

THE MAN IN THE ARCTIC PROGRAM (MAP)

ECONOMIC, DEMOGRAPHIC, AND SOCIOCULTURAL
EFFECTS OF DEVELOPMENT IN ALASKA

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Alaska is in the midst of a major period of economic growth, stimulated largely by oil and gas development.¹ The 800-mile trans-Alaska pipeline, which is now under construction, will have a peak employment level of 16,000 workers, many of whom have migrated to Alaska from other states. Commercial production of Prudhoe Bay oil is expected to begin in 1977. While direct employment in the oil industry will decline substantially at this point, royalty payments and taxes to the state government will provide a substantial new economic stimulus, creating new jobs and bringing new migrants to Alaska. Alaska presently has about 350,000 residents. Even if no major new oil developments occur, by 1990 Alaska's population is projected to exceed 600,000.

What is more likely, however, is that major new oil developments will occur. Prudhoe Bay and the oil pipeline may be only the beginning of the oil boom in Alaska. After the oil pipeline is completed, a gas pipeline will be built either following a Canadian route to the midwest or an Alaskan route to a tidewater port in south-central Alaska. Congress has authorized exploration of the Naval oil reserve (Pet 4). The federal government is planning an Outer Continental Shelf lease sale in the Beaufort Sea, Bering Sea, and Gulf of Alaska. The state government may hold additional lease sales in Prudhoe Bay and Cook Inlet to bridge the gap in the state budget until North Slope oil production gets under way. Native corporations formed under the Alaska Native Claims Settlement Act of 1971 have selected land with oil potential as part of their settlement, and six corporations have already entered

¹This section summarizes information presented in G. S. Harrison, Alaska Growth Policy Issues. Summarized from the Growth Policy Symposium held at University of Alaska, Fairbanks, December 3-5, 1974.

into exploration agreements with oil companies. Such future oil and gas development would have tremendous impact on economic development, population growth, and sociocultural change in Alaska.

Alaska must make a number of major policy decisions over the next few years which will affect the rate of economic development, the quality of the natural environment, and the social well-being of Native and non-Native residents. Many of the developmental forces in Alaska obviously are out of the control of the state government, but the state has significant leverage on the issue of the rate of economic development through its petroleum leasing policies and the rate at which it spends state oil revenues. The state can also influence well-being in Alaska by the ways in which oil revenues are used. The state, for example, could seek to mitigate the costs of oil and gas development in Alaska, attempting to preserve natural wilderness or the traditional lifestyles of Native and non-Native residents. Or it can elect to bear these costs of development and allocate its revenues toward achieving other goals such as reduced taxes or a higher level of education or health care.

The Man in the Arctic Program (MAP), a major research effort in progress at the Institute of Social, Economic and Government Research at the University of Alaska, is examining economic, demographic, and sociocultural effects of development in Alaska with the objective of providing information for such policy choices. MAP, funded primarily by the National Science Foundation, is organized into two phases of three years each. The first phase, which will come to a close at the end of 1975, is concerned with broad economic and demographic effects of oil and gas development. I will very briefly describe the approach used in this research and a few of the preliminary findings. Research on social and cultural effects of

development in the north will be done primarily in Phase II, beginning in 1976. During Phase II, the economic and demographic research program will focus on the distribution of economic welfare across different population groups and in different regions of the state. Since the sociocultural research program is now being developed, I cannot, of course, present findings. However, I will discuss the types of social problems and policy issues in Alaska that stimulated the sociocultural research effort and the Arctic social and cultural systems model we are using to explore the social effects of development in the north.

MAP ECONOMICS AND DEMOGRAPHIC RESEARCH ²

MAP in its Phase I program has developed computerized models of Alaska's economy and population structure and has carried out studies of certain key development policy issues. The models are used to estimate the impact of different policy options on such variables as employment, gross state product, and personal income. While MAP is examining a wide range of specific policy options, many of the important policy decisions fall within two broad categories:

1. The rate of petroleum leasing in Alaska -- choices, for example, between very limited leasing to preserve Alaska's environmental quality and rapid leasing to promote accelerated economic development.
2. Alternative uses of the state revenues generated through North Slope oil production -- uses of these funds, for example, to reduce taxes on personal income or corporate profits or to provide various public services, social programs, and welfare payments.

