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retention without undue loss of insulating ability? What improvements can be made in building standards and construction codes? The performance of various kinds of building materials and equipment need coordinated study as efforts are made to solve these problems. Dependable answers can improve future homes, schools, office buildings, and other structures.

THE BRIGHTER SIDE

Major attention in this chapter has been given to the need to rectify faults and improve matters, but, in conclusion, it should be noted that not all of the attention should be given to the negative aspects of current conditions. There is also a challenging opportunity to study the positive side of the picture. What are the environmental and social factors, the health aspects, and the desirable conditions that lead to the kind of life that many Alaskans want for themselves and their children? How can the quality of life be improved? This is a primary objective of the whole effort to secure information that will improve Alaska's future.

CHAPTER 5
KNOWLEDGE AND UNDERSTANDING

Most of the research recommended in the three preceding chapters is practical, research dealing with recognized problems of resource development, environmental protection, or health and well-being. The motivation of such research is to solve a recognized problem, or to produce a new or improved product or process.

There is, however, another kind of motivation for research—the desire to know more about the fundamental processes that operate throughout nature. Usually called basic or fundamental research, this is the type of study that is most often conducted in a university, but some basic research is carried out by the military services, engineering organizations, medical centers, and other scientific and technical organizations. There are two reasons for conducting basic research. One is to satisfy human curiosity, to gain a better understanding of how stars and planets are formed, of the dynamics of the world's oceans and continents, of the prehistoric development of human life and culture, or of some other naturally occurring physical, biological, or social system. The other reason is because the information gained through basic research usually turns out to be necessary and useful. No one can predict with confidence just what the uses of a particular basic research study will be, yet time and time again the results have later turned out to be valuable in quite practical ways that the researchers did not foresee. A still rapidly expanding example is the ever-widening use of microchips that developed out of basic research on solid state physics.

In Alaska, there is another reason for conducting basic research in several scientific areas. It is because Alaska is one of the best places in the world to conduct such research. The American Association for the Advancement of Science (Hickok, Weller, Davis, Alexander, and Elsner, 1981) and Weller (1984a) have provided lists of research topics on which Alaska has a natural advantage over other parts of the world:

* The Arctic is a natural laboratory for studying the effects of charged particles from the sun as they enter the earth's magnetosphere and ionosphere, producing the aurora, magnetic storms and substorms; interfering with electronic communications; and perhaps influencing global weather.

* In the low pressure area of the Arctic and sub-Arctic much of the weather of North America is generated.

* Nowhere else in the U.S. are snow, ice, and permafrost so abundant and so easily studied.

* Alaska is one of the most tectonically active regions of the world, with many volcanoes, frequent earthquakes, the active subduction of the Pacific Plate, and a complex geologic history of parts assembled from widely separated earlier locations.

* Alaska has a rich and widely varied fauna and flora. It is the breeding ground of many migratory birds, home of one of the world's largest fisheries, and home to plants and animals with highly successful and varied adaptations to cold and to great seasonal changes in light and temperature.

* The earliest inhabitants of Alaska, who came from Siberia thousands of years ago, have developed some of the most successful accommodations to a harsh environment to be found anywhere on earth.

In studying these and other matters, **scientists and engineers in Alaska utilize and build upon the research findings of other investigators throughout the nation and the world. As good citizens of their professional communities, they should and do contribute to the world's knowledge as they study problems of particular importance to Alaska or problems in which Alaska is one of the world's natural laboratories because of its high geographic and geomagnetic latitude.**

Thus, there is sound reason why research in Alaska should go beyond attempts to solve the immediate problems of resource development, protection of the environment, or improvement of health in order to increase the basic knowledge and understanding of the physical, biological, and social systems that can most appropriately be studied in Alaska. Accordingly, this chapter describes several areas of research that can contribute importantly to fundamental knowledge and understanding of how the world operates, as well as providing new knowledge that is useful in practical applications.

The Upper Atmosphere

Solar-terrestrial physics is the branch of space physics that studies the components of the energy emitted by the sun, especially the corpuscular fluxes in the solar wind and the particles ejected in solar flares; their propagation through space; and their effects upon the earth's environment. In addition to providing a better understanding of the dynamics of sun/earth relationships and of physical processes in near space, research in solar-terrestrial physics may lead to better methods of designing and protecting earth-based communication equipment and the satellites on which we increasingly depend for communications; for current information about weather, crops, and land use; and for military surveillance.

The Earth's ow to Outer Space

Corpuscular emiss from the sun enter the earth's magnetosphere primarily at two points, called cusps; one in the Arctic, and the other in the Antarctic region. For that reason, the upper atmosphere at high latitudes has been called the "earth's window into space." Alaska sits right under the northern window, and is therefore the best place in the U.S. to study many geophysical effects that are the direct consequences of phenomena occurring in deep space, and to study the effects of those phenomena on the earth.

The most obvious effect of the solar particle flux is the aurora, but in addition to producing those spectacular night displays, the variable emissions from the sun also interfere with radio transmissions, with signals from orbiting satellites, and with defense surveillance devices. The solar flux can trigger chemical changes that destroy some of the earth's protective ozone and change the gas composition and temperature of the very high altitude winds that blow equatorward from the polar latitudes. Under some circumstances those emissions can also cause power surges in long conductors, such as power lines and pipelines. And, perhaps, although this is still very much a matter of continued research, the solar particle flux influences the weather and climate. Large amounts of energy are involved in magnetospheric storms, but how, or if, that energy release is coupled to the lower levels of the atmosphere is not clear. Alaska is a crucial place to look for answers to those questions.

This field of research is expensive, partly because of the location of the ground-based observations and partly because of the necessity of sending probes into space. It is of such importance, however, that since 1978 the Polar Research Board has issued six reports that include discussions of needed research on the upper atmosphere of the polar regions and near-earth space. Those reports make quite specific recommendations on research priorities (Polar Research Board, 1982b).

Weather and Climate

Weather and climate patterns of the whole earth are connected through the earth's atmosphere and oceans. Events starting in one region may have repercussions far away; for example, the warming of Alaskan waters in 1982-83 resulted from "the most prolonged and catastrophic El Nino visitation of recent times" (Rasmusson, 1985, 175), an event that spread its effects far beyond its origin in the Pacific Ocean west of Peru. The oceans and atmosphere are global in their exchanges of energy, but some regions of the earth are more important than others in generating weather and climate patterns. Alaska, and particularly the low pressure area of the Gulf of Alaska, is one such region; events there cause disturbances as far away as Europe and regularly forecast events over much of North America.

For this reason and also because weather in Alaska is important to Alaskans, there are two sets of weather and climate issues to study: the local weather and the Alaskan influence on weather patterns through North America and even beyond.

Alaska Weather

Alaska has three major climatic zones: the Arctic Zone climate north of the Brooks Range; the Interior Zone climate of the area between the Brooks and Alaska ranges; and the Coastal Zone climate of the area south of the Alaska Range. Study of these three climatic zones will lead to better understanding of a variety of issues, for the nature of the region's climate has such widely varying influences as determining the extent and characteristics of permafrost, the length of the growing season, the distribution of pollution, the risks of superstructure icing on ships, and river flow and glacier balance and their implications for prospective hydroelectric power generation in different parts of the state (Weller, 1984b).

As one basis for such studies, weather records have been collected under the auspices of the federal government and through manned weather recording stations in Alaskan villages. However, the federal government is currently trying to diminish its involvement in weather records and measurements, and the local record keeping has not been sufficient. More systematic recordingand reporting of weather variables are needed, and there is an especially severe lack of observations at higher altitudes. One immediate objective of research would be to develop reliable, automatic observing and reporting equipment that could be stationed at strategic locations, including higher altitude locations, throughout the state.

Effects on Weather Elsewhere

The low pressure area off the coast of Alaska initiates major changes that influence the weather of

much of North America and the Northern Hemisphere. Changes in the temperature of the sea surface, unusual ice conditions in the Bering Sea, or a change in the jet stream pattern can generate perturbations that extend widely beyond Alaska. The causes, effects, and interrelationships among such changes are far from being fully understood. Research that led to a better understanding of these phenomena could improve longer-range weather forecasting, both for Alaska itself and for the rest of North America.

External Influences

Just as Alaska exports weather to the rest of North America, so Alaskan weather is influenced by events elsewhere. Arctic haze comes primarily from coal-fired smelters and other industrial activities of Eurasia. The potential global warming due to an increase in carbon dioxide and other "greenhouse" gases in the atmosphere results primarily from the burning of fossil fuels and other activities over the earth. All of these external influences affect the weather of Alaska. They also affect the processes there that influence the weather and climate of the rest of the Northern Hemisphere. Their continued study is necessary, therefore, both to have a better understanding of Alaskan weather and a better understanding of weather and climate changes of the rest of the Northern Hemisphere.

Geology

Many of Alaska's present resources are products of its geological past, and that past has been complex, varied, and surprising. Alaska is not a single part of a continental block, as is most of Canada or the contiguous states of the U.S. Instead, it is a mosaic of separate pieces called terranes—physically separate and geologically different blocks of continental types of rock—that originated elsewhere, mostly much farther south, and that, over the ages, have been rafted into their present locations on top of oceanic plates. Indeed one terrane, the Yakutat Block, is still in the process of arriving and colliding with adjoining terranes (Stone, 1984).

Evidence for this mosaic nature of Alaska—and for a similar history of the western continental margin of much of North America—has come from a variety of sources. Key parts of the evidence came from work at the University of Alaska on paleomagnetism. Many rocks record the direction of the earth's magnetic field at the time the rocks were formed. Studies of these paleomagnetic records from different parts of Alaska demonstrated that they could not possibly have been formed in their present locations, but must have come from elsewhere, usually much farther south. This evidence, plus detailed geological examinations of the rock strata of different terranes, together with information about plate tectonics and the movement of land masses over the earth's surface have fitted together to provide the current view of the nature of Alaska's geological history.

This whole concept of the history of Alaska is important to the state because the area where terranes collide or slide past each other are likely to be seismically active and are the areas that have the greatest potential for mineral deposits, and often for oil deposits. In fact, the terrane concept is now the dominant framework on which industry's exploration strategies are based.

Because this whole concept is still young, there is much detail still to be learned. Detailed geological mapping across terrane boundaries, mapping of the individual terranes to learn more about their history, additional paleomagnetic work to determine ages more accurately--studies of this kind are needed to understand the state's geological history more fully, to aid in searching for more of its potential resources of oil, gas, and minerals, and to be better able to identify hazardous areas.

Studies of earthquakes and identified faults, and studies of the processes of accretion being exhibited by the Yakutat Block and its relations with its neighboring terranes are also needed to understand better what must have happened in the past as the many parts of Alaska were coming together.

Recent Geological History

More recently, geologically speaking, glaciers of past ice ages have shaped and reshaped the surface of much of Alaska. Glacial deposits cover about half of the state, and glacier fluctuations controlled the deposition of sediments, the location of lake beds, and the deposition of loess through much of the rest of the state. The deposits range from stable gravels to ice-rich silts and unstable clays. The deposits also include records of other events, ash falls from volcanic eruptions, earthquakes, fault movements, sea-level changes, erosion, and other aspects of geological history. Moreover, the patterns and changes of glacier coverage over past time provide a record of past changes of temperature and snowfall and thus give evidence about past changes in climate. Ice cores from current glaciers provide information about snowfall, climatic change, ash fall from volcanoes, and atmospheric composition over recent geologic time. For all these reasons, surficial geological mapping of more of the state and in finer detail than is now generally available would be desirable. In addition to providing information about recent geological history and paleomagnetic changes, such maps would identify areas of major instability on mountain and hill slopes and thus show likely landslide, earthflow, and avalanche areas. That information could aid engineers and planners in locating transportation routes, pipelines, hydroelectric dams, and other structures, and in avoiding areas of special hazard (Hamilton, 1985).

Natural Hazards

A few old timers still remember the Novaruptа-Katmai eruption of 1912 and the resulting Valley of 10,000 Smokes. More remember the Good Friday earthquake of 1964 and the destruction at Kodiak, Valdez, and Anchorage. Future eruptions and earthquakes of comparable size are likely, for Alaska contains 90 percent of the explosive volcanoes in the U.S. and is one of its most seismically active states. But when?

Likely locations are known, for both volcanic and seismic zones are generally recognized, but the timing is quite uncertain. Recent studies at the University of Alaska and elsewhere indicate that about every thousand years—on the average—there has been a volcanic eruption large enough to deposit 10 centimeters or more of ash over a large area. Lesser eruptions and major earthquakes have been much more frequent; the arc of southern Alaska has experienced a large earthquake about each decade for the past two centuries.

All of this makes Alaska an obviously good place to study volcanic eruptions and earthquakes, and the hazards that are sometimes associated with them: tsunamis, the wreckage of buildings and other structures, and sometimes the triggering of avalanches or rock or mud slides. These have all been topics of interest to agencies of the federal government; for example, the U.S. Geological Survey. But, for understandable reasons nearly all of their studies have been of more heavily populated areas, such as California (Davies, 1983).

Hazard Mitigation

Some of the risks can be reduced by proper construction. For centuries Chinese architects have supported upper stories and roofs with intricate corbel bracketing to absorb and dissipate the forces of earthquake shaking. Building codes in some earthquake zones—as along California's San Andreas fault—specify construction methods that will withstand expected amounts of shaking. In Alaska, design criteria for the two dams of the proposed Susitna hydroelectric project call for ability to withstand an 8.5 earthquake.

Yet some of the dangers are quickly forgotten. People continue to build on flood plains, in slide areas, or over known fault lines. We do not use all the knowledge we have. Although there have been precautions and earth stabilizing changes in Anchorage, one recent review summarized "It is the opinion of many scientists and planners that if a major earthquake were to occur today in Alaska, the state and its major communities would be at a level of readiness no better than that of March 27, 1964" (Fitzgerald, 1984, 17).

Research and the Avoidance of Damage

Basic to substantially improved ability to forecast time and location of these natural hazards, and to reduce their damage, is a fuller understanding of the underlying geology, for the first step toward better prediction and damage limitation is better knowledge of the physical processes involved (Alaska Council of Science and Technology, 1980a). A first recommendation for research is, therefore, to move ahead on the kind of studies recommended in the section on geology.

