

CALIFORNIA GROUND FISH COLLECTIVE ANNUAL REPORT

2016



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Fort Bragg Groundfish Association

A California Fish Marketing Act Corporation

Half Moon Bay Groundfish Marketing Association

A California Fish Marketing Act Corporation

The Nature Conservancy

A District of Columbia Non-profit Corporation



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Background

The U.S. West Coast groundfish fishery is a mixed stock fishery comprised of over 90 species of flatfish, rockfish, roundfish, and others, and operates under an Individual Fishing Quota (IFQ) management system. Under this federal management system, the annual total allowable catch for each managed species is divided into transferable quota shares and allocated among individual fishermen. Quota shares generate an exclusive right to harvest or transfer a certain amount of annual quota pounds based on the scientifically established total allowable catch for each fish species within the fishery.

Many fishery participants face the challenge of a limited supply of quota pounds of federally-declared overfished species, which constrains the harvest of more abundant species as many of these stocks are caught together and can be difficult to avoid. During the 2016 fishing season, six species (see Table 1) were federally designated overfished species, and therefore only small amounts of quota for these stocks were available to the fishery. Given the limited supply of overfished species quota, fishermen face the risk of exceeding their quota allocations for these species while targeting more abundant stocks. If the harvest of any species exceeds a permit holder's quota allocation, he or she may not take another fishing trip until adequate quota is acquired from another participant to cover the deficit. Because catch of overfished species is not entirely predictable (i.e. these species are generally caught incidentally), a fisherman could unintentionally harvest his or her entire annual quota allocation for one or more of the overfished species during one trip or set, even when taking reasonable measures to avoid those species. If too many overfished species are caught, the entire fishery can be closed.

California Groundfish Collective

This report describes the results of a collaborative effort along the coast of California to pool overfished species quota and reduce the risk of catching these species during the 2016 fishing season. In 2016, the California Groundfish Collective (“the Collective”) was formed by an annual contractual agreement entered into by the Fort Bragg Groundfish Association (FBGA) and the Half Moon Bay Groundfish Marketing Association (HMBGMA). The 2016 fishing season marked the sixth year of annual operations of the California Groundfish Collective.

The goals of the California Groundfish Collective are to maximize conservation and economic opportunities and to retain local access to fish. By establishing the Collective, fishermen members of each association agree to pool their entire allocation of overfished species quota pounds and develop regional, spatially-explicit fishing plans designed to reduce the risk of catching overfished species across 15 million acres of fishing grounds in California (refer to Figure 1). As parties to the agreement, Collective members who catch overfished species are covered by the pool's quota, in return for adhering to the fishing plans and sharing information on the location of catches of overfished species.



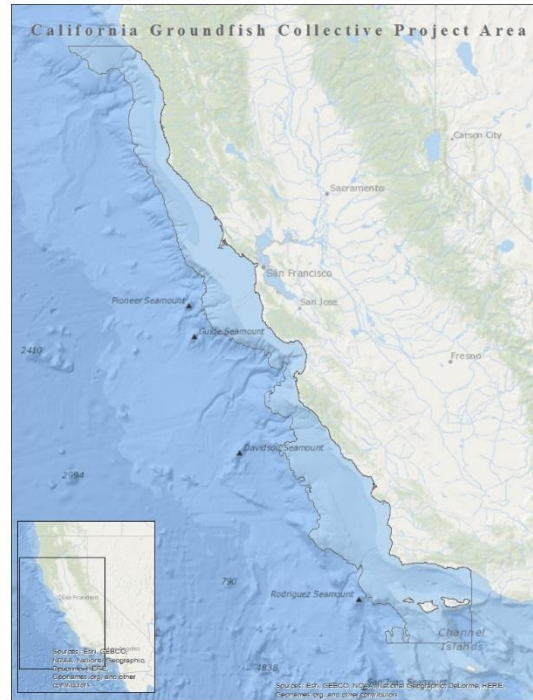


Figure 1. Outline shows the spatial extent of the California Groundfish Collective regional fishing plans.

In 2016, the California Groundfish Collective included six vessels using different gear types: bottom trawl, pots, and Scottish seine. The California Groundfish Collective was governed by an Advisory Committee made up of one representative from each fishing association.

The Nature Conservancy (TNC) owns quota in the West Coast groundfish fishery and is engaged in the fishery with the goal of working with the industry and local communities to develop and implement best practices for an economically and environmentally sustainable fishery and port communities. TNC served as a scientific advisor, invested overfished species quota into the California Groundfish Collective, and collaborated with FBGA and HMBGMA to combine the best available science with fishermen knowledge to create regional fishing plans. TNC and the members of the California Groundfish Collective also partner on information sharing through technology and engagement in collaborative fisheries research.



