Rights-Based Fishery Management Systems in Marine Fisheries off Alaska

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Abstract. Rights-based management in federally managed fisheries off Alaska has evolved rapidly over the past decade. While license limited entry and individual quotas (with rights assignments to vessel owners) were the principle tools under consideration in the early 1990s, in 2002 a wider range of programs and program options are under consideration. Two important developments were the emergence of cooperatives as a fisheries management tool, and the willingness of the North Pacific Fisheries Management Council to consider allocations of rights to buy fish to fish processors as a part of rights based management programs.

Key words: fishery rationalization, limited entry, individual fishing quotas, harvesting and processing cooperatives.

1. INTRODUCTION

Access limiting fishery management measures create two classes of people: those who have access, rights, or an exclusive privilege to the fishery and those that do not have such rights. Theory and experience indicate that, without controls or limits on participation in an otherwise open access fishery, it tends toward excess harvesting capacity leading to a variety of biological and economic performance problems. This paper briefly describes the evolution of access limitation in federally managed fisheries off Alaska. Understanding the development of these management regimes, however, first requires a brief description of the policy-making process under which all federal fishery management policies are derived, and the nature of the "right" in U.S. federal rules.

Marine fisheries management policies for fisheries in waters outside of State of Alaska (State) jurisdiction are developed by the North Pacific Fishery Management Council (Council) under authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act, 16 U.S.C. 1801 *et seq*.). This law charges the Council with, among other things, developing fishery management plans (FMPs) which are submitted to the Secretary of Commerce for review and approval (disapproval or partial approval). This function is delegated to the National Marine Fisheries Service (NMFS), an agency of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. If approved, the policies developed by the Council in its FMPs are implemented by federal rules.

Conservation and management of Pacific halibut is governed under a different statute and a slightly different policy-making regime. The U.S. manages the halibut fishery cooperatively with Canada through the International Pacific Halibut Commission (IPHC). The Northern Pacific Halibut Act of 1982 (Halibut Act, 16 U.S.C. 773-773k), under which IPHC regulations are made effective for U.S. fishermen, also provides the Council with the discretion to develop regulations which, if approved by the Secretary of Commerce, would allocate fishing privileges among U.S. fishermen. Hence, the Council has no FMP for halibut because the Magnuson-Stevens Act under which FMPs are authorized does not apply to halibut, but the allocation policy-making process at the Council level and the rule-making process at the NMFS level are virtually the same as that for fisheries managed by FMPs. For FMP fisheries and halibut fisheries, the Council functions as a regional common property institution. (Holland *et al*., 2001)

2. COMMUNITY DEVELOPMENT QUOTA (CDQ) PROGRAM

Originally commercial groundfish fisheries in the federal waters of the Bering Sea and the Gulf of Alaska were primarily foreign. U.S. fishermen gradually replaced foreign fishermen under the auspices of the Magnuson-Stevens Act beginning in 1976. By 1990, a combination of carrots, sticks, and subsidies had "Americanized" the fishery. This Americanized fishery quickly became overcapitalized. At-sea factory processors and catcher vessels and on-shore processing capability appear to have had more than enough capacity to harvest and process the available groundfish resources, especially for pollock, a high-volume resource. Overcapacity made it possible for one fleet sector to effectively harvest the resource first, "preempting" other sectors. In 1989, at-sea catcher-processor operations harvested a disproportionate share of the Gulf of Alaska pollock TAC and forced a closure of the fishery before the on-shore fleet was able to fully exploit the fishery. The catcher vessels delivering onshore, and the on-shore processors, found their access to the resource "pre-empted" by the catcher-processor activity. This 1989 "preemption" event triggered a long-term effort by the Council to allocate the pollock fishery TACs between "offshore" catcher-processors and motherships, and "inshore" catcher vessels delivering to shore-based plants.

The Western Alaska CDQ Program was created in the context of this inshore-offshore debate (Ginter, 1995).

Communities in Western Alaska are small and remote with limited transport connections, jobs are relatively scarce, unemployment and poverty are high, and subsistence activity is important. Residents of these communities, however, had little commercial, or even subsistence, involvement in the Bering Sea groundfish fisheries in the past. Despite this limited historical involvement, leaders of Western Alaskan communities had looked toward the rich commercial groundfish fisheries off their shores as a potential source of jobs and economic development. This interest eventually manifested itself in the CDQ program, the political feasibility of which was enhanced by linking it to the Council's first inshore-offshore proposal in June, 1991. Initially, the CDQ program relied on an allocation of 7.5 percent of the annual pollock TAC in the Bering Sea. This allocation, known as the CDQ reserve, subsequently was allocated among eligible Western Alaska communities based on the relative merits of their community development plans. Fishing under the CDQ program began in December 1992. (NRC, 1999).