In addition, there are opportunities for studies aimed more directly at some of the hazards themselves. We do not live in a hazard-free world. Risks must be taken, but it would be helpful to know more about the odds for particular hazards in particular places. For example, when a hydroelectric project is being contemplated, what is the region's seismic history? Are there fault lines nearby? What will be the effect of the loading of a full reservoir on the underlying geological structures? Is there a history of volcanic eruptions that might produce rock or mud flows or large ash deposits in the reservoir/generator/outflow area?

Two Alaskan studies have already provided relevant sets of recommendations concerning hazards. In 1979 and 1980 the Alaska Council on Science and Technology held 11 workshops to outline research priorities and recommendations in a number of fields. The first to be published dealt with needed research on seismicity. The workshop's first recommendation was that the state establish a comprehensive state policy concerning seismic activity—a policy that would establish codes and standards for building construction, especially for dams, hospitals, and schools; make plans for land-use controls, preparedness, and post-disaster recovery; and plan research on seismic activity.

Three years later the Alaska Division of Geological and Geophysical Surveys convened another workshop of seismologists from federal and state agencies, universities, and industry to plan methods of improving the availability of critical seismological information. The workshop recommended that the State Geologist establish a continuing working group that would study Alaskan earthquakes, volcanoes, and tsunamis and annually would "assess the future needs of seismic research, hazards mitigation, and hazards education in Alaska and...be available to evaluate earthquake and eruption predictions" (Davies, 1983, 1).

Research Recommendations

The first research recommendation of the Alaska Council of Science and Technology workshop was for the establishment of an "integrated statewide system to collect, process, and archive seismic data." At the time of the workshop, 10 different federal agencies, universities, and private organizations were collecting seismic data from some 200 stations, but, except briefly (Davis, 1978), there was no systematic collation and organization of the data from these several sources. Some of the networks were temporary; they were put in place for different reasons; and although there was cooperation among some of the groups, there was no systematic and continuing arrangement for coordina-

tion of the networks or the collection and archiving of the data.

The workshop of the Alaska Division of Geological and Geophysical Surveys also called for establishment of a permanent, coordinated, statewide program to collect, organize, and disseminate seismic data (Davies, 1983). The U.S. Geological Survey and the National Oceanic and Atmospheric Administration, as well as the state's Division of Geological and Geophysical Surveys, the University of Alaska's Geophysical Institute, and industry all have permanent interests in such a network, for continuous monitoring over time is essential to improvement in the evaluation of risks. High priority should go to establishment of the proposed statewide system.

Although the network should be statewide, the Alaska Council on Science and Technology workshop recommended that special attention initially be devoted to three tectonic corridors of highest priority: "the Fairweather corridor in the eastern Gulf of Alaska ... the Kodiak corridor in the Western Gulf of Alaska ... the Shumagin corridor in the eastern Aleutian arc" (Alaska Council on Science and Technology, 1980a, 29).

Snow, Ice, and Permafrost

Alaska and its surrounding oceans provide an ideal laboratory for the study of snow, ice, and permafrost. Nearly all of the state is covered by snow for six to nine months of the year. Permafrost is distributed over 80 percent of the land area and is found under some of the surrounding seas. Alaska has almost a total monopoly on American glaciers; they cover nearly 30,000 square miles, whereas the next most glaciated state, Washington, has only about one-half of one percent as much. Alaska's glaciers range from small to huge; some are fairly stable and some show periodic surges. The mountains bordering the North Pacific Ocean, including those in Yukon Territory and British Columbia, as well as those in Alaska, constitute the fourth largest ice mass in the world. With all of the snow, ice, and permafrost in the state, frozen water in one form or another strongly influences the weather, the growth and life cycles of plants and animals, the development of natural resources, and most of the other human activities within the state.

In all, there are four topics to consider: permafrost; the local ice that forms on lakes and rivers, on any outflow or overflow of water, and on various above-ground structures; glaciers; and—the most areally extensive of all—snow and sea ice. Although much has been learned about these matters as a result of studies made in the past few decades, there are still major gaps that need filling.

Permafrost

"Permafrost is defined as ground that remains continuously at a temperature below 0 °C for a period of two years or more" (Polar Research Board, 1983b, 1). At its maximum thickness, the frozen layer may be as much as 700 meters deep. The permafrost contains various amounts of frozen water and there are sometimes substantial ice wedges or ice masses within the frozen ground. During summer months, there is likely to be a shallow layer of thawed, wet, and marshy ground above the frozen layer.

The importance of research on permafrost is indicated by the fact that since 1974 the Polar Research Board of the National Academy of Sciences has published four reports and sets of research recommendations on the topic (Polar Research Board, 1983b). Close collaboration between scientists and engineers will be needed in planning and conducting future research on permafrost, for two kinds of information are needed. One is to gain a better understanding of some of the basic physical properties involved, such as the transport of heat and water within the permafrost and between permafrost and the adjacent unfrozen earth. Better understanding of these properties and processes can lead to greater ability to predict the response of permafrost to changes of climate and to natural or human disturbances of the permafrost or the surrounding soil.

At the same time, there is a large engineering interest in the characteristics and location of permafrost, for permafrost creates numerous problems for all forms of transportation—highways, pipelines, railroads, and air strips. It also creates problems for any structures that require foundations in or on the soil—buildings, towers, water and sewage systems, etc.

Current research opportunities given high priority by the Polar Research Board include improvements in "methods of detecting ground ice," the development of better methods of "predicting heat and mass transport within permafrost and across its boundaries from adjacent media," and the monitoring of prototype or existing facilities constructed in permafrost regions "in order to advance engineering technology." In these and other studies, the Polar Research Board recommended "that maximum advantage be taken of opportunities for international cooperation" and that arrangements be made for the active and positive transfer of permafrost-related information and technology to those who can use that information.

Local Icing

In addition to the extensive glaciers and sea ice, ice also forms in smaller amounts in particular local areas, sometimes with serious problems and damage. The icing of rivers and lakes can form jams both at the time of freeze-up and at the time of breakup, with resulting local flooding and damage. Melting of ice or snow near a highway and refreezing of the melt water can produce sudden and unexpected ice patches on an otherwise dry highway. Ice forming on drilling platforms or on fishing boats operating during winter months can lead to instability, breakage, and, in the worst cases, to

capsizing and loss of boats and crew members. All of these forms of ice present scientific problems of understanding better the mechanisms involved and the properties of the resulting ice, and practical engineering or design problems to avoid or overcome the dangers involved. Thus, studies of the freeze-up of ice, including the several methods of ice formation, frazil-, anchor-, and aufeis-formation are called for, as are studies of the breakup processes, the formation of ice jams, and the ice loading of structures projecting above the earth or sea.

Glaciers

The sheer mass of ice locked up in glaciers affects North American weather. The location, size, and heat balance of glaciers are important for the planning of hydroelectric projects because the growth and melting of glaciers is a major factor in determining seasonal and year-to-year variability in the amount of water available to flow through the turbines. Outbursts from glacier-dammed lakes and glacier surging may lead to flooding and damage to anything downstream.

In 1970 the Committee on Polar Research (now the Polar Research Board) ranked studies of the surging and sliding of glaciers among the highest priority research needs in the whole field of snow and ice studies. Although the detailed study of the 1982-83 surge of Variegated Glacier and its presurge behavior (Kamb, Raymond, and Harrison, 1985) has done much to answer questions about glacier surging, studies of the basic glacial processes in a representative sample of Alaska's glaciers remains as one of the priority recommendations of the Polar Research Board (1983a).

Tidewater glaciers produce icebergs, and icebergs may be hazards to shipping and sometimes to shore structures. Studies are needed to be able better to predict the calving of icebergs, their movement through or near shipping lanes, and the ablation and other processes that change their shape, size, and distribution of mass.

There are also rock glaciers, "glacierlike tongues of angular rock waste usually heading in cirques or other steep walled amphitheaters" with ice as a core or ice cementing the rock together (Washburn, 1973, 195). Moving slowly, but inexorably—commonly less than a meter per year—rock glaciers could influence the location of a highway, a reservoir, or some other construction intended to last for a long time. Yet so far there is no inventory of the number, location, or extent of rock glaciers that could be used as warning information when new constructions are being considered.

Snow and Sea Ice

Alaska includes three quite different snow zones. Along the southeast portion of the state, the thick and often wet snow piles up to many feet in depth each winter. In the interior, the "taiga snow" is dry, of low density, and often recrystallized. North of the Brooks Range, the sparse annual precipitation leaves dry, hard, shallow, wind-packed "tundra snow." Within each type there are complex processes of heat transfer between snow and ground and snow and atmosphere. Both animal and plant life of a region are largely shaped by the amount, duration, and characteristics of the annual snow cover.

There is also extensive annual change in the amount and some of the characteristics of the sea ice in the Beaufort, Chukchi, and Bering Seas. Together, the areal extent of snow and sea ice has a large effect on the earth's heat balance and weather. Snow reflects about 80 percent of the sun's radiation. When the snow is gone and sea ice is melted, the underlying ground and water absorb about 80 percent of the sun's radiation. Thus, the extent of 'sea-ice profoundly affects the heat exchange between the atmosphere and the ocean, thereby influencing weather and climate" (Polar Research Board, 1977, 16). The large-scale coordinated study called AIDJEX (Arctic Ice Dynamics Joint Experiment) produced much new information on the energy balance and dynamics of sea ice. Further work is still desirable, however, because of the importance of sea ice to offshore activities and future developments.

An important reason for some of the needed research is to avoid or reduce damage. Thus, studies are needed of avalanche processes and hazards, and fuller information is needed about the forces and mechanisms involved in the interaction of sea ice with drilling platforms and artificial islands, and the potential damage resulting from ice scouring of shallow sea bottoms and ice ride-up on shores and their structures.

Satellites now provide extensive data on snow and ice cover, but improvements are needed in remote sensing techniques in order to be better able to determine thickness, age, brine content, and reflectivity of snow and ice coverage from satellite images.

Taking account of the knowledge gained in earlier studies, in 1983 the Polar Research Board grouped a total of 24 highest priority studies—more specific in nature than need be described here—under two major high priority categories: "The interaction of snow and ice with past and present climates"; and "The direct impact of snow and ice on society" (Polar Research Board, 1983a).

Snow, Ice, and Climate

Ice cores, mostly from Greenland rather than Alaska, can give much information about past climate changes, temperatures, annual precipitation, and composition of the air. Ice cores plus tree-ring data and pollen counts from selected parts of Alaska compared with similar data from elsewhere in the world at the same times can not only give information concerning past climates, but can also help in the understanding of current trends or forecasts of future climatic changes.

Studies of the vertical transfer of heat between water and ice and between ice and air are needed to help interpret those past records and also to gain a fuller

understanding of the heat exchanges that determine much of North America's current weather. Similarly, studies are needed of the interaction between seasonal snow cover and the global energy balance.

Snow, Ice, and Society

Among the types of research recommended to gain a better understanding of the direct impact of snow and ice on society were the forces and mechanisms involved in the development of pressure ridges, rubble piles, and ice ride-up; studies of the location, stability, and mechanics of ice jams; and studies of the physical bases for forecasting snowmelt, run off, soil-water reserves, and basin storage.

Annual precipitation is small over most of Alaska (southern and southeast Alaska excepted). Yet as the population continues to rise there is increased need for water for domestic, commercial, and industrial use, and for waste disposal. Thus, information about the amount of water available from snow or ice, its location, and its seasonal and annual variability becomes an ever increasing necessity.

Northern Oceans

The northern oceans surrounding Alaska include the Beaufort, Chukchi, and Bering Seas. The total coastline involved is vast, and the continental shelf areas support some of the world's richest fisheries. Within those continental shelves may lie large reserves of oil and gas. Permanent or seasonal ice covers much of the northern oceans, and into their margins flow large amounts of fresh water bearing whatever natural silt and manmade pollutants the rivers have picked up. Both onshore and offshore developments are influenced by the characteristics of the northern oceans and both tend to change those characteristics. Yet in all of these regions significant gaps in knowledge are restricting the ability to deal with problems encountered by or produced by the various forms of development that are occurring (Alexander, 1984).

The Arctic Ocean is unlike other oceans. It is a "mediterranean" sea, surrounded almost wholly by land. However, it is much colder than the real Mediterranean, and "there is probably no other ocean in which river input plays such a major role...[Thus], arctic seas cannot be understood by referring to information gathered from other areas" (Alexander, 1982, 53-54).

Problems of Multiple Use

Conflicts over multiple uses of the seas and particularly the continental shelf portions are inevitable. For example, the effects of oil-related activities in the Beaufort Sea on the migratory marine mammals that are critical to the culture of the coastal communities are certainly controversial. But the effects are not yet known; for even such basic information as the food organisms and feeding behavior of the bowhead whale are not known.

One kind of knowledge needed to maintain the rich biological productivity of the northern oceans and also to help solve the problems of multiple use is an understanding of the natural fluctuations that occur and the reasons for those fluctuations. The seas around Alaska are linked to the rest of the world's oceans, and Alaskan seas are influenced by large scale ocean circulation and global weather patterns. A dramatic example was the warming associated with the El Nino of 1982-83. Local differences such as the extent of snow and sea-ice coverage are also involved, and there is much still to be learned about how the local events and the global influences interact to account for the substantial fluctuations in biological production that have been observed. More needs to be known about those natural fluctuations in order to be able to assess the impact of deliberate interventions and policy changes on the biological productivity of the northern oceans.

The Bering and Chukchi Seas

The flow of fresh water into the arctic seas is extremely high, and is in part responsible for their low surface salinity. In particular, the Yukon River is a major source of water for the northern Bering Sea and the southern Chukchi Sea. Its influence on the biological processes in these seas needs to be evaluated, as does its transport of organic compounds to the Bering Sea, their composition, and the factors influencing their composition. Such geochemical work will be important in interpreting the influence and fate of atmospheric pollutants at high latitudes.

Because of its importance for Alaskan fisheries, a study of the deep circulation of the Bering Sea, including the annual and interannual exchange of water through the Aleutian passes and the wind-driven circulation over the deep ocean basin and its importance to shelf regions, should receive high priority. At the continental margin in this region is one of the largest and longest canyon-fan systems of the world. No information is available about the transport and deposition of sediments in this system, nor about the associated living community in those depths.

