

AR 1977

*Alaska Department of Natural Resources*

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*1977 Annual Report*



JAY S. HAMMOND  
GOVERNOR  
STATE OF ALASKA



ROBERT E. LeRESCHE  
COMMISSIONER  
DEPARTMENT OF NATURAL RESOURCES

# Overview-Natural Resources

Unlike many states, the State of Alaska owns vast amounts of land and the natural resources it contains. The right to acquire these lands was given to the State by the federal government at the time of Statehood. Thus, at present the State has working title to 37 million acres, and is moving towards the selection of 72 million additional acres.

The Department of Natural Resources is charged with managing these state-owned lands and its resources. The Department is also responsible for determining what federal lands the State should select to complete Alaska's land entitlement under the Statehood Act. In each of these areas the Department's responsibilities have increased greatly in recent years because of the discovery and development of rich resources on state-owned land; the increasing management standards; the increasing quantity of state-controlled land; and the exploration and development of resources on federal and private land (i.e. the Outer Continental Shelf Program, National Petroleum Reserve-Alaska, and Native corporate lands). The Department is also charged with regulating resource development related activities on all land, whether state or private.

There are many uncertainties about the future of Alaska's lands. During the next year legislation focusing on the D-2 issue will greatly affect the future course of Alaska land development. Much attention has been focused on the total quantity and location of lands to be placed in the federal system and the possible creation of new systems, including cooperative management of state and federal lands. No doubt, considerably more attention will be paid to these questions before Congress ultimately acts. Of equal significance for Alaska are the issues relating to rapid conveyance of state- and native-selected lands and the resolution of many related land status problems. When these land and mineral issues are resolved, one can expect Alaska to face the decade of the 80's with enthusiasm and confidence in the management of its valuable natural resources.



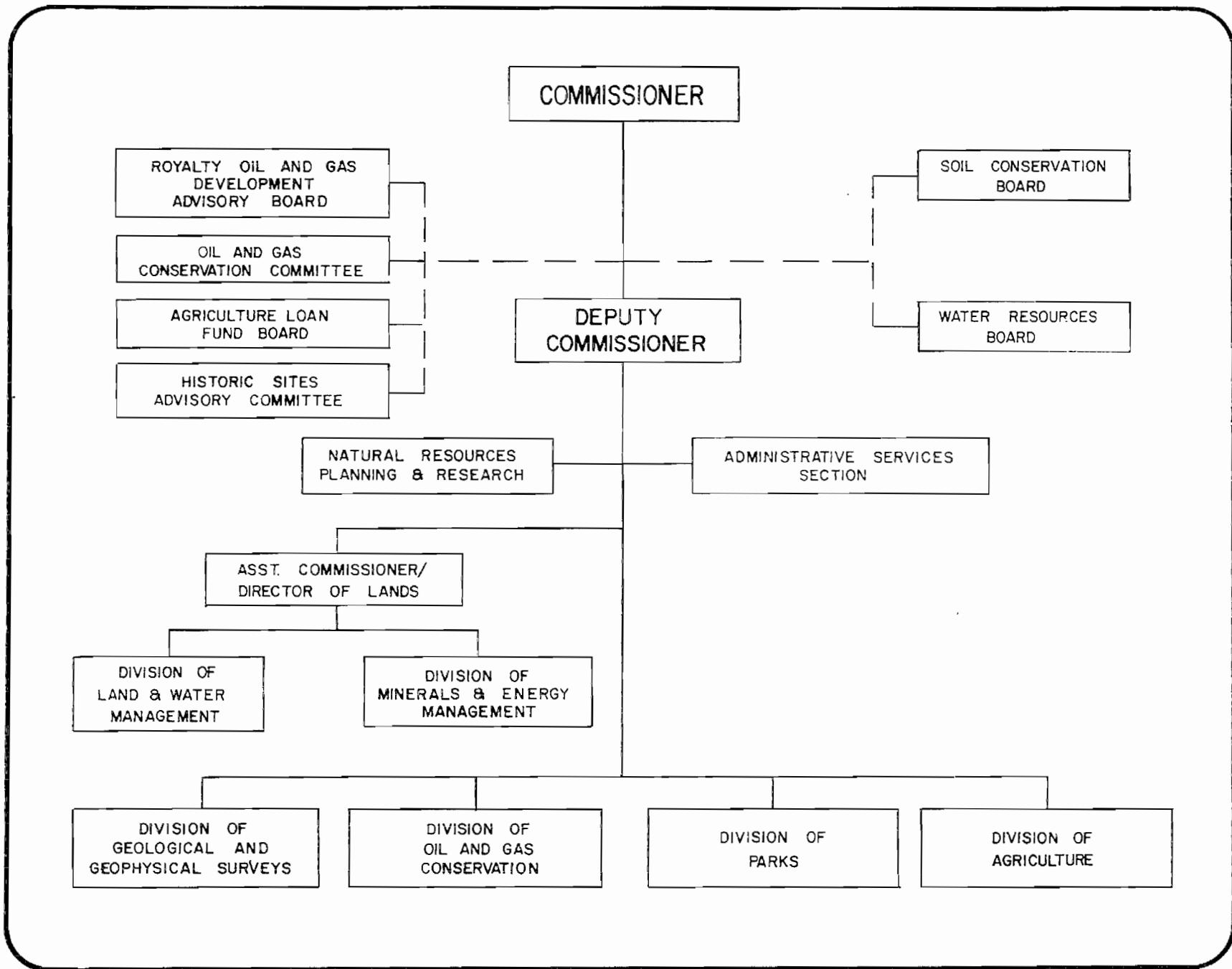
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*Alaska Department of Natural Resources*

*Pouch M*

*Juneau, Alaska 99811*



# Commissioner: Robert E. LeResche

Deputy Commissioner: Frederick H. Boness

The Department's responsibilities include land and water, oil and gas, timber, agriculture, and soil conservation. The Department is also responsible for other energy resources such as coal, geothermal and uranium, and hard minerals. It has the authority for the State Park System and historic preservation programs. The Department provides the principal state interface with the federal government and the private sector regarding the development of Alaska's resources. The Department also shares state responsibilities in the resource area with the Department of Environmental Conservation, responsible for air and water quality programs, and the Department of Fish and Game.

The chief executive of the Department is the Commissioner of Natural Resources, who is responsible for policy development and administration of the Department's seven divisions and various boards and agencies. A Deputy Commissioner serves as principal Assistant to the Commissioner. Each division in the Department is headed by a director. The seven divisions are:

Alaska Division of Lands

Alaska Division of Land and Water Management

Alaska Division of Minerals and Energy Management

Alaska Division of Geological and Geophysical Surveys

Alaska Division of Oil and Gas Conservation

Alaska Division of Parks

Alaska Division of Agriculture.

The Director of the Division of Lands also has the title of Assistant Commissioner, with responsibility for coordinating the activities of the Divisions of Land and Water Management and Minerals and Energy Management. He is responsible for ensuring that the obligations under the State Land Act (Title 38, Alaska Statutes) are carried out in a thorough and consistent manner.

## NATURAL RESOURCES PLANNING AND RESEARCH SECTION

Chief: David G. Hanson

The Planning and Research Section assists the Commissioner in coordinating the various management and resource planning functions of the Department. Among the basic responsibilities of this section are new-program development, state land-selection coordination, assistance to the Commissioner in setting department policies and priorities, and coordination between the Department and other agencies.

The Planning and Research Section completed a variety of major land-selection tasks in 1977. These included the establishment of a land-selection process and criteria document, which was applied to the selection of 3.6 million acres of land last April. The Section has also computerized a statewide resource inventory and an assessment system which allows rapid analysis of the State's resource potential. The system has been utilized to select the above-mentioned 3.6-million acres of state interest lands. The inventory has also been used to assess the impacts of various D-2 proposals on state interests and resource values. The results of the inventory have also been used by both the U. S. Department of the Interior and various congressional committees during the D-2 deliberations at the national level. Other section projects include various studies regarding land-use planning in the Susitna Valley, a regional land status mapping system for the coastal zone, agricultural-development actions related to the Delta Junction area, a Prudhoe Bay Water plan, the completion of a North Slope petroleum-development analysis, and various reports and policy papers related to major issues of concern to the Department.

## ADMINISTRATIVE SECTION

Administrative Officer: Harry S. Aase

The Administrative Section of the Department of Natural Resources provides overall support to the divisions within the Department. This section administers and reviews spending of the authorized budgets of these divisions. This section also provides assistance in personnel matters and supply and equipment purchasing procedures.

## ALASKA ROYALTY OIL AND GAS DEVELOPMENT ADVISORY BOARD

Executive Director: Donald G. Wold

The Board was created by Alaska Statute 38.06. It occupies a place in the procedure for disposing of state royalty oil and gas taken in kind, and was first organized in mid-1975. The Board consists of three public members knowledgeable in oil and gas matters, the Commissioner of the Department of Revenue, and the Commissioner of the Department of Natural Resources, who serves as Chairman. Once royalty oil and gas is taken in kind, on the decision of the Commissioner of Natural Resources and some agreement or sale of the royalty oil or gas has been completed, it must be approved by the Board and the Legislature before becoming effective. The royalty statute creates strong incentives for in-state use of royalties for the benefit of the state.

## OIL AND GAS CONSERVATION COMMITTEE

Chairman: O. K. Gilbreth, Jr., Director, Division of Oil and Gas Conservation

This three-member committee was formed to provide official enforcement of Alaska Statute 31. The Statute provides for the conservation and waste prevention of the State's oil and

gas resources. This committee makes regulatory recommendations under this statute and carries them out through the Division of Oil and Gas Conservation. The three members; the Director of the Division of Oil and Gas Conservation, the Chief Petroleum Geologist, and the Chief Petroleum Engineer, are employees of the Division of Oil and Gas Conservation. They serve at the pleasure of the Commissioner of Natural Resources.

## AGRICULTURAL LOAN FUND BOARD

Chairman: James H. Reaves

This board was established by Alaska Statute 03.10, the Alaska Agricultural Loan Act. The five members of the Board are appointed by the Governor and serve three-year terms.

The Board makes decisions on issuing loans on each application received under the Alaska Agricultural Loan Act. The Loan Act was designed to promote more rapid development of agriculture as an industry throughout the state by means of long-term, low-interest loans. Decisions of the Board must be approved by the Commissioner of Natural Resources.

## WATER RESOURCES BOARD

Chairman: Vacant

This board was established by the Alaska Statutes, Chapter 46. It is composed of seven members who have general knowledge of use, requirements for use, and conservation and protection of water. The Commissioner of Natural Resources serves as Executive Secretary and the Commissioner of Environmental Conservation or his designee serves as an ex-officio member.

### HISTORIC SITES ADVISORY COMMITTEE

Chairman: William S. Hanable, Chief, History and Archaeology Section, Alaska Division of Parks

This committee was established by Chapter 41 of the Alaska Statutes. It is composed of seven members; the State Archaeologist, State Liaison Officer appointed under Public Law 98.665, three persons with professionally relevant backgrounds in specific fields, and two persons representing indigenous ethnic groups.

