

Pacific Groundfish

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Abstract

In 2011, the Pacific Fisheries Management Council (the Council) established a catch-share program for the Pacific Groundfish Fishery which spans the entire West Coast of the U.S. Catch-share programs typically divide the total allowed a quota of fish among fishermen, with each quota owner getting a certain percentage of the total. At the time of implementation, the Council established an Adaptive Management Program (AMP) that reserves ten percent of the quota to address any potential issues that arise from the implementation of a catch-share system. The five potential issues that were identified by the Council at the start of the program were barriers to new entrants, community stability, processor stability, conservation, and any other unintended consequences of the catch-share. During the first few years of the catch-share program, the AMP quota was passed through to the fishermen to avoid any disruption to fishermen's livelihoods. After the first few years, the Council could not determine any pertinent issues or ways to address those issues with the ten percent quota, so the pass-through to fishermen continued. Now, with an upcoming five year review of the program, the Council will be deciding whether to permanently pass the ten percent AMP quota through to fishermen, effectively removing the AMP from the catch-share program, or to determine some more permanent plan for it. For our capstone project over the next year, we will be evaluating policy options for the AMP quota, determining if there are alternative uses for it that could address any issues within the fishery, or if it should be permanently allocated to fishermen. Our client, Frank Lockhart, Program Director at the National Marine Fisheries Service (NMFS) West Coast Region, has identified three specific issues that he feels are the most important to consider in our evaluation: 1) barriers to new entrants, 2) community stability, and 3) processor stability.

1. INTRODUCTION

1.1 Description of the fishery

This case study examines the U.S. West Coast Pacific Groundfish Fishery. The fishery spans along the west coast, from California to Washington, including Oregon. The fishing grounds are located in the open ocean, offshore areas within national jurisdiction. There are 90 plus species being caught in the fishery, including pacific cod, pacific whiting (hake), rockfish, and sole. The Shorebased IFQ Program allocated quota to permit owners for 30 different groundfish species and rockfish complexes, and individual bycatch quota for Pacific halibut, based on catch history (Guldin et al., 2017).

The areas are, from south to north: Conception - Southern boundary of EEZ to 36°00' N latitude Monterey - 36°00' N latitude to 40°30' N latitude Eureka - 40°30' N latitude to 43°00' N latitude Columbia - 43°00' N latitude to 47°30' N latitude Vancouver - 47°30' N latitude to northern boundary of the EEZ (Figure 1). The groundfish fishery has had a limited entry (LE) system based on license limitation since 1994. Under the LE system, vessels were given limited entry permits (LEPs) based on their catch history. LEPs are endorsed for use with trawl and/or fixed gears. There is a smaller portion of the commercial groundfish fishery that is not permitted and is the open-access fishery. The gears in the open-access fishery include longline, vertical hook and line, troll, pot, setnet, trammel net, shrimp and prawn trawl. Open-access trawl gear cannot be used to target groundfish but may land incidental groundfish as bycatch. Open-access trap/pot and longline vessels may target groundfish under certain restrictions. The IFQ program was implemented for the limited entry trawl sector.

The sectors of the fishery are further described as seen on the NOAA website, below:

- Limited entry trawl. This sector is comprised of fishermen with limited entry permits endorsed for trawl gear, including bottom and pelagic trawls. The limited entry program limits the number of vessels allowed to participate in a fishery. This sector is rationalized in a system of individual fishing quotas and harvest cooperatives. [Visit our Groundfish Amendment 20 for more information.](#)
- Limited entry fixed gear. This sector is comprised of fishermen with limited entry permits endorsed for line or pot/trap gears. Those limited entry fixed gear permits with a sablefish endorsement are able to target sablefish during the primary season (April through October) to catch individual vessel limits (termed tier limits) of sablefish. While sablefish is the primary target species in this sector, limited entry fixed gear fishers also target other groundfish species such as rockfish.
- Open access. This sector of the groundfish fishery is comprised of fishers targeting groundfish without limited entry permits, and fishers who participate in non-groundfish fisheries that incidentally catch groundfish. Trawl gear may not be used in the directed groundfish open access fishery. Trawl gears for target species such as pink shrimp, California halibut, ridgeback prawns, and sea cucumbers are exempted from this rule.
- Recreational. This sector includes anglers targeting groundfish species and others who target non-groundfish species but who incidentally take groundfish under recreational gears and regulations. The West Coast recreational fisheries are managed by the coastal states with management coordinated in the Council process.
- Tribal. This sector is made up of tribal commercial fishers who have a federally recognized treaty right to fish for federally managed groundfish in their “usual and accustomed” fishing areas. These tribes, all located in Washington state, include the Quinault, Hoh, Quileute, and Makah. Formal allocations to these tribes exist for sablefish, and Pacific whiting. Other groundfish species allocations for this sector are decided by annual Council action.

