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"Don't wait for Boldt.": Building Co-management From the Ground Up: the Success of Salmon Fishermen's Groups in Western Alaska.

Disclosure

The approach to achieving co-management which I shall advocate in this paper comes directly from my own experience as an observer and practitioner of co-management since 1989 in the Arctic-Yukon-Kuskokwim (A-Y-K) fisheries management region. I am not an unbiased observer. In May 1989 I arrived in Bethel, Alaska for 5-months of master's thesis fieldwork as the secretary/administrative assistant for the Kuskowkim River Salmon Management Working Group. After submitting my anthropology master's thesis at McGill University in May 1990, I took a position as a Policy Specialist in June 1990 with the Bering Sea Fishermen's Association in Anchorage and continue to work for BSFA. Since 1991 part of my duties at BSFA have been to provide staff support to the Yukon River Drainage Fisheries Association and since 1993 I have acted on a part-time basis as their Executive Director.

The "traditional models" of Alaskan co-management

Co-management or cooperative management have been frequent buzzwords on the Alaskan wildlife management scene and in the Alaska Native community for several years now. The concept is described in conferences and literature of Alaska Native and rural advocacy groups and typically the same models are presented as the standard approach to achieving more power and influence for Native villages and organizations (Rural Alaska Community Action Program 1995; Native American Fish & Wildlife Society 1998). Three major models are usually presented: the "marine mammal commission" model exemplified by the Alaska Eskimo Whaling Commission; the "goose plan" model demonstrated by the Yukon-Kuskokwim Delta Goose Management Plan and the more recent "tribal village self-determination and traditional knowledge" model, advocated by various individual and regional tribal groups .

The "marine mammal commission" model

The most frequently described model is that of the Alaska Eskimo Whaling Commission. The longest established Alaskan co-management group, the AEWC and its sister group the Eskimo

Walrus Commission have persevered for a variety of reasons. Foremost has been the Marine Mammal Protection Act which provides for the establishment of co-management agreements with Alaska Native organizations and the 1994 Section 119 amendments to the MMPA which authorized supporting appropriations to the Department of Commerce and the Department of the Interior. The Act has given these Commissions legal grounding as well as secure funding. This model has also been the basis for the formation of several other marine mammal commissions throughout Alaska, with the Alaska Sea Otter Commission, the Nanuq Commission and the umbrella advocacy group, the Indigenous People's Council for Marine Mammals being the most notable examples.

Unfortunately, this model has only limited application to other species in Alaska because marine mammal management in Alaska has unique features. First, the federal government and not the state government has primary authority over marine mammals, second, Alaska Natives are the only ones allowed to hunt marine mammals, third, there is limited to no commercial use of marine mammals and fourth, competing "users" such as tourists and environmentalists do not have a strong presence in the region. This means that these individual agreements must only be struck between two parties, the federal government and the native commission uncomplicated by the claims of other users or the State of Alaska.

The "goose plan" model

Another model often presented, and the second longest running co-management regime in Alaska, is the Yukon-Kuskokwim Delta Goose Management Plan formed in 1984 (Pamplin 1986; Osherenko 1988; Spaeder 1998). The agreement is primarily between Yup'ik Eskimo of the Waterfowl Conservation Committee of the Association of Village Council Presidents (AVCP) and the U.S. Fish and Wildlife Service which manages the Yukon-Kuskokwim National Wildlife Refuge that encompasses numerous villages as well as the spring nesting and breeding grounds of these highly migratory species. Conservation concerns over four individual species have led to cooperation in setting harvest and population goals, in education programs and in reducing government enforcement activities which has significantly defused a potentially explosive situation and built a framework for ongoing negotiations leading to, in theory, more cooperation. However, Spaeder (1998) convincingly argues that a more in-depth analysis documents Native avoidance and opposition to other aspects of waterfowl management, in particular biological research, and a feeling of ambiguity towards local involvement in governmental resource management.

The local example of the YKDGMP also led to the adoption of the Qaulnguut (Kilbuck) Caribou Herd Cooperative Management Plan (1995). Conflicts over enforcement and differing perceptions of survey methods, herd size and herd health led to negotiations between Yup'ik villagers and agencies. This plan was first adopted in 1994 and is amended and readopted on annual basis based upon meetings between AVCP, the USFWS and the ADF&G. Population estimates are jointly reviewed, harvest goals are set and some inter-village allocation decisions are made by the hunters themselves. An expanding herd size as well as expanded Federal jurisdiction over subsistence hunting regulations have facilitated the success of this cooperative management regime. Experience with goose and caribou management has also led Yup'ik villagers and agencies to more localized and less formal agreements concerning management of grizzly bears in the Kilbuck Mountains and moose in the lower Yukon.

