The Wales/Deering Subsistence Producer Analysis Project

By Don Callaway

In 1994 the National Park Service entered into a cooperative agreement with the Alaska Department of Fish and Game (ADF&G) subsistence division to conduct social and cultural research in the communities of Wales and Deering. This article draws extensively from the original text found in the report *The Production and Distribution of Wild Food in Wales and Deering, Alaska, (Technical Paper #259)* authored by James S. Magdanz, Charles J. Utermohle and Robert J. Wolfe. The full text of the final report can be found on the ADF&G website—http://www.state.ak.us/adfg/subsist/download/TP259.pdf .

Regulatory Context and the Intent of this Research Project

The establishment of new national parks and preserves in Alaska under the Alaska National Interest Lands Conserva-tion Act (ANILCA) nearly doubled the park acreage in the United States. For those parks established or enlarged by ANILCA, subsistence uses by local residents are permitted in accordance with the provisions of Title VIII.

Paraphrasing Section 803 of Title VIII, we can define subsistence use as the customary and traditional use in Alaska of fish, wildlife, and other renewable resources for direct personal or family consumption, for the making and selling of handicraft articles from the non-edible by-products of fish and wildlife taken for direct personal or family consumption, and for customary trade, barter, or sharing for personal or family consumption.

The communities of Wales and Deering, the subject of this research, are affiliated with the Bering Land Bridge National Preserve (BELA). The establishment of the preserve includes protecting the viability

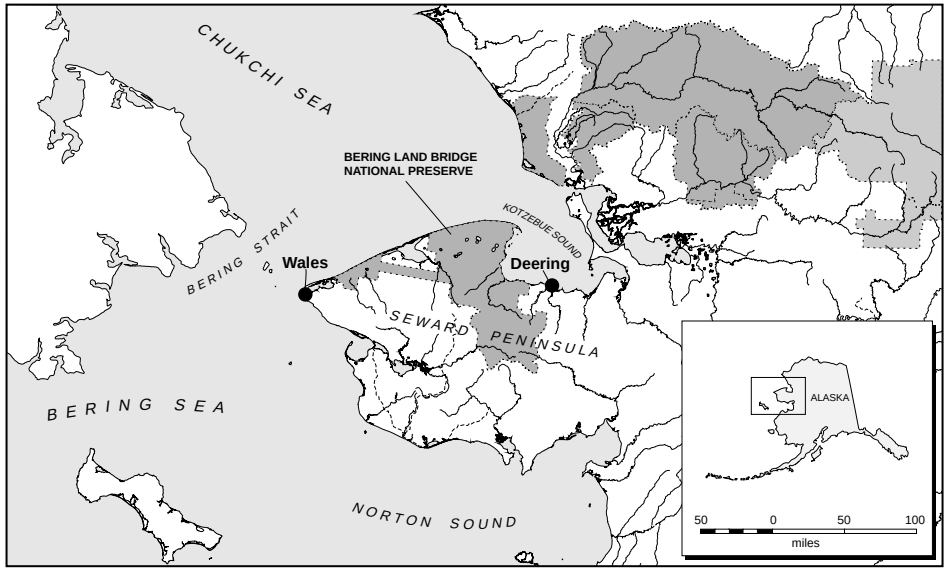

Figure 1. Northwest Alaska, including the study communities of Wales and Deering.

Left: Residents of Wales, in 1916, stand in front of a meat cache at Cape Prince of Wales. Numerous other caches in the background attest to Wales' population before the 1918 influenza epidemic.

Photograph from the Robert Steiner Collection, 91-164-64, Archives and Manuscripts, Alaska and Polar Regions Department, University of Alaska Fairbanks

