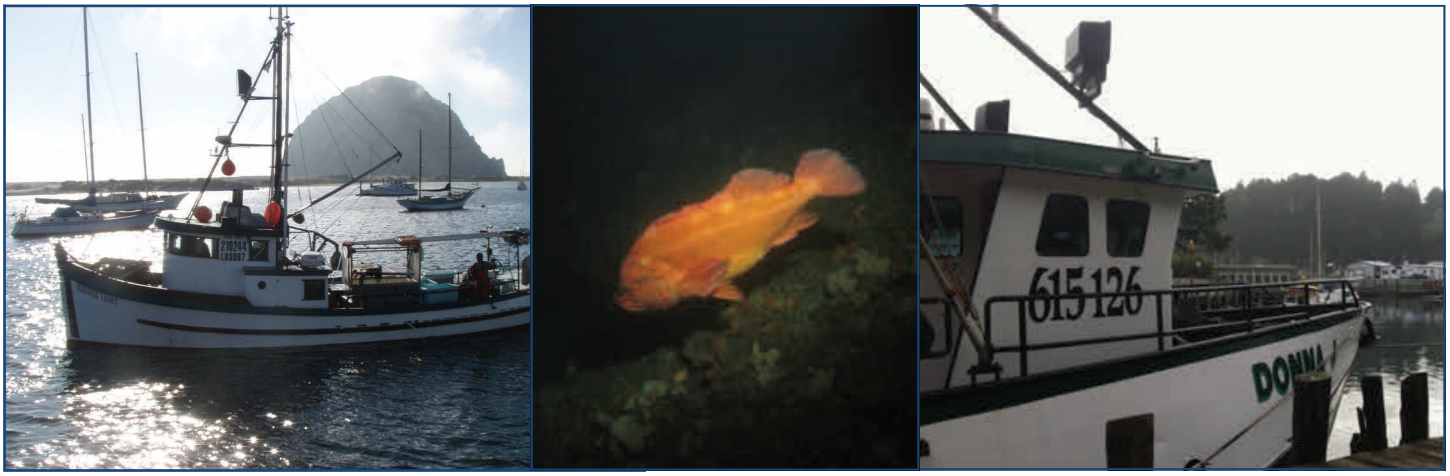
CALIFORNIA RISK POOL ANNUAL REPORT 2013



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Central California Seafood Marketing Association
A California Fish Marketing Act Corporation

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

CCSMA

FBGA
FORT BRAGG GROUNDFISH ASSOCIATION

HMBGMA
HALF MOON BAY GROUNDFISH MARKETING ASSOCIATION

The Nature Conservancy
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Introduction

In 2011 the west coast groundfish fishery transitioned into an Individual Fishing Quota (IFQ) management system. Under this management system, the annual total allowable catch for each managed species is divided into transferable quota shares and allocated among individual fishermen. Fishermen are afforded some flexibility under this system as to where and when to fish, and the quota is transferable so it can be leased or bought and sold.

For many participants, this management system presents a challenge due to the extremely limited supply of "overfished species" quota that constrains the harvest of more abundant species. The west coast groundfish fishery is comprised of over 90 species of flatfish, rockfish, roundfish, and others; six of these species are federally designated overfished species, and therefore only small amounts of quota for these species are available to the fishery on an annual basis. Many fishermen are at high risk of exceeding their quota for certain overfished species while attempting to harvest more abundant target species. If the harvest of any species exceeds a fisherman's quota allocation, he or she may not take another fishing trip until adequate quota is acquired to cover the deficit. Because harvesting overfished species is not entirely predictable (i.e. these species can be 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.

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 2013 fishing season. The California Risk Pool is formed by an annual agreement entered into by the Fort Bragg Groundfish Association (FBGA) and the Central California Seafood Marketing Association (CCSMA). During 2013, the Half Moon Bay Groundfish Marketing Association was established and informally participated in the California Risk Pool to learn how the collaboration operated. The 2013 fishing season marked the third consecutive year of the operation of the California Risk Pool.

The goal of the California Risk Pool is to maximize conservation and economic opportunities and retain local access to fish. By establishing the California Risk Pool, fishermen members of each association agree to pool their overfished species quota pound allocations and develop regional fishing plans across 15 million acres (see Figure 1) designed to reduce the risk of catching overfished species. As parties to the agreement, risk pool members who catch overfished species are covered by the risk pool's quota, in return for adhering to the spatial fishing plans and using eCatch, an electronic logbook system, to share catch information on the location of 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.

