

TRANSACTIONS BETWEEN STATE MANAGERS AND NATIVE FISHERMEN:
CO-MANAGEMENT ON THE KUSKOKWIM RIVER, ALASKA.

Daniel E. Albrecht, M.A. (McGill)
Bering Sea Fishermen's Association
725 Christensen Drive
Anchorage, Alaska 99501 U.S.A
(907) 279-6519

Presented at the First Annual Meeting of the
International Association for the Study of Common Property
Duke University, September 27-30, 1990

THE KUSKOKWIM RIVER SALMON FISHERY

The Kuskokwim River, at 930 miles, is Alaska's second largest river (Figure 1). The population of the drainage is roughly 12,000 people, primarily Yup'ik Eskimo who live along the lower half of the river. The area has a mixed subsistence-market economy. Fish, mostly salmon, form the bulk of the subsistence harvest with moose, marine mammals, waterfowl, and other animals also harvested in the annual cycle.

Commercial salmon fishing is the largest single source of non-governmental employment and income in the region. Commercial harvesting takes place within the lower 250 miles of the river (Figure 2). Essentially the same gear is used for both commercial and subsistence salmon fishing: a small, outboard-powered skiff 18 to 26 feet long drifting a multifiber gillnet up to 50 fathoms in length. The fishery is directed on the harvest of chum salmon in late June to mid-July and on coho salmon in August. Commercial openings are held two to three times a week for periods of 6 to 9 hours each. Subsistence salmon fishing is allowed at all times except immediately before, during, and after commercial openings.

There are over 800 limited entry permit holders for the Kuskowkim Area commercial salmon fisheries (Districts W-1, W-2, W-4, W-5; Figure 1), essentially all of them local residents and 95 percent of these are Alaska Natives. Fishing income is relatively low averaging \$7,000 gross in a season. Income is evenly distributed with 65 percent of the fishermen earning 50 percent of the fishery's gross income. Most fishermen also catch salmon for subsistence. Fishing income is not sufficient as the sole source of one's livelihood and must be supplemented either by subsistence harvests or by wage income. Fishing income enables Yup'ik to purchase such subsistence equipment as boats, rifles, and snowmobile.

BEFORE CO-MANAGEMENT

Prior to co-management fishery management was the sole responsibility of the Area Management Biologist for the Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. From the early 1970s to the mid 1980s, management was on the basis of harvest guidelines. Commercial fishing was generally allowed twice weekly with the fishery closing once the harvest levels for each species were reached. While this policy allowed for the orderly development of the commercial fishery as effort levels grew (Figure 3), another ramification was that stocks were overharvested during years when the run was weak and underharvested during strong runs.

Kuskokwim River salmon management was, and remains hampered by several natural factors. The turbidity of the water makes estimates of population size difficult to obtain and the drainage is so vast that escapement is, at present, only measured through using a few streams as indices. As well, the growth in size and efficiency of the fleet makes comparison of yearly harvests to gauge abundance unreliable.

Beginning in 1984, ADF&G officials began to manage using in-river estimates of run strength and to obtain escapement objectives for certain tributaries. To gauge the former, they operated a test fishery near Bethel. A sonar counter and weir were used to measure escapement into two tributaries of the Kuskokwim. Aerial surveys to estimate spawning activity were conducted in the other major tributaries.

Beginning in the late 1970s and continuing into the 1980s, confrontation and disagreement between local fishermen and local ADF&G staff became commonplace. According to the members of the Working Group, the following problems characterized relations between managers and users; one, there was little formal opportunity for users to participate in in-season management of the commercial fishery; two, some ADF&G personnel were seen as condescending or arrogant; three, there was poor communication between the ADF&G and users; four, disagreements over the health of the stocks arose as restrictions were placed on when and how long commercial fishing was allowed; five, the decisions of the ADF&G were mistrusted due to what some felt was an inadequate database and run strength monitoring ability. Kuskokwim fishermen did not hesitate in challenging the local ADF&G staff, often bypassing them with direct appeals to the ADF&G Commissioner and the Governor.

THE MANAGEMENT CRISIS

The tension between managers and users began to focus on the health of the River's Chinook stocks. From 1983 through 1986, ADF&G escapement estimates were judged to be below average levels. In response the ADF&G began to delay the first opening of the season

to allow more Chinook to pass to their spawning grounds. Secondly, beginning in 1985 the ADF&G successfully lobbied the Alaska Board of Fisheries (which sets statewide regulations and policy) to institute a 6-inch mesh size restriction for commercial fishing so that less of the large females would be caught. Although fishermen have complied with this regulation, some, elders in particular, feel that the small gear causes large chinook to suffocate and drop out of the net to be wasted. Other fishermen, while agreeing that there was a problem with chinook stocks, felt that the Japanese mothership driftnet fleet or other factors were to blame. Still others disagreed with ADF&G's population estimates and felt the chinook stocks were healthy.