The Beaufort Sea

In general, the Arctic Ocean is not as biologically productive as the Bering and Chukchi seas. Yet in summer it supports large mammals such as the bowhead whale. This support must depend upon physical or biological processes that either concentrate their immediate prey or that provide a nutrient-rich environment for the plant plankton that serve as the base of the whole food chain. Potential mechanisms for such concentration include gyres, such as the Barrow Gyre

formed by the northward-flowing current passing through the Bering Strait and on past Point Barrow. There is also evidence of upwelling along the Beaufort Sea shelf, and this may be important in concentrating nutrients outside the Barrier Islands and in the region near the Canadian border. The relationships between physical oceanographic dynamics and biological activity urgently need research.

Ice and Biology

A large portion of the seas surrounding Alaska is ice covered during at least part of the year. Of particular interest is the seasonal ice cover of the broad continental shelf of the Bering Sea, for few natural events produce such major oceanographic effects as does the annual advance and retreat of sea ice over that shelf. This seasonal cycle dramatically alters the physical and chemical nature of the underlying water, and those changes, in turn, have a strong influence on the biological system. Indeed, dramatic phytoplankton blooms occur each spring, stimulated by melting ice and upwelling at the retreating ice edge. Clearly, the ice-related production must be critical to the food chain, but how the transfers occur is not understood. In part, the intense blooms are known to supply nutrients to the benthic (sea bottom) community, and that factor must be related to the success of walrus in the region, but there is much that is not known. Studies of under ice fish, eggs, and larvae are needed. As a related issue, polynyas (open water areas surrounded by ice) tend to recur annually in the same regions, especially to the south of major islands and coastlines in the Bering Sea. Polynyas, leads, and the annually moving edge of the sea ice are regions of high marine mammal concentration, and regions rich in nutrients. At these locations, the ice itself appears to play an important biological role. At the edge of the seasonal sea ice in the spring, a very intense bloom of phytoplankton occurs. Moreover, "flora, mainly diatoms growing primarily in the bottom layer of the sea ice...," apparently account for "from ten to twenty-five percent of the total primary production...which is most active in spring and early summer" (Alexander, 1982, 53).

Other problems concerning sea ice also await attention, from its role in rafting sediments and their effects on its properties to prediction of its distribution and coverage. Here, satellite imagery and sophisticated modeling capability will help. A refined forecasting ability for storm surges, and a better understanding of their dynamics in ice-covered seas will be essential to safe development of offshore structures.

A few major themes in work on marine mammals can also be identified as having high priority: habitat ecology and food chain relationships; the bioenergetics of representative species; physiological work on temperature regulation, asphyxia, and metabolism; and the processes involved in navigation and orientation.

Climatic Effects

On a more global scale, other research in physical oceanography relates directly to the problem of global climate and the CO_2 problem discussed in Chapter 3. Contrary to previous thinking, recent evidence suggests that there is exchange of deep water from the Arctic basin with surface water from the continental shelf. Such deep ventilation could significantly reduce the ability of the Arctic Ocean to buffer atmospheric carbon dioxide. Although of a still speculative nature, the expected warming trend associated with an increase of CO_2 and other greenhouse gases dictates that the prospect of a warmer and maybe ice-free Arctic Ocean should be considered. A comprehensive study of its oceanography would be timely.

Human Resources

The truism that people are a primary resource has already been supported by several of the recommendations presented earlier. Management studies, as well as biological and oceanographic research, were recommended to improve the state's fisheries. The military services have conducted research on human engineering and personnel performance in cold climates, and want more. Solution of some of the pollution problems will depend more upon education and changed behavior than upon new research findings. One workshop of the Alaska Council on Science and Technology (1980b, 25) concluded that "The basic issue in Alaskan mineral development and research is the need to establish underlying state policy for the development of those minerals"; and another workshop (Alaska Council on Science and Technology, 1981b) agreed that a primary need for development of the transportation system is an economic study of the state's existing and prospective market structure. Clearly, there is research to be done by behavioral and social scientists, as well as by engineers and physical and biological scientists.

When the Arctic Research and Policy Act of 1984 was being debated in Congress, one of the criticisms was that the bill "...ignores the importance of the human sciences in the Arctic. Arctic policy should include that research that will enhance economic, technical, resource, and social development" (Brower, 1983, 4). As the bill was enacted, it did include several references to social and psychological problems and called for national policies, priorities, and goals for research on "natural resources and materials, physical, biological and health sciences, and social and behavioral sciences" (Section 102 (b) (1)).

Research in four areas is recommended: (1) anthropological and archaeological research on cultural change and the social and cultural accommodations to conditions in the north, as discussed earlier in Chapter 3; (2) research on education; (3) research on some economic features of the state; and (4) research on policy and management processes and decisions.

Alaskan Education

In a spate of recent and usually critical reports, the nation's schools have been examined and re-examined in terms of their goals and objectives, accomplishments and failures, crime and violence, and ability or inability to meet the needs of their students and of society. Some of the criticisms apply to some of Alaska's schools, but Alaska also has its own special school problems deriving from the need to provide education to a relatively small number of pupils scattered over a large geographic area.

The desirability of having schools easily accessible—a grade school and high school in every community—inevitably means that many schools are small, with few teachers, small libraries, and sometimes little equipment for teaching vocational and technical subjects or science courses. At last count Alaska had 162 high schools with fewer than 100 students (Fitzgerald, 1985). Radio and television can be used to supplement the local resources, and considerable money has been provided for the purchase of telecommunications equipment. But much less has been devoted to learning how to use that equipment most effectively. Studies are needed of the educational effectiveness of these media, of methods of coordinating their use with the teacher/classroom/ textbook/recitation activities of the local school, and of their impact on village life and adult learning (Floyd, 1985). More generally, studies of the effectiveness of rural school curricula and operations would be desirable, as would studies of the selection of teachers for small rural schools and studies of the cost and effectiveness of vocational/technical education and the employability and later activities of students trained in small vocational/ technical programs.

In 1980, the Alaska Council on Science and Technology convened a workshop on research priorities for the state's rural primary and secondary schools. Because federal funds for research on education are committed to problems of national concern—such as ghetto schools in large cities and the educational problems of Blacks and Hispanics—there is little likelihood of support from federal sources for studies of how to improve schools in Alaska. The workshop therefore appealed to the state government for support for four studies of high priority.

1. Defining and assessing "effective schooling" in Alaska's cross-cultural context. What are the diverse roles of schools in Alaska's urban and rural settings and how can they be most effective with pupils coming from diverse cultural backgrounds?

2. Effects of community participation in educational affairs on school functioning. How can local interest and participation in schools be most constructively used to improve educational effectiveness?

3. Providing educators with skills necessary to work effectively in Alaska's cross-cultural situation. What do teachers need to know not only about the subjects they will teach, but also about the cultural traditions and differences of the small and often isolated communities in which they will teach?

4. Developing educational approaches for village high schools. It is no longer necessary to leave home to attend high school, but the at-home schools are often small and inadequately equipped. How can education of good quality be provided in such schools and how do these village high schools score in terms of drop-out rates, attendance, the later success of their graduates in college, and their later success in the village or elsewhere? (Alaska Council on Science and Technology, 1981a.)

Economic Organization

Two aspects of the economic organization of Alaska provide opportunities for research that are not available elsewhere. One arose as a consequence of the Alaska Native Claims Settlement Act of 1971. That act granted some 44 million acres of federal land and nearly a billion dollars to the Native corporations that were established under the act. In doing so, some of the organizational, economic, and governance problems, advantages, and dilemmas of a capitalistic system were superimposed on traditional Native organizations. Because somewhat similar changes are taking place in some of the world's less developed countries, economists, sociologists, political scientists, business managers, and social planners will want to study the Alaska experience. What can be learned from the processes involved in the establishment and management of the Native corporations and from the experience of those corporations that can provide useful guidance as comparable changes take place in some of the world's less developed countries?

The other aspect of the Alaskan economic scene that presents special opportunities for study is its openness and comparative absence of institutional tradition and restriction. There are fewer established rules in a frontier area than in a long established one. In Alaska there is not yet as much institutional momentum that restricts freedom of entry into commercial, entrepreneurial, or professional activities. There appears to be more challenge, less conventionality, and perhaps more opportunity for Horatio Alger success stories, but also perhaps more personal stress, for while the lesser amount of institutional tradition may offer more wide open opportunity, it may also offer less support. Anecdotal observation suggests that stress levels are sometimes higher, that the psychic costs are greater than they are under more traditionally stabilized circumstances. Alaska is the nation's last frontier in which these questions can be studied.

Policy and Management

Every problem discussed so far exists in a social setting. Every program of resource development, environmental protection, or health services involves

questions of policy, requires forms of management, encounters problems of regulation and law, of governmental controls, and sometimes of intergovernmental tensions and differences. Each set of techniques, such as those involved in fishing, mining, transportation, rural education, or building construction, has its own traditions, beliefs, regulations, standards, and perhaps its own ingrained set of false beliefs, out-of-date rules, errors, and inefficiencies.

Moreover, as pointed out several times before, there are many conflicts between one set of desirable activities and another set of desirable activities. Using a river or harbor, a piece of land, or an amount of money for one purpose may deny or diminish opportunities for another use.

Many of the necessary choices involve competition between present and future needs and values. For example, decisions about resource development vs. environmental protection inevitably raise the old dilemma of short term vs. long term benefits. The state has a constant need to raise revenue, and that need will become more urgent as the diminishing flow of oil from Prudhoe Bay builds pressure for the development of other oil or mineral resources, for hydroelectric dams, for road construction, or for other types of development. Decisions on these matters must necessarily consider the easily foreseen and immediate needs of the state, but thoswhether or not there is good information about their relative values.

Traditionally, the resolution of such problems has been by majority vote, by decision of someone in a position of authority, by following an established precedent, or by some other legally established or customary method of resolving conflicts. However, there is no assurance that these traditional methods always lead to optimal outcomes. In fact, optimizing one outcome may be the wrong objective. Neither is it assured that such problems are best handled on the basis of the individual values, experience, and biases of whoever happens to be in a position of responsibility for making a particular societal decision. Techniques have been developed for improving budgeting, for comparing probable costs with probable consequences, for assessing potential risks and potential benefits of alternative courses of action, for projecting future trends, for resolving value conflicts, for reaching a consensus, and for dealing with other aspects of the formation of policy and the direction and management of activities.

In some settings, such as university schools of business on governmental affairs and in some social science research institutes, these policy and management questions are subjects for research and analysis much as problems in engineering, biology, or physics are problems for other university departments or other research institutes. Alaska includes such an organization in the Institute for Social and Economic Research of the University of Alaska.

Two recommendations follow. One is that research on decision making, regulatory procedures, projections of economic and fiscal trends, and other aspects of policy and management should be encouraged. The knowledge obtained from such research will be valuable to policy makers, and participation in that kind of research will help educate some future public servants and business leaders in the best available methods of handling the kinds of public issues with which they will later deal.

The other recommendation is that, to as full an extent as possible, efforts be made to record, analyze, and study the experience gained in the programs that will be developed to deal with the kinds of problems discussed in the earlier parts of this report—the development of natural resources, preservation of the environment, improvements of health and well-being, and adding to the state's store of knowledge. How were decisions concerning those programs made? What organizational and administrative patterns were used? What government controls were involved? Did they aid or impede the program? How well did the program meet its goals? Experience may be a good teacher, but that is most likely to be true if the experience is critically analyzed to determine mistakes and successes, so that future decisions can be wiser and future experience more satisfactory than they have been in the past.

In the final analysis, the success and the usefulness of all of the research recommended in this report will stand or fall on the long-term wisdom and effectiveness of the systems the state uses to make decisions about its own future.

CHAPTER 6
CONCLUSION: ALASKA SCIENCE POLICY

The preceding chapters discussed 23 areas in which additional research is needed to help ensure a good future for the state. The number 23 is arbitrary, for each of these topics could have been divided into parts as several of them, in fact, were, and because the 23 topics and their subdivisions overlap and are inter-related. Research on natural hazards requires an understanding of geology. Mining and forestry depend upon transportation. Studies of climate and weather are relevant to studies of agricultural development. And so it goes; each of the topics is related to, dependent upon, or helps to illuminate some of the other topics.

In the past, however, research has too frequently been fragmented, conducted with a narrow focus by different investigators, for different reasons, in different locations. Consequently, the results have not fitted together or helped to interpret each other as well as they might have had there been more coordinated planning. This situation has been one of the results of the fact that there has been no coordinated policy concerning research for Alaska or on the Arctic. As the Alaska Council on Science and Technology (1982) pointed out, "Alaska does not have an articulated, comprehensive state science policy." Nor has the United States had a coordinated policy for research on problems of the Arctic (Hickok, Weller, Davis, Alexander, and Elsner, 1981). Instead, as the interests of federal government agencies have changed, so have the nature and extent of their studies of arctic problems.

True in the past, these statements may now be going out of date. Alaska now has a science advisor to the governor, and for several years had the Alaska Council on Science and Technology. The Arctic Research and Policy Act of 1984 calls for an integrated national Arctic research policy and a national research program to implement that policy. Members of the overseeing Arctic Research Commission have been appointed. The National Science Foundation, as the responsible lead agency, and the other interested agencies of the federal government have begun to organize a joint effort to develop an integrated program of arctic research (National Science Foundation, 1984). To support that program, the National Research Council has prepared a comprehensive report on "National Issues and Research Priorities in the Arctic" (Ad Hoc Committee on the Arctic Research and Policy Act, 1985).

This new surge of interest in arctic research will be beneficial to Alaska, but, as pointed out earlier, the federal interest is primarily arctic, not Alaskan.