In 2013, the California Risk Pool included nine vessels using various gear types: bottom trawl, longline, pots, and Scottish seine. The California Risk Pool was governed by a three member Advisory Committee made up of one representative from each fishing association and one representative from The Nature Conservancy (TNC). 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 invested quota into the California Risk Pool and collaborated with FBGA and CCSMA to combine the best science with fishermen knowledge to create the regional fishing plans, as well as to implement technology solutions for sharing information.

Figure 1. Black outline shows the spatial extent of the California Risk Pool regional fishing plans.

Risk Pool Fishing Plans

Under the risk pool agreement, the FBGA and CCSMA created spatial fishing plans in partnership with TNC to reduce the risk of catching overfished species. The spatial fishing plans cover specific regions and combine the fishermen's knowledge with the best available science and technology to delineate risk zones (high, medium and low) as well as voluntary closures.

The fishing plans are created collaboratively and are specific to each gear type. Delineated zones may also include fishing prescriptions - such as test tows or reduced tow durations - that are assigned based on the risk of encountering overfished species or the presence of sensitive habitat areas. The fishing plans set out specific precautionary actions that a vessel must take when overfished species are harvested above certain thresholds, including move-on rules and communication to all risk pool members in the area over radio or satellite phones. The spatial fishing plans are adapted throughout the fishing season using information collected and shared among risk pool participants. In return for adaptively managing and complying with the fishing plans, fishermen are covered for catches of overfished species. When incidental catches do occur, the risk pool 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).

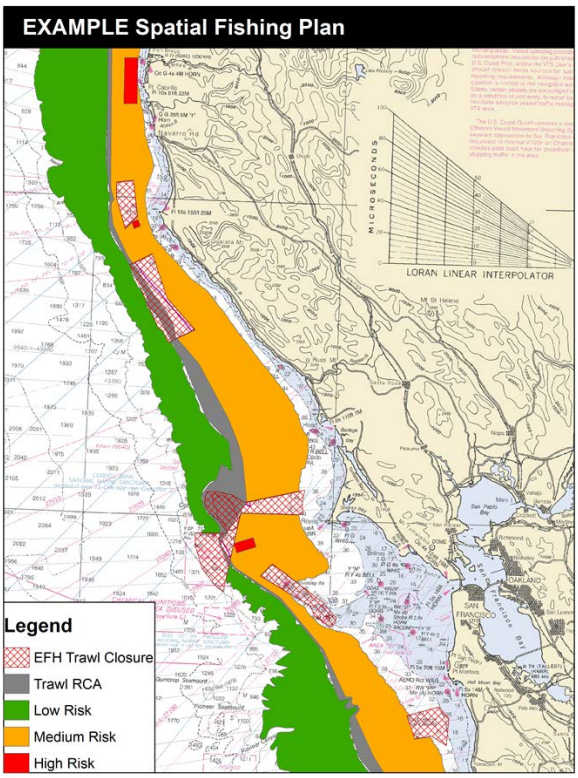

Figure 2. Example of spatial component of a regional fishing plan in the central coast of California that depicts high, medium and low risk zones as well as existing management closures. Certain fishing prescriptions are assigned to zones.

Technology

Capturing and sharing spatially explicit fisheries data is a fundamental component of risk pool operations. Risk pool members need to know almost immediately if other members have caught overfished species in order to reduce the risk of additional catches and to update and adapt spatial fishing plans. In addition, risk pool managers also need to ensure that fishing occurs in

compliance with spatial fishing plans in order to fill deficits for overfished species quota and effectively monitor fishing operations.

To capture and share certain catch data, the California Risk Pool uses an application developed by TNC called eCatch (www.ecatch.org). eCatch allows fishermen to easily capture logbook information using an iPad, visualize and query catch data on web-based maps, and share spatial data with others if it makes sense to do so. The eCatch logbook records fishing event locations with latitude and longitude (start and end locations recorded for each fishing set) and records estimates of catch at each location. This technology reduces the cost of data entry and enables the rapid sharing of fisheries information. eCatch also provides the risk pool manager with a tool to ensure compliance with spatial fishing plans. After three consecutive years using eCatch, the California Risk Pool participants are building a spatial library of valuable fisheries data that is used to update and adapt regional fishing plans.