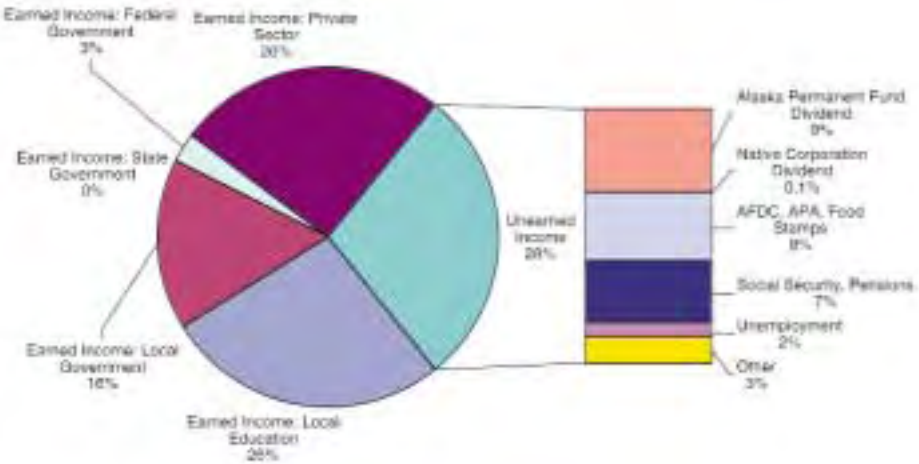

Figure 2. Sources of personal income, 1994.

of subsistence resources in addition to protecting habitat for fish and wildlife.

Two clear purposes of the park were involved in the development of the Wales/Deering analysis. First, information from each household in both communities details the amount of harvest for every species of natural resources used by that household. This information details the community's dependence on wildlife resources and in addition helps park managers gauge the impact of human harvest on resource populations. Critical to managing any natural resource is biological data on the size of a wildlife population and cultural information on the amount of human harvest.

Second, while the nutrition and economic aspects of wildlife harvests seem the critical issue, in fact, it is the social relations in the harvest, processing, and sharing of those resources that are of paramount concern to the rural Native Alaskans of the region. Subsistence resources, and the activities associated with their harvest provide more than food. Participation in family and community subsistence activities, whether it be clamming, processing fish at a fish camp, or seal hunting with a father or brother, provide the most basic memories and values in an individual's life. These activities define and establish a sense of family and community. They teach how a resource can be identified, methods of harvest, efficient and non-wasteful processing of the resource, and preparation of the resource into a variety of food items.

The sharing and distribution of resources establishes and promotes the most basic ethical values in Native and rural culture — generosity, respect for the knowledge and guidance of elders, self-esteem for the successful harvest of a resource, and family and public appreciation in the distribution of the harvest. No other set of activities provides a similar moral foundation for continuity between generations. The single most respected and reinforced role for young men in the community is to be a successful hunter who distributes the fruits of that success widely within the community. The documentation of these social relationships, a major intent of the research design, has several useful outcomes. Information gained from the project is used in the regulatory process. Positive regulatory findings ensure continued access to these wildlife resources for the communities in question. In addition, the findings of this project have substantial importance in answering a number of significant questions in the scientific literature and in interpreting the cultural values, ideals and behaviors of these Iñupiaq communities.

The Setting: Participating Communities

The communities of Wales and Deering are located in Northwest Alaska — a sparsely populated area bisected by the Arctic Circle *(Figure 1)*. Temperatures range from the minus 50s ºF [-50ºC] in winter with nearly no sunlight, to the high 70s ºF [25ºC] in summers that are characterized by little darkness. Permanent year-round settlement in one location is a relatively recent phenomenon in the region. The current locality of Wales *(Figure 3)*, though, has a long history of occupation due to its exceptional access to marine mammals and its strategic location for trade with Siberia. Wales, with 500 inhabitants at its peak, was one of the largest traditional settlements in northwest Alaska before the 1918 influenza epidemic. In contrast, Deering *(Figure 4)* was not occupied continuously during the nineteenth century. As many as 400 people may have been living in the Deering area prior to 1850, but this population lived in over a dozen small seasonal settlements. Currently each community has about 150 people, more than 90

Figure 3. Wales, 1998

percent of Iñupiaq descent.

Both communities have low per capita income. In 1994 both communities had a per capita income (from all sources) of about $7,000 which was about a third of the per capita income ($23,417) for the state during that year *(Figure 2)*. Both communities are heavily dependent on the harvest of wildlife resources with per capita harvests of about 700 pounds. By comparison the average U.S. per capita consumption of meat, fish and poultry is about 220 pounds. Although the per capita harvest for both communities is about the same, the composition of those harvests varies substantially due to differences in ecological setting. Wales is much more dependent on marine mammals, especially walrus, while Deering, located in a sheltered bay inside Kotzebue Sound, harvests about equal amounts of seal, fish and caribou *(Figure 5)*. In summary, we find two indigenous communities with very low incomes that are heavily dependent on traditional resources.