Thus, the very existence of these new interests and activities increases the need for a coordinated and long-range policy for research on Alaskan problems. That does not mean that all of the research details should be planned by some central organization; the scientists and engineers who will conduct research must have a large measure of responsibility for planning the details. It does mean that some organization with the future well-being of the state and its citizens as its central interest should be keeping watch over the whole sweep of Alaskan research—an organization that can ask of any planned project "How can this study be coordinated with others in order to contribute the most to the whole of the information that is needed?" Ideally, that organization will have funds with which it can give full support to selected studies that score high in potential benefit to the state, but low in likelihood of support by the federal government or some other external sponsor. The budget should also be sufficient to permit the new organization to supplement the funds provided by another agency sponsoring research of interest to the state, for that sponsor may not wish or may not be able to use its own funds for anything more than its own particular needs and interests, whereas the policy organization may conclude that the study would be of increased value if it were enlarged or augmented in some state-oriented direction.

There is a second and closely related conclusion to be drawn from the 23 research topics discussed in the preceding chapters: much of the necessary research should be planned and conducted as interdisciplinary programs. Work on fisheries cannot be of maximum value if it is limited to the biological aspects alone. Physical oceanographers should also be involved, for the productivity of the state's fisheries is dependent upon the physical and chemical characteristics of the seas. Similarly, human stress is an environmental problem, a medical problem, and a psychological problem. Working alone, no one of these disciplines can accomplish as much as can the three working together. Or again, optimal development of a renewable or nonrenewable resource calls for joint study by specialists in the particular resource field, engineers, environmental specialists, and economists. The many

inter-relationships of the problem areas and the ramifications of alternative means of handling them frequently call for joint study by representatives of several disciplines. This fact also means that the studies should not be planned solely to meet the needs of a single agency or institution that has a specific and limited area of responsibility. Thus, the inter-disciplinary nature of most of the problems reinforces the need for an organization that will look broadly at Alaska's future, and that can ask of each project "How can this study be conducted to be most useful in assuring the best attainable future for Alaska and its citizens?"

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University of Alaska Foundation
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2-19-85
Times

Dixie Welch Brown heads the University of Alaska Foundation, seeking endowments and support in any form for the statewide university system

University gifts promote excellence

by Ann Chandonnet
Times Writer

Not every corporation director deals with mummified bison, prize bulls, and boxes of jewels.

But that's just part of the pleasure that Dixie Welch Brown of Fairbanks has with her job.

Brown is executive director of the University of Alaska Foundation, an organization which trustee Brian Brundin has called "a successful partner in the university's search for excellence."

Recent donations to the nonprofit organization have included computer equipment, real estate, two prize Fairbanks bulls, and a box of jewels. The 11,000-year-old mummified bison "fell out of a mining site," says Brown, who notes that "establishing fair market value was fun."

With a smile, Brown notes that "we like cash; we never turn it down, but there are all those other things that people may not think about (giving)."

Young, energetic, attractive, Brown hardly fits the traditional stodgy image of an educational fund-raiser. She herself likes a mix of people on the foundation's board, a mix that represents a true crosssection of Alaska.

"Some are very traditional Alaskan pioneer types, others are people like Paul Meyerhof, who is young, a UAA graduate from the MBA program. There is a very wide range of interests and ages," Brown notes.

The 213 trustees serve three-year terms, as the executive board of the college; they make all the decisions in the financial policy, the basic decisions about which projects to be undertaken. Some of the current members are president Paul Gavora of Fairbanks, Richard Reeve of Anchorage and Byron Mallott of Juneau.

Established in 1974, the foundation is incorporated separately from the University of Alaska as a non-profit, educational, public, charitable organization. Its purposes are to raise private sector funds from individuals and corporations for the benefit of the entire University of Alaska system.

Brown's is no 9-to-5 job. Working breakfasts, receptions, cocktail parties and business meetings keep her on the go, often from 7 a.m. to 9 p.m. From her Fairbanks headquarters, she frequently travels to other cities both within and outside Alaska.

"The president of the University may send me off to represent him at a meeting he is unable to attend, and we have functions in Anchorage, Juneau, Seattle, California, Nevada. What we try to do is not replace state appropriated funds, which are a legislative responsibility, but to provide funds that will create an aura of excellence."

This aura might take the form of a chair in banking or journalism, a poet laureate, special speakers who come to Alaska and lecture at as many campuses as possible.

Brown took over the post of president in 1979, recognizing that "what we really needed was a reorientation in terms of the type of people we had on the board. We needed young alums on the board, and geographic diversity. I wanted people to begin to understand more clearly the purposes of the foundation — to create an atmosphere in which to create and grow; to respond better to the state of Alaska and its communities."

Currently the board is involved in a couple of major projects. One is the university museum endowment project. Brown explains, "The museum in Fairbanks is really a statewide museum with research that covers everything from paleontology to botany." The board is trying to raise a million dollars for the museum endowment, to provide more public lectures and enhance exhibits, as well as to fund more traveling exhibits.

In addition, donations to the endowment help fund research in the earth sciences, school tours, senior citizens' and children's programs, archaeological digs, and other programs at the museum, which hosts 100,000 visitors each year.

The fund's principal will be invested and saved for the museum's future; only the interest income will be spent. All cash and other donations are 100 percent tax deductible, and arrangements can be made for deferred or split gifts, or multi-year pledges.

"People are able to set aside not only liquid assets but also real estate; any kind of property can be used in an endowment. We guarantee an income for life or a term of years to that individual, based on the amount and assessed value. It's a good mechanism for people to make donations to any charitable organization," says Brown.

The board's other major project is The Alaska Research Development project, which is anticipating and outlining future needs of the university. Dr. Dael Wolfle, Lyle Perrigo and a team of consultants are conducting this work, which should be completed in early 1986.

See Foundation, page D-4

Foundation director gathers donations for university's extras

Continued from page D-1

"It isn't ivy covered halls on the hill any more; we must deal with the society as a whole," Brown says with fervor. "With this project we are not just staying with needs within the university system, but expanding to needs around the state."

Brown grew up in Washington state, and came to Alaska in 1974, working for the university museum as a research assistant in archeology. She worked with the TransAlaska Pipeline, doing the archeological survey work along the construction route. Then she became director for the Office of Regents Affairs for three years.

Brown's training is in anthropology, particularly in how cultures interact; this hierarchy she views as a correlative to how the University operates.

"There are a lot of organizations in Alaska which are founding foundations, and I have been asked on a variety of occasions to give a workshop on how to form a public foundation. It's becoming bigger and bigger business, particulary as state revenues dry up. It's certainly a trend across the country. There is now a degree program at Vanderbilt for people in this field, so we have now been sanctioned," she smiles.

The University of Alaska Foundation board of trustees officially meets twice a year, but members get together much more frequently. "A visit with foundation members and fellows whenever I'm in Anchorage, which is at least twice a month," said Brown on a recent trip. The board is subdivided into project commities, which meet frequently, although trustees are neither paid nor reimbursed for travel.

The foundation has current assets of nearly $7 million, which means that Brown must pay "close attention" to tax law, because she is advising contributors on their estates.

For more information on the University of Alaska Foundation or its endowment programs, write 590 University Ave., Suite 101, Fairbanks, 99701, or call 474-7687.

S Murkowski Report to Alaskans 3/1985

President names three Alaskans to panel

Appointed to the Arctic Research Commission were:

– James H. Zumberge, President of the University of Southern California, who will serve as chairman of the commission;

– Juan Gualterio Roederer, Director of the Geophysical Institute and Professor of Physics at the University of Alaska, who will serve as vice-chairman;

– Oliver Leavitt, a Barrow resident who is vice-president of the Arctic Slope Regional Corporation, and a board member of the Alaska Federation of Natives;

– Elmer Rasmuson, former Mayor of Anchorage who now serves as chairman of the Executive Committee of the National Bank of Alaska;

– Albert Lincoln Washburn, a leading arctic scientist and former chairman of the Polar Research Board.

STATE OF ALASKA
THE LEGISLATURE

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May, 1986

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS date base CM 14. In order to save space copies of minutes have not been left in the files.

Jeanie Henry

SENATE RESOURCES COMMITTEE, 3/11/85, 1:40

Offered: 3/13/85
Referred: Rules

Original sponsors: Boucher, Ringstad, Gruenberg, et al

IN THE HOUSE

BY THE HEALTH, EDUCATION AND SOCIAL SERVICES COMMITTEE

CS FOR HOUSE CONCURRENT RESOLUTION NO. 11 (HESS)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - FIRST SESSION

Relating to the University of Alaska Foundation.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS art. VII, secs. 4 and 5 and art. VIII, secs. 1 and 2 of the Constitution of the State of Alaska call for the promotion and protection of public health, providing for the public welfare, the settlement of lands and the development of resources, and the utilization, development, and conservation of all state natural resources; and

WHEREAS although the Arctic Science and Policy Act of 1984 is commendable and its passage long overdue, the Act focuses on federal interests and priorities solely and it is directed only at part of the state; and

WHEREAS the economic viability of the state, the well-being of its inhabitants, and the promise of a reasonable future for coming generations depends upon the support of applied and fundamental research directed at specific Alaskan problems; and

WHEREAS these physical, biological, medical, and social problems are only partially, or not at all, addressed by conventional sources of support resulting in significant gaps in both scientific and technical research endeavors;

BE IT RESOLVED that the Alaska State Legislature commends and supports the University of Alaska Foundation in its endeavors to forecast research needs and to find and fill the gaps in the current research effort, and be it

FURTHER RESOLVED that the Alaska State Legislature encourages the University of Alaska Foundation to seek support for long-term and stable

funding for this research.

Everyone present is a co-sponsor

Introduced: 2/26/85
Referred: Resources

BY STURGULEWSKI, BENNETT, JOSEPHSON, ZIEGLER, FERGUSON, COGHILL, V.FISCHER, FAHRENKAMP, HALFORD AND RODEY

IN THE SENATE

SENATE RESOLUTION NO. 1

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - FIRST SESSION

Relating to the University of Alaska Foundation.

BE IT RESOLVED BY THE SENATE:

WHEREAS art. VII, secs. 4 and 5 and art. VIII, secs. 1 and 2 of the Constitution of the State of Alaska call for the promotion and protection of public health, providing for the public welfare, the settlement of lands and the development of resources, and the utilization, development, and conservation of all state natural resources; and

WHEREAS although the Arctic Science and Policy Act of 1984 is commendable and its passage long overdue, the Act focuses on federal interests and priorities solely and it is directed only at part of the state; and

WHEREAS the economic viability of the state, the well-being of its inhabitants, and the promise of a reasonable future for coming generations depends upon the support of applied and fundamental research directed at specific Alaskan problems; and

WHEREAS these physical, biological, medical, and social problems are only partially, or not at all, addressed by conventional sources of support resulting in significant gaps in both scientific and technical research endeavors;

BE IT RESOLVED that the Senate commends and encourages the University of Alaska Foundation in its endeavors to forecast research needs, find and fill gaps in the current research effort, and to seek support for research requiring long-term and stable funding.

Senator Sturgulewski's Office
March 11, 1985

University of Alaska Foundation

Alaska Research Development Project

The University of Alaska Foundation is attempting to identify research needs for Alaska. Over 360 Alaskans have each invested $1000 in a statement of research needs which is to be published this spring.

Research about Alaska is important to:

1. ensure the well-being of Alaska's citizens;

2. preserve Alaska's diverse cultures and renowned scenic environment;

3. make certain the economic health of Alaska;

4. promise a reasonable future for coming generations of Alaskans.

Examples of preliminary findings of the Project illustrate the need for further work:

1. Norwegian fresh salmon costs less and is more uniform in quality than Alaska salmon. The science, technology and economics of the fish farming operations which produce those salmon should be explored here in Alaska.

2. Biotechnology research offers the possibility of cold resistant plant varieties, low-temperature sewage digestion processes, and cost-effective fishery waste treatment techniques.

3. There is a need for investigation of true costs of recent advances in energy savings for buildings and facilities. Preliminary information suggests that these savings may be accompanied by reduced materials life and increased maintenance costs.

4. Alaska and other places in the North experience higher than normal incidences of alcoholism, interpersonal violence and stress. Reasons for and methods of lessening these incidences need to be developed.

Office of Development
Director

(907) 474-7687
sydevoff

MAR 1 1985

University of Alaska
Statewide System of Higher Education
590 University Avenue
Suite 101
Fairbanks, Alaska 99701

M-Rewrite

February 28, 1985

Senator Arliss Sturgulewski
Pouch V
Mail Stop 3100
Juneau, AK 99811

Dear Senator Sturgulewski:

Per your request, enclosed is a position paper on the Alaska Research Development Project. If you should have further questions or need additional assistance, please call me.

Thank you.

Sincerely,

Dixie Welch Brown
Executive Director

DWB/bjg
enclosure

Position Paper

on

The Alaska Research Development Project

University of Alaska Foundation

The project mission is to identify the research needed to ensure: 1) the well-being of the State's inhabitants, 2) the preservation of its diverse cultures and a renown scenic environment, 3) the economic vitality of the State and 4) the promise of a reasonable future for coming generations of Alaskans. Support for this work came exclusively from the private sector. Over 360 Alaskans each invested $1000 in the effort that will soon result in the publication of a statement of research needs.

Forecasting Alaska's research needs, identifying gaps in on-going or completed investigations and finding a broader base of support for applied and basic work is important because:

- Research is one of a very limited number of ways of acquiring new knowledge about Alaska.
- Looking ahead rather than reacting to situations provides for a more coherent and less costly way of developing and using resources, preserving and caring for the environment and our diverse heritage, providing for the health and welfare of our inhabitants and increasing our knowledge and understanding of the State in which we live.

- Equipment designed for temperate zone use is often force fitted into Alaska. The consequences generally are increased costs and less reliability. What is needed is equipment designed for conditions in Alaska.
- Starting, stopping, restarting, etc. needed research programs (which is characteristic of many research endeavors) adds substantially to costs, increases the time to rearch reasonable solutions to problems and is disruptive to professional careers.

A few of the findings of the Project are given below as illustrative of conditions in Alaska and the need for further work:

- Norwegian fresh salmon is served regularly in many Alaska restaurants because it costs less and its quality is more uniform than its Alaskan counterpart. These fresh salmon come from fish farming operations suggesting that the science, technology and economics of using similar techniques should be thoroughly explored here.
- Alaska is one of just two states in the nation without biotechnology research programs. Research of this type offers the possibilities of achieving: 1) cold resistant plant varieties quicker than by normal horticultural techniques, 2) low-temperature sewage digestion processes that may work for much longer periods every year

and 3) cost-effective and energy-efficient fishery waste treatment techniques.