California Groundfish Collective Fishing Plans

Under the California Groundfish Collective agreement, FBGA and HMBGMA created regional spatial fishing plans intended to reduce the risk of catching overfished species. The objectives of the regional fishing plans are to promote the long-term success of the fishery and the supporting port communities by:

- (i) Maximizing the harvest of target species from the fishery;
- (ii) Minimizing the harvest of overfished species from the fishery;
- (iii) Safeguarding sensitive fish habitat; and,
- (iv) Contributing to the rebuilding of overfished stocks.

The spatial fishing plans cover specific regions and combine fishermen's knowledge with the best available science and technology to delineate risk zones (e.g. high, medium and low) as well as voluntary closures of very high risk areas. The fishing plans are created collaboratively and are specific to each gear type and region. Fishing plans and specific zones may include fishing prescriptions - such as test tows or reduced tow durations - that are assigned based on the perceived risk of encountering overfished species or the presence of sensitive habitat areas. The fishing plans set out precautionary actions that a vessel must take when overfished species are harvested above certain thresholds, including move-on rules and communication to all California Groundfish Collective members in the area.

The spatial fishing plans are adapted throughout the fishing season using information collected and shared among Collective participants. In return for adaptively managing and complying with the fishing plans, fishermen members are covered by the Collective for catches of overfished species that occur. When incidental catches do occur, the Collective agreement ensures that spatial information and details of the catch are shared across the membership. Figure 2 provides an example of the spatial component of a regional fishing plan that identifies risk zones (note this is just an example, not an actual plan for confidentiality purposes).



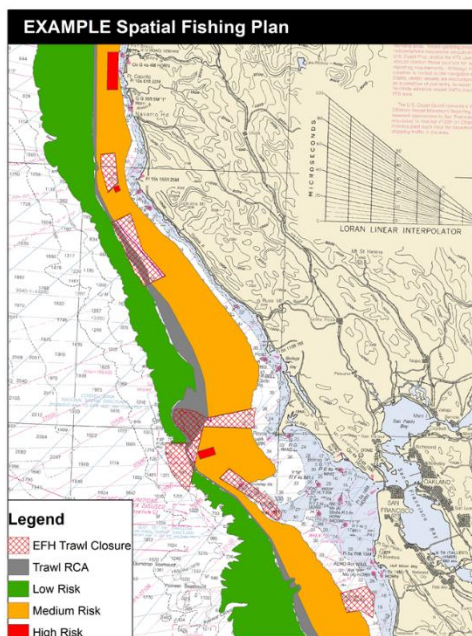


Figure 2. Example of spatial component of a regional fishing plan in the central coast of California that depicts high, medium and low risk zones as well as existing management closures. Certain fishing prescriptions are assigned to each zone.

The California Groundfish Collective has used an application developed by TNC called eCatch (www.ecatch.org) to capture logbook information and share the location of and other information associated with harvests of overfished species. eCatch is an electronic logbook application and spatial database. eCatch can facilitate the sharing of fisheries information that is used to adapt and inform fishing operations on a trip by trip basis, and it also allows for the manager of the California Groundfish Collective to ensure fishing is occurring in compliance with spatial fishing plans. The private collection and sharing of logbook information using a spatial database has proven useful for updating and adapting regional fishing plans, as well as informing other engagements such as pursuing independent ratings and assessments for sustainable seafood, like Seafood Watch. In 2014, the Collective worked with the Monterey Bay Aquarium’s Seafood Watch program to conduct a sustainability assessment of eight species¹ caught by the Collective. The assessment resulted in all eight species caught by the Collective receiving the “Best Choice” (green) rating.

Overfished Species Quota Holdings Summary

Members of FBGA, HMBGMA and TNC transferred their 2016 overfished species quota pounds into holding accounts (e.g. IFQ vessel accounts) managed by the California Groundfish Collective following execution of the annual agreement. The Collective’s total overfished species quota

¹ Chilipepper rockfish, Dover sole, English sole, Pacific sanddabs, Petrale sole, Sablefish, and Shortspine and Longspine thornyhead rockfish.



pound holdings for 2016 are presented in Table 1 and Figure 3 below. In the region where the California Groundfish Collective participants operate, the most constraining overfished species in 2016 were bocaccio (*Sebastes paucispinis*), canary rockfish (*S. pinniger*), cowcod (*S. levis*), darkblotched rockfish (*S. crameri*), and yelloweye rockfish (*S. ruberrimus*).² Pacific ocean perch (*S. alutus*) is also an overfished species in the west coast groundfish fishery, however, the California Groundfish Collective did not manage any holdings of this species. Nevertheless, we include Pacific Ocean Perch in the following tables and figures.

Table 1. California Groundfish Collective's quota pound (QP) holdings of overfished species in 2016 compared to the sector allocation for the entire west coast groundfish fleet.

Species	California Groundfish Collective's QP Holdings	IFQ Sector's Total QP Allocation	California Groundfish Collective's QP Holdings as Percentage of IFQ Sector Allocation
Bocaccio rockfish	110,891	187,437	59%
Canary rockfish	10,871	98,062	11%
Cowcod	2,130	3,175	67%
Darkblotched rockfish	26,644	645,536	4%
Pacific Ocean Perch	0	273,704	0%
Yelloweye rockfish	175	2,381	7%
Totals	150,711	1,210,295	12%

In 2016, approximately 12% of the IFQ's sector-wide overfished species quota pounds were collectively managed and held by the California Groundfish Collective (refer to Table 1, Figure 3).