Initially, 55 Western Alaska communities were eligible for a CDQ allocation of pollock. Changes in the program over time have increased this number to 65 communities with a resident population of about 27,000. From the start, the eligible communities grouped themselves into six regional associations or "CDQ groups," non-profit entities formed by one or more communities. Each year a CDQ group submits a community development plan for the coming year to the State, requesting a specific share of the TAC, describing how it would use this TAC share for the economic development of the communities it represents, and providing organizational and financial information. The State reviews all the plans from the various CDQ groups and makes recommendations to the Council and NMFS on the appropriate division of the available CDQ reserve among the CDQ groups. The length (in years) of the allocation of a CDQ reserve for a species among CDQ groups is not set out in regulation. It has varied (from one to three years), and has varied by species and, for an individual species, through time. (NMFS, May 2002, page 62)

An allocation of CDQ reserve to a CDQ group gives it an exclusive right to harvest, process, and sell the amount of fish in that allocation. The CDQ group may enter into joint ventures with other firms to perform these functions, or to sell the year's allocation to another entity. The CDQ group must use the income earned from the harvest and sale of its share of the CDQ reserve, however, for the purpose of regional, fisheries-based, economic development. This can include acquisition of fisheries assets, other businesses, and training. The CDQ groups are subject to intrusive public monitoring and (primarily State) government approval of investment decision-making, and vessels fishing for CDQ.

While the harvesting rights assigned within a year can be transferred to other parties and can be used to generate royalty payments for a CDQ group and its communities, the groups and the communities they represent have no long term rights that can be sold or traded.

Aside from the increase in the number of participating communities, the principal change in the CDQ program since 1992 has been its expansion to include fisheries for species other than pollock (although it has not been expanded to fisheries outside of the Bering Sea). Currently, the CDQ reserves are comprised of 10 percent of the pollock TAC, 20 percent of the longline and pot gear sablefish allocation, 7.5 percent of each of the other Bering Sea groundfish species' TACs, 7.5 percent of each Bering Sea prohibited species catch limit (except for herring), 7.5 percent of each crab species' TAC, and set-asides of the commercial halibut TAC that range from 20 percent to 100 percent, depending on the halibut area within the Bering Sea.

3. INDIVIDUAL FISHING QUOTA (IFQ) SYSTEM

Commercial fishing for halibut and sablefish began in March 1995, under a new management regime that allocated a specific amount of halibut or sablefish in a specified area to each participating fisherman. Before then, each fisherman competed for an overall quota specified for each area without any control on the number of participants in the fishery. The earlier system worked fine until the number of participants (vessels and gear) in the fishery exceeded the amount that could efficiently harvest the specified quota during the normal summer fishing season.

The problems with this system began to be apparent in the halibut fishery in the 1970s, when fishing seasons in some areas began to shorten as the halibut catch limits were more quickly achieved. (Pautzke, et al., 1997). Early in 1982, the Council decided that it needed a moratorium on the entry of new fishermen into the halibut fishery while further study of limited entry systems was conducted. This moratorium was rejected, however, by NMFS because it would not resolve the problem of excess investment in the fishery.

The sablefish fishery began to grow, as foreign fishing was eliminated from U.S. waters, and as foreign markets became more accessible to U.S. fishermen. Increased effort in the sablefish fishery lead to the same problems previously experienced in the halibut fishery, namely compressed fishing seasons due to a race to maximize harvest and the attendant gear conflict, loss and congestion on the grounds and periodic market gluts, to name a few. The Council initially responded by dividing the sablefish TAC between trawl and longline gear types (an option not available in the halibut fishery where the only legal gear is longline gear).

In 1987, however, the Council received a license limitation proposal from longline industry representatives. Despite its failed first attempt at limited access for the halibut fishery four years earlier, the Council invested committee and staff time to investigate alternative management regimes. In December 1988, the Council formally determined that the open access status quo was no longer an acceptable way to manage the longline fishery for sablefish and narrowed its consideration to only license limitation or IFQ systems (Pautzke, et al., 1997).