In April of 1987 the ADF&G was proposing a complete closure on commercial fishing during June to aid chinook escapement. Faced with this threat, local fishermen's groups and others met with the ADF&G and worked out a compromise Management Plan for the June Fishery. Its basic elements were as follows: a cap of 14,000 on the number of chinook that could be sold in June; three 8-hour periods pre-set for June 18th, 24th, and 30th (the six-day gaps designed to minimize pressure on individual stocks of chinook); and an extensive information campaign to encourage fishermen to use their commercially-caught chinook for subsistence.

As it happened, the 1987 chinook run was the strongest in many years. Most fishermen as usual caught their subsistence chinook prior to the start of the commercial fishery rather than rely on their incidental take. The cap of 14,000 was exceeded on the first period. Although fishermen tried not to catch chinook on the 24th and 30th, they could not avoid doing so which coupled with a high price created frustration with this rigid management plan.

Later that summer during the coho run, tensions reached the boiling point. On the basis of limited catches in its test fishery at Bethel, the ADF&G delayed the first two coho openings. Local users, however, felt that fish were present in strong numbers and the Bethel test fishery was inadequate as a gauge of run strength since the crew were not local Natives and did not know "how to fish." At a well-attended public meeting called by the Western Alaska Salmon Coalition and the Association of Village Council Presidents, local fishermen berated the ADF&G staff for its overly conservative management and its failure to listen to users and involve them in management. Catches at the peak of the run were extremely strong. Fishermen claimed that this proved that they were right and "that the fish were there all along", while the ADF&G maintained that the run was delayed and compacted.

KUSKOKWIM RIVER SALMON CO-MANAGEMENT

The Alaska Board of Fisheries met in November and December of 1987. Representatives of Kuskokwim fishing interests went to this meeting with the experiences of the recent summer fresh in their minds and with frustrations built up over many years. Prior to Kuskokwim proposals being addressed, these representatives met for several hours with local and higher-echelon ADF&G staff. All parties including the ADF&G felt there was a "bad situation" and "something had to be done." Through these ad hoc meetings, a new cooperative approach to Kuskokwim River salmon management was negotiated, and then later approved by the Board of Fisheries (Appendix 3).

Representation

The Kuskokwim River Salmon Management Working Group was formed of those individuals and interests who were willing to make the commitment to participate in management decision-making. Fishing organizations were obvious choices for membership but the participants also made seats for those who needed to be represented but lacked an official organization, the seats for Elders or Subsistence Fishermen being a case in point. The Working Group currently has ten seats to represent the various salmon user groups along the river. The ten members are as follows: Western Alaska Salmon Coalition, Kuskokwim Fishermen's Cooperative, Kuskokwim United Fishermen's Marketing Association, Processors, Elders, Downriver Fishermen (Tuntutuliak and down), Upriver Fishermen (Lower Kalskag and up), Upriver Subsistence Fishermen, W-1 Subsistence Fishermen, and the Alaska Department of Fish and Game.

The ADF&G, however, does not vote on motions concerning the determination of commercial openings. The Group meets with ADF&G staff every four to five days during the summer months. Meetings are held in Bethel, the regional center for the river and the commercial fishery.

The primary responsibility of the Working Group is to make recommendations to the Area Management Biologist on openings for commercial salmon fishing in Districts W-1 and W-2 of the Kuskokwim River (Figure 2). This meeting process consists of reviewing the available management data and then determining when and how long the next opening will be. Data produced by the ADF&G such as weir or sonar counts, Bethel test fishery results, and commercial harvest figures are reviewed. As well, data provided by local fishermen (through the efforts of the Working Group) are examined. These data come in the following forms: a test fishery near the mouth of the river operated by Yup'ik commercial fishermen and funded by local processors; a program run by the Kuskokwim Fishermen's Cooperative to monitor subsistence fishing success in villages along the river; and the regular input of members of the Working Group along with that of their fellow fishermen in attendance.

In addition to addressing commercial openings, the Group handles other fishery-related issues. These issues are generally brought to the attention of the Group by the users themselves.

