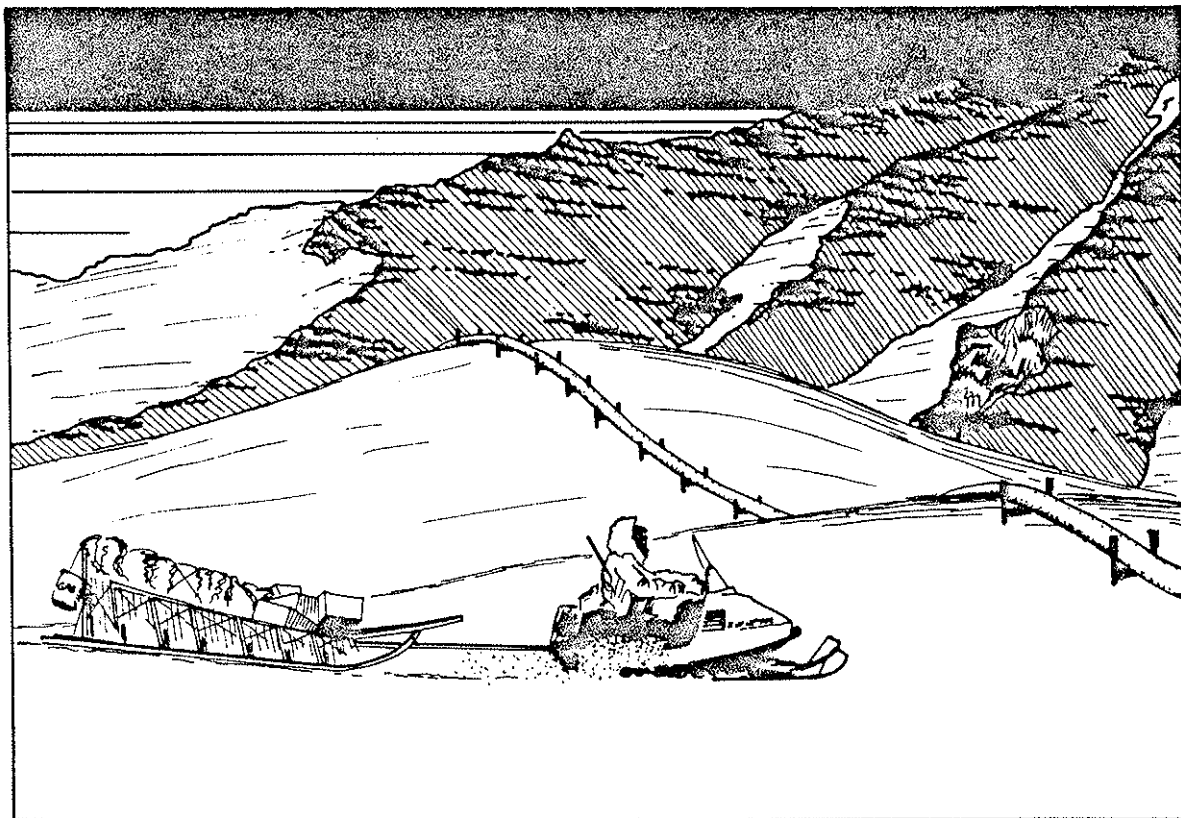


The Subsistence Lifestyle in Alaska Now and in the Future



School of Agricultural and Land Resources Management

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THE SUBSISTENCE LIFESTYLE IN ALASKA
NOW AND IN THE FUTURE

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SUBSISTENCE: A DISCUSSION OF RELEVANT CONCEPTS AND SOME OBSERVATIONS ON PATTERNS OF CHANGE IN ALASKA

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Introduction

At this stage of the course, I expect you are aware, probably painfully aware, that subsistence is far from being a strictly academic concern. Subsistence activities not only describe an important Alaskan lifestyle, but also are at the core of an intensely controversial political issue. The term subsistence, like the terms (d)2 and inflation, has become a codeword that is loaded with emotion. The content of the vast majority of written materials concerning subsistence is a mixture of information and ideology. Certainly an advocacy approach to subsistence is not unwarranted; however, I would hope that the purpose of this course is not to expose you to the range of political attitudes toward subsistence but rather to develop an appreciation for the complex nature of the subsistence lifestyle as it exists in Alaska today and as it may exist in Alaska tomorrow.