The "tribal village self-determination and traditional knowledge" model.

Organizations such as the Native American Fish & Wildlife Society, the Native American Rights Fund and the Alaska Inter-Tribal Council argued that Alaska Natives possessed inherent traditional knowledge and community sense of responsibility that would enable them to both govern their own affairs and be successful stewards of fish and wildlife resources. To achieve this end these organizations, along with certain individual village tribal governments, have sought both judicial and congressional recognition of this right of individual tribal self-determination and the primacy of the individual village unit.

The Alaska Inter-Tribal Council was one of the strongest advocates of this position. In Congressional testimony (AITC 1996a) they argued that P.L. 93-638, the Indian Self-Determination and Education Assistance Act essentially requires the federal government to compact and contract with individual tribal governments and provide the funding for a variety of services and powers. They stated that many individual tribal governments "no longer wish to be dependent upon regional non profit native organizations that are too costly to operate and maintain, are housed far from the tribal community, and have an impossible task in determining the best approach to problem solving at the community level." In their eyes, individual village tribes would rather bypass these regional organizations and directly contract with the federal government "to provide their own local services, employ their own people in the community and require state, federal and private agencies to deal directly with them."

On behalf of various individual villages AITC asked the Congress "that special consideration be given to these local needs by redirecting federal government resource management activities and the funding to local tribal governments and their natural resource management programs (AITC 1996b)." The AITC lobbied by saying that "(f)unding for these essential projects are just a few of the many tribal government projects that need to be funded to protect and preserve the traditional natural resources that the local tribal members are dependent upon (AITC 1996b)."

The Alaska Regional Chapter of the Native American Fish & Wildlife Society (1998) hosts an annual conference in Anchorage to educate Alaska Natives about various issues and approaches in natural resource management policy. The theme for 1998's Fifth Annual Regional Conference was "Tribal Stewardship: Our Connection to Mother Earth." Technical sessions included Indigenous Sciences, Traditional Methods of Conflict Resolution, Co-Management Agreements and Fisheries Issues. The co- management session described the examples of the various formal agreements such as marine mammal commissions. The session on Fisheries Issues focused on the examples of the Columbia River Inter-Tribal Fish Commission and the Northwest Indian Fisheries Commission.

It is obvious that the template for this tribal self-determination are the Indian reservations of the contiguous lower 48 states. This "Indian country" model for the basis for the power they claim that Alaska Natives should have granted to them. Not only do these reservation tribes receive significant federal funds for resource management activities, more importantly they actually have sovereign power over the land and shared or sole authority over much of the fish and wildlife.

Unfortunately for those who advocate for Alaska Native tribal self-determination, the legal and political history of Alaska Natives vis-a-vis the U.S. government is vastly different from that in the lower 48. While it is true that PL-638 enables tribal contracting of a variety of federal programs and services other Federal laws dealing with Alaska Natives, such as ANILCA and ANCSA, clearly limit any tribal power that may exist over the vast lands and waters and more importantly establish no management authority over fish and wildlife species. The clearest of these was the 1971 Alaska Native Claims Settlement Act which effectively extinguished aboriginal hunting and fishing rights. The 1980 Alaska National Interest Lands Conservation Act indirectly restored some of these rights by mandating a "subsistence priority", however this right applies equally to Natives and non-Natives living in rural areas.

Although through refuges and parks the federal government controls large amounts of land, it is the state that currently possesses the power to regulate all commercial, subsistence and sport fishing, all sport hunting and subsistence hunting on state and private lands. In 1990 the Alaska State Supreme Court further restricted Native subsistence rights when it is ruled that the federal rural subsistence priority violated the state constitution and that therefore all Alaska residents should be considered subsistence users. This put the state in direct violation of ANILCA and prompted activists began to look to the courts to establish the meaning and scope of tribal power and Indian country within Alaska. By the early 1990s the federal government had assumed management responsibilities for regulating hunting on federal lands in order to protect a rural subsistence priority. Currently, the federal government is scheduled to assume oversight of fishing regulations on December 1, 1998 unless the Alaska State Legislature can put a constitutional amendment on the ballot to establish a rural subsistence priority in state law to assure that subsistence uses are provided for.

Although various portions of Federal law such as the Indian Self-Determination and Education Assistance Act, the Indian Child Welfare Act, the Marine Mammal Protection Act, and various other social service legislation clearly establishes that tribes do exist and have various powers, the physical extension of these powers is limited primarily to internal tribal issues. While the Federal protection of the rural subsistence priority is clearly established and being strongly asserted by agencies such as the U.S. Fish & Wildlife Service, it is also now starkly clear that legally there is little Indian country in Alaska, that Alaska Native tribes have limited powers and that whatever Indian country that may be determined to exist by future courts would likely be limited to individual Native allotments and tribal powers over fish and wildlife management would be minimal at best. This finality was delivered in February 1998 when the United States Supreme Court ruled in *Alaska vs. Native Village of Venetie Tribal Government* (1998) that the tribe's land was not Indian country and therefore Alaska tribes do not have the same powers as those on reservations in the lower 48.