- Recent advances led to substantial energy savings in buildings and facilities. Preliminary information suggests that these achievements may be accompanied by reduced service life of materials and increased maintenance costs.
- Alaska and most other places in the North experience high incidences of alcoholism, interpersonal violence and stress. The reasons for such variations from the norm are not fully understood and realistic methods of lessening these effects are not yet developed.

The above list gives examples only and should not be considered as research priorities. The findings of the Project will appear in a document in about two months.

2-27-85

Dixie Welch Brown

474-7687

Introduced: 2/26/85
Referred: Resources

BY STURGULEWSKI, BENNETT, JOSEPHSON, ZIEGLER, FERGUSON, COGHILL, V.FISCHER, FAHRENKAMP, HALFORD AND RODEY

IN THE SENATE

SENATE RESOLUTION NO. 1

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - FIRST SESSION

Relating to the University of Alaska Foundation.

BE IT RESOLVED BY THE SENATE:

WHEREAS art. VII, secs. 4 and 5 and art. VIII, secs. 1 and 2 of the Constitution of the State of Alaska call for the promotion and protection of public health, providing for the public welfare, the settlement of lands and the development of resources, and the utilization, development, and conservation of all state natural resources; and

WHEREAS although the Arctic Science and Policy Act of 1984 is commendable and its passage long overdue, the Act focuses on federal interests and priorities solely and it is directed only at part of the state; and

WHEREAS the economic viability of the state, the well-being of its inhabitants, and the promise of a reasonable future for coming generations depends upon the support of applied and fundamental research directed at specific Alaskan problems; and

WHEREAS these physical, biological, medical, and social problems are only partially, or not at all, addressed by conventional sources of support resulting in significant gaps in both scientific and technical research endeavors;

BE IT RESOLVED that the Senate commends and encourages the University of Alaska Foundation in its endeavors to forecast research needs, find and fill gaps in the current research effort, and to seek support for research requiring long-term and stable funding.

SR 1 SENATE JOURNAL - PAGE 394- 3 2/26/85

SENATE RESOLUTION NO. 1 by Senators Sturgulewski, Bennett, Josephson, Ziegler, Ferguson, Coghill, Vic Fischer, Fahrenkamp, Halford and Rodey,

Relating to the University of Alaska Foundation,

was read the first time and referred to the Resources Committee.

SR 1 SENATE JOURNAL - PAGE 518- 1 3/12/85

The Resources Committee considered SENATE RESOLUTION NO. 1 (University of Alaska Foundation) and a majority of the committee recommended do pass. The report was signed by Senator Sturgulewski, Chairman and concurred in by Senators Vic Fischer, Fahrenkamp, Coghill and Halford.

SENATE RESOLUTION NO. 1 was referred to the Rules Committee.

which the world managed to import into the Japanese market last year, the Japanese exported back more than ten and one half.

-- The trade imbalance could be offset considerably, if Japan, Taiwan, and Korea would buy Alaska's coal, gas and oil.

-- And that leads us to another question.

-- If we are to develop our coal, gas, oil and other resources, how do we make the sound environmental decisions to proceed with development?

-- The decisions to develop the Red Dog, Green's Creek, and Quartz Hill mines....

-- Can we have safe outer continental shelf development?

-- Should oil exploration be allowed in our Arctic Wildlife Reserve?

-- Can we have this kind of development in Alaska without compromising our ecology and environment and most of all our Alaskan lifestyle?

-- Does every development scheme have to evolve into a battle between well-meaning environmental groups and those looking to diversify Alaska's economic base?

-- All too often the basis of indecision on both sides is suspicion of the other point of view and ignorance of the facts.

-- It has been said that the Alaska pipeline cost an additional billion dollars because we did not have the scientific knowledge at the time to know such things as the effects of a hot pipeline through permafrost.

-- That's why one of my first initiatives in the Senate was to propose the formation of a national scientific body that would help provide the knowledge we need to make informed decisions.

-- That was my Arctic science policy bill -- designed to be the vehicle to unlock our Arctic with sound scientific knowledge.

-- The President signed that bill into law last August. Now he is ready to appoint the five members of the Arctic Research Commission.

-- Within a few days, I expect the President of the United States to formally announce the appointment of the commissioners. I have been given the privilege of releasing those names.

Chairman of the Commission will be Dr. James Zumberge, President of the University of Southern California and a noted polar scientist.

Vice Chairman will be Dr. Juan Roederer, Director of the Geophysical Institute at the University of Alaska, Fairbanks.

The other three commissioners will include:

Mr. Oliver Leavitt, a leader among the Alaska Native community from Barrow.

Elmer Rasmusson of Anchorage, a prominent member of the Alaska business community.

And Dr. Lincoln Washburn, a leading Arctic scientist from the University of Washington.

I expect the five to be sworn into office sometime next month in Alaska.

-- This commission will help guide us in making sensible decisions about our resources and the future.

-- Consider:

-- If we want to have clean air to breathe and clean water, we need to know how to combat "Arctic haze" -- the industrial pollutants that drift into the Arctic air mass from industrialized areas in the Soviet Union and Northern Europe.

-- If we want to improve human health and living conditions in the Arctic, we are going to have to learn how to combat Hepatitis B - to design new building and engineering systems for Arctic housing and transportation systems.

-- If we want to protect our environment and fully develop our natural resources in a sensible manner, we need to fully understand the Arctic ecosystem.

-- If we [illegible] to provide for our own defense, we need to know how [illegible]ch our troops to survive, train, and fight in Arctic climates.

-- After all, our greatest potential adversary, the Soviet Union, is also our Arctic neighbor.

It is important to remember, however, that the focus of the Arctic Research and Policy Act is on national needs and objectives.

In some cases, national priorities may differ from the priorities of Alaskans.

Without question, we will benefit from the Arctic Research and Policy Act. But that effort alone is not enough for Alaska's needs.

-- We need our own effort, complementary to the national commission, but independent from it as well.

-- There is a group of people in our state who understand this, and they are quietly working toward the achievement of an exceptional future for Alaska.

-- I'm speaking of the University of Alaska Foundation and their supporters.

-- For the past several years the University of Alaska Foundation has been quietly seeking the means to achieve the brightest possible future for Alaska.

-- They call their project "The Alaska Research Development Project."

-- Their aim is to discover what Alaska needs to know about itself, its environment, and its people.

-- The Foundation recognizes we have the opportunity and the responsibility to critically investigate our resources, determine where we want to be fifty or one hundred years from now, and develop a coordinated, long-range effort to accomplish our goals.

-- This dedicated and inspired group of civic, commercial, and educational leaders has laid before us a challenge that cannot be ignored.

-- They have dared us to plan our future....

-- A draft report outlining research needs ranging from ice dynamics to the eradication of Hepatitis B is already being circulated among members of Alaska's scientific community.

-- That draft is a preliminary version of a report which will be available in a few months.

-- The Foundation is now planning where the report will lead us.

-- They have a number of ideas, including the establishment of a research institute.

-- This institute would focus exclusively on Alaska's needs and objectives rather than the national needs and objectives dominating the agenda of the Arctic Research Commission.

-- Clearly, there is a role for the state to play in the creation of this institute.

-- The University of Alaska Foundation has some great ideas, but they can't make them happen without your help.

-- I understand the Foundation will soon be presenting you with their plan. I know you will listen and act.

-- Alaska has a rare and enviable opportunity to plan for her future.

-- Let us join together by gaining the wisdom to ensure that future...for ourselves...our state...and our nation.

-- For the key to Alaska's future is knowledge.

Roederer named to Arctic study panel

Three internationally known scientists, one of them from Fairbanks, and two other Alaskans will serve as the first five members of the new Arctic Research Commission.

The appointments were revealed Monday by U.S. Sen. Frank Murkowski, R-Alaska. President Reagan was to officially announce them today.

The commission's office will be based at the University of Southern California, where the appointed chairman, James H. Zuberge, is president.

Named to the commission were Juan Roederer, a physics professor and director of the University of Alaska-Fairbanks Geophysical Institute; Elmer Rasmuson, former Anchorage mayor and the chairman of the National Bank of Alaska's executive committee; and Oliver Leavitt of Barrow, vice president of the Arctic Slope Regional Corp. and a board member of the Alaska Federation of Natives.

Roederer is well-acquainted with the two other scientists on the commission, USC President Zumberge, and Albert L. Washburn, a leading Arctic scientist and former chairman of the National Academy of Science Polar Research Board. Washburn is a research center director at the University of Washington.

According to Roederer, Zumberge also chairs an international scientifice committee overseeing all research in the Antarctic. Washburn has done research in Alaska and Greenland, Roederer said.

Roederer got a letter from the White House in December informing him of the selection. He was among UAF scientists who worked actively in promoting passage of the federal Arctic Research Policy Act.

Roederer has been at UAF for more than seven years. His research has included magnetospheric physics, computer modeling of magnetic fields and plasma systems, psychoacoustics and neuropsychology.

Congress passed the act establishing the commission in early 1984. The new five-member commission is to recommend policy for America's Arctic research efforts. The act also created an Inter-agency Committee, represented by nine federal agencies or departments, for coordination and communication of their Arctic research projects and needs. The inter-agency group is coordinated by the National Science Foundation, whose director is an ex-officio member of the Arctic Research Commission.

The commission must publish 30 days' meeting notice in the Federal Register, but Roederer says most of the new commission members likely will meet later this month when the National Academy of Science's Polar Research Board meets in Alaska.

That board will hear public comments in Anchorage Feb. 28 and Fairbanks March 1 as it works to identify urgent and long-term scientific problems in the Arctic, Roederer said.

Filed
SR1

Introduced: 2/25/85
Referred: Health, Education &
Social Services

BY BOUCHER, RINGSTAD, GRUENBERG, TAYLOR, SZYMANSKI, FRANK, DAVIS, POURCHOT, CLOCKSIN, ADAMS AND DUNCAN

IN THE HOUSE

HOUSE CONCURRENT RESOLUTION NO. 11

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - FIRST SESSION

Relating to the University of Alaska Foundation.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS art. VII, secs. 4 and 5 and art. VIII, secs. 1 and 2 of the Constitution of the State of Alaska call for the promotion and protection of public health, providing for the public welfare, the settlement of lands and the development of resources, and the utilization, development, and conservation of all state natural resources; and

WHEREAS although the Arctic Science and Policy Act of 1984 is commendable and its passage long overdue, the Act focuses on federal interests and priorities solely and it is directed only at part of the state; and

WHEREAS the economic viability of the state, the well-being of its inhabitants, and the promise of a reasonable future for coming generations depends upon the support of applied and fundamental research directed at specific Alaskan problems; and

WHEREAS these physical, biological, medical, and social problems are only partially, or not at all, addressed by conventional sources of support resulting in significant gaps in both scientific and technical research endeavors;

BE IT RESOLVED that the Alaska State Legislature commends and encourages the University of Alaska Foundation in its endeavors to forecast research needs, find and fill gaps in the current research effort, and to seek support for research requiring long-term and stable funding.

ANCHORAGE CAUCUS

ALASKA STATE LEGISLATURE

SENATE

Abood, M.
DeVries, E.
Faiks, J.
Fischer, V.
Halford, R.
Josephson, J.
Kelly, T.
Kerttula, J.
Rodey, P.
Sturgulewski, A. ✓

HOUSE

Boucher, R.
Clocksin, D.
Collins, V.
Cotten, S.
Furnace, W.
Gruenberg, M.
Hanley, A.
Jenkins, R.
Martin, T.
Pearce, D.
Pettyjohn, F.
Phillips, R.
Pignalberi, M.
Pourchot, P.
Rieger, S.
Szymanski, M.
Uehling, R.

MINUTES
February 19, 1985

12:00 Noon, Senator Josephson called the meeting to order. The following members were absent: Senator Abood, Senator DeVries, Senator Kelly, Senator Kerttula, Senator Rodey (out of town), Representative Gruenberg, and Representative Martin.

Representatives from the University of Alaska Foundation informed the Caucus about the Alaska Research Development project. William Wood spoke to the Caucus and suggested that we need research projects that address issues the State will face in the future. Over the last three years, $360,000 has been raised from the private sector for funding for this project. A scientific advisory group has been formed based upon the principle of partnership of interest. Interest includes: government, academic, industrial/commercial, and general public. One issue that needs to be addressed is how do we create new wealth (for the State), rather than how we spend the old wealth.

Lyle Perrigo focused on what they've done, how they've done it, who's been involved, and the possibilities of the results they have now. This project really is an effort to forecast what the research needs are for the State of Alaska. Mentioned who is on the Scientific Advisory Commission and that a

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Uehling, R.

draft report is being distributed for comments. The next stage is to find a mechanism for supporting research in the State of Alaska, how we do that, we're not sure.

Representative Boucher stated that we're moving into the information age and we need to draw the knowledge we have, and supports the project. We need to invest in the future. We're overloaded with information and very little knowledge. What we need to do now is concentrate in "thinkware".

Senator Sturgulewski praised the project.

Representative Pignalberi noted that he has a copy of the draft report if anyone was interested, please contact him.

Senator Sturgulewski mentioned that there will be a resolution of support for the project that will be introduced in the legislature.

Senator Josephson adjourned the Caucus meeting at 12:40 pm.

ANCHORAGE CAUCUS

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Rieger, S.
Szymanski, M.
Uehling, R.

AGENDA

FEBRUARY 19, 1985

TIME: 12:00 NOON

LOCATION: House Finance Room
Capitol Building

I. Call to Order

II. Roll Call

III. New Business

A. Presentation by University of Alaska Foundation regarding the Alaska Research Development project

IV. Other Business

V. Announcements

VI. Adjournment

SENATOR
ARLISS STURGULEWSKI

2957 SHELDON JACKSON
ANCHORAGE, ALASKA 99508
SENATE DISTRICT F, SEAT A

Alaska State Legislature

While in Juneau
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3818

Senate

M E M O R A N D U M

January 28, 1985

TO: Senator Joe Josephson
Senate Coordinator, Anchorage Caucus

FROM: Senator Arliss Sturgulewski

The University of Alaska Foundation has requested an opportunity to make a presentation to the Anchorage Caucus regarding the Alaska Research Development project on which they are working. The purpose of this project is to be a catalyst for increased research capabilities at the University of Alaska.