A primary concern was the best way to achieve optimum fleet size (on which there was little agreement) without disenfranchising too many current or would be participants and without engendering too much political opposition either at the Council level or in Washington, DC. Because of this, the Council decided to set aside the license limitation alternatives and focus on IFQ alternatives. In 1990, the Council decided to incorporate the halibut fishery into its developing IFQ proposal because of the inherent overlap between these two fisheries and also because by this time the race for fish in the halibut fishery had reduced the season to one or two chaotic days. Ultimately, the Council voted to adopt an IFQ program for the halibut and sablefish fisheries in December 1991, and after review and approval, NMFS published implementing rules in late 1993 (NMFS, 1992, 1993).

The annual allocation of a person's IFQ is based on the amount of quota share (QS) the person holds. The initial allocation of QS, i.e. the basic harvesting right in the halibut-sablefish IFQ program, involved passing two tests. First, a person had to either own or lease a vessel that made legal landings of halibut or sablefish during the QS qualifying years of 1988, 1989, or 1990. The second test determines how much QS the qualified person would be initially allocated. For halibut, QS was based on the qualified person's highest total landings for any five years of a seven-year period from 1984 through 1990, separately for each halibut regulatory area. The sum of all qualified persons' "best 5 out of 7" years total landings constituted the QS pool for each regulatory area. A qualified person's QS was then calculated as the ratio of his or her total landings to the QS pool for each area. A qualified person's sablefish QS was calculated in the same manner except that it was based on his or her "best 5 out of 6" years total landings for the six-year period of 1985 through 1990. Annual allocation of IFQ was then calculated generally as the product of the person's QS and the annual TAC for halibut or sablefish for a specific area (50 CFR 679.40(a)).

The initial allocation of QS under this program rarely provided the recipient with an amount of IFQ poundage close to what he was accustomed to catching under the old race-for-fish system. This was because of the summing of all catch histories over multiple years during which there was entry and exit from the fishery. Many fishermen were disappointed that they did not receive their "average" catch history for the qualifying years. Some fishermen who were consistent high performers during these years, received more QS than most fishermen. This presented most initial recipients of QS with a choice of selling what they received and retiring from the fishery, buying more QS to increase their IFQ poundage, or doing neither and using the small amounts of IFQ poundage to land incidental catches of halibut or sablefish in longline fisheries for other species. These choices were at the heart of the ultimate objective of rationalizing these fisheries.

Whether and to what extent halibut and sablefish QS or IFQ should be transferable was a major source of debate within the Council as it was designing the program. Concern about too little control of transfers resulting in a wholesale consolidation of the fishery into a few hands was countered by concern that too many limits on transfers would not resolve the fundamental race-for-the-fish problem that produced the problems the Council was trying to resolve. The Council decided to retain as much as possible pre-existing characteristics of the longline fisheries as being comprised of relatively small-scale, owner-operated vessels. Maintaining the social and economic fabric of the fishery also was important to the many coastal communities in which fishing vessels in these fisheries were home ported. Another Council concern was to allow relatively easy entry of new fishermen into the fisheries to take the place of those leaving. The Council balanced these concerns through an array of controls and restrictions on the transfer of QS and IFQ, including limiting who may receive transferred QS, how much QS may be held by any person and how much IFQ may be fished from any one vessel during a year, and requiring that QS in most vessel categories eventually transfers to individuals required to be on the vessel when it is fishing IFQ instead of corporate entities.

The Council further wanted to assure a robust market for QS harvesting rights that would be available to working fishermen and not held indefinitely by retired fishermen or their heirs. Although the number of crewing positions within the halibut and sablefish fisheries decreased, crew members who remained in the IFQ fisheries had the option of purchasing QS, thereby increasing their value as crew as their IFQ would add to the overall harvest limit of the vessel on which they worked.

4. LICENSE LIMITATION PROGRAM (LLP)

As noted in the discussion of the CDQ program, in the late 1980s and early 1990s, overcapitalization and competition for groundfish among gear groups led to numerous allocation problems, to the long-running and acrimonious inshore-offshore debate, and distracted the Council from other management issues. Moreover, the open access fisheries led to a dissipation of the rents that fish harvesting might have generated, rents which the industry knew it could tap if the fishery could be restructured to resolve the open access problem.

Federal crab fisheries in the Bering Sea were also heavily overcapitalized. These fisheries had developed for many years under State management. After the Magnuson-Stevens Act established a mechanism for federal management in the offshore waters, the Council developed a Bering Sea crab FMP but delegated routine management of the crab fisheries to the State, except for limited access management.