² The California Risk Pool annual reports for 2011 and 2012 included widow rockfish, as well as Pacific halibut IBQ. Since widow rockfish were delisted in 2012, the data presented in the 2016 report only include the six overfished species listed below in Table 1.



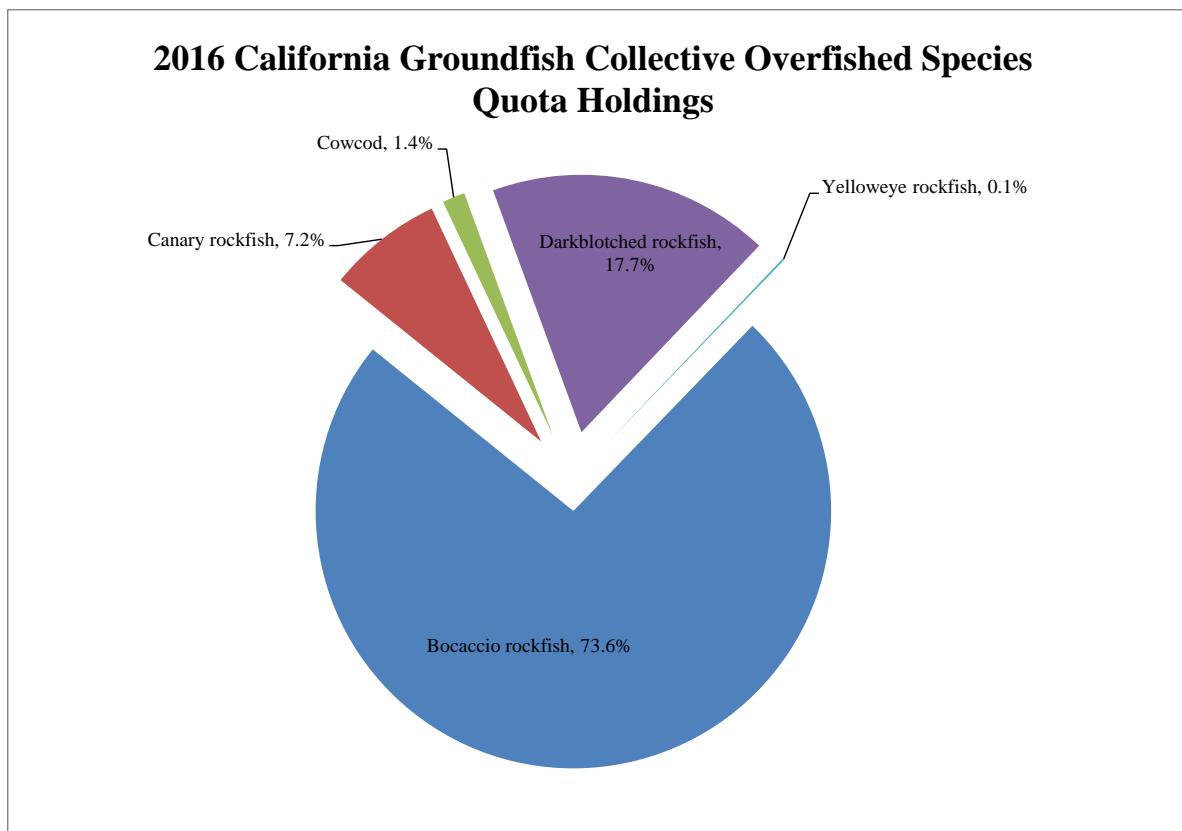


Figure 3. Breakdown of the California Groundfish Collective 2016 overfished species quota pound holdings.

Fishing Results: Catch and Utilization Rates

Overfished Species

In this report, we use utilization rates as a simple (though not perfect) metric to present the fishing activity of the California Groundfish Collective and provide a measure of comparison to the rest of the fleet. Utilization rates represent the percentage of an annual allocation that has been caught (i.e. pounds caught divided by annual allocation).

The California Groundfish Collective had a lower utilization rate of overfished species than the entire IFQ groundfish fleet. In 2016, the entire groundfish IFQ fleet (including the California Groundfish Collective) used a total of 535,326 pounds of the available 1,210,295 pounds of overfished species quota pounds available, or 44% of the total allowable catch. The California Groundfish Collective collectively managed a total of 150,711 pounds of overfished species quota pounds and collectively caught a total of 43,414 pounds, or 29% of the total California Groundfish Collective holdings (Table 2).



Table 2. California Groundfish Collective's quota pound holdings, total catch, and utilization rates (total catch as percentage of holdings) in 2016.