The policy analyses in Phase I are being carried out on a fairly aggregate level while the more detailed, distributional aspects will be studied in Phase II. Some of the preliminary results of MAP research provide estimates of the impact on Alaska's economy of alternative state policies concerning the rate of petroleum development and the rate of state expenditures. The effects of three broad alternative growth policy sets are compared:

1. A "limited growth" policy, defined by no additional petroleum leasing and placing most of petroleum revenues in an investment trust fund.
2. A "moderate growth" policy, defined by moderate additional petroleum leasing and the use of half of the petroleum revenues for current spending.
3. A "rapid growth" policy with extensive lease sales opening several new fields and the majority of petroleum revenues used for current spending.

²This section summarizes papers prepared by Dr. David Kresge, Director of the MAP Phase I program, especially, D. Kresge, Alaska's Growth to 1990: Policies and Projections. Fairbanks: Institute of Social, Economic and Government Research, University of Alaska, November 21, 1974.

These analyses indicate that rapid growth policies can markedly increase gross state product, employment, and population, but available policy options cannot substantially curtail Alaska's growth. While the size of Alaska's economy increases substantially under rapid growth policies, at the same time population grows as new workers migrate to the state. The result is virtually no change in the unemployment rate or in real per capita income. In sum, what this analysis forcefully points out is that under a wide range of government spending and petroleum leasing policies, unemployment will not be significantly reduced nor real per capita income increased.

MAP SOCIOCULTURAL RESEARCH

Although certain northern population groups may derive substantial economic benefits from development, rapid development in itself not only has little effect on achieving the social goals of reduced unemployment and increased income. Rapid development, at least in certain phases, also may cause serious social and cultural dislocations in both Native and non-Native communities. In other phases and to some population groups, of course, rapid development may bring social benefits. The fundamental purpose of MAP sociocultural research is to develop a model predicting the effects of rapid economic growth on social problems in different types of communities and on the quality of life experienced by different northern population groups.

Social Problems

Concern with the social and cultural consequences of growth has intensified in Alaska, in part as a result of the serious social problems occurring through construction of the trans-Alaska pipeline. While little systematic empirical research has been done, community agency reports³ and interviews with informed

³The information on social problems in Fairbanks discussed in this section is drawn largely from the series of pipeline impact reports done by the Fairbanks North Star Borough, Fairbanks, Alaska.

observers suggest a wide range of social problems. A housing crisis, for example, has occurred in communities along the pipeline corridor. In major pipeline service centers, such as Fairbanks and Valdez, rental housing is virtually unavailable and is extremely high in price. Indeed, the newspapers have carried advertisements offering rewards for locating a vacant apartment. Many long-term tenants are subject of eviction or to large rent increases, which force out many of those on fixed incomes. The scarcity of housing has precipitated a number of other serious problems. Substandard housing is brought into use which in turn may be leading to increased accidents, health hazards, fire dangers, and stress on families.

The housing crisis is probably a short-term dislocation which will end with pipeline construction. Another social problem resulting from rapid growth, however, which may have long-term social consequences is family breakdown and defective socialization of children. During the pipeline construction period in Fairbanks, for example, the divorce rate has rapidly increased. The juvenile arrest rate, especially among 11-12 year olds, has substantially risen. Rates of serious child neglect have risen. Runaways have also increased with a new pattern of groups of children floating from house to house while parents are away at remote construction camps. Social workers and probation officers suggest that these problems are caused in part from a changed employment structure. Parents may take high-paying pipeline jobs requiring them to leave town for a period of several weeks or may work in town on the six-day, ten-hour work schedule of pipeline employment. At the same time, there is a shortage of domestic labor at low-wage rates, so children may be left unattended.

pipeline paychecks. Native organizations are especially concerned that pipeline construction may undermine the movement for Native self-determination and the implementation of the Native Land Claims Settlement Act because qualified Natives prefer the high-paying pipeline jobs. For example, when the Tanana Chiefs Conference offered training for the position of business manager of the village corporation, in only 14 out of 44 villages was a person available.