"The Tribe's ANCSA lands do not satisfy either of these requirements. The federal set-aside requirement is not met because ANCSA, far from designating Alaskan lands for Indian use, revoked all existing Alaska reservations "set aside by legislation or by Executive or Secretarial Order for Native use," save one. 43 U.S.C. Sect. 1618(a) (emphasis added). Congress could not more clearly have departed from its traditional practice of setting aside Indian lands. Cf. Hagen v. Utah, 510 U.S. 399, 401. The difficulty with the Tribe's argument that the ANCSA lands were set apart for the use of the Neets'aiti Gwich'in, "as such," by their acquisition pursuant to Sect. 1618(b) is that ANCSA transferred reservation lands to private, state-chartered Native

corporations, without any restraints on alienation or significant use restrictions, and with the goal of avoiding "any permanent racially defined institutions, rights, privileges, or obligations." Equally clearly, ANCSA ended federal superintendence over the Tribe's lands by revoking all existing Alaska reservations but one, see Sect. 1618(a), and by stating that ANCSA's settlement provisions were intended to avoid a "lengthy wardship or trusteeship," Sect. 1601(b). Although ANCSA exempts the Tribe's land, as long as it has not been sold, leased, or developed, from adverse possession claims, real property taxes, and certain judgments, see Sect. 1636(d), these protections simply do not approach the level of active federal control and stewardship over Indian land that existed in this Court's prior cases.

The Tribe's contention that such superintendence is demonstrated by the Government's continuing provision of health, social, welfare, and economic programs to the Tribe is unpersuasive because those programs are merely forms of general federal aid, not indicia of active federal control. Moreover, the argument is severely undercut by the Tribe's view of ANCSA's primary purposes, namely, to effect Native self-determination and to end paternalism in federal Indian relations. The broad federal superintendence requirement for Indian country cuts against these objectives, but this Court is not free to ignore that requirement as codified in Sect. 1151. Whether the concept of Indian country should be modified is a question entirely for Congress."

In recent years, both the NAFWS and the AITC however have focused their efforts on a more practical approach by attempting to create, one village at a time, the building blocks to local involvement in management and research. Using federal Administration for Native Americans grant funds their approach is to assist a local village's efforts in developing their own "traditional natural resource management program". They provide technical assistance and pass-thru funding for a village council to hire a single local employee to function in any of the following activities (AITC 1998):

- develop tribal capabilities to conduct management activities;
- conduct traditional use harvest surveys of community members;
- identify specific habitat areas utilized by fish and wildlife resources;
- assist the Traditional/IRA Council in developing and expanding comprehensive land use plans, codes and ordinances for the traditional use areas surrounding the community; and
- coordinate tribal management efforts with other resource management agencies.

This approach, while not as exciting as taking a lawsuit all the way to the Supreme Court, shows more promise in achieving some degree of co-management. Like the approach of the Bering Sea Fishermen's Association described below it builds skills and ability at the local level.

The "A-Y-K fisheries" cooperative management model

As noted at the beginning of this paper, the model which I am advocating comes from ten years of experience with the fisheries of the Arctic-Yukon-Kuskokwim region, the "AYK". These are small scale artisanal commercial and subsistence fisheries that include the villages of Kotzebue Sound and Norton Sound, the Yukon River, the Kuskowim River and the Yukon-Kuskokwim Delta. These villages' populations are more than 95% Alaska Native. Pacific salmon, primarily chinook, chum and coho salmon are typically harvested by these villagers using open, 18-25 ft. skiffs powered by outboards deploying 50 fathoms of set or drift gillnet gear. Fishwheels are also

used in the middle and upper Yukon and in the upper Kuskokwim. In the summer villagers often leave their home village and live in cabins and tents at "fish camp" along the rivers or coasts in mult-generational family units. Several dozen salmon are harvested by each unit then dried and smoked and eaten as a year round staple. Commercial fishing opportunity is regulated by the Alaska Department of Fish & Game and ranges from two 48-hour periods per week in the setnet and fishwheel fisheries to as little as two 6-hour periods in the more intensive drift fisheries of the lower Yukon and lower Kuskokwim rivers. Most extended family groups have at least one limited entry commercial fishing permit.