Today I would like to review some of the findings from two research projects I have directed. Before delving into the results themselves, however, I want to give you some idea of the perspective taken in our research on subsistence. First of all, why study subsistence? Much of our research concerns the effects of rapid change on Alaskan life, particularly with regard to the effects of energy related developments such as the Trans-Alaska pipeline and the Prudhoe Bay oil field. Of key concern are the effects of changing social, economic and environmental conditions on Native culture. While the term "culture" is just as elusive as subsistence, no one would argue that subsistence is not an integral component of native Alaskan culture. Hence long-term changes in subsistence patterns are by definition changes in Native culture. In order to understand the effects of rapid change on Native culture, then, subsistence must be one focus of research.

Subsistence patterns are also of interest because of the resulting pressures on natural resources. Some subsistence activities appear to pose a direct threat to the continued survival of specific species. In some cases, such as hunting the bowhead whale, the changing intensity of the subsistence activity alone may be important. In other cases, pressures on natural resources may result not only from subsistence but also from recreation or commercial activities; pressures on moose, caribou and salmon are good examples. Where subsistence is only one of several competing forms of consumption or when it alone results in excessive resource pressures, the allocation of hunting and fishing opportunities is of critical concern.

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Subsistence activities may also be incompatible with other land or water uses. Pipelines, hard rock mining operations, roads and off-shore drilling platforms are salient examples of potentially conflicting uses. Even wilderness designations may conflict with current subsistence practices.

In sum, subsistence is of interest because of the interdependence of human and natural resources and because of the existence of competing resource uses. We are no longer, and perhaps never were, dealing with a closed system. Whether our interest is cultural preservation, resource protection, resource development or recreational access, subsistence is of central concern.

Relevant Concepts

Up to this point, I have avoided the inevitable and not defined the term subsistence. Again, I am sure you have heard many definitions already; political definitions, legal definitions, cultural definitions--the list seems endless and confusing. Let me add a few more. First of all, subsistence is a set of human behaviors. It takes people. Second, we must assume that subsistence behaviors, like all other behaviors are motivated by specific goals. The goal of food and material production is the most obvious, but there are others I will discuss later. Subsistence also, of course, must be defined in terms of the other side of the equation, what is consumed or the products of subsistence. The term "products" may in turn be defined by the object consumed (e.g., caribou) or in terms of the products actually used (e.g., meat, ivory, skins). In addition to behaviors, motivations, and products, a definition of subsistence must include attitudes toward related activities and objects such as wage employment and household conveniences. Finally, a definition of subsistence must recognize basic personal characteristics: values, cultural identities, family ties, and past experiences, each of which contribute to the context within which subsistence activities are pursued:

Behaviors, motivations, products, attitudes, and personal characteristics are conceptual categories that are components of a subsistence definition. It is doubtful any one research program can ever exhaustively treat all of these conceptual categories, if for no other reason than the fact that the construction of operational definitions for the conceptual categories would involve an impractical number of disciplines and research perspectives. At the same time, it would be a mistake to focus on only one of the conceptual categories. To do so would severely reduce our chances of understanding the role of subsistence in existing social, economic, and cultural systems. Without this understanding, it is impossible to contribute significantly to the resolution of such questions as: what importance will subsistence have in Native culture in the future? how should we weigh the potential costs of developing off-shore oil platforms? and how should we allocate limited-resource consumption opportunities?

Eventually, we may have to adopt relatively simple, concrete definitions of subsistence to implement specific policies but we should be aware of the sacrifices involved. For example, suppose whaling is restricted to those who have no other means of providing food for their families. Most whaling captains and experienced crews would be barred from participation. As a result, the number of whales struck and lost might drastically increase, clearly an unacceptable situation.

We not only need to learn about the dimensions of subsistence but also about how subsistence patterns are changing across generations and in response to changes in employment opportunities, incomes, and village living conditions. Thus, our research focus must be broader than subsistence alone. For each major related area, employment, for example, the same broad conceptual categories of behaviors, motivations, products, attitudes, and personal characteristics must be applied. The entire conceptual framework obviously consists of many elements and the transition from conceptual categories to measurable attributes is a challenging task.