The types of social problems that may be occurring in Alaska "boomtowns" as a result of pipeline construction may be repeated with other anticipated oil and gas development in the north, such as development of Alaska's Outer Continental Shelf, development of the Naval oil reserve (Pet 4), and construction of other gas and oil pipelines across Alaska or Canada. A rather obscure but quite useful literature on boomtowns was stimulated by the impact of large military and industrial installations in nearby communities in the World War II period. Much of this research consists of studies of impact situations which have parallels in current and anticipated oil and gas developments in Alaska -- small rural towns overwhelmed by the sudden emergence of an installation involving large sums of investment, a large construction force but comparatively smaller long-term labor force, and a large influx of population.⁵ While much of this research is limited to single case studies, some work has been done in identifying characteristic impact patterns, relating them to social problems, and suggesting policies for dealing effectively with impact in its

⁵ See, for example, R. Havighurst and H. Morgan, The Social History of a War Boom Community. New York: Longmans Green, 1951; L. Carr and J. Sterner, Willow Run: A Study of Industrialization and Cultural Inadequacy. New York: Harper Brothers, 1952.

various stages.⁶ The litany running through this literature is the predictability of these social effects combined with the repeated lack of appropriate response of policy-making institutions. As Breese⁷ concludes in an analysis of five such impact situations:

Thus the familiar pattern is repeated over and over again whenever the boom conditions which accompany large plant industrialization and rapid urbanization are experienced...

On the basis of this and past experiences, one thing is unmistakably clear. The social and economic costs of mis-directed development are prohibitively high -- high in dollars and cents, but higher still in the countless irritations induced by the congestion, noise, confusion, and the added hazards of fire and traffic which such development engenders. In the face of countless and continuing examples of communities being subjected to unduly severe strains as a result of defense connected "boom" conditions, one might ask why these situations are perpetuated ...

Similar social consequences of growth have been found in boomtowns arising from energy production in such states as North Dakota and Wyoming.⁸ As Kohns⁹ points out in reviewing Wyoming's experience:

The history of power production synonymous with "boom development" in Wyoming is a dismal record of human ecosystem wastage ... Almost every community in Wyoming has experienced boom, e.g., Newcastle, Cheyenne, Laramie, Hanna, Salt Creek, Casper, Gillette, and now Rock Springs and Douglas. There has been little change in the social consequences over the past one hundred years ... Divorce, tensions on children, emotional damage, and alcoholism were the result. The pattern of depression, delinquency, and divorce was so well documented that the consequences were predictable.

⁶ G. Breese, The Impact of Large Installations on Nearby Areas: Accelerated Urban Growth. Beverly Hills: Sage Publications, 1965; F. Hoehler, Efforts at Community Organization In Boom Towns of Defense, Journal of Educational Sociology, 15(8), 1942, pp. 445-505. Many other studies in this area may be found in government agency reports and other sources not readily available.

⁷ Breese, op. cit., p. 557.

⁸ L. Nellis, What Does Energy Development Mean for Wyoming? Human Organization, 33(3); E. Kohns, Social Consequences of Boom Growth in Wyoming. Paper presented at the Rocky Mountain American Association of the Advancement of Science Meeting, April 24-30, 1974, Laramie, Wyoming; R. Engler, The Politics of Oil: Private Power and Democratic Directions. Chicago: University of Chicago Press, 1961.

⁹ Kohns, op. cit., p. 3.

The sociocultural impact of rapid economic growth may differ in the north due to such factors as the cultural backgrounds of Eskimo and Indian populations and the extreme small size and isolation of many northern communities. However, this literature taken as a whole can be quite helpful in developing a model of the social effects of rapid economic growth because it suggests the emergence of a similar pattern of problems in quite different communities, time periods, and cultural contexts. This literature also suggests the strategic role of federal, state, and local institutions. In some boomtowns, public agencies implemented policies which took advantage of a temporary boom to make long-term community improvements while, in others, no such policy intervention occurred and the boom led to long-term community problems.

