

SJR

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POSITION PAPER/Department of Health & Social Services

POSITION PAPER

SENATE JOINT RESOLUTION NO. 40

"Relating to the need for Congressional hearings on Arctic science policy."

The unique health problems (hypothermia, accidental death, alcoholism, seasonal depression, sleep disturbances, otitis media, and hepatitis B) experienced in Arctic environments require a coordinated, long duration, Arctic based research endeavor. The rapid growth of Arctic populations necessitate a well defined Arctic science policy.

An Arctic research center is needed to coordinate research and bring all Arctic technical resources under one roof. This coordination should include coordination with the circumpolar research efforts. A periodic international circumpolar Arctic sciences conference board in Alaska could stimulate such a cooperation and coordination.

The Department of Health & Social Services fully endorses Senate Joint Resolution No. 40.

Recommended by: Verner Stilmer
Verner Stilmer, M.D., M.P.H.
Director, Division of Mental
Health & Developmental
Disabilities

Date: 5/6/81

Approved by: Helen D. Beirne
Helen D. Beirne, Commissioner
Department of Health & Social
Services

Date: 5/11/81

THE LEGISLATURE OF THE STATE OF ALASKA
TWELFTH LEGISLATURE

FISCAL NOTE

I. REQUEST

Bill/Resolution No. SENATE JOINT RESOLUTION NO. 40
 Title Congressional hearings on Arctic science policy
 Requested by Commissioner's Office Date 5/4/81

II. FISCAL DETAIL

Agency Affected Health & Social Services
 Program Category Affected Mental Health & Developmental Disabilities
 BRU, Program, or Subprogram(s) Affected _____
 (Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

FUNDING (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Fund Source)						

POSITIONS

FULL TIME						
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instructions, Section III)

No cost impact is foreseen to the Department of Health & Social Services as a result of this legislation.

IV. DATE May 6, 1981 PREPARED BY Verner Staliner, M.D., M.P.H., Director
 AGENCY Health & Social Services/Mental Health & DD
 PHONE 465-3370

Original: Legislative Finance
 cc: Budget and Management
 Prime Sponsor (First Legislator Named) M&B Approval [Signature] Date 5/7/81



UNIVERSITY OF ALASKA

May 11, 1981

Vic Fischer
Chairman, Senate State Affairs
Committee
Alaska State Senate
Pouch V
Juneau, Alaska 99811

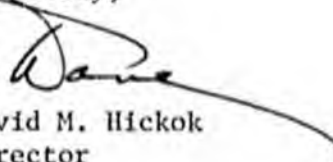
Dear Vic:

Thank you again for your efforts and interest regarding science in Alaska. I believe the joint hearings held by your committees in April inspired increased awareness within the State of scientific problems and priorities and, hopefully, will bring us one step closer to a long-term commitment to research in the Arctic.

You may be intertested in the dialogue on arctic science which appears to be heating up on the national level. I am enclosing a speech calling for an arctic research policy which was presented on the Senate floor by Mr. Murkowski last week. I will be working with the Senator's office on a bill which should result in Congressional hearings on arctic science next winter or spring.

As you know, the need for arctic research is critical. At the moment the proposed federal budget cuts pose a serious threat to research, but I am cautiously optimistic that increased awareness of our lack of scientific knowledge will spur an eventual renaissance in arctic science. Your part in that is much appreciated.

Sincerely,



David M. Hickok
Director

DMI/pp

Enclosure

SJR-40



United States
of America

Congressional Record

PROCEEDINGS AND DEBATES OF THE 97th CONGRESS, FIRST SESSION

Vol. 127

WASHINGTON, WEDNESDAY, APRIL 29, 1981

No. 63

Senate

(Legislative day of Monday, April 27, 1981)

THE NEED FOR AN ARCTIC RESEARCH POLICY

Mr. MURKOWSKI. Mr. President, I very much appreciate the opportunity to address our assembled body this morning on the Arctic research policy and the needs therein.