Species	2016 California Groundfish Collective's QP Holdings	2016 California Groundfish Collective's Total Catch	2016 California Groundfish Collective's Utilization
Bocaccio rockfish	110,891	36,894	33%
Canary rockfish	10,871	4,438	41%
Cowcod	2,130	288	14%
Darkblotched rockfish	26,644	1,788	7%
Pacific Ocean Perch	0	0	0%
Yelloweye rockfish	175	6	3%
Totals	150,711	43,414	29%

From 2011 to 2016 the California Groundfish Collective's overall overfished species utilization has remained below the rest of the groundfish fleet's total utilization of overfished species (Figure 4). In 2016, the Collective's utilization of overfished species was 29%, which is the second highest utilization rate for the Collective since the start of the IFQ program, but still below the rest of the IFQ fleet's 46% utilization (Figure 4). This increase in 2016, like the increase in 2015, is largely due to an increased usage of bocaccio rockfish, as well as a slight increase in usage of canary rockfish. The Collective's darkblotched rockfish usage in 2016 was 42% lower than 2015. Canary rockfish was declared rebuilt in 2016 and darkblotched rockfish and bocaccio rockfish were declared rebuilt in 2017, both well before their original target rebuilding dates.



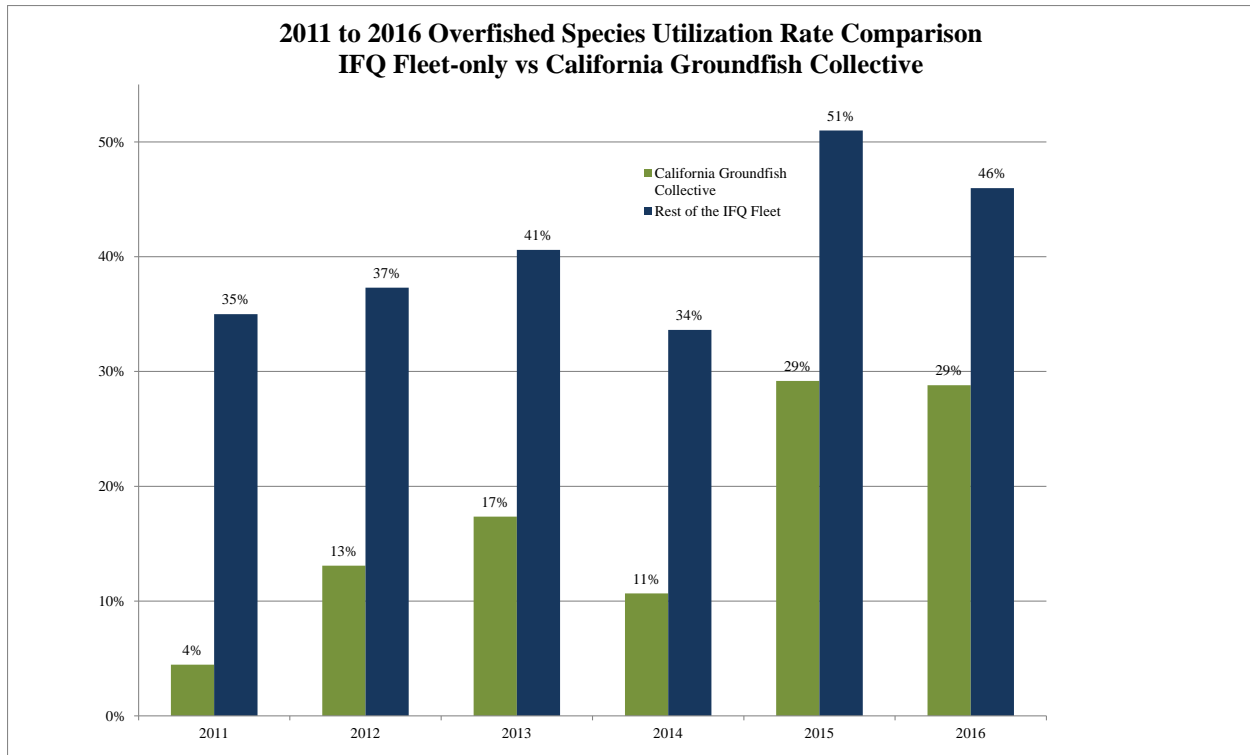


Figure 4. Comparison of overfished species utilization rates for the California Groundfish Collective and the rest of the IFQ groundfish fleet including whiting from 2011 to 2016.

The California Groundfish Collective operates in the non-whiting sector of the groundfish IFQ, thus removing the whiting fleet’s catch and allocations for overfished species and comparing to the rest of the non-whiting fleet provides a more relevant utilization comparison. The rest of the non-whiting fleet caught 380,326 pounds of overfished species, or 49% of the non-whiting fleet’s total holdings (with the California Groundfish Collective removed) (Table 3, Figure 6).

Table 3. 2016 overfished species utilization rates for California Groundfish Collective, rest of the non-whiting fleet, and the total IFQ fleet (California Groundfish Collective removed).