As I mentioned earlier, we can't hope to do justice to all of the conceptual components of subsistence and to all the major areas related to subsistence in one research program. Our research on subsistence is by no means definitive. On the other hand, we have assembled detailed information on subsistence and employment patterns in the upper Yukon-Porcupine and the North Slope regions of Alaska. The information is derived from structured personal interviews. In the upper Yukon-Porcupine region, 174 interviews were conducted in the spring of 1977, representing a sample of 56 per cent of all households in the region. The North Slope sample consisted of over 80 per cent of the households in all villages except Barrow where a 50 per cent random sample was selected. A total of 332 interviews were conducted.

Recalling our conceptual categories of behaviors, motivations, products, attitudes, and personal characteristics, each survey addressed subsistence, employment, and community living conditions using several dimensions. The specific measures used in each survey differ somewhat to reflect actual regional differences in subsistence patterns, differences in research objectives, and scope, and because the design of the North Slope survey incorporated what we have learned from the upper Yukon-Porcupine survey, I won't attempt to point out these differences except where absolutely necessary.

Our behavioral dimension focused on participation and/or time spent in the major subsistence activities in each region (27 activities in the Yukon-Porcupine survey and 13 in the North Slope survey). The behavioral dimension also included measures related to the use of equipment in subsistence.

A motivational dimension was present only in the North Slope survey and assessed the importance of eight goals such as: a chance to get away from lots of other people, a chance to be in charge of what's happening, and a chance to be with friends. In psychological terms, the

measurement attributes were: affiliation, stress reduction, achievement, autonomy, dominance, arousal, interdependencies, and experience with nature.

The product dimension specifically excluded any measures of actual take as such information was perceived by residents to be potentially detrimental to current subsistence practices (i.e., limits exceeded or take out of season). Instead we relied on perceptions of the proportion of all food consumed in the household that is provided by subsistence. In the North Slope survey, we asked additional questions related to the sharing of subsistence products and equipment.

Both surveys included several attitude measures related to employment--subsistence and development preferences. Personal characteristics measured included ethnicity, education, childhood residence, and, on the North Slope, the employment and subsistence activities of the respondent's parents.

A comparable set of measures to those used for subsistence addressed wage employment behaviors, motivations, products, attitudes, and personal characteristics. The larger scope of the North Slope survey included a third major area, community living conditions.

Observed Patterns of Change

Not unexpectedly, most survey respondents in both surveys prefer to spend time in both subsistence and wage employment activities (see Table 1). Preferences appear to differ with age, however. Young Native respondents were less likely to prefer spending most of their time in subsistence activities, but were more likely to prefer splitting their time between subsistence and wage employment. The results do not necessarily suggest a decline in the intensity of subsistence activity among younger Natives. Current subsistence practices involve substantial outlays of cash for rifles, traps, riverboats, snow machines, and other equipment. The shifting preferences shown in Table 1 may indicate a growing awareness of the necessity for cash. Preferences for subsistence over wage employment also seem to differ between the residents of regional centers and the residents of other villages in the region (see Table 1). Fort Yukon residents are more likely to prefer both subsistence and wage employment than the residents of smaller villages. Barrow residents' responses indicate a relatively stronger preference for wage employment.

Another indication of the importance of subsistence is the respondents' perceptions of the proportion of food that they or members of their family provide by hunting, fishing, or gathering. Since the question depends on individual perceptions, it cannot be interpreted as an absolute measure. It is useful, however, in comparing population groups of special interest. In this case, both Yukon-Porcupine and North Slope residents are obviously more active in subsistence than