Mr. President, the Nation's dependence on insecure sources of expensive foreign oil is now declining because of reductions in domestic demand. At the same time, our dependence on the energy resources of Alaska's North Slope is growing.

The President of one of America's major oil companies, Arco Alaska, recently stated that he expects "half of future U.S. domestic oil supply to come from Alaska and its offshore fields." The major portion of America's new found energy resources will come from areas in Alaska north of the Arctic Circle. The Prudhoe Bay oil fields, located on the North Slope of Alaska, will soon be sending nearly 2 million barrels of oil per day through the Trans-Alaska pipeline across Alaska to Valdez and by tanker to the lower 48 States. Those fields are being expanded with development of the Kuparuk Field. Arco alone plans to spend some \$10 billion over the life of the fields. And Prudhoe Bay is just the beginning of this Nation's efforts to develop Alaska's energy resources.

Among the energy projects planned for Alaska over the next decade include: The Alaska natural gas transportation system, which will carry Prudhoe Bay gas to the lower 48 States with a cost rapidly approaching \$30 billion; the 23 million acre National Petroleum Reserve—Alaska, located entirely within the North Slope of Alaska, which will for the first time be open to private leasing by the end of this year; offshore drilling in the Beaufort Sea, with plans to accelerate dramatically further leasing in both the Beaufort and Chukchi Seas of the Arctic Ocean; preliminary investigation of the oil and gas potential of the Arctic National Wildlife Refuge, which was authorized last year in the Alaska National Interest Lands Conservation Act; proposals for a petrochemical industry to use Prudhoe Bay natural gas liquids; and extensive private exploration taking place on State- and Native-owned land on the North Slope.

Mr. President, it is thus apparent that the level of oil and gas developmental activity in Alaska's Arctic is increasing dramatically. Moreover, this same kind of activity is occurring in our neighbor Arctic-rim nations—Canada and the Soviet Union—where there is also sub-

stantial activity to find and develop the energy and mineral resources of the Arctic.

A major, unavoidable impact of this energy development is the introduction of new technology, environmental disruption, large work forces, and many unanticipated and unintended problems. A wide variety of wildlife, marine mammals, birds, and fish, as well as the complex plant life of the tundra, combined with the low temperatures, harsh winds, and long dark Arctic winters, make this environment extremely sensitive and subject to damage unless properly protected during resource development. Yet,

because our reliance on the Arctic for the Nation's energy needs is such a recent event, we know much less than we should about how the people, the wildlife and the environment will be affected by development and how we can prevent and mitigate those adverse effects.

It is essential—and it is good economics and good government—that a key element of our Nation's energy program be a comprehensive, coordinated, and well-funded policy of basic and applied Arctic research. Unfortunately, the U.S. Government has no such policy today. Although some applied research is being conducted by oil companies, by the University of Alaska, and by the Federal Government, the level of research is far, far below that which is necessary. As just one indication of the low priority that the Federal Government is giving Arctic research, the Department of the Navy is phasing out operations at the Naval Arctic Research Laboratory at Point Barrow, Alaska, intending to place the facility on a caretaker status toward the end of this year. This is the only, yes, the only, Federal facility for Arctic research now available in the United States.

Other nations recognize the critical need for continuing Arctic research. There are active, expanding research programs in Canada, the Soviet Union, and even in smaller nations such as Denmark. These nations recognize their own self interest. They have acted to maximize energy development in the Arctic. They have acted to insure that they do not make unnecessary and costly mistakes. They are pursuing their short- and long-term interest intelligently. We, however, are not.

Of particular interest to me is the ongoing Arctic research the Soviet Union is engaged in. As some of the additional materials I will insert in the Record clearly show, we are frightfully behind the Soviets in this area. In the Soviet Union, a large Arctic research effort involving 20,000 scientists is coordinated through the Arctic and Antarctic Institute of Leningrad.

