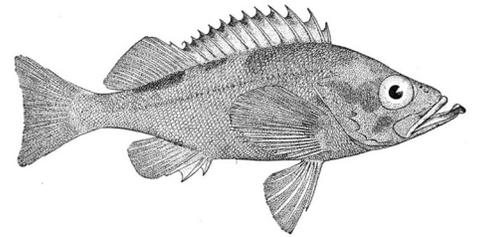


CATCH SHARES IN ACTION

United States Bering Sea and Aleutian Islands Non-Pollock (Amendment 80) Cooperative Program



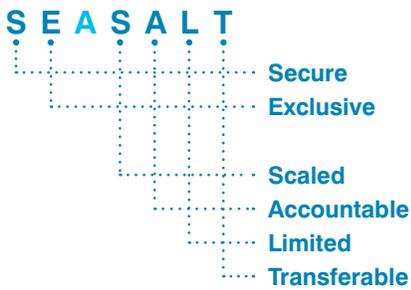
AUTHORS

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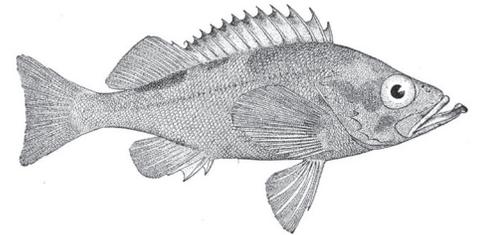
McIlwain, K. and Hill, J. (2013). Catch Shares in Action: United States Bering Sea and Aleutian Islands Non-Pollock (Amendment 80) Cooperative Program. Environmental Defense Fund.





CATCH SHARES IN ACTION

United States Bering Sea and Aleutian Islands Non-Pollock (Amendment 80) Cooperative Program



SPECIAL DESIGN FEATURES



MULTI-SPECIES, GROUP-ALLOCATED,
QUOTA-BASED, TRANSFERABLE

The Bering Sea and Aleutian Islands (BSAI) Non-Pollock (Amendment 80) Cooperative Program was one of the first catch share programs designed and implemented to manage fishing interactions with a non-target species. The goals of the program were largely focused on reducing bycatch to enable the fleet to achieve higher retention of groundfish resources. In this program, participants were incentivized to form Cooperatives to receive exclusive access privileges. Key design elements for this program include eligibility requirements, government-approved Cooperative formation, concentration caps, trading restrictions and sideboards, which are catch limits that restrict the transfer of excess fishing capacity to other fisheries not managed under catch shares.

The BSAI fishing grounds are among the most productive in the world, and the groundfish fishery is important commercially. Over 90% of the groundfish catch is harvested by pelagic and bottom trawl gear (NPMFC, 2010). In 2008, managers implemented a Cooperative catch share program for the 28 non-pollock trawl vessels, known as the Amendment 80 fleet. This sector targets six BSAI groundfish species: yellowfin sole (*Pleuronectes asper*), rock sole (*Lepidopsetta bilineata*), flathead sole (*Hippoglossoides elassodon*), Atka mackerel (*Pleurogrammus monopterygius*), Pacific Ocean perch (*Sebastes alutus*) and Pacific cod (*Gadus macrocephalus*). The National Marine Fishery Service (NMFS) manages this fishery with consultation from the North Pacific Fishery Management Council (NPFMC). In 2010, program Cooperatives landed approximately 181,000 metric tons of groundfish worth U.S. \$278.2 million (NPFMC, 2012).

SYNOPSIS

Road to a Catch Share

The BSAI groundfish fishery developed over the last century, with a significant degree of foreign trawl fishing driving its early development. Between 1976 and 1990, foreign fleets were barred from the exclusive economic zone (EEZ) in all U.S. fisheries, which enabled domestic participation to grow significantly. To limit overcapacity, managers implemented a limited license program (LLP) in 2000. However, while the LLP capped the number of participants, it did not limit the amount of fishing effort, and problems began to escalate within the fishery.