But the path to resolving the overcapitalization problems in the crab and groundfish fisheries remained unclear. These fisheries were complex with many players with vested interests. The principal groups asserting their interests included harvesters and processors. Within these groups, however, were large and small vessel operators that used a variety of mobile and fixed gear types, delivered or processed their catch to inshore or offshore processors, and based their businesses in Alaska or other states. All of these players were in competition for what was potentially a great deal of wealth.

To buy time to consider alternatives, and to stabilize effort somewhat in order to lay groundwork for those alternatives, the Council turned to moratoria and limited entry. In June 1992, the Council adopted a short term moratorium on the entry of new vessels into the groundfish and crab fisheries to at least "circle the wagons," as one Council member explained. Billed as a "simple" moratorium to give the Council time to develop a more sophisticated system, the Council was nevertheless aware of the need for any limited access system to have popular support. Given this political sensitivity to limiting access, the resulting moratorium policy qualified more vessels to participate than actually participated in the groundfish and crab fisheries in any one year.

In 1996, the Council proposed following up the moratorium with a license limitation system (LLP) knowing it would not rationalize the groundfish and crab fisheries, but considering it a step in that direction (NMFS, 1997). Final implementing rules for the LLP were published in 1998 and the fishing under it began on January 1, 2000 (NMFS, 1998).

The LLP system was complex, and there were exceptions to many of the provisions, but in brief, the LLP created separate classes of groundfish and crab limited licenses. Separate groundfish licenses were created also for the Gulf of Alaska and the Bering Sea. Licenses designate vessel type (catcher/processor or catcher vessel) and length category. These licenses gave the persons who held them the right to use a licensed vessel to fish for groundfish species in the Federal EEZ. An LLP license was not required, however, to fish for groundfish in State waters (all waters within three miles of shore), or for sablefish (already under an IFQ program) or for certain rockfish off of Southeast Alaska. The crab license program was generally similar to the groundfish program, designed to give operations flexibility, while restricting the likelihood of increased effort in fisheries. Crab licenses were defined by area and species, for example there were separate Aleutian Islands brown and red king crab endorsements.

Qualification for an LLP license depended on participation in the affected fisheries during a general qualification period (GQP) and an endorsement qualification period (EQP). Generally, meeting the GQP test requires at least one landing during the period of January 1988 through June 27, 1992. A person could not earn harvesting rights, unless he could pass the EQP test which earns him an endorsement that allows fishing in a particular area or species. The EQP is more recent running from 1992 through 1994 or June 1995, depending on the species and area.

Licenses under the LLP are transferable but endorsements are not severable from the license and groundfish and crab licenses earned on the landings of the same vessel also must be transferred together. Licensed vessels can be replaced but increases in the length of licensed vessels is limited in vessels under 125 ft and prohibited in larger vessels.

This program did not provide significant limits on fishing effort, but it was not meant to. The allocation criteria were easily met. The definition of the licenses allowed operations to change their fishing targets easily, moving from one fishery to another. The criteria allowed vessels to upgrade and were not combined with restrictive limits on gear, or vessel characteristics other than length and processor status. The LLP was not designed to constrain fishing effort or generate economic rents in the fishery, but to stabilize the fishery and to define the potential classes of persons eligible for rights under future rationalization programs. By defining the groups of persons who might eventually be eligible for rights under this future programs, the LLP might reduce the costs of negotiating and agreeing on new rights regimes, and reduce the costs associated with allocating those rights and implementing the programs.

5. AMERICAN FISHERIES ACT (AFA)

In 1996, the Magnuson-Stevens Act was amended to impose a moratorium on Council use of IFQs. The original moratorium expired October 1, 2000, but was extended that year until October 1 2002. The moratorium posed a substantial obstacle to the Council's comprehensive rationalization plan of 1992.
The moratorium also prevented fishing operations from using IFQs to increase the rents from fisheries. Industry was forced to look for other methods to reduce the loss of rents due to unregulated open access exploitation of the resources. In the Bering Sea pollock fishery the industry settled on fishing cooperatives.

At first, there were serious obstacles to cooperative agreements because of potential anti-trust implications, because the relatively large numbers of operators complicated negotiations, particularly in the inshore sector, and because any agreement might be undercut by the entry of new operations into the fishery. In 1997 and 1998, decisions by the Department of Justice and by Congress removed these obstacles.