As you know, President Reagan has signed the legislation dealing with the Arctic Research policy legislation sponsored by Senator Murkowski. Individuals working with the project of the University of Alaska Foundation will be here when Senator Murkowski speaks to the joint session of the legislature on the 18th of February.

Would it be possible to reschedule or have an additional meeting of the Anchorage Caucus on the 18th for a presentation to be made by representatives of the University of Alaska Foundation so they would not need to stay in Juneau until the 21st of February to make an appearance at the regular Thursday meeting of the Anchorage Caucus.

The Foundation is not requesting specific legislative action, although they might like to encourage a resolution of support for the project. They have raised money in Fairbanks as well as in the Anchorage community for the establishment of additional research. Action is being taken by the U of A Foundation to increase its visibility in the Anchorage community. Brian Brundin, Edith Bullock, Fred Eastaugh, Paul Gavora, John Hughes, Byron Mallott, Tom Miklautsch and William R. Wood are heading up this special project for the University of Alaska Foundation.

I look forward to your early reply.

I told my staff to indicate OK for 18th but you know my staff is so small! How will do I know ☺

Alaska State Legislature

SENATOR
ARLISS STURGULEWSKI
Chairman, Senate Resources Committee
Vice-Chairman, Senate Health, Education and Social Services Committee
Member, Senate Community and Regional Affairs Committee

2957 SHELDON JACKSON STREET
ANCHORAGE, ALASKA 99508

While in Juneau
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3818

Senate

M E M O R A N D U M

February 20, 1985

TO: Senator Vic Fischer

FROM: Senator Arliss Sturgulewski

RE: Attached resolution

Attached is a Senate resolution commending and encouraging the University of Alaska Foundation's research project.

Your co-sponsorship is invited. — Yes - thanks

Alaska State Legislature

FEB 21 1985

SENATOR
ARLISS STURGULEWSKI
Chairman, Senate Resources Committee
Vice-Chairman, Senate Health, Education and Social Services Committee
Member, Senate Community and Regional Affairs Committee

2957 SHELDON JACKSON STREET
ANCHORAGE, ALASKA 99508

While in Juneau
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3818

Senate

M E M O R A N D U M

February 20, 1985

TO: Senator Fahrenkamp

FROM: Senator Arliss Sturgulewski (as)

RE: Attached resolution

Attached is a Senate resolution commending and encouraging the University of Alaska Foundation's research project.

Your co-sponsorship is invited.

Yes Bettye Fahrenkamp

14-0697
Levy
2/19/85

IN THE SENATE BY STURGULEWSKI

SENATE RESOLUTION NO.

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - FIRST SESSION

Relating to the University of Alaska Foundation.

BE IT RESOLVED BY THE SENATE:

WHEREAS art. VII, secs. 4 and 5 and art. VIII, secs. 1 and 2 of the Constitution of the State of Alaska call for the promotion and protection of public health, providing for the public welfare, the settlement of lands and the development of resources, and the utilization, development, and conservation of all state natural resources; and

WHEREAS although the Arctic Science and Policy Act of 1984 is commendable and its passage long overdue, the Act focuses on federal interests and priorities solely and it is directed only at part of the state; and

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WHEREAS these physical, biological, medical, and social problems are only partially, or not at all, addressed by conventional sources of support resulting in significant gaps in both scientific and technical research endeavors;

BE IT RESOLVED that the Senate commends and encourages the University of Alaska Foundation in its endeavors to forecast research needs, find and fill gaps in the current research effort, and to seek support for research requiring long-term and stable funding.

From The Last Frontier
Rep. Terry Martin
State Capitol, Pouch V
Juneau, AK 99811

If Texas can do it, !!!
Why not Alaska?

Going Dry: Texas Looks Beyond Oil

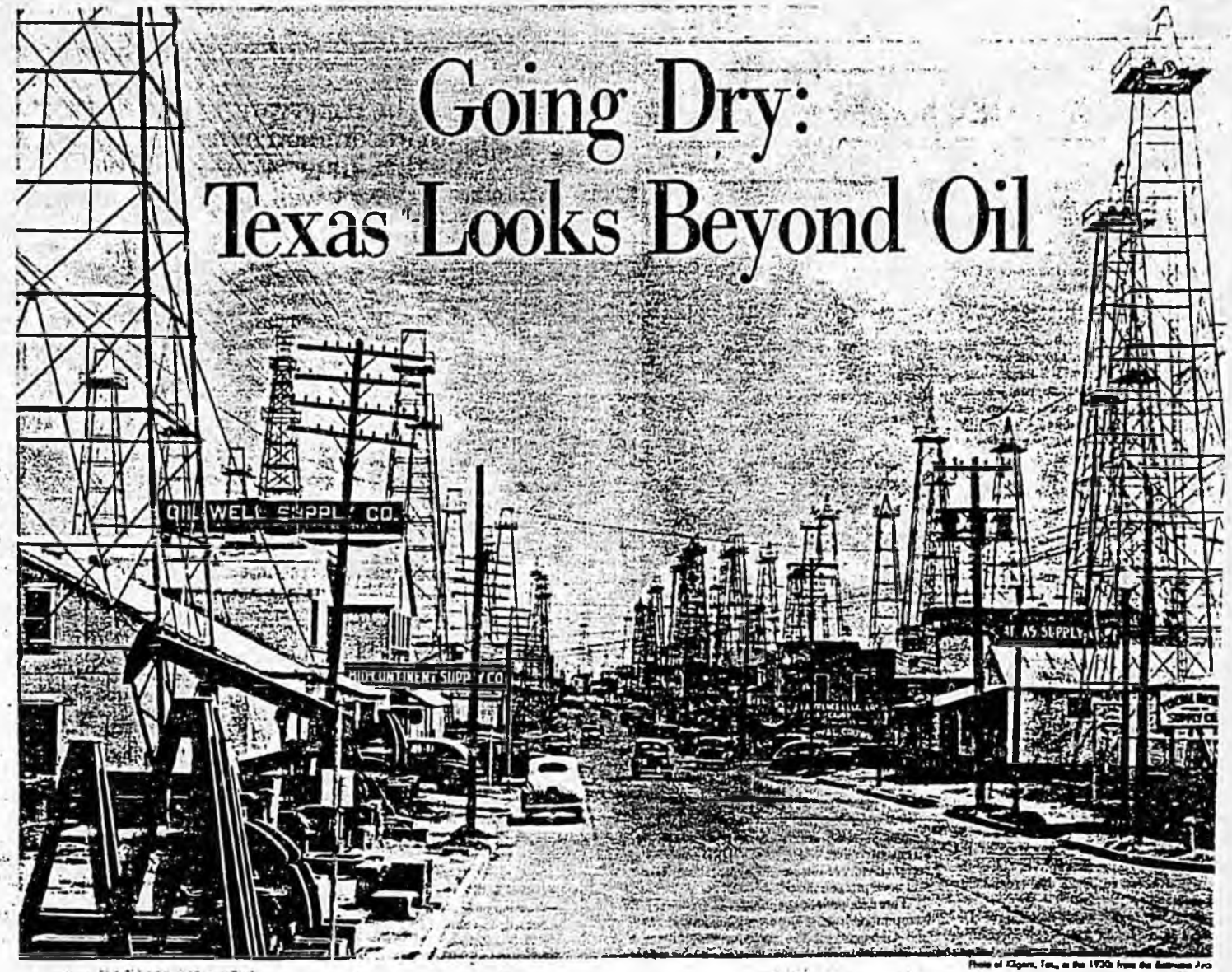


Photo of Kilgore, Tex., in the 1930s from the Dallas Mo

By Paul Taylor
Washington Post Staff Writer

KILGORE, Tex.—Billy Bob Crim was 4 years old when they struck oil in this dirt-poor cotton-farming town, and his father had to make a decision. Should he dig an oil well in the front yard, or out back?

"Daddy didn't drill in either place," Crim, 58, recalls with relish, "because if he did, me and John T. [his brother] wouldn't have had any place to play."

Such decisions were easy in the Texas of 1930, awash in newly found oil. But today, still in Crim's lifetime, the gusher is in decline.

Texas is going dry.

The state that made oil famous has been forced to search for new riches, and that search has produced an unlikely partnership of microchips and moguls, of college presidents and politicians, as Lone Star institutions struggle toward a high-tech future.

Half a century ago, Kilgore sat atop the biggest oil strike in history.

In the boom set off by wildcatter C.M. (Dad) Joiner's 1930 discovery, they dug up cemeteries here to drill for oil, they ripped a Presbyterian Church in half, they erected a forest of 24 derricks toe-to-toe along a single block of Main Street, tearing down all the stores in the way.

They drilled with such frenzy that, until the Texas Rangers were sent in to enforce production limits in 1931 under martial law, they had driven the world price of oil down from $1.10 to 10 cents a barrel.

Even with the limits, tiny Kilgore (population 800 before the discovery, 8,000 after) had 1,200 oil wells pumping away throughout the 1930s and '40s, some capable of producing a fantastic 10,000 barrels a day.

Now, there are fewer than 100 producing wells in Kilgore, and they cough up but a pittance—an average of fewer than 10 barrels a day of oil, mixed with a couple hundred barrels of the salt water that each year encroaches a few feet further into the legendary East Texas oilfield.

Kilgore, in short, is running out of oil, as is the entire state.

It won't happen next month or next year; it won't happen for 20 or 30 years. If price and technology make the state's sizable reserves of hard-to-get oil worth extracting, it won't happen even then.

But it has begun to happen. Oil production and oil reserves in Texas have declined by more than a third since the peak production year of 1972, and there have been no major new finds in a quarter of a century.

And so Texas—whose name is virtually synonymous with oil; whose political power, economic clout and fabulous private wealth are drawn from oil; whose low taxes, high-risk entrepreneurial zeal, braggadocio, broadness of character, coarseness of manner, grittiness of determination all have been fueled by oil; and whose made-in-Hollywood grip on the imagination of cultures all over the world has been preserved by oil—is weaning itself from oil.

It is a remarkable transformation. The state's economy, once built on cattle and cotton, then suddenly flush with oil, is barely a decade into the business of building a diverse manufacturing base. In that sense, it is a century behind the East Coast.

But now, even as that catch-up industrialization process is proceeding in fits and starts, the energy-based manufacturing sectors—oil and gas extraction, oil refining, the petrochemical industry—already are in long-term decline. So Texas is trying to leapfrog into another economic revolution, into frontiers of knowledge and high technology.

"High Tex," they call it here.

"Knowledge is the oil and gas of our future," says Jo Newton, departing chairman of the board of regents of the oil-rich University of Texas system.

In the Texas of 1985, a broad consensus of academics, politicians and, especially, business leaders shares this view. They believe that wherever the state's economy is headed, it is the university system that will take it there.

As a result, the 14-school university system is beginning to play a role roughly akin to what an aggressive Chamber of Commerce might do in a small city, or what a "national industrial policy" might do for the whole country.

That is, as they decide what research to pursue in which areas of the state, the universities are self-consciously placing themselves in the economic-development business as well as the knowledge business.

"The universities aren't merely an ornament anymore," says Walt W. Rostow, professor of political economy at the University of Texas and national security affairs adviser to President Lyndon B. Johnson. Rostow served on a gubernatorial commission that projected the needs of the state

through the year 2000. "They are now seen here as a part of the bottom line."

Just in the past year, a broad range of new links has begun to be forged all over Texas between university research programs and high-tech companies, or basic industries looking to retool, or small entrepreneurs looking to start out, or real estate interests looking for general economic expansion.

This is by no means a novel formula. In the 1960s and 1970s, Stanford/Silicon Valley in California and MIT/Route 128 in Massachusetts got a jump on the rest of the country in the commercialization of knowledge. Today, in all but a handful of the 50 states, mad scrambles are under way to create "high-tech highways" that marry university research with economic development.

Texans, with characteristic can-do spirit, believe that they are poised to break out of the pack, perhaps far enough to be on a par with the granddaddy centers in Palo Alto and Boston, although the emergence of high tech here won't take such a geographically concentrated form.

There are good reasons for this bravado. For starters, the UT system has a financial base that is the envy of the academic world. Its $2.1 billion endowment—which has been massing since oil was discovered 62 years ago under the "worthless" 2.1 million acres of state lands set aside for higher education in the constitution of 1876—is unmatched by any public system in the country and topped only by Harvard's $2.4 billion.

Moreover, Texas chauvinism is being put to productive work. Private donations to the UT system have topped $100 million for each of the past two years; among public institutions, only the University of California system raises more.

And the best, they'll guarantee you down here, is yet to come. "We're about 50 first-class funerals away from having a private foundation base in Texas that can top anything in the East," says Jack Rains, chairman of the board of 3D/I, a Houston-based engineering company. "You can bet that the bulk of that money is going to go straight into education."

Private donations already have enabled the flagship school of the state system—the University of Texas at Austin—to raise its endowed faculty positions from 112 to 802 in four years. No institution of higher education, public or private, has ever undergone such a bold, compressed reach for faculty excellence.

They're reaching for student excellence, as well. Texas A&M and UT-Austin rank nationally in the top five in the number of National Merit Scholars; both schools woo high school whiz kids with the ardor, and full scholarships, usually reserved for 260-pound linemen.

In the 1960s, politicians often treated the university system as a plaything. In the 1980s, the politicians have become cheerleaders for education and research.

Despite a projected state budget shortfall of $1.1 billion in the next two years, Gov. Mark White's proposed budget calls for a quadrupling—to $80.7 million—of state spending on pure research. Last year White pushed through the largest tax increase in state history to improve the state's underfunded and low-achieving elementary and secondary schools.

His strongest allies for higher taxes for education were in the business community.

"We in this state have been lucky enough to sit on top of a whole bunch of oil and gas, but when we're in rocking chairs and that's all played out, we better make damn sure our kids have something upstairs to keep the state going," computer magnate H. Ross Perot told Texans in a call-to-books speech he delivered across the state last year.

Texas has a long way to go. Even with the new taxes, funding for public schools here still is well below national norms, and student test results still are near the bottom. High school students here rank 17th of the 22 states that collect Scholastic Aptitude Test data. The low-tax mentality will die slowly in the state legislature.