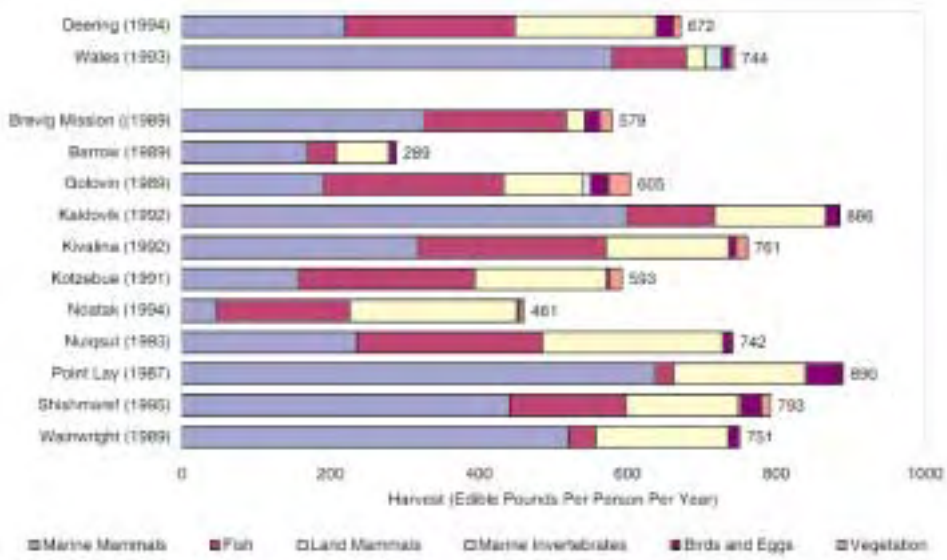

Figure 5. Estimated harvest in 14 northwest Alaska communities. Deering's and Wales' harvest of pounds per person per year were similar to other northwest communities.

Research Design

In both communities about 84% of available households were interviewed (42 in Wales, 37 in Deering). Before the research began, approval for the research was obtained from the respective local governments. The household survey form asked questions about the harvests of wild foods (by species) by the respondent's household during the previous year. The survey also obtained information on the age, sex, employment and income of each permanent resident of the respondent's household. In addition to the standard harvest inquiries, interviewers asked each household to identify the people who harvested, processed or distributed 12 categories of subsistence resources for the respondent's household, and whether or not these individuals lived in his or her household. Detailed genealogical data was also obtained from participating households and entered into "Legacy" software. Surveys required 15 minutes to two hours to complete. The data was analyzed using the Statistical Package for the Social Sciences (SPSS) and Excel programs. The analysis employed a variety of statistical techniques, including hierarchical clustering.

Figure 4. Deering, 1998

Significant Findings:

The Long Term Continuity of Kin-based Production Groups

Since the nineteenth century indigenous groups in northwest Alaska have experienced tremendous dislocations — the advent of commercial whaling, which introduced diseases and social restructuring of traditional relationships; starvation due to the crash of the caribou herds in the late nineteenth century; and missionary impacts on indigenous beliefs especially after the terrible epidemics of the early twentieth century, which brought a devastating mortality to nearly a third of the population. However, many of the underlying beliefs, values and practices that are linked to subsistence activities have persisted.

The surveys demonstrated continuity between the organization of contemporary households and those documented by ethnohistorians during the mid-nineteenth century. Although contemporary households in 1994 were somewhat smaller and less complex, they essentially mirrored the subsistence networks described for "local families" in the 1850s. In essence the key elements of sharing, respect for elders, ethical treatment of "animals" and support for those in need have been sustained for at least 150 years.