In 1997, whiting fishing firms operating off the Pacific Northwest coast of the U.S. formed a cooperative to divide the available TAC of whiting among themselves. The cooperative was facilitated by a statement from the U.S. Department of Justice that it did not intend to enforce federal anti-trust laws against the parties to the agreement. The cooperative had immediate benefits for its members. The race for the fish ended, excess capacity was taken out of the fishery, the remaining vessels operated more efficiently, product recovery rates, rose, and profits rose. Cooperation among industry members, and the slower harvest, made it possible for managers to allow the industry to fish closer to the available TAC without risk of exceeding the TAC. (Sullivan, 2000)

Four of the companies involved with the whiting cooperative also operated catcher-processor vessels in the pollock fishery in the Bering Sea. Impressed with their experience in the whiting fishery, and confident that an agreement would not run into antitrust objections, they approached the Council in June 1998, about implementing a similar cooperative arrangement in the Bering Sea pollock fishery. The Council demurred, however, because of concern about the competitive effect of cooperatives on the CDQ groups and the inshore sector, and about whether harvesting cooperatives would be seen as a maneuver to avoid the statutory prohibition on IFQs (Sullivan, 2000; NMFS, 2002).

Rejected by the Council, the interested firms turned to Congress. There, the AFA was being drafted to reduce foreign ownership of fishing vessels operating in fisheries under U.S. jurisdiction. This legislation was "hijacked" by adding provisions designed to facilitate private negotiation of cooperative harvesting agreements. These amendments specified how pollock TACs were to be allocated among fleet segments. Offshore catcher-processors and the catcher vessels delivering to them received 40 percent of the part of the TAC set aside for non-CDQ directed fishing, motherships and the catcher vessels delivering to them received 10 percent, and onshore processors and the catcher vessels delivering to them received 50 percent (Pub. L. 105-277, sec. 206).

Moreover, the AFA explicitly listed, by name, the vessels that would be allowed to harvest pollock in the catcher-processor sector, including the names of seven catcher vessels allowed to deliver to the catcher-processors (Pub. L. 105-277, sec. 208). Nine catcher-processors were bought out, reducing the pool of firms that had to negotiate cooperative agreements. The Act also provided qualifying criteria for those catcher vessels to be allowed to deliver to motherships and to inshore processors. These lists and qualifying criteria were necessary because the LLP did not provide a tight definition of the vessels that would be allowed to fish for pollock. Under the LLP, any effort to negotiate a cooperative might be undercut by entry of new operations into the fishery. This stipulation, in the AFA, defined the vessels that had the right to participate in the fishery, preventing new vessels from entering and undercutting any agreements that might be reached, and defined numbers of participants in the groups that were generally small (NMFS, 2002). Finally, the AFA acknowledged that fishing operations could form harvest cooperatives, and contained instructions on how inshore processors and the vessels delivering to them might form cooperatives to harvest their part of the overall TAC (Pub. L. 105-277, sec. 210).

Immediately after the Act was passed (by January 1999) the catcher-processors and the catcher vessel firms that delivered to them, formed fishing cooperatives. The catcher-processors negotiated a catcher-processor cooperative, while the owners of seven catcher vessels delivering to the catcher-processors created a second catcher vessel cooperative. These arrangements divided the catcher-processor sector pollock TAC among the eligible vessels. Inter-cooperative agreements later turned the catcher vessel quota over to the catcher-processor cooperative for harvest, removing these catcher vessels from active pollock fishing. The AFA contained provisions allowing onshore processing firms and associated catcher-vessels to form cooperatives. However, because the AFA did not specify the vessels to be included, but only listed the qualifying criteria, onshore and mothership sectors did not form cooperatives until 2000.

The AFA and implementing rules require each catcher vessel delivering inshore that joined a cooperative to bring a share of the TAC to that cooperative proportional to its historical catch. The vessels, in aggregate, have to agree to deliver 90 percent of their TAC to the processing firm associated with that cooperative. Cooperatives could form if the owners of at least 80 percent of the catcher vessels that delivered in the preceding year agree to do so. Catcher vessels that choose to do so may stay out of the cooperative system and fish their share of the TAC in an "open access" fishery. Catcher vessels that want to switch cooperatives must spend at least one year in the open access fishery. These inshore catcher vessel cooperatives were controversial. They appeared to give onshore processors control over rights to a part of the TAC, over and above the rights that accrued to them as vessel owners.

