

## **APPENDIX F**

### **Alaska Native Issues**

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## ACRONYMS AND ABBREVIATIONS

ADF&G	Alaska Department of Fish and Game
AEB	Aleutians East Borough
ANILCA	Alaska Native Interest Lands Conservation Act
AP	Advisory Panel
BSAI	Bering Sea/Aleutian Islands
CDQ	Community Development Quota
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
EO	Executive Order
FMP	Fishery Management Plan
ft	feet/foot
GOA	Gulf of Alaska
IFQ	Individual Fishing Quota
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
NPS	National Park Service
PSC	prohibited species catch
Secretary	Secretary of Commerce
SEIS	Supplemental Environmental Impact Statement
TK	Traditional Knowledge or Traditional Ecological Knowledge
USFWS	United States Fish and Wildlife Service

# Section 1 Alaska Natives Issues

Indigenous people of Alaska (Alaska Natives) have long utilized fishery resources, both for subsistence and commercial purposes. The groundfish and other commercial fisheries may interact with Alaska Native subsistence activities in a number of ways, and Alaska Natives are also directly engaged in the commercial groundfish fishery in other ways.

The subsistence harvest and distribution of fish that spend part or all of their time in the ocean has occurred since people have been present in Alaska. Of the more than 200 communities with federally recognized tribal governments in Alaska, a significant majority are located in coastal areas or along river systems that support anadromous fish that, in turn, form an important part of the subsistence base of those communities. Other important subsistence resources, such as marine mammals and seabirds, depend on marine and anadromous fish to some degree. Several groundfish species are utilized for subsistence purposes but, in general, their use is overshadowed in terms of relative importance by other fish (and non-fish) species.

In particular, salmon is an important anadromous subsistence resource for Alaska Natives. However, the continuing interception (incidental bycatch) of salmon originating in western Alaska river systems by domestic salmon fisheries targeting other salmon stocks continues to be an issue today. The Native issue of the direct interception of Pacific salmon that originate in western Alaska river systems by foreign fleets on the high seas was addressed at the highest levels of government and resulted in multi-level agreements and treaties with foreign nations. Such bycatch is a concern due to recent poor returns of maturing salmon to the western Alaska river systems. This has resulted in severe economic disaster declarations and severe restrictions on subsistence harvests. The impact of the salmon bycatch within the groundfish fishery itself on Native subsistence harvest is thought to be minimal, but remains an issue. It is being addressed by the Alaska Board of Fisheries, rather than the North Pacific Fishery Management Council (NPFMC), since National Marine Fisheries Service (NMFS or National Oceanic and Atmospheric Administration [NOAA] Fisheries) has little direct involvement in management of the salmon fisheries in Alaska, with the exception being in southeast Alaska.

Marine mammals, and Steller sea lions specifically, are also an important subsistence resource in a number of Alaska Native communities. The impact of commercial fishing activities on Steller sea lions is an issue of particular concern to Alaska Native communities in some areas but, as discussed at length in the main body of this Programmatic Supplemental Environmental Impact Statement (SEIS), the relationship between Steller sea lion population dynamics and commercial fishing activities is not entirely clear given existing data.

Alaska Native engagement in commercial fishing activities began soon after contact with the Russians, and deepened over the course of later interactions with Euro-Americans. This engagement includes owning fishing vessels and harvesting and processing fish. Alaska Native participation in commercial fishing in general, and the groundfish fisheries in particular, was further influenced by the establishment of the NPFMC Community Development Quota (CDQ) program for commercial offshore fisheries in the Bering Sea. The CDQ program established six regional non-profit Alaska Native corporations, representing 65 coastal area villages. These CDQ corporations were initially given a share of the commercial pollock harvest quota, and in later years the program was expanded to include other groundfish and non-groundfish species. Thus creating the opportunity for western Alaska communities to enter the fisheries in a number of different ways and reap the social and economic benefits of those fisheries. Direct engagement in commercial fisheries also

creates “joint production” subsistence opportunities for Alaska Natives, where the same vessels and gear utilized for commercial production may also be utilized for subsistence production.

The NPFMC recognizes the importance of fishery resources to Alaska Natives and has specifically included Alaska Native representation on both its Advisory Panel (AP) and the NPFMC itself. Through these representatives (and others), the concerns of CDQ groups, other Native fishermen, Native communities, and subsistence harvesters are raised during the fishery management decision-making process. Fishery management measures or fishery management plans (FMP) adopted by the NPFMC, as guided by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA) (Public Law 94-256), directly or indirectly address issues of Alaska Native concern, such as use of CDQ revenue, salmon bycatch, and protection of Steller sea lions, which are subject to subsistence harvest.

Fishery management must comply with the National Environmental Policy Act (NEPA) of 1969. NEPA requires that potential effects of fishery management actions on the human environment including Alaska Natives be analyzed and, to the extent practicable, mitigated. This includes effects on subsistence, CDQ groups, non-CDQ Native fishermen, and fishing communities with Native populations. Executive Order (EO) 12898 (1994) on Environmental Justice requires that the potential for disproportionately high and adverse effects on minority populations (which include Alaska Natives) be analyzed. While not a part of NEPA, this analysis typically is undertaken during the NEPA process. In addition, EO 13175 (2000) on Consultation and Coordination with Indian and Tribal Governments requires that when there is a potential for federal action to significantly or uniquely affect Indian tribal governments, federal agencies must engage in timely and meaningful consultation with federally recognized tribal governments. This consultation requirement is addressed through the MSA and NEPA compliance process. The majority of the more than 200 federally recognized tribes in Alaska are located along the coast or river systems and can potentially be affected by fishery management decisions. Further, Alaska Native communities, like other communities, that are engaged in and dependent upon the fishery, are subject to the provisions of MSA National Standard 8, which guides fishery management toward fostering the sustained participation of traditional fishing communities.

Finally, Alaska Natives have observed changes in the environment and in the distribution and populations of fish and wildlife over many generations. The value of these observations has been increasingly recognized by western scientists and fishery managers as Traditional Ecological Knowledge (Traditional Knowledge or TK). Federal agencies responsible for managing lands, waters, fish, and wildlife are collecting Traditional Knowledge and incorporating it into NEPA compliance documents and management activities to varying degrees.

## **1.1 Summary of Current Alaska Native Issues/Groundfish Management**

### **Subsistence**

#### **Steller Sea Lion**

Steller sea lions are harvested by some Alaska Natives, primarily Aleut, communities. The decline in sea lion populations has affected subsistence harvest practices, and Alaska Natives have expressed concern about potential cause and effect between commercial groundfish fishing and the sea lion population decline.



### Salmon Bycatch

Concerns continue to be raised by Alaska Natives on the effects of salmon bycatch in the Alaska groundfish fisheries on subsistence salmon harvests, particularly in the Yukon-Kuskokwim area.

### General Ecosystem Health

Concerns have been expressed by Alaska Natives on the effects of commercial fishing and associated bycatch discards on the health of the marine ecosystem, particularly with regard to discards attracting fish and wildlife and causing disease in animals that eat discards.

### Joint Production

Commercial fishing often provides overhead in terms of equipment and trip costs for subsistence harvest of fish or other resources. Changes in the location of commercial fishing infrastructure through closures and changes in allocation and other changes in fishery management that affect the viability of commercial fishing (through regulatory action) operations can have an indirect adverse affect on associated subsistence activities.

## **Alaska Native Participation in Commercial Fisheries**

### CDQ Fisheries

Approximately 65 western Alaskan Native communities participate in commercial fishing through six CDQ corporations. These corporations are allocated quotas for specific fisheries, which generate employment and revenue opportunities, and provide funds for economic investment in participating communities. Changes in allocation can create beneficial or adverse effects, depending on their nature.

### Non-CDQ Fisheries

Alaska Native fishermen from several communities in the Aleutian Islands/Alaska Peninsula, Kodiak, southcentral Alaska, and southeast Alaska regions participate in groundfish fisheries as boat owners, crew, or fish processors. Commercial fishing is a major component of the economy in most coastal Native communities, and changes in management measures such as allocation, seasonal and spatial closures, and gear restrictions, would create beneficial or adverse effects, depending on their nature.

### Economic Viability of Traditional Alaska Communities

The MSA and the NPFMC list maintaining community benefits from fishing as an objective. Many of the Alaska communities that participate in groundfish fisheries and derive municipal revenue from fishing-related activities are predominantly Native. Fishery management actions have a direct and indirect effect on the economic viability of many coastal Alaska Native communities.

## **Alaska Native Participation in Fishery Management**

### Level of Representation within the NPFMC

Although Alaska Natives currently have some representation on the AP and NPFMC, the limited number presents some difficulty in representing potentially competing interests between CDQs, non-CDQ Native fishermen, and subsistence users.

### Co-management

Other federal and state agencies, notably the U.S. Fish and Wildlife Service (USFWS) and Alaska Department of Fish & Game (ADF&G), have instituted measures to increase Alaska Native participation in management of fish and wildlife. Some Alaska Natives have indicated an interest in some form of co-management of the Alaska groundfish fisheries.

### Consultation and Coordination with Indian Tribal Governments

Opportunities for consultation have been provided to potentially affected tribal governments throughout the Programmatic SEIS preparation process. However, some commentors on the Draft Programmatic SEIS have asked for greater outreach.

### Public Involvement

Like other members of the public, Alaska Natives have rights and opportunities to review and comment on preparation of an Environmental Impact Statement (EIS), as part of the NEPA process.

## **Other Issues**

### Environmental Justice

Actions taken in the management of groundfish fisheries could have disproportionately adverse effects on CDQ groups and other Alaska Natives participating in fish harvesting and processing.

### Incorporation of Traditional Knowledge into Fishery Management

Alaska Natives have interacted with the natural environment for many generations, and have a body of knowledge based on their observations and those passed down from ancestors. Scientists and resource managers are recognizing the value of Traditional Knowledge in supplementing other sources of information. Efforts to collect Traditional Knowledge can range from a review of existing literature to key informant interviews in the field. Incorporation of Traditional Knowledge should provide appropriate citation of the source, and Traditional Knowledge should be presented with respect.

## **1.2 How Management of Fisheries Has Evolved to Address Alaska Native Issues**

Since the Americanization of the fisheries during the 1980s, Alaska Native issues have become increasingly important in fisheries management. This trend reflects increased Native participation in groundfish fisheries and developments of EOs and MSA/NEPA compliance. Both NOAA Fisheries and the NPFMC have made

management decisions concerning the economic viability of Alaska communities relating to bycatch, protection of subsistence resources, and allocation to CDQ groups and other fishing/processing sectors where Alaska Natives are participants.

### **North Pacific Fishery Management Council**

The NPFMC members from western Alaska have functionally, if unofficially, represented Alaska Native interests since approximately 1987. As Alaska Native participation in the fisheries has grown, the seat has represented a broader group of interests, such as CDQ corporations, and has made the unofficial Alaska Native representation role more complex for the incumbents. Alaska Native interests represented on the AP have also become more diverse during this time period, and are addressed through regional, community, CDQ, and conservation group members appointed by the NPFMC to sit on its AP.

### **NEPA Compliance and Related Regulatory Requirements**

Amendments to the Alaska groundfish FMPs must comply with NEPA. In the late 1970s and 1980s, NEPA compliance documents such as Environmental Assessments and EIS addressed but did not expand upon Alaska Native issues. Alaska Native groups were given the same opportunities to comment on documents as other stakeholder groups, but were not targeted for additional outreach.

The enactment of Executive Orders on Environmental Justice and Consultation and Coordination with Indian Tribal Governments in the mid-1990s increased the focus on Alaska Native issues. These issues are often addressed as part of NEPA analysis. Greater attention has since been given to potential disproportionate adverse effects on Alaska Natives. Outreach efforts have increased to meet consultation requirements. Compliance with the NEPA process and related EOs provides a mechanism for encouraging participation in fishery management decision-making.

### **Analytical Emphasis on Socioeconomic Issues by NPFMC and NOAA Fisheries**

Staff responsibilities have evolved to include oversight of issues associated with fishing communities and social impact assessments, which have Alaska Native components. NOAA Fisheries is also adding staff with responsibilities for addressing basic research in non-economic social sciences, and this may assist in addressing the concerns of Alaska Natives. This includes a cultural anthropologist position at the Alaska Fisheries Science Center.

### **CDQ Program and Community Protection in Fisheries Management**

The CDQ program in the Bering Sea/Aleutian Islands (BSAI) was established in 1991. The intent of the CDQ program is to promote fisheries-related economic development in the coastal communities that participate in the CDQ program. CDQ corporations can lease out their shares of the quota, or harvest and process the share themselves. In addition to generating employment for Alaska Natives, revenue generated from use of quota shares must be used for economic development under specific guidelines established by the NPFMC. The first individual fishing quota (IFQ) allocations that occurred for sablefish and halibut were established by the NPFMC. The six CDQ corporations formed and as directed by NPFMC, developed plans for how quotas would be fished and revenue distributed. Quota for additional fisheries was allocated to CDQ groups as a part of the Inshore/Offshore 1 FMP amendments and subsequent amendments. The CDQ program now applies to multiple groundfish fisheries including pollock, Pacific cod, flatfish, Atka mackerel, rockfish, and

sablefish, as well as halibut and crab. Currently, the CDQ program is allocated 10 percent of the total allowable quota for pollock and 7.5 percent for most other species. Gulf of Alaska (GOA) FMP Amendment 66 has recently been approved by NPFMC and is designed to allow 42 eligible GOA coastal communities to participate in the fixed gear halibut and sablefish IFQ Programs.

## **Subsistence**

Establishing the prohibited species catch (PSC) for salmon and herring and associated bycatch limits has been important to Alaska Natives for both commercial and subsistence fishing. Prior to the mid-1980s, bycatch limits were primarily aimed at foreign fleets; since the mid-1980s bycatch restrictions have focused on the domestic fisheries, with bycatch limits established for chum salmon, chinook salmon, various crab species, halibut, and herring. Since 1995, conservation efforts to reduce bycatch and waste in the groundfish fishery have continued, and retention and utilization programs have been revised and improved.

### **1.3 Management Measures Used to Address Alaska Natives Issues**

Historically, federal management measures that address Alaska Native issues relating to fishery management of the Alaska groundfish fisheries have focused on representation on the NPFMC and its committees, consideration of issues and testimony by the NPFMC, and dedication of staff resources to address Alaska Native and community concerns. The number of seats on the NPFMC from Alaska is defined in the MSA, but representation has been based on informal factors such as geographic representation and interest group affiliation. In recent years, one seat has been filled by a western Alaska representative who functionally if informally served as a representative of Alaska Native interests, with a recent focus on CDQ interests. Other Native interests, such as Native-owned catcher vessels and subsistence users have also found a voice through at least limited representation by this seat on the NPFMC. Seats on the AP change every year. The NPFMC is charged with representing a variety of interests, including subsistence fishermen. There is generally at least one CDQ representative on the AP, who has also informally functioned at times as a representative for broader based Alaska Native related interests.

Other federal and state agencies have established regional and statewide advisory councils to provide Alaska Native input to resource managers. These agencies include the USFWS (national wildlife refuges, subsistence on federal lands), NPS, (use and access of parklands) and ADF&G (harvest regulations for fish and wildlife). In general, these advisory councils and commission members provide input on subsistence, take regulations, and general fish and wildlife management issues for terrestrial and anadromous resources, and in a few cases are decision-makers. With the exception of specific marine mammals and migratory waterfowl, there is little Alaska Native involvement in federal management of offshore fish and wildlife because there is very little subsistence in federal waters.

Both NOAA Fisheries and the NPFMC have recognized the importance of addressing socioeconomic issues, including the importance of community protection. In support of this endeavor the Alaska Fisheries Science Center has recently hired a cultural anthropologist who will focus on socioeconomic and community issues. The NPFMC also addresses CDQ and community issues in their staff analysis.

Alaska Native issues related to fishery management are addressed through the NPFMC public decision process. Both the MSA and NEPA compliance process requires that potential effects on Alaska Natives be adequately assessed during the federal decision-making process. The NEPA process requires that any potential management action analyze potential impacts on socioeconomic characteristics (employment, income, municipal revenue) and subsistence use of fish and wildlife resources as a part of the human environment. This analysis will generally also include a discussion of EO 12898 on Environmental Justice (1994) and EO 13175 on Consultation and Coordination with Indian Tribal Governments (2000). Through the public involvement process Alaska Natives, communities, or individuals can voice their concerns on the potential impacts of the proposed management changes.

The CDQ program provides another indirect tool for addressing Alaska Native issues. The CDQ program was established to provide benefits to predominantly Native western Alaska communities along the Bering Sea. Allocation of groundfish quota to CDQ groups provides benefits to Alaska Natives, through their participation in the fisheries and by generating revenue that can be used in communities for fishery related economic development. The NPFMC can influence these processes when adjusting quotas and ruling on types of eligible community economic development investments in Native communities.

## Section 2 Overview of Policy Alternatives

The Programmatic SEIS evaluates the environmental consequences of four different policy alternatives. Each policy alternative contains a framework comprised of a management approach and a suite of policy goals and objectives. To assess the environmental consequences and highlight for the decision-makers and the public the tradeoffs of each policy alternative, we analyzed a range of management measures that illustrate how the framework could be implemented. Ultimately, the two example FMPs under each of the alternatives to the status quo illustrate the range of actions possible under each alternative and show the flexibility each alternative will allow the NPFMC to manage the fisheries adaptively.

The four policy alternatives under consideration by the NPFMC are chosen to serve as bookends to a management framework. They will serve as a means for the NPFMC to commit to a management decision.

