure 16) Areas to the north and south of that range would remain status quo. Overall, this Alternative would open 2,453 square miles to fishing.

Under this alternative, all legal groundfish non-trawl gear would be allowed to fish in the newly reopened areas previously within the NT_RCA. These gears include bottom longline, pot/trap and dinglebar. In addition to LEFG and OA sectors, vessels utilizing non-trawl gear in the IFQ sector (i.e., gear switchers) would be allowed to fish in the newly reopened areas. Salmon troll vessels retaining groundfish in the NT_RCA would still be held to current trip limits; however, there would be additional fishing area (i.e., from 75-100 fm) where salmon troll vessels would be subject only to OA trip limit regulations as currently allowed outside the NT_RCA. Directed Pacific halibut fisheries however would be restricted to the current boundaries. If the Council would like to move the seaward boundary for vessels in that fishery, that consideration would have to occur in a halibut process. The Council also included a sub-option which would redesignate any bottom trawl EFHCAs into bottom contact EFHCAs.

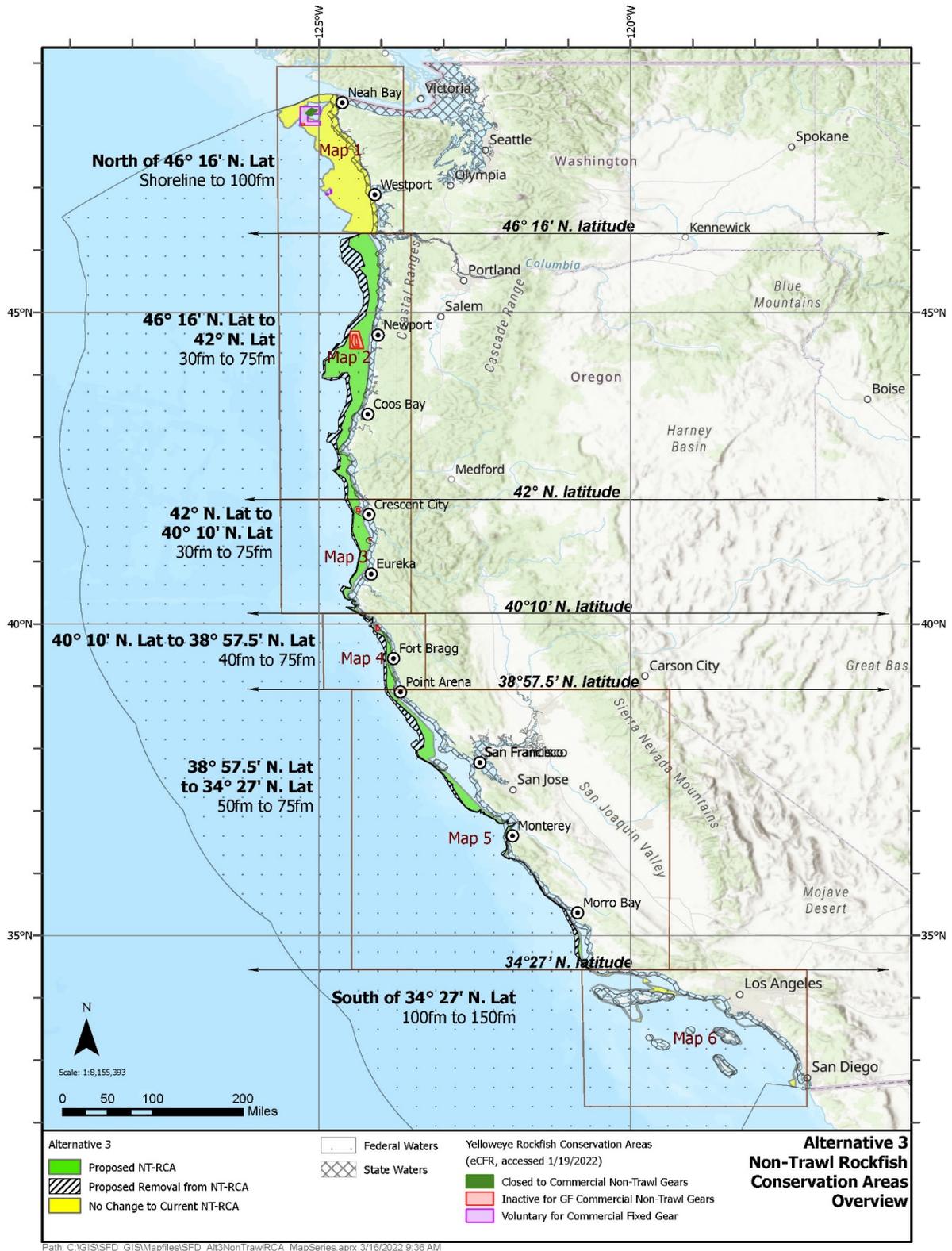


Figure 16. Overview of proposed NT_RCA boundaries under Alternative 3.

Table 6. Non-trawl management areas and the current non-trawl RCA boundaries compared to proposed NT_RCA boundaries under Alternative 3.

Management Area	Current NT_RCA boundaries a/	Proposed NT_RCA boundaries	Amount of area opened to fishing (mi ²)
North of 46°16' N. lat.	Shoreline (0 fm) to 100fm	No change	No change
46°16' N. lat. to 42° N. lat. b/	30 fm to 100 fm	30 fm to 75 fm	1,361
42° N. lat. to 40°10' N. lat. b/	30 fm to 100 fm	30 fm to 75 fm	142
40°10' N. lat. to 38°57.5' N. lat.	30 fm to 125 fm	30 fm to 75 fm	205
38°57.5' N. lat. to 34°27' N. lat.	50 fm to 125 fm	50 fm to 75 fm	743
South of 34°27' N. lat. c/	100 fm to 150 fm	No change	No change

a/ Current NT_RCA boundary coordinates at 86 FR 14379, see Tables 2 & 3 -coordinates at §§ 660.71-660.74

b/ between 46°16' N. lat. and 40°10' N. lat., 30 to 40 fm fishing is only allowed with hook-and-line gear except bottom longline and dinglebar (§660.11)

c/also applies around islands

While difficult to project impacts, similar to Alternatives 1 and 2, Alternative 3 is likely to increase non-trawl attainment midwater rockfish stocks. Alternative 3 would additionally allow for increased access to species that occupy the deeper shelf and start of the slope, including sablefish, lingcod, and potentially slope rockfish complexes north and south. Sablefish north of 36° N. lat. is already a highly attained species (with LEFG attainments averaging 89 percent from 2016 to 2020 and OA attainments averaging 78 percent). While sablefish north attainment is likely to stay similar to No Action or potentially see minor increases, vessels targeting sablefish may see benefits in being able to find fish closer to shore (i.e., less operational costs). Other species attainments are uncertain, however, like midwater rockfish stocks are estimated to increase by some degree.

Movement of the NT_RCA to 75 fathoms would also lead to potential higher impacts to yelloweye rockfish, which are still under a rebuilding plan. Yelloweye rockfish are most common in waters from 27 to 219 fm and generally north of Point Arena (see Table 13-7 in Agenda Item F.4., Attachment 1). While there are YRCAs available off Oregon and California to mitigate yelloweye bycatch, none of these overlap the proposed area for reopening. Therefore, unless the Council adopted BACs as an option, there would be no mitigation measures available for yelloweye rockfish in the re-opened fishing area. For quillback and copper rockfish, these species can inhabit waters between 75-100 fathoms; however, survey and observer data suggest that the likelihood of encountering these species decreases with depth (see section 11.3 of Agenda Item F.4., Attachment 2). Further analyses is needed to determine potential impacts to other species; however, limited data availability will likely make any estimates uncertain. Again, the only mitigation measure that would be potentially available to mitigate impacts for copper, quillback or any other groundfish stock would be if the Council developed BACs.

Compared to Alternative 1 and 2, Alternative 3 does lead to potential increased risk in seabird and humpback interaction. Longline gear, which as noted in Section 4.1 above, is known to have interactions with seabirds as they strike the baited hooks. For humpback whales, the shift in the seaward boundary would expand the area where pot gear, which is known to entangle whales, would be permitted.

Habitat impacts under Alternative 3 would be greater than No Action or Alternatives 1 and 2 due to the allowance of bottom contact gear such as longlines or pots. As described in Section 3.1.5 above, these gear types can result in habitat impacts such as crushing or displacing biogenic habitat. Currently, there is only one bottom contact EFHCA (Cordell Bank; Figure 20) that is within the areas proposed to be opened to fishing which would prohibit the use of any bottom contact gear types (i.e., pot, longline) from being fished in those areas.

Suboption 1 under this alternative would change the designation of any bottom trawl EFHCAs into bottom contact EFHCAs. As shown in Table , there is an estimated 272 square miles of bottom trawl EFHCAs that would be opened to non-trawl gears under Alternative 3. However, some of the EFHCAs, such as Mendocino Ridge or Point Arena South (shown in blue Xs on Figure 18 and Figure 19), would change designation under this suboption have the majority of the closed area already exposed to bottom contact gear outside of the NT_RCA. This change in designation could thereby affecting fishing operations that are already occurring outside of the NT_RCA and therefore should likely be considered in a full EFH review process. Other EFHCAs, such as the Bandon High Spot or the Nehalem Bank/Shale Pile though (noted by red stars on Figure 17), might be more appropriate for redesignation if the Council were to want to protect habitat in that area from bottom contact gear as these bottom trawl EFHCAs are primarily within the area proposed for opening.

Table 7. Amount of bottom trawl EFCHAs estimated to be opened to non-trawl gear under Alternative 3.

Management Area	Amount of BT EFHCA area opened to fishing (mi²)
46°16' N. lat. to 42° N. lat.	119
42° N. lat. to 40°10' N. lat.	17
40°10' N. lat. to 38°57.5' N. lat.	4
38°57.5' N. lat. to 34°27' N. lat.	131