The Committee develops criteria for evaluation of state monuments, historic sites and property considered to have historic, prehistoric, or archaeological significance. The Committee also reviews, surveys and plans, and approves nominations to the National Register.

### SOIL CONSERVATION BOARD

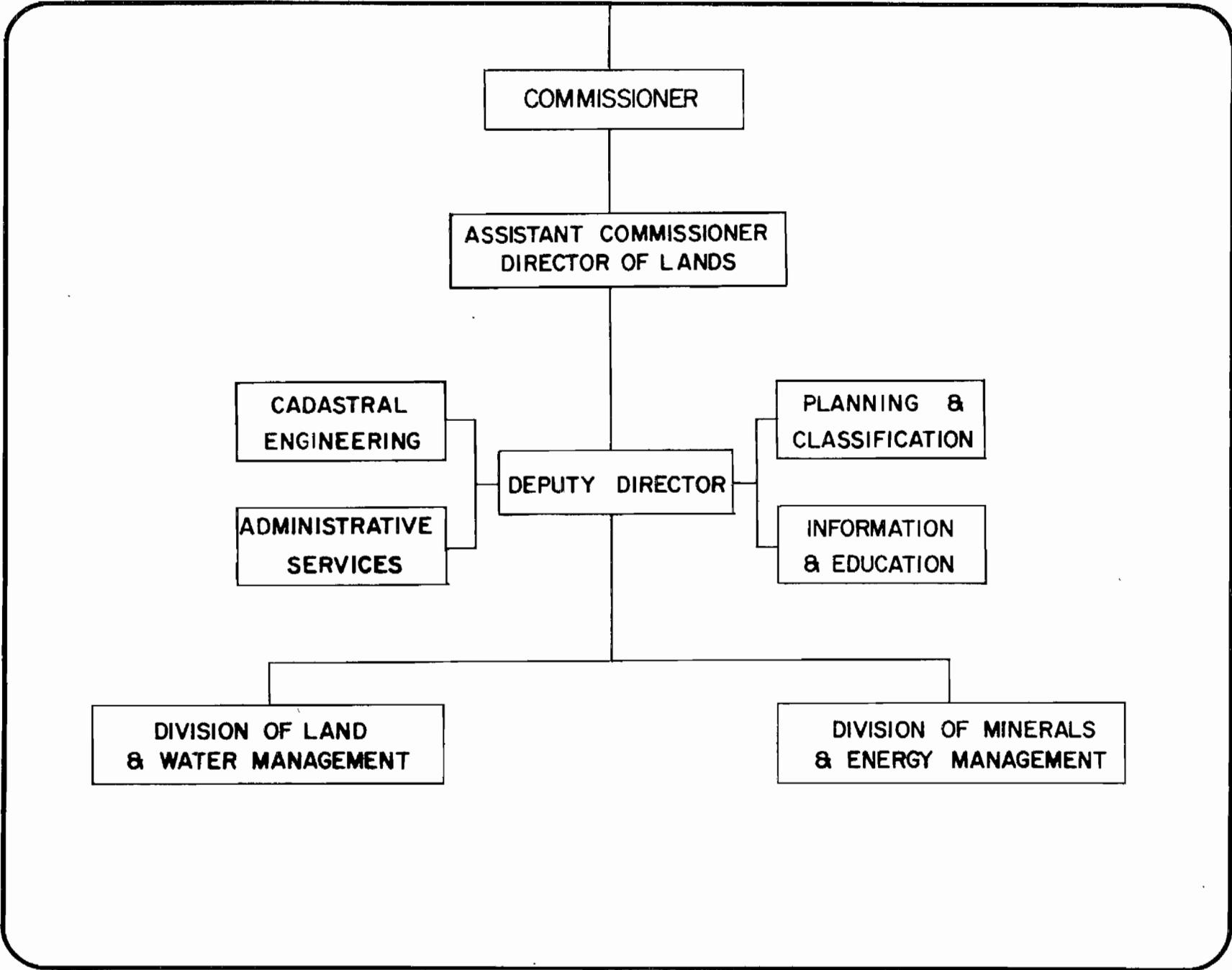
Chairman: Michael Mosesian

This board was established by Chapter 41 of the Alaska Statutes and is composed of three members who must be resident, bona fide farmers from the major farming areas of the state.

The Board advises the Commissioner of Natural Resources, on request, in exercising his powers, duties, and functions relating to soil conservation.



*Alaska Division of Lands*  
*323 E. Fourth Avenue*  
*Anchorage, Alaska 99501*



# *Director: Michael C. T. Smith*

Deputy Director: Vacant

In 1976 the Alaska Division of Lands was reorganized to better meet its statute responsibilities. By law the Division is the manager of both surface and subsurface resources on state-owned land. By dividing the surface and subsurface resource responsibilities between two new line divisions (Division of Land and Water Management and Division of Minerals and Energy Management), the parent division (Division of Lands) now has more of an ability to completely and effectively oversee a rational management program of the State's resources.

The Division of Land and Water Management has been delegated the surface management responsibilities of Title 38 of the Alaska Statutes, including the responsibilities for land use, timber, water, and gravel, and all related surface resource activities.

Under Title 38, the Division of Minerals and Energy Management has been delegated the subsurface management responsibilities for the nonrenewable mineral and energy-producing resources, including coal, oil and gas, and any leaseable or locatable minerals.

One of the major programs the Division was involved in during the past year was the selection of about 250,000 acres from the Chugach and Tongass national forests. Under the Statehood Act, the State is entitled to select lands from the national forests for community expansion and development, especially where no other selectable lands are available.

The Division in cooperation with the Department's National Forest Selection Team operated a unique public and agency participation program that allowed about fifty local government, community organizations and individuals to nominate lands to be considered for selection. After the nominations were reviewed for their suitability, an energetic program of 21 well publicized public meetings was undertaken to allow each community involved to comment on the proposed selection.

The actual selection totaled 142,689 acres in the Tongass National Forest and 104,907 acres in the Chugach National Forest.

On April 14, 1977 Governor Jay Hammond announced to the public a course of rational state land disposals that was to be carried out during the ensuing months. The Division of Lands provided disposal policy guidelines and technical support to the Division of Land and Water Management to accomplish this task.

With much of Alaska's future based on the development of its subsurface resource wealth, the Division of Lands in 1977 began implementing policies to allow development of these resources for the highest possible benefit to the people of Alaska. Leasing methods, competitive bidding procedures and study of areas with high mineral potential are constant projects of the Division.

The Division of Lands during the past year has been involved with the revamping and updating of internal procedures and the regulations that implement Title 38. The regulations under which the Division operates have not been updated since their inception shortly after Statehood. These regulations are the basic guidelines under which both line divisions within the Division of Lands operate.

The Division of Lands not only has the responsibility of coordination and policy development, but also for supplying support services to the Division of Land and Water Management and the Division of Minerals and Energy Management.

## PLANNING AND CLASSIFICATION SECTION

Chief: Stephen M. Reeve

The Planning and Classification Section is responsible for the state land planning that precedes all state land uses. This is carried out through a series of regional plans that involve identifying: community and individual needs for various

types of land uses; the physical capability of given state lands for various uses; and the statewide interests in lands within the region. The Section also fosters a public participation program to provide local citizens with an opportunity to share in the various land-disposal decisions.

Areas for future regional planning are selected on the basis of where the demands for residential, agricultural, industrial, and other uses of state lands are perceived to be the highest. If a region falls within or includes a municipality with planning authority, the regional plan will be a cooperative effort.

During 1977 the final recommendations for the Delta region were completed and published as Volume IV of the Delta Land Management Planning Study. The Section then classified approximately two million acres for agriculture, timber, resource management, residential, and public recreation purposes. The Division of Land and Water Management is now preparing sale plans for agricultural lands in the Tanana Loop and Delta-Clearwater areas based upon this plan.

In addition to the lands classified as a result of the Delta Plan, the Section also classified approximately 87,000 acres as agricultural lands: 33,638 in the Matanuska-Susitna Valley area, 4,393 near Fairbanks, and 42,119 west of Nenana. This project is part of administrative efforts to guarantee protection of Alaska's agricultural lands.

Work on the Haines-Skagway Regional Plan was updated and revised in 1977. Public meetings in Haines and Skagway will be held in early 1978 to consider alternative uses for state lands in these areas.

Work began in 1977 on the Kenai Regional Plan, and a comprehensive resource bibliography will be available in early 1978. As part of the Kenai Regional Plan, lands will be identified for transfers under the Cook Inlet land exchange for municipal selection, and for private and public uses.

Coastal zone management activities of the Section in 1977 included an analysis of and recommendations for all Division of Lands statutes and regulations to ensure conformance with the State Coastal Management Act. Also completed were resource inventory maps for the Kenai, western Prince William Sound, and Anchorage areas; these maps will form the basis of a coastal resource and development flagging system to be developed in 1978.

During 1977 the Planning and Classification Section also began a thorough revision of the classification regulations. Cooperation with the Joint Federal-State Land Use Planning Commission and the U. S. Bureau of Land Management may enable the development of compatible state and federal classification systems. The revised regulations will be available for public review and public hearings in 1978.

The Section continued coordinating Division planning activities with the Planning and Research Section and the Division of Land and Water Management's district offices in both regional and subregional planning and classification. The Section also coordinates review of major Division of Lands actions by other agencies and the Division review of the actions of other agencies submitted through the State's Clearinghouse.

Other projects initiated in 1977 were analysis of the Division's needs for automated data processing as related to planning and land records and analysis of various special interest lands for which it may be desirable to develop special management guidelines. Preliminary analysis identified seven types of land needing further study: roadsides, riversides, wetlands, floodplains, lakeshores, beaches, and geothermal areas. Roadsides have been selected as top priority for additional work in 1978.

## CADASTRAL ENGINEERING SECTION

Chief: Claud M. Hoffman

The function of the Cadastral Engineering Section is to survey, plat, and identify land boundaries and maintain the official state land records. The land status plats provide the necessary legal descriptions for these lands. Four units comprise the Cadastral Engineering Section.

The District Survey Coordinator and Contracts Administration Unit has the responsibility for the coordination of the Division of Land and Water Management District Office surveys, state wide platting controls, regulation contract specifications, and contract administration. Survey work prompted by the Homesite legislation of 1977 has resulted in 147 homesite lots between 2.5 and five acres. The 800 acres surveyed for the program in 1977 are in the Central, Tok, Delta and Rex-Nenana areas.

The Engineering Field Unit prepares survey instructions for the Open-to-Entry Site Program. This unit is also responsible for general survey contracts and field accuracy checks. All computations necessary to ensure third-order accuracy in field surveys are performed on an in-house Wang 2200 B Computer. The printouts from the computer substantiate the validity of each survey and are kept as an integral part of each survey work file.