Species	2016 California Groundfish Collective's Utilization	2016 Non-whiting Fleet Utilization (Groundfish Collective removed)	2016 Total IFQ Fleet Utilization (Groundfish Collective removed)
Bocaccio rockfish	33%	60%	68%
Canary rockfish	41%	51%	48%
Cowcod	14%	26%	29%
Darkblotched rockfish	7%	51%	44%
Pacific Ocean Perch	0%	37%	44%
Yelloweye rockfish	3%	6%	5%
Totals	29%	49%	46%



Information stored in eCatch allows the California Groundfish Collective to map the location and amount of overfished species that were caught by California Groundfish Collective members during the 2016 fishing season. Areas of high catch intensity can indicate higher potential risk of catching overfished species over time (Figure 5), and this information is used by the California Groundfish Collective to adaptively manage the regional fishing plans and update spatial restrictions or rules throughout the year. Data stored in eCatch also makes it possible to evaluate overfished species harvests on a trip by trip or set by set basis. In 2016, the California Groundfish Collective members harvested overfished species in approximately 37% of all sets, which provides a measure of the risk of encounter.

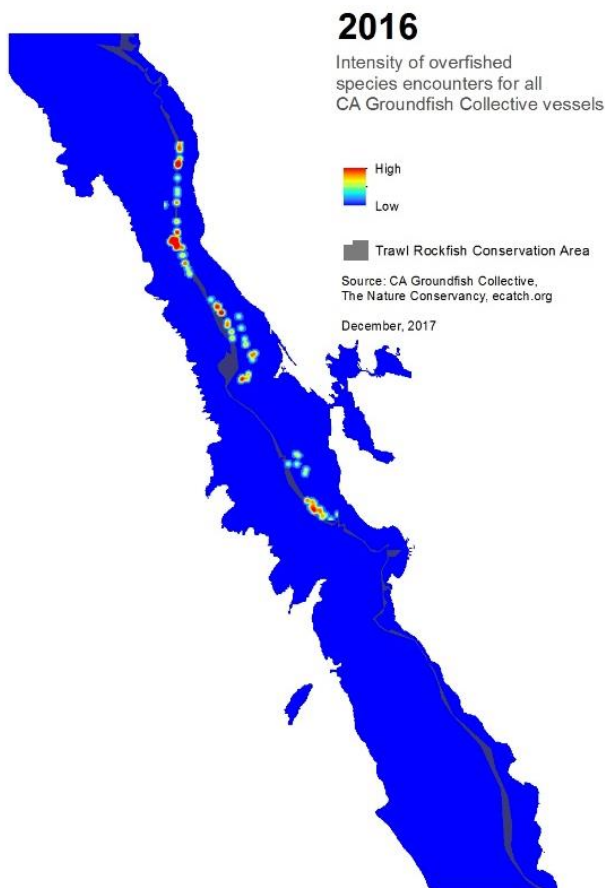


Figure 5. Map created using eCatch data depicting the intensity of overfished species encounters for all California Groundfish Collective vessels during 2016. Intensity is calculated as frequency of fishing sets where overfished species were harvested.

The California Groundfish Collective provides its members with a type of mutual insurance – a secure and reliable source of overfished species quota – so that members may fish and maximize their harvest of target species. In 2016, the California Groundfish Collective manager filled more than 61 overfished species deficits for its members. Requests to fill a deficit were generally processed within minutes to a few hours. This rapid process resulted in no loss of fishing time for



the members of the California Groundfish Collective while attempting to acquire overfished species quota pounds, but instead allowed them to concentrate on planning their next fishing trip and manage their overall fishing operations.

In early 2016, the California Groundfish Collective conducted an assessment of overfished species quota pound holdings and current utilization rates to determine the need to retransfer quota pounds back to contributing members so they may be made available on the open market. In March of 2016, the California Groundfish Collective Advisory Committee determined that it would release darkblotched rockfish quota pounds onto the open market with the objective of securing additional canary rockfish quota pounds for utilization by its members. Additionally, by December 31, 2016, the end of the fishing season, all remaining quota pounds were assessed and retransferred pro-rata back to the original contributing members of the California Groundfish Collective.

Target Species

Since the California Groundfish Collective seeks to maximize conservation and economic opportunities, measures of overfished species utilization must be considered in conjunction with target species utilization. A primary objective of the Collective is to maximize harvest of target species, though this objective is not exclusive of the other objectives to minimize the bycatch of overfished species, safeguard sensitive habitat, contribute to the rebuilding of overfished species stocks and participate in collaborative fisheries research. Target species include all species except for overfished species and Pacific halibut Individual Bycatch Quota (IBQ). Allocations included individual allocations plus any additional quota pounds transferred into Collective member vessel accounts throughout the year.

In 2016, California Groundfish Collective members caught a total of 1,538,044 pounds of target species, or 21% of their collective quota pound holdings of 7,336,212 pounds of target species (excluding overfished species and halibut IBQ).