There is evidence that participants in the catch share program are taking advantage of increases in flexibility. Harvesters and processors have altered their participation in non-catch share fisheries, days at sea, the timing of landings, the number of fishing trips, the location of landings, participation in co-ops and risk pools, diversification, gear switching, carryover of quota and exiting the fishery.

When the Council implemented the IFQ program, it included a provision that allows participants with LEPS to fish their quota pounds with trawl or any other legal groundfish gear, referred to as “gear switching.” Most vessels that have taken advantage of this provision are those utilizing fixed gear prior to implementation and that typically target sablefish. Gear-switching was intended to allow the flexibility for each vessel to choose the most profitable fishing strategy, as well as for environmental reasons, because fixed gear was thought to have fewer habitat impacts. Since implementation, an average of 16 vessels have taken advantage of the gear-switching provision each year, and an average of six vessels switched from using trawl to using fixed gear for part of the year. An additional average of 10 vessels from 2011 to 2015 purchased or leased trawl permits and quota to fish with fixed gear in the IFQ program.

Since there was not 100 percent observer coverage prior to IFQ implementation, NFMS does not have exact data on total number of trips from 2005 to 2010, but have approximate data using fish ticket data. The number of trips decreased post implementation, and average delivery size (pounds of IFQ groundfish) and trip length (hours) increased. Delivery size has increased by about 10 000 pounds on average since IFQ implementation.

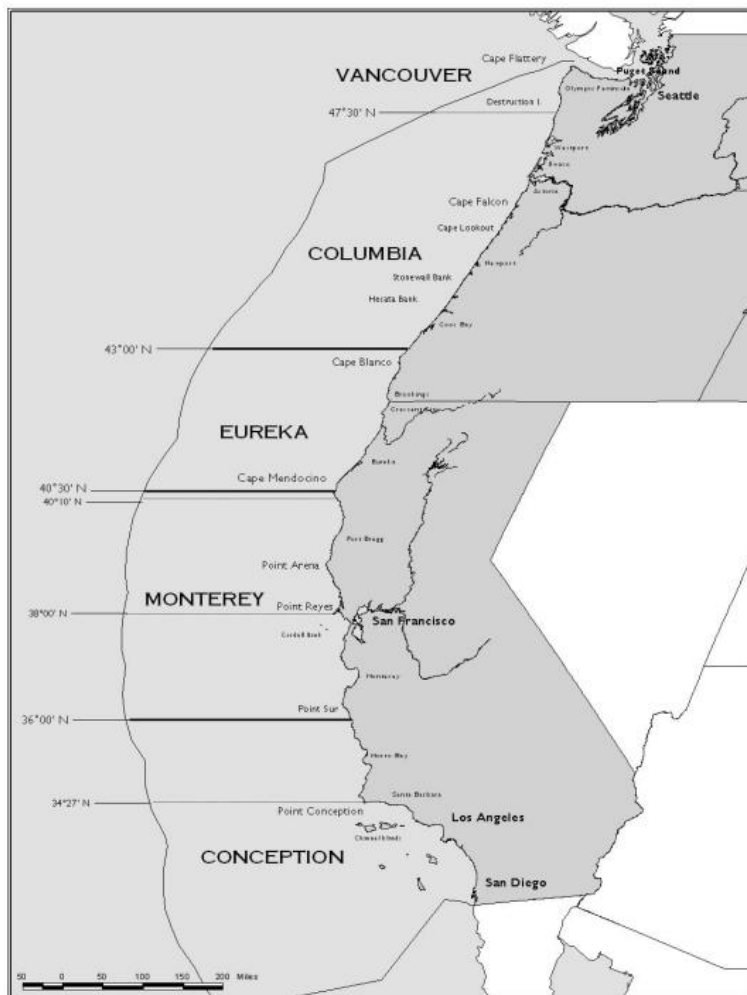


Figure 1. Extent of Pacific Groundfish Fishery.

Source: National Marine Fisheries Service 2018.

1.2 Economic contribution and social implications of the fishing activity

The number of shore based processing companies purchasing Pacific whiting decreased from an average of 12 before IFQ implementation to an average of eight after IFQ implementation. The number of shore based processing companies purchasing non-whiting species remained relatively constant.

To restrict consolidation in the shoreside catch share program and mothership co-ops, the Council limited the percentage of quota share (the long-term harvest privilege) that entities in those sectors may control. Additionally, the amount of annually issued quota pounds that a shoreside vessel may use and hold, the annual amounts that a mothership catcher vessel may deliver, and the annual amounts that a mothership may process were limited. Most vessel account and quota share owners do not currently appear constrained by these limits.