The Engineering Office Unit plats and computes the boundaries of the State's outer continental shelf responsibilities. Acreage figures for OCS planning are derived by coordinate geometric closures formed in conjunction with the U. S. Bureau of Land Management's criteria for salient points. The plotting is done by a customized Wang 2200 B Computer and digital flatbed plotter.

This Unit also updates and maintains maps on recording district boundaries, judicial districts, State land activity maps, etc. It also microfilms official state land records.

The Land Records Unit is responsible for recording and plotting all pertinent data that affect state lands and waters. All title documents received by the Division of Lands are processed, platted, and eventually maintained by unit. It also is responsible for the Land Registration Act, which requires owners of real property outside of organized boroughs to file a statement of real property ownership with the State.

In 1976, a Land Records Data Processing Subunit was formed to computerize state land actions for storage and immediate retrieval. Last year, 63,000 serial page files were computerized and 4,119 township plats were coded.

## INFORMATION AND EDUCATION SECTION

Information Officer: Charles P. Albrecht

This section deals with the dissemination of information to the public, media, and industry for the Division of Lands and the two divisions within. It also provides this support to all divisions within the Department of Natural Resources as needed.

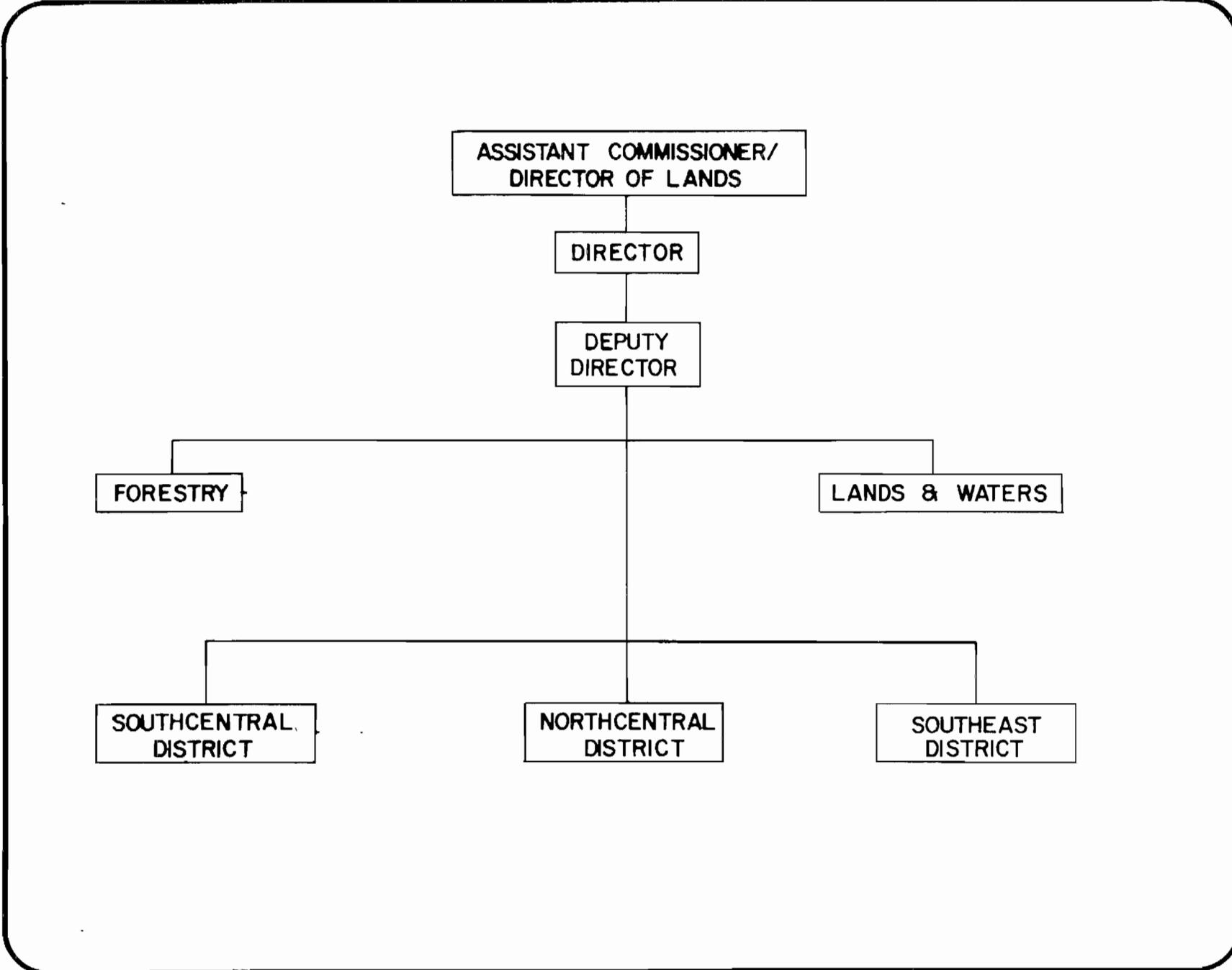
Information is provided in response to a wide variety of written and oral correspondence concerning the various programs and policies of the Division and Department. All publications of the Division of Lands are prepared by this section.

## ADMINISTRATIVE SERVICES SECTION

Administrative Officer: Lar Krug

The Administrative Services Section provides administrative support to the two divisions within the Division of Lands. This section includes the Accounting Unit, Fiscal Unit, Personnel Unit, Word Processing Unit and Mail and Supply.

*Alaska Division of Land and Water Management*  
*323 E. Fourth Avenue*  
*Anchorage, Alaska 99501*



# Director: Theodore G. Smith

Deputy Director: George K. Hollett

The Alaska Division of Land and Water Management, whose Title 38 obligations are delegated by the Director of the Division of Lands, carries out responsibilities for the management of surface resources, including lands, waters, forests, and all related resource activities. State lands include tidelands, submerged lands, shorelands, and the School, Mental Health, and University Trust Lands, in addition to the General Selection lands selected from available federal public domain under the Statehood Act. Park land disposals, exchanges, etc., are included upon request of the Division of Parks. Responsibility extends to the identification, selection, and disposal or retention of land and its related surface resources.

During 1977, the Division disposed of state lands for residential purposes in the Ketchikan area, and provided for a land exchange between the University of Alaska and the City and Borough of Sitka for community expansion.

Also during that year the Division prepared the first disposals under the State's "Homesite Program." The first areas available under this program are located in the Central, Delta, Tok and Rex-Nenana areas of the Northcentral region of the state. These areas are expected to be disposed of during spring of 1978. Under this program, required zoning regulations were also promulgated. The State has zoning authority outside of organized boroughs.

Preparations were also completed for a revised "open-to-entry" disposal program. Public hearings on the new regulations for this program were completed in late fall of 1977 and the program is expected to be in action by late spring of 1978.

The public hearings on the regulations for agricultural rights disposals were also completed in 1977. The first disposal under this new program is scheduled for the Tanana Loop area near Delta, Alaska in spring of 1978.

The Division of Land and Water Management is composed of two sections and three district offices.

## LAND AND WATER SECTION

Chief: Richard A. LeFebvre

The Land and Water Section has the responsibility for providing review and administrative assistance to the Division's district offices in all activities that affect the state's land and water resources. This section is also charged with administration and protection of all land title received by the State. These responsibilities are met by the section's three units.

The Contract Administration Unit administers all land and water case files including leases, land sale contracts, and use permits. The Unit is currently maintaining over 55,000 state land and water case files. This unit is responsible for issuing all individual patents to state land.

The Contract Administration Unit also has responsibility for appraisal, review and acceptance on all state land as well as the primary appraisal function for the Southeastern District Office. During 1977 this unit appraised or reappraised 426 parcels. The State's now-suspended Open-to-Entry program accounted for 415 of the appraisals. Although the appraisals were performed throughout the state, most of the actions took place in the Southcentral region.

The Title Administration Unit is responsible for execution of state land selection actions, tracking those applications through the federal adjudication process, and defending state title against all competing claims (e.g., adverse adjudication decisions by the U. S. Bureau of Land Management, Native Claims, etc.). One of the major responsibilities of this unit is the tracking of the implementation and policy formations of the Alaska Native Claims Settlement Act, and how these affect the State's existing land ownership and future land selections.

This unit is also involved in the determination of navigability of inland waters to protect the State's rights of ownership under the Alaska Statehood Act.

The Land and Water Coordination Unit is responsible for coordinating all statewide land and water activities, and also handles such duties as synthesis of regulations and easement identification under the Alaska Native Claims Settlement Act.

This unit reviews state land disposal actions referred to them by Division district offices for legal and technical problems such as survey, classification, and title. These disposals exclude timber disposals, which are handled by the Forestry Section.

In 1977, this unit formulated policy for regulations pertaining to homesites, agricultural rights sales, zoning, and a revised Open-to-Entry Program.

#### FORESTRY SECTION

Chief: Henry R. Ketchum

The Forestry Section coordinates forest protection on all state and private lands and management of state timber lands. The Section reviews all timber contracts issued by the district offices on all state General Selection and Trust lands and on certain borough lands under contract. Through a cooperative forest management program, this section also provides technical assistance to private landowners and educational information to the general public. The Forestry Section has three units.

The Fire Management unit has the overall responsibility for the coordination of fire protection activities on all state and private lands. In 1977 the State was responsible for protecting approximately 27,000,000 acres of state, private, and federal lands. Through cooperative agreement with the U. S. Bureau of Land Management (BLM) and the U. S.



*Forestry greenhouse at the Plant Materials Center near Palmer, Alaska.*

Forest Service, about 18,500,000 of these acres were protected with federal forces. The State protected about 7,300,000 acres of state and private lands and 1,200,000 acres of federal lands under these agreements.

Lands protected by the State through the Division's district offices are principally located on the Kenai Peninsula and the Matanuska-Susitna Valleys as far north as Mt. McKinley National Park. The remaining state lands protected under agreement with BLM lie in inaccessible areas of the interior.

Although Alaska had severe fires in 1977 which accounted for 2,290,400 acres burned, the areas protected by the State suffered minimally with only 363 acres burned.

State law requires a person to obtain a permit during the fire season for any open fire in the vicinity of the general

highway system of the interior and southcentral regions of the state. The program was operated for the sixth year in 1977 by the district offices under the supervision of the Fire Management Unit, and continues to be a successful tool for fire prevention. About 3000 burning permits were issued in 1977.

The Forest Management Unit is involved with the coordination of district timber sales and carries out the continuing inventory of the State's forest resources.

During 1977 the State received stumpage fees for approximately 59 million board feet of timber. The majority of timber harvested was from the Westside Salvage Timber Sale, a sale of an estimated 285 million board feet of beetle-killed white spruce on the west side of Cook Inlet, and from the Icy Cape Timber Sale near Icy Bay.

The Cooperative Forest Management Unit includes public service forestry with such activities as tree planting, sawmill clinics, and other programs to instruct and educate private landowners on sound forest management practices.