High rates of discards and premature season closures became characteristic of the non-pollock trawl fishery in the years leading up to catch share implementation. As fishermen raced to maximize their catch, discard rates increased, reaching up to 30% of the catch limit (Fina, 2011; NMFS, 2011). Early season closures became a regular occurrence as trawlers reached the limits of Prohibited Species Catch (PSC) of halibut, red king crab, tanner crab and snow crab. Fleets lost significant economic opportunity under this system as fisheries closed before they could harvest all of their target species (J. Anderson and L. Swanson, personal communication, 2011).

Managers recognized the need to address the prevailing incentives that were failing the fishery. In 2008, the NPFMC developed the BSAI Non-Pollock Cooperative Program, also known as Amendment 80. The program is a limited access privilege program that allocates Quota Shares for six groundfish species to eligible trawl catcher-processor vessels. Operators of those vessels are allowed to form harvesting Cooperatives. The program focuses on creating economic incentives to reduce discards and bycatch to minimize the negative impacts on adjacent fisheries.

Performance

Five years since implementation, the BSAI Non-Pollock Cooperative Program is considered a highly successful catch share program (Anderson and Concepcion, 2010). The program has met its goals of increasing groundfish retention and reducing bycatch of halibut, enabling fishermen to harvest a more complete share of target species (BUC, 2009). Fishermen report that the catch share program allows them to slow the pace of their fishing operations and to selectively target fishing grounds. The Cooperative structure has also led to social innovations among members to improve groundfish retention (Hiatt et al., 2010; Fina, 2011).

STEP 1 IN ACTION

Define Program Goals

The BSAI Non-Pollock Cooperative Program was implemented under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). As such, the program was designed to meet the legal requirements regarding stock sustainability and ecological, economic and social goals. Biological goals prescribed in the National Standards (NS) One, Three and Nine of the MSA (16 U.S.C. 1851) are:

- NS1 - Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.
- NS3 - To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.
- NS9 - Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

During the catch share program's development, managers and fishermen identified a variety of goals to improve the biological and economic conditions of the fishery to accompany the legal requirements under the MSA. The goals identified for the program are (Federal Register, 2007; NPMFC, 2010):

- Reduce bycatch and create individual accountability for bycatch reduction
- Increase economic returns by enhancing operational efficiency and enabling more complete harvests of target species
- Allocate resources in an equitable manner that is based on present and historical harvesting patterns
- Minimize negative impacts on participants of adjacent fisheries that are not managed by a catch share

STEP 2 IN ACTION

Define and Quantify the Available Resource

Defining and quantifying the available resource was largely driven by pre-existing management structures, as laid out by the BSAI Fishery Management Plan (NPFMC, 2010). The BSAI Non-Pollock Cooperative Program allocates privileges for six non-pollock groundfish species among trawl fishery sectors. They are: yellowfin sole (*Pleuronectes asper*), rock sole (*Lepidopsetta bilineata*), flathead sole (*Hippoglossoides elassodon*), Atka mackerel (*Pleurogrammus monopterygius*), Pacific Ocean perch (*Sebastes alutus*) and Pacific cod (*Gadus macrocephalus*). Flatfish (yellowfin sole, rock sole and flathead sole) exist throughout the Bering Sea shelf and share similar habitat. Atka mackerel and Pacific Ocean perch are mostly targeted by vessels that operate in the Aleutian Islands, where these species are in higher abundance. Pacific cod is typically caught throughout the entire BSAI range (NPFMC, 2010). The BSAI is divided into two subareas, the Bering Sea and the Aleutian Islands. Annual

Stock Assessment and Fishery Evaluation (SAFE) reports are used to determine the annual catch limits for these Amendment 80 species.

The non-pollock fleet operates within fishing grounds that overlap with adjacent fisheries, resulting in interactions with other fleets and non-target species, and leading to high rates of bycatch and discards. To minimize participation and impact on adjacent fisheries' stocks, the catch share program imposes sideboard and prohibited species limits. Sideboard limits were established for Gulf of Alaska (GOA) pollock, Pacific cod, Pacific Ocean perch, northern rockfish and pelagic shelf rockfish (e.g., dusky rockfish). Sideboards seek to limit participation in GOA to historical levels in order to prevent fishermen from increasing their participation in other fisheries as a result of increased efficiency in the Amendment 80 fleet (Federal Register, 2007). Halibut (*Hippoglossus stenolepis*), red king crab (*Paralithodes camtschatica*), tanner crab (*Chinocetes bairdi*) and snow crab (*C. opilio*) are prohibited species, which means they must be discarded by participants.