Most crew on catcher vessels are paid a percentage of the total revenue earned by the vessel after certain expenses are deducted. The crewmembers in the groundfish fishery have been in the fishery for an

average of 20 years, and they earn an average of 98 percent of their annual income from fishing (in all fisheries, not just the groundfish trawl fishery) (Russell et al. 2014).

Catcher vessels in the catch share program earn only about 50 percent of their annual revenue from the catch share fishery (data available on FISHEyE). They participate in a wide variety of other activities, meaning that the catch share program and other fisheries are interdependent.

2. MANAGEMENT OF THE FISHERY AND RIGHTS-BASED APPROACH

2.1 Management of the fishery

The fishery is managed by the National Oceanic and Atmospheric Administration (NOAA). The Pacific Fishery Management Council (Council) oversees the management of the fishery. The Groundfish Management Team (GMT) provides objective scientific information to the Council, contributing to the development of fisheries management plans. There is also a Groundfish Advisory Subpanel (GAP), which is made up of three fixed gear (at-large) commercial fishers, one conservation representative, two processors, one at-sea processor, three sport fishers, two open access fishers, three trawlers, four charter boat operators (one each for Washington and Oregon, and two for California), and one tribal fisher. The general purpose of the GAP is to advise the Council on management decisions. Input from all the groups are considered, but the Council makes the final management decisions.

Below are general processes used to regulate groundfish harvests found on the NMFS website. Since these processes can take up to six months, they may be streamlined for some decisions.

- **The process for controversial or complex issues** takes at least three Council meetings. Proposals for management measures may come from the public, from participating management agencies, from advisory groups, or from Council members. If the Council wants to pursue these proposals, it asks for other possible solutions to the problem being addressed and then directs the Groundfish Management Team (GMT), the National Marine Fisheries Service (NMFS), and/or Council staff to prepare an analysis. At the next meeting when such a proposal is on the agenda, the Council reviews the analysis and chooses a range of alternatives and possibly a preliminary preferred alternative. The analysis is then made available for public review, and the Council makes a final decision at the next meeting the item is scheduled.
- **The biennial management process** was implemented in 2003 through [Amendment 17](#) to the groundfish FMP and is detailed in [Council Operating Procedure 9](#). Under the biennial cycle, eligible management measures are implemented for a two-year period and adjusted through the routine in season actions. Those management measures not eligible for implementation within the biennium can be considered for future action by the Council in June of the even years (e.g., June 2014). Separate harvest specifications (overfishing limits [OFLs], acceptable biological catches [ABCs] and annual catch limits [ACLs]) are identified for each year in the two-year period. This cycle provides more time for the Council and NMFS to work on other critical groundfish issues and more time for public comment. At least a three-meeting process (typically September, November, April, and June) is used to decide biennial harvest specifications and management measures:
 - September (in odd years): the Council adopts final preferred OFLs and range of ABCs where possible and provides initial fishery management guidance, including a range of new management measures for preliminary analysis
 - November (in odd years): the Council decides on a preliminary range of harvest levels, including ACLs, for public review and range of management measures for more detailed analysis
 - April (in even years): the Council decides final harvest levels, and decides preliminary management measures for public review

- June (in even years): the Council decides final management measures

2.2 Rights-based approach: allocation and characteristics

The fishery is managed through an Adaptive Management Program (AMP), which includes an Individual Fishing Quota (IFQ) program for the shore based trawl fleet, and cooperative programs for the at-sea mothership and catcher/processor trawl fleets. Quota was initially allocated based on historical catch. Ten percent of the quota was reserved at the start of the AMP to address any potential issues that could arise from the implementation of a quota share system. The five main issues identified by the Council included barriers to new entrants, community stability, processor stability, conservation, and any other unintended consequences of the catch-share. That ten percent has been passed through to the fishers, as the Council could not determine a way to use the reserved quota to address the aforementioned issues. The Council now must decide whether to permanently pass through the quota to the fishermen or decide on some other use.

The Makah, Quileute, Hoh, and Quinault Tribes off the Washington coast participate in tribal commercial, ceremonial and subsistence fisheries for groundfish according to their treaty rights. Participants in the tribal commercial fishery use gear similar to that used in non-tribal commercial fisheries operating off Washington. Groundfish caught in the tribal commercial fishery is typically sold through the same markets as non-tribal commercial groundfish catch. Management of tribal fisheries is conducted by the individual tribes.