The Cooperative Forest Management Unit maintains an experimental greenhouse and nursery at the Division of Agriculture Plant Materials Center in Palmer. The nursery's production is 90,000 seedlings per crop, including Sitka spruce, white spruce, and lodgepole pine.

In 1977, seedlings grown at Palmer were again planted in cut over areas of the Westside Salvage Timber Sale near Tyonek. A cooperative study was initiated with the Tyonek High School science class to monitor climatic data as it affects seedling survival. Over 20,000 seedlings were grown under contract for the U. S. Forest Service and were outplanted on Afognak Island. Almost 1,000 pounds of cones were processed and 30 pounds of seed obtained for the State's tree-seed bank.

Also in 1977, the Willow Experimental Forest was examined in cooperation with the U. S. Forest Service Institute of



*Seeds to reproduce trees on Afognak Island.*

Northern Forestry in Fairbanks. Continuing projects include a birch spacing study, reforestation programs, and testing of fertilization techniques.

The district offices of the Division of Land and Water Management are set up to provide the public with service and information regarding the State's resource and land management programs.

#### SOUTHCENTRAL DISTRICT OFFICE

District Manager: L. A. Dutton

The Southcentral District Office in Anchorage is responsible for land, water, timber, and fire management on all state

land in Southcentral Alaska. The Southcentral District Office is located at 3327 Fairbanks Street in Anchorage.

This district office has since 1976, direct field fire control responsibilities on state and private lands from the Knik River north of Anchorage to and along portions of Turnagain Arm to the south. In 1977 this area was extended to include certain areas of the Matanuska-Susitna Valley and the west side of Cook Inlet. This office also started preparatory work on several timber sales in the Susitna Valley to meet local needs.

The Soldotna Resource Area Office maintains fire control and surveillance on the Kenai Peninsula. This office is also involved in timber management projects in that area. It is located approximately one mile north of Soldotna on the Sterling Highway.

The Nancy Lake Resource Area Office maintains fire control and surveillance in the Susitna Valley. This office is also involved in timber management projects in that area. It is located in the State Parks Headquarters Building at Nancy Lake near Willow, Alaska.

The Eagle River Fire Control Center is the maintenance and supply center for all fire and district-related projects in the southcentral area. The Center is located one mile south of Eagle River on the Glenn Highway.

#### NORTHCENTRAL DISTRICT OFFICE

District Manager: William H. Copeland

The Northcentral District Office in Fairbanks is responsible for land, water, timber, and fire management in the northern half of the state, with special emphasis placed on land management aspects of the North Slope oil development area at Prudhoe Bay. The Northcentral District Office is located at 4420 Airport Way in Fairbanks.

In 1977 this district placed a major emphasis on identifying and preparing sites for the State's Homesite Program. The first offering under this program is expected to be in mid-1978 in the northcentral areas of Central, Tok, Delta, and Rex-Nenena.

The Northcentral District Office has also been involved in the preparation of the Tanana Loop Agricultural sale which is expected to take place in early 1978. Tanana Loop is near Delta Junction, Alaska. Some of the work accomplished by this district concerned water use and water-oriented problems on the North Slope. This office, with the cooperation of other state agencies, is developing policy for water-use operations in the northern climes of the state.

The Delta Resource Area Office maintains fire control and surveillance in the Delta-Salcha area, where the State has assumed fire responsibility for over 1.5 million acres for 1978. This office, is also involved in timber management projects in the Delta-Tok area. It is located about 3.5 miles north of Delta Junction at the Federal BLM fire protection facility.

#### SOUTHEASTERN DISTRICT OFFICE

District Manager: Henry L. Hall

The Southeast District Office in Juneau is responsible for land, water, timber, and fire management in the panhandle area of the state. This office is located in the eleventh floor of the State Office Building in Juneau.

The Haines Resource Area Office takes care of land, water, timber, and fire management responsibilities in the Haines-Skagway area. This office is located in the Gateway Building in Haines.

The Ketchikan Resource Area Office is responsible for the timber management projects and log salvage program in that area. It is located in the National Bank of Alaska Building in Ketchikan.

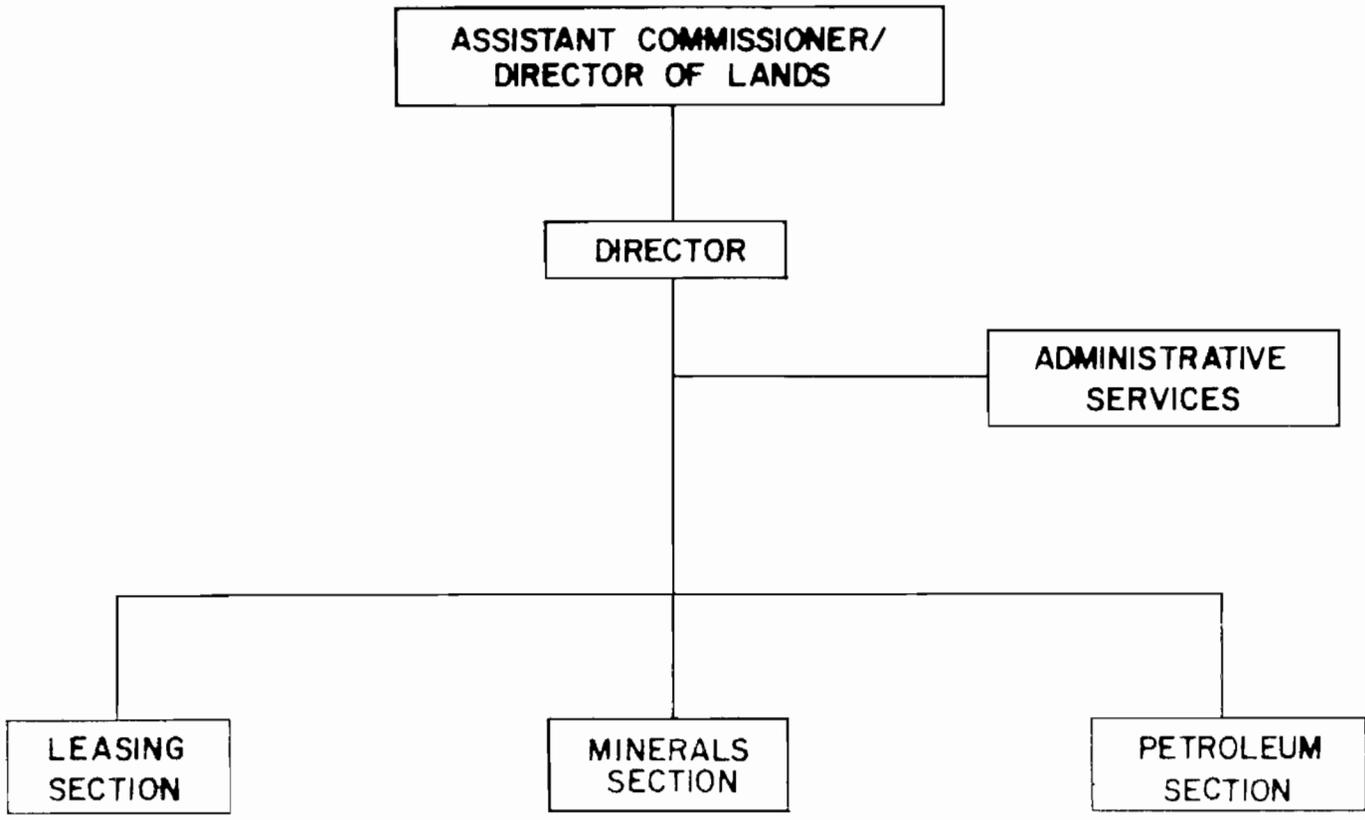
# STATE LAND SELECTION ACTIVITY

ENTITLEMENTS			ACTIVITY FOR 1977			TOTALS SINCE STATEHOOD		
Grant	Low Granting Entitlement	Land Entitlement	Applied For	Tent. Approval	Patent	Applied For	Tent. Approval	Patent
<b>TERRITORIAL GRANTS</b>								
School	Title 48, Sec 353	*	-138	0	0	109,073	0	101,562
University	Title 48, Sec 354a	100,000 Ac	0	0	0	99,303	0	99,414
Mental-Health	P.L. 84-830	1,000,000 Ac	-334	1000	0	1,017,216	187,795	787,591
Univ-Tanana	Title 48, Sec 353	*	0	0	0	11,372	0	11,211
<b>STATEHOOD GRANTS</b>								
General Grant	PL 85-508, Sec 6b	102,550,000 Ac	711,632	-471,161	189	71,162,999	15,203,752	20,082,120
Community	PL 85-508, Sec 6a	400,000 Ac	179	0	0	83,792	11,957	10,216
Community National Forest	PL 85-508, Sec 6a	400,000 Ac	10,084	759	763	47,292	15,929	4,645
<b>OTHER FEDERAL GRANTS</b>								
Klukwan Bill	PL 94-456, Sec 2	265 Ac.	0	0	0	0	0	265
Territorial Grant	PL 85-265		0	0	0	0	0	640
<b>TOTALS IN ACRES</b>			721,423	-469,402	362	72,531,047	15,419,433	21,097,664

\* In place lands surveyed and approved prior to July 7, 1958, where acreage was not determined in the act.

NOTE: The applied for acreage includes land Tentatively Approved and Patented.

*Alaska Division of Minerals and Energy Management*  
*323 E. Fourth Avenue*  
*Anchorage, Alaska 99501*



## *Director: Joseph P. Green*

Since most of Alaska's natural resources are located on Alaska's public lands, it is important that the Alaskan public receive the maximum net economic benefit from the development and management of their nonrenewable mineral and energy-producing resources. It is the responsibility of the Division of Minerals and Energy Management to accomplish this objective.

Under Title 38 of the Alaska Statutes, the management of mineral and energy-resource development on state land is the responsibility of the Department of Natural Resources. The Division has been delegated the responsibility for the subsurface ownership functions for energy and minerals as stipulated by the Statute.

The major concerns of the Division are the implementation of an acceptable leasing program for Alaska's mineral and energy-producing resources. The Division also performs royalty auditing, economic analysis, and transportation studies.

The State is a major land and resource owner. Since statehood, over ten million acres of state land have been leased for oil and gas exploration and development. About 4.3 million acres are now under lease agreements. Although only a small part of this land has been thoroughly evaluated, the total state land oil and gas equivalent production plus reserves are estimated to be about 15 billion barrels. To date, the State has viewed royalty payments on 700 million barrels. The Division has a major responsibility in putting into effect a leasing program that maximizes the benefits to be derived from the State's oil and gas.