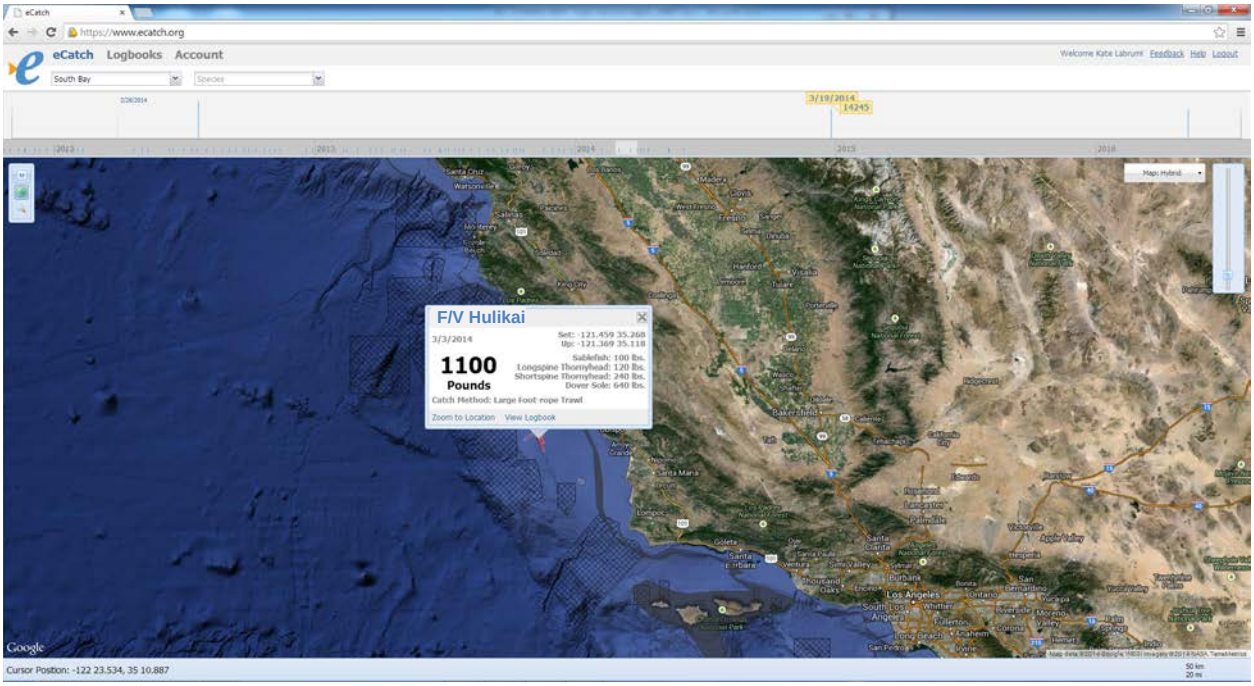

Figure 3. eCatch v2.0 web-based mapping interface. The eCatch application (www.ecatch.org) allows fishermen to capture logbook data using an iPad and then query that data and visualize it on web-based maps.

Overfished Species Quota Holdings Summary

Members of the CCSMA, FBGA, and TNC transferred their 2013 overfished species quota pounds into California Risk Pool managed holding accounts (e.g. IFQ vessel accounts) following signing of the annual agreement. Due to specific IFQ regulations on daily quota pound limits for overfished species, the California Risk Pool was not able to deposit all overfished species quota into a single holding account. The Pacific Fisheries Management Council approved changes to risk pool regulations under the catch share management program in late 2011 that will allow a

risk pool vessel holding account to hold overfished species quota above the currently established vessel account caps. When this change is implemented it will greatly streamline risk pool management of overfished species quota pounds and provide cost savings.

The California Risk Pool's total overfished species quota pound holdings for 2013 are presented in Table 1 and Figure 4 below. In the region where the risk pool participants operate, the most constraining overfished species are bocaccio (*Sebastes paucispinis*), canary rockfish (*S. pinniger*), cowcod (*S. levis*), darkblotched rockfish (*S. crameri*), and yelloweye rockfish (*S. ruberrimus*).[1] Pacific Ocean Perch (*S.alutus*) is also an overfished species in the west coast groundfish fishery, yet the California Risk Pool did not manage any holdings of this species. Nevertheless we include Pacific Ocean Perch in the following tables and figures.

Overfished Species Managed by California Risk Pool	2013 California Risk Pool's QP Holdings	2013 IFQ Sector's Total QP Allocation	California Risk Pool's QP Holdings as Percentage of IFQ Sector Allocation
Bocaccio rockfish	76,935	165,126	47%
Canary rockfish	4,159	87,964	5%
Cowcod	1,114	2,205	51%
Darkblotched rockfish	27,285	587,976	5%
Pacific Ocean Perch	0	241,241	0%
Yelloweye rockfish	134	2,205	6%
Totals	109,627	1,086,717	10%

Table 1. California Risk Pool's quota pound (QP) holdings of overfished species in 2013 compared to the sector allocation for the entire west coast groundfish fleet.