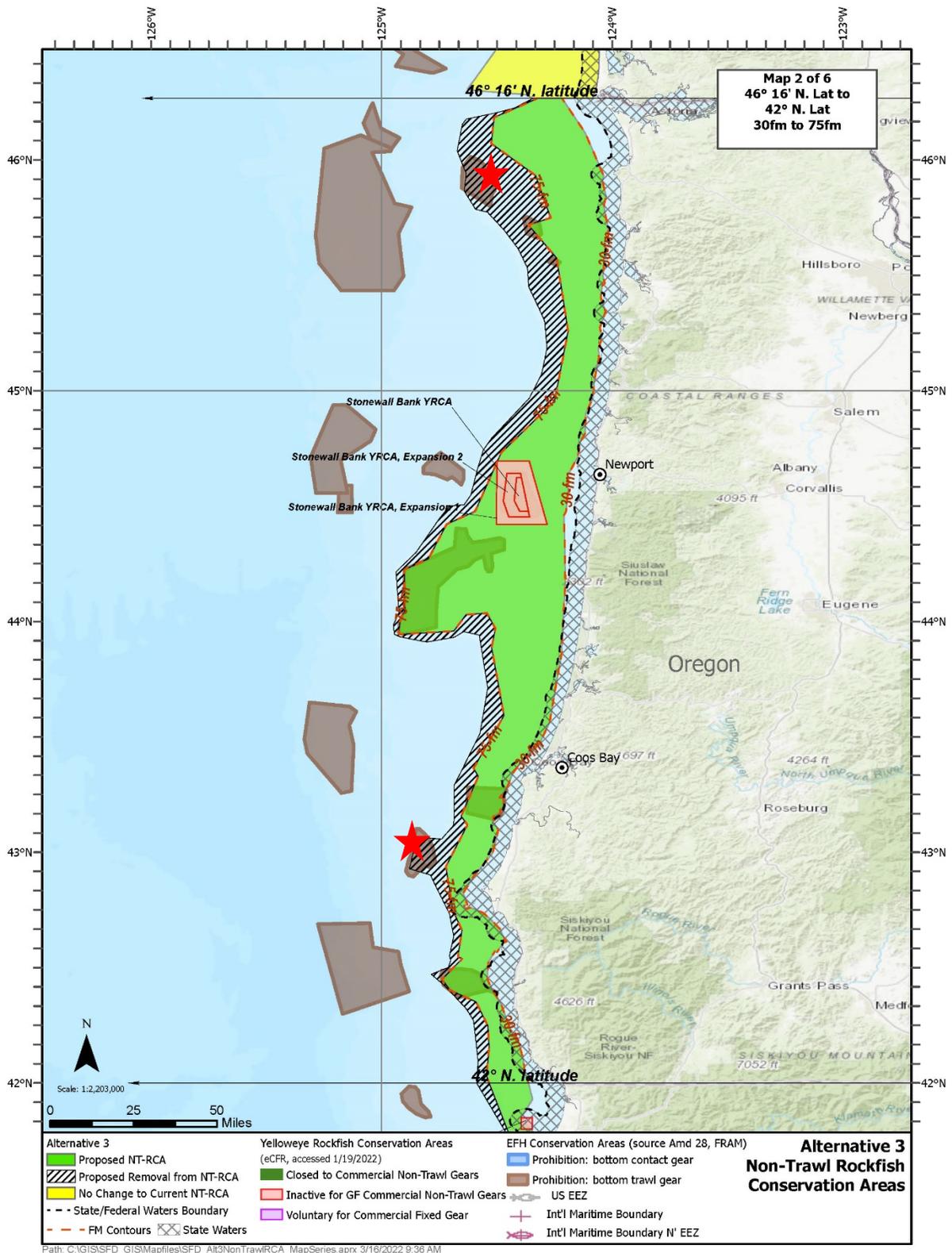


Figure 17. Proposed NT_RCA boundaries off Oregon under Alternative 3. YRCAs and EFHCAs shown for reference.

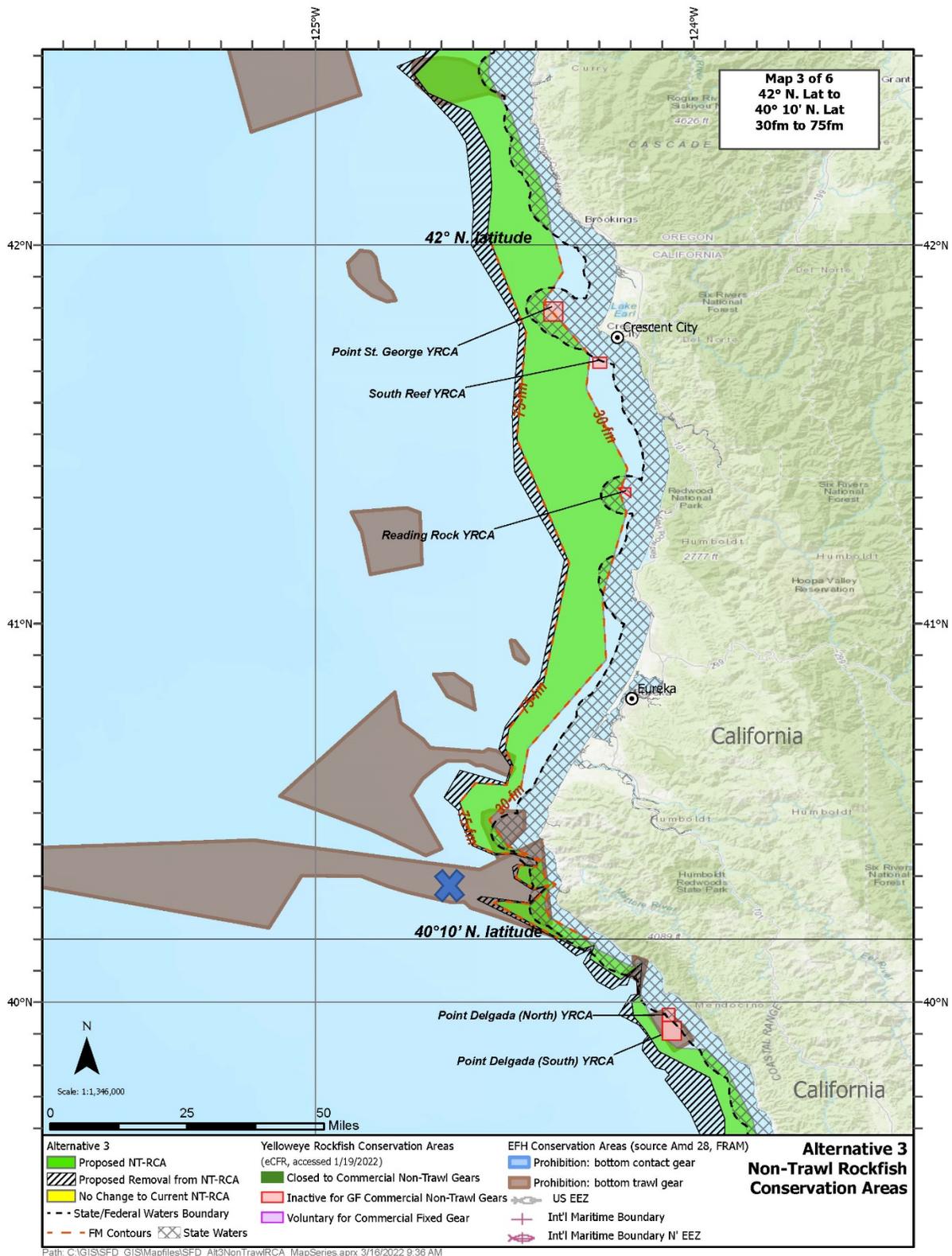


Figure 18. Proposed NT_RCA boundaries off California from 42°- 40° 10' N. lat. under Alternative 3. YRCAs and EFHCAs shown for reference.

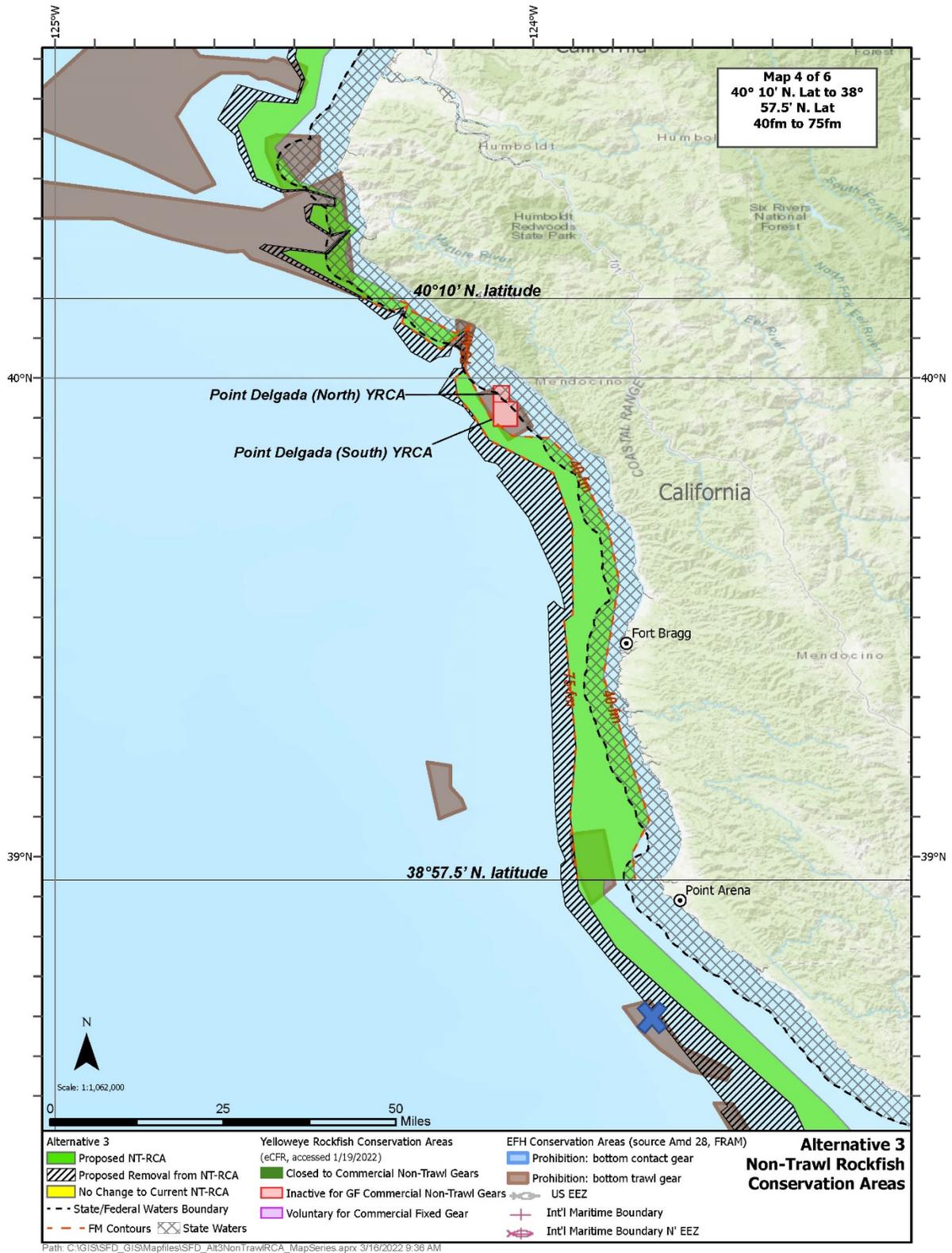


Figure 19. Proposed NT_RCA boundaries off California from 40° 10' N. lat.- 38° 57.5' N. lat. under Alternative 3. YRCAs and EFHCAs shown for reference.