3. CONTRIBUTION OF THE RIGHTS-BASED APPROACH TO ACHIEVING SUSTAINABILITY

3.1 Sustainable use of the resources

One major factor affecting the measurement of changes since the baseline period is the high natural variability in Pacific whiting biomass and its corresponding total allowable catch (TAC). During the Economic Data Collection (EDC) baseline period (2009-2010) and the Pacific Coast Groundfish Fishery Social Survey (PCGFSS) baseline (2010), the average TAC for whiting was about 70 percent of the 1995 to 2015 average. In contrast, average TAC since implementation (2011 to 2015) was about 120 percent of the 1995 to 2015 average, about a two-thirds increase from the baseline. This increase, coupled with the importance of whiting to the overall fishery (on average, 50 percent of all ex-vessel revenue), has a major effect on nearly all analyses.

One of the primary intentions of Amendment 20 was to reduce bycatch and discard mortality for all species. The vessel-level accountability provided by catch shares has resulted in significant reductions in the catch and discards of overfished species, exceeding Council goals for overfished species. When Amendment 20 was implemented, only lingcod and Pacific whiting had been rebuilt.

Discards of six of the seven historically overfished rockfish species dropped at least 90 percent after implementation of an Amendment to the catch share program. For each, bottom trawl gear accounted for 90 percent or more of the discards prior to implementation. Total fishing mortality decreased, likely due to the decrease in discards. Widow rockfish was declared rebuilt in 2012, although the Council elected to continue precautionary low harvest levels through 2016. Discards of widow rockfish did not decline as drastically, as widow rockfish are more pelagic than the other overfished rockfish species and are commonly caught in the midwater trawl and directed whiting fishery.

3.2 Economic viability of the fishery

The Final Environmental Impact Statement (FEIS) predicted that elements of the catch share program might contribute to improvements in product quality and prices. The average value of at-sea whiting

production per metric ton (mt) declined from the 2009–2010 period to the 2011 to 2015 period by about 8 percent in the catcher-processor sector. Production value per pound in the Pacific whiting shoreside sector follows this trend. Seafood certification and labeling programs help inform consumers. The West Coast groundfish limited entry trawl fishery was certified as a sustainable fishery by the Marine Stewardship Council in 2014 (the Pacific whiting fishery was certified in 2010). The Monterey Bay Aquarium’s Seafood Watch Program promoted several major species from “avoid” to either “best choices” or “good alternatives.” Both designating entities indicated that their findings had been based on management changes in the groundfish fisheries, including the catch share program and its stringent monitoring requirements. These designations may lead to increased consumer awareness and preference for West Coast groundfish in the future.

3.3 Social equality

The catch share program created a new type of fishery participant: a quota share owners, who have the option to lease their annual quota pound allocations to other participants. This type of fishery participant earns income from the fishery while avoiding some of the risks and costs of direct participation. Some operators who depend on quota leasing have stated the conditions are destabilizing for their employment. In an IFQ program, as consolidation increases, the vessels that remain in the fishery will likely spend a larger portion of their revenue on quota share purchases and/or leases of quota pounds from quota share owners who have exited or who fish less in the catch share program. At the start of 2014, NMFS lifted the moratorium on quota share ownership transfers.

Since the 1990s, the number of groundfish (whiting and non-whiting) buyers have declined on the West Coast. Overall, the greatest decline in the number of buyers occurred in California ports. Historically lower-volume port areas continued to experience declines, and four low-volume port areas (Bodega Bay, north Washington Coast, other Washington ports, and Tillamook) that had historically purchased limited entry trawl groundfish no longer did so in the catch share period. Notable increases in non-whiting ex-vessel revenue were observed in the Morro Bay and Monterey areas between 2011 and 2015, some of which is driven by vessels operating under the gear-switching provision to harvest southern sablefish.

4. MAIN CHALLENGES AND WAY FORWARD

4.1 Challenges for the fishery

One issue that has recently been raised in the Council and in the community hearings is a spatial conflict between catch share harvesters (catch share gear switching vessels targeting sablefish using fixed gear fishing south of the 36° N. latitude line) and vessels fishing in the open access and daily trip limit sablefish fisheries. The conflict is, in a sense, created by the existence of the 36° line that separates northern and southern trawl sablefish quota. Northern sablefish quota is nearly fully utilized, while the southern sablefish quota has been between 14 percent (2013) and 50 percent (2011) utilized. This means it is likely that a vessel permitted in the catch share fishery and willing to fish south of 36° N. latitude can relatively easily acquire quota to do so.

Another issue is the question of what to do with the AMP quota. Although ten percent was reserved for public use, it has not yet been utilized. With the recent 5 year review, fishers inside and outside of the fishery are eager to find out the plan for this quota.

4.2 Improving fishery sustainability in the future

The ecological sustainability of the fishery has improved with the catch share implementation. In order to improve management of the fishery, the Council must decide what to do with the reserved quota for public use. An analysis of the main problems in the fishery should be conducted to see where the quota

can be most effectively used. Doing so has the potential to increase economic viability and social equitability of the fishery.

REFERENCES

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