In 2013, approximately 10% of the IFQ's sector-wide overfished species quota pounds were collectively managed and held by the California Risk Pool (see Table 1, Figure 4).

[1] 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 2013 report only include the six overfished species listed above in Table 1.

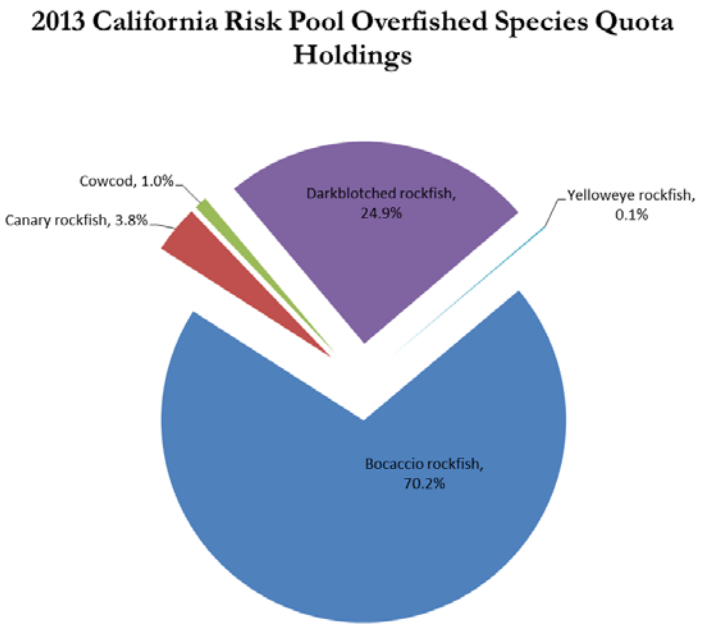

Figure 4. Breakdown of the California Risk Pool 2013 overfished species quota pound holdings.

Risk Pool Fishing Results: Catch and Utilization Rates

Overfished Species

We use utilization rates as a simple (though not perfect) metric to present the activity of the California Risk Pool and provide a measure of comparison. Utilization rates represent the percentage of an annual allocation that has been caught (i.e. pounds caught divided by annual allocation). In 2013, the entire groundfish IFQ fleet (including the California Risk Pool) used a total of 416,030 pounds of the available 1,086,717 pounds of overfished species quota pounds available, or 38% of the total allowable catch. The California Risk Pool collectively managed a total of 109,627 pounds of overfished species quota pounds and collectively caught a total of 19,036 pounds, or 17% of the total risk pool holdings (see Table 2).

Overfished Species Managed by California Risk Pool	2013 California Risk Pool's QP Holdings	2013 California Risk Pool's Total Catch	2013 Total Catch as Percentage of QP Holdings
Bocaccio rockfish	76,935	15,282	19.9%
Canary rockfish	4,159	1,490	35.8%
Cowcod	1,114	361	32.4%
Darkblotched rockfish	27,285	1,903	7.0%
Pacific Ocean Perch	0	0	0.0%
Yelloweye rockfish	134	0	0.0%
Totals	109,627	19,036	17.4%

Table 2. California Risk Pool's quota pound holdings and total catch in 2013.

Since 2011, the California Risk Pool has increased its utilization of overfished species quota, though the risk pool's overall utilization has remained below the rest of the groundfish fleet's total utilization of overfished species (see Figure 5).

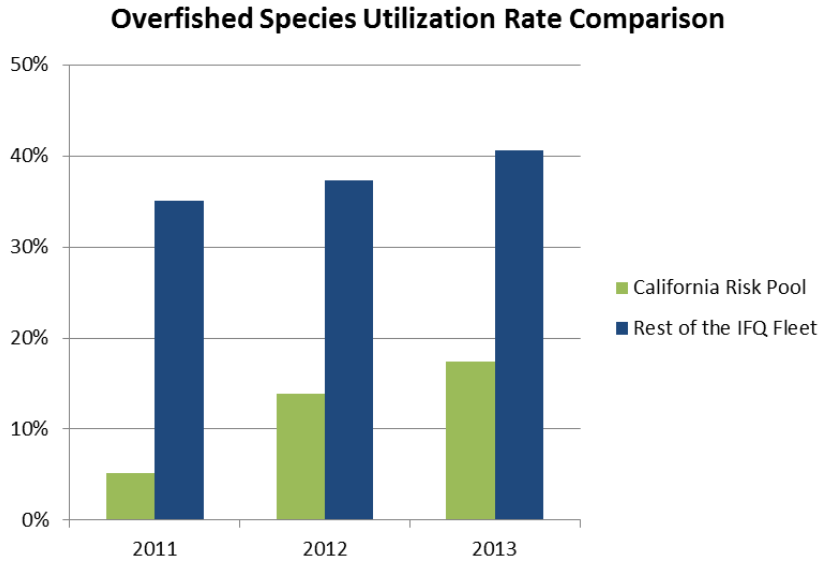

Figure 5. Comparison of overfished species utilization rates for the California Risk Pool and the rest of the IFQ groundfish fleet from 2011 to 2013 (widow rockfish is not included).