**Alternative 1** Continue Under the Current Risk-Averse Management Policy: Under this policy alternative, the NPFMC would continue to manage the groundfish fisheries based upon the present conservative and risk-averse policy. This policy assumes that fishing does result in some adverse impacts to the environment and that, as these impacts become known, mitigation measures will be developed and appropriate FMP amendments will be implemented.

This policy approach would continue Alaska Native involvement through MSA and NEPA mechanisms. Additionally, some effort will be placed on incorporating Traditional Knowledge on fisheries management.

**Alternative 2** Adopt a More Aggressive Management Policy: This alternative represents a less precautionary management policy (i.e. more aggressive harvest policy) would be implemented based upon the concept that the present policy is overly conservative and that higher harvests could be taken without threat of overfishing the target groundfish stocks. This policy assumes that fishing at the recommended levels would have no adverse impact on the environment, except in specific cases that are generally known.

This policy approach would continue existing levels of Alaska Native consultation, and incorporation of Traditional Knowledge.

**Alternative 3** Adopt a More Precautionary Management Policy: This policy would seek to accelerate the existing precautionary management approach through community or rights-based management, incorporation of ecosystem-based management principles and, where appropriate and practicable, increase habitat protection and impose additional bycatch constraints. Under this approach, additional conservation management measures would be taken as necessary to respond to social, economic or conservation needs and to address concerns over uncertainty. Additional measures would be taken if scientific evidence indicated that the fishery was negatively impacting the “environment,” not just a population of a given species.

This policy alternative increased consultation with, and participation of Alaska Natives in fisheries management. While this policy continues to recognize the importance of Traditional Knowledge additional efforts would be initiated to increase collection and research.

**Alternative 4** Adopt a Highly Precautionary Management Policy: This policy would require that the user of the resource demonstrate that the intended use would not have a detrimental effect on the environment before significant fishing could be allowed. The policy, as illustrated by its FMP framework, shifts the burden of proof from the resource to the user when faced with uncertainty and would impose very restrictive conservation and management measures that would only be modified or relaxed when additional, reliable scientific information became available. It would involve a strict interpretation of the precautionary principle. Management discussions would involve and be responsive to the public, but decreased emphasis would be placed on industry and community concerns. More emphasis would be placed on ecosystem concerns and principles, including the identification and incorporation of non-consumptive use values. The overall premise is that fishing does produce adverse impacts on the environment, but due to a lack of information and uncertainty, we know little about these impacts.

With regards to Alaska Native issues, this policy alternative would initiate cooperative research programs and co-management in order to enhance use of Traditional Knowledge in fishery management, including monitoring and data gathering capabilities. Consultation with Alaska Natives would increase with a particular focus on subsistence users.

## **Section 3      Alternative 1: Continue Under the Current Risk-Averse Management Policy**

### **3.1      Alaska Native Participation and Consultation in Fisheries Management**

#### **3.1.1      Alaska Native Representation on the North Pacific Fishery Management Council and the Advisory Panel**

The NPFMC was established through guidelines set by the MSA of 1976 (Public Law 94-265). The MSA outlines the number of members and how they are chosen for the NPFMC. Section 302 of the MSA states “The NPFMC shall have 11 voting members, including seven appointed by the Secretary of Commerce (Secretary) in accordance with subsection (b)(2) (five of whom shall be appointed from the State of Alaska and two of whom shall be appointed from the State of Washington). These voting members must represent the principal state official with marine fishery responsibility, the regional director of National Marine Fisheries Service (NMFS).” Appointments are based on recommendations from the state governor or other individuals who, by reason of their occupational or other experience, scientific expertise, or training, are knowledgeable regarding the conservation and management, or the commercial or recreational harvest, of the fishery resources of the geographical area concerned. Four nonvoting members include the regional director of the USFWS, the commander of the Coast Guard, the Executive Director of the Marine Fisheries Commission for the geographical area, and one representative of the Department of State. Since the late 1980s, of the 11 voting members on the current NPFMC, one member is from a western Alaska community.

Under section 101-627(4), the MSA states “The Secretary shall establish APs to assist in collection and evaluation of information relevant to the development of any fishery management plan or plan amendment for a fishery to which subsection (a)(3) applies. Each AP shall participate in all aspects of the development of the plan or amendment; be balanced in its representation of commercial, recreational, and other interests; and consist of not less than seven individuals who are knowledgeable about the fishery for which the plan or amendment is developed...” The North Pacific AP is a voluntary advisory group with no decision-making power. It currently consists of 23 members, representing various geographical regions and interests as suggested in the MSA. Of the 23 members, one individual represents CDQ constituents on behalf of the Bristol Bay Economic Development Corporation, also a CDQ group and one individual represents Aleut Enterprise Corporation. Western Alaska Native groups have traditionally been very active on the AP.

#### **3.1.2      Public Involvement**

Public involvement is a fundamental principle of both MSA and NEPA. The unique status of Alaska Natives is acknowledged by NOAA Fisheries in a number of ways when complying with the MSA and NEPA. The regulations on implementing the MSA and NEPA require that agencies make diligent efforts to involve the public including Alaska Natives, in preparing and implementing fisheries management procedures. The MSA stresses public involvement in participation of stakeholders in the NPFMC process. The procedures defined by the MSA provide opportunities for public comment at various stages during the development of fishery management actions (Section 302 Regional Fishery Management Councils 16 USC 1852). This process and the NEPA process are intertwined so that the public has formal opportunities to provide input on proposed actions on proposed FMPs or amendments through the scoping process, and during public review of Draft



and Final EIS documents. Public input and comments received must be considered in the project analysis, documentation, and decision-making.

The first formal step in EIS preparation is a Notice of Intent to prepare an EIS must be published in the Federal Register as required by NEPA 40 Code of Federal Regulations (CFR) 1501.7 and NOAA 216-6. The Notice of Intent serves as the official legal notice that a federal agency is commencing preparation of an EIS. By providing the Notice of Intent to federally recognized tribes within the project area, consultation and the opportunity to become involved is initiated.

Federal agencies recognize the importance of Alaska Native involvement through established statutes, EOs, regulations, and policies. NEPA requires formal actions to address the EOs. See Section 3.6 for a discussion of Environmental Justice.

The Council on Environmental Quality (CEQ) NEPA regulations require the lead agency's scoping process to "Invite affected federal, state, and local agencies, Indian tribes, project proponents, and other interested persons" to participate in the EIS process as required by 40 CFR 1501.7 (1). During the scoping process, NOAA Fisheries contacts tribal organizations and solicits input on the nature and extent of issues and impacts to be addressed in the EIS and the methods by which they will be evaluated. NOAA Fisheries recognizes the importance of inviting tribal involvement in the NEPA process. For example, in the Programmatic SEIS formal letters and newsletters were mailed to Alaska Native organizations informing them of the scoping process and comment period. Scoping meetings were held with the intent to prepare the Programmatic SEIS, to define the federal action under review and to offer consultation and coordination with tribal governments. This process would continue under the Alternative 1 policy.

Community outreach efforts are implemented through letters, newsletters, special meetings, and comment response. Letters and newsletters supply notification of project commencement and completion and supply project information throughout the process.

Notices of NPFMC meetings and public hearings are to be published in local newspapers distributed in major fishing ports having a direct interest in the affected fishery and areas that will result in wide publicity. Every meeting, or emergency meeting held by the NPFMC or the AP is open to the public unless notification that it is closed has been published in regional newspapers. Timely notices of meetings are required. There are usually five meetings a year. Interested persons are encouraged to present oral or written statements regarding the issues on the meeting agenda. Written comments received up to approximately one week prior to the meeting are included in meeting packets for NPFMC members, or the individual may submit their comments by giving oral or written testimony at the meeting. Minutes and all analysis action memos of each NPFMC meeting, except closed sessions, are filed and contain a record of the attendees, a description of matters discussed, and conclusions reached. The minutes are available to the public (posted on the NPFMC website, by request). Newsletters are provided following each NPFMC meeting and are distributed to mailing lists and posted on the NPFMC website.

As a matter of policy, the NPFMC routinely schedules its meetings in Anchorage, Alaska (a central geographical location), and less frequently (but on a regular basis) in the major Alaska fishing ports of Sitka, Kodiak, and Unalaska/Dutch Harbor, along with Seattle, Washington (a center of effort for the North Pacific fisheries).

Under Alternative 1, the current opportunities available for public comment on proposed and existing fishery management plans, EIS documents, regulations, and agenda items during NPFMC meetings, provide many avenues for Alaska Natives to provide input regarding groundfish fishery management.

### **Public Review and Comment on FMPs, Amendments, and EIS Documents**

After a FMP or amendment is transmitted to the Secretary a notice stating that it is available must be immediately published in the Federal Register to inform the public that written information, views, or comments of interested persons may be submitted to the Secretary during a 60-day period. The 60-day comment period begins on the date the notice is published.

In accordance with CEQ NEPA guidelines, NOAA Fisheries must provide public notice of the availability of NEPA documents to interested persons and agencies (40 CFR 1506 (a) and (b)) notice must be published in the Federal Register and sent by mail to national organizations reasonably expected to be interested (40 CFR 1506.6 (b) (2)). This includes Alaska Natives within the project area. NOAA Fisheries will also conduct a public hearing to provide the opportunity for oral testimony, if necessary.

NOAA Fisheries provided a public comment period on the Draft 2001 Programmatic SEIS that lasted approximately six months. The comment period was announced and details were explained in a series of newsletters. Public meetings were held in five locales in and outside of Alaska to acquire oral and written comments on the Draft 2001 Programmatic SEIS. During this time, the option to contribute comments by mail was also provided. Letters were sent to tribal governments soliciting their participation and input on project-specific issues in a special state-wide teleconference between NOAA Fisheries with Alaska tribal governments. Upon the completed preliminary review of public comments, NOAA Fisheries recognized the need for increased efforts to include Western Alaska communities in the agency's decision-making process, and additional meetings were conducted.

Solicitation of public comment on proposed FMPs, their amendments, and proposed rule-making by NOAA Fisheries is required under the MSA and NEPA. Such comments are viewed by NPFMC and NOAA Fisheries as critical in helping managers shape responsible plans for our nation's fishery resources that best meet the NPFMC's and NOAA Fisheries' mission, the ten MSA National Standards, the goals of NEPA, and the interests of the American public. During the formal comment period, the public can review and comment on draft plans. The process described in this document for soliciting and analyzing public comments is part of a broader effort of public involvement and agency consultation described in this Programmatic SEIS. The comments received are analyzed and the results considered by the NPFMC and NOAA Fisheries.

#### **3.1.3 Co-Management**

Co-management is a relatively new approach to fisheries management and can be defined in many ways. In general, co-management refers to "joint decision-making by the government and communities (or other interest groups) about one or more aspects of natural resource access or use" (Castro and Nielsen 2001). According to Brown (1999), the term is often used for partnerships formed by stakeholders but does not guarantee that stakeholders share power with the management agency. The level of co-management can vary depending on the resource, management function, degree of formality of the arrangement, and the number of interests involved.

There are various arrangements for the amount of participation within co-management that range from activities as simple as consultation and coordination or as complex as the allocation of equal power among stakeholders during decision-making. Fisheries are often suited for co-management because they are a mobile resource and encompass a large area. Sharing authority and decision-making in resource management brings diverse groups together, regardless of their different interests (McCay and Jentoft 1998). Where decision-making is not able to be shared, advisory groups, review committees, and other open forums allow resource managers to consult with the public. This approach allows interested parties to express themselves to resource managers who are then exposed to a wide range of knowledge, ideas, concerns, and needs.

Co-management has many challenges. In some cases, local participants may be asked to bear the work and costs of resource management without adequate funding to support such responsibilities. For managers, it may be difficult to lead a group of diverse stakeholders who may have conflicting interests, or there may be regulatory limits on the authority to share decision-making. These challenges may make stakeholder groups or agencies reluctant to enter into a co-management agreement. However, there are benefits to such an agreement if the participants are willing and able to overcome the difficulties. Co-management efforts can provide avenues to share information and raise awareness about fisheries management. For the NPFMC and NOAA Fisheries, it may be advantageous to collaborate as it may increase their enforcement, monitoring, and research capabilities as well as enhance the communication between the agencies and interested parties.

The existing types of co-management under the Alternative 1 framework are on a primary level and include informing, consultation, and cooperation, as provided through solicitation of public comments. This form of co-management may be considered less participatory than other approaches where stakeholders have equal voting power with resource managers. Under the current Alternative 1 framework, managers are able to seek meaningful advice from the members of the AP who represent various interests, including Alaska Native interests, as well as from the public.

### **3.1.4 Consultation and Coordination with Indian Tribal Governments**

NOAA Fisheries recognizes their special obligations to consult and coordinate with tribal governments on a government-to-government basis pursuant to Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, signed by President Clinton and published in the Federal Register on November 9, 2000. Executive Order 13175 requires executive agencies “to establish regular and meaningful consultation and collaboration with tribal officials in development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.” Further, As part of CEQ regulations regarding the scoping process, the lead agency shall: “Invite the participation of affected federal, state, and local agencies, any affected Indian tribe, the proponent of the action, and any other interested persons” Section 1501.7(a)(1).

Under Alternative 1 policy, NOAA Fisheries will continue to consult with Alaska tribal governments through the NPFMC and the MSA/NEPA decision-making process.

NOAA Fisheries complies with EO 13175, by initiating public outreach to potentially interested tribal governments. For example the agency started a government-to-government consultation effort on the Alaska Groundfish Fisheries Draft 2001 Programmatic SEIS. Letters were sent to approximately 250 federally recognized tribes within 50 miles of the Alaska coast, encouraging them to begin correspondence with NOAA Fisheries. Letters were initially sent out to introduce the project and begin the scoping period, to introduce the completed Draft 2001 Programmatic SEIS, and to indicate the closing of the preliminary review of public

comment. In these letters communities and villages were invited to scoping/public meetings or teleconferences and to submit written comment. NOAA Fisheries has made substantial effort to comply with EO 13175 and to involve and respond diligently to all communities that correspond and hold a vested interest in the future management of the groundfish fisheries.

## **3.2 Traditional Knowledge**

### **3.2.1 Definition of Traditional Knowledge and Collection Methods**

*Traditional environmental knowledge, or TK, can generally be defined as a body of knowledge built up by a group of people through generations of living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use. The quantity and quality of traditional environmental knowledge varies among community members, depending upon gender, age, social status, intellectual capability, and profession (hunter, spiritual leader, healer, etc.). With its roots firmly in the past, traditional environmental knowledge is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of the present (Johnson 1992).*

Biologists have begun to work more with indigenous peoples to integrate Traditional Knowledge into their research (Freeman and Carbyn 1988, Freeman 1992, Hobson 1992, Albert 1992). This interest in Traditional Knowledge recognizes the fact that biological field studies typically are conducted as intensive, short-term efforts during the summer. In contrast, Traditional Knowledge represents the cumulative observations of people who have lived in the environment their entire lives.

Traditional Knowledge can be passed along relatively unchanged from generation to generation, but also adapts to and reflects changes in technology and socioeconomic conditions. The term Traditional Knowledge as used in this Programmatic SEIS also includes contemporary indigenous knowledge. This knowledge includes, but is not limited to, expertise on weather, sea ice, currents, fish and wildlife, historic and current uses of the land and water for subsistence activities and other traditional uses, and impacts of human activities on fish and wildlife and the environment.

Traditional Knowledge can be obtained in a number of ways:

- Literature available from local libraries, universities, and Internet-based search engines.
- Existing information gathered from third parties such as Alaska Native organizations.
- Key informant interviews with elders and other knowledgeable individuals in Alaska Native communities.

NOAA Fisheries intends to evaluate existing sources of Traditional Knowledge for use in its fishery management analysis. It is hoped that Traditional Knowledge may be useful by providing observations on past trends and cumulative effects. In the Draft 2001 Programmatic SEIS, efforts were initiated to evaluate potential sources of Traditional Knowledge from existing literature available from state agencies, local libraries and universities, and Internet-based search engines.

### **3.2.2 Applicability of Traditional Knowledge to Fisheries Management**

Traditional Knowledge can provide a historical perspective regarding trends and cumulative effects for specific fish and wildlife species, and for large scale environmental changes. It can also provide observations from specific geographic areas in the GOA and BSAI that can supplement scientific information or fill in data gaps. Public comments received on the initial Draft 2001 Programmatic SEIS, assist with the evaluation of Traditional Knowledge and the assessment of potentially disproportionate adverse effects on Alaska Native populations as required by EO 12898 on Environmental Justice.

The NPFMC annually adopts a set of research ideas presented by the AP and the Scientific and Statistical Committee that prioritize activities or areas in fishery management that need attention. Included in the list of research priorities are issues that may pertain to Alaska Natives such as Traditional Knowledge, bycatch research, or impacts of fishery management measures on social and economic conditions. These research priorities are then provided to NOAA Fisheries who will use the information to determine, along with their own set of priorities, where to allocate funding for research. This provides another avenue for incorporating Alaska Native Traditional Knowledge not just in fisheries management but in research as well.

Under Alternative 1, NOAA Fisheries is currently using existing literature available at libraries, universities, and the Internet to identify sources of Traditional Knowledge relevant to the GOA and BSAI groundfish fisheries. A Traditional Knowledge database has been developed, and Traditional Knowledge has been entered into the database. NOAA Fisheries intends to use relevant Traditional Knowledge excerpts in preparing the comparative baseline and reaching conclusions on the significance of potential environmental consequences. Under this framework, Traditional Knowledge is not collected from third party sources or key informant interviews.