Recurring concerns include enforcement problems, fishermen safety, and regulations.

Operational rules

All meetings are open to the public. In keeping with local traditions, discussion is extensive and fishermen in the audience are encouraged to participate. All management data is presented by the ADF&G staff. The participants focus most of their attention on the harvest results from the previous commercial opening(s). Following questions and discussion of the data, the ADF&G Area Management Biologist puts forth his recommendation on when the next commercial opening should be. Following this recommendation, debate between members of the Working Group ensues and ADF&G staff generally step out of the debate unless asked their opinion.

The Group will often debate for more than an hour before a motion on the next salmon opening is approved. All motions of the Group have to pass by consensus. Consensus is defined by the Group as unanimous agreement or with only one vote in opposition. Once a motion is approved, the Area Biologist is asked if he will implement the vote of the Group. In the past three seasons, the Area Biologist has only used his authority to override the Group on three to four occasions. In these cases, all of which took place during the 1990 season, the ADF&G wanted one extra day of closure before the next opening.

THE FISHERY UNDER CO-MANAGEMENT

The Kuskokwim River Salmon Management Working Group co-management mechanism has allowed maximized commercial salmon harvests within sustained-yield principles while at the same time providing for the needs and operation of the vitally important subsistence fishery. A summary of the co-management of each of the major species on the Kuskokwim follows. (Refer to Figure 3 and Appendix 1 for details).

Chinook

During the three years of the Group's operation the chinook runs (early June to early July) have been extremely strong, supporting both record commercial and subsistence harvests and healthy escapements. Managing the June fishery requires special consideration for subsistence users as chinook form the bulk of the salmon harvest for human consumption. At the same time, however, adequate opportunity must be given to commercially harvest the chum and sockeye salmon which are building in strength in late June.

Although ADF&G policy (Appendix 3) prefers, and local staff have advocated six-day gaps in June, the Group has made a successful compromise by limiting the area allowed for commercial fishing so that both escapement and upriver subsistence needs could be met but spacing periods only four days apart so commercial fishermen could take advantage of the large chum runs of 1988 and 1989. In 1989 the Group made a special effort to protect

subsistence uses. The Chinook run was healthy but high water prevented many villagers from moving to their subsistence fishing camps. The Group delayed the start of the commercial fishery for a few extra days to allow them adequate time to harvest and hang their subsistence salmon.

Chum

In 1988, its first year of operation, the Working Group was fortunate to be able to manage the largest recorded chum salmon run on the Kuskokwim River. Consequently there was little disagreement between the ADF&G and the Working Group and an intensive fishing schedule was allowed.

In 1989 an intensive debate ensued between the ADF&G's interpretation of chum run strength and that of local fishermen and the Working Group. Until their escapement monitoring projects had sufficient data, the ADF&G tended to view the run more conservatively and recommend an opening every four days. Members of the Group, from their experience fishing on the river, felt the run was quite strong (albeit not as strong as 1988's) and that a more aggressive fishing schedule was warranted. The outcome was that only one period was set at a time. Meetings were held after each opening, the available data evaluated, and another single period announced. In general, the Group voted to set the next opening a day earlier than the ADF&G recommendation. The Area Biologist carried out these decisions of the Group. When the Group decided to set two openings at one meeting, the ADF&G persuaded the Group to space the second one an extra day later to assist escapement. Through this "one opening at a time" strategy and meeting frequently, the run was micro-managed and a perfect balance was struck. The second largest commercial chum harvest on the river was obtained and ADF&G chum escapement objectives were achieved as well.

Coho

Coho move through the river in rapid pulses as weather conditions change. The ADF&G ability to assess coho escapement and run strength is limited compared to their tools for gauging chum and chinook strength. Thus, coho management has proved to be a tense and difficult challenge for the co-managers. In both 1988 and 1989 the August coho run demonstrated early strength. In 1988 the Group scheduled a relatively more intense commercial fishery and set two to three periods at a time. At a point, however, when they felt run strength would remain strong, catches and new entry dropped dramatically. The Group then closed the river to commercial fishing for a week to allow the run to recover and to aid escapement. Weir escapement at the ADF&G's single index stream for coho fared poorly. The Group was able to use only the preliminary returns from this weir for decision-making as it is some twenty days in salmon migration timing from Bethel.