Alaska also has vast coal resources, estimated at more than 100 billion tons. World energy markets and federal policy are increasing the economic attractiveness and feasibility of developing these reserves. About 700,000 tons of coal are currently mined annually in Alaska. As coal assumes an increasing share of the power requirements now generated by oil and gas, this figure will increase rapidly. The Division's coal permit and leasing program will ensure that leases are

granted to bona fide developers and that the State will receive equitable payment related to the level of mining activity and the market appreciation of the resource. The Division is also responsible for the proper planning of and a rational leasing program for Alaska's energy sources of the future, uranium and geothermal. Managing the State's mineral and energy resources requires research and the subsequent production of publications by the Division. A list of these publications are contained in the last section of this report.

Report No. 2-77, "Study of State Petroleum Leasing Methods and Possible Alternatives," was prepared to evaluate alternative methods and policies related to the competitive leasing of state lands for oil and gas exploration and development. It revealed that four major factors determine which bidding method yields the highest present value of income to the State: level of risk, size of reservoir, cost of exploration and development, and value of oil at the wellhead.

The Division developed a model to analyze the effect of any economic phenomenon on the income yielding characteristics of a given oil field. The Division can now project revenue impacts of a variety of economic and technical conditions and legislative proposals.

The Division also cooperated in a report entitled "Petroleum Development Study, North Slope of Alaska." This study was instigated by the Department of Natural Resources to obtain a data base for North Slope petroleum development. This information provides the State and the North Slope Borough with development alternatives that can aid in the resolution of the North Slope resource management and policy issues.

The Division is also revising proposed oil and gas preleasing regulations to encourage increased industry, state, and federal participation in the planning process of the development of the State's energy resources. The preleasing regulations represent a substantial departure from previous leasing procedures and represent an increased managerial role for the State in the development of its resources.

The Division is currently cooperating with the U. S. Bureau of Land Management in preparation for the proposed joint State-Federal Beaufort Sea Lease Sale, scheduled for 1979.

The Division is located in Anchorage, and is comprised of three technical sections.

#### LEASING SECTION

Leasing Manager: Acting Chief Ethel "Pete" Nelson

The Leasing Section is responsible for all mineral leasing and mineral operations on state-owned lands. This includes oil and gas, coal, and other leasable minerals. The Section is responsible for approving plans of operation on these leases and for administering the Division's mineral contracts (leases, mining claims, etc.). Administration of royalty sales contracts is also a major function of this section.

#### MINERALS SECTION

Chief: Vacant

This section is responsible for supervising land management functions relating to operation and abandonment plans for locatable minerals leases, claims, and permits and for coordinating mining operations on state lands with other agencies. The Section also provides expertise on state land use planning, coordinates investigations to determine the location, extent, and value of known and potential mineral resources. It also makes recommendations on regulations, guidelines, statutes, and policies regarding mining resources on state lands.

#### PETROLEUM SECTION

Chief: Patrick L. Dobe

This section is responsible for oil and gas management functions such as conducting studies to determine the location, volume, and value of known potential petroleum resources. It provides technical assistance in state land selections, lease sales, and lease-bid acceptance or rejections. The Petroleum Section also interprets data to determine the cost benefit of petroleum resource development.

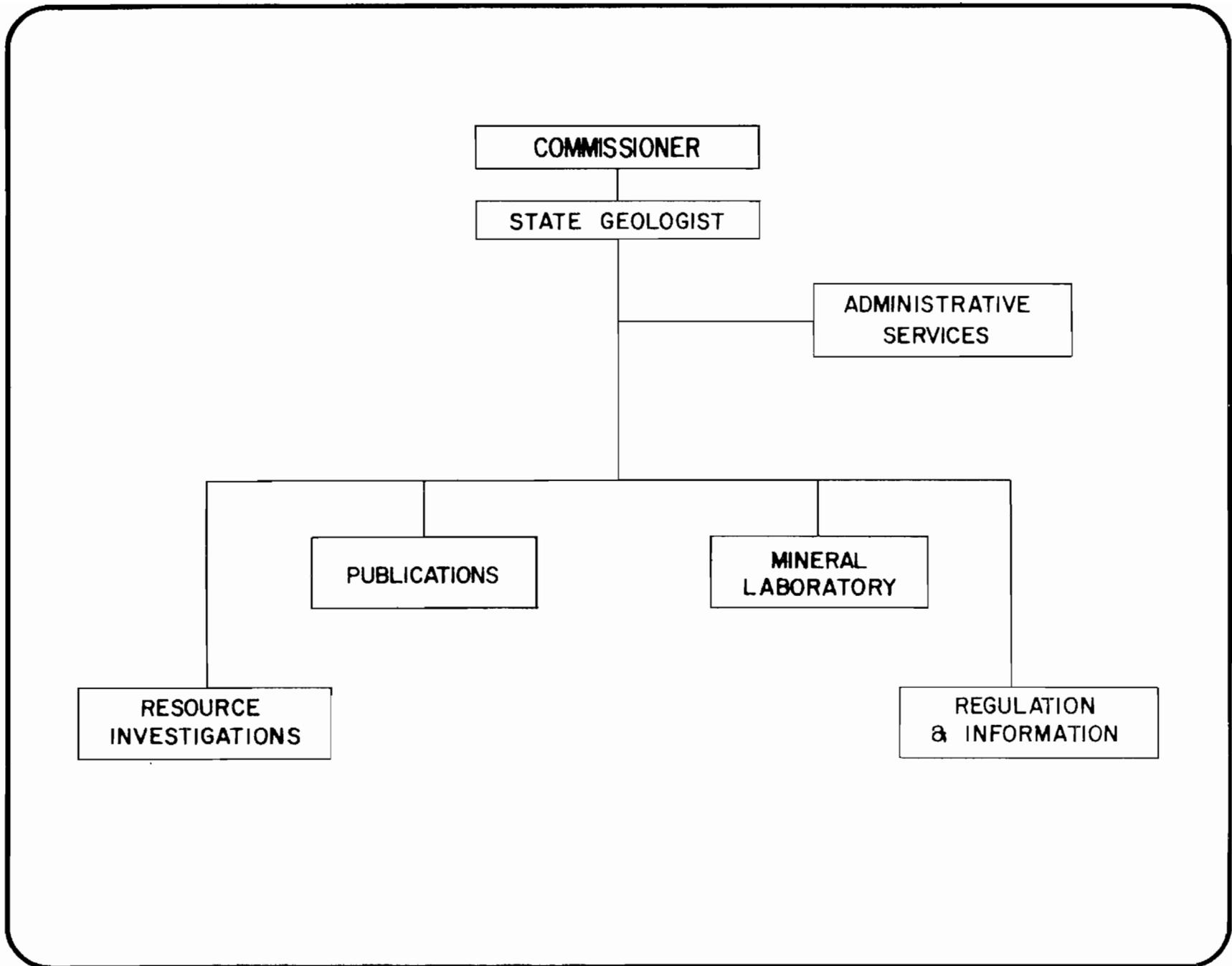
The Petroleum Section will also monitor petroleum operations and development by federal agencies and industry. The Section advises, when requested, the Royalty Oil and Gas Development Advisory Board. It also supervises studies on energy supply and demand and is responsible for analyzing the economic potential of the State's mineral and energy resources to facilitate the development of a rational leasing policy and leasing schedule for the State's resources.

COMPETITIVE OIL AND GAS LEASING OF STATE LANDS

Sale No. and Date	Acres Offered	Percent Leased	Acres Leased	\$/Acre	Tracts Offered	Tracts Leased	Bonus Received
1. Dec. 10, 1959	88,055.00	87.66	77,191.00	\$ 52.08	37	31	\$ 4,020,342.43
2. July 13, 1960	17,567.51	93.96	16,505.57	24.70	27	26	407,654.54
3. Dec. 7, 1960	73,047.70	31.30	22,866.70	1.54	26	9	35,325.31
4. Jan. 25, 1961	400.00	100.00	400.00	679.04	3	3	271,614.40
5. May 23, 1961	97,876.00	98.06	95,980.00	74.71	102	99	7,170,464.88
6. Aug. 4, 1961	13,257.00	100.00	13,257.00	8.35	6	6	110,671.55
7. Dec. 19, 1961	255,708.44	73.14	187,025.40	79.47	68	53	14,863,049.33
8. April 24, 1962	1,061.70	100.00	1,061.70	4.81	8	8	5,097.00
9. July 11, 1962	315,668.93	87.77	264,437.13	59.42	89	76	15,714,112.60
10. May 8, 1963	167,583.06	84.43	141,490.51	29.23	200	158	4,136,224.92
11. C A N C E L L E D BECAUSE OF U.S. PROTEST ON YAKUTAT BAY AREA							
12. Dec. 11, 1963	346,782.40	71.25	247,089.00	12.31	308	207	3,042,680.74
13. Dec. 9, 1964	1,194,373.00	60.51	722,659.00	7.66	610	341	5,537,100.94
14. July 14, 1965	754,033.00	53.45	403,000.00	15.25	297	159	6,145,472.59
15. Sept. 28, 1965	403,042.06	74.87	301,751.28	15.49	293	216	4,674,343.74
16. July 19, 1966	184,410.05	72.66	133,987.29	52.55	205	153	7,040,880.17
17. Nov. 22, 1966	19,229.70	96.67	18,589.70	7.33	36	35	136,279.67
18. Jan. 24, 1967	47,729.00	88.82	42,397.00	34.87	23	19	1,478,777.23
19. Mar. 28, 1967	2,560.00	R E J E C T E D 12-9-74					
20. July 25, 1967	311,249.89	82.39	256,447.31	73.14	295	220	18,757,340.88
21. Mar. 26, 1968	346,623.00	47.59	164,961.00	18.24	308	147	3,009,224.00
22. Oct. 29, 1968	111,199.48	54.20	60,272.15	17.29	230	125	1,042,219.90
23. Sept. 10, 1969	450,858.47	91.50	412,548.47	2,181.66	179	164	900,041,605.34
24. May 12, 1971	196,635.07	47.10	92,617.97	4.87	244	106	455,640.57
25. Sept. 26, 1972	325,401.42	54.78	178,244.71	7.43	259	152	1,324,673.40
26. Dec. 11, 1972	399,920.96	44.50	177,972.56	8.75	218	105	1,557,848.84
27. May 9, 1973	308,400.81	36.93	113,891.71	9.93	210	96	1,130,324.51
28. Dec. 13, 1973	166,648.04	58.69	97,803.69	253.77	98	62	24,819,189.91
29. Oct. 23, 1974	278,269.43	50.00	127,119.65	8.19	164	82	1,040,909.98
	6,877,591.12	63.57	4,371,567.50	\$ 235.09	4,544	2,858	\$1,027,969,069.37

22nd competitive sale bonus received included 1/5th bonus from forfeited leases.  
 26th competitive sale, 1/5th bonus received calendar year 1972. 4/5ths received 1973.