I support wholeheartedly the exploration and development of our Arctic energy resources to help sustain this Nation's national defense, its economy, and our way of life. At the same time, I support, and I urge the support of my colleagues for, the development and implementation of an intelligent national Arctic research policy which will put us on a par with Denmark, Canada, and the Soviet Union. We cannot afford less.

The Arctic research issues that should be examined by our scientists and engineers are numerous and wide ranging. The impact of expedited oil and gas developmental activities on the breeding grounds for water fowl, marine mammals, and wildlife remains uncertain. Of particular importance to the Native people of the North Slope is the impact of offshore development on the populations and migratory habits of the bowhead whale, an animal still vital to the subsistence and cultural lifestyle of Alaska's Natives. The ability of wildlife to coexist with the modern technology of oil and gas development, particularly in pristine areas such as the Arctic National Wildlife Refuge, deserve greater examination.

Technological problems of operating in the Arctic require further study. The Arctic environment is extremely sensitive and unique. Transportation—whatever the mode—is very expensive. Since so little is known about Arctic operations, many activities that are simple and routine in the lower 48 become exceedingly complex and difficult in the Arctic. For example, no satisfactory method of permanent waste disposal of nonorganic materials in the Arctic has yet been developed. Acceptable construction techniques are in their infancy and are still being tested and developed. Ice conditions and the threat they pose to offshore drilling activities are poorly understood and little tested. Pollution control—whether air emissions, water discharges, or oil spills—requires a different approach in the Arctic than in moderate climates.

The Alaskan Arctic is strategically important to our national defense. The strategic interest of the Arctic grows as energy production in that area increases. In the not too distant future, the strategic importance of the Arctic will rival that of the Persian Gulf.

Not only does the Arctic contain critical energy and mineral resources and military bases, but the Arctic represents our only common border with the Soviet Union. Little is known of seaborne movements in the Arctic, whether on the surface of the seas or in submarines beneath the waters and ice of the Arctic Ocean. Our understanding of communication in the unique atmospheric conditions of the Arctic is minimal. Our national defense requires a more complete understanding of the Arctic and its effects on our military capabilities.

Obviously, there is no shortage of issues for applied Arctic research. What is lacking to date is a national commitment to this research and a coordinated, comprehensive, long-range research program involving the various interested public and private organizations. The costs, by any measure, are insignificant. The danger, on the other hand, of failing to do what is proper and prudent carries large costs. These costs may be measured in terms of delay, needless litigation, and expensive development efforts that fail for lack of required information.

I plan to make the development of a national Arctic research policy one of my priorities in this session of the 97th

Congress. I will be asking many of you to contribute to this important task, because it has significance for your States and for all parts of this country that are relying more and more on Alaska's energy resources. My colleague, the senior Senator from Alaska, shares my concerns about the need for a coordinated, comprehensive Arctic research policy.

The Federal Government needs to designate an agency that wants the responsibility for Arctic research—if the U.S. Navy does not want the job, perhaps it should be given to the Coast Guard. The Coast Guard, with its long history of service throughout Alaska, may be the logical Federal agency to take over the extremely valuable laboratory and other facilities at Point Barrow that will soon fall into disrepair and, thereafter, be available for a vital mission only at great cost. Until a perma-

ment designation of the Federal agency best able to maintain these facilities is made, the Arctic Research Lab might be turned over to the University of Alaska, which would be provided funds to maintain the lab as its caretaker. Finally, a final decision on the laboratory's scientific value must be made as soon as the Federal agency has been designated.

In the Alaska Lands legislation, the Congress directed the Secretaries of Energy, Interior, and Defense to study carefully the implications of closing down NARL, including the impact of that closing on our Arctic research program, and to maintain the facility until such time as the Congress could consider the results of that study. It is my expectation that these departments and the administration will respond to this directive and will make every effort to maintain the facility in a caretaker status until we are better able to evaluate its role in this Nation's Arctic research program.

