

ALASKAN PUBLIC POLICY AND ENVIRONMENTAL RESEARCH:

THE TENUOUS ALLIANCE*

I am one of a very few biologists of the University of Alaska who can view the Tundra Biome program with truly Olympian detachment, and perhaps the only one to achieve that eminence through having one hundred per cent of his grant proposals to Tundra Biome turned down.

My failure to make the grade with Tundra Biome naturally left me despondent about my future as a biologist among biologists. I hit upon the idea that if I could attach myself to social scientists, my weaknesses would be hidden, at least for a while. Luckily, "environment" was the in thing at the time, and I became house environmentalist for the Institute of Social, Economic, and Government Research (which thereafter became known as the Institute of Everything). At ISEGR I have become able to speak of institutional arrangements, infrastructure, support sectors, and opportunity costs--whatever they are. I have also learned that economists and political scientists always must be policy-oriented, just as sunflowers must turn toward Old Sol and sitting seagulls must face the wind.

All of this gives me the opportunity to see things from an unusual perspective, much like the drunk who sat down squarely between two stools at the bar. I will exercise that perspective tonight to describe some of the changes taking place in Alaska, to point out some of the implications and challenges those changes have for scientists, and to raise some questions about the relationships between scientists and policymakers.

*Presented at the Tundra Biome Seminar, Anchorage, Alaska, November 19, 1974, by Robert B. Weeden, University of Alaska

New Forces and Changing Patterns

One of the really awesome events of the past year or two is the extent to which Alaska has been drawn into the mainstream of world affairs. Not long ago we were a quiet backwater, sluggishly responding to changing moods and forces in the rest of the nation, scarcely cognizant of events in the larger world. We got television programs two weeks late, as though we just happened to be on someone's mailing list. When skirts Outside were going down, ours were going up. In all of the hectic days of riots and campus unrest we had nary a demonstration, even at the University of Alaska, our local hotbed of radicalism.

Now, when Japan prospers, the centuries-old trees of southeast Alaska fall by the thousands. When inflation hits Japan's housing industry, Alaskan lumber piles up on the docks, and the Panhandle's businesses slump.

When Canada and Qatar double the price of gas and oil to U.S. buyers, oil and gas exploration in Alaska becomes feverish. When rumors of a 20 billion barrel oil strike in Mexico hit the new headlines, minor speculators on fringe North Slope acreage do an uneasy shuffle.

As one of many ramifications of Administrative panic in Washington over the oil situation, Pet 4 is becoming a scene of bureaucratic territorial display and BLM is dropping a network of transportation corridor easements over Native land conveyances. (That's called Indian giving.)

There is ample reason to expect Alaska to become the first state to establish an Office of National and World Affairs to provide a continuing assessment of events affecting our economy, land use, and life styles.

Forces of a more regional character, meanwhile, are reshaping Alaska internally.

We are getting our first taste of oil and gas pipeline construction booms. Those of you who drove in downtown Fairbanks this summer and fall saw one sign of the times: the Yellow Peril, several hundred new pickups with the Letter B (for Bechtel) stencilled on the door panels. Fairbanks and Anchorage are feeling the effects of growth rates among the fastest in the nation. Within the next fifteen years Alaska will have more than doubled its population. Can you imagine what Fairbanks' air will be like then?

Alaska's traditionally high population turnover is accelerating as boomers flock northward. Will we become a sprawling work camp of transients whose hearts and bank accounts are still Outside? Will the urbane immigrants ameliorate the misplaced frontierism of our sourdoughs which has come so close to clobbering our environment? Should we pay the Mafia half a billion dollars a year to stay away, preventing the sordid scene if they have to come and get it?

There has been a near-revolution, too, in the relative strengths of state and federal government in Alaska. Washington once was Alaska's father figure, preoccupied, absentminded, and prone to rare fits of misplaced affection, but nevertheless the source of sustenance and hence the seat of power. The state government was given daily chores and a modest allowance and told to keep out of the real action. But a strong shift in the center of gravity has been taking place in the last few years. The State's

economy is in far better shape than the Nation's as a whole; the outlook for the U.S. Treasury is grim but Alaska is poised on the brink of an embarrassment of riches.