The subsistence-market economy

Salmon fishing has been and continues to be central to the annual economic cycle of families and villages in the region. Salmon fishing for sale in a cash market is a more recent development but is a prime contributor to the "mixed subsistence-market economy" (Wolfe 1979). Fishing income of individual permit holders in the AYK region however is not that of the typical central or southeast Alaskan or Pacific Northwest full-time professional commercial fisherman who fishes not only in the summer but also in the spring and fall for other species. AYK commercial salmon fishing permit holders are more than 95% local village residents who earn an annual gross income on average of \$5,000. Commercial fishing plays a critical role in this income since it is the largest single source of private sector income and is well integrated into the traditional patterns of subsistence hunting, fishing and gathering. Commercial fishing income, as a permit holder, crew member, tender operator or plant laborer enables village residents to purchase non-perishable foodstuffs (rice, potatoes, canned and boxed goods, etc.) to supplement their harvests of wild food such as fish, moose, caribou, seals, and rabbit. The cash also facilitates purchase of the necessary equipment and supplies (rifles, nets, traps, boats, outboards, snowmachines, four-wheel ATV, etc.) to participate in the "bush economy."

There are other local sources of cash income but these are short-term and infrequent. These include summer wage labor on construction or renovation projects of village facilities such as schools, laundromats, city buildings and airports, fire-fighting or National Guard participation. Only a few local year-round jobs are available with the local school or city and village governments. Other income includes transfer payments such as welfare and Alaska Permanent Fund Dividends.

Compared to other areas in Alaska, however, the subsistence economy of the region has been supported by the commercial salmon fishery rather than displaced (Wolfe 1984: 177; Andrews and Pete 1991: 543-544; Andrews and Albrecht 1992). Regulations and policy advocated by fishermen and approved by the Board of Fisheries have generally provided for adequate subsistence harvests and fishing opportunity. The Alaska Department of Fish & Game's conservative approach to management has also prevented overexploitation of stocks and the state subsistence priority has minimized disruptions to traditional harvests and fishing practices even in years of poor returns. Overexploitation of stocks has also not occurred due to the relatively low commercial harvest allocations in the AYK and the higher costs of shipping and fish processing infrastructure. Although commercial salmon fishing permits can be and are freely bought and sold on the open market, bluntly speaking, there is simply not high enough a potential income from

commercial fishing income in the A-Y-K region to attract significant non-local or out of state participants.

Even the most commercialized of villages have remained “subsistence-based” because of the intrinsic value of subsistence activities and since local renewable resources form the most reliable base of the economy from year to year. Village economies have evolved incorporation of both subsistence and commercial activities since neither is sufficient to support the population alone.

Bering Sea Fishermen's Association

BSFA is a non-profit fisheries economic development and advocacy group assisting coastal and village fishermen from four regions: Bristol Bay, the Yukon and Kuskokwim Rivers, Norton Sound and Kotzebue Sound. It is governed by a 12-member Board of Alaska Native village fishermen with three representatives from each region selected by their own local fishermen's organizations. Formed in 1980, the BSFA has been one of the strongest players in fisheries politics in Alaska.

During the 1980s it worked with village fishermen to develop and protect their newly-developing sac roe herring fisheries and small-boat halibut fisheries and as well as their more established artisanal commercial and subsistence salmon fisheries. In the 1990s, its greatest accomplishment was achieved with the initiation of the Community Development Quota program for the Bering Sea & Aleutian Islands pollock fishery. BSFA's influence in the 1980s and the early 1990s was based upon the political cohesion and voting power of its village fishermen and the long-time position of its Executive Director, Henry Mitchell, as an appointed member of the North Pacific Fishery Management Council. In addition to straightforward education and advocacy BSFA also administered a variety of state and federal economic development and research grants which established its reputation as a professional organization.

Kuskokwim River Salmon Management Working Group

The Kuskokwim River Salmon Management Working Group formed in 1988 after several years of growing political conflict between the Alaska Department of Fish & Game (ADF&G) and local Yup'ik and non-native local fishermen of the lower Kuskokwim River (Albrecht 1990a, 1990b, 1996; Andrews and Albrecht 1992; Morrow and Hensel 1992; Pinkerton and Weinstein 1995; Ebbin 1998a, 1998b). Seats have been apportioned for an elder, one processor, one lower river commercial fisherman, one middle river commercial fisherman, one lower river subsistence user, one middle river subsistence user, one upper river subsistence user, one sport user and one representative each from the regional fishermen's cooperative, a local fishermen's marketing association and a regional fisheries advocacy group. Members, both Yup'ik and non-Yup'ik are seated based upon both input from various sub-regional organizations and the community's perception of the individual as a fisheries or community leader or knowledgeable person.