Mr. President, I will review the issue of Arctic research policy with other interested groups to identify the best organization structure to develop, fund, and implement research projects that are crucial to our understanding of the Arctic. In particular, I want to focus on those Arctic research projects that will be cost effective; that will enable us to understand and avoid potential adverse effects; and that will lead to the development of better alternatives and improved mitigative measures. Among those who should be involved in this process are the oil companies active in the Arctic, the State of Alaska, the University of Alaska, other Arctic rim nations, the Departments of Energy, Defense, Interior, Transportation, Coast Guard, the National Petroleum Council, the National Science Foundation, the National Academy of Sciences, the scientific community, conservation organizations, and private groups such as the National Geographic Society and the American Association for the Advancement of Science.

Alaska's energy resources are vital to this Nation's future. Development of those resources will have a positive effect on our balance of payments. They can, properly managed, strengthen our

overall energy independence and our national security.

Mr. President, I will ask unanimous consent to have printed at the end of my remarks a chronology of energy development and Arctic research developments in my State. This chronology demonstrates the Nation's growing reliance upon Alaska's energy resources and the dramatic expansion of activity in recent years.

Given the extreme importance of Alaska's energy resources and the incalculable fact of their continued development, we must include as part of our national energy policy a serious, major program of applied Arctic research. Over the next several months, my office will be reviewing the major elements of such a policy and the most appropriate organizational and financial structures necessary to expand and energize our Arctic research to the levels that they deserve.

Mr. President, I ask unanimous consent that the chronology of energy development and Arctic research developments and excerpts from a new February 1981 report on U.S. Arctic science policy by the Alaska Division of the American Association for the Advancement of Science be printed in the Record.

There being no objection, the material was ordered to be printed in the Record, as follows:

CHRONOLOGY OF ARCTIC RESEARCH EFFORTS AND DEVELOPMENT OF U.S. ARCTIC POLICY*

1923—President Warren O. Harding establishes Naval Petroleum Reserves No. 1 (NPR-1).

1946-53—Exploration of NPR-4.

1947—Naval Arctic Research Laboratory (NARL) established at Ft. Barrow, Alaska.

1958—Passage of Alaska Statehood Act. 1960's—Increased national attention and Congressional action with respect to environment, ocean and space sciences.

1964—Good Friday earthquake in Alaska. Following this, significant economic recovery and oil industry exploration activities take place. These activities place new demands on Arctic science and technology.

1964-65—(1) Alaskan Senator Bob Bartlett commissions Legislative Reference Service of the Library of Congress to prepare report on scope of U.S. Arctic research.

(2) Bartlett also requests Joseph Fitzgerald, Chairman of the Federal Field Committee for Development Planning in Alaska, to implement a process within the federal executive branch to develop Arctic policy.

1965—Fitzgerald prepares initial broad statement of U.S. Arctic policy and initiates discussions with heads of departments and agencies in Washington, D.C.

Policy statement emphasizes need for conduct of coherent Arctic scientific programs prior to commencement of exploration and production.

1965-1968—Ongoing discussions regarding contents of policy statement between Federal Field Committee and National Science Foundation.

1968—Governor Walter Hickel brings need for a U.S. Arctic policy to Republican Convention; for first time, Arctic interests included in a major political platform.

1968—U.S. policy statement agreed to by all concerned agencies and forwarded to President Johnson; statement not signed by Johnson prior to his leaving office.

*Based on "United States Arctic Science Policy," prepared under auspices of Alaska Division, American Association for the Advancement of Science, 1981.

1968—Establishment of Interagency Arctic Research Coordinating Committee (IARCC), at request of State Department, Office of Science and Technology and Federal Council for Science and Technology.

Primary purpose of IARCC was to issue sound and rational development of Arctic research, through coordination of federal research programs and development of cooperative research projects with other nations. (Disappointingly, IARCC in its 10-year existence did not play a strong role.)

1968-1969—Other events bring new focus to Arctic science:

(1) Implementation of National Oceanographic Program in executive branch (pursuant to Marine Resources and Engineering Development Act of 1968).

(2) Discovery of nation's largest oil field on Arctic coast at Prudhoe Bay, Alaska.