During the 1989 coho run, the Working Group, having learned a lesson from 1988 coho management, set only one opening at a time to afford themselves maximum flexibility. Although the run behaved

somewhat unpredictably, there was little friction between the ADF&G and the Group over the timing of periods. As in 1988, new entry slowed dramatically in the third week of August (perhaps due to interception by domestic offshore mixed-stock fisheries) and the Group again closed the fishery for a week to help escapement. Commercial coho harvests were as strong as they could be and the ADF&G estimated that escapement did well.

The 1990 season

The 1990 season has been extremely challenging for the Group. Chum and coho prices were less abundant than recent years and prices were low. The Group acted to protect escapement but endured criticism from some of their fellow commercial fishermen. Disagreements over run strength caused the ADF&G Area Biologist to override the Group on a few occasions. He and his staff felt a more conservative management strategy was in order, but many members of the Group felt that the ADF&G's scientific data was inadequate and inconclusive. In the case of the 1990 coho run, they felt that the ADF&G was relying too much on one or two sources of data to back its decisions. This is similar to the criticism levelled at the Bethel test fishery in 1987 when the ADF&G used its results to justify a delay in the start of the fishery.

CONSENSUS: THE KEY TO KUSKOKWIM CO-MANAGEMENT

The rule of consensus is the chief factor which has made this cooperative management mechanism successful. Consensus style decision-making is appropriate for the Kuskokwim in several ways. Foremost, it is based on Yup'ik systems of government whereby community decisions would be made by a group of elders. The issue is discussed at length until the problem is worked and "talked out" and the decision is agreeable to all. Members recognized that this was the only way the Group would be respected as an authority in management by the wider community --both the people they represented and State officials. Second, in the words of many members, the consensus rule prevents "railroading" by any bloc of members. Just as users resented the monopoly ADF&G had on management, so too were they concerned lest any users abuse their new authority. Levels of trust still had to be built. Finally, consensus forces each member to compromise so that a workable decision may be achieved.

The salmon users on the Group represent a range of interest and opinion but share important traits. Essentially all fishermen are local residents and use the same gear --drift gillnets--, and most rely heavily on subsistence salmon harvests as well. The nature of the fishery and the river is such that no fishermen from a particular area have an advantage over others. These similarities reinforce notions of sharing and cooperation among the users. However, the needs and opinions of users represented on the Group are sufficiently diverse that rarely is there a unanimous decision of the Group which is in irreconcilable opposition to the opinion of the ADF&G.

The ADF&G was pleased with the broad representation in the Group. Like those fishermen active in forming the Group, the ADF&G places great value on the fact that the issue of fishery management can be discussed at "one table" and at one time. In the past, the ADF&G staff found it very difficult to concentrate on their duties as they would have to handle numerous phone calls and visits from fishermen, and repeatedly explain their rationale for a decision.

USER-PRODUCED MANAGEMENT DATA

In addition to consensus rules of decision-making, the involvement of users in different management tasks has improved and increased the amount of data available. In a region like the Kuskokwim, where the drainage is vast and scientific data is scarce, bringing a broad range of opinion to management helps to counteract the pitfalls of single-approach management, such as overharvesting or managing too conservatively. Two Working Group projects involve local users directly in the production of scientific data.

The Industry Test Fishery

One of the persistent complaints of local users concerning ADF&G management was that the test fishery at Bethel was located in a non-productive fishing area and that it was fished improperly because the crew were not Native, local fishermen. Therefore, the Working Group wanted to have their own test fishery. Since 1988, with the financial and logistical support of local processors, a test fishery has operated near the mouth of the river near Eek Island (Figure 2) at a site selected by the Working Group. Two Yup'ik commercial fishermen from Eek alternate as skippers and are assisted daily by an ADF&G technician who acts as crewman and tabulates the catch data into a standardized catch-per-unit-effort or CPUE figure. ADF&G staff in Bethel then prepare the data for presentation at Working Group meetings.

The data from the industry test fishery has proven timely for decision-making on several occasions. It provides data on entry earlier than the ADF&G test fishery at Bethel. However, since it is a newer operation its results are less refined and sometimes difficult to evaluate since yearly comparisons are limited.

The Subsistence Monitoring Program / Test Fishery

For the past three seasons, the Kuskokwim Fishermen's Cooperative has hired monitors in each village to contact fishermen in their area on a daily basis and record the amount of fish they caught, the number of hours fished, and the length and mesh size of the net they used. As with the industry test fishery, Cooperative employees then calculate this information into a standardized CPUE figure each species by village

In general, the subsistence test fishery program has been more problematic and less successful than the industry test fishery. It

has proven most useful for tracking the progress of the Chinook runs as they move up the river since this is the species fished for the most consistently by subsistence users. As a consistent measure of abundance its utility is limited since fishermen will vary the location and timing of their harvest attempts according to ecological conditions and other factors. As well, if fishing conditions are poor or if the racks are full, some villages will have no subsistence effort at all for several days. In 1988 monitors were in place at twelve sites from Tuntutuliak to Chuathbaluk. The program was streamlined to eight sites for 1989 and four sites for 1990 to eliminate redundancies and to shift funds to maintaining consistency of data collection and analysis.