Quality of Life and Northern Lifestyles

MAP sociocultural research is also examining the effects of development on the "quality of life" and lifestyles of different northern population groups. Concern that rapid development would erode or end the lifestyles characteristic of the north has intensified in Alaska, in part as a result of pipeline construction. The image of change held by many northerners prior to the pipeline was "traditional Alaska grown rich."¹⁰ Northern lifestyles were not expected to change; everybody would just be better off. Again, pipeline construction has led to increased population, increased traffic, higher levels of air pollution, and mushrooming trailer parks. The types of satisfactions that brought many migrants to the north -- the absence of crowding, the natural beauty of the wilderness, the personalized social and political relationships, and the opportunity to fulfill significant social

¹⁰ Mike Carey and David Halprin, unpublished interviews conducted in Fairbanks, summer 1974.

roles that is characteristic of a small semi-isolated society -- are, for many, no longer as available. Again, however, rapid economic development may be having important redistributational effects. While pipeline construction may be leading to decreased availability of northern lifestyles for some groups, it has increased this opportunity for others. Indeed, in pipeline construction camps a course on how to build a log cabin shared first rank with a course on how to avoid income taxes.¹¹ Workers see the high-paying pipeline jobs as a way to make enough money to live a northern lifestyle-- building a log cabin and retiring in the bush for a while.

MAP sociocultural studies will explore quality of life issues by extending research defining and measuring quality of life which has been done at the University of Michigan's Institute of Social Research. The survey instruments developed to assess quality of life for nationally representative population groups will be adapted to include the satisfactions characteristic of the north. The relative importance and levels of satisfaction in different life domains, such as natural environment and family life, will be compared for northern and nationally representative samples. Satisfactions will also be compared for northern population groups experiencing different forms and rates of development.