It's the private sector-university connection that's driving most of the effort to diversify.

Some examples, in the last year alone:

• A real estate developer in Fort Worth gives the University of Texas at Arlington $5 million to set up a robotics institute that, he hopes, will attract new industry and keep the existing aerospace and automobile plants in the area competitive.

• A developer in San Antonio donates money and land to launch one of Mayor Henry Cisneros' pet projects, an Institute of Biotechnology at the University of Texas Health Sciences Center that will, he hopes, spur the development of a biomedical industry in San Antonio.

• An independent oilman in Houston gives $10 million in seed money to a new consortium of four universities—UT, Texas A&M, Rice University and the University of Houston—so it can compete to build a federally sponsored $2 billion atom smasher, and conduct research in laser applications in cancer treatment.

Given the zeal with which the state is bounding down the high-tech highway, cool heads cry out to be heeded.

"These are all experiments," says Victor L. Arnold, director of UT's Bureau of Business Research. "They are all worth pursuing. But we just don't have any track record yet.

"If you're looking at high tech to be a panacea for unemployment problems, you're making a big mistake. We do econometric projections here, and even under the most liberal assumptions, we can't get high tech to provide more than 10 percent of our jobs by the year 2000."

Still, conquering new frontiers is near the very core of what makes Texas Texas. The state has the gusto to build a new economy, it has the money, it's working on the smarts, and, all of a sudden, it sees the need.

"The clock is ticking," says George Christian, former press secretary to President Johnson and now a political consultant and business lobbyist in Austin. "We better damn well get ourselves a new base before the oil runs out."

When will that be?

Texans have pumped 47 billion barrels of oil out of the ground since the Spindletop discovery started it all at the turn of the century. Geologists say there are another 8 billion barrels of proved reserves in the state.

At current drilling rates, that will be long gone by the year 2000. Moreover, prospects for major new finds in Texas—surely the most paved-over land on the continent—are considered remote.

That's a bleak picture, but it is not quite the whole picture. Texas also has some 110 billion of barrels of oil that has been classified as "unrecoverable"—too deep or locked too tightly in rock formations to be worth the cost of extraction.

Dr. William L. Fisher, chairman of UT's Department of Geology, believes that new technologies have made 35 billion of those 110 billion barrels recoverable. Assuming that oil prices hold and energy demand grows, he believes that half of the 35 billion will be drilled by the year 2000.

"What created a market for these technologies was the explosion in price that began in 1973," Fisher says. "It prolonged the life of thousands of wells that would have been capped years ago. It could well extend the oil-extraction business in this state well into the 21st century."

The irony of the oil price explosion is that it occurred just as production in this state was peaking. In 1972—the peak year of oil production here—a barrel of crude sold for $3.48. In 1982, the peak year for price, it had shot up more than ninefold, to $32.48.

Small wonder, then, that the realization that Texas has built its economic and tax base on a declining natural resource has been slow to sink in here. Look what oil and natural gas, which has undergone similar production declines and price increases, did for the state through that 10-year stretch:

• Oil and gas employment tripled, to 311,000.

• State revenues from the oil severance tax grew sixfold, from $210 million in fiscal year 1973 to $1.3 billion in fiscal year 1982, despite a 30 percent decline in oil production during that period.

• Sales and severance taxes on the energy industry came to account for 40 percent of all state revenues by 1982.

"We have been taxing the hell out of a declining resource base," says Bernard Weinstein, an economist at the John Gray Institute in Beaumont. With the energy bust of the past three years, the figure is down to 30 percent and dropping. "I'm afraid this state has 10 years of hard slogging ahead in the area of taxes," he says.

What has awakened Texans to the drying up of its chief natural resource is not so much the long-term production decline as the short-term price softening.

The effects of the price bust have been dramatic.

Houston, the red-hot energy capital of the Southwest through the 1970s, is sitting on 30 million square feet of unleased office space—roughly enough to house all of downtown Denver. Business foreclosures in Houston ran at an all-time high in 1984, double the 1983 rate.

Statewide, 16 oil refineries have shut their doors since 1981, and 123,000 manufacturing jobs have been lost. Most of the losses come from industries that supply the energy business, such as fabricated metal and machinery, and industries that process energy as a raw material, such as refineries and petrochemical plants.

"We were on a drunken stupor of prosperity," says Kenneth Schnitzer, a Houston developer heading a hurry-up effort by a business panel to expand Houston's economic base. "We're just now sobering up."

Houston is widely perceived as the chief victim of the energy bust, long- and short-term, but that's probably a misreading of its future.

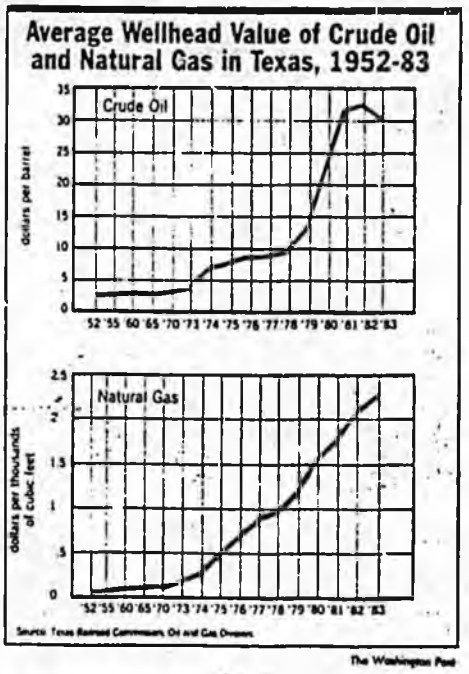
The energy business in Houston is tied more to servicing than to extraction; and it is tied more to the worldwide oil industry than to the Texas industry. In short, when the wells go dry in Texas, Houston still will be one of the world's energy capitals.

Moreover, despite its domination by the energy industry, Houston has other irons in the fire. For example, the Texas Medical Center, one of the largest medical complexes in the world, has more employes—56,000—than the city's 10 largest oil companies combined.

"We have a port, we have NASA, we have medicine," says J.L. Taylor of the Houston Chamber of Commerce. "We probably should have started to diversify 15 years ago, but when you have 1,000 new people moving into your city every week, who worries about broadening your base?"

In the 1970s, the Houston area grew by 970,000 residents and jumped from 76th to 11th place among metropolitan areas in per capita income.

"We have achieved a certain critical mass," Taylor says. "The irony is that we are much better poised to diversify now than we were 15 years ago, when I first started beating the drums for diversification."



Author James Michener tells of being in Houston, interviewing a roomful of real estate brokers for his forthcoming Texas novel. It was 1983. Houston, hottest of the red-hot boom towns of the 1970s, had just taken a spectacular fall in the oil glut, a fall that it still is struggling to overcome.

Michener posed a question to his broker guests. He planned to have one of the characters in his novel move from Detroit to Houston and make it big in real estate.

Question: Which year should the character come to town?

The brokers batted the problem around. Someone suggested 1973—the year of the first oil shock. Silence.

Another proposed 1979—the year of a second OPEC increase and domestic oil decontrol. Land prices were doubling, then doubling again, in a matter of months.

There were nods of agreement and wan smiles of fond remembrance all around the room, but they were offered without enthusiasm.

Finally a broker, heretofore silent, pierced the indifference.

"I have it," she said. "Next Tuesday!"

The room erupted into rebel yells and whoops of delight. "Hot damn! Next Tuesday."

Michener tells the story with unadorned wonder.

"If you want a two-word definition of Texas," he says, " 'next Tuesday' gets you about as close as you'll ever get.

This is a state where you play hard, you take your licks, you get up off your behind, you adjust to the market, and you get ready for the next big strike."

The Houston of 1985 is not much better off than the Houston of 1983. If oil prices continue to slip—and most analysts predict they will—the worst is yet to come.

But there are other corners of the state whose long-term prospects seem dimmer—and they tell another side of oil's decline in Texas.

Take Kilgore and Billy Bob Crim.

When Dad Joiner struck oil here, on Dec. 28, 1930, it was in a well he had spudded on a 900-acre farm owned by Lu Della Crim, Billy Bob's grandmother. The Crims became millionaires overnight.

So did lots of folks in East Texas. Joiner's pool of oil turned out to be an astounding 42 miles long and an average of five miles wide. It put all previous oil discoveries to shame.

In the oil industry, a field containing 100 million barrels is considered a major find. The East Texas field has produced 5 billion barrels, and it is still going—albeit at a drastically reduced rate.

Some 31,500 wells have been drilled into the field over the past 54 years. Fewer than 650 have been dry holes. More than 19,000 of the wells have been plugged and abandoned, and most of those that remain are stripper wells, producing 10 barrels a day or less. Geologists predict that the field will play out within the next 15 years.

For the local tax base, the impact will be devastating. Oil accounts for $3.3 billion of the $6 billion tax base of Gregg County, where the East Texas field sits.

The local tax consequences of declining oil production don't belong to East Texas alone—although the problem is more advanced here. More than one-fourth of the counties in Texas—69 of 254—are in a similar position: More than half of their tax base comes from a dwindling natural resource.

For some cities, the situation is even more dire. Clarksville City, a few miles north of here, where the East Texas field still is productive, draws $358 million of its $368 million tax base from oil.

"It's going to be terrible when the oil runs out," says Buddy Potter, who owns an oil production company in Kilgore. "We keep on having tax consultants come in to tell us how to expand our base. But I just don't think folks are really ready for it."

Loss of tax base hits hard. Loss of royalty income hits harder still.

Oil has brought the landowners of East Texas what they like to call "cash flow." In great abundance.

An owner of an oil property—or of the mineral rights to the property—typically receives a bonus for allowing a production company to drill on the land, plus royalties worth a one-eighth share of whatever the company pulls out of the ground.

In the past three decades, the royalty owners of Texas—most of them small landowners whose shares have been sold, inherited and otherwise split into millions of pieces—have been paid an estimated $41 billion in oil royalties.

Back in 1931, the Crims leased the rights to drill on their property to Humble Oil, now Exxon, for $2.1 million. Family members have been drawing royalty checks every month since then.

"The royalty income has got to be well into the millions, though I don't think anyone in the family has ever totaled it up," says Trey Crim, 31, Billy Bob's nephew. "But one thing's for damn sure—it's running out now."

Trey says his share of the royalties dropped to $5,000 last year. It prompted him to do something that no one in his family had ever done before. He got into the oil business.

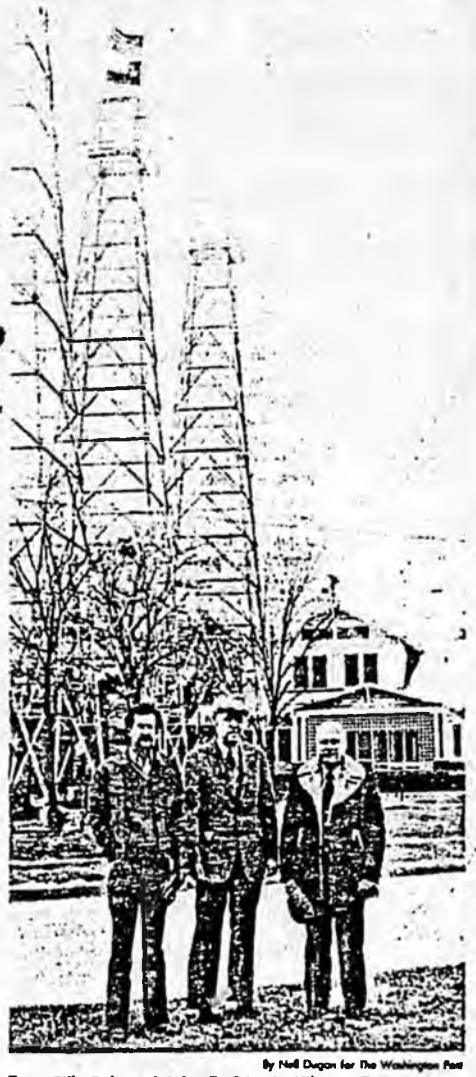
Crim's company, Long-Tex Exploration Inc., raised money from small investors to drill five wells last year—not at the 3,600 foot depth of the Dad Joiner discovery, but at 8,000 to 10,000 feet. He was looking for the hard-to-get oil.

"We hit three of five," Crim says. "We paid off our investors in four months. Those wells ought to produce for another year."

As for the rest of the Crim family—well, over the years it has dabbled in the tobacco business, the laundry business, the timber business. But mostly it has chosen to stay in Kilgore, live simple, decent lives and cash in royalty checks.

The Crims' home town has the sleepy, serene, small-town look of a place whose future came and went long ago.

There are 12,000 people in Kilgore. Some folks here say that the town could have grown bigger, the way Longview did, up the road a stretch—but that old, conservative families like the Crims just didn't want it to. The go-getters of Kilgore, well, they took their cash-flow and moved to Houston or Dallas.



By Neil Dugan for The Washington Post

Trey, Billy Bob and John T. Crim in Kilgore, Tex.

The future seems uncertain here, even to the Crims. When they struck oil in Kilgore in 1930, it was at the depth of the Depression, "and it seemed like the whole world was pouring out its goodies at your feet," says the narrator of the film at the local museum.

Now, says Billy Bob Crim, "it seems like all good things must come to an end."

It is possible to pinpoint a moment on the calendar when the state, in a kind of whoosh of recognition, came to see the need for new arrangements.

It happened in 1983, when Austin outgunned 56 other cities to become the home of the Microelectronics and Computer Technology Corp. (MCC), a newly formed research consortium of 20 high-tech companies that hope, among other projects, to beat the Japanese in the race to build fifth-generation supercomputers.

When Austin won the competition, some other cities cried foul. Texas, they said, "bought" MCC. They were right.

The business community ponied up $23 million to attract the consortium to the state—most of it to build an MCC research facility that will be tied to the University of Texas at Austin, but some to provide a private jet for MCC executives and below-market home mortgages for MCC researchers.