A similar shift is occurring in land and resource control. Until 1959 the federal government had unencumbered control of 99 per cent of Alaska. Statehood put a lien on 28 per cent of that land, but state selections were so slow that the federal government in 1971 still controlled nearly 95 per cent of the land in Alaska. By the end of this decade the State and Native corporations will control 40 per cent of the acreage and most of the strategic, revenue-yielding lands. The federal acreage will be beautiful and of inestimable esthetic value, but (with exceptions such as Pet 4 and Tongass National Forest) with distinctly second-best commodity resource potential.

One of the subtlest but most potent effects of the discovery of North Slope petroleum reserves and the settlement of Native land claims is that Alaskans no longer have the freedom to avoid hard choices. No matter who you are: a down-river villager, a Prince William Sound seiner, a white collar commuter, or a would-be homesteader--you are confronted with a rapidly-gelling social, economic, and institutional environment that forces choice. Our life style had its disadvantages but it was as close to the Nirvana of personal freedom allowed to industrialized man. Today our personal space is being assaulted and eroded. In the phrasing of the political scientist, our options are being foreclosed.

Development Goals and Research Needs

No one feels the weight and thorniness of choice more than the serious politician. He has accepted the task of understanding and implementing the public interest; he hasn't got the luxury of seeking his own personal optimum. His experience has taught him--perhaps better than the journal articles of ecologists have taught biological scientists--that everything is linked with everything else. Operating in the fierce complexities of human affairs, he knows that failure to understand the consequences of an act can lead to social disarray and, quite possibly, the loss of his job.

The natural scientists among you are familiar with petroleum development as a factor in land use and ecologic systems. You think in terms of biodegradation rates of spilled oil, SO₂ accumulation in lichens, caribou responses to pipelines, healing rates of disturbed vegetation, effects of gravel extraction on stream silt loads, and so on. It is humbling, I think, for us to think of the questions oil and gas development pose to the Alaskan policymaker:

Should Alaska throw its exhaustible resources into the breach to alleviate national energy shortages?

Is it right to rape Alaska to let other Americans to continue living in profligate style a few years more.

If Alaska holds its resources back even a little, will even greater social and environmental disruption befall the oil shale and strippable coal states?

Should Alaska try to delay OCS leasing until we comprehend the risks more fully? Or is offshore oil production, even in the wild seas of the Gulf of Alaska, less risky than development off the populous Atlantic seaboard?

How can exportable energy sources be rated in terms of the energy costs and environmental risks attending their production, the extent of conflicts with other resources, their community impacts, their yield of revenues, their pollution yield when consumed, etc?

How can alternate routes for exporting petroleum be compared so as to illuminate optimal choices for different regions of the State, Alaska as a whole, Canada, U.S. consumers, and the U.S. treasury?

Should Alaska build hydroelectric dams to free petroleum for export?

Is it wiser to take royalty oil and gas in kind than to sell it Outside, making it available for local primary processing plants?

The State faces a tight budget for several more years. Should we sell \$300 million worth of petroleum leases in new areas such as offshore Prudhoe Bay and lower Cook Inlet, or are there other ways to solve the problem?

The list could go on and on. Other lists could be made up for forest resources, wilderness values, minerals, transportation problems, community

expansion, commercial fisheries, and many other issue swarms.

What these questions show, I think, is that most of us don't know where we are going. If we had a better developed sense of social direction, the issues of resource development would be largely technical in nature. We would see that the commonly defined problems of Alaska deal with means, not ends.

Imbedded in every question is a central issue we hardly dare to expose to public view, and that is what kinds of life styles do we want, and what kinds are possible, in Alaska in the next few generations? Today we are examining this issue from the standpoint of growth; I suspect that we will reformulate the question in time to one that emphasizes human change since changes, not size increments, are the heartwood.