#### **Case Study - Development of the Traditional Knowledge Database**

For the Draft 2001 Programmatic SEIS, a Microsoft Access 2000 relational database was developed for entering and querying Traditional Knowledge. The intent of the database design is to provide a tool that can be used for future Traditional Knowledge collection efforts, not only by the Alaska region, but other regions of NOAA Fisheries as well. Queries can be conducted for a number of topics, content, key words, citations, and speaker variables. This database is useful for incorporating Traditional Knowledge into fisheries management and the Programmatic SEIS.

### **3.3 Alaska Native Participation in Groundfish Fisheries by Regional Setting**

Alaska Native issues regarding participation in the groundfish fishery and potential impacts of the management alternatives are many and complex. This section discusses regional differences in Alaska Native engagement in and dependence upon the groundfish fishery in overview. This discussion is split into CDQ and non-CDQ regions. Within the non-CDQ regions a further split is made among communities with issues related to direct participation in the fishery and those without direct participation.

#### **3.3.1 Community Development Quota Participation in Groundfish Fisheries**

The CDQ program for western Alaska was created by the NPFMC to foster regional participation in and benefit from the groundfish fisheries. At its inception during the inshore/offshore allocative decision process (in the early 1990s), the program was limited to the pollock fishery. In subsequent years it has expanded to

include a variety of other groundfish and non-groundfish species. Groundfish, in general, and the pollock fishery, in particular, provide a strong economic foundation for the CDQ program. The CDQ region includes predominately Alaska Native communities within 50 nautical miles of the Bering Sea coast. This program was intended “to provide fishermen who reside in western Alaska communities a fair and reasonable opportunity to participate in the BSAI groundfish fisheries, to expand their participation in salmon, herring, and other nearshore fisheries, and to help alleviate the growing social economic crisis within these communities” (BSAI Groundfish FMP). In order for a community to qualify as a CDQ community, it not only needed to be an Alaska Native Claims Settlement Act community within the designated geographic area, it also could not have previously developed harvesting or processing capability sufficient to support substantial participation in the groundfish fisheries in the Bering Sea (although there was some leeway for exceptions to this criteria, as illustrated by the case of Akutan, described below).

Initially, the pollock allocation to CDQs was 7.5 percent of the Bering Sea total allowable catch (TAC), but this was increased to 10 percent under provisions of the American Fisheries Act of 1998. Bering Sea opilio, bairdi, and king crab, more recent additions to the CDQ program, are currently at allocations of 7.5 percent following a phase-in period. Other allocations include halibut, sablefish, remaining BSAI groundfish, along with prohibited species, with some variability in allocations by management area as detailed elsewhere in the Draft 2001 Programmatic SEIS.

Different CDQ groups have taken different approaches to the opportunities provided by the program. Some groups have chosen to become direct participants in the fishery through ownership interest in groundfish harvest and catcher processor vessels, while others have chosen to have their quota shares harvested by industry partners in exchange for royalties and employment opportunities, preferring to invest the benefits from the groundfish fishery in developing other direct participation in local (non-groundfish) fisheries. According to Northern Economics, Inc. (2002):

*Since the inception of the program in 1992, the program has provided approximately 1,000 jobs annually for western Alaska residents and has created an excess of \$8 million in wages annually since 1998. Over the duration of the CDQ program, annual pollock CDQ royalties have consistently exceeded \$13 million. In 2000, the CDQ communities received nearly \$33 million in pollock CDQ royalties, while royalties from the multi-species program provided the communities an additional \$7.4 million. The value of CDQ community assets in aggregate, including equity ownership in fishing vessels, on-shore development projects, loan portfolios and IFQ holdings, increased from nearly \$15 million in 1992 to over \$152 million in 2000.*

Under Alternative 1, CDQ participation would remain the same as under existing conditions. The nature of engagement with the fishery would not change, and that no significant changes to CDQ communities would be likely to occur, at least through the mechanism of the CDQ program itself. Potential subsistence related impacts to these communities are at least partially independent of CDQ status, as developed below, but no significant new impacts to subsistence are likely to occur under Alternative 1.

### **3.3.2 Non-Community Development Quota Regional Issues**

Alaska Native issues affect communities outside the CDQ region as well as those inside the region. The “non-CDQ region” may usefully be divided into two separate parts for discussion purposes. First are those Alaska Native communities that directly participate in the groundfish fisheries. The second set are those

communities outside of the CDQ region that do not participate directly in the groundfish fisheries, but nevertheless may experience a range of impacts from various groundfish fishery management decisions.

### Impacts to Non-CDQ Alaska Native Communities with Direct Participation

A number of non-CDQ communities with significant Alaska Native populations participate directly in the BSAI groundfish fishery. These communities face potential impacts that could result from BSAI groundfish management decisions. These impacts may include non-commercial economic affects related to subsistence and Environmental Justice. These same communities also face potential impacts or issues common to all communities, Alaska Native or non-Native, that are substantially engaged in or dependent upon the fishery. These impacts may include displacement or consolidation of harvesting and processing sectors.

Table 1 displays the population information for the Alaska Peninsula/Aleutian Islands major groundfish ports in 2000. While King Cove and Sand Point are clearly the Alaska Native non-CDQ communities most engaged on a day-to-day basis in the BSAI groundfish fishery, there are Alaska Native population centers in the other Alaska communities most heavily engaged in the groundfish fishery. For example, as shown in Table 1, Unalaska’s Alaska Native population is almost as large as that of King Cove, but accounts for less than 10 percent of the overall community population. Akutan is in the unique position of being both a CDQ community and to a substantial degree being directly engaged in the groundfish fishery. This overlap means that the community may be buffered from some types of impacts due to this form of diversification. However, impacts to Akutan may be amplified compared to other communities if both direct participation and CDQ engagement experience adverse outcomes under a given management alternative.

**Table 1. Ethnic composition of population, selected Alaska Peninsula/Aleutian Island Region communities, 2000.**

Race/Ethnicity	Unalaska		Akutan		King Cove		Sand Point	
	Number	%	Number	%	Number	%	Number	%
White	1,893	44.2%	168	23.6%	119	15.0%	264	27.7%
African American	157	3.7%	15	2.2%	13	1.6%	14	1.5%
Alaska Native/Native American	330	7.7%	112	15.7%	370	46.7%	403	42.3%
Native Hawaiian/ other Pacific islander	24	0.6%	2	0.3%	1	0.1%	3	0.3%
Asian	1,312	30.6%	275	38.6%	212	26.8%	221	23.2%
Some other race	399	9.3%	130	18.2%	47	5.9%	21	2.2%
Two or more races	168	3.9%	11	1.5%	30	3.8%	26	2.7%
<b>Total</b>	<b>4,283</b>	<b>100%</b>	<b>713</b>	<b>100%</b>	<b>792</b>	<b>100%</b>	<b>952</b>	<b>100%</b>
<b>Hispanic*</b>	<b>551</b>	<b>12.9%</b>	<b>148</b>	<b>20.8%</b>	<b>59</b>	<b>7.4%</b>	<b>129</b>	<b>13.6%</b>

Source: U.S. Census Bureau 2000.

\*'Hispanic' is an ethnic category and may include individuals of any race (and therefore is not included in the total as this would result in double counting).

Akutan is also unique with respect to the degree of separation of the industrial enclave that comprises local commercial processing development from the remaining portion of the community. As discussed in Section 3.9.3 of the Programmatic SEIS, among all of the communities engaged in fishing, the residential portion of the community is in some ways most like a traditional Aleut community due to its relative distinctness from

the local industrial development. This distinction may serve to shape localized impacts somewhat differently than what would be the case in more spatially integrated communities.

Support services are present in King Cove and Sand Point and are of key importance to local private sector economies. King Cove and Sand Point have very different types of engagement with the groundfish fishery than do communities in the CDQ program. Both communities have a significant local commercial harvest fleet, and both are home to major shore processors. Akutan does not have a local fleet but does have a major processor. All three communities derive a significant portion of municipal revenues from fish landings in the community, and groundfish make up a substantial portion of the overall landings. The local public sector also derives revenue by providing a variety of services to fishing industry participants.

In general, the communities of King Cove, Sand Point, and to a lesser extent Akutan may be impacted by the various groundfish management actions quite differently than CDQ communities. For example, King Cove, Sand Point, and Akutan are economically sensitive to impacts resulting from changes to harvesting, processing, or support service sectors, and all three communities depend on municipal revenues derived from active engagement in the fishery. None of these types of impacts is likely under Alternative 1.

It is also important to note that the participation of King Cove and Sand Point in groundfish fisheries does have direct and indirect benefits for some other CDQ communities. King Cove and Sand Point are part of the Aleutians East Borough (AEB), and revenue that derives from landings in these communities (along with landings in Akutan) substantially benefits smaller Alaska Native (and CDQ) communities in the AEB, such as False Pass and Nelson Lagoon.

### **Impacts to Non-CDQ Alaska Native Communities Without Direct Participation**

There are a significant number of Alaska Native communities that are neither CDQ communities nor directly participating non-CDQ communities that may still experience impacts resulting from the various proposed groundfish fishery management approaches. The CDQ regions encompass a coastal area extending “50 nautical miles from the baseline from which the breadth of the territorial sea is measured along the Bering Sea coast from the Bering Strait to the western most of the Aleutian Islands, or on an island within the Bering Sea.” It excludes communities “located on the GOA coast of the North Pacific Ocean” and Alaska Native (and other) communities located in Alaska’s “Interior.”

There are no anticipated impacts relating to subsistence and Environmental Justice for the GOA communities not directly engaged in the fishery. Data developed to date suggest no concerns over these types of impacts, and none has been raised during the public involvement process. The situation is, however, different for the communities of the Interior. A central concern of relevant Alaska Native communities in the Interior is the impact of the groundfish fishery on the subsistence and commercial salmon fishery. A number of comments on the Draft 2001 Programmatic SEIS related to this issue have been received from the Yukon-Kuskokwim area. Two specific regional groups that have been active in the public involvement process associated with the compilation of this Draft 2001 Programmatic SEIS have been the Association of Village Council Presidents and the Tanana Chiefs Conference, Inc., regional non-profit corporations that provide health, social, education, and community services to Alaska Native villages within Western Alaska and the Interior regions. Most of the communities served by these organizations are located along the Kuskokwim and Yukon Rivers and their tributaries. Because potential impacts to these regions focus on subsistence issues, impacts to these regions are discussed in the following section.



### 3.4 Subsistence Issues

The discussion of subsistence has been expanded from what appeared in the Draft 2001 Programmatic SEIS, which drew public comment for its general nature.<sup>1</sup> A new section has been added and subsistence issues are now treated at some length in the revised Programmatic SEIS.

Potential effects of the proposed alternative on subsistence use of natural resources may be usefully split into five main sections, each of which is summarized below:

- Potential effects on groundfish subsistence use.
- Potential effects of commercial groundfish fisheries on subsistence use of Steller sea lions.
- Salmon bycatch in the groundfish fishery and associated impacts to subsistence salmon fishing.
- General ecosystem concerns about volume of fishery removals.
- Indirect impacts on other subsistence activities, including joint production and income-related impacts.

#### 3.4.1 Effects on Groundfish Subsistence

There is a relatively low level of subsistence activity associated with groundfish species targeted for commercial harvest. For the communities profiled, the best available information indicates that groundfish made up less than 10 percent of total subsistence take, and ranged far behind salmon and other non-salmon fish. There are no indications that ongoing commercial harvest is adversely affecting groundfish-specific subsistence activities. Further, Alternative 1 policy and current FMP do not restrict subsistence fishing directly. As a result, no significant impacts to groundfish subsistence are anticipated under any of the Alternatives. Therefore, effects of the Alternatives on groundfish subsistence will not be discussed further in this document.

#### 3.4.2 Effects on Subsistence Use of Steller Sea Lions

The effects of Alternative 1 on Steller sea lion subsistence use are less straightforward than is the case for groundfish subsistence use. The subsistence harvest of Steller sea lions has declined substantially since 1992, over the same time period that the overall population of Steller sea lions was declining, as discussed in Section 3.9.5.3 of the Draft 2001 Programmatic SEIS. However, the relationship between the two is not clear. Furthermore, the complex connections between commercial groundfish fisheries and the decline in Steller sea lion population, discussed at length in the body of the Draft 2001 Programmatic SEIS, render the analysis of impacts of commercial fishing on Steller sea lion based subsistence problematic. It is evident though, that

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<sup>1</sup>“**AKN 06: The Draft Programmatic SEIS erroneously indicates that Alaska Native communities do not have a stake in the management of the groundfish fisheries.** The Draft Programmatic SEIS suggests that because the fisheries occur in the Exclusive Economic Zone, impacts to Alaska Native subsistence are few. This is not the case and should be revised.” A second general category of comment “**AKN 11: NMFS should establish marine protected areas which include provision for traditional Alaska Native subsistence uses.**” is not addressed in this section, but rather is encompassed in the marine protected areas discussion, and will be added to this section after consultation with authors of the broader Marine Protected Areas and Essential Fish Habitat analyses.

both of these relationships are important for assessing the potential effects of Alternative 1 on the subsistence use of Steller sea lions. This effect will be true for each of the four policy alternatives.

To the extent that Alternative 1 does not indirectly result in restrictions on existing opportunities or abilities to take Steller sea lions for subsistence purposes, it will have no direct adverse effects upon subsistence uses of Steller sea lions. If current levels of groundfish fishing are causing a decline in the Steller sea lion population, the fisheries could be indirectly contributing to the declining trend in subsistence harvest and use of the Steller sea lion that has occurred in recent years. Thus, to the extent that the design or mitigation strategies contained in Alternative 1 achieve the intended protection of Steller sea lion populations, the alternative will have neutral to positive effects on the subsistence use of that resource. More precise assessments are not possible, given the quality and quantity of information available, although it is probable that subsistence harvest levels will not be significantly changed by the projected potential changes in the Steller sea lion population resulting from Alternative 1. This is due to the complex dynamics involved in the existing conditions surrounding contemporary subsistence harvest of these animals, as developed in detail in Section 3.9.5.3 of the Draft 2001 Programmatic SEIS.

Even relatively large changes in Steller sea lion populations may not be accompanied by changes in the rate of subsistence use. Although subsistence harvest is to some degree related to the total population (and density) of animals to be taken, other factors also affect the rate of harvest, especially at low population levels. Unfortunately, little is known about these relationships, so the threshold at which the population is no longer perceived as “low” is not clear. Further, while anecdotal information suggests that there are long-term, intergenerational changes occurring, no detailed information exists on changes in cultural preferences for, and uses of, traditional marine-mammal-based foods. A number of other variables, such as negotiated agreements, may also influence long-term trends.

When examining impacts on a community level, it is important to note that of all the communities identified in the text of the Draft 2001 Programmatic SEIS as having a documented Steller sea lion harvest, only Akutan and Unalaska are identified as “regionally important groundfish communities” with substantial direct participation in the fishery. In other words, where use of Steller sea lions is identified as important to the community subsistence base, the commercial groundfish fishery is generally not, and vice versa.

### **3.4.3 Effects on Subsistence Salmon Fisheries**

Salmon bycatch in Alaska groundfish fisheries has been an ongoing management issue for the Alaska groundfish fisheries and has been a concern repeatedly noted in the public comment process for this Programmatic SEIS.<sup>2</sup> This concern focuses on the recent status of the western Alaska stocks and the contribution of salmon bycatch to decreasing subsistence harvests. The following sections on historic and current subsistence salmon harvest are summarized from the most recent data from this area supplied by the ADF&G (2001).

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<sup>2</sup> **AKN 10: The Draft Programmatic SEIS fails to analyze the issue of salmon bycatch, which is seriously impacting Alaska Native subsistence.** The salmon discarded in the groundfish fisheries are jeopardizing subsistence harvests. This issue must be addressed in the revised document.

In 1999, fisheries in four management areas accounted for 77 percent of the total subsistence salmon harvest statewide. These were Yukon (232,070 salmon; 25 percent of the statewide total); Kuskokwim (202,413 salmon; 21 percent); Northwest Alaska (154,294 salmon; 16 percent); and Bristol Bay (143,756 salmon; 15 percent). The total estimated salmon subsistence harvest in Alaska in 1999 was 975,617 fish based on annual harvest assessment programs.

The bycatch species of most concern in the groundfish fishery are chinook and chum, and of these two, chinook is considered a much larger potential problem. In 1999, the largest subsistence harvests of chinook salmon occurred in the Kuskokwim Area (77,660 salmon; 50 percent of the statewide total), followed by Yukon (50,515 salmon; 33 percent), Bristol Bay (13,009 salmon; 8 percent); and Northwest (6,242 salmon; 4 percent). Three areas dominated the subsistence chum salmon harvest in 1999: Yukon (162,670 salmon; 48 percent of the statewide harvest), Northwest (115,676 salmon; 34 percent), and Kuskokwim (47,612 salmon; 14 percent). Given that the majority of salmon subsistence harvest occurs in the Yukon and Kuskokwim areas, the following discussion will focus on these areas.

### **Yukon Area**

As in the past, today's residents of the Yukon River area rely heavily on fish for food. While non-salmon species provide an important component of the overall fish harvest, salmon comprises the bulk of the total subsistence fish harvested. Although four salmon species are harvested in the Yukon drainage subsistence fishery, chinook, chum, and coho salmon comprise the majority of the subsistence harvests. In portions of the drainage, subsistence harvests of some species, especially chum and chinook salmon, are substantial. Often subsistence harvests far exceed commercial harvests.

Depending on the drainage area, subsistence fishing occurs from late May through early October. Fishing activities are either based from a fish camp or from the home village. Fishing patterns and preferred sites vary from community to community. Extended family groups, typically representing several households, often undertake subsistence salmon fishing and typically cooperate to harvest, process, preserve, and store salmon for subsistence use.