The California Risk Pool operates in the non-whiting sector of the groundfish IFQ, thus removing the whiting fleet's catch and allocations for overfished species provides a more relevant utilization comparison. The rest of the non-whiting fleet caught 370,265 pounds of overfished species, or 64% of the non-whiting fleet's holdings (with the risk pool removed) (see Table 3, Figure 7).

Overfished Species	2013 California Risk Pool's Utilization	2013 Non-whiting Fleet Utilization (risk pool removed)	2013 Total IFQ Fleet Utilization (risk pool removed)
Bocaccio rockfish	19.9%	15.7%	14.8%
Canary rockfish	35.8%	40.7%	25.1%
Cowcod	32.4%	12.2%	11.5%
Darkblotched rockfish	7.0%	72.9%	45.4%
Pacific Ocean Perch	0.0%	79.9%	44.8%
Yelloweye rockfish	0.0%	9.2%	6.7%
	17.4%	63.5%	40.6%

Table 3. 2013 overfished species utilization rates for California Risk Pool, rest of the non-whiting fleet, and the total IFQ fleet (risk pool removed).

Using eCatch, the California Risk Pool was able to map the location and amount of overfished species that were caught by risk pool members during the 2013 fishing season. Areas of high catch intensity can indicate higher potential risk of catching overfished species over time (see

Figure 6), and this information is used by the risk pool to adaptively manage the regional fishing plans and update spatial restrictions or rules throughout the year. Data collected in eCatch also makes it possible to evaluate overfished species harvests on a trip by trip or set by set basis. In 2013, the California Risk Pool members harvested overfished species in approximately 28% of all sets, which provides a measure of the risk of encounter.

Figure 6. Maps created using eCatch data depicting the intensity of overfished species encounters for all California Risk Pool vessels during 2011 (left), 2012 (middle), and 2013 (right). Intensity is calculated as frequency of fishing sets where overfished species were harvested. [Note, 2011 and 2012 include widow rockfish encounters.]

The California Risk Pool provides its members with insurance – a secure and reliable source of overfished species quota – so that they may fish and maximize their harvest of target species. In 2013, the California Risk Pool managers filled approximately 150 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 Risk Pool from 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.

Midway through the year, the California Risk Pool conducted an assessment of overfished species quota pound holdings and utilization rates to determine the need to retransfer quota pounds back to contributing members so they may be made available on the open market. Additionally, by December 31, 2013, all remaining quota pounds were assessed and retransferred pro-rata back to the original contributing members of the California Risk Pool.

Target Species

Since the California Risk Pool 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 California Risk Pool 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. In 2013, the California Risk Pool members collectively held allocations for 6,722,334 pounds of target species. Allocations include individual allocations plus any additional quota pounds transferred into risk pool member accounts throughout the year. Target species are considered all species except for overfished species and Pacific halibut IBQ. In 2013, California Risk Pool members caught a total of 3,408,452 pounds of target species, or 50% of their collective holdings.

In 2013, the total catch of target species for the entire IFQ fleet was 259,031,890 pounds, or 76% 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 43,888,614 pounds or 41% of the non-whiting target species allocation.[2]