In practice, individuals continue only if they are willing to put in the necessary time and energy without financial recompense while suffering the comment and criticism that comes with the job. The group meets two to three times weekly with ADF&G management staff from June through August to review all the pertinent scientific information and the fishermen's knowledge and arrive at 100%-consensus or consensus-minus-one recommendations regarding openings and closings of

the Kuskokwim River commercial salmon fishery. The ADF&G manager has the option of vetoing the group's recommendation or if the group cannot reach consensus, determining the fishing schedule himself.

From 1988 to the present the KRSMWG process has had to deal with a whole range of complications that might have led to its demise. These have included record high commercial harvests for each species, record low commercial harvests for each species, severely restricted or closed subsistence fisheries, fishermen's strikes, record high ex-vessel prices, record low ex-vessel prices, threatened lawsuits and turnover in both ADF&G managers and working group members. Despite this turmoil it has survived and is become a local Kuskokwim institution in its own right. Through their willingness to spend several grueling hours each week arguing about what the fish are doing and what the data means, they recreate themselves anew each year.

The Yukon River Drainage Fisheries Association

The Yukon River Drainage Fisheries Association was formed in December 1990 at a gathering of diverse Yukon River fishermen deciding to work together for a common purpose (Andrews and Albrecht 1992). Their stated goals include: 1) to foster communication and cooperation between historically competing fishermen; 2) to promote cooperative management between fishermen and state fisheries managers, and 3) to increase salmon returns through habitat protection and restoration projects. It is governed by a 16-member Board of Directors along with 12 Board alternates with seats apportioned between the six salmon fishing districts from the river's mouth to the Canadian border, a coastal fishing district and portions of the upper river tributaries. These 28 board members and alternates comprise the Association's delegation which meets annually for a 4-day meeting. Dues-paying members from the respective districts elect the persons who will be their district's delegation and those selected in turn decide amongst themselves who should be the Board member(s) and who the alternate(s). Motions of the 16-member board or the 28-member annual meeting delegation can only pass with full 100% consensus.

Unlike the KRSMWG whose primary task is inseason management, the YRDFFA has focused on crafting and amending the various salmon stock management plans and regulations which govern the management of the various commercial and subsistence fisheries of the Yukon River and its tributaries. These plans are crafted in joint discussions with ADF&G managers, debated and fine-tuned at the Annual Meeting and then presented, often jointly with the ADF&G, to the Alaska Board of Fisheries which formally votes into policy or regulation. Being a river-wide organization the YRDFFA has become the primary vehicle for resolution of all significant salmon management disputes and issues on the Yukon. Indeed both the ADF&G and the Board of Fisheries have repeatedly asked for the Association's help in resolving an issue. In recent years the YRDFFA has also taken on the role of providing input to inseason management by organizing teleconferences between its board, Yukon salmon processors and the ADF&G field managers.

The Alaskan Yukon River fisheries involve more than 11,000 persons living in 40 different villages of which there are 943 state-licensed Yup'ik, Athabaskan and white commercial permit holders and more than 1,500 subsistence fishing households. Despite this complexity the YRDFFA has consciously accepted the role of consensus-builder and as a result has been recognized formally and informally by government and fishermen as the sole co-management forum for this huge fishery.

Earning co-management rights

The alternate approach I am advocating is to earn rather than demand your place at the management table. Power is better achieved and will prove longer lasting by developing the necessary skills in wildlife management and making yourself an indispensable part of the management framework. There are several areas that are the natural venue of stakeholders and that can become the gateway towards greater involvement and eventually, power. These include allocation, enforcement, basic research and public communications and outreach. Step by step stakeholders can develop the skills in these venues and others that form the building blocks of wildlife management. In other words, walk before you run.

Barring legislative mandates such as that contained in the Marine Mammal Protection Act, co-management will not be delivered to a stakeholder group simply because it is the right thing for agencies to do. Attitudes will vary from agency to agency and a good portion of an agency's response will be dependent upon the viewpoint of individual biologists and managers. A more successful approach is to learn to play the "management game" and then earn your place at the table.

Salmon fishermen's groups in western Alaska are taking a more realistic approach to securing a place at the management table. Rather than seeking to defeat the state by arguing the moral superiority of Native management or the wisdom of traditional knowledge they pushed and prodded the state into publicly admitting key weaknesses in its management approach, liabilities which many state field staff were the first to admit. First, that state management possessed an inadequate number and variety of data-gathering tools to manage the complex fisheries in the vast rivers and coast of western Alaska. Second, that the state's "magic black box" style of management with little public knowledge or involvement only built mistrust and suspicion of all fishery management decisions regardless of their biological rationale. That is, fishermen knew little of which data staff examined, how they interpreted the data, and what parameters went into the final decision to allow or curtail fishing activity. Third, that unless all user groups within an area worked together and were all involved in crafting management policy suspicions would also live that the state was favoring one group over another.