In 1999, it is estimated that 2,888 households participated in the fishery, and as shown in Table 2 these households were distributed over a large number of communities that are in turn spread across a wide geographic region. The estimated 1999 total subsistence salmon harvest for the Yukon area broken down by species included 50,515 chinook (22 percent), 79,250 summer chum (34 percent), 83,420 fall chum (35 percent), 19,984 coho (9 percent), and 681 pink salmon (0.3 percent). There has been considerable variation from year-to-year, however, as shown in Table 3. However, these numbers show that chum and coho salmon were significantly down for 1998 and 1999.

### **Kuskokwim Area**

The harvest of fish and wildlife for subsistence use is an important component of the mixed subsistence-cash economy throughout the Kuskokwim area. The subsistence salmon fishery in the region is one of the largest and most important in the state. Many other households, which are not directly involved in catching salmon, participate by assisting family and friends with cutting, drying, smoking, and associated preservation activities (salting, canning and freezing). ADF&G Subsistence Division studies in the region indicate that fish contribute as much as 85 percent of the total pounds of fish and wildlife harvested in a community annually, and salmon as much as 53 percent of the total annual harvest (Coffing 1991).

**Table 2. 1999 subsistence salmon household/permit totals by community, Yukon management area.**

Community	Households/ permits total	Community	Households/ permits total	Community	Households/ permits total
Alakanuk	128	Grayling	51	Nunam Iqua (Sheldon's Point)	35
Alatna	12	Healy	8	Pilot Station	95
Allakaket	54	Holy Cross	66	Pitka's Point	26
Anvik	40	Hooper Bay	194	Rampart	29
Beaver	32	Hughes	24	Ruby	73
Bettles	20	Huslia	84	Russian Mission	57
Birch Creek	14	Kaltag	57	Saint Mary's	118
Central	12	Kotlik	90	Scammon Bay	76
Chalkyitsik	35	Koyukuk	38	Shageluk	32
Circle	21	Manley Hot Springs	16	Stevens Village	31
Eagle	65	Marshall	68	Tanana	122
Emmonak	157	Minto	65	Venetie	54
Fairbanks	95	Mountain Village	151	Other Alaska Communities	54
Fort Yukon	173	Nenana	33	<b>Totals</b>	<b>2,888</b>
Galena	183	Nulato	100		

**Table 3. Historic subsistence salmon harvests: Yukon management area.**

Year	Estimated salmon harvest				
	Chinook	Summer chum	Fall chum	Coho	Total
1990	48,587	115,609	167,900	43,460	375,556
1991	46,773	118,540	145,524	37,388	348,225
1992	47,077	142,192	107,808	51,980	349,057
1993	63,915	125,574	76,882	15,812	282,183
1994	53,902	124,807	123,565	41,775	344,049
1995	50,620	136,083	130,860	28,377	345,940
1996	45,671	124,738	129,258	30,404	330,071
1997	57,117	112,820	95,141	23,945	289,023
1998	54,124	87,366	62,901	18,121	222,512
1999	50,515	79,250	83,420	19,984	233,169
1995-1999 Average	51,609	108,051	100,316	24,166	284,143
1990-1999 Average	51,830	116,698	112,326	31,125	311,978
1975-1999 Average	42,113	184,387	136,889	29,713	365,499

There were 37 communities consisting of approximately 4,200 households with permits within the Kuskokwim area for the 1999 salmon subsistence fishery, as shown in Table 3. The 1999 total subsistence salmon harvest estimates for the Kuskokwim area were 77,660 chinook, 47,612 chum, 49,388 sockeye, and 27,753 coho salmon. As was the case in the Yukon area, considerable variation is seen from year to year, as shown in Table 4, and the 1998-1999 harvest levels were significantly below the ten-year average. The historic salmon harvest for the Kuskokwim area is presented in Table 5.

**Table 4. 1999 subsistence salmon harvests by community Kuskokwim area.**

Community	Households/ permits total	Community	Households/ permits total	Community	Households/ permits total
Akiachak	119	Kongiganak	71	Oscarville	15
Akiak	58	Kwethluk	142	Platinum	19
Aniak	163	Kwigillingok	95	Quinhagak	132
Atmautluak	53	Lime Village	17	Red Devil	18
Bethel	1,508	Lower Kalskag	63	Sleetmute	35
Chefornak	94	McGrath	100	Stony River	16
Chuathbaluk	28	Mekoryuk	92	Takotna	14
Crooked Creek	30	Napakiak	73	Telida	2
Eek	67	Napaskiak	74	Toksook Bay	133
Goodnews Bay	53	Newtok	80	Tuluksak	72
Kalskag (Upper)	53	Nightmute	67	Tuntutuliak	74
Kasigluk	136	Nikolai	29	Tununak	109
Kipnuk	176	Nunapitchuk	100	<b>Totals</b>	<b>4,180</b>

**Table 5. Historic subsistence salmon harvest Kuskokwim area.**

Year	Estimated salmon harvest					
	Chinook	Sockeye	Chum	Coho	"Small salmon"	Total salmon
1990	92,678	39,662	131,469	50,713	221,844	314,522
1991	90,224	56,404	96,308	55,581	208,293	298,517
1992	68,665	34,159	99,576	44,496	178,231	246,896
1993	91,721	51,363	61,726	35,295	148,384	240,105
1994	98,378	39,279	76,951	36,504	152,734	251,112
1995	100,159	28,622	68,942	39,165	136,729	236,888
1996	81,598	35,036	90,238	34,698	159,972	241,570
1997	85,506	41,270	40,976	30,714	112,960	198,466
1998	86,115	37,578	67,665	27,239	132,482	218,597
1999	77,660	49,388	47,612	27,753	124,753	202,413
1960-1999 Average	57,887	NA	NA	NA	186,232	244,118
1995-1999 Average	86,208	38,379	63,087	31,914	133,379	219,587
1990-1999 Average	87,270	41,276	78,146	38,216	157,638	244,909

## Salmon Bycatch under Groundfish Fishery Existing Conditions

The issue of salmon bycatch is presented in more detail in the bycatch qualitative analysis paper. The five species of Pacific salmon are divided into two FMP bycatch management groups: chinook salmon, and “other” salmon (chum, sockeye, coho, pink). (Steelhead trout have not been observed recently in either the BSAI or GOA and were not considered in that assessment). All groundfish fisheries in the BSAI and GOA are prohibited from retaining any species of salmon except for those retained under the Voluntary Salmon Donation Program that authorizes their retention for local food banks (BSAI FMP Amendment 26, GOA FMP Amendment 29). In 1999, over 3 million pounds of salmon were donated.

Of the five salmon species, only the bycatch of chinook and chum salmon is of any serious concern in the BSAI and GOA. Pink, coho, and sockeye salmon populations in Alaska are considered healthy, and bycatch in the groundfish fisheries represents only a minuscule portion of state harvests and overall population size. These three species also are small components of bycatch in the groundfish fishery relative to chinook and chum salmon.

While the overall bycatch of chinook and chum salmon is also very small relative to state harvests, bycatch take could pose a threat to specific stocks (rivers of origin). A recent paper by Witherell *et al.* (2002) provides a compilation of the latest data on Alaska groundfish fisheries salmon bycatch under existing conditions:

*Bycatch is primarily juvenile salmon that are one or two years away from returning to the river of origin as adults. The origin of salmon taken as bycatch includes rivers in western Alaska, southcentral and southeast Alaska, Asia, British Columbia, and Washington. Analysis indicates that an incidental catch of 30,000 chinook salmon in the Bering Sea and Aleutian Islands groundfish trawl fisheries equates to about 14,581 adult chinook salmon from western Alaska. Similarly, a bycatch of 60,000 chum salmon in the Bering Sea and Aleutian Islands groundfish trawl fisheries equates to about 13,120 adult chum salmon from western Alaska. We estimated that, on average, salmon bycatch in the Bering Sea and Aleutian Islands groundfish trawl fisheries reduced the western Alaska chum salmon run by less than 0.2%, and reduced the western Alaska chinook salmon run by less than 2.7%. Impacts of salmon bycatch from the Gulf of Alaska groundfish trawl fisheries cannot be estimated at this time (Witherell, et al. 2002).*

Some western stocks of chinook and chum salmon are currently depressed. In 2000, there were fishing closures in the Yukon and Kuskokwim River systems, and it is possible that ADF&G escapement goals may not be realized over the immediate future. If individual stocks become so depressed that full closure of direct fisheries is insufficient to enable a rebound in the population, then any additional mortality, including bycatch, could negatively impact the stock. It is estimated that 58-70 percent of chinook salmon bycatch in the BSAI groundfish fisheries may originate from western Alaska stocks, but it is unknown what proportion of these salmon are specifically from depressed stocks. Analysts contend that there is insufficient information to determine the effects of BSAI bycatch and PSC limits on specific at-risk stocks within this western group.

Under BSAI FMP Amendment 21b, the PSC limit represents about 19.2 to 36.9 percent of the combined Arctic-Yukon-Kuskokwim and Bristol Bay chinook salmon landings reported between 1997 and 1999. This is a substantial portion of the domestic harvest. In 1999, the NPFMC adopted BSAI FMP Amendment 58 to (1) further reduce the chinook salmon bycatch limit from 48,000 to 29,000 fish over a four-year period, (2) implement year-round accounting of chinook salmon bycatch in the pollock fishery, (3) revise the

boundaries of the chinook Salmon Savings Areas, and (4) set more restrictive closure dates. This reduced PSC limit represents about 11.6 to 22.3 percent of the combined Arctic-Yukon-Kuskokwim and Bristol Bay chinook salmon landings reported between 1997 and 1999. PSC limits have not been established for salmon in the GOA, nor is bycatch considered a potential problem for GOA subsistence fisheries under existing conditions. Some western Alaska stocks of chum salmon are also depressed, but analysts estimate that only about 19 percent of chum salmon bycatch in the BSAI is from western stocks. Because this is equivalent to only 1.3 to 1.5 percent of the combined Arctic-Yukon-Kuskokwim and Bristol Bay chum salmon landings reported between 1997 and 1999, bycatch represents a tiny fraction of landings even for depressed stocks. The quantitative assessment of bycatch and the relationship of bycatch to individual salmon stocks are discussed in detail in the Bycatch Qualitative Analysis Paper, as well as in the Draft Programmatic SEIS. It is apparent that this analysis conflicts with views held by a significant number of Alaska Native entities and individuals participating in the public involvement process. The degree to which this divergence of opinion is based in the different approaches of scientific analysis and Traditional Knowledge is unknown. Whatever the specific origin of this divergence, it is acknowledged that this conflict in viewpoint exists.

Under Alternative 1, the amount of salmon bycatch and associated impacts to western Alaska stocks would appear relatively low, and adverse impacts on subsistence would therefore not be significant. However, salmon bycatch is nonetheless a contentious issue given the current state of some of the salmon fisheries. For example, in 2000, "salmon returns throughout the Yukon and Kuskokwim River drainages and the entirety of Norton Sound were less than 50 percent of the 20-year average" (D. Eggers, ADF&G Juneau, personal communication, cited in Witherell *et al.* 2002). These and correspondingly adverse conditions in the Bristol Bay sockeye fishery have led the state to constrain commercial, recreational, and subsistence harvests, and in 1998, 1999, and 2000, economic disaster was formally declared for western Alaska based on collapsed salmon runs (Witherell *et al.* 2002). While year-to-year fluctuations are common (more so in the GOA than in BSAI fisheries), in recent years chum salmon bycatch in the BSAI has remained fairly stable. However, BSAI chinook bycatch increased in 2001 to about 7 percent above the 1990-2001 annual average (Witherell *et al.* 2002). Given the existing conditions in the salmon fisheries and the specific importance of salmon to overall subsistence take, the cause of public concern voiced by Alaska Natives over salmon bycatch in the Alaska groundfish fisheries is readily apparent. However, this concern does not appear to be supported by existing quantitative data and analysis.

It is also important to note that adverse subsistence salmon conditions in western Alaska are having a regulatory impact on commercial salmon fisheries in Alaska Native groundfish communities elsewhere. Specifically, Area M, which includes both the north and south sides of the western end of the Alaska Peninsula as well as the eastern part of the Aleutian Islands, has faced commercial restrictions designed to decrease the interception of western Alaska salmon while targeting Bristol Bay and Alaska Peninsula salmon stocks. These restrictions have had a marked negative impact on the communities of King Cove and Sand Point, two Alaska Native communities directly involved groundfish communities, as discussed in Section 3.9.3 of the Programmatic SEIS.

#### **3.4.4 Indirect Impacts on Other Subsistence Activities**

Beyond direct use of groundfish and Steller sea lions as subsistence resources and potential bycatch-related impacts to subsistence salmon fisheries, the Alternative 1 policy or FMP could have indirect impacts on other subsistence pursuits. These types of impacts fall into two main categories:

- Impacts to other subsistence pursuits as a result of loss of income from the commercial groundfish fishery. This income could be used to purchase fuel, vehicles, other subsistence related gear, or otherwise offset expenses required to engage in a range of subsistence pursuits.
- Impacts to other subsistence pursuits as a result of the loss of opportunity to use commercial fishing gear and vessels for subsistence pursuits, where these assets are used in such a manner that commercial and subsistence catches are jointly produced, based on shared use of fixed and variable inputs.

The variables that influence these indirect impacts are numerous and complex. Although some impacts are likely to accrue to a limited number of communities that participate directly in the fishery, quantification of these impacts is problematic. Impacts to subsistence in communities that participate in the fishery primarily through investment and control of quota (the CDQ communities) could occur through loss of income that would be directed toward subsistence pursuits, but quantification of these impacts is also problematic.

It is also important to note that the geographic distribution of these potential impacts varies widely. Joint production impacts are confined to those individuals who own or have immediate access to vessels participating in the groundfish fisheries. The impacts of a potential loss of income would fall on a larger group of individuals, many of whom may live significant distances away from the coastal communities where commercial vessels are home ported. It should also be noted that these are both still relatively constrained areas compared to the potential subsistence salmon impacts discussed above. Though their geographic base may be narrow, the impacts on families may be much more immediate and of greater magnitude.

### **Income-Related Indirect Subsistence Impacts**

The potential loss of income resulting in funds not being available for subsistence pursuits is a very complex issue. Below are some facets of the various issues involved.

- Loss of income can impact everyone associated with the fishery, and people associated with the fishery live in communities ranging across Alaska and the Pacific Northwest.
- Income specifically contributed by groundfish pursuits may be a larger or smaller proportion of funds used for subsistence by individuals or families.
- The relationship between loss of income and specific subsistence outcomes is not entirely straightforward.
- Field experience would indicate that subsistence strategies are, at least in part, flexible in nature and are readily adapted to the level of cash flow available.
- Income associated with the groundfish fishery can be derive from direct participation through employment, investment in vessels or processors, and/or through control of quota, such as through CDQ related revenues.
- CDQ communities represent a special case by being the only communities where fisheries subsistence is heavily practiced and where benefits from the fishery are primarily derived through investment and control of quota.



- Different CDQ groups have chosen different organizational structures and strategies for using funds derived from the program and have had varying degrees of success with their investments. As a result, there are different levels of individual and family income in different CDQ communities.
- CDQ programs focused on employment and training may, in turn, indirectly influence individual subsistence spending and participation decisions.

No loss of income related to subsistence impacts is anticipated under the Alternative 1 policy or the current FMP.

### **Joint Production Related Subsistence Impacts**

The second type of potential impact, loss of opportunity for joint production, applies to groundfish communities with direct participation in the fishery (i.e., only vessels that currently participate in the commercial fishery can be used for joint production). This type of impact was noted in public comment on the Draft 2001 Programmatic SEIS.<sup>3</sup>

In general, there is little information on joint production within the groundfish fishery. Below are some general points about the vessels involved, followed by points about the communities involved.

- Not all vessels in the commercial groundfish fishery are also used for subsistence.
- Depending on the community involved, a greater or lesser proportion of the commercial fleet engaged in the local commercial groundfish fishery is owned and operated by non-residents.
- Joint production can occur in at least two fundamentally different ways. Subsistence fish can be retained during commercial trips, or separate trips using the commercial vessel and gear may be made for subsistence harvests.
- As a general rule, trips specifically dedicated to subsistence are not economical for the larger vessels engaged in the groundfish fishery. However, for the large vessels based in subsistence communities, dedicated trips for subsistence fishing may be unusual, but it is known from field interviews that some other subsistence use may occur.
- Smaller vessels are most likely to be involved in joint production. Though the number of joint production vessels is unknown, nearly all of the smaller class vessels that engage in the groundfish fishery are also involved in some combination of (or all of) the salmon, halibut, sablefish, and herring subsistence fisheries.
- For those small vessels engaging in other fisheries in addition to the groundfish fishery, the time of the year that the vessel is available for joint production may decrease if the reduction of the commercial groundfish fishery were of a sufficient magnitude.

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<sup>3</sup> **AKN 09: Commercial fishing provides a platform that supports subsistence activities.** The commercial fisheries form the basis of continuing cultural health in many Alaska Native communities. The economic infrastructure of the commercial fisheries provides the requisite foundation for a subsistence lifestyle. The Draft 2001 Programmatic SEIS should acknowledge this and revise its analysis accordingly.