*Alaska Division of Geological and Geophysical Surveys*  
*3001 Porcupine Drive*  
*Anchorage, Alaska 99501*



# State Geologist: Ross G. Schaff

The Alaska Division of Geological and Geophysical Surveys (DGGs) is charged with conducting geologic and geophysical surveys to determine the mineral and energy potential of Alaska lands; the location and character of ground waters and construction materials; and the potential geologic hazards to buildings, roads, bridges, and other installations and structures. The Division also conducts such other surveys and investigations to advance the knowledge of geology in Alaska as required by Alaska Statute 41. The 1977 Alaska State Legislature expanded the Surveys' responsibilities to include hydrological investigations.

The Division has main offices in Anchorage and College, and also maintains mining-information offices in Anchorage, College, Juneau, and Ketchikan, where files on mining claims, deeds, and affidavits extending back to 1953 are maintained for public use. The Division has four sections: Resource Investigations, Publications, Mineral Analysis Laboratory, and Regulations and Information.

## RESOURCE INVESTIGATIONS SECTION

Supervisor: Gilbert R. Eakins

This Section provides geologic and geophysical information through field investigations and the coordinated efforts of other state and federal agencies involved in furthering the knowledge of Alaska's geology.

### Water Resource Investigations

The 1977 Alaska Legislature endowed the Division with major responsibilities for collecting and disseminating water-resource information. Of particular importance is the requirement of water-well drilling contractors to provide copies of well logs which will enable the Division to better advise the Division of Lands and Water Management of the geologic and hydrologic conditions in areas where water appropriations are requested.



*Site of Knik River slide that killed one person in 1976. DGGs recently began a study of such hazards.*

A collaborative data-collection program was continued with the Water Resources Division of the U. S. Geological Survey (USGS). The funds were used for basic data-collection and for regional compilations in several Alaska communities. Funds received from Collier Chemical Corporation were used to improve the hydrologic data base of the north Kenai area, where ground-water extraction is of considerable concern to residents.

Water studies were also conducted in the Prudhoe Bay area in conjunction with the preparation of the first surficial geology map of North America's largest oil and gas field - a field in which water and construction-material extraction could present serious conflicts with wildlife management.

### Petroleum and Natural Gas Investigations

The fourth of a series of cooperative oil-and-gas investigations by the Division of Geological and Geophysical Surveys and the USGS Conservation Division was initiated in the Bristol Bay Basin with objectives to define and determine the oil and gas potential of the basin for future federal-state offshore and onshore lease sales. Results of two prior cooperative efforts (Kodiak Island, Lower Cook Inlet) were published in open-file format in 1977 and are listed in the last section of this report.

The Division began active participation in the USGS program to examine Naval Petroleum Reserve-Alaska. Information generated through exploration activities both onshore and offshore will be used in a joint DGGG-USGS compilation of geologic information for the entire North Slope basin. This summary will be useful in determining oil and gas potential for the joint Federal-State Beaufort Sea lease sale.

State land selections and D-2 lands discussions require continuous updating of the data pertaining to oil and gas potential of the entire state. Division petroleum geologists, working with the Division of Oil and Gas Conservation, provided the basic evaluation on which selections were proposed in late 1977.

### Coal-Resource Investigations

Knowledge of the coal resources of the Beluga-Susitna coal basin was expanded through field work in the Talkeetna-Kashwitna area. Primary objectives were to determine the distribution of coals and related sedimentary rocks through mapping and measuring stratigraphic sections. Gravity surveys were conducted to determine the depth and margins of the basin.

A series of quadrangle maps showing the known data base for coals was initiated in 1977. The maps will summarize reserve and resource estimates, distribution, overburden

thickness, coal rank, and physical characteristics such as ash and sulfur content. Reports for the Healy and Anchorage 15-minute quadrangles will be published in 1978.

A statewide relative evaluation of Alaska coals was prepared for the Department of Natural Resources' Planning and Research Section to provide the data base for the selection of state lands.

### Mineral-Resource Investigations and Geologic Mapping Programs

The primary thrust of 1977 minerals investigations and related geologic mapping was directed toward providing detailed information for discussions related to the various D-2 bills in Congress and for the selection of state land. Geophysical work consisting of interpretative analysis of previously flown aeromagnetic surveys and the collection of gravity data formed an integral part of each project.

After several years of work the Division has concluded that Alaska Range tectonics and geology are correlative with those of the Brooks Range and the Yukon Territory. This conclusion suggests that rock sections of the three major mineral belts and those in between hold excellent potential for the discovery of massive sulfide deposits.

In 1977 new geologic mapping projects were initiated in the Lime Hills, in the Lake Clark and Iliamna areas, and in the Yukon-Kuskokwim region. Work continued in the Brooks Range with emphasis on the Wiseman quadrangle.

Geophysical projects were conducted in the Talkeetna-Kashwitna area and Ambler River and Survey Pass quadrangles. Alkaline plutons and ultramafic bodies of the Brooks Range were also investigated in cooperation with the USGS Branch of Alaskan Geology.



*Glacier-carried boulders stand vigil in valley near Healy, Alaska*

### Surficial Geology

Surficial geologic field mapping of the proposed capital site near Willow was completed during the 1977 field season. In addition, mapping was conducted in the South Kenai lowlands, the Little Susitna, Willow, and Matanuska-Susitna Valleys, the Fairbanks A-4 quadrangle, and Prudhoe Bay.

### Geologic Hazards

The coastal areas of the Kenai Peninsula, Prince William Sound, and eastern Gulf of Alaska were mapped and documented for geologic hazards. Yearly progress in the Geologic Hazards Program included reports on the glacial-volcanic interactions on the Mt. Wrangell, Augustine, and Redoubt volcanoes. A cooperative program was initiated with the Pacific-Arctic Branch of the USGS to delineate the geologic hazards of the Alaska coastal zone. Tectonic

analyses of the Castle Mountain fault, which trends south of the proposed capital site, were conducted to estimate the frequency and magnitude of potential earthquakes along this active zone of deformation.

### PUBLICATIONS SECTION

Supervisor: L. Frank Larson

The major method of communicating the results of geologic and geophysical investigations to the people of Alaska is through the publication of maps and reports. During 1977, the Survey distributed 18,166 documents. Most of these were from 1977 publications: seven geologic reports, ten open-file reports, one satellite photomap, one energy-resource map, five revised information circulars, four issues of the Mines & Geology Bulletin, seven individual reports, one bibliography, and one guidebook. These are listed in the last section of this report. The Publications Section also prepared visual aids for two articles printed in national publications and seven presentations given at geologic workshops and conferences. These documents, are available for inspection or purchase at any Division of Geological and Geophysical Surveys mining-information office.

A pocket-sized booklet, Information Circular 11 and 21, lists all documentation produced by the Survey since its inception; they are free from any office.

### MINERALS ANALYSIS LABORATORY

Supervisor: Henry S. Potworowski

During the report period the Minerals Analysis laboratory performed 27,602 determinations on 3,379 samples. Of these, 977 samples were submitted by the Division staff. These analyses represent fundamental data for the mineral and energy evaluation of lands in Alaska.

## REGULATIONS AND INFORMATION SECTION

Supervisor: Cleland N. Conwell

The Regulations and Information Section attempts to maintain a feeling for the pulse of the mining and energy-resource activity throughout the state. The four mining-information offices of the Division directly provide the public with current information on mining claims and other pertinent information. In 1977, this information included results from the processing of 20,986 mining documents.

A second function of this section is to administer the safety and regulatory provisions of the Alaska Mines and Safety Code for coal, metallic, and nonmetallic mining. In 1977, 26 mine and prospect inspections were made. In addition, three inspections were made for compliance with mined-land reclamation laws. During the year, 3,091 visitors requested information from the Division's mining-information offices.

### Mineral Exploration

Mineral exploration continued at an accelerated pace. A meaningful indicator of the accelerated pace of exploration activity is that 17,378 new mining claims were filed in 1977, an increase of 31 percent over 1976. There were 2,008 affidavits of labor filed on 44,146 active claims, which is twenty percent above the 1976 total. In addition, the total number of active mining claims in the state in 1977 jumped to 61,524, up 45 percent over the previous year. The amount expended on Alaska exploration for 1977, once the final figures are known, will probably exceed \$45 million.

### Arctic Alaska

Of the estimated \$15 million spent in this area on mineral investigations in 1977, one-third was invested in exploration of the high-grade copper, lead, and zinc ore bodies north of the Kobuk River in the southwestern Brooks Range; these

well-known stratabound volcanogenic massive sulfide deposits hold a proven reserve estimated at several billion dollars. Several major companies conducted extensive exploration for uranium, particularly in the Selawik Hills, the Ray Mountains, and the Kokrines Hills. Substantial reserves of lead, zinc, and barite were explored at the Red Dog deposit, 50 miles east of Point Hope. Houston Oil and Minerals released preliminary drilling information on a similar deposit nearby.

### Western Alaska

Expenditures in western Alaska exceeded an estimated seven million dollars. Cominco drilled on the Berg lead-zinc prospect and conducted geological studies in four areas. Placid Oil and Great Lands Exploration were busy in the Bendeleben and Candle quadrangles. Exxon, Cities Service, Wyoming Minerals, Union Carbide, and Hawley and Associates actively explored the uranium potential of the Seward Peninsula with emphasis on the Darby Mountains, Serpentine Hot Springs, and areas that had indicated either anomalous radioactivity or radioactive minerals in placer deposits.

### Interior Alaska

About ten million dollars was expended on mineral exploration on the interior part of the state. A major uranium exploration program north of Healy was conducted by the German firm Urangesellschaft, which drilled and conducted extensive ground and aerial reconnaissance; their expenditure alone is estimated at \$2.5 million. Inspiration Consolidated Copper was again active in the Nabesna area (Orange Hill). Active exploration extended along the north flank of the Alaska Range from Healy to Tok. Shortly after the field season, the U. S. Bureau of Mines announced the discovery of a radioactive anomaly near Mount Prindle, northwest of Fairbanks; a rush of claim staking resulted. A limited amount of exploration continued in the Healy and Jarvis Creek coal fields.



*The Sioux Alaska Mining Company dredge on Moss Creek, the first dredge constructed on the Seward Peninsula (1910).*

#### Southcentral Alaska

An estimated five million dollars was spent on metal- and energy-related resource investigations in this area. The greatest dollar expenditure was related to coal exploration by several companies in the northern part of the Beluga field and southern part of the Yentna coal field, with limited exploration occurring in the Susitna field. WGM of Anchorage conducted an extensive evaluation program for uranium in the Cook Inlet area. Several companies explored the Wrangell Mountains for copper and related deposits.

#### Southwestern Alaska

Limited exploration continued on the base-metal veins in the Chignik Bay and Port Moller areas. Bear Creek signed an exploration agreement with the Bristol Bay Native Corporation and searched for porphyry copper deposits on

the Alaska Peninsula. The Department received several inquiries regarding the Chignik coal field; however, no known exploration activity occurred.