Filling the data gaps

In most circumstances, the last thing a manager or field research biologist in Alaska is likely to concede is the usefulness, let alone the equal value of traditional knowledge or elders' wisdom. However, the first thing a manager or field research biologist in rural Alaska is likely to concede is that he or she possesses an inadequate number of research and management tools. The A-Y-K region fisheries occur on the longest and second-longest river systems in Alaska, the Yukon and Kuskokwim respectively and in the remote Arctic of Norton Sound and Kotzebue Sound, the limit of the range for Pacific salmon. State funding of basic management tools such as test fisheries, inriver sonars and escapement monitoring projects has been static or declining since the late 1980s. Operational costs for personnel, equipment, fuel and other items necessary to run field projects in this remote, wilderness area remain high.

The KRSMWG addressed the data gap on the Kuskokwim through user funding of a daily test fishery at the river's mouth and systematic daily reporting of catches from select subsistence fishing sites from the mouth to the middle River. The test fishery at the river's mouth at the lower end of the main commercial fishing district served to detect incoming salmon migrations one to two days earlier than the state's test fishery located at the midpoint of the district. Daily reporting from select fishermen's catches also served to track upstream migration of stocks and proved especially valuable when combined with oral reports from each village as to whether or not their subsistence needs were being met. Although both of these projects ceased in the early 1990s due primarily to funding problems, they proved their value especially when used in conjunction with the state's indicators.

The BSFA has addressed the data gaps throughout AYK by securing an annual \$800,000 Congressional appropriation since Federal fiscal year 1994 to fund cooperative salmon research and restoration projects. Working in consultation with the ADF&G and USF&WS, BSFA determines the overall emphasis of the various projects and then subcontracts with regional Native non-profit organizations, individual tribal village councils and even individual fishermen to handle the day-to-day operations and administration of each project. Depending on the project, agencies contribute personnel, equipment, supplies, technical assistance or some combination of these elements. Escapement monitoring such as towers, weirs and stream surveys are the most common type of project, followed by daily gillnet or fishwheel test fisheries although longer term research into habitat productivity, spawner fecundity and migration distribution have also been supported. Approximately twenty different projects are supported by BSFA each year. In areas such as the Kuskokwim and Norton Sound, BSFA's efforts have doubled the number of run monitoring projects available to managers.

A typical escapement monitoring project is subcontracted by BSFA to a regional or local group. This group typically uses the funds for local Native hire of technicians, equipment, supplies and contractual costs such as land use permits or local ad hoc contracts for transport, housing and labor. The agency contributes one technician for technical support and perhaps some equipment. Daily escapement counts are forwarded by the project to the ADF&G field offices for use in management of the commercial and subsistence fisheries.

Instead of securing funding of its own, the YRDFA has improved the information situation through increased advocacy and the implicit political power of a unified regional fishermen's group. Working in consort with BSFA and by putting pressure on various state and federal agencies YRDFA has kept the heat on to constantly keep upgrading salmon research projects. For example, the USF&WS now runs weir or sonar projects on the major Yukon tributaries that flow through various National Wildlife Refuges. The ADF&G now operates more counting towers which can provide inseason escapement estimates, thus improving its past reliance on peak spawning aerial surveys which are notoriously unreliable and of little use to inseason management. Additional research on marine interception, discrete stock run timing and habitat productivity as well as comprehensive salmon restoration and enhancement planning efforts have all been funded and or completed in part due to YRDFA's advocacy.

Opening management's "magic black box"

The efforts of the KRSMWG and the YRDFA provide some of the most dramatic examples of one of the best ways to improve relations between fishermen and managers and therefore significantly improve the way that data is analyzed and acted upon. In the AYK fisheries and indeed with many fisheries throughout the world, fisheries management decisions are delivered ex cathedra via radio announcement. More than likely only a cursory explanation of the rationale behind a decision is made coupled with an invocation of the agency's goal to, for example, provide for sustained yield.

The KRSMWG process by contrast functions in a completely opposite manner and literally, all information is on the table and debated in public by the Working Group, the department and the public itself. This includes escapement counts, test fishery catches, subsistence catch reports, commercial catch-per-unit-effort data, processor fish quality reports, weather forecasts, enforcement reports and fishermen's and elders hands-on experiential sense of what the fish are doing. Not only is the information itself reviewed but its relative value given the current situation is assessed. For example, escapement counts at a mid-river weir may be low but if it is early in the run that is less of a concern. Or the test fishery may be experiencing high catch rates but low water conditions and/or strong tides and on onshore wind may increase gear efficiency.