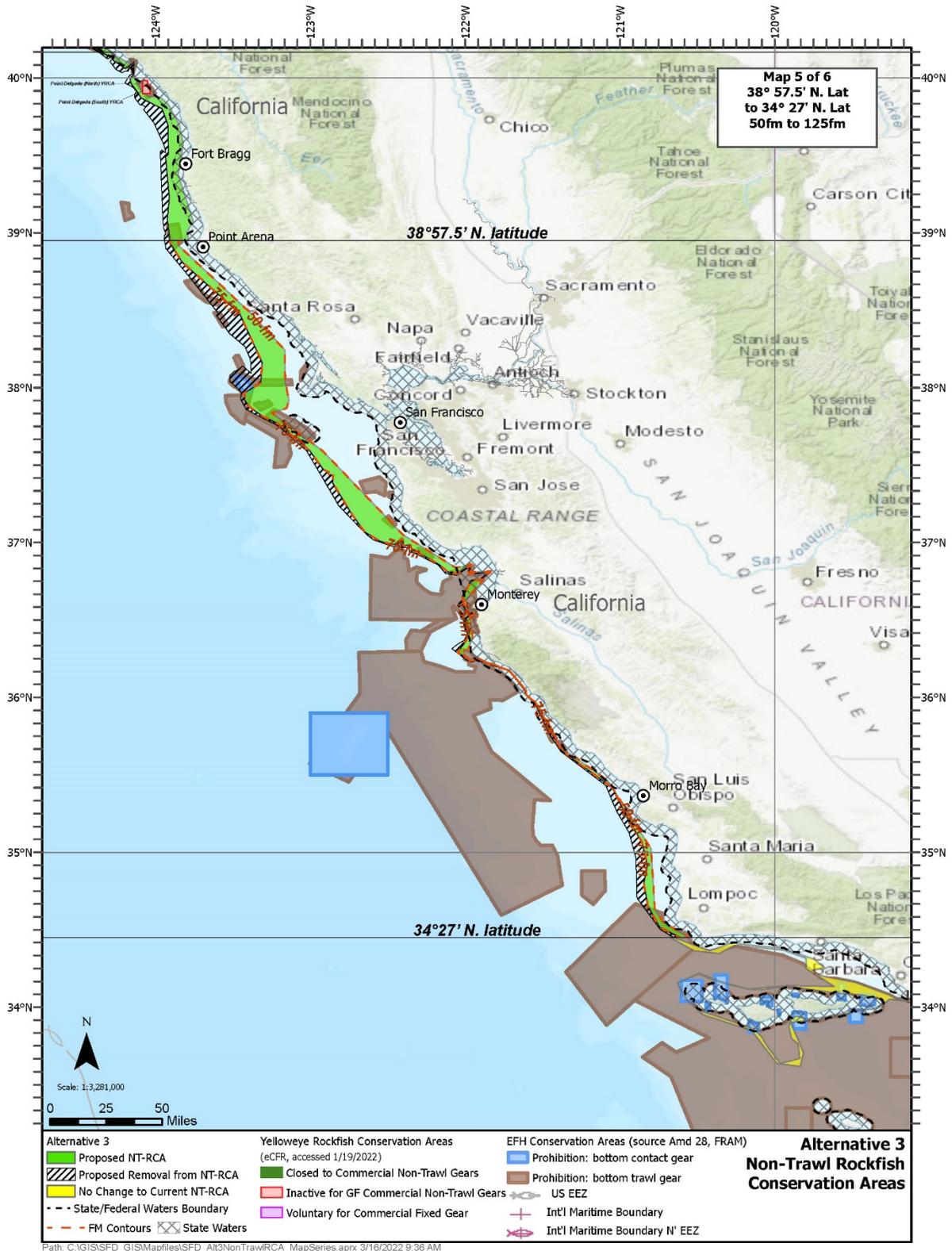


Figure 20. Proposed NT_RCA boundaries off California from 38° 58.5' – 34° 27' N. lat. under Alternative 3. YRCAs and EFHCAs shown for reference.

It is also important to consider other fisheries that are currently operating in the depths proposed to be opened. Table below provides an overview of the state fisheries where the majority of fishing effort extends into waters from 75 to 100 fm from 34° 27' N. lat. to 46° 16' N. lat. While commercial groundfish non-trawl effort may have not been present in this area for two decades, there have been other fisheries with bottom contact gear (crab pots, hagfish pots, pink shrimp trawl) occurring in this area. However, these fisheries are subject to the EFHCAs depending on the gear type used in the fishery.

Table 8. State fisheries off Oregon and California that operate within the proposed area to be opened under Alternative 3.

State	Mgmt Area (<i>if applicable</i>)	Sector	Fishery (Gear)	Regulatory Bounds in 2021 (<i>Most liberal restrictions during the season</i>)	Fishing Area (<i>Where in Regulatory Bounds does majority of activity occur</i>)
California	37° 11' to 34° 27' N. lat.	Commercial	D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
			Spot prawn (pot)	All depth	100-170 fm
	38° 57.5' to 37° 11' N. lat.	Commercial	D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
	40° 10' to 38° 57.5' N. lat.	Commercial	D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
	42° to 40° 10' N. lat.	Commercial	D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
Pink shrimp (trawl)			All depth, outside state waters	50-140 fm	
Oregon	Statewide	Commercial	Hagfish (Trap)	All Depths	50-125 fm
			Shrimp (trawl)	All Depths	40-120 fm
		Recreational	Pacific Halibut	All Depths	70-120 fm

Questions for Council Consideration

1. Does the Council want to consider suboption 1 for all EFCHAs? To what extent should the EFHCA be redesignated from bottom trawl to bottom contact (i.e., only the portion exposed or the entire area)?

4.4 Alternative 4: Removal of the NT_RCA from 46° 16' to 34°27' N. lat.

Remove the NT_RCA.

Suboption 1: Prohibit all bottom contact groundfish gear in groundfish EFHCAs that would otherwise be reopened under this action.

Under this alternative the NT_RCA would be removed from 46° 16' N. lat. to 34° 27' N. lat. (Figure 21). This would provide 8,764 sq miles of potentially fishable area for non-trawl fisheries targeting groundfish (Table 9). As under Alternative 3, the fisheries that would be permitted to fish in these opened areas would be the OA, LEFG, and IFQ gear switching fisheries. One major change though is that in the area between 34° 27' N. lat. and 46° 16' N. lat., salmon troll vessels would no longer be subject to the NT_RCA based trip limits for lingcod and yellowtail rockfish. Instead, vessels in these areas would be permitted to retain the open access limits for groundfish unless regulations were to change. Additionally, vessels fishing in the directed Pacific halibut fishery would still be required to fish outside of the current seaward boundaries (i.e., 100 or 125 fathoms) as the NT_RCA boundaries for that fishery would have to be modified in another process.

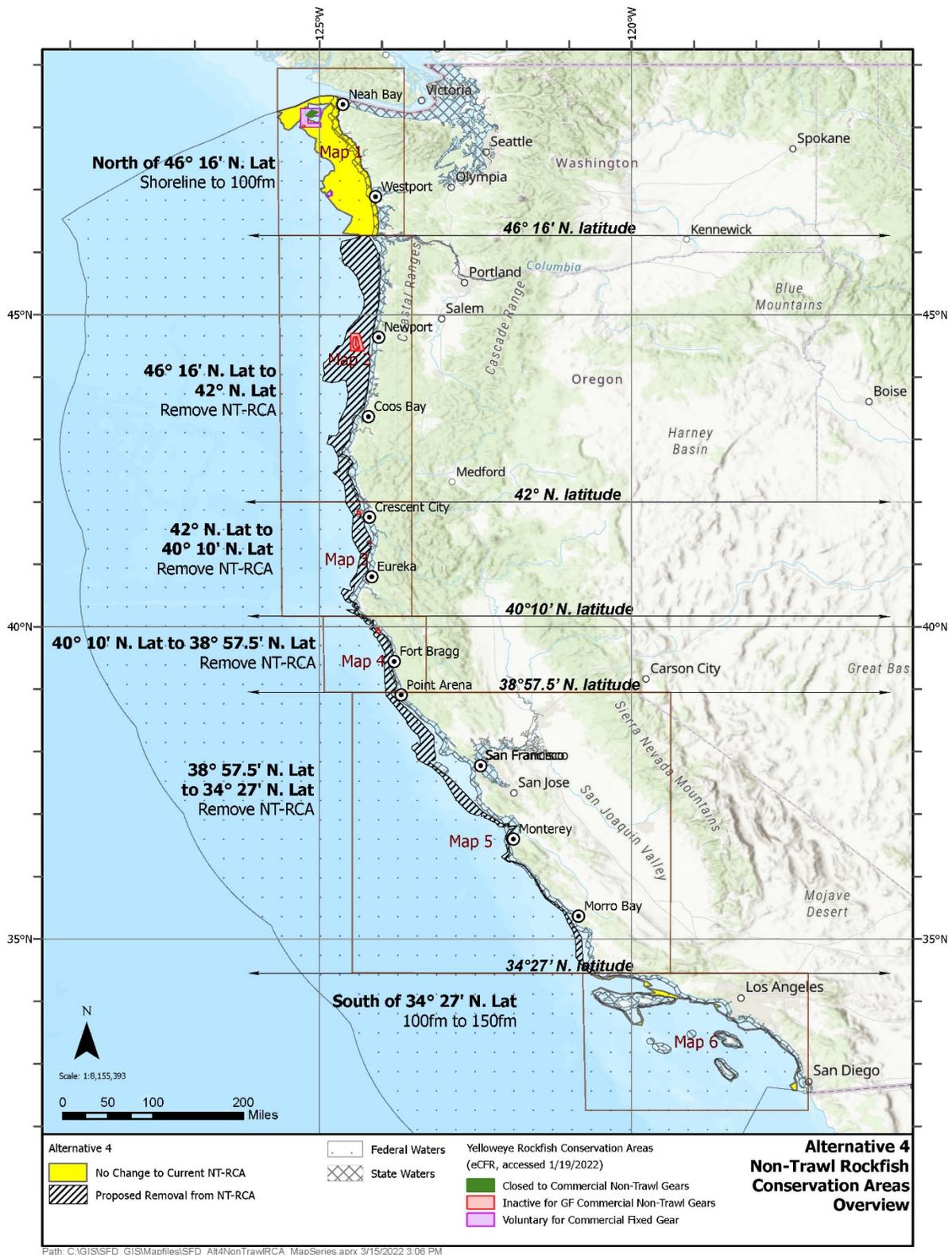


Figure 21. Proposed NT_RCA boundaries under Alternative 4.

Table 9. Non-trawl management areas and the amount of area opened to fishing under Alternative 4- removal of the NT RCA from 46° 16' – 34° 27' N. lat.

Management Area	Current NT_RCA boundaries a/	Proposed NT_RCA boundaries	Amount of area opened to fishing (mi²)
North of 46°16' N. lat.	Shoreline (0 fm) to 100fm	No change	No change
46°16' N. lat. to 42° N. lat. b/	30 fm to 100 fm	Remove	5,151
42° N. lat. to 40°10' N. lat. b/	30 fm to 100 fm	Remove	1,003
40°10' N. lat. to 38°57.5' N. lat.	30 fm to 125 fm	Remove	587
38°57.5' N. lat. to 34°27' N. lat.	50 fm to 125 fm	Remove	2,023
South of 34°27' N. lat. c/	100 fm to 150 fm	No change	No change

a/ Current NT_RCA boundary coordinates at 86 FR 14379, see Tables 2 & 3 -coordinates at §§ 660.71-660.74

b/ between 46°16' N. lat. and 40°10' N. lat., 30 to 40 fm fishing is only allowed with hook-and-line gear except bottom longline and dinglebar (§660.11)

c/also applies around islands

Overall, attainment of groundfish species, both target and non-target species, would be likely to increase under Alternative 4. However, the level of increased attainment is uncertain. Given the limited changes to the NT_RCA boundaries and activity that has occurred in the NT_RCA through EFPs since its implementation nearly two decades ago, it is difficult to determine the projected participation and species impacts that may or may not occur. If the Council chooses to move this alternative forward in the ROA, staff will need to examine landings prior to the NT_RCA closing, similar to Amendment 28. However, unlike Amendment 28, there are no logbooks available for the time period limiting the ability to do spatial analysis outside of catch area codes or looking at species compositions to define trips likely caught within the NT_RCA. Concerns related to yelloweye rockfish may be somewhat alleviated with the use of the YRCAs available to the Council. Impacts to other species of concern, such as copper or quillback rockfish, will need additional analysis.

Compared to Alternative 3, there would likely be a greater risk to seabirds and whales under this Alternative. Overall, there would likely be an increase in the amount of non-trawl gear being used to harvest shelf stocks. However, distribution and migration patterns of seabirds and whales would need to be further assessed.

In terms of habitat impacts, Alternative 4 would likely have the greatest impact of the Alternatives proposed between 46° 16' and 34° 27' N. lat. as it would expose the greatest amount of habitat to non-trawl gear. Under the proposed suboption 1, where all bottom trawl EFHCAs would be converted to bottom contact EFHCAs, there are ten where the majority or entirety of the EFHCA would now be open to bottom contact gear. This includes EFHCAs such as Rogue River Reef, Point Arena North, and Arago Reef. However, there are situations as described under Alternative 3 in which only a small portion of the EFHCA would be exposed and therefore the Council may want to consider those EFHCA designations in a separate process. Overall, there is an estimated 991 sq. miles of bottom trawl EFHCAs that would potentially be opened to bottom contact gear under this alternative (Table).