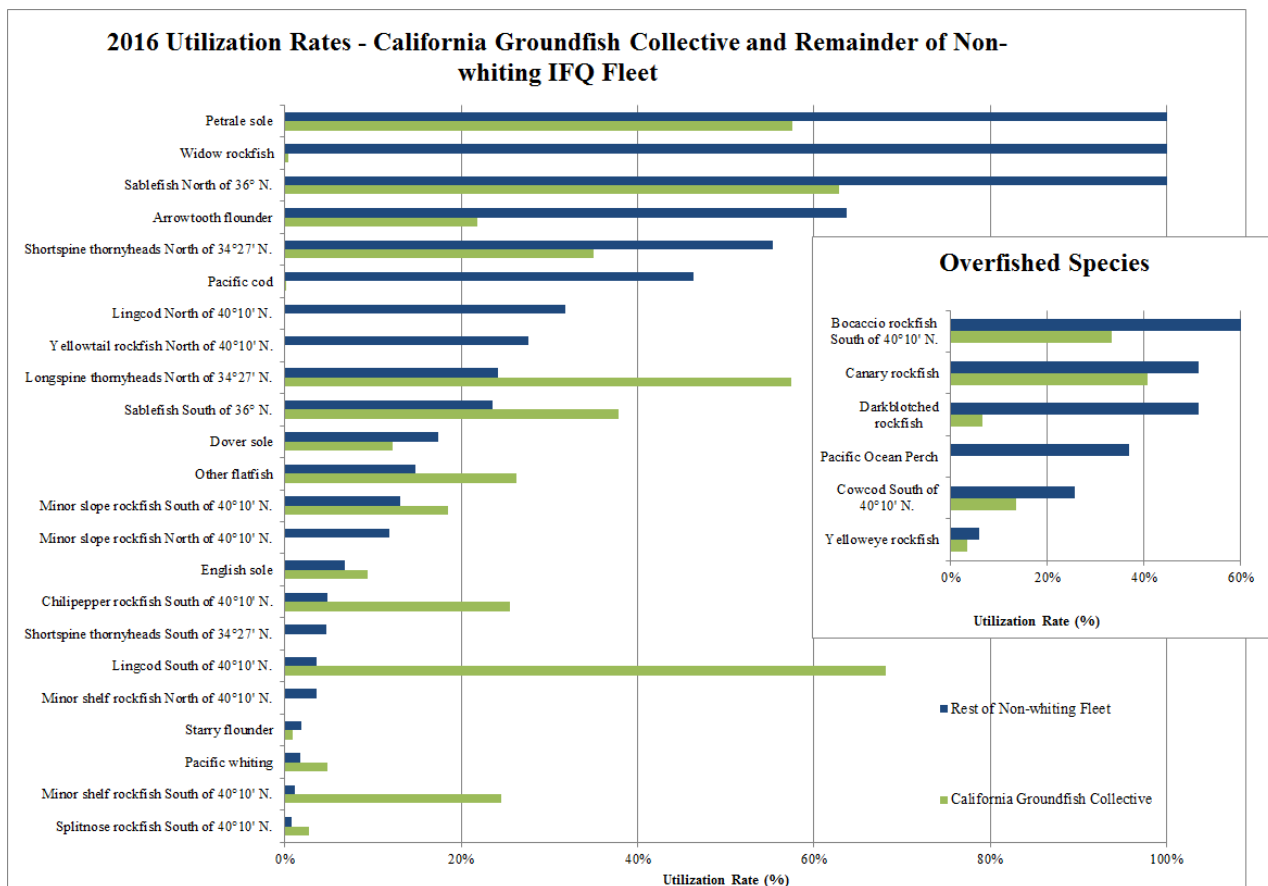


Figure 6. Comparison of target species and overfished species utilization rates for the California Groundfish Collective and the rest of the *non-whiting* IFQ groundfish fleet in 2016.

In 2016, the total catch of target species (including whiting) for the entire IFQ fleet was 232,718,263 pounds, or 46% of the fleetwide allocation. Whiting contributes a substantial amount of pounds to the total target catch, and when the whiting fleet is removed, the non-whiting groundfish fleet caught 40,021,968 pounds or 19% of the non-whiting target allocation, compared to 21% for the California Groundfish Collective.³

A bycatch ratio is an additional metric that can be used to evaluate fishery performance. A simple bycatch ratio can be determined by dividing the total catch of overfished species by the total catch of target species. When comparing bycatch ratios, a smaller number indicates less overfished species were caught while harvesting target species. The California Groundfish Collective’s bycatch ratio was higher than the rest of the non-whiting IFQ fleet for 2016 due to the combination of decreased harvest of target species and increased harvest of overfished species (mainly bocaccio rockfish). In 2016, the California Groundfish Collective’s utilization of bocaccio rockfish was

³ Non-whiting data acquired through personal communication with Jeff Cowen, NMFS, and Sean Matson, NMFS, on October 10, 2017.