Thinking back to all the comments I've heard and feelings I have sensed from Alaskans about their life styles, I can pick out two natural groupings. One constellation illuminates human scale as a prime factor. Alaskans revel in the freedoms that come from uncrowded societies, in being able to comprehend all of Alaskan society, in knowing the state's leaders personally, in belonging to neighborhoods instead of teeming agglomerations. (I am intrigued with a relatively new theory in social psychology that Dr. Kleinfeld of ISEGR introduced me to not long ago, the theory of undermanned societies, which may be extraordinarily relevant for us. The theory, in a nutshell, is that when societies are small each individual expands to meet a wider variety of challenges, accepts greater responsibilities, plays more roles, and evaluates other people more in terms of their action performance than in terms of conformity to norms and niceties.)

The other group of life style factors refers to the relationships of people to the natural environment, and the opportunity to establish and evolve those relationships. These include the combined earth mystique and pragmatism frequently encountered in the life styles of commercial fishermen, miners, and loggers; the deeper traditions of subsistence living; and the ethical-aesthetic relationships of anglers, sporthunters, wilderness enthusiasts, and artists. A very special awareness of the power and the beauty and the ultimate reality of nature is part of Alaska living, and for many it is the main part.

It seems to me that the policymaker and scientist-in-search-of relevance both attend too much to the familiar technical problems like fiscal policy and pipeline routing, oil-spill prevention and logging practice. Neither cares to stride towards the common meeting ground of human welfare and the quality of life. Yet, a moment's thought reveals so much that could be done by both.

For example, we hear a good deal about subsistence these days, and the need to manage land to produce subsistence resources. I often detect a grudging note in the land manager's admission of this need: he seems to be thinking with longing about all the opportunities being sacrificed to put subsistence lands to some "higher" use. If we recognized how little the money means in a state as affluent as Alaska, and how much the subsistence style of living means, we could rejuvenate subsistence policies, regulations, and wildlife research. A fuller sense of excitement and commitment would flow through studies of caribou responses to industrialization processes, research on fire ecology, experiments in heightened waterfowl

production, and predictions of ecosystem changes following streamflow regulation, to name just a few.

One of the new research fields, now opening up in response to dawning sensitivity to the human side of resource use, deals with recreation as experience, not as activity. We know that northern environments are highly vulnerable to overuse even at recreation densities quite tolerable in temperate areas, mainly because of low biotic productivity and slow vegetation recovery rates. Management for quantity clearly would be disastrous--but how little we know today about management for quality! There is an urgent need for a dual approach to the problem, one which grapples with the biological and psychological aspects of recreation carrying capacity, the other defining characteristics of the will-o-the-wisp known as quality of experience. Again, this sort of research really only makes sense if programs, regulations, and policies of land managers also reflect the shift from quantity to quality.

Another critical problem that links policymakers with researchers is the thorough revamping of the hoary old crutch of geographic engineers, the cost-benefit ratio. What we need, of course, is much more than a modernizing of the ratio to conform with newly-widened economic horizons. Internalizing the externalities is necessary but not sufficient. We also need to learn how to measure the unmeasurable: to make statements about the myriad values of landscape and its components, and of human history and the genius of the place, that allow these intangible assets to be evaluated, compared, and weighed on the scales with economic and other quantifiable values.

As a final item in this brief survey of research opportunities tied to social needs, I will mention the urgency for social and natural scientists alike to get serious about the measurement of human and environmental well-being. We need to discover what to measure--ephemerid larvae in streams, percentage of introduced plants in vegetative cover, hydrocarbon buildup in Mytilus; share of public expenditures for social security in GNP, infant mortality, number of physicians per capita, average distance from urban home to recreation area. We need to systematize these measurements so that we can detect change. We need to interpret the measurements and changes in terms that mean something to public leaders.

Scientist and Policymaker

Is it really possible for scientists to be of significant help to policymakers? I think so, but as many of you know, I'm an incurable optimist.

There are certainly many barriers to real togetherness of science and policy, and many dangers if togetherness is achieved.

What are some of the barriers?

First, of course, is the mutual distrust that nearly always accompanies mutual ignorance. The scientist does not understand the "muddy normative problems of policy" any more than the policymaker understands the mechanistic world of black boxes he believes scientists live in. Accustomed to searching for answers that will fit the framework of a very few alternative theories, the scientist scarcely comprehends the political world where every answer is correct, but for different people.