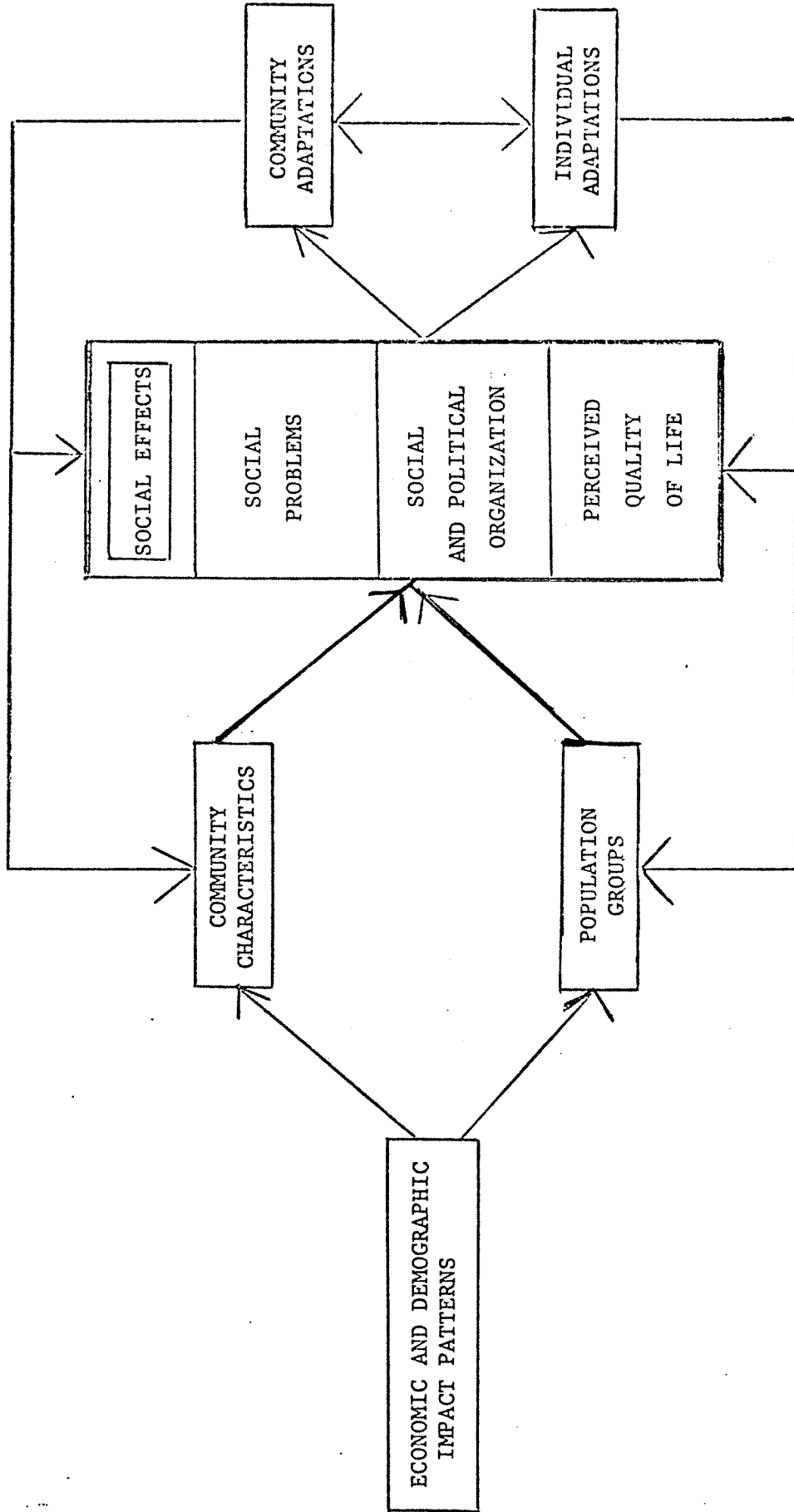
Social and Cultural Systems Model

To explore the social effects of rapid economic development in the north, we have developed the following heuristic model (see Figure 1). Such a model is useful in early research stages because it identifies classes of variables considered important and suggests that certain types of phenomena are related. As MAP sociocultural research proceeds, this initial model should be replaced by one suggesting predictive relationships.

¹¹Alyeska Report, Alyeska Pipeline Service Company 1(1), January, 1975.

FIGURE I

HEURISTIC MODEL: SOCIOCULTURAL EFFECTS OF OIL AND GAS DEVELOPMENT



The heuristic model developed to explore social effects of development in the north identifies five classes of significant variables:

1. Social Problems
2. Social and Political Organization
3. Perceived Quality of Life of Different Population Groups
4. Individual Lifestyle Adaptations
5. Institutional Adaptations.

These types of social effects are examined primarily at the community level. First, individual perceptions of well being are often organized around conditions in the community where one lives. Second, policy actions designed to ameliorate negative effects of development are often directed at communities, for example, impact aid funds. In addition, social statistics tend to be available by communities.

The sociocultural effects occurring in a community affected by rapid development are conceptualized as a joint function of the particular pattern of economic and demographic impact and the community's social, political, and economic structure. The model suggests that different types of communities will adopt different patterns of institutional response to changes occurring through development and that these institutional adaptations will have feedback effects on levels of social problems, community social and political organization, and the quality of life of different population groups. Similarly, the model suggests that different types of individuals will adopt different patterns of individual response to changes occurring through development and that these individual adaptations will have feedback effects on community social problems, social and political organization, and quality of life. These community and individual adaptations, of course, will also be influenced by state, federal, and industrial policy decisions, which structure the options available to the community. The

collective result of this economic and social change over time may be to dramatically alter the economic, political and population group structure of the community. When stabilization occurs, the old society may be replaced by a new society, where quality of life may be based on a very different set of values and where very different types of lifestyles may dominate.

Research resources available under MAP will not, of course, permit the development of predictive theory regarding all the sets of relationships suggested in the heuristic model. The first priority of MAP sociocultural base studies will be to conceptualize and examine linkages between patterns of economic and demographic impact and community types (viewed as causal and intervening variables) and social effects (viewed as dependent variables) in the areas of social problems, quality of life, and individual behavioral adaptations.

1. Patterns of Economic and Demographic Impact:

Research on boomtowns suggests that the economic impact pattern precipitating serious social problems can be conceptualized in terms of such factors as a rapid, multifold increase in employment and population, change in the dominant economic sector, and substantially increased price and wage levels. In Alaska, another community impact pattern prevalent in Native villages, appears to be a sharp decrease in adult population caused by migration to nearby employment opportunities. Community impact patterns will be conceptualized in so far as possible in terms of the economic and demographic data projected by MAP economic and demographic models in order to link projections of social change under different policy sets with projections of economic and demographic change.