The group that developed the deal includes a who's who of Texas power—Gov. White; Cisneros, who threw in behind Austin's bid after his own city didn't make the final cut; Perot; Perry Bass, scion of the Sid Richardson oil fortune and head of a family that owns much of Fort Worth; Ben Love, chairman of the board of the Houston-based Texas Commerce Bancshares; Dallas oilman H.R. (Bum) Bright, chairman of the Texas A&M Board of Regents, Republican fund-raiser and owner of the Dallas Cowboys; plus a host of academics and scientists.

"The group that came together for MCC had never been in the same room before," says Rostow. "And once they got it, I think they understood that they had to stay together. From now on, this partnership between the politician, the scientist, the engineer and the entrepreneur is going to be a key ingredient to making the economy tick."

MCC has been a genuine galvanizing event in Texas. Its example already has spawned a host of look-alike research institutes in the state. Most are going to break ground this year. Among them:

• The Houston Area Research Council (HARC). Created with $10 million and 100 acres in grants from George Mitchell, chairman of the Mitchell Energy and Development Corp, HARC is a research consortium of scientists from the University of Texas, Texas A&M, Rice and the University of Houston.

It will compete for the federally sponsored $5 billion Superconducting Super Collider (SSC), a giant atom-smasher to be housed in a 100-mile-radius underground tunnel.

"If Texas could get the SSC on top of already having MCC, we'd become the nation's premier research state overnight," says Harden Weidemann, director of the Texas Economic Development Commission. The project would attract research talent from around the world. It also would be an enormous boost to the local economy, including a $200 million annual electric bill.

• Advanced Robotics Research Institute of the University of Texas at Arlington. With $5 million in seed money from a Fort Worth developer, ARRI is scheduled to break ground this fall on a research institute that will look for ways to apply existing robotics technology to plants and factories.

The institute expects to have researchers from nearby General Motors, Bell Helicopter, General Dynamics, Texas Instruments and Rockwell plants participate as members of a governing board.

• In San Antonio, Cisneros has spearheaded the creation of an Institute of Biotechnology at the University of Texas Health Sciences Center and a Texas Research Park on a 1,500-acre tract.

Cisneros hopes to fashion the university and military medical facilities in San Antonio into a world-renowned medical research center. The public school system already has created a high-tech magnet high school and will follow soon with a health-careers magnet high school.

The nation's 10th largest city—but also one of its poorest—San Antonio suffers from having a small manufacturing base. Cisneros says he has no illusions that these institutes will solve persistent unemployment problems, but he believes that the economic activity they generate will produce service jobs for both unskilled and skilled workers.

As Texas moves from the sunset of the oil era to the sunrise of high tech, it has a lot of catching up to do.

Despite ranking third in the nation—behind California and New York—in 1982 in the number of employes engaged in what the Bureau of Labor Statistics defines as high-tech industries, Texas lags far behind in attracting research-and-development grants. In 1982, it received 3.7 percent of all federal R&D funds, compared with 23.6 percent that went to California.

Although the number of high-tech jobs in Texas grew by 73.5 percent from 1975 to 1980—compared with an increase nationwide during that period of 26.8 percent—many Texas-based companies continue to send dollars out of state to fund their research needs.

Much of the problem lay with the universities. "Research dollars go to where the best brains are," Mitchell says. "Our universities haven't been able to compete with those on the East Coast and in California because for years our legislature was dominated by rural interests. But that is changing now."

The state legislature recently has passed laws freeing endowment funds for research programs, and UT-Austin, the state's flagship school, is exploring ways to reduce the teaching load on research scientists, and to enable them to share in the profits of the commercialization of their work.

A bigger problem lies in elementary and secondary education. "What our state is lacking isn't engineers—you can always import engineers," says economist Weinstein. "We're just not up there with the big boys in turning out a skilled work force that can read and write and think.

"We need to change the collective mentality in this state that says you can get away with a low-tax/low-service approach to government. It's beginning to happen. But we've got 10 years of hard slog." ■

RECORDS CERTIFICATION

I, the undersigned, an employee of the State of Alaska, do hereby certify that the microfilm images on this microform are accurate reproductions of the original records of the State of Alaska as accumulated during the regular course of business, and that it is the established policy and practice of this State to microfilm its records and to dispose of the original records after microfilm reproductions have been made.

James O. Smith
Signature of Camera Operator

11/24/89
Date

2-519 (REV 8/78)

SR

8

Alaska State Legislature

POUCH V
JUNEAU, ALASKA. 99811
(907) 465-4907

Senate
Committee on Resources

M E M O R A N D U M February 24, 1986

TO: All Members
Senate Resources Committee

FROM: Staff, Senate Resources Committee

RE: SR 8 "Relating to the use of Alaskan wood"

SR 8 recognizes the importance of the Alaska timber industry to the economy of Alaska and calls for state and local government agencies to follow existing statutes requiring the use of Alaskan woods when public funding is involved.

The resolution also calls for the Department of Commerce and Economic Development to undertake an educational program to make the public aware of the advantages of Alaskan woods. In addition, forest land owners are encouraged to meet the domestic demand for forest products.

Introduced: 1/29/86
Referred: Resources

IN THE SENATE BY FAIKS

SENATE RESOLUTION NO. 8

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

Relating to the use of Alaskan wood.

BE IT RESOLVED BY THE SENATE:

WHEREAS the state has been importing annually the equivalent of at least 100,000,000 board feet of dimension lumber; and

WHEREAS Alaska's forests could provide much of the state's domestic needs for wood products; and

WHEREAS 8 to 10 jobs would be generated directly and indirectly for each 1,000,000 board feet of timber harvested and processed into lumber locally; and

WHEREAS the utilization of local wood for domestic purposes would stimulate the state's forest products industry and help to diversify the economy of the state; and

WHEREAS, in recognition of the benefits derived from the uses of locally grown timber, previous legislatures have passed a Forest Products Preference Act, which provides:

> Sec. 36.15.010. USE OF LOCAL FOREST PRODUCTS REQUIRED IN PROJECTS FINANCED BY PUBLIC MONEY. In a project financed by state money in which the use of timber, lumber, and manufactured lumber products is required, only timber, lumber, and manufactured lumber products originating in this state from local forests shall be used wherever practicable.
>
> Sec. 36.15.020. INSERTION OF CLAUSE IN CALLS FOR BIDS AND IN CONTRACTS. A clause containing the substance of AS 36.15.010 shall be inserted in all calls for bids and in all contracts awarded.

BE IT RESOLVED by the Senate that local and state governmental

agencies that routinely purchase wood or initiate the purchase of wood for domestic use should follow the existing provisions of law; and be it

FURTHER RESOLVED that the Alaska Department of Commerce and Economic Development is encouraged to undertake an educational program to make the public aware of the overall advantages of using Alaskan wood wherever practicable in Alaskan construction; and be it

FURTHER RESOLVED that the owners of forest lands both public and private are encouraged to meet the domestic demand for forest products by supplying an adequate amount of timber for local processors and local manufacturers.

Resolved — 1

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT

POUCH D
JUNEAU, ALASKA 99811
PHONE: 465-2094

OFFICE OF FOREST PRODUCTS

The primary purpose of the Office of Forest Products is to help strengthen and expand a statewide forest products industry.

The office consists of the Director, Thyes Shaub, located in Juneau and a Senior Marketing Specialist, Frank Seymour, located in Ketchikan.

MAJOR ACTIVITIES - 1985

* actively participated in the Governor's Timber Task Force
* established a Market Advisory Committee consisting of statewide industry heads, the State Forester and the USFS Regional Forester.
* planned and participated in hosting timber trade groups from Korea and Japan as part of the Governor's Pacific Rim Trade Program
* published "Alaska's Commercial Forest Resource" providing an overview of the resource, ownership patterns, and the forest products industry.
* utilized USFS research funds to contract the development of a computer model which analyzes the effects of changes in regulatory variables on production costs.
* initiated review and problem identification study of the Railbelt forest products industry to identify necessary courses of action for furthering the use of Alaskan wood fiber and wood products in Alaska.
* coordinated with the Department of Natural Resources, Division of Forestry, in developing a five-year strategy plan to encourage the development of the forest products industry.
* facilitated communication between members of the industry and State agencies.
* responded to regular requests for information from the public, legislators, State agencies, the media and members of the industry.
* participated in policy review and State comment on ANILCA and TLMP reports and coastal zone consistency reviews.
* provided telex communication for market inquiries between the Alaskan Asian offices and Alaska businesses.

Competitive in price when compared to Lake products.
Road to Kelsa - Plans for 3 more

PLANNED ACTIVITIES - 1986

* initiate a "Buy Alaska" campaign to increase awareness and acceptance of Alaska timber products.

* research the potentials of Alaska timber products to supply in-state markets competitively.

* facilitate trade missions, sample shipments and communications between the Alaskan industry and the Pacific Rim customers.

* participate in policy and regulatory review for State and Federal laws and management plans such as ANILCA, CZM and TLMP.

* continue input and follow-up on Timber Task Force recommendations.

* develop technical species and product brochures for promotion with contractors, architects, Pacific Rim customers and other potential users of Alaska wood products.

* continue work with the Division of Forestry to implement a resource management and economic development action plan to enable the forest products industry to contribute its potential to the diversification of the State's economy.

* participate with the Market Advisory Committee in developing a statewide forest products association and market development strategy.

* prepare forest industry information for the Governor's office, Legislators, State agencies, educators, the public and the media.

* compile a directory of producers of Alaska's forest products.

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Introduced: 1/29/86
Referred: Resources

IN THE SENATE BY FAIKS

SENATE RESOLUTION NO. 8

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WHEREAS the utilization of local wood for domestic purposes would stimulate the state's forest products industry and help to diversify the economy of the state; and

WHEREAS, in recognition of the benefits derived from the uses of locally grown timber, previous legislatures have passed a Forest Products Preference Act, which provides in part:

Sec. 36.15.010. USE OF LOCAL FOREST PRODUCTS REQUIRED IN PROJECTS FINANCED BY PUBLIC MONEY. In a project financed by state money in which the use of timber, lumber, and manufactured lumber products is required, only timber, lumber, and manufactured lumber products originating in this state from local forests shall be used wherever practicable.

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FURTHER RESOLVED that the owners of forest lands both public and private are encouraged to meet the domestic demand for forest products by supplying an adequate amount of timber for local processors and local manufacturers.

SENATE AMENDMENT #1

By SENATOR ZIEGLER

To: AMEND SENATE BILL No. SR 8

To: _____ HOUSE BILL No. _____

PAGE: 1 & 2 LINE: 5...Page 1
Lines 5 & 6 Page 2

In the title, on page 1 and, in both cases on page two, change the word "Alaskan" to "Alaska"

SR 8 AR. Woods

Alaska State Legislature

ARLISS STURGULEWSKI, Chairman
BETTYE FAHRENK MP, Vice Chairman
JACK COGHILL
DICK ELIASON
VIC FISCHER
RICK HALFORD
FRED ZHAROFF

POUCH V
JUNEAU, ALASKA. 99811
(907) 465-4907

Senate
Committee on Resources

February 10, 1986

Frank Wanamaker
Alaskan Woods
8511 Hartzell Street
Anchorage, Alaska 99507

Dear Mr. Wanamaker:

Thank you for your recent letter.

I have co-sponsored SR 8 with Senator Faiks, calling for the enforcement of those statutes you cited requiring the use of Alaskan woods in state projects. I have scheduled a public hearing on this resolution for February 24, 1986 at 1:30 p.m. in the Butrovich Room (Room 205) of the Capitol Building. This meeting will be teleconferenced, and you are welcome to participate from the Anchorage Legislative Information Office at 1024 West 6th Avenue.

I share your concern and feel this law should be enforced.

Sincerely yours,

Arliss

Senator Arliss Sturgulewski
Chairman, Senate Resources Committee

JAN 21 1986

JAN 21 1986

ALASKAN WOODS

CABINETS and MILLWORK INC.
8511 HARTZELL STREET
ANCHORAGE, ALASKA 99507

Jan. 10, 1986

Dear Senator;

Alaskan Woods is excited about the governors new program "I PROMOTE ALASKAN".

We are in need of your help to promote this program.

Would you please see that Alaska Statutes, Title 36 Public Contracts, Chapter 15 Forest Products Preference, Section 36.15.010 and Section 36.15.020 are inforced.

We thank you for supporting the "I PROMOTE ALASKAN" program.

ARE YOU AWARE OF THIS STATUTE?

ARE YOU AWARE OF THE AVAILABILITY OF QUALITY ALASKAN WOOD PRODUCTS LOCALLY?

ALASKA STATUTES

Title 36
Public Contracts

SEPTEMBER 1982

Chapter 15. Forest Products Preference.

Collateral references.- 64 Am. Jur. 2d, Public Works and and Contracts, 94.
2,3,7,10,18; 81A C.J.S., States
154, 158, 161.

Sec.36.15.010. USE OF LOCAL FOREST PRODUCTS REQUIRED IN PROJECTS FINANCED BY PUBLIC MONEY. In a project financed by state money in which the use of timber, lumber, and manufactured lumber products is required, only timber, lumber, and manufactured lumber products originating in this state from local forest shall be used wherever practicable. (14-3-1 ACLA 1949)

Sec. 36.15.020. INSERTION OF CLAUSE IN CALLS FOR BID AND IN CONTRACTS. A clause containing the substance of AS 36.15.010. shall be inserted in all calls for bid and in all contracts awarded. (14-3-2 ACLA 1949)

ALASKAN WOODS

CABINETS AND MILLWORK INC.

FELLOW ALASKANS

All residents of this great state have a vested interest in maximizing the utilization of our natural resources.

"Maximum utilization" is accomplished by taking a raw resource, adding value through processing, and ultimately selling to other Alaskans. We at ALASKAN WOODS do just that We cut native trees (Birch, Spruce, Cottonwood) and process that wood, IN ALASKA WITH ALASKAN WORKERS, into products needed and purchased by ALASKANS.

We are Alaskan owned and operated thus maximizing the value of the resource. We purchase here, we pay labor here, we sell here, and the profits stay here.

We have a complete wood processing facility with the capacity to supply a wide variety of wood products including:

T&G FLOORING **T&G PANELING**

MOULDING OF ALL SHAPES AND SIZES

FURNITURE **CUSTOM CABINETS**

We invite your questions and comments or a visit to our plant. Just call (907) 349-6588 in Anchorage.