TABLE 1
TIME PREFERENCE FOR SUBSISTENCE VS. WAGE EMPLOYMENT

YUKON-PORCUPINE NATIVE RESPONDENTS							
Time Preference for Subsistence vs. Wage Employ.	All Native Respondents	Age				Place of Residence	
		Under 30	30-39	40-49	50+	Fort Yukon	Other Villages
mostly subsistence	13	4	6	14	26	11	16
mostly wages	14	22	15	7	19	12	16
both	<u>73</u> <u>100</u>	<u>74</u> <u>100</u>	<u>79</u> <u>100</u>	<u>79</u> <u>100</u>	<u>55</u> <u>100</u>	<u>77</u> <u>100</u>	<u>68</u> <u>100</u>
Number of Respondents	115	22	35	28	36	50	65
NORTH SLOPE NATIVE RESPONDENTS							
Time Preference for Subsistence vs. Wage Employ.	All Native Respondents	Age				Place of Residence	
		Under 30	30-39	40-49	50+	Barrow	Other Villages
mostly subsistence	15	8	6	13	43	16	13
mostly wages	22	17	17	29	20	26	17
both	<u>63</u> <u>100</u>	<u>75</u> <u>100</u>	<u>73</u> <u>100</u>	<u>63</u> <u>100</u>	<u>37</u> <u>100</u>	<u>52</u> <u>100</u>	<u>70</u> <u>100</u>
Number of Respondents	288	90	66	40	42	122	166

Fairbanks residents. More interesting, however, are the differences between residents of the regional centers (Fort Yukon and Barrow) and the residents of the smaller villages (see Table 2).

While 54 per cent of the Native households sampled in the upper Yukon-Porcupine survey report that at least half of their food comes from subsistence activities, only 7 per cent spend over 6 months a year primarily engaged in subsistence (see Table 3). It is important to note that a response of few or no months spent mostly on subsistence does not necessarily indicate a lack of a subsistence orientation. While 31 per cent of the native survey did not spend any months doing mostly subsistence activities, only 22 per cent of the households reported they obtained no subsistence foods. In part, the differences may be accounted for by the activities of other household members but it is also likely that a substantial amount of subsistence activity can occur as a secondary activity in a single month. In these circumstances, the respondent may not indicate he or she spent "most" of their time on subsistence. Results from the North Slope survey support this hypothesis as 18 per cent of the survey respondents spent some part of 7 months or more on subsistence. When asked to describe the pattern of time spent on subsistence, however, most North Slope respondents indicated their subsistence activities were intermittent, often on weekends and after work.

The amount of time spent on subsistence is not necessarily a good indicator of the importance of subsistence; the quantity of subsistence goods produced and the diversity of subsistence activities are key indicators as well. Even beyond these measures, it is necessary to consider the diverse set of motivations which are important to those engaging in subsistence. Technological changes may enable subsistence users to obtain the food they need in a shorter time than was necessary when traditional techniques and equipment were used. Subsistence activities can be successfully pursued even when an individual has taken part in full-time wage employment. In fact, Yukon-Porcupine responses indicate that earnings are applied to equipment used in subsistence (see Table 4). The use of snow machines and riverboats has opened up evenings and weekends as practical times to engage in subsistence activities.

Wage employment and subsistence activities both peak in the summer and fall months in the upper Yukon-Porcupine region. Sixty per cent of those who reported that they were doing mostly subsistence activities also were holding a job in September. Half of these people had year-round jobs, making it likely that they were taking vacation. During the winter months, on the other hand, the majority of the Native heads of household in the Yukon-Porcupine did not have or want a job and were not primarily engaged in subsistence. No doubt part of the reason for the lack in winter activity is the severe climatic conditions which make outdoor work undesirable. On the North Slope, as a whole, approximately 69 per cent of those able to work participated in spring whaling. Employment patterns were more stable than in the Yukon-Porcupine region, largely because of the activities of the North Slope Borough (see Table 5).