2. Community Types:

Different types of communities may respond quite differently to a similar pattern of economic and demographic impact depending on such factors as: 1) degree of isolation, 2) cultural background of population, 3) economic structure, 4) community size, and 5) social and political institutions. For example, in communities where the dominant industry is fishing, large numbers of residents may attempt to maintain this traditional occupation and lifestyle, although it becomes increasingly less viable with oil development.¹² In a community where large numbers are employed in seasonal construction, in contrast, resident labor may shift over fairly easily to new employment opportunities, which will result in fewer social dislocations. A task of MAP sociocultural research will be to develop a typology of Alaska communities based on the key factors leading to differential social responses to economic and demographic impact patterns. Such a typology will be developed through a pattern analysis of community characteristics, following procedures used by Barth (1963) in analyzing the effects of community structure on the types of relationships which develop between air force bases and their host communities.¹³

¹² G. Rogers, Offshore Oil and Gas Developments in Alaska: Impacts and Conflicts, Polar Record, 17(108), 1974, pp. 255-275.

¹³ E. Barth, Air Force Base/Host Community Relations: A Study in Community Typology, Social Forces, 41, 1963, pp. 260-264.

3. Population Groups:

MAP sociocultural research will examine the effects of development on the quality of life of different occupational, age, sex, and cultural groups. In addition, the possibility of defining northern population groups in terms of dominant value orientations and lifestyles will be explored since such orientations may be key mediators in changes in satisfaction levels resulting from development.

4. Social Problems:

The range and level of social problems occurring in different types of communities under different economic and demographic impact patterns will be identified, such as housing shortages, overload on municipal services, family disintegration, child neglect, alcoholism, depression, etc. Research on boomtowns suggests, for example, that communities anticipating a boom almost invariably expect significant increases in crime and devote major attention to building up the police force. Yet, in some situations, crime dramatically increases; in others, crime increases in only a few categories; and, in others, there is an "amazing dearth of crime."¹⁴ A major task of MAP sociocultural research will be to develop testable hypotheses suggesting the specific conditions and processes through which such problems arise.

¹⁴ Carr and Stearner, op. cit.

5. Perceived Quality of Life:

The conceptualization and measurement of perceived quality of life for Native and non-Native population groups will be a major research task. Pilot interviews and analyses of lifestyles of people holding highly divergent orientations toward the satisfactions and dissatisfactions of living in the north will be carried out. On the basis of such pilot work, a northern quality of life survey instrument will be constructed and hypotheses concerning the effects of rapid growth on satisfactions levels and lifestyles will be developed.

6. Individual Lifestyle Adaptations:

A major research task will be to identify the forms of individual adaptation to the economic and social consequences of development and to develop hypotheses suggesting the conditions under which particular adaptive choices occur. The major lifestyle adaptations explored will be:

1. migration decisions -- for example, migrating from the north, migrating to regions of new employment opportunity;
2. employment decisions -- for example, changing occupation, entering the labor market;
3. allocation of income -- for example, the disposition of increased income resulting from high wage levels in impact-related employment, the adjustments in purchasing made to deal with impact-related inflation on a fixed income;

4. pursued activities -- for example, changes in participation in community organizations, changes in the uses of leisure;
5. allocation of time -- for example, changes in time devoted to subsistence versus wage-earning pursuits, changes in seasonality of employment and leisure.

CONCLUSION

Economic development in the north poses complex issues and difficult choices. MAP economic research calls into question the widespread belief that economic growth in and of itself will achieve such social goals as increased income or decreased unemployment. MAP sociocultural research may identify serious social problems resulting from rapid development, at least in the short term. At the same time, the substantial state oil revenues could be used to mitigate these social costs and perhaps to achieve central social goals in such areas as health and education. My own preference, as a northerner who values the satisfactions and lifestyles resulting from low population and natural wilderness, is for a moderate rate of development. But here I am reminded of a point made in the research literature on World War II boomtowns -- that local populations use traditional lifestyles and values as a screen for their real concern, that development will mean the redistribution of economic power and social status to new groups. The Man in the Arctic Program Phase II effort will focus on this issue of distributional effects. Through this type of research, hard policy choices can be informed by the best available understanding of the range of consequences.