- In practical terms, joint production opportunities also vary by gear type. Although quantitative data are slim, knowledge of the industry suggests that little subsistence takes place using trawl vessels compared to other gear types. Among the fixed gear classes, much more time is directed toward sablefish, salmon, and herring than is devoted to groundfish; therefore, the joint production opportunities in this class would remain relatively high independent of the groundfish management alternative chosen.
- Field observations indicate that different individuals look at the balance between commercial and subsistence catches during times of scarcity or forced decision-making in very different ways.
- CDQ-owned vessels that participate in the groundfish fishery usually do not participate in subsistence activities.

In terms of communities, the potential for significant social or community level impacts resulting from indirect effects of any of the alternatives on subsistence through loss of direct income (exclusive of CDQ considerations) or joint production opportunities is only anticipated in Unalaska, Akutan, King Cove, Sand Point, and Kodiak. As outlined below, joint production impacts are only considered likely for a subset of these communities.

- In the case of Unalaska, none of the large commercial vessels that deliver groundfish to the local processing plants are owned or crewed by residents of the community. There is a small boat fleet from the community that does jig for cod, and the opportunity would continue to exist for joint commercial/subsistence production. In terms of the number of participants, this fleet has seen growth and decline in recent years. There was also some longline groundfish activity by small boats, but the level of effort in federal waters is difficult to assess with current data.
- In Akutan, like Unalaska, the fleet delivering to the local processing facility is a non-resident fleet and the resident fleet from the traditional community is essentially not engaged in the commercial groundfish fishery. Therefore, there would be no joint production impacts from any of the alternatives.
- In the case of Sand Point and King Cove, local vessels less than 68 feet (ft) in length are likely to engage in subsistence. Although data are not available to quantify potential impacts of this nature, it would appear likely that if income of larger vessels (i.e., those in the Trawl Catcher Vessel non-American Fisheries Act/Trawl Catcher Vessel 60/Pot Catcher Vessel classes and some in the Fixed Gear Catcher Vessel 33-59 ft vessel class) goes down significantly because of any particular alternative, it will be more difficult for vessel owners and operators to justify using their large vessel for certain types of subsistence activities.
- Given the concentration of the fleet in Kodiak, and the inherent tendency of smaller vessels (such as those in the smaller villages as well as that portion of the Kodiak fleet) to be less specialized (and therefore have more joint production opportunities), whatever indirect subsistence impacts that do occur in this region as a result of the alternative frameworks are likely to be concentrated in the City of Kodiak itself.

In summary, the indirect impact of Alternative 1 policy or the current FMP on subsistence is difficult to assess for the reasons discussed in this section. Impacts associated with lost joint production opportunities are likely

to be concentrated among small vessel owners in a relatively small number of communities. Indirect impacts associated with loss of income may affect subsistence pursuits in a wider range of communities, including the CDQ communities. Significant adverse impacts are not anticipated under Alternative 1 or its FMPs.

### **3.5 Alaska Native Environmental Justice Issues**

Concerns regarding environmental equity are generally termed “environmental justice.” Environmental Justice can also be defined as “the determination of equal justice and equal protection under the law for all environmental statutes and regulations without discrimination based on race, ethnicity, and /or socioeconomic status” (Bryant, 2001). Environmental Justice issues encompass a broad range of impacts including those on the natural and physical environment and related social, cultural, and economic effects. EO 12898 (1994) requires each federal agency to achieve Environmental Justice by addressing “disproportionately high and adverse human health and environmental effects on minority and low-income populations.” Environmental Justice impacts are not highlighted as an objective of any of the four policy alternatives that are being analyzed in this Programmatic SEIS. However, as Alaska Native populations may be affected by future policy objectives, it is important to consider these effects. Environmental Justice impacts were not highlighted in the Draft 2001 Programmatic SEIS, either for minority populations and low-income populations in general, or for Alaska Native populations in particular. This omission was a focus of public comment.

To address this shortcoming, a description of existing conditions concerning Environmental Justice was added to the Programmatic SEIS. The following sections provide an overview of differing Environmental Justice impacts by CDQ and non-CDQ regions.

#### **3.5.1 Community Development Quota Region as Low-Income and Minority Population and Environmental Justice Related Impacts**

The purpose of the CDQ program is to facilitate the participation of BSAI community residents in the BSAI fishery, as a means to develop local community infrastructure and increase general community and individual economic and social well-being. CDQ communities are by definition predominantly Alaska Native villages, as shown in Table 6. Alaska Native residents comprise 86.8 percent of the combined total population of all CDQ communities. They are remote, isolated settlements with few natural assets with which to develop and sustain a viable diversified economic base. As a result, economic opportunities have been few, unemployment rates have been chronically high, and communities (and the region) have been economically depressed.

While these communities border some of the richest fishing grounds in the world, they have largely been unable to take advantage of these opportunities. The full domestication of the BSAI fisheries occurred relatively quickly. However, the very high capital investment required to compete in these fisheries precluded small communities from participating in their development. The CDQ program serves to ameliorate some of these circumstances by extending an opportunity to qualifying communities to directly benefit from the productive harvest and use of these publicly owned resources.

The sixty-five coastal communities currently eligible to participate in the CDQ program are organized into six CDQ groups, with between one and 21 communities in each group. The CDQ communities are geographically dispersed, extending westward to Atka, on the Aleutian Island chain, and northward along the Bering coast to the village of Wales, near the Arctic Circle. Table 6 summarizes the six CDQ groups in terms of their approximate populations. The total population of the 65 CDQ communities in 2000 was estimated

**Table 6. Alaska Native percentage of total community population, Alaska community development quota communities, 2000.**

Community	% of Population
<b>Aleutian Pribilof Island Community Development Association</b>	
Akutan	16.4%
Atka	91.3%
False Pass	65.6%
Nelson Lagoon	81.9%
Nikolski	69.2%
Saint George	92.1%
<b>Bristol Bay Economic Development Corporation</b>	
Aleknagik	84.6%
Clark's Point	92.0%
Dillingham	60.9%
Egegik	76.7%
Ekuk	0.0%
Ekwok	93.8%
King Salmon	30.1%
Levelock	95.1%
Manokotak	94.7%
Naknek	47.1%
Pilot Point	86.0%
Port Heiden	78.2%
Portage Creek	86.1%
South Naknek	83.9%
Togiak	92.7%
Twin Hills	94.2%
Ugashik	81.8%
<b>Central Bering Sea Fishermen's Association</b>	
St. Paul	86.5%
<b>Coastal Villages Fishing Cooperative</b>	
Chefornak	98.0%
Chevak	95.9%
Eek	96.8%
Goodnews Bay	93.9%
Hooper Bay	95.8%
Kipnuk	98.0%
Kongiganak	97.2%
Kwigillingok	97.9%

Community	% of Population
<b>Coastal Villages Fishing Cooperative (Continued)</b>	
Mekoryuk	96.7%
Napakiak	96.6%
Napaskiak	98.2%
Newtok	96.9%
Nightmute	94.7%
Oscarville	100.0%
Platinum	92.7%
Quinhagak	97.3%
Scammon Bay	97.4%
Toksook Bay	97.6%
Tuntutuliak	98.9%
Tununak	96.9%
<b>Norton Sound Economic Development Corporation</b>	
Brevig Mission	92.0%
Diomede	93.8%
Elim	94.9%
Gambell	95.8%
Golovin	92.4%
Koyuk	94.3%
Nome	58.7%
Saint Michael	93.2%
Savoonga	95.5%
Shaktoolik	94.8%
Stebbins	94.7%
Teller	92.5%
Unalakleet	87.7%
Wales	90.1%
White Mountain	86.2%
<b>Yukon Delta Fisheries Development Association</b>	
Alakanuk	97.9%
Emmonak	93.9%
Grayling	91.8%
Kotlik	96.1%
Mountain Village	93.5%
Nunam Iqua	93.9%
<b>Total All Villages</b>	<b>86.8%</b>

Source: U.S. Census Bureau Census 2000

to be just over 27,000. However, this population figure may include a substantial number of individuals who are not year-round residents (Table 7). The administrative offices of CDQ groups tend to be located in regional hub communities, near government or industry partner offices, and/or near community or other ongoing projects.

To the extent that subsistence in the CDQ region experiences other adverse impacts, however, no significant adverse Environmental Justice impacts associated with income or joint production loss are anticipated under Alternative 1. These impacts could occur as a result of loss of income that would otherwise be applied to subsistence pursuits or as a result of the loss of subsistence opportunities through loss of joint production opportunities or through adverse impacts to subsistence resources themselves (as in the case of salmon bycatch). These would be considered Environmental Justice impacts to the Alaska Native CDQ communities independent of (or at least not directly related to) impacts to the CDQ program itself.

**Table 7. Community development quota group populations (2000).**

<b>Community Development Quota (CDQ) Group</b>	<b>2000 Population*</b>
Aleutian Pribilof Island Community Development Association	1,143
Bristol Bay Economic Development Corporation	5,932
Central Bering Sea Fisherman's Association	532
Coastal Villages Region Fund	7,855
Norton Sound Economic Development Corporation	8,488
Yukon Delta Fisherman's Development Association	3,123
<b>Total</b>	<b>27,073</b>

\*The population estimate may include individuals who are not year-round residents.  
Source: ADCED 2001, U.S. Census, 2000

### **3.5.2 Non-Community Development Quota Alaska Native Environmental Justice Issues**

#### **Groundfish Communities**

The discussion in this section is organized into six different topical areas as outlined below. This organization reflects the complexity of the Environmental Justice issue for the Alaska groundfish fishery, the range of regions and communities that may experience impacts, and the complex nature of ties of specific regions and communities to different sectors of the fishery, all of which have implications for Environmental Justice outcomes. Each topic is discussed in turn, and includes conclusions by region and alternative, consistent with the organization of the social impact analysis sections in the main body of the Programmatic SEIS. The individual topics are:

- Community level Environmental Justice impacts.
- Catcher vessel fleet related Environmental Justice impacts.
- Catcher processor fleet related Environmental Justice impacts.

- Shore processor related Environmental Justice impacts.
- CDQ related Environmental Justice impacts.
- Subsistence related Environmental Justice impacts.

### **Groundfish Community Level Environmental Justice Impacts**

For the Alaska Peninsula/Aleutian Islands region, alternatives projected to significantly reduce participation in pollock and Pacific cod fisheries would result in significant and profound impacts to those communities in the region most engaged in the fishery: Unalaska, Akutan, King Cove, and Sand Point. Beyond impacts to the fisheries-related sector of the economy, impacts would ripple through other sectors of the local economy. The degree to which other sectors would decline depends upon the relative level of integration of the processing and harvesting sectors with the rest of the community economy and the diversity within the fisheries-specific portion of the economy. Unalaska, with its substantial support service sector, would experience additional impacts, but this would not necessarily disproportionately impact Alaska Natives (outside of, perhaps, local Alaska Native corporation enterprises).

Fisheries-related local government revenues would also decline significantly, with the specific amount depending on the local tax structure. Given that King Cove and Sand Point are communities where Alaska Natives constitute a plurality, these potential adverse impacts are an Environmental Justice issue, as they would disproportionately accrue to a minority population. Akutan, with its unique dual traditional community/large groundfish plant industrial enclave structure, plus its CDQ engagement would also likely experience Environmental Justice impacts, but the local fishery support sectors are relatively undeveloped compared to the other regional groundfish communities. Other predominately Alaska Native communities of the AEB would experience a substantial decline in groundfish-related tax revenue with a groundfish fishery decline, and economic opportunities are generally limited in these communities. None of these types of impacts is anticipated under the Alternative 1 policy or the current FMP.

For the Kodiak region, commercial groundfish activity is highly concentrated in the City of Kodiak itself, a largely non-Native community. All regional groundfish processors, except one, are located there, as are 87 percent of the regionally owned catcher vessels that, in turn, account for fully 95 percent of the total ex-vessel value of the regionally owned fleet over the period from 1992 to 2000. As the Alternative 1 policy does not cause a reduction in Kodiak production and Alaska Native participation in the groundfish fishery, no Alaska Native Environmental Justice impacts are anticipated to result from Alternative 1 policy of the current FMPs.

For the southcentral and southeast Alaska regions, the Washington inland waters region, and the Oregon coast region, none of the alternatives is anticipated to result in adverse impacts at the community level. Therefore, Alternative 1 is not considered likely to produce Environmental Justice concerns in these regions for any low-income or minority population, including Alaska Natives.

### **Catcher Vessel Fleet Related Environmental Justice Impacts**

Resident owners and crews of the catcher vessel fleet in the Alaska Peninsula/Aleutian Islands region are assumed to be representative of the overall population of their communities. Given that assumption, alternatives resulting in adverse impacts to regional catcher vessels would create Environmental Justice impacts and disproportionately accrue to a minority (Alaska Native) population in the region, as would be

the case in the communities of King Cove and Sand Point. These communities together accounted for 72 percent of all regionally owned groundfish vessels and 83 percent of the total regionally owned ex-vessel groundfish value over the 1992-2000 period (Table 2).

Some disproportionate impacts would also be likely in Unalaska/Dutch Harbor, where the local fleet accounted for 21 percent of all regionally owned groundfish vessels and 14 percent of the total regionally owned ex-vessel value during this same time span. It is not as clear, however, that this would be an Environmental Justice issue, given the overall demography of the community (less than 8 percent Alaska Native in 2000), despite the fact that Alaska Native residents may be more likely to be engaged in the catcher vessel sector of the fishery than is the general population due to length of residence and historical engagement in fishery activity in general, among other factors. (Catcher vessels from the Chignik/Peninsula area communities of Chignik Bay, Chignik Lagoon, Chignik Lake, Ivanof Bay, and/or Perryville have participated in the commercial groundfish fishery at higher levels since 1997 than by earlier years, and impacts to this fleet may be Environmental Justice issues, but data on the fleet are sparse.) Significant adverse impacts are not foreseen under the Alternative 1 policy or the current FMP.

With diminishing vessel participation, owners and crew in the Kodiak region will experience significant impacts similar to the Alaska Peninsula/Aleutian Islands region, but this is not likely to be an Environmental Justice issue, given the relatively small proportion of Alaska Natives in the overall community population. However, as would be the case in Unalaska/Dutch Harbor, Alaska Native residents in the Kodiak region may be more likely to be engaged in the catcher vessel sector of the fishery than the general population, due to length of residence and historical engagement in fishery activity, among other factors.

For catcher vessel owners and crews in the southcentral and southeast Alaska regions, there are no indications that the impacts to Alaska Natives would be adverse. No adverse Environmental Justice impacts to Alaska Native-owned catcher vessels are anticipated under the Alternative 1 or the current FMPs.

### **Catcher Processor Related Environmental Justice Impacts**

Workforce populations associated with the catcher processor sector are largely associated with the Washington inland waters region in general, and the greater Seattle area in particular, where majority ownership of this sector is concentrated. It is important to note, however, that while individuals recruited from Washington dominate employment in this overall sector, some of the smaller entities within this sector are based in the Kodiak region. Alaskan crews and Alaska Native crews specifically, have been the focus of targeted hiring efforts in the sector for a number of years. This sector's workforce is significantly different demographically from the overall population of the greater Seattle area, based on 2000 U.S. Census data for the community and on industry-reported information for the same year. While the greater Seattle area is 23 percent minority, this workforce is 63 percent minority, according to industry data. The minority component of the various workforces within this sector was largely comprised of individuals of Hispanic or Asian ancestry.

Industry data indicate that in 2000, individual reporting entities were anywhere from about 36 percent to about 86 percent minority (Table 2). Therefore, any job losses experienced under the various alternatives would largely be jobs lost by minority workers. This would indicate a disproportionate adverse impact to a minority population, and therefore is an Environmental Justice impact. However, there is no indication that, on the sector level, these impacts would cause disproportionate impacts to Alaska Natives, so it is not

considered an Alaska Native Environmental Justice issue. However, employment associated with the catcher processor sector is important to a number of CDQ entities.

### **Shore Processor Related Environmental Justice Impacts**

The workforce populations associated with the shore-based processing plants in the Alaska Peninsula/Aleutian Islands region are significantly different demographically from the overall populations of these communities, based on interpretation of U.S. Census data and on more recent industry-reported information. These workforces are largely comprised of minority workers, of primarily either Asian or Hispanic ancestry. Industry data indicates that, in 2000, 79 percent of the workers at the plants are minority individuals, and that individual reporting plants were anywhere from about three-quarters to over 90 percent minority (Table 3). While a complete sample of processors was not obtained, it is assumed for the purposes of this analysis (and, in part, on previous knowledge of the industry) that the large processors in the region are at least roughly equivalent in their workforce composition with respect to the general proportion of minority hires, if not in the specific combination of minority groups represented at each processor.

Significant employment losses at these plants would cause a disproportionately high, adverse impact on a minority population, and therefore would be considered an Environmental Justice impact. These impacts would be further accentuated by the fact that at least some of these workers have limited English language skills. This, combined with limited opportunities to acquire job skills in other economic sectors, would indicate that these minority workers would be less able than average American workers to easily gain employment outside of the seafood industry. This is not, however, an Alaska Native issue as even plants in predominately Alaska Native communities have extremely low Alaska Native employment in their workforces. This effect is not anticipated under the Alternative 1 policy.

A similar pattern is seen in the Kodiak region, where industry data, though incomplete, suggest that these jobs are overwhelmingly held by minority workers. If this pattern holds true, significant processor job losses would cause a disproportionately high, adverse impact on a minority population, and be considered an Environmental Justice issue. Again, however, this would not be an Alaska Native issue and is not an anticipated adverse impact on Alaska Natives resulting from the Alternative 1 policy.

For the southcentral and southeast Alaska regions, the Alternative 1 policy is not anticipated to result in adverse employment impacts to shore-based processors including Alaska Natives that may work for processors. Additionally, no Alaska groundfish shore-based processors are located in the Washington inland waters or Oregon coast regions. Therefore, Environmental Justice is not considered an issue for this sector in these regions.