In the larger American culture, families support themselves predominantly on the wages produced by the parents of small nuclear families. This research demonstrates that households in northwest Alaska rarely function as independent entities. The organization of the harvest, processing and distribution of wildlife resources on which these communities base their survival rely

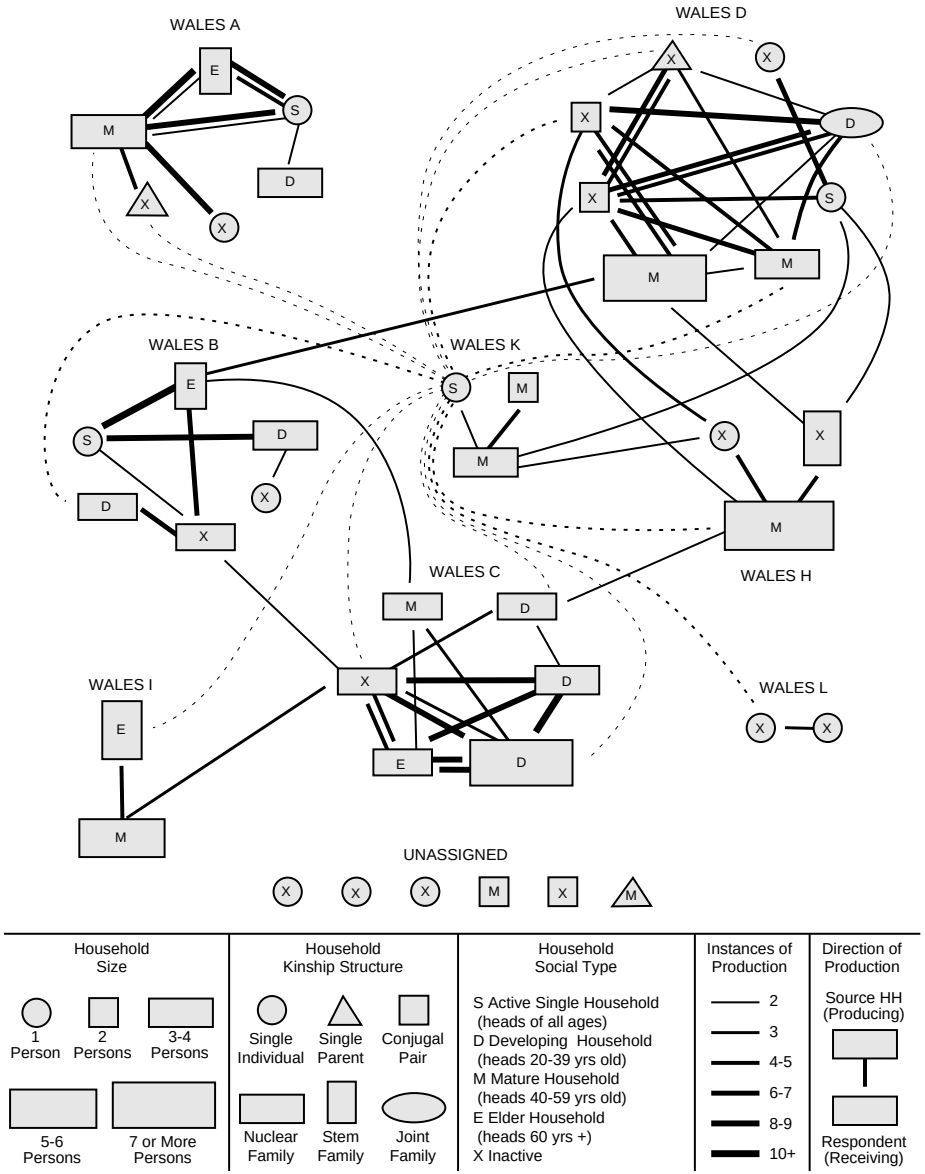

Figure 6. Wild food production and distribution networks in Wales, 1994. Each grouping (Wales A, B, etc.) represents a kinship network. Each polygon (rectangle, triangle, etc.) represents a household. The solid lines represent instances of harvesting, processing, and distribution of wild foods between households. The thicker the line, the more instances of production. The dotted lines link one man, who each summer harvests a considerable amount of salmon and distributes most of these fish throughout the entire community.

on extensive sharing between households in the community. In almost all cases, these households that share wildlife resources are linked through kinship. Most often these kinship linkages are between parents and children, grandparents and grandchildren, siblings (of either sex) or between aunts/uncles and nephews/nieces. Thus an elderly parent may have his/her wildlife nutritional needs met by children living in other households. These reciprocating households linked by kinship are called kinship networks.