(3) Congress giving greater attention to Federal Field Committee's reports on ways to resolve aboriginal land claims of Alaska Natives.

(4) Problems associated with construction of Trans-Alaska pipeline and tanker traffic from ice-free port at terminus of pipeline become evident; lack of persons knowledgeable about Arctic environment becomes apparent.

May 1969—Initial plans for Trans-Alaska pipeline presented to U.S. Senate Committee on Interior and Insular Affairs.

Plans called for a buried pipeline along entire length except for 12 miles. Problems with plans quickly pointed out.

October 1969—Now Secretary of the Interior Hickel convenes "Skyline Conference" to define role that federal government should take to ensure a balance between exploitation of Arctic resources and protection of land and people of the Arctic.

Late 1969—President sends report to Congress: Marine Science Affairs—A Year of Broadened Participation, 1969.

Report sets forth recommendation for a national Arctic policy report and is still clearest expression articulated of U.S. Arctic objectives.

December 1969—National Environmental Policy Act (NEPA) adopted.

1970—Pipeline project becomes first test under NEPA.

1970—Three major Arctic science programs begun in and near Alaska:

(1) Alaska Sea Grant Program—research efforts in Arctic marine and coastal resources and environments.

(2) Tundra Biome Program, sponsored by National Science Foundation—to study tundra ecosystems (part of U.S. participation in International Biological Program).

(3) Arctic Ice Dynamics Joint Experiments—study of ice movements, forces, and effects in Arctic Basin.

Unfortunately, programs were not coordinated.

1971—Renewed statement of U.S. Arctic policy forwarded to President by Under Secretary of State Irwin.

December 1971—Statement not signed by President, due to issuance of National Security Division Memorandum 144 by National Security Council.

Memorandum called for establishment of an Interagency Arctic Policy Group and development of a coordinated plan for scientific research in and on the Arctic. (No record that policy group ever met.)

1972—Publication by IARCC of Five-Year Coordinated Plan for Arctic Research.

Report had many weaknesses and was not considered to meet the mandate of NSD Memorandum 144.

1972—Under aegis of National Academy of Science, group headed by Dr. Walter O. Roberts, then director of National Center for

Atmospheric Research, examined and published recommendations on potential environmental effects of development of the North Slope.

No significant results from this effort.

1972—After eight years of effort, no successful development of U.S. Arctic policy.

1974—Workshop sponsored by Alaska Sea Grant Program and National Science Foundation.

Purpose was to coordinate activities and develop an "Arctic Offshore Program."

1974—While plans were being formulated for above workshop, the Bureau of Land Management of the Interior Department entered into an agreement with National Oceanographic and Atmospheric Administration for assessment of the outer-continental shelf environs, prior to leasing of the OCS for oil and gas.

Effort included studies in Gulf Alaska, Bering Sea, Beaufort and Chukchi basins. Unfortunately, results were poorly synthesized and research activities were often aborted prior to completion.

1976—Studies of environment of National Petroleum Reserve in Alaska, mandated by Naval Petroleum Reserves Production Act of 1976.

Studies added little to existing environmental knowledge.

EXCERPTS FROM U.S. ARCTIC SCIENCE POLICY (By David M. Hickok, Gunter Weller, T. Neil Davis, Vera Alexander, and Robert Eleanor)

In the long run, a well-thought-out and integrated Arctic science policy will guarantee the best management and use of the Arctic's diverse resources—natural, strategic, and human. During the past three decades government basically has paid "lip service" to this concept with token and procedural programs in Arctic science. Governmental coordination, priority determinations, and sporadic pronouncements concerning Arctic science have, in effect, been a farce in every sense. The nation simply cannot afford any longer to be complacent in its approaches to the acquisition of Arctic knowledge. Clearly, the time for a renaissance in Arctic science is now. We need a strong and cohesive U.S. Arctic science policy to guide national program effort in resource development, international relations, defense, environmental protection, and human health.