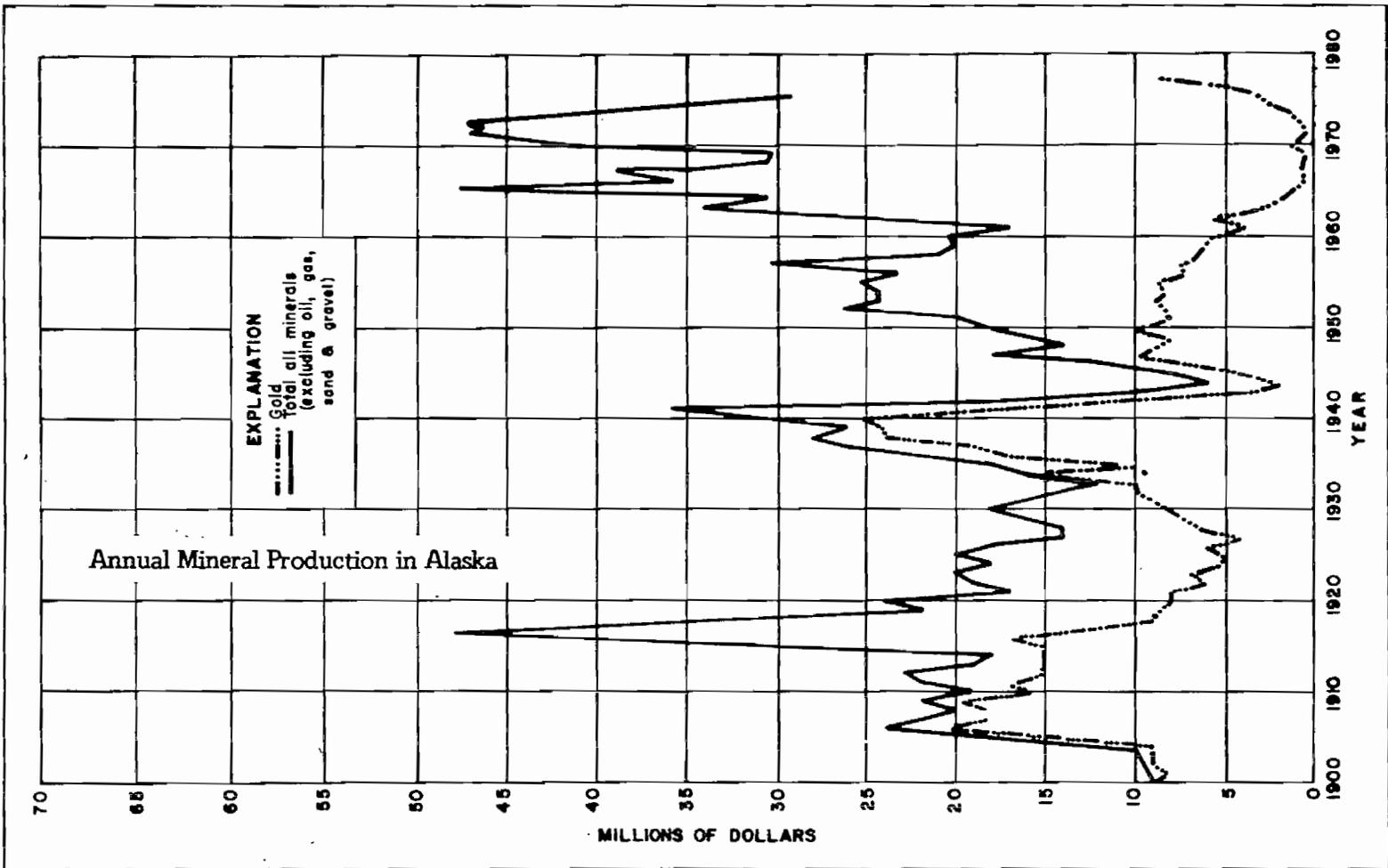
#### Southeastern Alaska

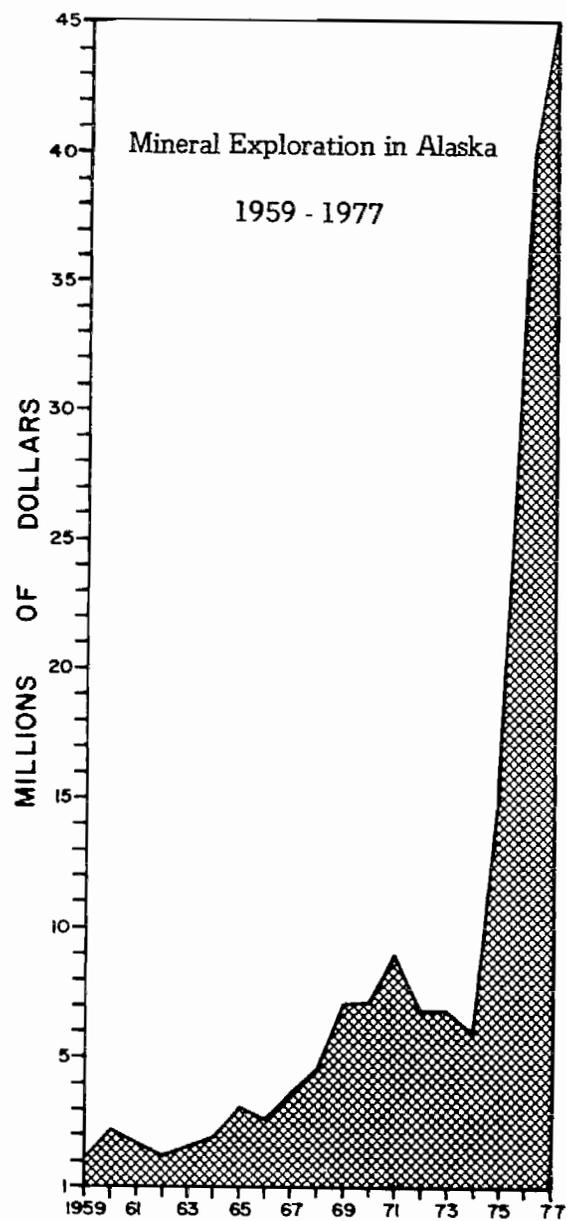
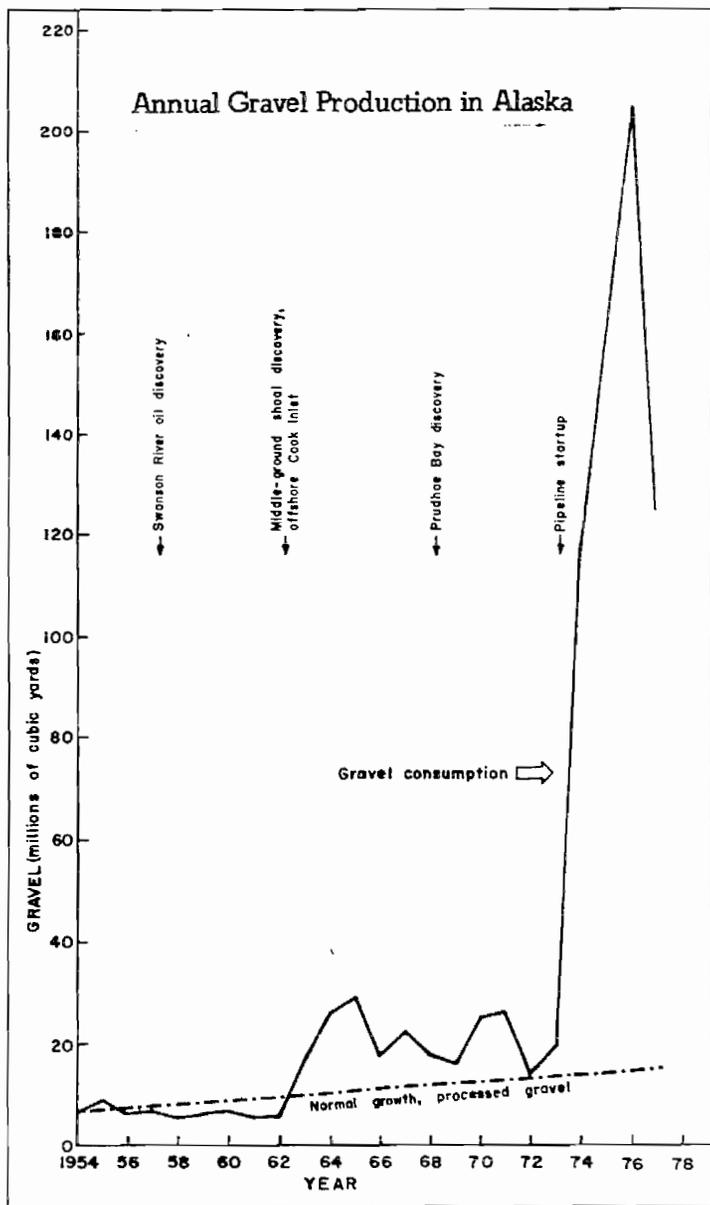
Southeastern Alaska had a very heavy concentration of exploration, particularly for uranium on Prince of Wales Island and base metals on Admiralty Island. At least three companies were actively drilling near Bokan Mountain. Pan Sound, a joint venture that includes several major companies made a substantial discovery of base and precious metals on Admiralty Island and released information for a proposed federal reclassification of land in the Tongass National Forest. Standard Metals reportedly discovered another Bokan-type ore body in the area of the old Ross-Adams uranium mine. Inspiration Consolidated Copper continued drilling the copper-nickel deposits on Yakobi Island.

In November, the U. S. Forest Service granted U. S. Borax a permit to construct a 13-mile road from the coast to their porphyry molybdenum deposit at Quartz Hill, 45 miles east of Ketchikan. ALYU Mining continued exploration on a barite and base-metal deposit northwest of Haines, near the Canadian border. The firm plans to mill 200 tons per day for a drilling-mud product and minor base metals.