33%, which is a 235% increase compared to the 2014 utilization rate and a 13% increase from 2015. Due to increased harvests of bocaccio in 2015 and 2016, the average bycatch ratio for the California Groundfish Collective for the period from 2011 to 2016 is slightly greater than the rest of the non-whiting IFQ fleet (Table 4).

Table 4. Bycatch ratios for the California Groundfish Collective and the rest of the non-whiting IFQ fleet.

Year	California Groundfish Collective	Non-whiting IFQ Fleet (Groundfish Collective removed)
2011	0.20%	0.83%
2012	0.43%	0.81%
2013	0.56%	0.91%
2014	0.39%	0.81%
2015	1.60%	1.08%
2016	2.82%	0.95%
Averages	1.00%	0.90%

Economic and Social Metrics

Estimated Total Ex-vessel Value

Ex-vessel value is a commonly used to represent the value of the fish at the first landing before any processing is done. The estimated ex-vessel value of the combined total groundfish catch of the California Groundfish Collective members in 2016 was approximately \$1.39 million. The top five species, sablefish north, Petrale sole, Dover sole, sablefish south, and longspine thornyhead, accounted for over 82% of the California Groundfish Collective member's estimated ex-vessel value in 2016 (Figure 7). The estimated total ex-vessel value was calculated from Collective members' fish tickets (landing receipts) for each port where landings occurred in 2016. For landings where fish tickets (landing receipts) were not available, PacFIN⁴ data were used to provide the average price per pound for a specific port. It should be noted that nearly all of the members of the Collective participate in other west coast fisheries for a portion of each year.

⁴ <https://reports.psmfc.org/pacfin/f?p=501:1000>



Estimated Total Ex-Vessel Value for Target Species Caught by the California Groundfish Collective Members in 2016

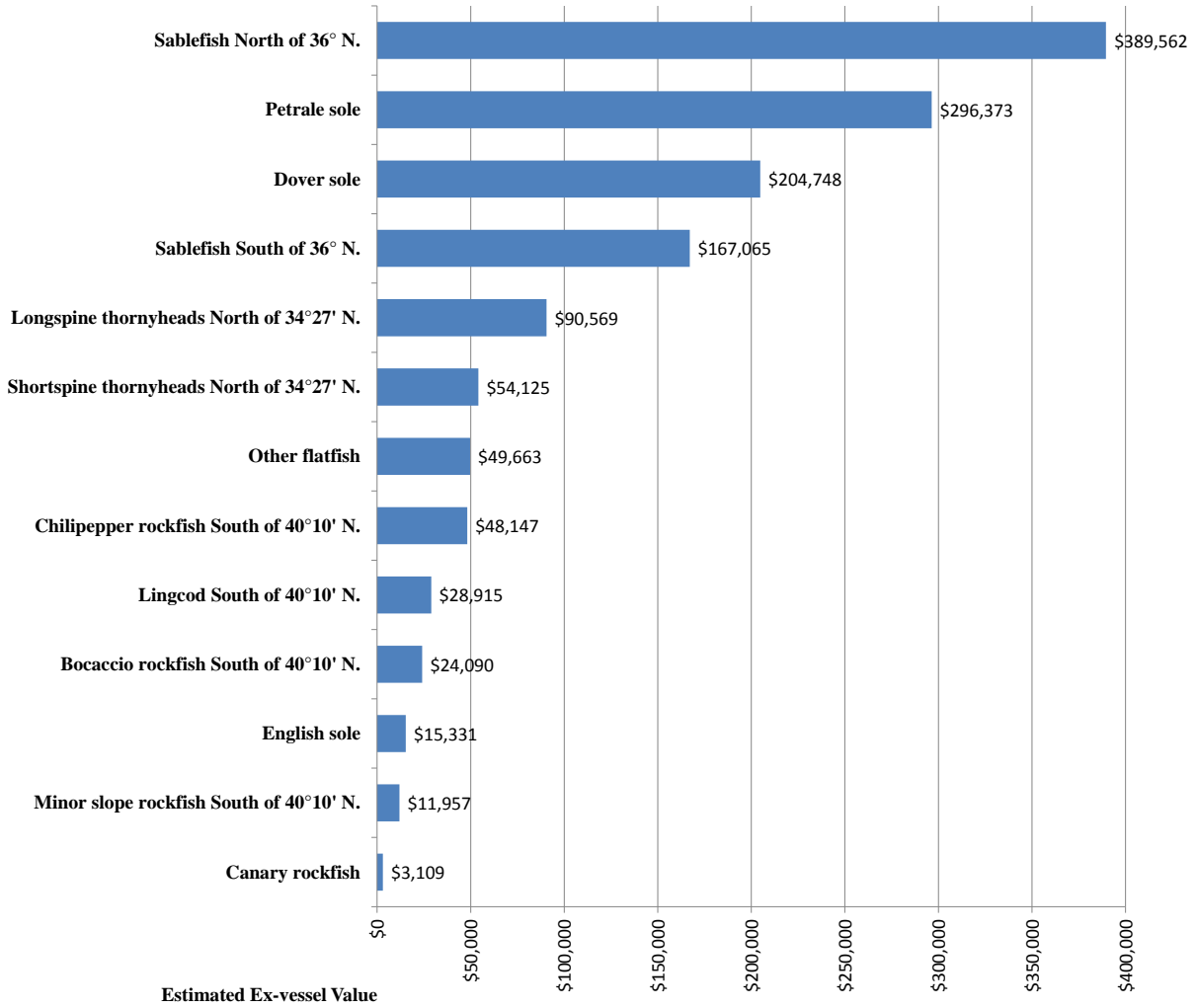


Figure 7. Estimated total ex-vessel value (dollars) of groundfish, by species, landed by the California Groundfish Collective members in 2016.