Table 10. Amount of bottom trawl EFCHAs estimated to be opened to non-trawl gear under Alternative 4.

Management Area	Amount of BT EFHCA area opened to fishing (mi²)
46°16' N. lat. to 42° N. lat.	581
42° N. lat. to 40°10' N. lat.	67
40°10' N. lat. to 38°57.5' N. lat.	33
38°57.5' N. lat. to 34°27' N. lat.	309

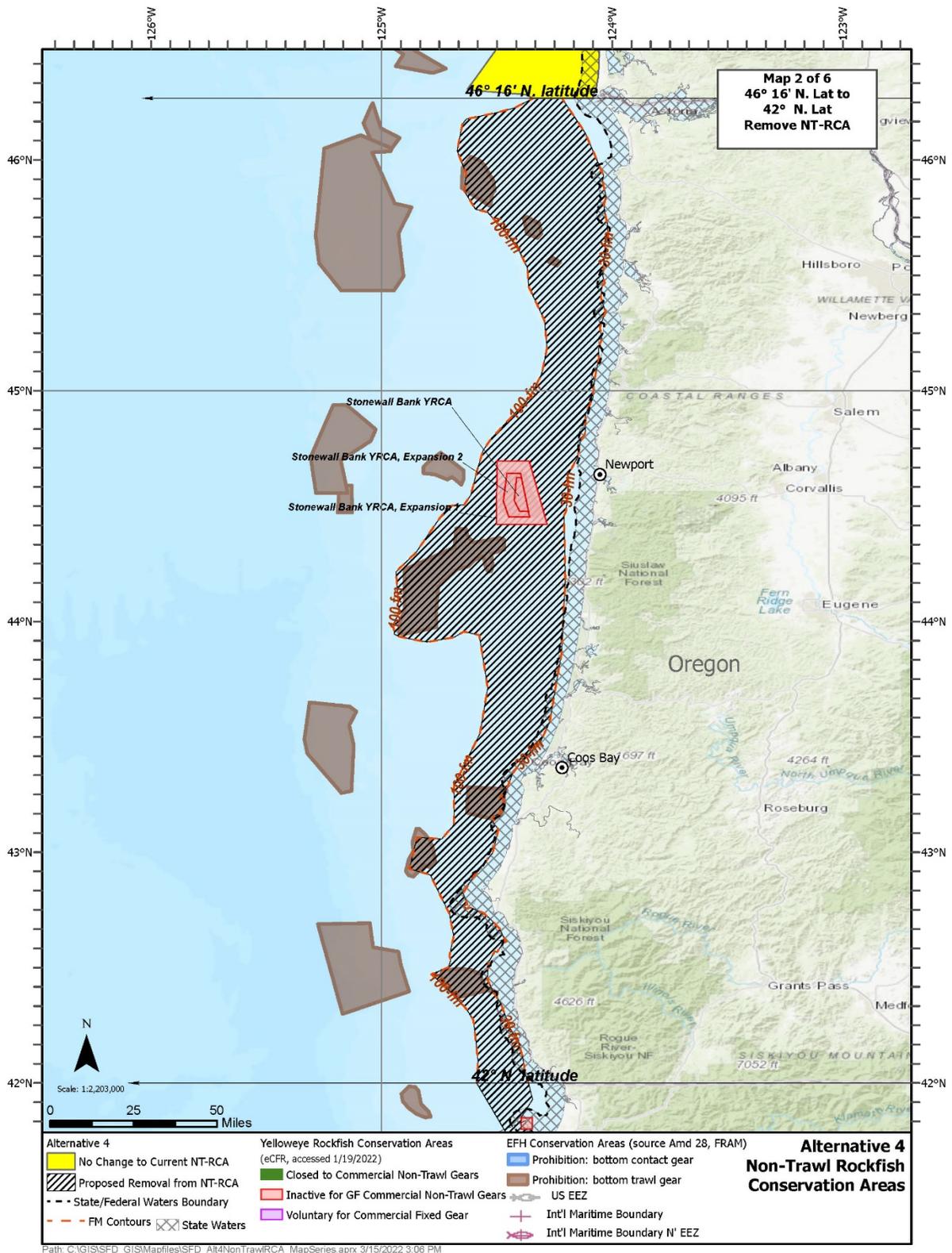


Figure 22. YRCAs and EFHCAs compared to proposed NT_RCA removal off Oregon under Alternative 4.

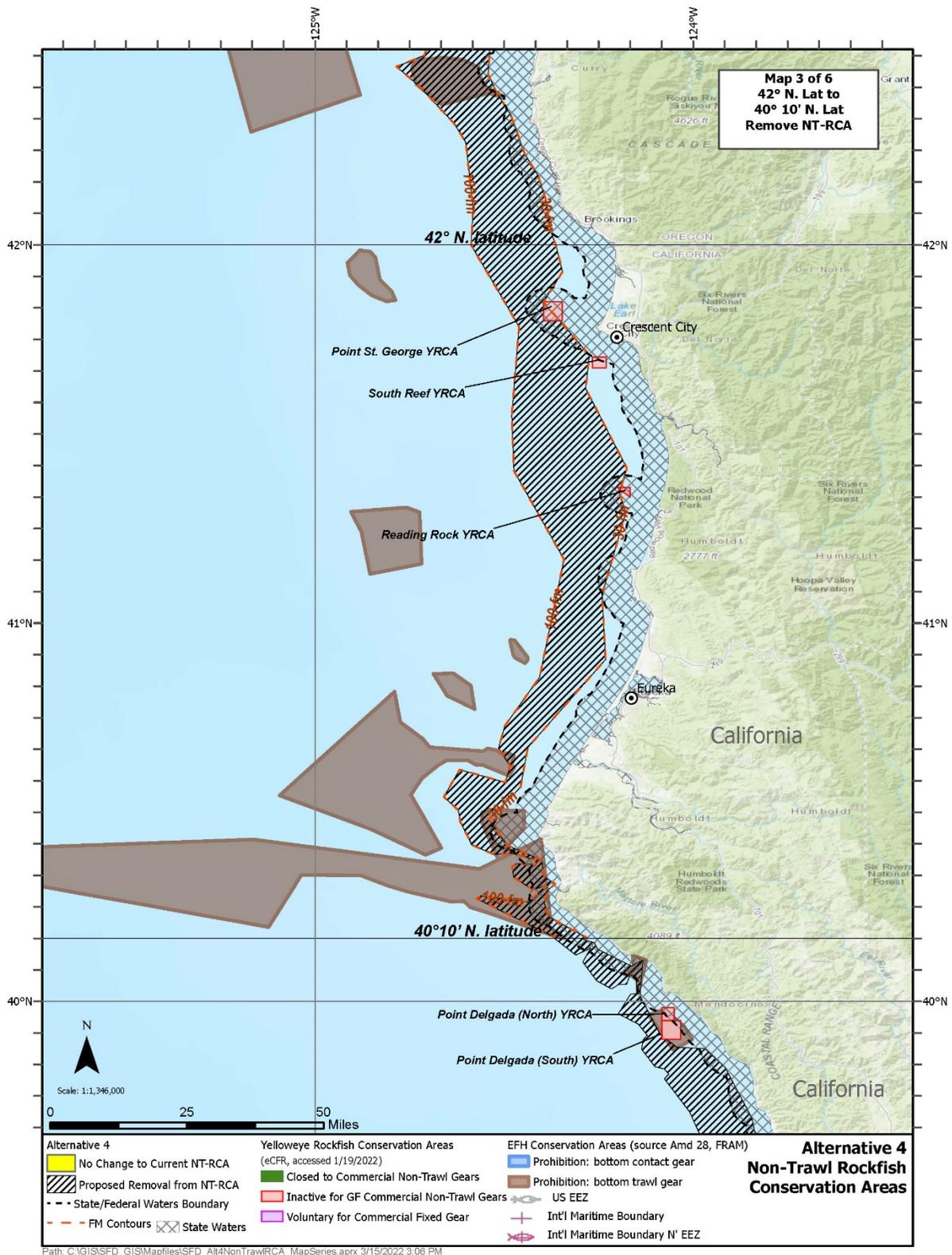


Figure 23. YRCAs and EFHCAs compared to proposed NT_RCA removal off California from 42° - 40° 10' N. lat. under Alternative 4.

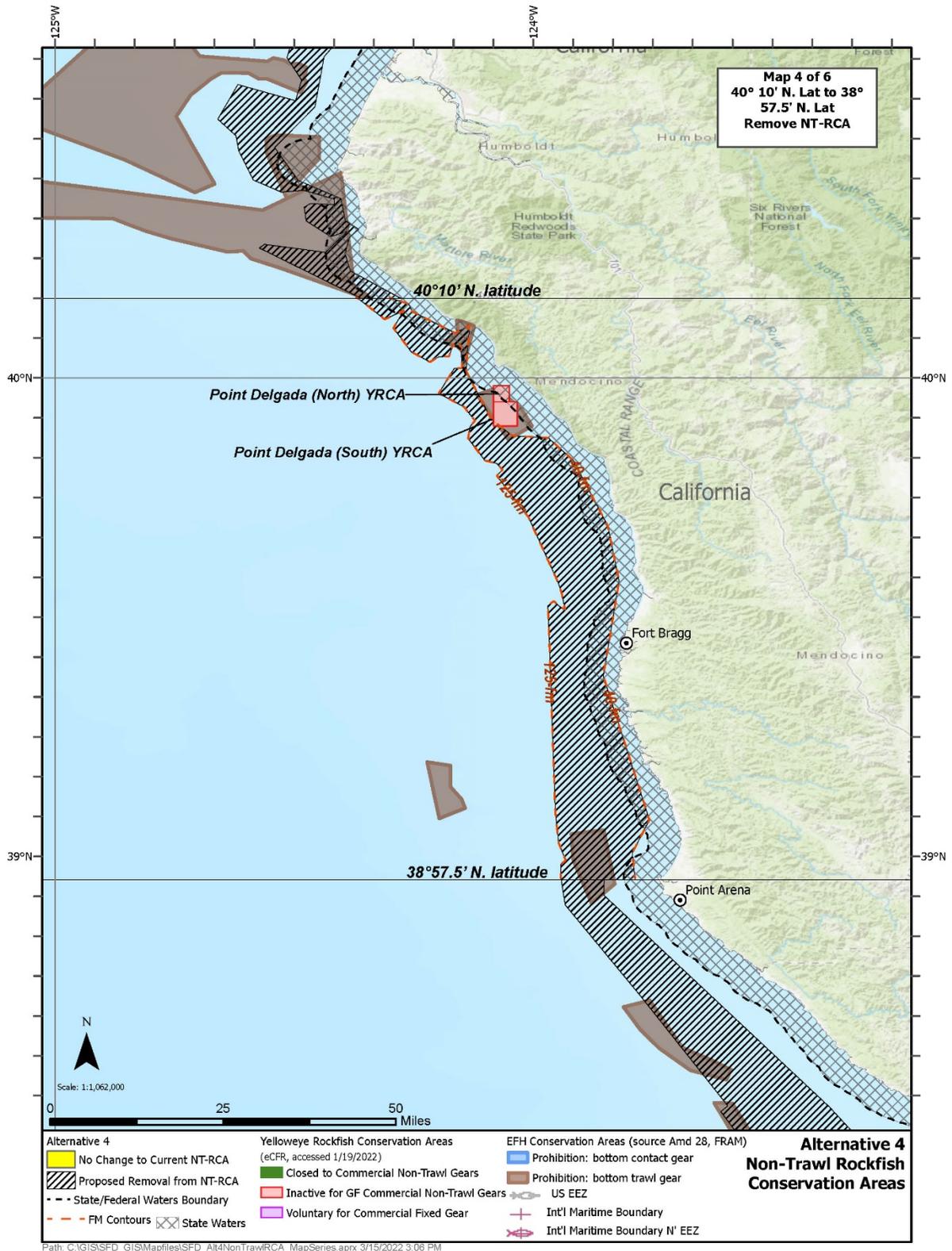


Figure 24. YRCAs and EFHCAs compared to proposed NT_RCA removal off California from 40° 10' – 38° 57.5' N. lat. under Alternative 4.