6. HALIBUT SUBSISTENCE FISHING PROGRAM

Subsistence fishing and hunting are important customary and traditional practices of Alaska Natives and non-Natives, especially in communities in rural areas with limited alternative food sources. In these areas subsistence harvesting is inextricably woven into the cultural fabric of Alaska Natives and the rural lifestyle. Federal rules governing the Pacific halibut fisheries, however, do not officially recognize subsistence harvesting of halibut. Under these rules, a person may fish for halibut only as a commercial fisherman (in compliance with IFQ program rules) or as a sport fisherman (limited to rod and reel gear and two-fish daily catch limit).

The Council acted first in 1997 to allow Natives participating in commercial halibut fisheries along the Bering Sea coast to retain undersized halibut as subsistence fish if they were caught with commercial halibut. The broader issue of providing for a subsistence halibut fishery in all coastal areas of Alaska was deferred temporarily at the request of the State due to the unsettled legal status of subsistence management within the State generally.

Subsistence hunting and fishing on federal lands and waters (which comprise about 60 percent of Alaska) had been managed by the State consistent with its management of subsistence harvests in non-federal areas. Federal statutes, however, provide a priority for subsistence harvests over other uses and that grant this priority only to rural residents. The State was unable to carry out this federal mandate for rural subsistence priority and also comply with the common use provisions of the State Constitution. Without amendment to the State Constitution and after exhausting appeals to court and Congress, the federal government took over the management of subsistence harvests on federal lands and waters within Alaska in 1999 (Buklis 2002).

After the Council assessed alternative management regimes, it adopted an Alaska-wide subsistence halibut program in October 2000. In taking this action, the Council defined "subsistence" with respect to halibut as "non-commercial, long-term, customary and traditional use of halibut." Although this proposed subsistence halibut program is not yet in effect, the Council recently (April 2002) determined that, in some of the more populated areas of the coastline, subsistence halibut harvests could cause gear conflicts with other fisheries or localized depletion of halibut. Therefore, the Council adopted amendments to its proposed subsistence halibut program that would constrain the amount of fishing gear that may be used and the subsistence harvest limit in certain areas. None of the latter proposed constraints, however, would affect the basic "right" to participate in the subsistence halibut fishery as proposed in the former action.

If approved and made effective by federal rules, the proposed subsistence halibut program would provide an exclusive halibut harvesting privilege to persons based on their residence in certain rural communities or membership in certain Alaska Native tribes. This privilege would allow fishing outside of either of the existing commercial or sport halibut fisheries. The subsistence "right" would be constrained by the amount of fishing gear that may be used (up to 30 hooks) and the amount of halibut that may be harvested per day, per subsistence fisher (20 fish). Subsistence fishing would be prohibited in some non-rural areas, but this would not prevent authorized subsistence users from providing an adequate amount of halibut to eat for their families and community.

The Council crafted subsistence eligibility criteria for two groups of people: 1) residents of rural places with customary and traditional uses of halibut; and 2) members of federally recognized Alaska Native tribes with a customary and traditional use of halibut. These criteria provide subsistence halibut fishing privileges to roughly 88,000 persons who reside in 117 rural communities or are members of 120 Alaska Native tribes. This population is about 14 percent of the total population of the State of about 627,000. Although Alaska contains many more rural communities and federally recognized Native tribes, only those with customary and traditional use of halibut (and specifically named in the implementing rules) will be allowed to carry out subsistence halibut fishing. In addition, not all eligible persons are expected to participate in this fishery every year. Traditionally, subsistence foods are provided to families, tribes or communities by designated hunters or fishermen, typically young men who have learned the requisite skills from their elders. Persons who would not be eligible for subsistence halibut fishing privileges are those who live in non-rural areas (namely Anchorage, Valdez, Juneau, and Ketchikan). Alaska Natives who are members of federally recognized tribes with customary and traditional use of halibut but who reside in a non-rural area of the State or outside of the State would retain their subsistence halibut privilege but would have to return to the area of their tribe to exercise that fishing privilege.

Subsistence halibut fishing privileges would be non-transferable. These rights could not be sold or leased to any person who does not qualify for them by virtue of rural residence or tribal membership. A non-Native person, however could receive a subsistence halibut fishing right by locating his residence in a specified rural community. Also, the Council decided to recommend a special community harvest permit system that would allow designated fishers to harvest subsistence halibut for a community that would otherwise be in excess of the harvest limits for an individual. In addition, the Council recommended another permit for special ceremonial, cultural or educational purposes. Although not transferable, these special permits are designed specifically to allow community-wide sharing of the resource.