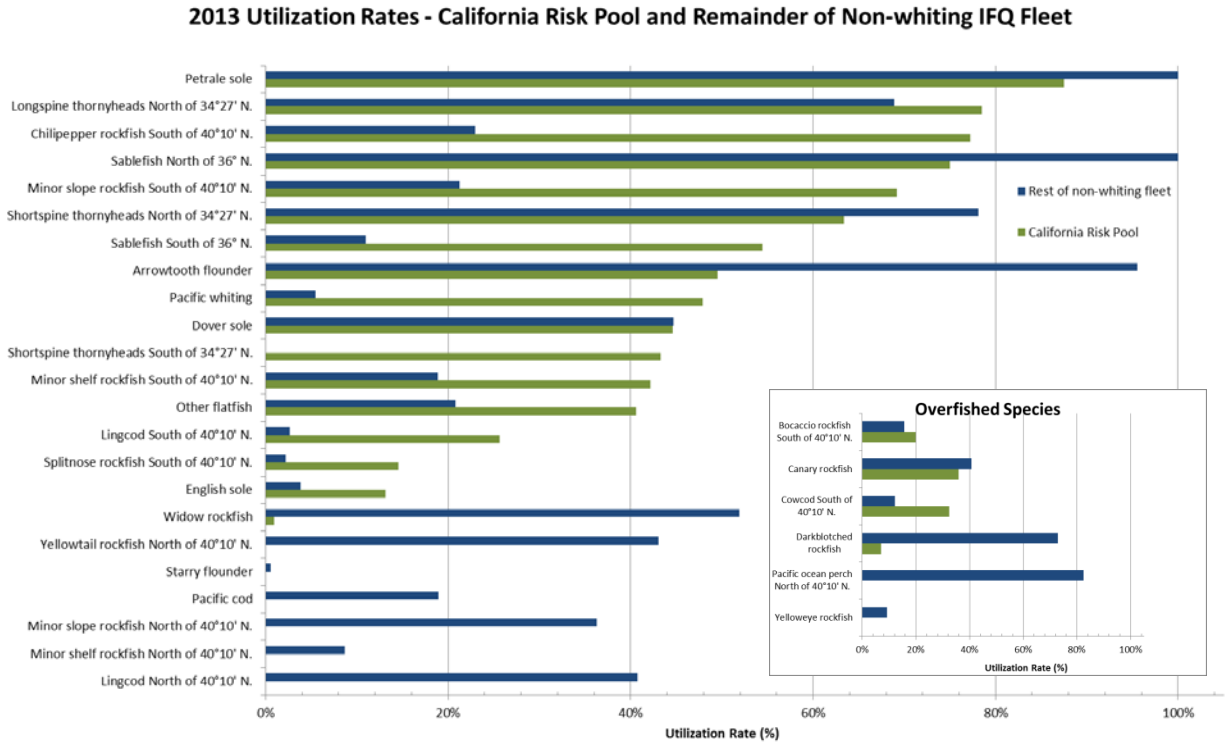

Figure 7. Comparison of target species and overfished species utilization rates for the California Risk Pool and the rest of the *non-whiting* IFQ groundfish fleet in 2013.

A bycatch ratio is an additional metric that can be used to evaluate the performance of the California Risk Pool and the groundfish fleet. Using information available on total catch of overfished species and total catch of target species, 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

[2] Non-whiting data acquired through personal communication with Sarah Towne, NMFS, May 16, 2014.

harvesting target species. The California Risk Pool's bycatch ratio was lower than the rest of the non-whiting IFQ fleet for 2011-2013 (Table 5).

Year	California Risk Pool	Non-whiting IFQ Fleet (risk pool removed)
2011	0.20%	0.83%
2012	0.43%	0.81%
2013	0.56%	0.91%
Averages	0.40%	0.85%

Table 5. Bycatch ratios for the California Risk Pool and the rest of the non-whiting IFQ fleet.

Economic and Social Metrics

Estimated Total Ex-vessel Value

Ex-vessel value is a commonly used value that represents 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 Risk Pool members in 2013 was approximately $2.8 million. The estimated total ex-vessel value was calculated from California Risk Pool members' fish tickets (landing receipts) for each port where landings occurred in 2013. For landings where fish tickets (landing receipts) were not available, PacFIN (http://pacfin.psmfc.org/index.php) data were used to provide the average price per pound for a specific port. It should be noted that more than half of the members of the California Risk Pool participate in other West Coast fisheries for a portion of each year. A handful of species, including sablefish, thornyheads, soles, and chilipepper rockfish, contributed the most to the estimated ex-vessel value for target species caught by the California Risk Pool (Figure 8).