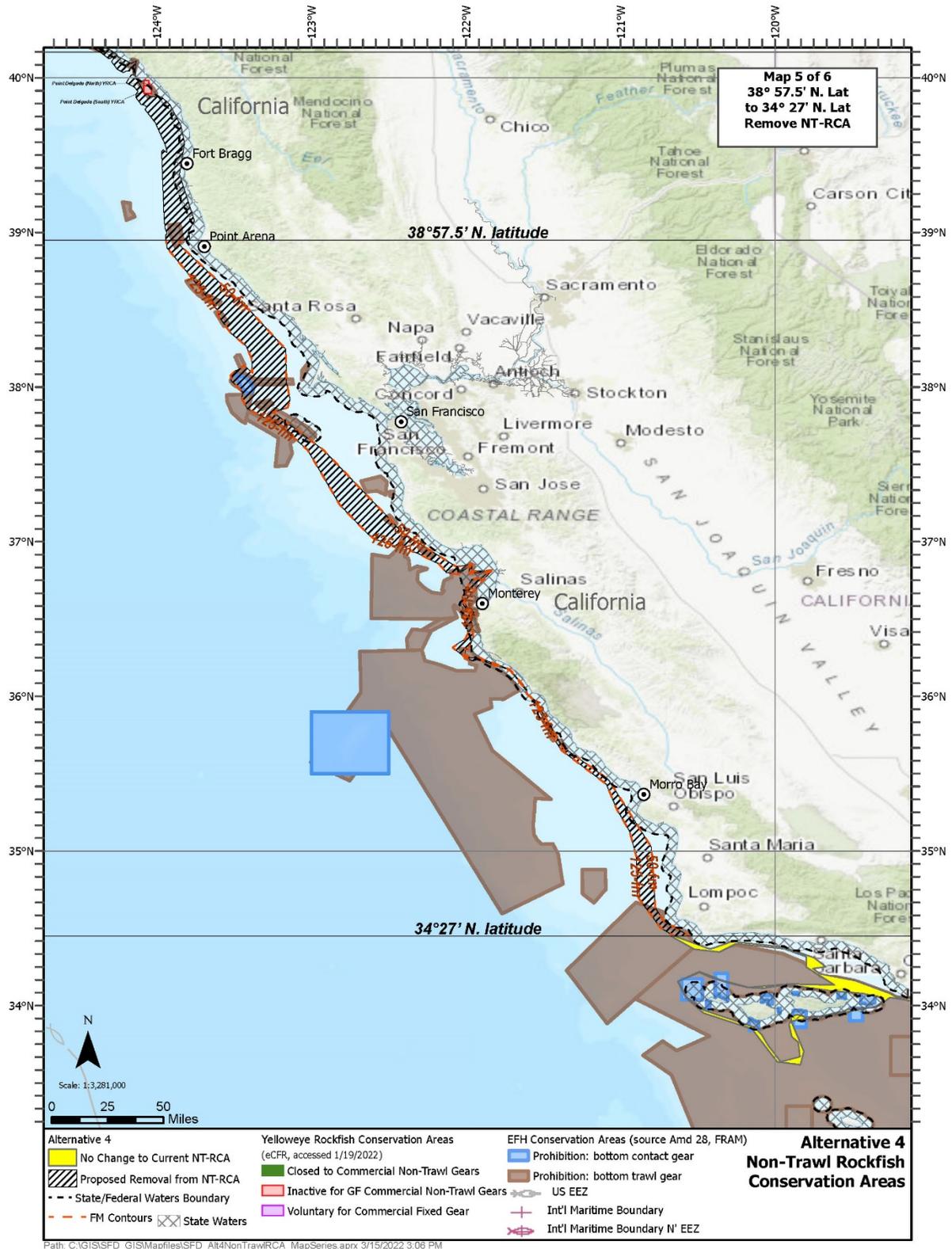


Figure 25. YRCAs and EFHCAs compared to proposed NT_RCA removal off California from 38° 57.5' -34° 27' N. lat. under Alternative 4.

Additionally, as with Alternative 3, cumulative impact analyses should consider that there are state fisheries already occurring within the bounds of the NT_RCA. Table below is the same as Table above except expanded to include fisheries that typically operate within all depths encompassed by the current NT_RCA. Further analysis would be needed to assess the extent of the fishing effort already occurring within the bounds of the NT_RCA and whether there could be gear conflicts; however, this does suggest that the habitats that were indirectly protected by the NT_RCA from non-trawl gear were subject to other gear type impacts.

Table 11. State fisheries off Oregon and California that operate within the proposed area to be opened under Alternative 4.

State	Mgmt Area (if applicable)	Sector	Fishery (Gear type)	Regulatory Bounds in 2021 (Most liberal restrictions during the season)	Fishing Area (Where in Regulatory Bounds does majority of activity occur)
California	37° 11' to 34° 27' N. lat.	Commercial	Ca. halibut (trawl)	All depth, outside state waters	10-60 fm
			D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
			Spot prawn (pot)	All depth	100-170 fm
		Recreational	D crab (pot)	All depth	30-60 fm
			Other flatfish (H/L)	All depth	30-60 fm
	Salmon (troll)		All depth	10-60 fm	
	38° 57.5' to 37° 11' N. lat.	Commercial	Ca. halibut (trawl)	All depth, outside state waters	10-60 fm
			D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
		Recreational	D crab (pot)	All depth	30-60f m
			Other flatfish (H/L)	All depth	30-60 fm
			Salmon (troll)	All depth	10-60 fm
	40° 10' to 38° 57.5' N. lat.	Commercial	Ca. halibut (trawl)	All depth, outside state waters	10-60 fm
			D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
		Recreational	D crab (pot)	All depth	30-60 fm
			Groundfish (H/L)	Nov and Dec All Depth	30-60 fm
Other flatfish (H/L)			All depth	30-60 fm	
Pacific halibut (H/L)			All depth	30-50 fm	
Salmon (troll)			All depth	10-60 fm	

State	Mgmt Area (if applicable)	Sector	Fishery (Gear type)	Regulatory Bounds in 2021 (Most liberal restrictions during the season)	Fishing Area (Where in Regulatory Bounds does majority of activity occur)
	42° to 40° 10' N. lat.	Commercial	Ca. halibut (trawl)	All depth, outside state waters	10-60 fm
			D crab (pot)	All depth	70-100 fm
			Hagfish (pot)	All depth	30-100 fm, but active to 200 fm
			Pink shrimp (trawl)	All depth, outside state waters	50-140 fm
		Recreational	D crab (pot)	All depth	30-60 fm
			Groundfish (H/L)	Nov and Dec All Depth	30-60 fm
			Other flatfish (H/L)	All depth	30-60 fm
			Pacific halibut (H/L)	All depth	30-50 fm
			Salmon (troll)	All depth	10-60 fm
		Oregon	Statewide	Commercial	Dungness Crab (pots)
Hagfish (Trap)	All Depths				50-125 fm
Shrimp (trawl)	All Depths				40-120 fm
Recreational	Bottomfish			All Depths	10-50 fm
	Flatfish (other than P. hal)			All Depths	20-50 fm
	Longleader			>40 fathoms	40-60 fm
	Pacific Halibut			All Depths	70-120 fm

Question for Council Consideration

1. Does the Council want to consider suboption 1 for all EFCHAs? To what extent should the EFHCA be redesignated from bottom trawl to bottom contact (i.e., only the portion exposed or the entire area).

4.5 Alternative 5: Repeal the CCA

Repeal the Cowcod Conservation Areas For Commercial and Recreational Fisheries.

- Waypoint analyses for areas within the CCA are contained in [E.5.a., Supplemental CDFW Report 1](#)

Under Alternative 5, both the Western and Eastern CCA boundaries would be removed and additional NT_RCA lines would be developed for use in controlling catch of groundfish for recreational and commercial sectors. Currently, vessels are prohibiting from operating outside 40 fathoms from each of the islands within the CCA bounds noting exceptions described in Section 3.2. New NT_RCA lines at 50, 60, 75, 100, and 125 fm would be developed as shown in Figure 26 through Figure 30. As staff was drafting this document, we were informed the CDFW was planning on submitting a report outlining additional details related to this alternative, including NT_RCA configurations and potential areas for habitat conservation (see Agenda Item F.6.a, CDFW Report 1). At the next meeting when this item is considered, staff will bring back additional information related to the final proposal. However, some initial thoughts are provided here for Council discussion on the Alternative.

Overall, impacts to both target and non-target stocks are likely to increase with the removal of the CCA and change to the NT_RCA boundaries within the area. When the NT_RCA boundaries were revised from 20 fathoms to 40 fathoms in the 2019-2020 harvest specifications process, the analysis noted that the “objective of this management measure is to allow increased opportunity to catch target stocks (i.e., shelf rockfish, bocaccio, and deeper nearshore rockfish) that are inaccessible due to the current depth restrictions. This management measure is expected to increase catch of shelf rockfish, bocaccio, nearshore rockfish, cabezon, greenling, and California scorpion fish...this measure is not expected to result in increased interactions with cowcod. This management measure will not likely affect canary rockfish and yelloweye rockfish because they are not commonly found in this area.” It also noted that lingcod mortality could increase with greater access. ([Appendix C to the 2019-2020 Harvest Specifications](#)) There is uncertainty regarding potential impacts to bronzespotted (retention is currently and expected to remain prohibited) and copper rockfishes under this Alternative that would need to be considered.