Despite its problems, the program fills important gaps. It provides the only "hard" or standardized data within the main stem of the river upriver of Bethel. It tracks the progress of the chinook run well enabling the co-managers to accurately time commercial openings so that subsistence harvests of this critical species will not be harmed. Finally, it is of significant, if intangible value, in that it engages the daily experience of subsistence fishermen and brings it formally and openly into the management forum. By treating the average fishermen as an expert witness, it gives him a stake in management.

In the design of these two new projects, the ADF&G exercised its influence to insure that appropriate scientific guidelines would be used. The ADF&G stressed that the two projects must collect data in a standardized, consistent manner. Indeed, the ADF&G supplies its own employee for the industry test fishery and handles the analysis of its data as well.

Both local users and the ADF&G staff work together closely in operating these projects. Through the responsibility of running a test fishery in a "scientific" manner and interpreting and using the data generated, the Working Group members have come to recognize more clearly the advantages and liabilities of a method they often criticized, while gaining an appreciation of the difficulty of ADF&G management and research operations. The ADF&G has come to recognize that the users' demand to be involved in management is backed up by a demonstrated willingness to provide their own data and make personal and financial contributions.

The ADF&G continues to generate most of the "fishery science" data. In addition to the Bethel test fishery and its escapement monitoring projects, staff also tabulate the commercial salmon sales, take age-sex-weight samples at dockside, and fly aerial surveys of fishing effort.

FISHERMEN'S KNOWLEDGE

Increasing the scientific data available was only one goal of the Working Group. They also wanted the local knowledge of fishermen directly involved in decision-making. This knowledge, as

demonstrated by the participants at Working Group meetings can be divided into four categories discussed below.

1) On-the-river experience

During meetings, members and fishermen in attendance share their experience of participating in the most recent opening. This input helps all present to discern what factors influenced the success of the commercial salmon harvest. Frequently, these comments relate to the weather or water conditions, such as the presence of high pressure systems which causes the salmon to dive to the bottom of the river below the fishermen's nets.

2) Subsistence harvest experience

Fishermen also report on how subsistence catches are progressing in their respective areas --i.e., how full the drying racks are. As well, they describe how well or how poorly they did on their most recent subsistence fishing outing. Although these latter reports are anecdotal and not standardized like that collected by the subsistence monitoring program, they do serve to augment it and the other "scientific" data available.

3) Fishermen's needs and goals

Working Group members, being local fishermen themselves, understand the social dimensions of the fishery. This allows them to assess how fishermen will react to management decisions. For instance, members debate if commercial fishing periods in late July will mesh with the desires of many villagers to go berry picking at this time. They are also aware of how critical fishing income is to village residents without other sources of income and thus the Group usually has allowed commercial harvests at the end of the run if biologically feasible. Although harvests usually are low ("scratch-fishing"), the Group feels obligated to provide an economic opportunity even if it barely pays expenses.

4) "Knowing the salmon"

Fishermen possess an intuitive understanding of salmon behavior gained from their direct experience in living off the* river. This is informed by the collective knowledge and beliefs of their fellow fishermen, particularly elders. This enables them to assess how the fish will react to certain weather conditions and hence when the fishing will be good.

Co-management engages fishery scientists and fishermen in a negotiation or transaction. Successful transactions require a familiarity with the values and knowledge of the other. Kuskokwim fishermen's knowledge acts to augment the scientific data generated by the projects of the Group and the ADF&G. A fishermen's understanding of salmon and how to manage them is gained first-hand and measured qualitatively rather than through the use of statistics. In turn, by sharing the responsibility for management, fishermen learn better the rationale behind the methodology of "fishery science" and begin to experience directly the difficulty of management. When each manner of understanding salmon management --"fishery science" and "fishermen's knowledge"-- is used and

shared at the co-management table, each acts to inform and refine the other.