Eight production and distribution networks were identified in Wales and six in Deering *(Figure 6)*. Networks ranged in size from 2 to 41 people, occupying 2 to 11 households. On average, networks harvested 12,723 pounds of wild foods (735 pounds per person). About 90% of inter-household sharing in Wales occurred within networks and about 75% of the inter-household sharing in Deering occurred within networks. Of the six different types of kin relationships, household heads related by parent-child relationships were most likely to be found in the same network. Networks organized around one elder parent household were more productive than networks organized around two elder sibling households.

It is noteworthy that in Wales, 79% of wildlife harvests came from marine mammals, principally walrus. Walrus are hunted by crews of men in locally made skin boats or with commercially manufactured boats. Perhaps because of this crew structure, relationships within networks were stronger and boundaries between networks more distinct in Wales than in Deering. In addition, the relatively high cost of maintaining the equipment and supplying the crew for marine mammal hunting meant that crews were more likely to be organized around higher income households in Wales.

By contrast, in Deering, the majority of the harvest (62%) came from land mammals and fish. Subsistence activities in Deering were less costly because land mammals could be pursued by a single man with a snowmachine and sled; an entire crew was not needed.

Generally and consonant with indigenous value systems, the flow of wild foods within the networks tended to be from the active single and active elder households to the inactive and developing households. While highly productive single-person households were important to network harvests, active elder households were more likely to make contributions in every economic sector: wild food harvest, earned income, and unearned income.

Six households in Wales and three households in Deering, either did not cooperate with any other households or did not harvest any wild foods, and thus were not included in any networks. All of these were short-term households occupied by teachers or other non-local government employees.

Resource Management Conflicts Resulting from Kin-based Production Groups

One key feature of these results with respect to National Park Service management of natural resources is the cultural conflict in expectations as to who provides for a family and what should be the entity

Photograph courtesy of James Magdanz © 2003

Rita Olanna, her son Percy, and her sister Pauline, skin a bearded seal at their extended family hunting camp near Brevig Mission. They live in three different households, but cooperate extensively in the production of wild food. All but one of the food productions networks in nearby Wales and Deering were based on extended family relationships.

connected with management regulations. Western game management practices come out of a tradition of managing the impacts of sport hunting. Buttressed by the cultural expectation that individuals provide for their nuclear families, most game management in Alaska focuses on limiting the amount of a resource (e.g., caribou) that one hunter can take in a day (or a given time period). This is called the individual bag limit. In contrast, a single male Iñupiaq hunter may harvest a number of caribou and distribute them to multiple households, related to him by kinship, within the community. Thus traditional practice, where a single hunter receives status and community approval for harvesting many animals and distributing them widely, comes into direct conflict with western game management practice.

The NPS and other agencies, in some instances related to decreasing animal populations, have modified some of their regulatory practices to allow for community bag limits or designated hunters. Community bag limits set a ceiling on the total community harvest of a resource (e.g., caribou), but limit no particular hunter within that community. "Designated" hunters are individuals selected by non-active or elderly households to harvest animals for their use. Thus the active hunter uses the designating household's bag limit and may harvest animals for a variety of households without exceeding his own individual limit. Without these provisions, the specialization in caribou harvesting observed in Deering families in 1994 (when the caribou bag limit was 15 per day) would have been illegal in 1977 (when the caribou bag limit was one per year). In times of resource shortages, the use of individual bag limits hobbles the most productive hunters. *(Figure 7)*.

On occasion the NPS, the Federal

Photograph courtesy of John Robson © 2003

Sharing of food is integral to Native and rural Alaskan communities. Here, whale blubber has been processed and prepared.