TABLE 2
 SUBSISTENCE FOOD BY REGION, VILLAGE
 NATIVE RESPONDENTS ONLY

<u>Proportion Food</u>	<u>Place of Residence</u>		
	<u>Yukon- Porcupine</u>	<u>Fort Yukon</u>	<u>Other Villages</u>
most	27	14	38
half	28	28	28
some	24	27	22
none	<u>21</u>	<u>31</u>	<u>12</u>
	<u>100</u>	<u>100</u>	<u>100</u>
Number of Respondents	129	50	65

<u>Proportion Food</u>	<u>Place of Residence</u>			
	<u>North Slope</u>	<u>Barrow</u>	<u>Other Villages</u>	<u>Fairbanks</u>
most	26	20	35	2
half	14	15	12	5
some	42	45	37	40
none	<u>18</u>	<u>20</u>	<u>16</u>	<u>53</u>
	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
Number of Respondents	330	128	202	408

TABLE 3
MONTHS SPENT ON SUBSISTENCE
SUBSISTENCE TIME PATTERN - NORTH SLOPE

<u>Months Spent on Subsistence</u>	<u>Yukon- Porcupine</u>	<u>Fort Yukon</u>	<u>Other Villages</u>
0	30	43	20
1-2	24	19	28
3-4	22	23	21
5-6	17	12	21
7-12	<u>7</u>	<u>3</u>	<u>10</u>
	<u>100</u>	<u>100</u>	<u>100</u>
Mean	2.6	2.2	3.1
Number of Respondents	129	58	71

<u>Months Spent on Subsistence</u>	<u>North Slope</u>	<u>Barrow</u>	<u>Other Villages</u>
0	33	32	33
1-2	15	17	13
3-4	20	22	18
5-6	14	15	14
7-12	<u>18</u>	<u>14</u>	<u>22</u>
	<u>100</u>	<u>100</u>	<u>100</u>
Mean	3.8	3.8	3.8
Number of Respondents	332	130	202

<u>Subsistence Time Patterns</u>	<u>North Slope</u>
most of the time	33
sometimes, weekends, after work	59
vacation, leave time	<u>8</u>
	<u>100</u>

TABLE 4
EFFECTS OF INCOME ON THE USE OF EQUIPMENT
IN YUKON-PORCUPINE SUBSISTENCE

<u>Use of Item in Subsistence</u>	<u>1976 Household Incomes</u>		
	<u>Under 5,000</u>	<u>5,000- 14,999</u>	<u>15,000 and Over</u>
Riverboat	67	69	91
Sno-go	58	69	88
Air charter	12	29	34
Jet unit	9	10	6
All-terrain vehicle	5	5	3
Dogteam	35	24	34
Number of Respondents	43	42	32

TABLE 5
NUMBER OF MONTHS EMPLOYED AND INCOME

<u>Number of Months Employed</u>	<u>Yukon- Porcupine</u>	<u>North Slope</u>
0	26	33
1-2	21	8
3-4	9	11
5-6	14	8
7-11	11	15
12	$\frac{19}{100}$	$\frac{25}{100}$
mean	3.9	5.3
<u>Incomes 1976</u>		
<5,000	37	12
5,000-14,999	36	27
15,000 & over	$\frac{27}{100}$	$\frac{61}{100}$
Number of Respondents	119	332

The household survey did not attempt to document actual subsistence take by species for a specific time period. Respondents were asked to indicate which types of subsistence activities were pursued. Differences in the diversity of subsistence take between the Yukon-Porcupine and North Slope (see Table 6) are in part an artifact of differences in research design. Differences within a region, however, are suggestive. The diversity of take is higher for those with incomes of over \$15,000 than it is for those with incomes under \$5,000. It appears that, to the extent made possible by environmental conditions and/or cash resources, a diverse subsistence take is considered desirable. Whether this desirability is based on preferences for a varied diet or varied set of subsistence activities, or both, cannot be answered with available information.

Often the assumption is made that increased wage employment participation will decrease subsistence activity. We have already shown that the diversity of subsistence take actually appears to increase as income increases (see Table 6). Higher incomes can be applied to expensive equipment, supplies, and transportation costs. We also found that peak periods for subsistence do not necessarily exclude employment. This apparent discrepancy may be explained by vacation and leave time or simple expanding activities beyond the 40-hour work week. One would still expect, however, that long periods of wage employment would limit the time that could be spent on subsistence. As Table 7 shows, there is some evidence that a year-round job does limit subsistence time, while the income derived from shorter periods of employment appears to have little or no effect on the time spent on subsistence.