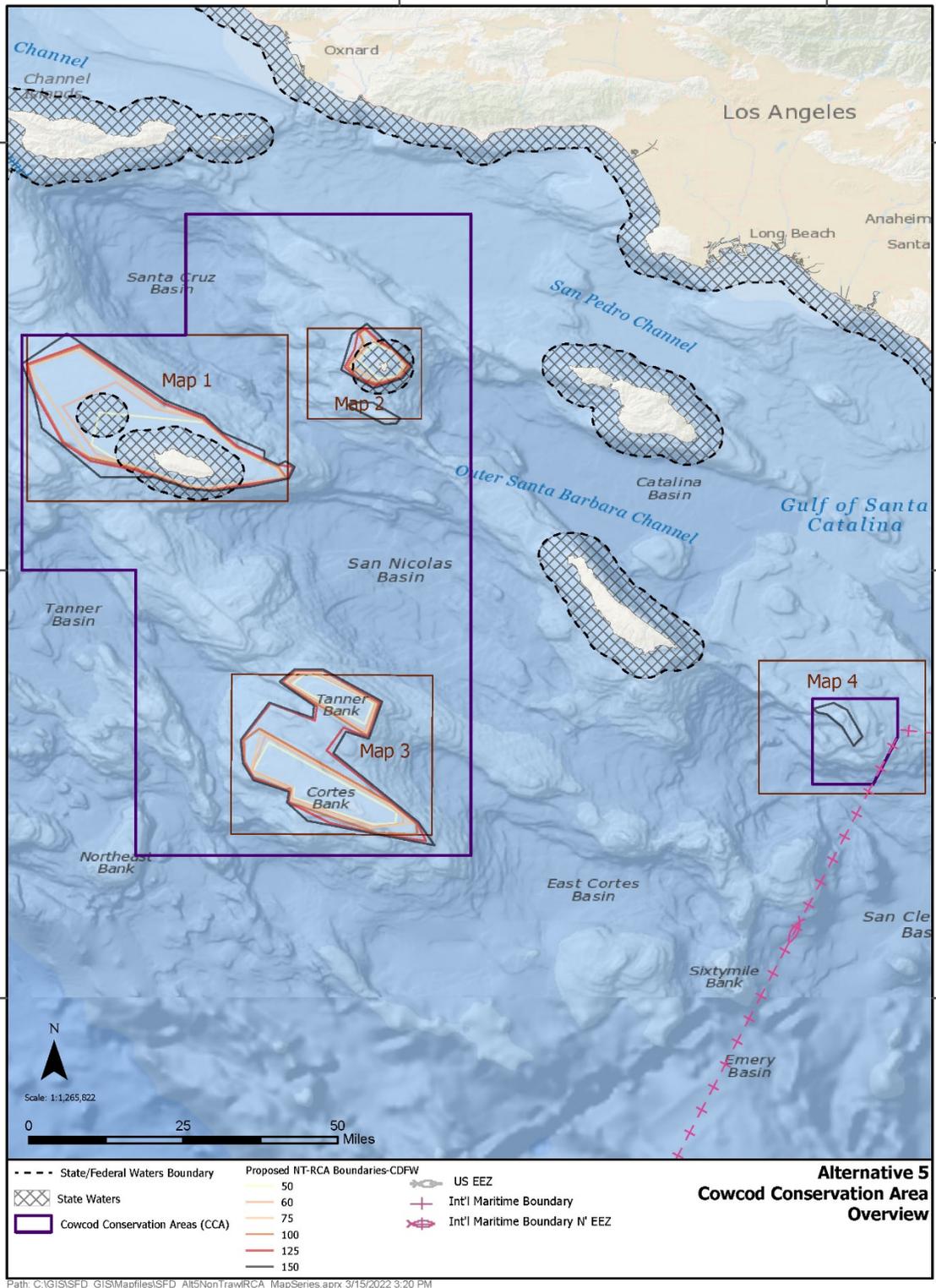


Figure 26. CCA boundary in relation to proposed NT_RCA boundaries.

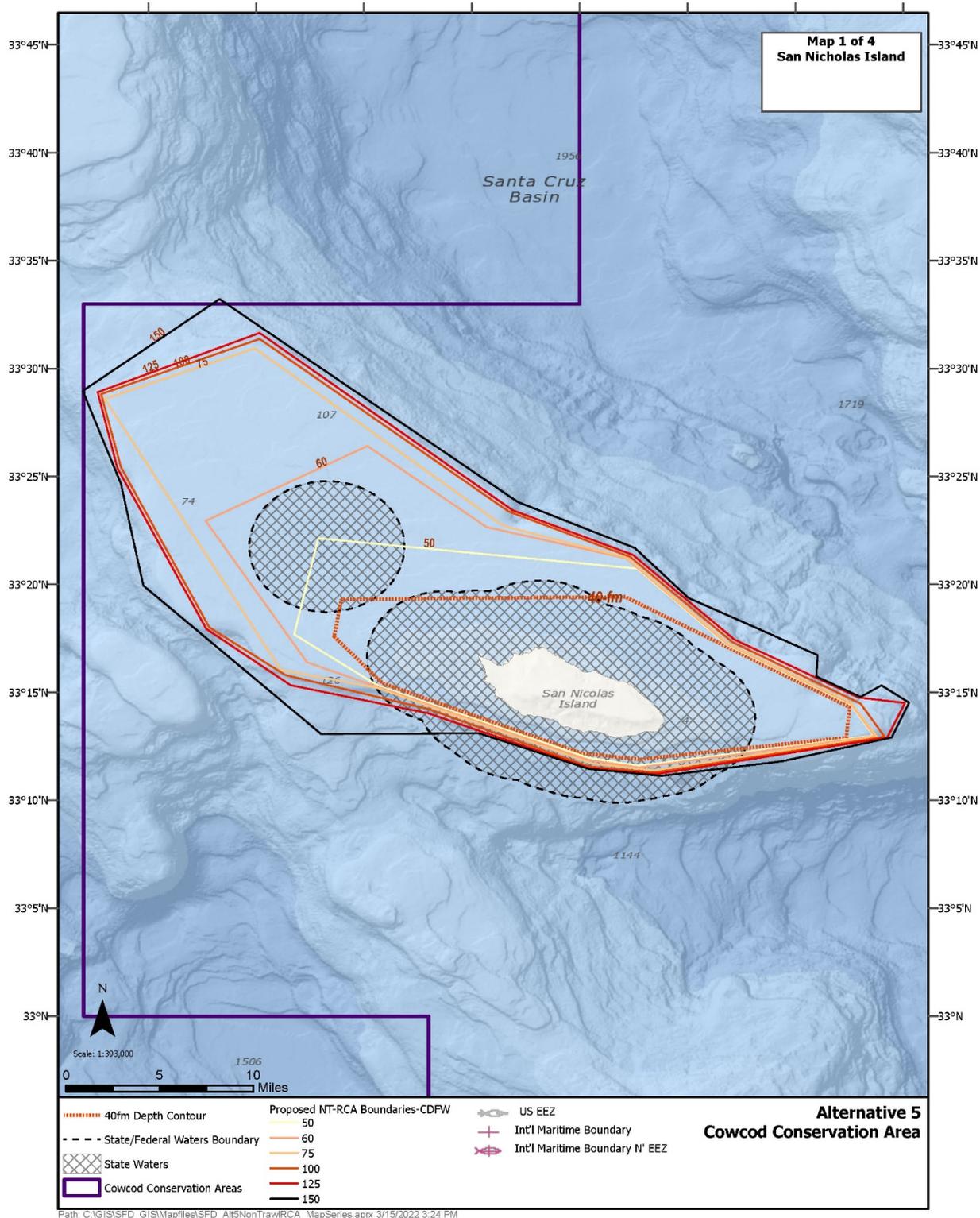


Figure 27. Current CCA boundary and 40 fm depth contour compared to proposed NT_RCA boundaries off San Nicolas Island.

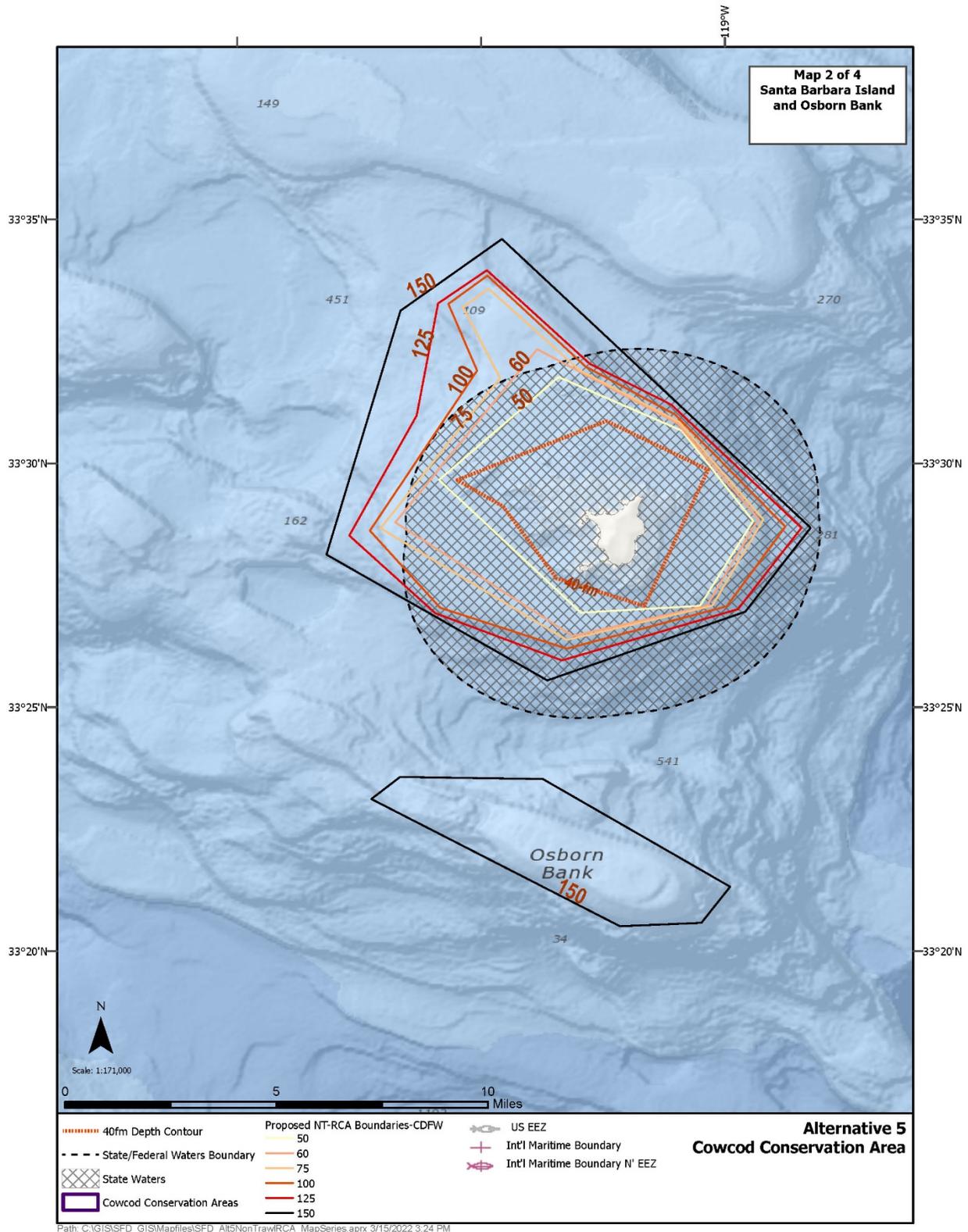


Figure 28. Current CCA boundary and 40 fm depth contour compared to proposed NT_RCA boundaries off San Barbara Island and Osborn Bank.