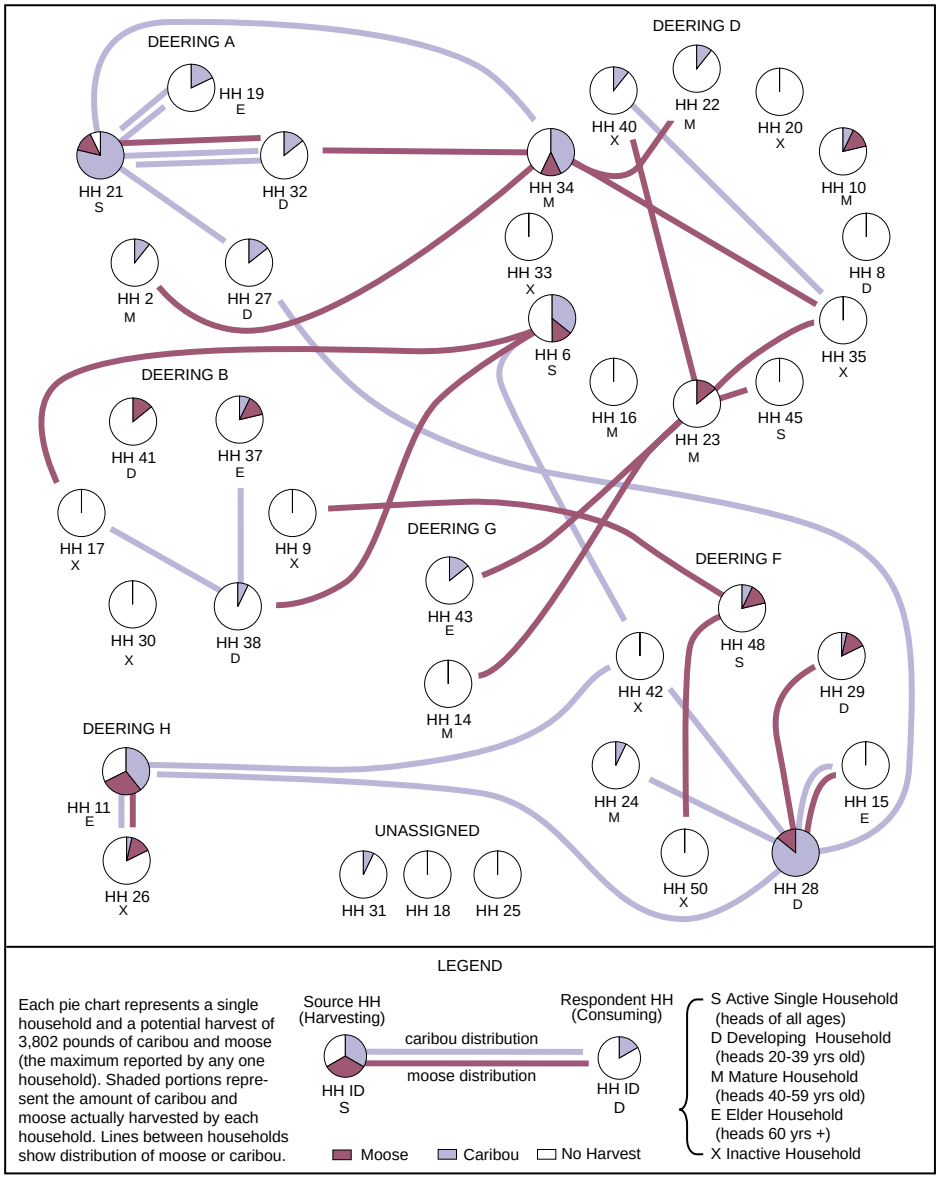

Figure 7. Harvest and distribution of large terrestrial mammals, Deering 1994. Two households were particularly important in the distribution of meat to other households. Household 21 and 28 reported harvesting one-third of Deering's total caribou harvest and distributed that harvest to eight other households in four networks.

Subsistence Board and the Alaska Board of Game have attempted, through the use of community bag limits and designated hunters, to preserve the traditional organization of the hunt in Iñupiaq communities. However, recently on state lands, urban hunters have used the courts to force the Alaska Board of Game to reorganize the hunt to favor individual rights on a statewide basis, instead of extended families and communities on a local basis.

Realistic game management requires local compliance. The results of this research clearly indicate the dynamics of contemporary subsistence practices for indigenous communities in the area and underscore the necessity of flexibility in western game management practices. Extended-family networks were not simply accommodated by indigenous management; they were part of indigenous management. These networks facilitate communication among members, encourage responsible harvests and use of fish and wildlife, and discipline members who fail to comply with group norms.

In essence much of western game management in Alaska highlights an equity issue. Euro-American regulations regarding individual bag limits reflect who has political and legislative power within the state. Non-indigenous Alaskans hold different beliefs about whether individuals or families and communities should be the basis for allocation.