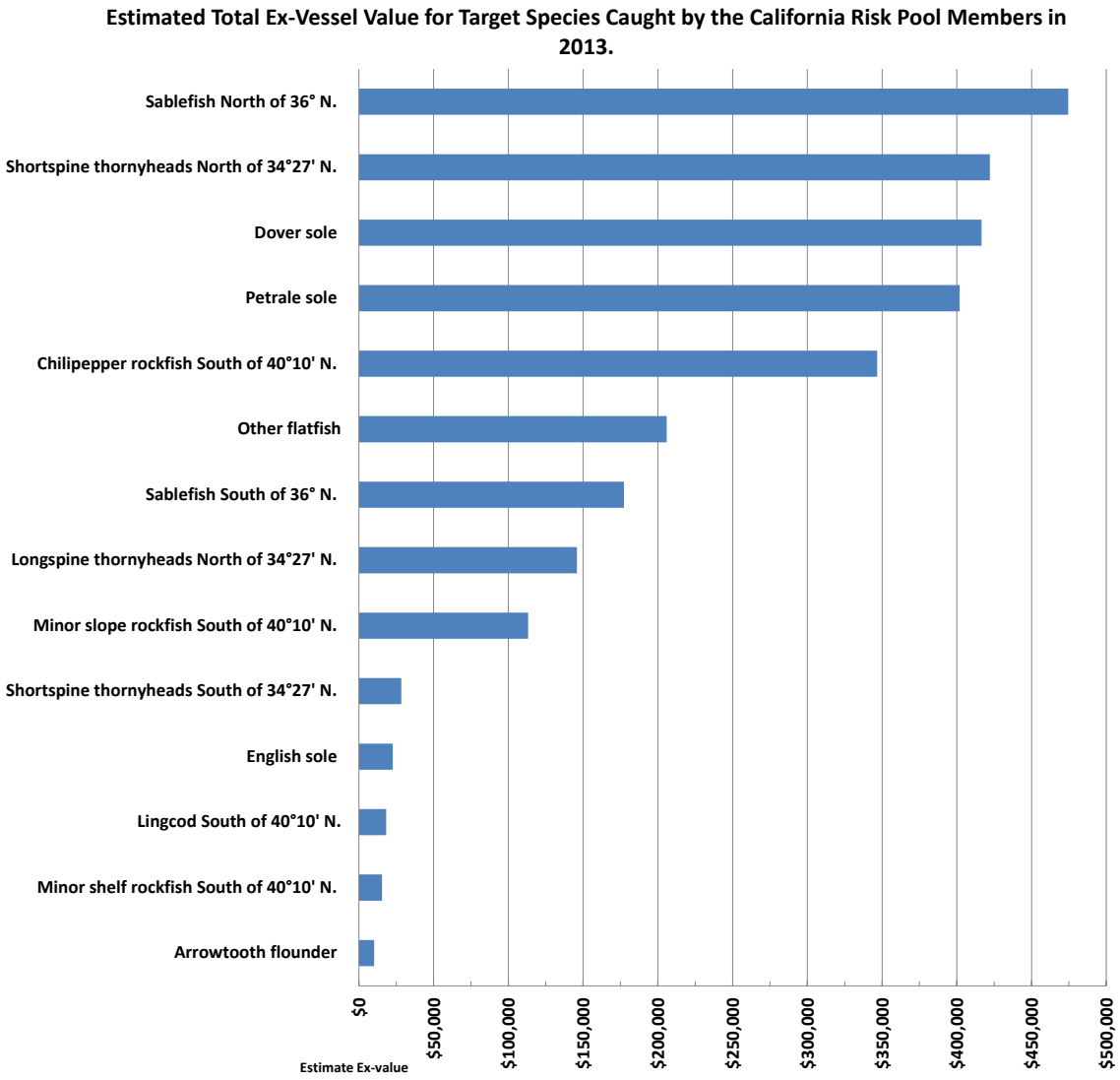

Figure 8. Estimated total ex-vessel value (dollars) of groundfish, by species, landed by the California Risk Pool members in 2013.

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 fishermen. 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 are various costs that may or may not pertain to every fishing operation. Each one of these costs incrementally reduces the profitability of each operation and increasing costs can result in the failure of the fishing operation. Operational costs (including crew shares) comprised the majority of costs incurred, followed by fixed costs, then management costs for the California Risk Pool members (Table 6).

	Percent of Gross Revenue
Operational Costs	
Captain/Crew Shares	46.0%
Fuel	12.5%
Ice	1.6%
QP Leasing	8.8%
Fixed Costs	
Vessel Insurance	4.9%
Vessel Maintenance/Repairs (i.e. haul-out, new rigging, etc.)	5.5%
Vessel Equipment (i.e. hauler, reel, electronics, etc.)	3.1%
Licenses/Permits (includes renewals)	0.6%
Fishing Supplies (i.e. nets, webbing, longline gear, hooks, etc.)	4.0%
Professional Services (i.e. lawyer, accountant, bookkeeper, etc.)	1.9%
Slip/Mooring Fees	0.8%
Landings Assessments and Membership Dues	1.3%
IFQ Groundfish Management Costs	
Trawl Buyback Fees	5.0%
Observers	3.8%
First Receivers/Catch Monitors	0.3%
	100%

Table 6. Average costs of participating in the West Coast IFQ Groundfish Fishery for California Risk Pool members presented as percentage (%) of gross gevenue.