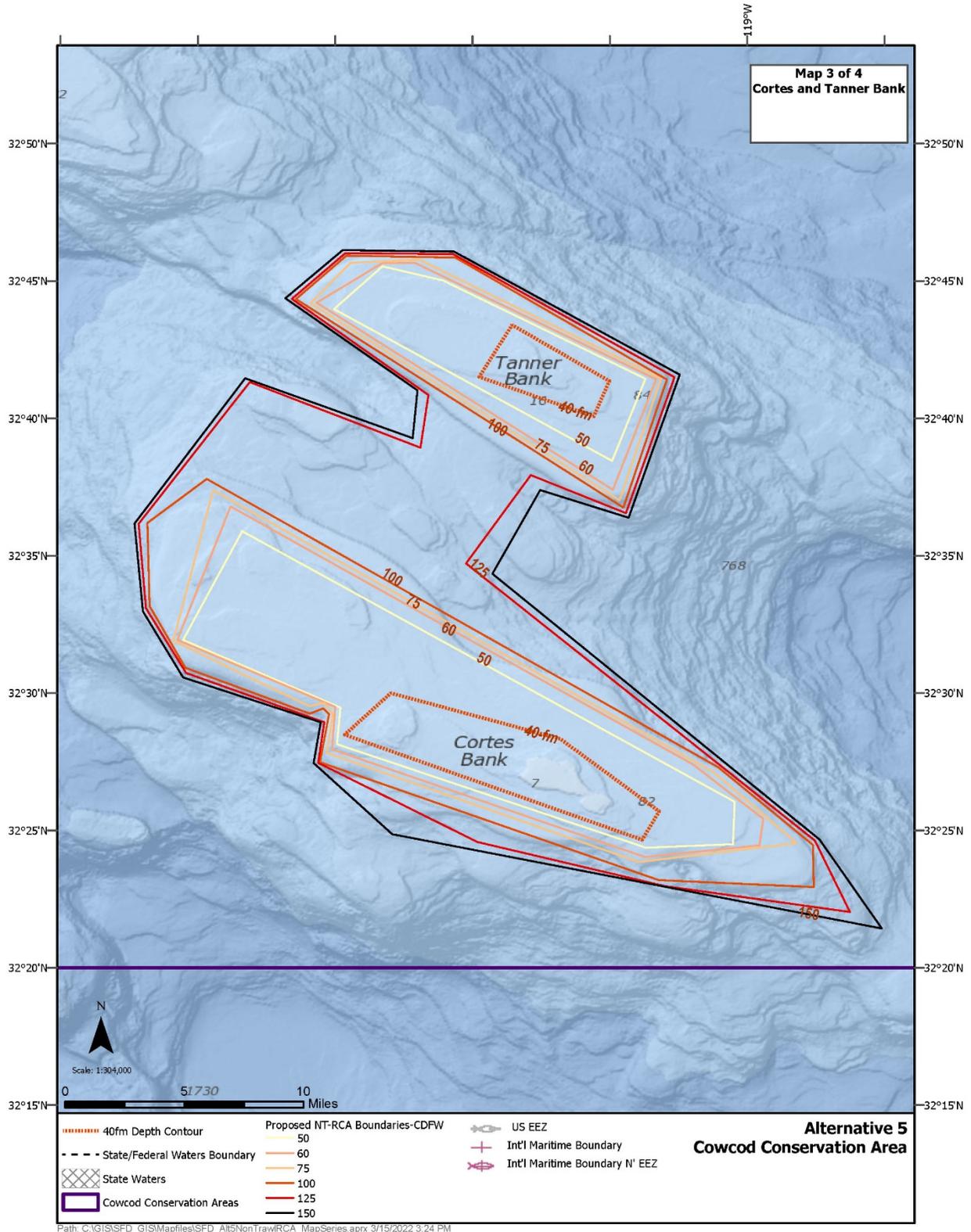


Figure 29. Current CCA boundary and 40 fm depth contour compared to proposed NT_RCA boundaries off Tanner Bank and Cortes Bank.

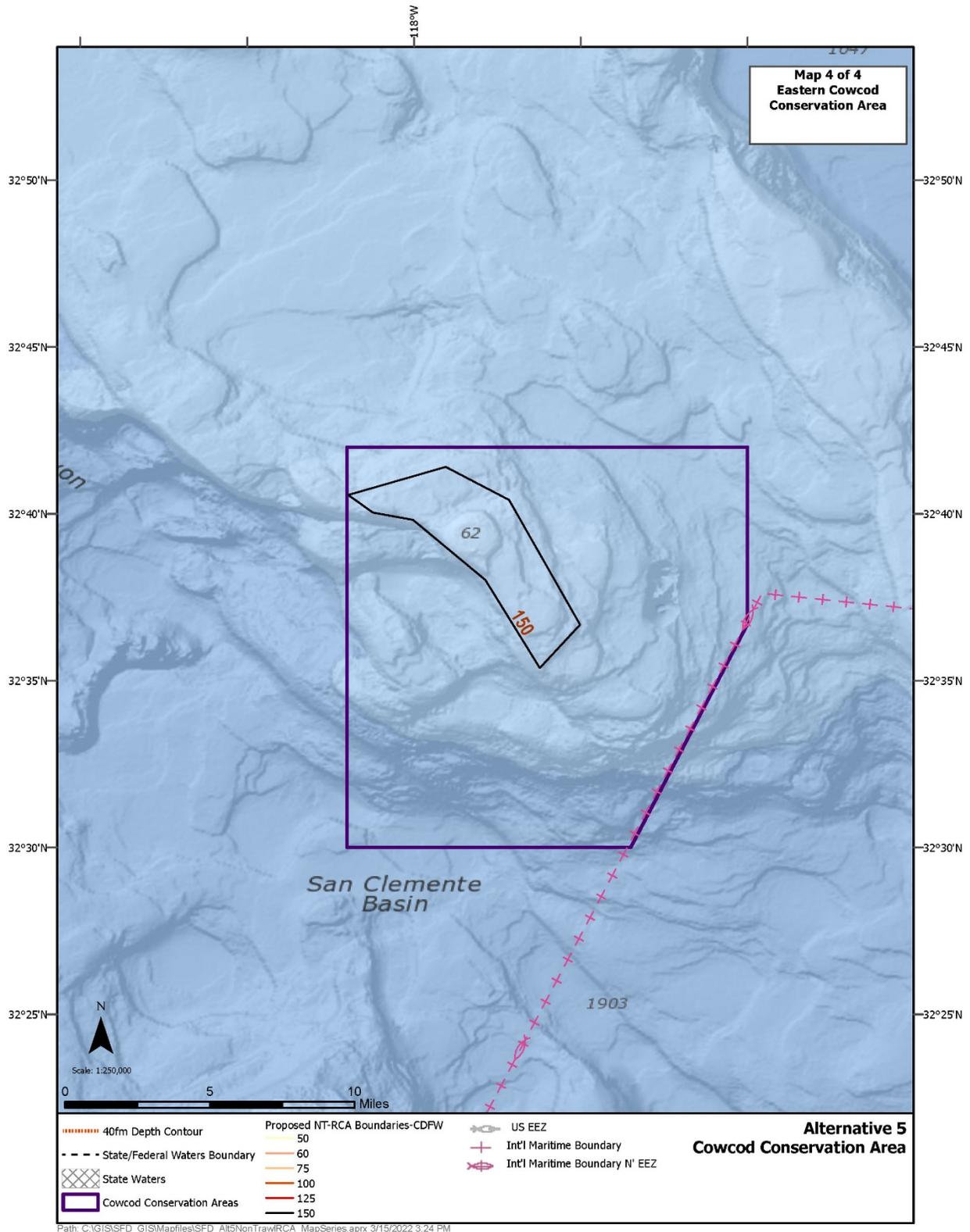


Figure 30. Eastern CCA boundary and proposed 150 fm NT_RCA boundary.

In terms of habitat impacts, the majority of the CCA is designed as a bottom trawl EFHCA (Southern California Bight; Figure 31). There is also one bottom contact EFHCA near Santa Barbara Island. Therefore, by opening the CCA to fishing even under the most conservative NT_RCA proposed to be developed, there would be significant area reopened to non-trawl fishing effort. However, there may be some state fisheries that can operate within the depth boundaries opened by Alternative 5 (Table) and preliminary investigation of commercial fishing data shows some fishery activity within the CDFW block number areas covered by the CCA (pers. comm. Andre Klein, CDFW). Further investigation would be needed to assess the exact spatial overlay of these fisheries with the proposed alternative and how much habitat of various types would be exposed.

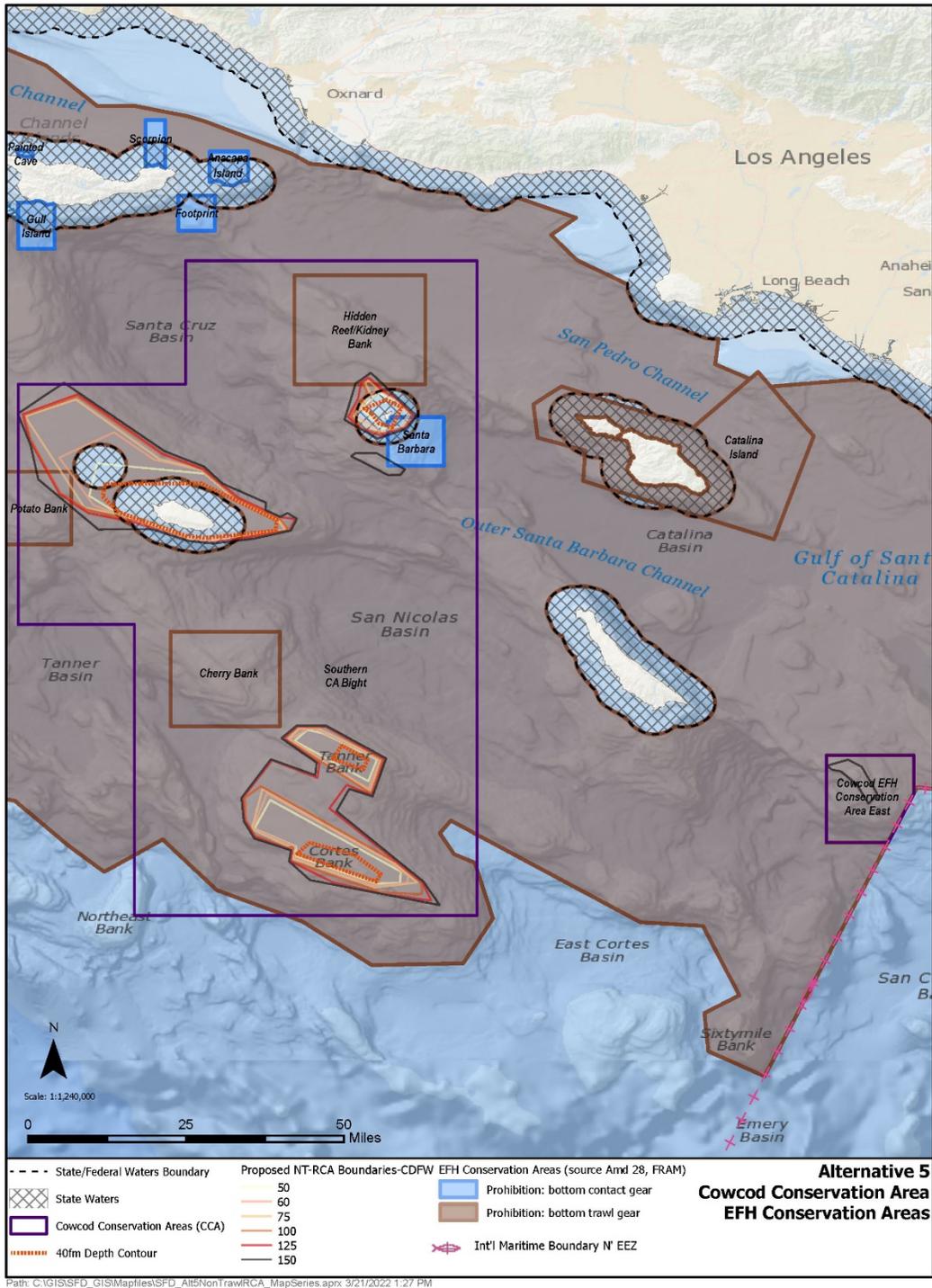


Figure 31. CCA boundaries and proposed NT_RCA boundaries for development under Alternative 5 compared to EFHCAs.

Table 12. State fisheries off California that operate within the proposed depths to be opened under Alternative 5.

State	Mgmt Area (if applicable)	Sector	Fishery (Gear)	Regulatory Bounds in 2021 (Most liberal restrictions during the season)	Fishing Area (Where in Regulatory Bounds does majority of activity occur)
California	South of 34° 27' N. lat.	Commercial	Box crab (pot)	All depth	85-135 fm
			Hagfish (pot)	All depth	30-100 fm, but is active to 200 fm
			Ridgeback prawn (trawl)	All depth, outside state waters	10-110 fm
			Spot prawn (pot)	>50fm	100-170 fm

Questions for Council consideration:

1. What NT_RCA lines would be recommended to be used if the CCA were repealed?
2. Does the Council want to consider developing BACs south of 34° 27' N. lat that could be applied within the current bounds of the CCA?
3. If new area restrictions are added along with a repeal of the CCA, what fisheries would be restricted from any new closed areas as proposed in the F.6.a CDFW Report 1 and does the action meet the purpose and need developed by the Council?