The amount of time spent on subsistence activities is not necessarily a reliable measure of the importance of subsistence in providing food. The amount of food provided is only one aspect of subsistence. The quality and diversity of take and of the activities themselves are also important. Maximizing the amount of food provided may limit the diversity of take and vice-versa. Our earlier discussion on the diversity of subsistence take indicates that it increased in importance for those with higher incomes (see Table 7). Comparable information concerning the relationship of income, time spent on subsistence, and amount of food provided is given in Table 8 for Yukon-Porcupine respondents. While the number of respondents in each category is extremely small, there is some indication that the amount of food provided by subsistence becomes less important as incomes increase. As more time is spent on subsistence for those with low incomes, the proportion of food provided by subsistence substantially increases. Households with higher incomes do not show a comparable change. Increases in the time spent on subsistence for higher-income families may be directed more at the goal of obtaining a wider variety of subsistence foods and participating in more different types of subsistence activities than it is toward increasing the proportion of food provided by subsistence.

TABLE 6
NUMBER OF SUBSISTENCE ACTIVITIES BY REGION, INCOME

Number of Subsistence Activities	Yukon-Porcupine	Total Household Income 1976		
		<5,000	5,000-14,999	15,000+
0	28	26	37	10
1-10		45	40	35
11-21	<u>72</u>	<u>29</u>	<u>23</u>	<u>55</u>
	100	100	100	100
mean	7.0	9.6	9.8	11.5
Number of Respondents	81	31	22	28

Number of Subsistence Activities	Yukon-Porcupine	Total Respondent's Wages 1976		
		<5,000	5,000-14,999	15,000+
0	28	35	32	19
1-2		26	26	20
3-4	72	17	16	30
5-10	<u>22</u>	<u>27</u>	<u>31</u>	
	100	100	100	100
mean	2.6	2.2	2.7	2.7
Number of Respondents	332	171	81	80

TABLE 7
 RELATIONSHIPS OF MONTHS SPENT ON SUBSISTENCE
 TO MONTHS SPENT EMPLOYED

<u>Months Spent on Subsistence</u>	<u>YUKON-PORCUPINE</u>			<u>NORTH SLOPE</u>		
	<u>Months Spent Employed</u>					
	<u>1-5</u>	<u>6-11</u>	<u>12</u>	<u>1-5</u>	<u>6-11</u>	<u>12</u>
0	14	15	26	22	21	32
1-13	39	39	38	25	25	23
4-12	$\frac{47}{100}$	$\frac{46}{100}$	$\frac{36}{100}$	$\frac{53}{100}$	$\frac{54}{100}$	$\frac{45}{100}$
mean	3.7	3.8	2.3	3.1	3.7	3.6
Number of Respondents	29	23	24	87	76	98

TABLE 8

EFFECTS OF TIME SPENT ON SUBSISTENCE ON PROPORTION OF FOOD
 PROVIDED CONTROLLING FOR INCOME FOR YUKON-PORCUPINE RESPONDENTS

Proportion of Food Provided by Subsistence for:	Number of Months Spent on Subsistence	
	<u>0-3</u>	<u>4-12</u>
A. Households with Incomes under \$5,000		
more than half	27	53
half or less	42	47
none	31	0
	<u>100</u>	<u>100</u>
Number of Respondents	26	15
B. Households with Incomes of \$5,000 and over		
more than half	20	21
half or less	50	79
none	30	0
	<u>100</u>	<u>100</u>
Number of Respondents	50	24

Subsistence activity remains an important component of the lives of the residents of the Yukon-Porcupine region and the North Slope. While the amount of time spent on subsistence is not as great, on the average, as the amount of time spent on wage employment, the products of subsistence pursuits are perceived to provide half or more of the food consumed in most Native households of the region. Rising incomes may be increasing the number of different subsistence activities a given individual pursues. Time spent in wage employment does not appear to adversely affect subsistence time until an individual takes a year-round job and even then the best times for subsistence are apparently not missed.

In sum, the quality of subsistence measured in terms of diversity of take and equipment employed, may be actually enhanced by wage employment opportunities while the quantity of subsistence, measured either in terms of time or proportion of food provided becomes less critical. The future viability of subsistence, then, may primarily concern the continued availability of diverse subsistence resources, rather than the presence of new employment opportunities which might be thought to conflict with the time available for subsistence.