### **Subsistence Related Environmental Justice Impacts**

Subsistence impacts, in general, are an Environmental Justice issue due to the disproportionate involvement of Alaska Natives in subsistence pursuits (and the exclusive engagement of Alaska Natives in subsistence activities involving taking of marine mammals). As noted above, no direct negative impacts on groundfish subsistence use or Steller sea lion subsistence use are anticipated under Alternative 1. Indirect impacts, as a result of lost opportunities for joint commercial and subsistence production, are possible under some alternatives, however, and would most likely be experienced in King Cove, Sand Point, and Kodiak. Given the assumption that the King Cove and Sand Point catcher vessel fleets reflect the overall demographic structures of those communities, and given that those communities have many Alaska Native residents, to



the degree that joint production impacts are felt, they would likely be Environmental Justice impacts. For Kodiak, the white or non-minority residents are the majority, while the Alaska Native component of the population only accounts for 10 percent of the total population. Therefore, subsistence impacts in this community are not likely to result in an adverse Environmental Justice issue. Indirect significant adverse subsistence impacts resulting from a loss of commercial fisheries income are not likely under Alternative 1, but these impacts may be felt in a much wider range of communities, and are not possible to quantify with existing data.

Disproportionately high, adverse impacts to subsistence are not considered likely for the southcentral or southeast Alaska regions under Alternative 1. Subsistence impacts are not applicable to the Washington inland waters region or the Oregon coast region.

### **Non-Groundfish Communities**

Under the Alternative 1 policy and the current FMPs subsistence impacts could affect non-CDQ communities and communities that are not directly participating in the groundfish fishery to some degree. The potentially affected regions span a large area, such as the Yukon and Kuskokwim regions, and include many communities. However, the effects of salmon bycatch on subsistence under the Alternative 1 policy or the current FMPs do not appear to be significantly adverse.

## **Section 4      Alternative 2: Adopt a More Aggressive Management Policy**

### **4.1      Alaska Native Participation and Consultation in Fish Management**

#### **4.1.1      Alaska Native Representation on the North Pacific Fishery Management Council and the Advisory Panel**

Under the Alternative 2 policy as illustrated by FMP 2.1 and 2.2, Alaska Native representation on the NPFMC and the AP would not change. It is assumed that one member would be appointed for each group to represent Alaska Native interests.

#### **4.1.2      Public Involvement**

Public involvement under the Alternative 2 policy would remain the same as described under the Alternative 1 policy, as it is a federal requirement.

#### **4.1.3      Public Review and Comment on Fishery Management Plans, Fishery Management Plan Amendments, and Environmental Impact Statement Documents**

Under FMP bookends 2.1 and 2.2, community outreach in relation to public review and comment and scoping on FMPs, amendments, EIS, comment analysis and response, and government-to-government consultation would not change.

#### **4.1.4      Co-Management**

The level of co-management under Alternative 2 policy would likely not change from Alternative 1.

#### **4.1.5      Government-to-Government Consultation Requirements**

Under the Alternative 2 policy framework as illustrated by FMPs 2.1 and 2.2, government-to-government would not change.

### **4.2      Traditional Knowledge**

Under the Alternative 2 policy there would be no change from Alternative 1. Traditional Knowledge obtained from existing literature and public comments would be used as a source of information for fisheries management. Under Alternative 2, there is no formal consideration of Traditional Knowledge in the management of fisheries. A formal system for collecting and evaluation of Traditional Knowledge information would not be established by NOAA Fisheries.

## **4.3 Alaska Native Participation in Regional Fisheries by Regional Setting**

### **4.3.1 Community Development Quota Regional Issues**

Under the Alternative 2 policy as illustrated by FMP 2.1, as noted in the main body of this Programmatic SEIS and in Appendix F-8, the Overcapacity discussion paper, CDQ for all groundfish species except for pollock would be repealed. The multi-species groundfish CDQ program has steadily grown in relative importance since its inception, and in 2000 it accounted for approximately one-tenth of all CDQ royalties. Due to the loss of revenue and other economic and employment opportunities under this bookend alternative, repeal of the multi-species program would generate adverse impacts to CDQ groups. However, under FMP 2.1, the pollock fishery would expand substantially over baseline conditions, so it is assumed that the pollock CDQ program would proportionally expand with the rest of that fishery. In terms of net change, this expansion is of sufficient magnitude that it would offset the losses incurred as a result of the discontinuation of the multi-species program on an overall or general level, but it is the case that losses and gains would not be evenly distributed among CDQ groups due to differential reliance on the various species under the overall CDQ program (and within the multi-species program in particular). As a result, the significance of direct/indirect effects to individual CDQ groups are unknown. Under FMP 2.2, CDQ would not change from Alternative 1; thus, no adverse impacts are anticipated.

### **4.3.2 Non-Community Development Quota Regional Issues**

#### **Non-CDQ Alaska Native Community Issues/Direct Participation**

No Alaska Native issue-related negative impacts are foreseen for these communities under this alternative.

#### **Non-CDQ Alaska Native Community Issues/no Direct Participation**

Impacts to these communities are summarized in Section 4.5 below.

## **4.4 Subsistence Issues**

### **4.4.1 Steller Sea Lion Subsistence**

FMP 2.1 is not anticipated to have any demonstrable impact on Steller sea lion subsistence, for reasons detailed in the Alternative 1 discussion. Communities experiencing direct adverse fishery impacts due to groundfish fishing restrictions under FMP 2.2 would not benefit from improved Steller sea lion subsistence opportunities.

### **4.4.2 Salmon Subsistence and Bycatch Related Issues**

As discussed in Appendix F-5 (Bycatch Qualitative Analysis Paper) under Alternative 1, it is possible that current PSC restrictions in the BSAI management region may not provide adequate protection to some depleted western chinook salmon stocks. If this is the case, the removal of PSC limits could exacerbate the situation and more at-risk chinook salmon might be taken. Further, the status quo PSC limit of 48,000 fish represents about 19.2 to 36.9 percent of the combined Arctic-Yukon-Kuskokwim and Bristol Bay chinook salmon landings reported between 1997 and 1999. This is a substantial portion of the domestic harvest.

Elimination of PSC limits would increase these proportions even further. This could potentially result in impacts to Alaska Native communities with substantial subsistence salmon fisheries dependent on these stocks, but further analysis is needed to confirm this possibility.

#### **4.4.3 General Ecosystem Concerns about Volume of Fishery Removals**

A more aggressive harvest strategy under this alternative would not impact Alaska Native concerns regarding this issue.

#### **4.4.4 Other Indirect Subsistence Impacts**

##### **Joint Production Subsistence Impacts**

More intense fishing efforts under the Alternative 2 policy may increase the opportunity for joint production opportunities for those continuing to participate in the fishery, but whether or not this impact would provide a significant benefit is not clear from available data.

##### **Income-Related Subsistence Impacts**

As noted in the Alternative 1 discussion, it would not appear to be possible to quantify impacts from changes of the magnitude anticipated under this alternative.

#### **4.5 Alaska Native Environmental Justice Issues**

##### **4.5.1 Community Development Quota as Low-Income and Minority Population**

Repeal of the multi-species groundfish CDQ allocations under FMP 2.1 (as noted in Section 4.4.1) could result in Environmental Justice impacts. These impacts, if they were to occur, would result from declines in employment and income and in revenues through royalties from CDQ participation and direct participation in the relevant fisheries. The direct participation impacts, if relevant, would result from the type of investments made by CDQ entities as described in detail in Section 3.9.4 of the Draft 2001 Programmatic SEIS. However, as noted above, losses in the multi-species CDQ program may be largely or entirely offset by increases in returns from the pollock CDQ program under FMP 2.1, but this will likely vary among individual CDQ groups. Although specific direct/indirect impacts are unknown at this time, any adverse impacts that do occur would disproportionately accrue to the minority and low-income populations that the CDQ program was explicitly designed to benefit and would qualify as Environmental Justice impacts. As the CDQ program does not change under FMP 2.2, similar Environmental Justice concerns do not apply.

##### **4.5.2 Non-Community Development Quota Alaska Native Environmental Justice Issues**

##### **Groundfish Communities**

###### Community Level

No community level impacts specific to Alaska Native communities are anticipated under Alternative 2 policy as illustrated by FMPs 2.1 and 2.2.

### Sub-Community Level

No sub-community level impacts specific to Alaska Natives are anticipated under Alternative 2 policy as illustrated by FMPs 2.1 and 2.2.

### **Non-Groundfish Communities**

If potential impacts to Western and Interior Alaska Native communities noted in Section 4.5.3, such as depletion of salmon stocks, come to fruition, these would be considered Environmental Justice impacts.

# **Section 5      Alternative 3: Adopt a More Precautionary Management Policy**

## **5.1      Alaska Native Participation and Consultation in Fisheries Management**

### **5.1.1      Alaska Native Representation on the North Pacific Fishery Management Council and the Advisory Panel**

The Alternative 3 policy framework seeks to accelerate the existing precautionary management approach through community or rights-based management, incorporation of ecosystem-based management principles and, where appropriate and practicable, increased habitat protection and additional bycatch constraints. Therefore this alternative requires a more precautionary approach to fisheries management than the current Alternative 1 policy. Alaska Native representation on the NPFMC and the AP under the Alternative 3 policy framework would increase. Currently, Alaska Natives are represented on both the NPFMC and AP. FMP 3.2 could provide the mechanism to incorporate an Alaska Native seat on NPFMC and a voluntary position for non-CDQ Natives in the AP to represent other stakeholders. The MSA defines a position for Native American representation on the Pacific Fishery Management Council. Section 302 Regional Fishery Management Councils (16 USC 1852, Voting Members (b)(5)(A)), states “The Secretary shall appoint to the Pacific Council, a group with management authority for fisheries in California, Oregon, Washington, and Idaho, one representative of an Indian tribe with Federally recognized fishing rights from a list of not less than 3 individuals submitted by the tribal governments. The Secretary, in consultation with the Secretary of the Interior and tribal governments, shall establish by regulation the procedure for submitting a list under this subparagraph.” This regulation only applies to the Pacific Fishery Management Council, and is not a requirement for the NPFMC managing the Alaska groundfish fisheries.

### **5.1.2      Opportunity for Public Comment**

Under the Alternative 3 policy as illustrated by the FMP bookends 3.1 and 3.2, Alaska Native consultation would increase. Possible ways to increase public involvement and Alaska Native participation could include separate meetings with Alaska Native communities and corporations for input on FMPs and amendments. Currently, the USFWS Federal Subsistence Program incorporates Alaska Natives in management through ten Regional Advisory Councils established under Title VIII of Alaska Native Interest Lands Conservation Act (ANILCA). These Advisory Councils provide recommendations and information to the Federal Subsistence Board related to policies and plans for managing subsistence. Regional Advisory Councils hold their own public meetings to discuss regulations and allow for local public input. The Regional Councils serve as liaisons between communities and the Subsistence Board.

Under the Alternative 3 policy, NOAA Fisheries and the NPFMC could take advantage of the existing Regional Councils to begin incorporating more Alaska Native input on fisheries management. Regional Advisory Councils could hold public meetings for FMPs and amendments. NPFMC and AP representatives could arrange meetings with these communities and corporations to gather input prior to any NPFMC decisions on fisheries management. Exploration of various methods such as increased personal contact with Alaska Natives by the NOAA Fisheries/NPFMC by telephone or in-person; creation or revision of official NOAA Fisheries/NPFMC Alaska Native policy; and creation of Alaska Native liaison positions in NMFS/NPFMC could be incorporated. The NPFMC could also solicit input from Alaska Native corporations

and regional non-profit groups. Exploration of various methods such as internships for Alaska Native students at NOAA Fisheries/NPFMC (including science centers), funding for travel to NPFMC meetings, video conferencing, addition of an Alaska Native seat on the AP could be incorporated. These approaches are often used by other federal agencies for projects that may impact Alaska Native interests and has proven to be an effective way to enhance Alaska Native participation.

### **5.1.3 Co-Management**

Co-management under the Alternative 3 policy would increase Alaska Native participation in fisheries management. Alaska Native participation in the NPFMC Observer Program could increase their involvement in gathering fisheries information. Regional Advisory Councils described above could be charged with providing the NPFMC with regular updates on local needs, concerns, and ideas about how to collaborate on managing the fishery. Providing communities with more responsibility could create a stronger sense of involvement and potentially reduce conflict among stakeholders and the NPFMC.

There are other federal agencies who have increased Alaska Native participation in co-management. The Federal Subsistence Program is a multi-agency effort made up of five federal agencies that emphasize cooperation and consensus building with rural Alaskans with regard to subsistence issues. As part of this effort, 10 Regional Advisory Councils have been created to review policies and management measures and provide recommendations and information to the Federal Subsistence Board. Each Regional Council has 10 or 13 members and meets at least twice each year. Regional Councils may develop and review proposals regarding subsistence use. Public meetings are also held by the Regional Councils to involve local people in establishing regulations. An Annual Report must be prepared by each Regional Council every year containing recommendations to the Federal Subsistence Board on subsistence regulations and management policies.

### **5.1.4 Consultation and Coordination with Indian Tribal Governments**

Under the Alternative 3 policy framework as illustrated by FMPs 3.1 and 3.2, community outreach and government-to-government representation, consultation requirements, and increased participation, would include efforts to promote increased personal contact with Alaska Natives. This may include more teleconferences and scheduled meetings with Alaska Natives as well as an increased effort to include a wider array of Alaska Native groups. Under this Alternative scoping, comment analysis and response, and public review and comment on the NEPA documents would not change.

## **5.2 Traditional Knowledge**

The Alternative 3 policy is similar to the Alternative 1 policy, but would increase incorporation of Traditional Knowledge into fisheries management and NEPA compliance. Under the FMP 3.1, formal procedures would be developed and implemented to incorporate Traditional Knowledge into fishery management. The FMP 3.2 requires incorporation of Traditional Knowledge through additional research such as key informant interviews. Implementation of this type of FMP would require working with Alaska Native organizations to develop research programs and protocols, and would need to be coordinated with community outreach and government-to-government consultation efforts.

Increasing the level of co-management provides an avenue to incorporate more Alaska Natives in fisheries research. Exploration of various methods such as making available a research database of published Traditional Knowledge for incorporation into NOAA Fisheries documents and implementing guidelines to obligate decision-makers to address issues could be incorporated. This research would be defined as field research on specific topics of importance as intended under the Alternative 3 management policy. Again, using the Regional Advisory Councils established for subsistence management under ANILCA would offer ways of including more traditional knowledge, skills, and fisheries practices into the Alaska groundfish fisheries. Regional Advisory Councils could provide recommendations to the NPFMC on research priorities. Advisory Councils could also appoint small research groups throughout the state to help gather data on water quality, marine mammals, seabirds, fish, and general ecology. These widely distributed research groups would supplement federal and state research efforts and increase the amount of information on the North Pacific ecosystem as well as very localized areas where data may be lacking.

### **5.3 Alaska Native Participation in Regional Fisheries by Regional Setting**

#### **5.3.1 Community Development Quota Regional Issues**

It is unclear to what extent increased rationalization would result in increased CDQ allocation. Assuming that additional fisheries are rationalized and CDQ allocation increased, there would be beneficial effects on CDQ groups.

#### **5.3.2 Non-Community Development Quota Regional Issues**

As noted in the Overcapacity qualitative analysis paper, the harvesting and processing sectors of the fishing industry in Alaska and elsewhere are labor-intensive and often located in relatively isolated communities. King Cove and Sand Point, two communities with Alaska Native populations, are examples of such communities. Based on experience with earlier rationalization programs, IFQs in groundfish fisheries could lead to a reduction in the number of vessels in the harvest sector and a decline in overall employment. Similarly, some processing consolidation may be expected to occur, but the extent to which this is likely to impact King Cove and Sand Point is difficult to assess, given the changes that occurred in the recent past under American Fisheries Act conditions. In general, rationalization effects under the Alternative 3 policy can be expected to disrupt the local economies of King Cove and Sand Point to some degree, especially during the transition from open access to an IFQ program, but the magnitude of this disruption remains to be assessed.

#### **Non-CDQ Alaska Native Community Issues/Direct Participation**

Under the Alternative 3 policy illustrated by FMPs 3.1 and 3.2, consolidation of sectors could lead to community level impacts in the Alaska Native communities of King Cove and Sand Point. As noted earlier, the degree to which consolidation takes place is a function of both individual enterprise decision-making (e.g. the efficient operation of a multi-species plant in an isolated community may require groundfish inputs where otherwise consolidation away from a community would make economic sense) and direct restrictions of movement (community protection clauses) or consolidation caps to prevent such movement.



## **5.4 Subsistence Issues**

### **5.4.1 Groundfish Subsistence**

Alternative 3 is not anticipated to have any demonstrable direct impact on groundfish subsistence. This is primarily due to relatively low groundfish subsistence dependency, the assumption that groundfish stocks would not be overfished, and the lack of restrictions on groundfish subsistence under this alternative.

### **5.4.2 Steller Sea Lion Subsistence**

Given the lack of availability of information, it is not possible to measure or predict effects of Alternative 3 on subsistence in order to determine whether or not such theoretically positive effects would be significant as a result of decreased commercial harvests. Logically, management policies that reduce commercial groundfish harvest the most could have the most potential benefit for the subsistence use of Steller sea lions, but operationally such differences will likely be slight. In general, somewhat positive effects could result if reductions in groundfish harvest lead to increased sea lion populations, and if higher sea lion populations result in benefits to subsistence users of sea lions. Such benefits could include higher harvest levels and lower harvest costs for sea lions; the degree to which subsistence reliance on Steller sea lions could be affected by the proposed alternatives cannot be quantified given the lack of data, but it is not likely to be great.