The YRDFA reviews the various salmon stock management plans and subjects them to a form of strict scrutiny. What is the goal of the plan? Are the allocational aspects of the plan fair? Is each user sharing in the burden of conservation and sharing in the rewards when the salmon are abundant? Is the subsistence priority maintained? Is the plan sensitive to the different aspects and goals of each individual fishing district along the Yukon? Are the spawning escapement and harvest goals based upon the best available data or are they the product of the standard agency tendency to err too strongly on the side of restricting harvest? Another key standard that YRDFA has promoted is the question: is the management plan, a two-way street? That is, if stock health improves are harvest restrictions relaxed?

BSFA has opened up the management and research process by virtuing of being a significant funding source and by working in a cooperative rather than a confrontational mode. BSFA could have used the substantial amount of funds at its disposal to set up a competing regime by hiring its own biologists to run its own network of test fisheries and escapement projects and gone head-to-head with the state with a well-funded public relations effort of press releases, editorials, elder's speeches about the old ways and poignant vignettes of the poor, oppressed Native fishermen. In the end however the state would still have been in charge and agency personnel would have issued scientific and legal rebuttals and closed ranks.

Instead BSFA sits down willingly with the agencies and with the regional non-profit Native organizations and decide what projects are the most critical so that management can assure that escapement goals are met, the subsistence priority is maintained and commercial harvests are maximized within sustained yield. The next step consists of inventoring the financial and personnel resources of each cooperator and putting together a budget and operational plan. This process often prompts extraordinary efforts by each participant to get a project going. The agency will rummage around its warehouse to find old but serviceable equipment and shuttle technicians from project to project to provide technical support. BSFA and the regional organizations commonly access additional funding from other sources or forego assessing indirect administrative charges to help projects get off the ground. After the field seasons BSFA, the

agencies and the individual village councils, fishermen and regional non-profit organizations evaluate each project and jointly agree on any necessary changes.

Defeating suspicions of favoritism

The KRSMWG, the YR DFA and the BSFA all knew that unless all user groups within an area worked together and were all involved in crafting management and research policy suspicions would also live that the state was favoring one group over another. Being connected to the fishermen, the three groups knew all too well the prejudices and biases of the various fishermen and how they always feel that the state was "in bed with the other guy." Leaders involved in the three groups already feel pressure from their constituents for cooperating with the government and therefore the new comanagement process.

Therefore, all three groups have been careful to invite all potential stakeholders to participate in the debate. More often than not different sectors of the public just want to be informed of what is happening and learn how to access the management process and participate if necessary. Through this participation they learn that what they perceive as favoritism may simply be the need for co-managers to acknowledge competing viewpoints.

Forcing users to talk to each other

It is worth noting that individuals and organizations in Alaska advocating one of the traditional co-management models described at the beginning of this paper focus so much on doing battle with the government that they forget that a great deal of the business of co-management is to mediate between different users. The "traditional tribal village" management approach relies heavily on the real and perceived authority of this small legal unit yet if co-management (let alone self-management) were to come into play most if not all fish and wildlife management regimes would require cooperation and compromise between different villages.

In my experience this is one of the key weakness in the village self-determination approach. Training individuals to document local harvests and subsistence use areas does help to fill in data gaps and this information may prove useful in future conflicts with mining or timber developers or sport fishing and hunting pressure. However, to then institute a "tribal resource management program" may set the groundwork for conflict with other nearby villages over nearly every single migratory resource such as salmon and caribou and even over less mobile but important resources such as furbearers, moose and freshwater fish. Only if these tribal management programs are integrated with those of other nearby villages (or distant villages, in the case of highly migratory species such as salmon), can conflict with other tribes be avoided and truly integrated management be implemented.

Fortunately, the KRSMWG, the YRDFA and the BSFA all recognized the need to include broad representation in their organizations and with the exception of the latter, institute consensus voting requirements. The KRSMWG has steadily expanded its membership so that marginal population or fishing areas have a representative. For YRDFA, it was very important that all six fishing districts from the mouth of the Yukon to the border be represented. However, YRDFA also structured its Board so that users on the coast and in the tributaries who are outside of the defined management districts would be represented. Since the number and diversity of users in the Yukon was so large YRDFA also created a two-tier system of 16 Board members and 12 delegates/alternates to assure adequate representation. BSFA provides services to a vast area as well and brings the Yup'ik fishermen of Bristol Bay, the Kuskokwim and the Yukon together with the Inupiaq of Norton Sound and Kotzebue Sound and the Athabaskan Indians of the Interior. Just recently, BSFA added a 13th seat for the community of St. Paul Island to the BSFA Board.

Both the KRSMWG and the YRDFA instituted consensus-voting requirements in order to foster participation in their newly-created groups. Founders of both groups realized that different users would not sit down and work things out if one majority bloc could simply outvote the other. The consensus requirement makes for long and arduous meetings but forces users to compromise with each other if anything is to be accomplished. An occasional drawback is that a representative may hold out and block consensus but the spirit and ethic of the process usually finds an accommodation. Finally, both groups also place no limits on participation by the general public at its meeting and operate with loose "town meeting" rules of order.