4.6 Alternative 6: NT_RCA adjustments off WA for pot gear

Open Limited Areas of the Non-trawl RCA to Pot Gear Only north of 46° 16' N. latitude.

- The open areas would be generally located seaward of the 75 fm line but may be defined by coordinates that do not necessarily follow a single depth contour. This alternative will be refined in the future to ensure the open areas would satisfy the following objectives:
 - Allow only minimal increases of yelloweye bycatch.
 - Avoid direct and indirect conflicts with recreational and other fisheries currently fishing within 100 fm.
 - Avoid impacts to sensitive habitats.
 - Are distinct enough from the 100 fm seaward boundary to be enforceable by the existing Vessel Monitoring System.

Under this alternative, portions of the NT-RCA seaward boundary would be modified to allow pot gear fishing between 75 and 100 fathoms (an area that is currently closed). All other gear and fishery restrictions would remain in place for the existing NT_RCA between the shoreline and 100 fm. The size and location of these open areas has yet to be determined as of the drafting of this document. Analysis presented below is based on the Council motion from November 2021 and uses the 75-fathom curve as the “revised” seaward boundary (i.e., similar to Alternative 3)- simply

for analytical purposes. As the Alternative is refined, impacts will be updated to reflect the identification of those specific cut-out areas for pot gear.

A revised seaward boundary of 75 fathoms would open 715.4 square miles to fishing with pot gear as shown in Figure 32. Within this re-opened area, there would be 33.2 square miles of bottom trawl EFHCAs that could be reopened to pot gear. Impacts to habitat in these areas would be considered in future analyses along with the differing impacts by gear. As described above in Section 4.3, pot gear typically has greater impact compared to other hook and line gear types (like those considered under Alternatives 1 or 2) but less than that of trawl gear in terms of ability to recover. Two EFHCAs are already primarily exposed to pot gear (Olympic 2 and Willapa Canyonhead) whereas the Grays Canyon EFHCA (noted by the red star in Figure 32) would have a larger portion of the EFHCA exposed to pot gear potentially. While not a part of the proposed alternative at present, the Council could consider changing the designation of these bottom trawl EFHCAs to bottom contact in select areas (as under suboption 1 of Alternatives 3 and 4) or could develop the cut outs to avoid opening these areas.

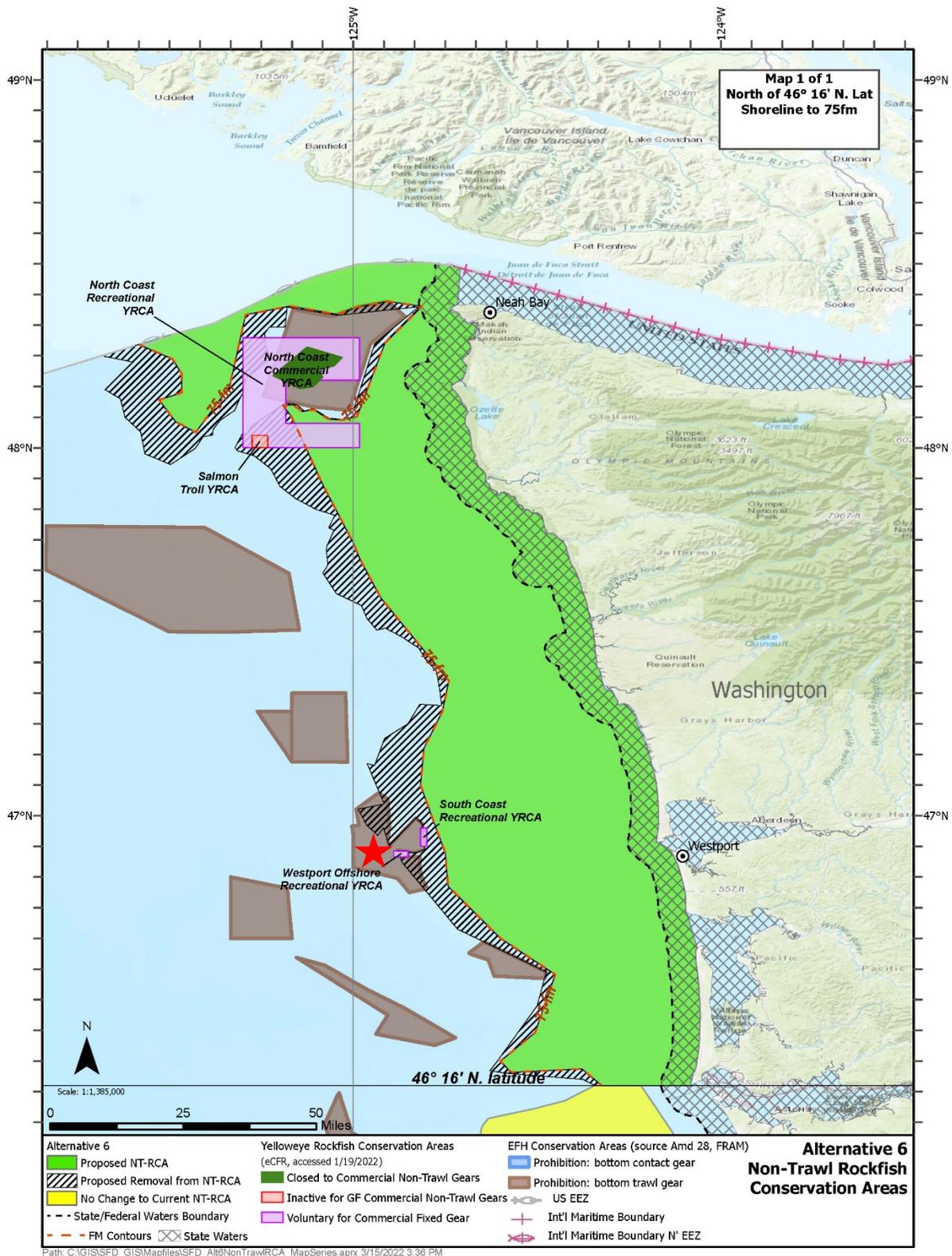


Figure 32. YRCAs and EFHCAs in relation to proposed boundary change to NT_RCA off Washington under Alternative 6.

As described in [Agenda Item E.6.a, Supplemental WDFW Report 1, November 2021](#), the primary goal of this Alternatives is to provide additional access to larger sablefish that are thought to inhabit the outer edge of the current NT_RCA. While sablefish north are already highly attained (discussed above in Section 4.3.), these larger sablefish would likely receive a higher price per pound resulting in an overall greater economic benefit to participants. Furthermore, there may be some operational cost savings (i.e., fuel, time on water) if vessels travel less distance to harvest sablefish. Sablefish catch would still be managed with IFQ, tiers, or trip limits depending on the sectors to which this Alternative ultimately applies. Vessels may also be able to target other species, such as lingcod, within those areas.

Yelloweye impacts were one of the main concerns driving the limitation of this Alternative to pot gear. Looking at all non-trawl observed trips (IFQ, LEFG, OA) from 2002-2020, hook and line gear types had a higher rate of being positive for yelloweye rockfish (6.9 percent) compared to only 1.3 percent of pot trips being positive for yelloweye rockfish. Of those trips positive for yelloweye rockfish, average bycatch rates (yelloweye/total groundfish catch) were less than half of that observed on hook and line trips.

Table 13. Number and percentage of WCGOP observed non-trawl trips from 2002-2020 by gear type and if positive or negative for yelloweye rockfish. Average yelloweye bycatch rate (lbs of yelloweye per total pounds on haul) by strata.

Gear	Positive for Yelloweye Rockfish	Number of Vessels observed	Number of Hauls	Yelloweye bycatch rate	Positive Hauls
Hook and line	No	63	5676	0.000	93.1%
	Yes	32	420	0.009	6.9%
Pot	No	34	2399	0.000	98.7%
	Yes	3	31	0.004	1.3%

Alternative 6 could see an increase in whale entanglements depending on whale migration patterns. Further analysis on those patterns compared to potential openings to pot gear need to be assessed.

As was noted in the motion and also brought up by the GAP in [Agenda Item E.4., Supplemental GAP Report 1, March 2022](#), considerations need to be made for potential gear conflicts between commercial and recreational gear if opening up areas previously closed to commercial fishing. Specifically, “the GAP also understands there are concerns and discussed the potential for gear or sector conflicts, particularly off Washington, where sport fishermen are restricted due to yelloweye rockfish impacts. Additionally, sport fishermen target lingcod, one of the species that also are taken in the sablefish pot fishery.” The GAP recommended considering “carving out some areas or hotspots of the NT_RCA to avoid conflicts or implementing a seasonal management measure so sablefish fishermen can target the larger sablefish in late summer and early fall.”

Questions for Consideration

1. Are there areas seaward of the 75-fathom depth curve that can be identified as possible areas to be opened under the criteria laid out by the Alternative 6 description?

2. Does the Council want to prohibit all bottom contact groundfish gear in groundfish bottom trawl EFHCAs that would be exposed under this action?
3. Does the Council want to consider developing BACs for waters off the Washington coast?

5. Summary of Questions for Council Consideration

For Alternative 1:

- Under the 2023-24 harvest specification and management measure process, the Council is considering a similar action except that the scope of the action would extend to the US/Mexico border. Does the Council want to keep the southern border of this action at 34° 27' N. lat. or align with the alternative with the measures proposed in the 2023-2024 biennial specifications management measures?
- If the action as proposed in November 2021 goes through, this alternative would be already implemented through the harvest specifications process and therefore would not need to be further considered. However, if the Council chooses to modify the 2023-24 management measure to the proposed NMFS alternative outlined in their [March 2022 report](#), then this Alternative would potentially include other non-bottom contact gear type configurations and the ability to use natural bait. Advisory bodies and the Council should consider if other gear configurations (e.g., rod and reel gear) or bait types (i.e., natural bait) are desired and provide some guidance to staff.

For Alternative 2:

- As with Alternative 1, no changes were proposed south of 34° 27' N. lat. under this alternative; however, does the Council want to align the alternative with the measures proposed in the 2023-2024 biennial specifications management measures?
- Similar to Alternative 1, elements of Alternative 2 are being considered in the 2023-24 specifications. However, in addition to the questions raised in Alternative 1 related to gear configurations and bait, there is also the question of whether the Council would want to permit LEFG vessels to fish up to their LEFG trip limits (as proposed under Alternative 2 of this action). Does the Council want to consider changing the crossover provisions?

For Alternative 3:

- Does the Council want to consider suboption 1 for all EFHCAs? To what extent should the EFHCA be redesignated from bottom trawl to bottom contact (i.e., only the portion exposed or the entire area)?

For Alternative 4:

- Does the Council want to consider suboption 1 for all EFHCAs? To what extent should the EFHCA be redesignated from bottom trawl to bottom contact (i.e., only the portion exposed or the entire area).

For Alternative 5:

- What NT_RCA lines would be recommended to be used if the CCA were repealed?
- Does the Council want to consider developing BACs south of 34° 27' N. lat that could be applied within the current bounds of the CCA?
- If new area restrictions are added along with a repeal of the CCA, what fisheries would be restricted from any new closed areas as proposed in the F.6.a CDFW Report 1 and does the action meet the purpose and need developed by the Council?

For Alternative 6:

- Are there areas seaward of the 75-fathom depth curve that can be identified as possible areas to be opened under the criteria laid out by the Alternative 6 description?
- Does the Council want to prohibit all bottom contact groundfish gear in groundfish bottom trawl EFHCAs that would be exposed under this action?
- Does the Council want to consider developing BACs for waters off the Washington coast?