### **5.4.3 Salmon Subsistence and Bycatch Related Issues**

Under the Alternative 3 policy, PSC limits in the BSAI would be lowered to the extent practical from 0-10 percent (FMP 3.1) to 10-30 percent (FMP 3.2). Any benefit conferred by lower bycatch would eventually allow for higher harvests in the state's commercial, subsistence, and recreational fisheries. Because salmon stocks in Alaska are rigorously managed by ADF&G and are generally considered healthy, with the exception of some western stocks, any additional protection afforded salmon populations under Alternative 3 would, therefore, have no long-term effect on stock status. The possible exceptions are at-risk western stocks of chinook salmon that may be taken as bycatch in the BSAI (see Alternative 1 discussion 3.5.3). It would be difficult to quantitatively determine if increased protection offered under Alternative 3 would be sufficient to protect these stocks from further depletion. Qualitatively, reduced PSC limits ranging from 0-10 percent (FMP 3.1) to 10-30 percent (FMP 3.2) should offer proportionate protection to at-risk chinook salmon stocks. In general, however, this alternative would result in neutral or positive effects with respect to Alaska Native subsistence use of these stocks.

### **5.4.4 Other Indirect Subsistence Impacts**

#### **Joint Production Subsistence Impacts**

Rights-based fishing efforts under Alternative 3 would increase the opportunity for joint production opportunities for those continuing to participate in the fishery, but anticipated consolidation of the fleet may offset this potential gain.

## **Income-Related Subsistence Impacts**

Income to commercial fishermen may be expected to rise under Alternative 3, but this may be offset by an overall reduction in the number of participants in the fishery as consolidation occurs. As noted in the Alternative 1 discussion, it would not appear to be possible to quantify subsistence-income-related impacts from changes anticipated under this alternative.

### **5.5 Alaska Native Environmental Justice Issues**

#### **5.5.1 Community Development Quota as Low-Income and Minority Population**

It is unclear to what extent increased rationalization under Alternative 3 would result in an increased CDQ allocation. Assuming that additional fisheries are rationalized and CDQ allocation increased, there would be beneficial effects on CDQ groups.

#### **5.5.2 Non-Community Development Quota Alaska Native Environmental Justice Issues**

### **Groundfish Communities**

#### Community Level

Under Alternative 3, the type of community level impacts as noted for King Cove and Sand Point would be Environmental Justice impacts, and the ripple effects within the AEB could also result in Environmental Justice impacts in other AEB communities, as described under Alternative 1. If Kodiak's participation in the groundfish fishery is reduced under Alternative 3, the alternative would have significant socioeconomic effects upon the region, and especially the community of Kodiak, given the local engagement in and dependency on the groundfish fishery. The City of Kodiak's population is a non-majority plurality, and the Alaska Native population component is relatively small (less than 11 percent). It is not considered likely that these would be Environmental Justice impacts, at least on the community level.

For the southcentral and southeast Alaska regions, the Washington inland waters region, and the Oregon coast region, none of the alternatives is anticipated to result in adverse impacts at the community level. Therefore, Alternative 3 is not considered likely to cause Environmental Justice concerns in these regions for any low-income minority population, including Alaska Natives.

#### Sub-Community Level

The only sector within the fishery subject to potential impacts under this alternative that would involve Alaska Native Environmental Justice issues is the harvest fleet. Presumably, vessel owners would be compensated for lack of continued participation under different consolidation scenarios, but skipper and crew job losses could cause disproportionate effects on Alaska Native populations in some communities. Although crew demographic information is sparse, it is assumed that King Cove and Sand Point would be among the set of potential communities involved.

### Non-Groundfish Communities

No negative impacts are anticipated for these communities, described in Section 5.5.3, and therefore there are no Environmental Justice implications for this region under the Alternative 3 policy.

## **Section 6      Alternative 4: Adopt a Highly Precautionary Management Policy**

### **6.1      Alaska Natives and the Magnuson-Stevens Act**

#### **6.1.1      Alaska Native Representation on the North Pacific Fishery Management Council and the Advisory Panel**

The Alternative 4 policy framework, a highly precautionary approach to fisheries management, would increase Alaska Native involvement in the NPFMC and the AP. One way to ensure Alaska Native participation in these groups would be to amend the MSA to guarantee two positions for Alaska Natives in both the NPFMC and the AP. Native American representation is currently part of the MSA for the Pacific Council, which has authority over Washington, Oregon, California, and Idaho. Although this has always been the traditional practice of the NPFMC, making it a written part of the MSA would not only give Alaska Natives a sense of their importance in fisheries management but such action would increase the ratio of Alaska Native representation in the decision-making process.

#### **6.1.2      Public Involvement**

The Alternative 4 policy as illustrated by the FMPs 4.1 and 4.2 would increase the opportunity for public involvement and public comment through ways suggested under the Alternative 3 policy. This may include enlisting the Regional Advisory Councils established under ANILCA to solicit Alaska Native community input. Additional efforts would encourage subsistence users to provide more input on fisheries management and their concerns on the relationship of management policies with subsistence management. Under this policy, the NPFMC and NOAA Fisheries may increase the level of cooperation with the Federal Subsistence Board and ADF&G to broaden their outreach on fisheries management.

Under the Alternative 4 FMP bookends, scoping, public review and comment on the NEPA documents, and comment analysis and response would not change. However, community outreach may need to develop and incorporate procedures whereby traditional knowledge is obtained during community outreach efforts. Community outreach should include increased consultation efforts to encourage participation and to address the needs of subsistence users through increased participation.

#### **6.1.3      Co-Management**

Under the Alternative 4 policy, the NPFMC, NOAA Fisheries, and Alaska Native communities would seek to enter into a collaborative management agreement in which Alaska Natives are given an increased level of authority greater than currently exists under the updated Alternative 1 policy. A series of Management Boards could be created throughout the region under this effort. Not only would the NPFMC seek Alaska Native input on FMPs and amendments from these Alaska Native Management Boards, but also such groups could come up with action plans for particular issues. These plans may help address issues such as localized depletion and provide a means of incorporating traditional knowledge into fisheries management. A Fisheries Joint Management Committee was established in Canada as part of the Inuvialuit Final Agreement of 1984. Joint management by this Committee is accomplished through a 50 percent Native representation. This type

of consensus-based, non-adversarial method of management has proved successful according to industry and academic perspectives (Campbell 1996).

#### **6.1.4 Government-to-Government Consultation Requirements**

Under the Alternative 4 policy framework and as illustrated by FMP bookends 4.1 and 4.2, government-to-government representation, consultation requirements, and participation would likely increase as a result of additional Alaska Native involvement and community outreach.

### **6.2 Traditional Knowledge**

The Alternative 4 policy includes the Traditional Knowledge elements of the Alternative 3 policy, and would initiate cooperative programs for research and monitoring based on Traditional Knowledge. FMP 4.1 would require that fishery managers initiate cooperative research programs for data gathering and monitoring in order to enhance the use of Traditional Knowledge in fishery management. As with Alternative 3, this alternative would require working with Alaska Native organizations to develop research and monitoring programs and protocols, and would need to be coordinated with community outreach and government-to-government consultation efforts. This outreach may include subsistence user groups such as the United Fishing Association.

Alaska Native Management Boards established under this management policy could develop research plans outlining goals and objectives for the NPFMC. This Alaska Native perspective would increase the use of Traditional Knowledge in fisheries research, giving it more emphasis in the scientific community. This approach may also provide fisheries scientists with access to a broader, historical understanding of the ecosystem. Not only could Alaska Natives participate in collecting important scientific data, as suggested under the Alternative 3 policy, but they could create an endowment for local high school students who are thinking of going into fisheries management. The endowment could provide funding for perhaps two to four students a year to assist the Alaska Native Management Boards in collecting Traditional Knowledge and subsistence use in their communities. The Alaska Native Management Boards could then provide this information to the NPFMC and NOAA Fisheries to augment their understanding of the fisheries to include in their database.

### **6.3 Alaska Native Participation in Regional Fisheries by Regional Setting**

#### **6.3.1 Community Development Quota Regional Issues**

Under the Alternative 4 policy commercial fishing reductions or elimination would result in significant negative impacts to the CDQ region. As noted in the discussion of the Alternative 1 policy and its effects, this region derives substantial benefit from this program, groundfish plays a dominant role in generating income within this program, and alternative opportunities for income and revenue are generally limited in this region.

### **6.3.2 Non-Community Development Quota Regional Issues**

#### **Non-CDQ Alaska Native Community Issues/Direct Participation**

Impacts to communities directly participating in the groundfish fishery would be significant under the Alternative 4 policy. While this would encompass many Alaska coastal communities, the Alaska Native communities that would be hardest hit would be King Cove and Sand Point. These communities each have a local harvest fleet, a significant shore processing presence, and a number of support service businesses that would all experience substantial economic losses under this alternative. Further, municipal and borough revenue losses would be felt in these and other AEB communities.

#### **Non-CDQ Alaska Native Community Issues/No Direct Participation**

Issues in this region are largely tied to salmon subsistence fishing, and these are summarized in Section 6.5.3.

### **6.4 Subsistence Issues**

#### **6.4.1 Groundfish Subsistence**

The Alternative 4 policy as illustrated by FMP bookends 4.1 and 4.2 is not anticipated to have any demonstrable direct impact on groundfish subsistence. This is primarily due to relatively low groundfish subsistence dependency and the assumption that groundfish stocks would not be overfished. Although FMP 4.2 has the potential to restrict subsistence harvest until information demonstrates that it has no significant impact on the environment, the level of groundfish subsistence harvest is so minimal it is assumed that subsistence fishing in the Exclusive Economic Zone (EEZ) would not be permanently restricted under the FMP bookend. It is also assumed that most subsistence groundfish fishing takes place in nearshore waters minimizing whatever potential impacts, however slight, that would result from this alternative policy. Lowering or virtually eliminating commercial fishing effort under this alternative would theoretically make more groundfish available for subsistence use, but there is no indication of current unmet demands that would be accommodated under Alternative 4 conditions.

#### **6.4.2 Steller Sea Lion Subsistence**

Potential impacts noted under the Alternative 3 policy would apply to the Alternative 4 policy.

#### **6.4.3 Salmon Subsistence and Bycatch Related Issues**

Under the Alternative 4 policy, PSC limits in the BSAI would be lowered to the extent practical to 30-50 percent (FMP 4.1) or to PSC = 0, the closure of the fishery (FMP 4.2). In the GOA, PSC limits would be established at 25,000 fish for chinook and 20,500 fish for other salmon (FMP 4.1) and would remain in effect until complete closure of the fishery (FMP 4.2). As noted under Alternative 3, however, because salmon stocks in Alaska are rigorously managed by ADF&G and are generally considered healthy (with the possible exception of some western stocks), any benefit conferred by lower bycatch would eventually be offset by higher harvests in the state's commercial, subsistence, and recreational fisheries. The possible exceptions are at-risk western stocks of chinook salmon that may be taken as bycatch in the BSAI. As noted in the Alternative 1 discussion, there is insufficient information to determine if these at-risk stocks are being

seriously impacted by bycatch in the BSAI under the existing conditions. In general, however, Alternative 4 would have neutral or positive effects on Alaska Native salmon subsistence uses.

#### **6.4.4 General Ecosystem Concerns About Volume of Fishery Removals**

The Alternative 4 policy would address concerns expressed by Alaska Natives about the volume of fishery removals and general ecosystem health as it is a highly precautionary approach to fisheries management.

#### **6.4.5 Other Indirect Subsistence Impacts**

##### **Joint Production Subsistence Impacts**

The drastic reduction of fishing effort under Alternative 4 would sharply reduce, if not eliminate, the joint production subsistence opportunities until more information was obtained about the frequency and intensity of fishing impacts on the environment, potentially re-opening the fishery. These impacts would effect all communities where there are Alaska Native-owned vessels participating in the fishery.

##### **Income Related Subsistence Impacts**

Loss of income under Alternative 4 would be significant, but forecasting this to engagement in subsistence pursuits is problematic, as discussed under Alternative 1. In general, however, it can be anticipated that these types of impacts would be felt in many rural Alaska communities.

#### **6.5 Alaska Native Environmental Justice Issues**

##### **6.5.1 Community Development Quota as Low-Income and Minority Population**

Significant adverse impacts to CDQ regions are anticipated under the Alternative 4 policy and would constitute Environmental Justice impacts.

##### **6.5.2 Non-Community Development Quota Alaska Native Environmental Justice Issues**

##### **Groundfish Communities**

###### Community Level

Direct adverse community level impacts to Alaska Native communities can be expected for King Cove and Sand Point, as well as smaller Alaska Native communities in the AEB. These would, in turn, be considered Environmental Justice impacts. Akutan and Unalaska, communities with more or less distinct Alaska Native population components, would experience significant impacts as well. If Kodiak participation in the groundfish fishery is reduced under Alternative 4, it would have significant socioeconomic effects upon the region, and especially the community of Kodiak, given the local engagement in and dependency on the groundfish fishery. The City of Kodiak's population is a non-majority plurality, and the Alaska Native population component is relatively small (less than 11 percent). It is not considered likely, therefore, that these would be Environmental Justice impacts, at least on the community level.

For the southcentral and southeast Alaska regions, the Washington inland waters region, and the Oregon coast region, none of the alternatives is anticipated to result in adverse impacts at the community level. Therefore, Alternative 4 is not considered likely to cause Environmental Justice concerns in these regions for any low-income minority population, including Alaska Natives.

#### Sub-Community Level

Displacement of all fishery sectors could occur under this alternative. This would be considered an Alaska Native Environmental Justice issue, specifically for the harvest vessel sector, for reasons presented in the Alternative 1 discussion.

#### Non-Groundfish Communities

Impacts to these communities would largely be driven by salmon subsistence issues as described above.



## Section 7 Summary Comparison of All Alternatives

The following summarizes the effects of each policy alternative with regard to Alaska Native issues and the Alaska groundfish fisheries, as determined by analyses of each alternative's associated FMP framework presented in this paper. Table 8 shows a summary of the effects of the FMPs on Alaska Native issues.

**Alternative 1:** Under this policy alternative, the NPFMC would continue to manage the groundfish fisheries based upon the present conservative and risk-averse policy. This policy approach would continue Alaska Native involvement by maintaining Alaska Native representation on the NPFMC and the AP and by incorporating Traditional Knowledge presented in existing literature in fisheries management. Alaska Native participation in accordance with MSA and NEPA would continue under this alternative. CDQ participation would also remain the same as under existing conditions. The nature of engagement with the fishery would not change, meaning that no significant changes to CDQ communities would be likely to occur, at least through the mechanism of the CDQ program itself. Subsistence fishing and Steller sea lion harvest is not anticipated to be adversely affected by the Alternative 1 policy, though Alaska Natives have voiced concern over salmon bycatch from the groundfish fisheries. Under Alternative 1, there would be minimal impacts from the loss of income from the groundfish fisheries, that may indirectly impact subsistence pursuits in many communities, including CDQ communities. No Environmental Justice impacts are anticipated under the Alternative 1 policy, with the potential exception of salmon bycatch, where effects are not known.

**Alternative 2:** A more aggressive harvest policy would be implemented based upon the concept that the present policy is overly conservative and that higher harvests could be taken without threat of overfishing the target groundfish stocks. Although no impacts are anticipated for non-CDQ communities, the CDQ program for all groundfish species except pollock would be repealed (under FMP 2.1 only). Therefore, CDQ communities with investments in these fisheries would be significantly impacted, but these impacts may be offset in whole or in part by the increase in revenues from the pollock CDQ program. No groundfish subsistence impacts are anticipated under this policy alternative; however, the elimination of PSC limits would increase the proportion of salmon bycatch. This could potentially result in impacts to Alaska Native communities with substantial dependency on salmon subsistence. Reductions in the CDQ program and potential effects on salmon subsistence would result in Environmental Justice impacts under Alternative 2.

**Alternative 3:** This policy would seek to accelerate the existing precautionary management measures through community or rights-based management, ecosystem-based management principles and, where appropriate and practicable, increase habitat protection and impose additional bycatch constraints. Under this approach, additional conservation management measures would be taken as necessary to respond to social, economic or conservation needs and to address uncertainty in management information. Elements of this policy alternative that pertain to Alaska Natives include developing and implementing procedures to incorporate traditional knowledge into fisheries management through additional research. Consultation with and representation of Alaska Natives in fisheries management would increase under this policy and additional opportunities for co-management of the fisheries would be provided. Alaska Native participation in accordance with NEPA would continue under this alternative.

Increased rationalization of fisheries could benefit CDQ groups. No impacts to subsistence are anticipated under Alternative 3 other than the potential for reduced salmon bycatch. Potential Environmental Justice impacts on non-CDQ Alaska Native communities that harvest groundfish commercially may result from this alternative. However, communities that do not harvest groundfish commercially will likely not be impacted.