To address groundfish discards, managers implemented a Groundfish Retention Standard (GRS) that required all vessels retain a percentage of their groundfish bycatch. The retention standard was set at 65% at the start of the program and increased to 85% in 2011 (Federal Register, 2007). However, the GRS requirement was removed in 2013 as it was found to be unmanageable due to monitoring costs and significantly higher-than-predicted compliance costs. In exchange, Cooperatives are now responsible to hire a third-party auditor to determine groundfish retention for inclusion in the required annual reports (Federal Register, 2013).

STEP 3 IN ACTION

Define Eligible Participants

In order to meet the program's goals of reducing bycatch and increasing economic efficiency, the program allocates exclusive privileges to groups. Trawl catcher-processor vessel owners who hold an LLP license can voluntarily form a Cooperative, which is then eligible to receive quota. At program implementation, 28 permits were eligible for allocation (Federal Register, 2007).¹

During program design, strict regulations were implemented for the formation of eligible Cooperatives. Cooperatives could form only with participation from at least nine out of the 28 eligible permits. Since some fishing corporations hold multiple permits, Cooperatives were also required to be comprised of a minimum of three separate quota-share-holding corporations (Federal Register, 2011). Permit holders choosing not to join a Cooperative were not allocated secure shares and were allowed to fish in a competitive limited access fishery. Starting in 2011, operators with multiple vessels could not have vessels in both the Cooperative fishery and a limited access fishery (Federal Register, 2011). Cooperative membership is established prior to the fishing season each year and members cannot move between Cooperatives within a fishing season, but may do so during the off-season.

During the first three years of the program, the Alaska Seafood Cooperative was the only Cooperative to form. It began with participation from 17 member vessels owned by five corporations. The remaining eight permits

¹ Remote Western Alaskan communities are eligible to receive Amendment 80 species allocations under the Community Development Quota (CDQ) program, established in 1998 (Hiatt et al., 2010). To be considered eligible, communities must not have previously developed commercial-scale harvesting or processing capacity. These communities are able to participate in the fishery by entering into a part-ownership relationship with one or more of the BSAI companies holding Amendment 80 permits, for which they receive royalty payments on their apportioned share (NPMFC, 2010).

were assigned to the Amendment 80 limited access fishery, as there was an insufficient number to form a second Cooperative. Three years after program implementation, another amendment was approved that reduced Cooperative requirements to seven eligible permits holders and two separate quota sharing entities. The amendment also banned corporations from splitting permits between the Cooperative and limited access fisheries. This change drove a majority of vessels to join Cooperatives. The newly formed Cooperatives included all of the remaining vessels, except for one that had very limited fishing history in the Bering Sea, and eliminated the limited access fishery for non-pollock groundfish species (J. Anderson, personal communication, 2011).

To prevent fleet consolidation and retain historical fishing patterns, concentration limits were included in program design. Concentration limits were set to prevent industry consolidation at both the corporation and vessel level, while allowing for some efficiency gains to be made in order to reduce costs, such as for monitoring and enforcement. Within the program, no single person or corporation can hold or use more than 30% of the Quota Share, unless it is grandfathered in based on historical participation, and no vessel may fish more than 20% of the quota allocated to the Amendment 80 sector (Federal Register, 2007).

New entrants to the fishery must meet complex eligibility requirements defined for the fishery. Under certain conditions fishermen may enter by buying an LLP license and Quota Share from one of the current Amendment 80 participants.

STEP 4 IN ACTION

Define the Privilege

The BSAI Non-Pollock Cooperative Program allocated quota-based privileges. The long-term allocations, called Quota Shares, were granted indefinitely to eligible participants and are attached to each participant's vessel. To create an incentive for Cooperative formation, managers only allow use of Quota Shares when a vessel is a Cooperative member.

At the beginning of each season, the formed Cooperative is allocated the annual allocation unit, called Cooperative Quota. Cooperative Quota is calculated from the sum of all Quota Shares held by the current Cooperative membership and based upon the annual catch limits set for each species.

Quota Shares cannot be leased, and permanent transfers of an eligible vessel (including the associated catch history) can only be made to new entrants who are defined as eligible under the program (NPFMC, 2010).