7. CONCLUSIONS

At the beginning of the Council's work on controlling access to fisheries by assigning rights, simply limiting the numbers of licenses issued to fishermen or vessels appeared to be the most practical, if controversial, approach. Limited entry was familiar to Alaskans as the State had a limited entry program in effect since 1976. Since then rights-based management has grown increasingly complex. The direction and nature of this evolution indicates a movement away from allocations to individual fishermen as in IFQ systems and more toward cooperative arrangements or allocations to specific groups. The reasons for this direction appear more political than operational.

A basic feature of this evolution in limited access systems is the TAC, catch limit or quota management on which all the federal groundfish, crab and halibut fisheries are based. Initial allocation problems were treated by assigning subdivisions of the TAC to different gear groups and industry sectors by area, but these management measures did not treat the fundamental race-for-the-fish problem endemic to open access fisheries. The Council's leap into the IFQ system for halibut and sablefish in the early 1990s successfully rationalized those fisheries but was perceived by many to be a give away of a public resource windfall to fishermen.

The CDQ program appeared more politically palatable because of its focus on the economic development of a needy part of the State. But the CDQ program also served to demonstrate how a TAC allocation to a sector of the fishery could rationalize that sector and lead to benefits of increased value of the harvest. In essence, government is saying to the CDQ groups, "here is a basket of TACs for a variety of species, go make the best use of it." Increasing the value of an allocation of TAC and better serving markets was also a key stimulus to the pollock fishing cooperatives.

The rationalization advances of the CDQ and pollock fishing cooperatives under the AFA, however, would likely not have occurred under a different political climate. The CDQ program became possible as a social welfare provision of an otherwise high stakes allocation game in the context of the inshore-offshore debate and IFQs. Fishing cooperatives were initially rejected by the Council and later imposed by Congressional statute. The latter action also would not have happened without something for everyone. That is, cooperatives for the offshore sector would not have been possible without similar if not greater benefits for the inshore sector in terms of preventing the entry of new pollock processors and limiting the ability of independent catcher vessels to sell their catch to different processors.

The players in the rights-based game have grown in understanding over these years. Their principal asset has become their catch or processing history and their objective is to capture as much rent from the fishery as possible in the name of rationalization.

At the start of the 1990s, license limited entry and individual quotas appeared to be the key rights based management tools for the future. In 1992, a type of individual quota program was created for the use of the CDQ groups. Shortly after, in 1995, individual quotas were in place in the important Alaskan halibut and sablefish longline fisheries. These programs were characterized by the allocation of harvest rights to individual vessel operators.

By 2002, there were important changes in the rights-based management toolbox, changes that might have surprised an observer in 1995. This paper points to two in particular: (1) the emergence of cooperative approaches to rights based management, and (2) the increased emphasis on allocations of rights to buyers and processors, independent of any interest they may have had in fishing vessels.

Why were cooperatives and rights allocations to processors in the rights-based mix in 2002? Undoubtedly many factors were at work. Here the authors suggest five. In the case of cooperatives, (1) a richer anthropological understanding of common property increasingly supplemented traditional economic understandings in the 1990s; (2) the U.S. government imposed a moratorium on individual quotas in 1996; (3) the U.S. Department of Justice indicated that it would not prosecute cooperatives for anti-trust violations. In the case of processor involvement: (1) processors in the AFA were able to effectively overcome the costs of cooperation; and (2) the processors acquired a powerful rhetorical vocabulary during the 1990s. These factors are discussed below.

Some of the groundwork for cooperative approaches, such as those used for pollock fishing under the AFA and recently proposed by the Council for the Bering Sea crab fisheries, was laid with an increasingly sophisticated understanding of common property management that emerged in the 1980s and 1990s. Common property was increasingly viewed as a very complex set of rules, often based in the mores and traditions of local communities, to regulate access to and harvest of resources. Indirect management of fisheries by creating legal structures that allowed stakeholders to devise common-property rules meeting their needs followed logically from this understanding. This indirect management could complement or substitute for direct regulation of fishing activity by a state. The AFA was perfectly consistent with this new intellectual context; under provisions of the AFA, government changed the legal structure within which the fishery was managed so as to reduce the costs of organizing faced by fishery participants.

In 1996, following the controversy over the adoption of the halibut and sablefish individual quota program, and during its reauthorization of the Maguson-Stevens Act, Congress imposed a moratorium on the use of individual fisherman's quotas until October 1, 2000. This moratorium was subsequently extended until October 1, 2002. This moratorium precluded the Council from considering IFQs for six years. Further, it created a lot of uncertainty about the potential future use of IFQs. In the interim, however, large potential benefits that might have been earned by fisheries participants continued to be squandered and lost to those participants. In an effort to obtain those benefits, the participants had an incentive to search for alternatives to IFQs. The cooperative approach offered the potential for rationalization, without the political liabilities of IFQs.