Compliance and Monitoring

The 2013 annual risk pool agreement established the protocol for dealing with non-compliance events or possible violation by one of the associations' vessels of their respective fishing plan regional rules. As directed by the California Risk Pool Advisory Committee, the Risk Pool 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 California Risk Pool used eCatch and the Advisory Committee reserved the right to require subsequent audits of Vessel Monitoring Systems (VMS) data from suspected or violating vessels.

During 2013 there were no incidences of non-compliance or suspected violations and thus no VMS audits were conducted.

Collaborative Research

The California Risk Pool has partnered with TNC and others in a collaborative fisheries research project that will gather new data on the distribution of rebuilding species, their demographic patterns, and habitat associations that will provide key information to share with fishermen,

managers and stock assessment scientists. In 2012 TNC and multiple partners[3] initiated a study to investigate the distribution of overfished species within the Rockfish Conservation Areas (RCAs) off the West Coast. The RCAs are depth-based closures whose primary goal is to help rebuild overfished species populations and reduce bycatch. However, fishing opportunities, and the economic and social benefits associated with them, are constrained by the RCAs in the groundfish fishery since the RCAs cover a large percentage of continental shelf and upper slope habitats. Due to limitations of trawl survey methods to assess populations in rocky habitats, there is limited understanding of the spatial distribution of overfished species. Landings of many target species (e.g. lingcod, yellowtail rockfish, and chilipepper) are significantly lower than quota allocations due to efforts by fishermen to avoid encountering overfished species. The RCAs have been in place since 2002, yet to date there has been little research on the finer-scale distribution patterns of overfished species that could help fishermen target healthy populations while avoiding depleted ones.

The California Risk Pool is a key partner in a collaborative research study of the distribution of overfished species in the RCAs. In an effort to reach a better understanding of the demographics and distributional patterns of these overfished species within the RCA, the NOAA Biogeographic team developed coast wide predictive distribution maps for seven overfished species and eight target species. To groundtruth those predictive maps, a research team, which includes fishermen, is conducting surveys in the central coast of California (between Point Conception and Half Moon Bay) using a stereo drop video camera, as well as directed fishing surveys using standardized hook and line (hydraulic snapper reel gear) through an Exempted Fishing Permit (EFP). Additional fisheries dependent and independent data sets along with local fishermen knowledge are also being used to help gain a better understanding of overfished species distribution and as a means to compare with the annual NOAA trawl survey data. The California Risk Pool dedicated overfished species quota pounds to the research effort in 2013 (refer to Table 7).

In 2012, the first year of the study, efforts focused on designing, building, and testing a stereo drop video camera system This Video Lander system, which can be deployed to depths of 1,000 feet, is easier and cheaper to operate from than a remotely operated vehicle and collects data on size, density, and habitat associations of demersal fish. It has been used very successfully to film and size over 20 species of fish, including yelloweye rockfish, cowcod, canary rockfish, and many others. .

In 2013, under an Exempted Fishing Permit, visual and directed fishing surveys were conducted in over 20 study plots in Central California. The visual surveys were designed to quantitatively assess target and overfished species in rocky habitats, while the directed fishing effort aimed to

[3] Environmental Defense Fund (EDF), Moss Landing Marine Laboratories (MLML) / California Sea Grant, University of California at Santa Barbara, the National Marine Fisheries Service/Southwest Fisheries Science Center (NMFS/SWFSC Santa Cruz lab), the California Department of Fish and Wildlife, Marine Applied Research and Exploration (MARE), and local fishermen.

demonstrate whether hook and line fishing could be conducted with minimal bycatch in the same areas. The California Risk Pool provided quota of overfished species to support the research (Table 7).

Overfished Species	Dedicated Pounds	Total Catch in 2013
Bocaccio rockfish South of 40°10' N.	1,000	420
Canary rockfish	500	19
Cowcod South of 40°10' N.	200	0
Darkblotched rockfish	500	0
Yelloweye rockfish	34	0

Table 7. Overfished species quota pounds dedicated to the Rockfish Conservation Area Exempted Fishing Permit Study and total catch in 2013.

The research will continue in 2014 and data will be analyzed through 2015 to produce a final report for the Pacific Fisheries Management Council. This research will provide new data on the abundance and distribution of stocks within the RCAs that may help support bycatch avoidance plans and inform stock assessments and spatial management decisions.