Costs of Participating in the West Coast IFQ Groundfish Fishery

Participation in the west coast groundfish IFQ fishery requires significant costs that are incurred by fishing businesses. Costs of participation can be divided into three major categories: operational costs, fixed costs, and IFQ management related costs. Within each of these three categories there are various costs that may or may not pertain to every fishing operation. Operational costs (including crew shares) comprised the majority of costs incurred, followed by fixed costs, then management costs for the California Groundfish Collective members (Table 5).

Table 5. Average costs of participating in the West Coast IFQ Groundfish Fishery for California Groundfish Collective members presented as percentage (%) of gross revenue.

Operation Costs	Average
Captain/Crew Shares	42.2%
Fuel	13.0%
Ice	1.4%
QP Leasing	8.6%
Fixed Costs	
Vessel Insurance	4.4%
Vessel Maintenance/Repairs (i.e. haul-out, new rigging, etc.)	6.1%
Vessel Equipment (i.e. hauler, reel, electronics, etc.)	2.1%
Licenses/Permits (includes renewals)	0.5%
Fishing Supplies (i.e. nets, webbing, longline gear, hooks, etc.)	2.8%
Professional Services (i.e. lawyer, accountant, bookkeeper, etc.)	1.7%
Slip/Mooring Fees	0.8%
Landings Assessments and Membership Dues	1.3%
IFQ Groundfish Management Costs	
Trawl Buyback Fees	5.0%
Cost Recovery*	1.5%
Observers	3.9%
First Receivers/Catch Monitors	0.2%
Miscellaneous Operating Expenses	4.4%
	100.0%

*Cost Recovery - 3% assessment on each landing was implemented in 2014, but is averaged for all years in this table.

Compliance and Monitoring

In 2016, the California Groundfish Collective Manager did not observe any non-compliance events by any member of the California Groundfish Collective. The 2016 annual California Groundfish Collective agreement established the protocol for dealing with non-compliance events or possible violation by one of the associations' vessels of the regional rules in their respective fishing plans. As directed by the Advisory Committee, the California Groundfish Collective Manager was



responsible for reviewing all vessel and trip specific data (i.e. spatial data from eCatch, landings, etc.) with incidents of overfished species to ensure compliance with regional fishing plans. In addition, to verify compliance with spatial fishing restrictions, the Advisory Committee reserved the right to require subsequent audits of Vessel Monitoring Systems (VMS) data from suspected or violating vessels.

Collaborative Research

Since 2014, the California Groundfish Collective has partnered with TNC and the Environmental Defense Fund to manage an Exempted Fishing Permit (EFP) project in the west coast groundfish fishery to implement electronic monitoring (EM). The purpose of this project is to develop and implement the use of electronic video monitoring in lieu of human observers for catch compliance purposes and in so doing, inform the development of regulations to facilitate alternative options to ensure catch accountability and potentially increase the cost-effectiveness of monitoring while preserving community access to the west coast fishery.

The EFP process provided an opportunity to demonstrate the use of EM across multiple gears and determine whether and how it can serve as a key component of a comprehensive catch accountability system. The project partners secured approval to continue the EFP project in 2016 and add up to 10 vessels. In 2016, four vessels (two fixed gear vessels and two trawl vessels) participated in the EFP, completing 48 trips (645 hauls). In 2016, the California Groundfish Collective worked with NMFS and PSMFC to develop and implement a Collective Enforcement Agreement (CEA) to govern vessels participating in the EFP. The CEA is a cooperative approach to implementing EM in which all involved vessels assume responsibility for collective compliance with the terms and conditions of the EFP and individual Vessel Monitoring Plans. The approach was intended to reduce NMFS enforcement costs and provide fishermen members with the ability to more easily and quickly adapt monitoring plans as needed.

Over the last two years, the California Groundfish Collective has produced significant learning through the EFP that is helping to inform the development of new EM regulations. The California Groundfish Collective produced a report summarizing the results and key lessons learned from the EFP project from 2015 through 2016⁵. The Collective looks forward to continuing to work with the PFMC, NMFS and other stakeholders to resolve outstanding concerns and reach successful implementation of EM as a cost-effective alternative catch monitoring option.

⁵ http://www.cagroundfish.org/s/FINAL_CGC_EM_EFP_REPORT_April-2017.pdf