Factors That Sustain Local Family Networks

In these Iñupiaq communities, local family networks have survived when so much else has changed. A strong local family network provides its adult members with a high degree of individual freedom: to work or not work, to hunt or to fish, to raise children or grandchildren — such freedom is all but impossible for adults in an economically independent nuclear family. In most areas of rural Alaska, dependence on a cash economy is risky, especially for men who work in construction, for jobs tend to be temporary. Jobs in the schools and health clinics are more permanent, but even those jobs are subject to changes in public funding priorities that are out of local control. Given distance from markets, limited skills in a small labor pool and a variety of other factors, it is extremely difficult to operate a private business.

There is no guarantee that current levels of public spending — upon which most jobs depend — will continue. In the daily business of subsistence living, people who are part of a local family network seem better prepared to survive the uncertainties of life in Alaska. A household without employment can depend on other households for food, equipment, and supplies. When hunting is poor, every household in a network benefits from the success of even a single hunter in the network. Wild foods play an essential role in maintaining the physical and emotional health of thousands of Alaskans. This is a tremendous responsibility for the agencies that participate in the management of those resources.

Regulatory Conflicts Associated with the Use of Modern Technology in Subsistence Activities

In 1850, the six to eight local families in the study communities probably would have spent much of the year living in separate, small, local family-based settlements spread across each "society's" territories. In

Photograph courtesy of John Robson © 2003

Participation in family and community subsistence activities provide the most basic memories and values in an individual's life.

1994 Wales and Deering represented permanent, localized-year-around settlements. The permanent settlements are a product of a number of social, economic and historical factors. Permanent settlements were often localized around stores that provided western technology and a stable source of foodstuffs. Fragile elders and the infirm, who formerly may have faced considerable difficulty keeping up (especially during periods of scarce resources), found increased security in permanent settlements. Thus the advent of commercial whaling and "trading posts" provided considerable incentive for some form of permanent settlement.

The numerous epidemics which caused precipitous declines in human populations accompanied by the crash of the caribou herd were also localizing forces. The most important contemporary reason for the creation of permanent settlements, however, is the demand of outside institutions that require children attend school on a nine month basis. Parents were faced with the choice between occupying traditional seasonal camps and losing their children or living with their children in permanent settlements established by the government and/or religious institutions. The factor that made this latter choice more palatable was the use of increasingly efficient western technology in their subsistence pursuits.

In 1994 there was less need to disperse. With modern transportation, families could fish, hunt, and gather throughout their traditional territories, yet return to their permanent homes in a matter of hours. Children could attend school and every family member could appreciate the benefits of local services, such as electricity and running water, which were not available in seasonal camps. Despite this, the nineteenth century settlement pattern was still in evidence seasonally, when some family members moved to temporary hunting and fishing camps. This contemporary settlement pattern presents some difficulty and requires sensitivity on the part of western land managers, particularly the NPS. The use of snowmachines during the winter months presents little impact to the environment; however, spring and summer use of all terrain vehicles may impact park aesthetic and resource values. The key to mitigating these potential conflicts is sustained dialogue between both parties with a foundation of empirical evidence, as represented by this study, to facilitate the discussion.

The Long Term Impact of Subsistence Activities on Wildlife Populations

In some quarters there is the perception that growth in Alaska Native populations threaten to outstrip Alaska's fish and wildlife. The data from this project do not support this conjecture, neither from a harvesting or a population growth perspective. For example, analysis from this project when coupled with time series data from Kivalina, a nearby community, suggests that total subsistence harvests have not increased in recent decades. While the population of Kivalina has doubled during the latter half of the twentieth century, per capita harvest of wild foods have declined by half, resulting in a stable level of subsistence demand. The factors in Kivalina's declining per capita harvests — the replacement of hungry dog teams by mechanical transportation, increased availability of imported foods and a variety of other technological changes— are present in Wales, Deering and throughout much of rural Alaska.

REFERENCES

Magdanz, James S., Charles J. Utermohle, and Robert J. Wolfe. 2002. The Production and Distribution of Wild Food in Wales and Deering, Alaska. Technical Paper 259. Juneau, Alaska: Division of Subsistence, Alaska Department of Fish and Game.