Another barrier is the tendency for the scientist to assume that all he needs to do is fill some voids in knowledge and a problem will be solved. Bustling up to the policymaker with pocket calculator in hand, he asks "What's the problem?", only to discover that the problem is that nobody really can specify what the problem is. The usual response of science, I might add, is to run out and find so many answers that, inevitably, they have to fit some problem. (Some interesting psychologic experiments were done recently which suggest that a person's capacity for sound judgment is seriously impaired when he is given a lot of information he believes should be relevant, but whose influence on the problem at hand is unclear to him.*) Still another common response is for scientists to pare down the problem to a small, selected fragment that is interesting and "researchable," but which may or may not enlighten the policymaker.

What about the dangers of togetherness?

One of the most salient is that if policymaker and scientist were to open clear channels of communication, the policymaker might be shocked, and the scientist embarrassed, at the pitiful dribble that comes out. Society in general, and some politicians, have a touching faith in the omniscience of the scientist. In reality we know how weak our predictive power is (examine an environmental impact statement some time and see how well it serves as a yardstick of our ignorance) and how narrow are the truths we can present.

*From Max Millikan's "Inquiry and Policy: the Relation of Knowledge to Action."

Periodically scientists who are truly concerned about the social application of knowledge propose a formal institution for providing top-level advice to government. The problem with science advisory groups or academics of science is that two of the possible outcomes are not very pleasant. The most benign is that they and their advice will still be ignored, simply because getting a seat closer to the head table does nothing to assure useful communication. The other is the very real danger that the prestigious scientists will be captured by the policymakers and slowly turned into technicians who spend their time bailing politicians out of trouble. There is even the risk that only one body of science will be fashionable or even acceptable, the brand emanating from the head table itself. As Dr. Hugh Folk pointed out at AAAS meetings in 1969,* the most critical need is to evolve a system of science/policy interaction that encourages responsible and capable opposition.

Despite these and other problems inherent in the participation of the scientist in policymaking, I am convinced that we can move steadily towards a positive and evolving relationship. If it can happen anywhere, it can happen in Alaska.

It is up to the scientist to take the first steps, I think. Fundamental to any real progress is for scientists to begin to exercise their basic responsibilities as citizens. By opening our eyes to the full spectrum of human events and processes that comprise Alaska today, making our own judgements of need and formulations of problems, and then reflecting those

*Hugh Folk, 1969. The Role of Technology Assessment in Public Policy. AAAS Panel on Technology Assessment, Boston.

assessments in our research and actions as citizens, we can build up a notable measure of credibility to policy leaders.

We also must begin trying to define whole problems instead of fragments. During the recent and rather faddish interest in multidisciplinary research, we made a try, but it hasn't been sufficient. Too often the only factor holding the research pieces together was the staple on the grant proposal or final report.

You have all chuckled, I'm sure, over the scene brought to mind in the joke about the politician who uses knowledge like a drunk uses a lamppost: for support, not illumination. There is an element of realistic description in that joke, but let's be fair--there are other scenarios. One is that the politician is lost and can't find any lights at all. Another is that he discovers that the lights are on the wrong street: he can't get there from here. Still another pictures the scientist using public policy issues like a dog uses a signpost--certainly not as a guide to research direction.

As I indicated a minute ago, if the tenuous alliance between science and public policy can be strengthened anywhere, it can be made to happen here. Our society has a manageable scale; we can comprehend its elements and appreciate its processes. Neither our land nor our communities are so irretrievably committed as is so often true in older societies--though the pudding mix is setting fast. Our society includes an extraordinarily big proportion of scientists and science-oriented professional people. We cannot experiment with society here anymore than elsewhere, but the linkages in northern social systems, like those in our ecosystems, are few enough so that we can trace the effects of rather small changes in policy and, if necessary,

change directions before mistakes are irretrievable.

I said earlier that I am an optimist. I leave it to you to decide whether I am a foolish one. I recall for you a favorite aphorism of mine: Progress is made by those who don't yet realize how futile life is.