Before 1997 there was a great deal of uncertainty about the attitude the Justice Department would take under anti-trust laws to efforts by independent catcher-processor operations to coordinate their efforts in fishing cooperatives. In 1997, catcher-processor fishermen in the West Coast whiting fishery explored the Justice Department's concerns in talks with the Department. As a result of these talks it became apparent that the Justice Department might be willing to accept catcher-processor cooperative agreements, if it's review of the arrangements indicated that the purpose was to reduce waste through regulation of the harvest of the fish. A whiting harvest cooperative formed pursuant to this understanding obtained from the Department a letter indicating that the Department did not intend to take antitrust action against the cooperative. This precedent reduced the potential risks for catcher-processor cooperatives in the North Pacific. Participants in the whiting cooperative were active in the North Pacific, so information about the Justice Department's decision was quickly passed on to Alaska. (Sullivan, pages 2-5).

Another change in the approach to rights based management between 1995 and 2002, was the increased attention paid to the allocation of rights to fish buyers and processors. This did not entail an allocation of rights to harvest fish. These rights typically continued to be allocated to vessel owners. Unless the processor owned fishing vessels, rights of this type would not be assigned. These rights tended to take the form of rights to access harvests by fishermen. Under the AFA, inshore catcher-processor fishermen have strong incentives to fish in cooperatives delivering to shoreside processors. While these incentives still give fishermen opportunities to move between processors, they cannot do so without costs. Fishermen who want to avoid an open access fishery must deliver to the same processor they delivered to last year, thus the position of processors with respect to the fishermen is strengthened. The crab rationalization program, proposed by the Council in June 2002, will require that fishermen deliver 90% of their harvests to designated shoreside processors. Other restrictions will require crab from certain areas to be delivered to processors in those areas. In contrast, the 1995 halibut-sablefish IFQ program allocated rights to vessel owners and did not restrict their ability to sell their fish to any buyer.

It may be that recent years have seen the introduction of rights based management in fisheries in which buyers and processors face fewer costs and have greater incentives to assert an interest in the fishery. Fish buyers and processors trying to assert a group claim for a share in the benefits from the rationalization of a fishery must organize and lobby effectively in order to obtain this good. It will be easier to organize if there are relatively small numbers of participants who know each other, and have similar operations (so they have good information about each other), and if their individual incentives for doing so are relatively high (it makes a difference whether a potential $1 million is to be divided among two people or one million people). These conditions reduce the costs and increase the benefits of organization to individual firms. Arguably, these conditions are more important in the Bering Sea AFA and Bering Sea crab buying and processing sectors than they were in the halibut and sablefish sectors. In particular, there are smaller numbers of buyers and processors operating in a particular regional environment, and, in the case of the AFA, they are concerned with one species.

Since the halibut and sablefish IFQ program debates, a new vocabulary has been introduced in the Council's rights based discussion. This vocabulary was used by buyer and processor representatives to help shape the debate in ways that helped them assert a claim for the resources. Among the key terms were "stranded costs" (processing investments made in the past in anticipation of an investment climate would be stranded in that use and lost if that climate changed), "Pareto-safe" (only a policy change that imposed no costs on anyone would be Pareto-safe), and "two-pie" (one pie is the division TAC among harvesters, the second pie is the division of the right to buy the harvested fish among buyers and processors). Stranded costs was a term adapted from the literature on public utilities, Pareto-safe and two-pie appear to have been new terms introduced in this debate. To some extent, use of these terms drew on the scientific work of Dr. Scott Matulich at Washington State University, and others, on the division of benefits from IFQ programs. (Matulich and Sever).

These terms were used to frame the debate by focusing attention on the allocation of the benefits from the rationalization of the fishery between vessel owners and shoreside buyers and processors. For example, the two-pie term tends to frame the debate as a contest between two parties, harvesters and processors, for a share of program benefits, simultaneously elevating the status of processors relative to harvesters, and lowering the status of other potential claimants (such as crewmembers and communities). In June 2002, a debate over the introduction of rights into the crab fisheries extended the two-pie concept to three-pies. Under a three-pie system, in addition to harvest rights for fishermen, and purchasing rights for buyers and processors, regions and communities receive rights to have fish delivered to their community.

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