CONCLUSION: VALUES AND THE BALANCE OF POWER IN CO-MANAGEMENT

Political realities help to achieve a balance of power in Kuskokwim co-management. Although the ADF&G has the statutory power to override the Group, it has been reluctant to do so unless they have felt the biological data to be incontrovertible. Likewise, while the Group has strong tacit political and social influence, they must not force the Area Biologist into a corner. To do so would create a situation of tension and chaos like that which existed prior to co-management. In the words of one member, the participants have "buried the hatchet" and achieved a "working relationship"; if users were to start "butting heads" again with the ADF&G again, then "in the long run, it'll be the fishermen who lose out."

It is not only the rule of consensus which helps to maintain the balance of power. The co-managers have also developed their own management style which gives them flexibility and maneuvering room in their negotiations over how to manage the fishery. "Setting one period at a time" is the heart of this style and has become an explicit rule of the co-managers. This enables individuals to more easily acquiesce to the larger consensus since they know they will not lose much and can use their act of flexibility to place bonds of reciprocity on fellow members. Therefore, the member can later bargain more effectively to be sure fishermen from his area have a good chance at the fish or to argue for a delay to help escapement.

Members of the Working Group and the local ADF&G staff feel that their co-management mechanism will survive. They have experienced a variety of situations and have adapted well. A few members I spoke with in the summer of 1990 expressed frustration, not with co-management, but rather with the inadequacy of the management data currently available to them. In becoming "managers" they become acutely aware of how State budgets affect their duties and livelihoods. Indeed, the extreme challenge inherent in Kuskokwim coho management, caused the Group to often ask fishermen for their patience while the Group postponed decisions up to the last possible moment so that they could have the most recent data available to use in judging when to set the next commercial opening.

Despite the difficulties it has faced and its lack of financial support for staff or daily operations, the Group seems likely to continue. In its first two years, its success rested a great deal on the combined efforts of a dozen or so individuals. During that time, however, others began (primarily through attending meetings) to gain a familiarity with the management and co-management process such that in 1990 at least three members were new participants. This process of education and burden sharing is

building up a core of local individuals who can and will partake in the participatory democracy of co-management.

Simply put, the participants have learned how to do co-management. Sharing the burdens of management --research, decision-making, public relations-- has engaged them in a learning process. One member of the Working Group, in commenting on the first drafts of my thesis described this process:

Personally, I find the more participation I have the more I find my ideas divergent from others on the Group. Understanding this divergence means I'm learning the values of others more clearly; this makes reaching compromise personally much easier for me. When I'm giving something to reach compromise I give it not because my values have converged with the recipient of what I've given up but because I understand more clearly how important it is for him to get it. I keep track of these concessions and expect something in return.

The knowledge they gain about each other enables them to find ways to make the co-management bargain possible. The success of co-management is not dependent upon the participants sharing many values, merely that they find ways to accommodate or make congruent each other's values.

The importance of sustained cooperative management means that each stakeholder has found it in his interest to participate. Through devolving some of its power, the ADF&G has gained more stability and peace in its work environment. It can now concentrate on its primary duty of biological resource management and broader long-term research goals. The Working Group is better able to communicate and work with users in the social and political realms of the fishery and also now shares the responsibility (and the burdens that go with it) for a decision. Therefore, the ADF&G no longer has to invest as much energy in attempting both to get users to accept its credibility and to stem damage to its authority.

The Working Group now takes some of the "heat" that the ADF&G used to bear alone. There are also financial and personal costs. But by making these contributions, users now exercise greater control over decisions that affect their livelihood. Commercial users can counteract the more conservative management tendencies of the ADF&G to make certain that the fleet is allowed to maximize its harvest within sustained-yield guidelines. Fishermen have a forum to make sure they get their fair share and subsistence users in particular can act to protect both the economic and cultural significance of their harvest. Instead of having to force repeated confrontations with the State to protect their interests, Kuskokwim River salmon users can work on long-term goals such as protecting their salmon runs from offshore mixed-stock or high-seas driftnet fisheries or working to enhance the economic value of their product.

Imposed decisions that allocate quotas or arbitrate between users and managers are only short term solutions to resource management conflicts. Giving the different interests a stake in the management system acts to sustain transaction and negotiation between them. Out of this can arise a compatibility of approaches to management which builds local level cooperation and hence more effective stewardship of a common property resource.

.....

For a more detailed analysis of the Kuskokwim River Salmon Management Working Group, refer to:

Albrecht, Daniel E. 1990 Co-management as transaction: the Kuskokwim River Salmon Management Working Group. Unpublished M.A. thesis, Department of Anthropology, McGill University, Montreal, 139 pp.