Inter- and intra-Cooperative transfers are allowed within the program to facilitate the goal of economic efficiency and to keep the Cooperative accountable to catch limits. Within Cooperatives, members agree upon how quota will be allocated amongst themselves, according to Cooperative bylaws. Cooperative members are able to transfer Cooperative Quota before and after trips and are subject to the approval of the Cooperative manager. Intra-Cooperative transfers happen often, both between licenses within the same company and between licenses owned by two different companies (J. Anderson, personal communication, 2011). Cooperative Quota can be transferred between Cooperatives both before and after fishing trips to help cover accidental overages. All transfers between Cooperatives must first be approved by NMFS.

STEP 5 IN ACTION

Assign the Privilege

Managers were committed to assigning the privileges in an equitable manner based on present and historical harvesting patterns. To best attain this goal, a two-level allocation process was established for the Amendment 80 fleet. First, fishery managers granted privileges to individual vessel permits based upon catch history. Then, Cooperatives were allowed to make internal allocation decisions to reflect current harvesting strategies.

Initial Quota Share allocations were made by NMFS to eligible vessels with an LLP license. These allocations were based upon the five best years of catch history between 1998 and 2004. Individual bycatch allocations for prohibited species, including crab species and halibut, are proportional to Quota Share allocations and not based upon catch history (Federal Register, 2007). An appeals process enabled license holders to request a review of their allocation. This process is run through the NMFS National Appeals Office, which separates the appeals process from the initial allocation decisions.

Each season before allocations are made to Cooperatives in the Amendment 80 fleet:

- 10.7% of the catch limit for all Amendment 80 species is allocated to the CDQ program (Federal Register, 2007)
- Managers allocate incidental catch allowance of Amendment 80 species to other target fisheries in other sectors to account for all sources of mortality
- A portion of the yellowfin sole, Atka mackerel and Pacific Ocean perch are allocated to the BSAI trawl limited access sector (American Fisheries Act catcher-processors and trawl catcher vessels)²

The remaining allocations are then distributed entirely to the Amendment 80 sector.

STEP 6 IN ACTION

Develop Administrative Systems

A detailed administrative system has been designed and implemented to ensure real-time catch accounting and robust monitoring and enforcement. The Restricted Access Management (RAM) division of NMFS administers the program. RAM uses online administration systems to determine the eligibility of participants, allocate Quota Shares, process Cooperative applications and inter-Cooperative Quota Share transfers, collect landing fees and conduct other related activities.

Cooperatives are held accountable through internal administrative systems established by Cooperative bylaws and agreements. Internal Cooperative arrangements also determine how Cooperative Quota allocations will be made to members to fish (this is unlike individual annual allocations to vessels, which NMFS administers).

² Currently, all Amendment 80 vessels that have applied for Quota Share are in Cooperatives, therefore the Amendment 80 limited access sector is not in operation.

Once Cooperative membership is determined for the season, Cooperative allocations are made based on the sum of member Quota Shares and can vary between Cooperatives. For example, the Alaska Seafood Cooperative first allocates quota to a quota reserve, then makes allocations to Cooperative members that reflect the Quota Shares each vessel brings into the Cooperative (J. Anderson, personal communication, 2011). The quota reserve provides a buffer against accidentally exceeding quota, and vessels must acquire member approval prior to using their quota in the reserve (BUC, 2009).

Discards were a large concern in the fishery prior to catch share implementation, and therefore an extensive monitoring system was developed for the program. Monitoring includes vessel monitoring systems (VMS), a requirement of two on-board observers for every trip with coverage on all hauls, motion-compensating scales for weighing samples, flow scales to obtain accurate catch-weight estimates for the entire catch and prohibitions on mixing of hauls and on-deck sorting (Wilderbuer et al., 2010). The on-board observers verify catch composition and quantity and collect biological information on marine resources. The on-board observer program is managed by the Fisheries Monitoring and Analysis Division of the Alaska Fisheries Science Center and has significantly improved managers' ability to estimate and enforce quota of bycatch species and allocated target species (Hiatt et al., 2010).