Co-opting the dissenters

One of the unanticipated results of the three co-management processes has been the co-opting or isolating of dissenters (both fishermen and managers) who refuse to participate in problem-solving

for the good of the fishery. The old ways of acting as a fishermen vis-a-vis government or vice-versa are becoming less and less tolerated. Certainly at meetings of the KRSMWG and the YRDFA the occasional fisherman will still show up and curse out the "college boy" biologist who "don't know nuthin'." And no doubt within the cubicles of government offices, newly-minted biologists see themselves as protectors of the resource from greedy fishermen. Some of these same biologists likely also shake their heads at the lapses of scientific rigor in some of the village-run research projects.

Now however these recalcitrant individuals are listened to less and less. Leaders within the three groups as well as leaders within the agencies understand that there is a job to do. Experienced fishery managers know that their effectiveness hinges on having as much data as possible and therefore they don't care who runs the projects. They also know that their job is made easier if fishermen can solve the allocation problems and decide themselves how to share in the burdens and rewards of conservation. Experienced fishery leaders know that legal action or verbally-bombarding the governor or Fish & Game Commissioner wastes a lot of effort. In the policy-making venue of the Alaska Board of Fisheries regulatory proposals submitted by individual fishermen or villages that do not first go through the regional review process of the KRSMWG or the YRDFA are rarely approved unless the proposal is a purely local matter. A key indicator of success, particularly for YRDFA, has been the decline in lawsuits filed by individual fishermen claiming bias by fishery managers.

Conclusion

Achieving legitimacy and status: the path to power

The broad representation, the consensus voting requirements and the open public participation all serve to initially legitimize these three groups in the eyes of many of their fellow fishermen. Their track record of success has kept their standing high. Equally important however is the legitimacy and status of these groups in the eyes of the state and the federal government. Remember that in most cases the government is under no obligation to share any thing, other than basic information, with users. If agencies as well as the public view a co-management group in a favorable light, then the agencies are more likely to share responsibilities and control.

A key factor in obtaining the respect of government has been the river-wide or drainage-wide focus of the YRDFA and the KRSMWG so that all users within a species range are included. An agency's job is made easier because there are now single unified forums where regulations, management plans, stock conservation concerns or research plans can be debated. Through repeated positive interactions with these groups policy-making bodies such as the Alaska Board of Fisheries now look to them to help solve complex allocation and conservation problems. BSFA's 18-year track record of research projects, economic development projects and numerous individual acts of assistance to villages have made agencies see BSFA as a valuable partner. These include not only natural resource agencies such as the ADF&G, USF&WS and the National Marine Fisheries Service but also rural development agencies such as Alaska's Departments of Commerce and Economic Development and Community and Regional Affairs and the federal government's Bureau of Indian Affairs, the Administration for Native Americans and the Economic Development Administration.

Attempts to legally mandate co-management by claiming sovereign rights and superior traditional Native knowledge, do little to further the everyday well being of village fishermen and more importantly do nothing to achieve better management of the resource. Even should a "Boldt-style" decision vault Alaska tribes above the state, (a prospect which is very unlikely given the Supreme Court's recent *Venette* ruling) these tribal councils and Native activists would have only limited skills to effectively manage complex fisheries and their newfound powers could well be used against each other. Native fishermen and managers must be willing to cross their own cultural boundaries and realize that their individual goals can only be met through sharing the various burdens of management. Only through actively participating and accepting responsibility, as in western Alaskan salmon fisheries, can both parties earn their co-management rights.

The first goal of those seeking co-management should be improved management so as to achieve optimal yield within biological and cultural needs. The initial focus should not be on power sharing arrangements nor on legal principles and especially not on the moral or spiritual superiority of Native wisdom or cosmology. Natives, other stakeholders and agency personnel must sit down together and prioritize and categorize the various data needs, harvest goals and economic and social considerations that form the management issue under consideration. These repeated transactions and exchanges build a foundation upon which co-management becomes sustainable and effective. In this way the necessary tasks can be identified and each participant can take responsibility for that component that best suits their skills and strength. Finally, when working in the arena of wildlife or fisheries co-management processes must be built upon appropriate biological sub-regional or regional boundaries such as watersheds, migration routes or habitat ranges not upon arbitrary legal boundaries such as the 200+ Alaska tribal villages nor the patchwork of federal refuges and parks. With these goals and the examples of the KRSMWG, the YRDFFA and the BSFA kept in mind rural Alaskan resource users will find that in time they can achieve a more stable and more influential role in managing the resource and eventually de-facto co-management.

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