**Alternative 4:** This policy would require that the user of the resource demonstrate that the intended use would not have a detrimental effect on the environment before significant fishing could be allowed. It would involve a strict interpretation of the precautionary principle. The overall premise is that fishing does produce adverse impacts on the environment, but due to a lack of information and uncertainty, little is known about these impacts. With regards to Alaska Native issues, this policy alternative would require the initiation of cooperative research programs for data gathering and monitoring in order to enhance use of Traditional Knowledge in fishery management. Alaska Native participation in decision-making in accordance with MSA and NEPA would continue under all alternatives. Consultation with Alaska Natives would increase and participation of subsistence users (Native and non-Native) in fisheries management would be strongly encouraged. Traditional Alaska Native subsistence uses of fish and wildlife within protected areas would be permitted under FMP 4.1. Reductions in or elimination of commercial fishing under FMP 4.2, however, would result in significant adverse impacts to the CDQ region and to non-CDQ Alaska Native communities participating in the fishery (as well as individual Alaska Native vessel owners and others who participate in the fishery). This may result in Environmental Justice impacts to these communities. Under FMP 4.2, no fishing, including subsistence, would be permitted in the Exclusive Economic Zone without a determination that subsistence fishing is having no significantly adverse effect on the environment. This strategy could greatly affect subsistence use until more information determined otherwise.

Groundfish management alternatives that involve substantial CDQ reductions will result in disproportionate high and adverse impacts to the predominately Alaska Native CDQ region communities. As noted in above, Alaska Native population component represents 87 percent of the total population of the communities of this region. Further, as recognized by the very initiation of the CDQ program, the region is economically underdeveloped and employment and income alternatives are few. CDQ impacts would be felt in a number of different ways, including employment, income, revenues, royalties, and return on fishery investments.

## Section 8      References

- Alaska Department of Community and Economic Development (ADCED). (2001). "Alaska Economic Information System" Department of Community and Economic Development. <http://www.dced.state.ak.us/home.htm>.
- Alaska Department of Fish and Game (ADF&G). (2001). "Alaska Subsistence Fisheries 1999 Annual Report." Division of Subsistence, ADF&G, Juneau, AK. Available on-line: <http://www.subsistence.adfg.state.ak.us/download/asf1999.pdf>.
- Brown, D. (1999). "Principles and Practice of Forest Co-Management: Evidence from West Central Africa." London, Overseas Development Institute: 31.
- Bryant, Ph.D., B. (2001). "What is Environmental Justice? A Broad based Definition." Environmental Justice Archive attached to Personal Home page of Dr. Bryant. <http://www.personal.umich.edu/~bbryant/envjustice.html>
- Campbell, T. (1996). "Aboriginal Co-Management of Non-Renewable Resources on Treaty or Traditional Territory." Master thesis submitted to the Committee on Resources and the Environment: University of Calgary.
- Castro, A.H.P. and E. Nielsen. (2001). Indigenous People and Co-Management: Implications for Conflict Management. *Environmental Science and Policy* 4(4/5): 229-239.
- Coffing, M.W. (1991). "Kwethluk Subsistence: Contemporary Land Use Patterns, Wild Resource Harvest and Use and the Subsistence Economy of a Lower Kuskokwim River Area Community. ADF&G Technical Paper 157. Alaska Department of Fish and Game, Division of Subsistence, Juneau, AK.
- Freeman, M.M.R. (1992). The Nature and Utility of Traditional Ecological Knowledge. *Northern Perspectives* 20:1.
- Freeman, M.M.R. and L.N. Carbyn, (eds.). (1988). "Traditional Knowledge and Renewable Resources Management in Northern Regions." Occasional Paper No. 20, Boreal Institute for Northern Studies, Edmonton.
- Hobson, G. (1992). "Traditional knowledge is science." *Northern Perspectives* 20(1): 2
- Johnson, M. (1992). "Lore: Capturing Traditional Environmental Knowledge." Ottawa: Dene Cultural Institute/IDRC.
- McCay, B.J. and S. Jentoft. (1998). Market or Community Failure? Critical Perspectives on Common Property Research. *Human Organization* 57(1): 21-29.
- Northern Economics, Inc. (2002). "An assessment of the socioeconomic impacts of the western Alaska Community Development Program." Report prepared for the Alaska Department of Community and Economic Development, Anchorage.

U.S. Census Bureau. (2000). Downloadable information available on-line at: [www.census.gov](http://www.census.gov)

Witherell, D., D. Ackley, and C. Coon. (2002). An Overview of Salmon Bycatch in Alaska Groundfish Fisheries. *Alaska Fishery Research Bulletin* 9(1):53-64.

**Table 8. Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.**

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Subsistence</b>							
<b>Steller sea lion</b>	<b>No effect</b> To the extent that Alternative 1 does not effect Steller sea lions population levels and indirectly restrict availability for subsistence purposes, it will have no direct adverse effects upon subsistence uses of Steller sea lions.	<b>Potentially adverse effect</b> An increase in total allowable catch (TAC) increases competition for prey with Steller sea lion and could have a possible adverse effect on sea lion populations, and could affect the availability for subsistence harvest. demonstrable impact on Steller sea lion subsistence.	<b>No effect</b> Similar to Alternative 1, Steller sea lions population levels are not affected by fishing for groundfish, and FMP 2.2 will have no direct adverse effects upon subsistence uses of Steller sea lions.	<b>Potentially beneficial effect</b> Management policies that reduce TAC and bycatch levels potentially benefit the availability of Steller sea lions for subsistence purposes. The relative contribution of effects of fishing on Steller sea lion abundance compared to other natural environmental factors is considered small.		<b>Potentially beneficial effect</b> Management policies that reduce TAC and bycatch levels potentially benefit the availability of Steller sea lions for subsistence purposes. FMP. The relative contribution of effects of fishing on Steller sea lion abundance compared to other natural environmental factors is considered small.	
<b>Salmon bycatch</b>	<b>No effect</b> The amount of salmon bycatch and contribution to potential effects on western Alaska stocks would appear relatively low, although Alaska Natives have voiced concern over salmon bycatch from the groundfish fisheries.	<b>Potentially adverse effect</b> Elimination of prohibited species catch (PSC) restrictions in the Bering Sea and Aleutian Islands (BSAI) management region is likely to adversely affect populations of some eliminate western Alaska salmon stocks and their availability for subsistence harvest by Alaska Native communities, which heavily rely on these resources.	<b>No effect</b> The amount of salmon bycatch and contribution to potential effects on western Alaska stocks would appear relatively low, although Alaska Natives have voiced concern over salmon bycatch from the groundfish fisheries.	<b>Potentially beneficial effect</b> Alternative 3 would be sufficient to protect these stocks from further depletion. Qualitatively, reduced PSC limits ranging from 0-10 percent (FMP 3.1) to 10-30 percent (FMP 3.2) should offer proportionate protection to at-risk chinook salmon stocks. In general, however, this alternative would result in neutral or positive effects with respect to Alaska Native subsistence use of these stocks.		<b>Potentially beneficial effect</b> PSC limits in the BSAI would be lowered to the extent practical to 30-50 percent (FMP 4.1) or to PSC = 0, the closure of the fishery (FMP 4.2). In the GOA, PSC limits would be established at 25,000 fish for chinook and 20,500 fish for other salmon (FMP 4.1) and would remain in effect until complete closure of the fishery (FMP 4.2). This would have neutral or positive effects on Alaska Native salmon subsistence uses.	

Table 8 (cont.).

Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Subsistence (cont.)</b>							
<b>General ecosystem health</b>	<b>Potentially adverse effect</b> Concerns have been expressed by Alaska Natives on the effects of commercial fishing and associated bycatch discards on the health of the marine ecosystem, particularly with regard to discards attracting fish and wildlife, and causing disease in animals that eat discards.	<b>Potentially adverse effect</b> A more aggressive harvest strategy under FMP 2.1 with reductions in bycatch limits under this alternative would likely increase Alaska Native concerns regarding the ecosystem. Effects under FMP 2.2 would be similar to FMP 1.		<b>Potentially beneficial effect</b> The Alternative 3 policy framework seeks to accelerate the existing precautionary management approach through incorporation of ecosystem-based management principles and, where appropriate and practicable, increase habitat protection and impose additional bycatch constraint and therefore requires a more precautionary approach to fisheries management.		<b>Beneficial effect</b> The Alternative 4 policy would address concerns expressed by Alaska Natives about the volume of fishery removals and general ecosystem health as it is a highly precautionary approach to fisheries management.	
<b>Joint production</b>	<b>No effect</b> FMP 1 does not increase or decrease opportunities for joint production.	<b>Potentially beneficial effect</b> More intense fishing efforts under the Alternative 2 policy may increase the opportunity for joint production opportunities for those continuing to participate in the fishery, but whether or not this impact would provide a significant benefit is not clear from available data.	<b>No effect</b> FMP 2.2 does not increase or decrease opportunities for joint production.	<b>No effect</b> Rights-based fishing efforts under Alternative 3 increase the opportunity for joint production opportunities for those continuing to participate in the fishery, but anticipated consolidation of the fleet may offset this potential gain.		<b>Adverse effect</b> The drastic reduction of fishing effort under Alternative 4 would sharply reduce, if not eliminate, the joint production subsistence opportunities until more information was obtained about the frequency and intensity of fishing impacts on the environment, potentially re-opening the fishery. These impacts would effect all communities where there are Native-owned vessels participating in the fishery.	

Table 8 (cont.).

Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Alaska Native participation in commercial fisheries</b>							
<b>Community development quota (CDQ) fisheries</b>	<b>No effect</b> CDQ participation would remain the same.	<b>Potentially adverse effect</b> CDQ for groundfish species except for pollock will be repealed. Alone this would be a significant negative impact to Alaska Native communities in the CDQ region, but likely will be offset at least in part by the increase in pollock TAC, which would increase overall returns. Impacts to individual CDQ groups are unknown, but may be adverse.	<b>No effect</b> Under FMP 2.2, CDQ would not change from Alternative 1.	<b>Beneficial effect</b> It is unclear to what extent that increased rationalization would result in increased CDQ allocation. Assuming that additional fisheries are rationalized and CDQ allocation increased, there would be beneficial effects on CDQ groups.		<b>Adverse effect</b> Commercial fishing reductions or elimination would result in significant negative impacts to the CDQ region.	
<b>Non-CDQ fisheries</b>	<b>No effect</b> Alaska Natives who own or crew on catcher vessels outside of the CDQ region participate directly in the groundfish fisheries. Opportunities for their participation do not increase or decrease under Alternative 1.	<b>No effect</b> No community, sub-community level, western and interior Alaska Native communities impacts.		<b>No effect</b> Opportunities for their participation do not increase or decrease.	<b>Potentially adverse effect</b> In general, rationalization effects under the Alternative 3 policy can be expected to adversely effect Alaska Native communities to some degree, especially during the transition from open access to an individual fishing quota (IFQ) program, however, the magnitude of this disruption remains to be assessed.	<b>Adverse effect</b> Impacts to communities directly participating in the groundfish fishery would be significant. While this would encompass many Alaska coastal communities, the Alaska Native communities that would be hardest hit would be King Cove and Sand Point. These communities each have a local harvest fleet, a significant shore processing presence, and have a number of support service businesses that would all experience substantial economic losses. Further, municipal and borough revenue losses would be felt in these and other AEB communities.	

Table 8 (cont.).

Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Alaska Native participation in fishery management</b>							
<b>Native representation</b>	<b>Potentially adverse effect</b> Alaska Natives currently have some representation on the NPFMC and its AP, but the limited number presents some difficulty in representing potentially competing interests between CDQ's, non-CDQ Native fishermen, and subsistence users.	<b>Potentially adverse effect</b> Alaska Natives currently have some representation on the AP and NPFMC, the limited number presents some difficulty in representing potentially competing interests between CDQ's, non-CDQ Native fishermen, and subsistence users.		<b>Potentially beneficial effect</b> Native representation on the NPFMC and the AP under the Alternative 3 policy framework would increase Native participation in the fisheries management. FMP 3.2 could provide the mechanism to incorporate an Alaska Native seat on the Council and a voluntary position for non-CDQ Natives in the AP to represent other stakeholders.		<b>Beneficial effect</b> Alternative 4 policy framework would increase Native involvement in the NPFMC and the AP and process.	
<b>Co-management</b>	<b>No effect</b> Co-management suggestions are currently provided through solicitation of public comments and through Alaska Native representation on the AP and NPFMC.	<b>No effect</b> The level of co-management under Alternative 2 policy would not likely change from Alternative 1.		<b>Potentially beneficial effect</b> Co-management under the Alternative 3 policy would increase Native participation in fisheries management, and indirectly opportunities for co-management.		<b>Potentially beneficial effect</b> NPFMC, NOAA Fisheries, and Native communities would seek to enter into a collaborative management agreement in which Natives were given an increased level of authority (objective is in terms of Traditional Knowledge and research/monitoring) efforts than currently exists under the updated Alternative 1 policy.	
<b>Consultation and coordination with Indian tribal government</b>	<b>No effect</b> NOAA Fisheries will continue to consult with Alaska tribal governments through the NPFMC and the MSA/NEPA decision-making process.	<b>No effect</b> The level of consultation and coordination under Alternative 2 policy would likely not change from Alternative 1.		<b>Potentially beneficial effect</b> Scoping, comment analysis and response, and public review and comment during the NEPA process would continue. Community outreach and government-to-government representation, consultation requirements, and increased effort to include a wider array of Native groups would increase.		<b>Potentially beneficial effect</b> Government-to-government representation, consultation requirements, and participation, would likely increase as a result of additional Alaska Native involvement and community outreach.	



Table 8 (cont.).

Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Alaska Native participation in fishery management (Cont.)</b>							
<b>Public involvement</b>	<b>No effect</b> Current opportunities available for public comment on proposed and existing FMPs, EIS documents regulations, and agenda items during NPFMC meetings; provide many avenues for Alaska Natives to provide input regarding groundfish fishery management.	<b>No effect</b> Public involvement under the Alternative 2 policy would remain the same as described under the Alternative 1 policy, because it is a federal requirement.		<b>Potentially beneficial effect</b> While direct mechanisms for public involvement would not change, efforts to increase Native consultation would result in additional public involvement benefits.		<b>Beneficial effect</b> The opportunity for public involvement and public comment would increase in the NPFMC process. Scoping, public review and comment, and comment analysis and response in the NEPA process would not change.	
<b>Environmental justice</b>							
<b>CDQ region as low-income and minority population and environmental justice related impacts</b>	<b>No effect</b> No significant adverse CDQ allocation-related Environmental Justice impacts or impacts associated with income or joint production loss are anticipated.	<b>Potentially adverse effect</b> Elimination of multi-species groundfish CDQ allocations under this alternative could result in Environmental Justice impacts if not offset by pollock CDQ gains.	<b>No effect</b> No significant adverse CDQ allocation-related Environmental Justice impacts or impacts associated with income or joint production loss are anticipated.	<b>Potentially beneficial effect</b> It is unclear to what extent that increased rationalization would result in increased CDQ allocation. Assuming that additional fisheries are rationalized and CDQ allocation increased, there would be beneficial effects on CDQ groups.		<b>Adverse effect</b> Significant adverse impacts to CDQ regions are anticipated. This may result in Environmental Justice impacts to communities.	

Table 8 (cont.).

Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Non-CDQ Alaska Native environmental justice issues</b>							
<b>Groundfish community level Environmental Justice impacts</b>	<b>No effect</b> No community or sub-community impacts specific to Alaska Native communities are anticipated.	<b>No effect</b> No community or sub-community level impacts specific to Alaska Native communities are anticipated.		<b>Potentially adverse effect</b> It is not considered likely to cause Environmental Justice concerns in these regions for any low-income minority population, including Alaska Natives, however the harvest fleet is subject to potential impacts. Skipper and crew job losses could cause disproportionate effects on Alaska Native populations in some communities. Although crew demographic information is sparse, it is assumed that King Cove and Sand Point would be among the set of potential communities affected.		<b>Adverse effect</b> Direct adverse community level impacts to Alaska Native communities can be expected for King Cove and Sand Point, as well as smaller Alaska Native communities in the AEB. Akutan and Unalaska, communities with more or less distinct Alaska Native population components would experience significant impacts. Displacement of all fishery sectors could occur under FMP 4.2 specifically for the harvest vessel sector.	
<b>Non-groundfish communities</b>	<b>No effect</b> The amount of salmon bycatch and contribution to potential effects on western Alaska stocks would appear relatively low, although Alaska Natives have voiced concern over salmon bycatch from the groundfish fisheries.	<b>Potentially adverse effect</b> Potential adverse impacts of increased salmon bycatch to western and interior Alaska Native communities, these would be considered Environmental Justice impacts.	<b>No effect</b> The amount of salmon bycatch and contribution to potential effects on western Alaska stocks would appear relatively low, although Alaska Natives have voiced concern over salmon bycatch from the groundfish fisheries.	<b>No effect</b> No adverse impacts are anticipated for non-groundfish communities.		<b>Potentially beneficial effect</b> Impacts to these communities would largely be driven by salmon subsistence issues and reductions or elimination of salmon bycatch.	

**Table 8 (cont.). Summary of potential effects of the policy alternatives and Fishery Management Plan bookends on Alaska Natives.**

Effect Indicator	Alternative 1	Alternative 2.0		Alternative 3.0		Alternative 4.0	
	Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Other Alaska Native issues</b>							
<b>Traditional knowledge</b>	<b>No effect</b> NOAA Fisheries is currently using existing literature available. Under this framework, traditional knowledge is not collected from third party sources or key informant interviews.	<b>No effect</b> Under the Alternative 2 policy there would be no change from Alternative 1.		<b>Beneficial effect</b> Under the FMP 3.1, formal procedures will be developed and implemented to incorporate traditional knowledge into fishery management.	<b>Beneficial effect</b> The FMP 3.2 requires incorporation of traditional knowledge through additional research such as key informant interviews.	<b>Beneficial effect</b> Alternative 4 would require that fishery managers initiate cooperative research programs for data gathering and monitoring in order to enhance use of traditional knowledge in fishery management.	

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