Offshore, exploration and future production facility design in all basins north of the Aleutians is severely hampered by lack of data on ice characteristics and dynamics, information on currents and sediment transport, knowledge of the occurrence of subsea permafrost, and data on superstructure icing and storm occurrence. Operating offshore drill rigs in the ice-covered waters of the Arctic in a safe and environmentally acceptable fashion is difficult and costly. The numerous natural hazards in the Arctic, particularly sea ice, make a cautious approach, in which technologies and environmental procedures are continually being tested and improved, mandatory. Petroleum companies operating on Arctic continental shelves have found accurate forecasting of sea ice behavior to be indispensable. The normal hazards of offshore drilling are magnified many times by the wide variations in weather and ice conditions. Pipelines from drilling platforms to shore are subject to rupture by the scouring action of massive pressure ridges and ice islands, and enormous forces can build up on the drilling platforms as the moving ice piles up against it. Without such information the construction of offshore, year-round production facilities is impossible.

To be able to exploit Arctic resources, legally, economically, and in an environmentally acceptable fashion; to conduct military operations in the area; and to represent its interests in the Arctic intelligently and from an informed basis, the United States must have a substantial and well-coordinated scientific research program in the Arctic. Such a program does not presently exist, neither does a coherent policy on Arctic research nor any priority sense of purpose. Consequently, the United States has only very limited Arctic scientific and technological expertise and capability. Only a strong, stable, long-term science effort can supply the answers needed now and to train a generation of future Arctic scientists.

Various jurisdictional problems in the Arctic also have strategic as well as political and economic implications. There is disagreement, for example, about the extent of coastal state jurisdiction over the Arctic sea and on Norway's claim to exclusive control of the resources of Svalbard's continental shelf. Controversy also marks the effort to establish a Norwegian-Soviet continental shelf boundary in the Barents Sea, and the continental shelf boundary between Canada and Alaska has not yet been agreed upon. The possibility of Arctic tanker traffic, the advent of the nuclear-powered submarine, and the massive buildup of the USSR fleet along the Barents Sea have enhanced the importance of the Arctic Ocean as transit area, particularly to the USSR and to such an extent that some observers have begun to refer to the Arctic Ocean as a "Soviet lake." The

Soviet Union's scientific effort in the Arctic Ocean and along margins exceeds the combined efforts of all the other littoral countries.

Dr. Tore Gjelsvik, director of the Norwegian Polar Institute in Oslo, wrote recently:

"In contrast to Antarctica, the international scientific cooperation in the Arctic is rather poorly developed and organized. On the national level, arctic science is differently developed. The Soviet-Russian organization and institutes charged with exploration and scientific studies are larger than the biggest in the west, and they carry out a large and systematic study of not only the Soviet arctic coasts and islands, but over the whole central arctic. The Soviet arctic technology is well developed, and the transportation system—consisting of powerful icebreakers and aircraft—is superior to that of the west. The Arctic and Antarctic Institute of Leningrad is the central polar organization, but in addition, many specialized agencies or institutes have been established. More than 20,000 scientists must be involved in arctic studies on the Soviet side.

"In the biggest arctic nations in the west, their polar research, although increasing in size and quality, is rather poorly coordinated. Neither USA nor Canada has established a central organization for arctic science. This also makes international cooperation and coordination difficult. Arctic science in the west has grown considerably since the discovery of oil and gas in the American Arctic but is still lagging behind the Soviet one. If the gap is not bridged, or at least diminished, there is a danger of unwanted consequences of future political and legal arrangements within the central Arctic."

Dr. Gjelsvik concluded by urging the Western governments to increase funds for arctic science and to coordinate their efforts on an international level. We heartily concur.

These brief examples illustrate the uniqueness and diversity in structure, dynamics, and behavior of the arctic region as an important part of the whole Earth. Other nations are expending great efforts in the study of the Arctic because they understand that the keys to many of our planet's present and future problems may lie in this region. If the United States is to participate in this process in any meaningful way, it must begin to involve itself in arctic research now.