Catch accounting requires that each vessel in the fishery track information including daily catch receipts, product transfer reports, recorded cargo transfer reports and off-loading information. Catch accounts are established in the Alaska Region's Catch Accounting System, which provides near real-time delivery of accurate data for in-season management decisions. Data from industry are reported through the Electronic Reporting System and fed hourly into the NMFS database. Data from observers are sent electronically to the Alaska Fisheries Science Center and transmitted daily into the Catch Accounting System. These data are used to calculate quota debits from Amendment 80 vessels and Cooperatives (NPFMC, 2010). Participants use eLandings, an interagency electronic reporting system, to report all commercial fishery landings off Alaska.

Many parties are involved in the oversight of the Cooperative program, and members are held accountable through multiple channels within the Cooperative. Corporation owners, vessel captains, crew and other company personnel participate in the management process and together develop a Cooperative agreement that outlines harvest strategies, harvest shares and compliance provisions. For example, the Alaska Seafood Cooperative appoints a Cooperative manager to oversee day-to-day operations. Responsibilities include: ensuring communication among the fleet, member companies and Cooperative staff; ensuring compliance with the Cooperative agreement; ensuring harvest shares are distributed in a timely and accurate manner; and applying for annual Cooperative Quota allocations. The Alaska Seafood Cooperative also appoints a data manager to oversee all Cooperative monitoring activities, ensure that government requirements are met and make certain that Cooperative members acquire timely updates on their quota accounts.

Cooperative members pay for monitoring activities and other Cooperative services. The program was initially implemented without a cost recovery program in place, as NPFMC was unclear as to whether cost recovery regulations applied to Cooperative allocations. Upon subsequent review of the MSA, the development of a cost recovery program is now underway (G. Merrill, personal communication, 2011).

STEP 7 IN ACTION

Assess Performance and Innovate

A formal review of the program is to occur five years after program implementation to inform future management decisions. Fishery managers also designed a socioeconomic survey to help improve understanding of the program's effects on vessels and entities regulated by the catch share (Federal Register, 2011). To date, the overall program review has not been released.

It is clear, however, that the program has worked exceedingly well. The program has successfully met many of its goals, including ending the race for fish. Harvesting has slowed, allowing fishermen to better maximize harvests of the target species while reducing discards and avoiding bycatch of halibut and crab. Due to trawl gear innovations, there has been a decrease in bycatch and habitat damage through reducing bottom contact by 90% (Anderson and Concepcion, 2011). This achievement has contributed to the Marine Stewardship Council's certification of every species in the flatfish fishery, which the Cooperatives believe will support market development in high quality, sustainable seafood products (MSC, 2010).

The program has also been integral to encouraging Cooperative innovation in overcoming management challenges associated with a multi-species fishery. Cooperatives were able to create a viable and innovative alternative to the cumbersome retention policy. Cooperatives currently enforce groundfish retention in parallel with an accompanying third party audit to provide transparency (J. Anderson, personal communication, 2011). Through this innovation, groundfish discards have successfully been reduced and the capital intensive Groundfish Retention Standard policy has been discontinued. Cooperatives have also played an important role in the implementation of gear modifications that have helped reduce halibut bycatch. Cooperatives have been collaborating with NMFS to explore ways to allow for accurate observer accounting on deck so crew can discard halibut while still alive, which would reduce mortality (BUC, 2009). Cooperatives have also devised innovative solutions to discrete challenges, such as when the fishery received small allocations of Pacific cod, constraining the ability to harvest other groundfish species (L. Swanson, personal communication, 2011). To address this challenge, most Cooperative members now fish for Pacific cod only at the end of the season to avoid overages (Anderson and Concepcion, 2011).

The catch share program has resulted in some consolidation of fishing effort to save operating and monitoring costs, and this has generally occurred among vessels that are owned by the same company. The program has meanwhile provided increased economic stability for communities by bringing steadier employment opportunities to shipyards (J. Anderson, personal communication, 2011). Before the catch share, vessel captains had to conduct maintenance at the same time as other vessels during season closures. This forced shipyard managers to engage additional temporary employees during the short busy period. When the Non-Pollock Cooperative Program was implemented, vessel holders gained the ability to choose when to conduct annual shipyard maintenance, allowing for shipyards to better accommodate the industry's schedule while providing more consistent employment within the community (J. Anderson, personal communication, 2011).

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