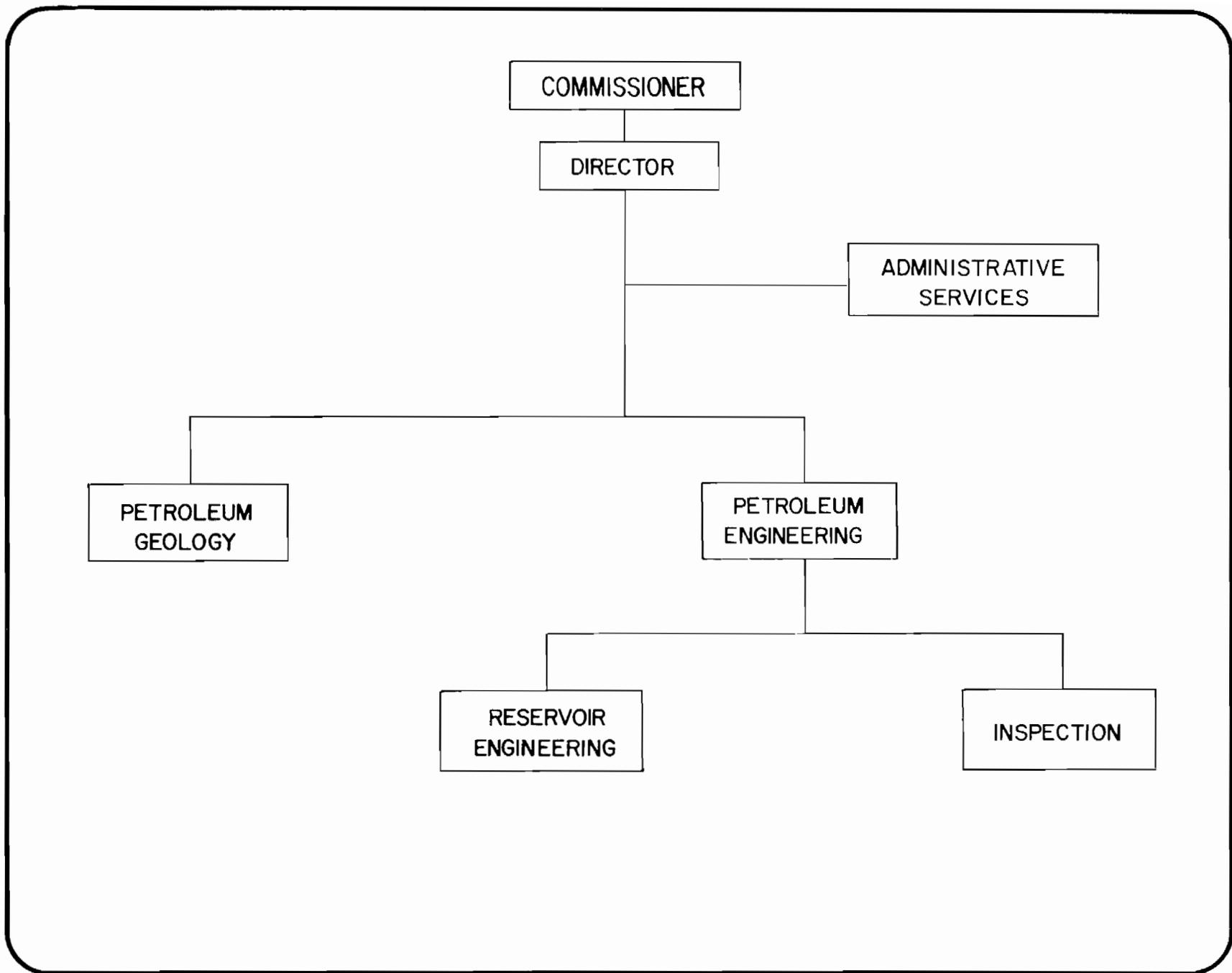
#### Mineral Production

The total mineral production exclusive of oil and gas in 1977 is estimated at \$154 million, a decrease of 35 percent from the 1976 adjusted total of \$237.7 million. Accounting for this figure, in order of value, were sand and gravel (\$125 million), building stone (ten million dollars), coal (eight million dollars), gold (\$7.8 million). Barite, tin, antimony, and gemstones contributed about \$3.2 million. Gold production was estimated at 50,000 ounces from an estimated 200 small-scale placer mines and the two dredges operated by Alaska Gold near Nome.





*Alaska Division of Oil and Gas Conservation*  
*3001 Porcupine Drive*  
*Anchorage, Alaska 99501*



# Director: O. K. Gilbreth

Chief Petroleum Geologist: Thomas R. Marshall, Jr.

Chief Petroleum Engineer: Hoyle H. Hamilton

The Alaska Division of Oil and Gas Conservation regulates the petroleum industry under Alaska Statute 31, known as the Oil and Gas Conservation Act. This law prohibits the waste of oil and gas and charges the Department of Natural Resources with enforcement. This responsibility has been delegated to the Oil and Gas Conservation Committee, which is composed of the Chief Petroleum Geologist, Chief Petroleum Engineer, and Director of the Division of Oil and Gas Conservation.

The objectives of the Division of Oil and Gas Conservation are to regulate oil and gas drilling operations to prevent the waste of oil and gas and to protect the correlative rights of owners. The Division also is charged with ensuring that oil and gas volumes are properly measured for accounting, royalty, and tax purposes and to advise other agencies and the public on oil and gas practices.

The Division of Oil and Gas Conservation is composed of a highly specialized group of engineers, geologists, and technicians with necessary support personnel. The entire staff is located in Anchorage, and all activity is coordinated from that point.

## OIL AND GAS CONSERVATION COMMITTEE

The Division of Oil and Gas Conservation advises the Alaska Oil and Gas Conservation Committee. It has been assigned responsibility for regulating the drilling, producing, and abandonment of oil and gas wells. Geological and engineering considerations are applied to the issuance of drilling permits, establishment of field and pool rules, drilling and production safety, reservoir production practices, determination of productive areas, and oil and gas production forecasting.

During 1977 the Oil and Gas Conservation Committee issued seven orders and thirteen administrative approvals. The orders were based on technical information presented to the Committee and pertained to specific wells, oil and gas pools, or field operations. The administrative approvals deal primarily with pressure maintenance projects and were issued to facilitate the drilling and production practices in established fields.

## Drilling Permits

There were 77 drilling permits issued in 1977. This compares with eighty permits issued in 1976. The purpose of a drilling permit is to ensure that casing strings meet size, strength, and setting depth criteria; that adequate volumes of cement will be used; that adequate blow-out prevention equipment will be installed; that the location of the well satisfies the regulations; and that a satisfactory plan of operations is proposed.

## Exploratory Drilling

Fourteen exploratory wells were spudded in 1977, the same number as were spudded in 1976. During 1977 Exxon Corporation announced a discovery at their Point Thomson Unit well, which lies about 50 miles east of Prudhoe Bay near the Beaufort Sea coast. Well records released by the Division of Oil and Gas Conservation after the two year confidential period indicate a discovery at Exxon's Alaska State "A" well which lies on Flaxman Island about eight miles east of their Point Thomson Unit Well. Additional wells are planned to evaluate these discoveries.

### Development Drilling

Development drilling decreased slightly during 1977 with fifty development and service wells spudded. This represents a 21 percent decrease over 1976. Development in the Prudhoe Bay Field is the center of state activity as the operators continue to increase production capacity.

### Producing and Shut-in Fields

Oil from the Prudhoe Bay Oil Field was first pumped into the Alyeska Pipeline on June 20, 1977. Oil continued to be produced from six Cook Inlet area oil fields. Gas was produced from seven Cook Inlet area gas fields and from the South Barrow Gas Field in the National Petroleum Reserve - Alaska (NPRRA). Eleven small, undeveloped gas fields remain shut in for lack of market or pipeline.

### Surveillance of Operations

Field surveillance over oil operator activities relative to drilling permit requirements continued to increase in 1977, with 133 field trips required to observe 1,181 separate operations. The trips required 314 man days, which is up 24 percent over 1976 and 75 percent over 1975. Field observations included pressure tests of blow-out prevention equipment and casing, production well tests, down-hole and surface safety valve tests, bradenhead casing pressures, meter provings and calibration, pipeline run tickets, cleanup, and abandonment of wells and locations.

### Well Data

Information on wells drilled since statehood is on file in the Division of Oil and Gas Conservation's office. This information includes various logs and reports along with core chips and well cuttings from selected wells. Information

marked "Confidential" is strictly controlled for two years after the date it is required to be filed; it is then made available to the public. Information from 47 such wells was released during 1977.

### Well Sample Materials

The Division maintains a permanent collection of lithologic samples from wells drilled in the state. These materials, derived from the State's well cuttings and core chips, have been processed at no cost to the State. These specially prepared materials on selected Alaskan wells are available for examination in the Division's office. In addition to the normal ditch and core lithologic samples, thin sections of ditch and core samples are available, as well as nannoplankton, palynologic, foraminiferal and thermal-alteration index (maturation) slides. The collection continues to grow as well materials are released and interest is shown in these special materials. Twelve different sedimentary areas are represented in the slide collection. Reports on pyrolysis-fluorescence, pyrolysis-flame ionization detector, vitrinite reflectance, and palynologic studies and potassium-argon age determinations are also available on a few wells. Use of these specially prepared materials by the public continues at a high level. Cuttings and core chips from over 15 wells were received during 1977 and will be released during 1979. During 1977, well samples from 28 wells were released for examination by the public.

### Technical Assistance to Other Agencies

Some major efforts of the Division of Oil and Gas Conservation were to prepare production forecasts and to furnish technical assistance to other state agencies. The Division estimated future oil and gas production for a variety of purposes and agencies. This division furnishes the Department of Revenue with production forecasts for revenue estimating purposes.

Geologists and engineers serve on and contribute to numerous Interstate Oil Compact Commission committees.

Many special studies were made by the Division. State hydrocarbon production and drilling activity was analyzed for reports by state agencies, lending institutions, and state bond analysts. At the request of the Administration or the Legislature, proposed laws and special problems relating to the oil and gas industry are analyzed.

#### Prudhoe Bay Field Reservoir Studies

In February 1977, the report "Prediction of Reservoir Fluid Recovery, Sadlerochit Formation, Prudhoe Bay Field, Supplement A" was issued. This report was the result of work done by H. K. van Poolen and Associates, Inc. in conjunction with the Division of Oil and Gas Conservation. The reservoir model and the results established by this report were used to aid in establishing the pool rules for the Prudhoe Bay Field.

Work continued in 1977 on a reservoir study on the Kuparuk River reservoir in the Prudhoe Bay Field. This study is being done by H. K. van Poolen and Associates, Inc. in cooperation with the Division of Oil and Gas Conservation and is expected to be completed the latter part of 1978.

#### Technical Meetings Attended by Division Personnel

During 1977, Division personnel attended meetings of the Interstate Oil Compact Commission, Offshore Technology Conference, National Meeting of the Society of Petroleum Engineers, Daniels Metering School, the National Convention of the American Association of Petroleum Geologists, and Schlumberger's Logging School. Members of the Division are active in the Society of Petroleum Engineers of AIME, the Alaska Geological Society, American Institute of Professional Geologists, and the Alaska Society of Professional Engineers.

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#### Statistics

Complete statistics of all 1977 permits, drilling, producing and releasable data will appear in the 1977 Division of Oil and Gas Conservation Statistical Report, which will be published during the first half of 1978.

## Summary of 1977 State Drilling and Production Statistics

### Drilling

Eighteen permits for exploratory wells were approved in 1977 which is one more than in 1976. Twenty-one exploratory wells were active during the year resulting in nine dry holes, one oil well, one gas well, five suspended wells and five drilling wells. One oil discovery was announced during 1977. These statistics do not include wells in National Petroleum Reserve A or the Outer Continental Shelf areas. Atlantic Richfield Company established a new drilling depth record for Alaska when they reached 17,921 feet in their Salome No. 1 on OCS lands in the Gulf of Alaska.

Drilling permits were approved for 59 development and service wells which compares with 63 in 1976. Most of the activity continues to be in the Prudhoe Bay Field.

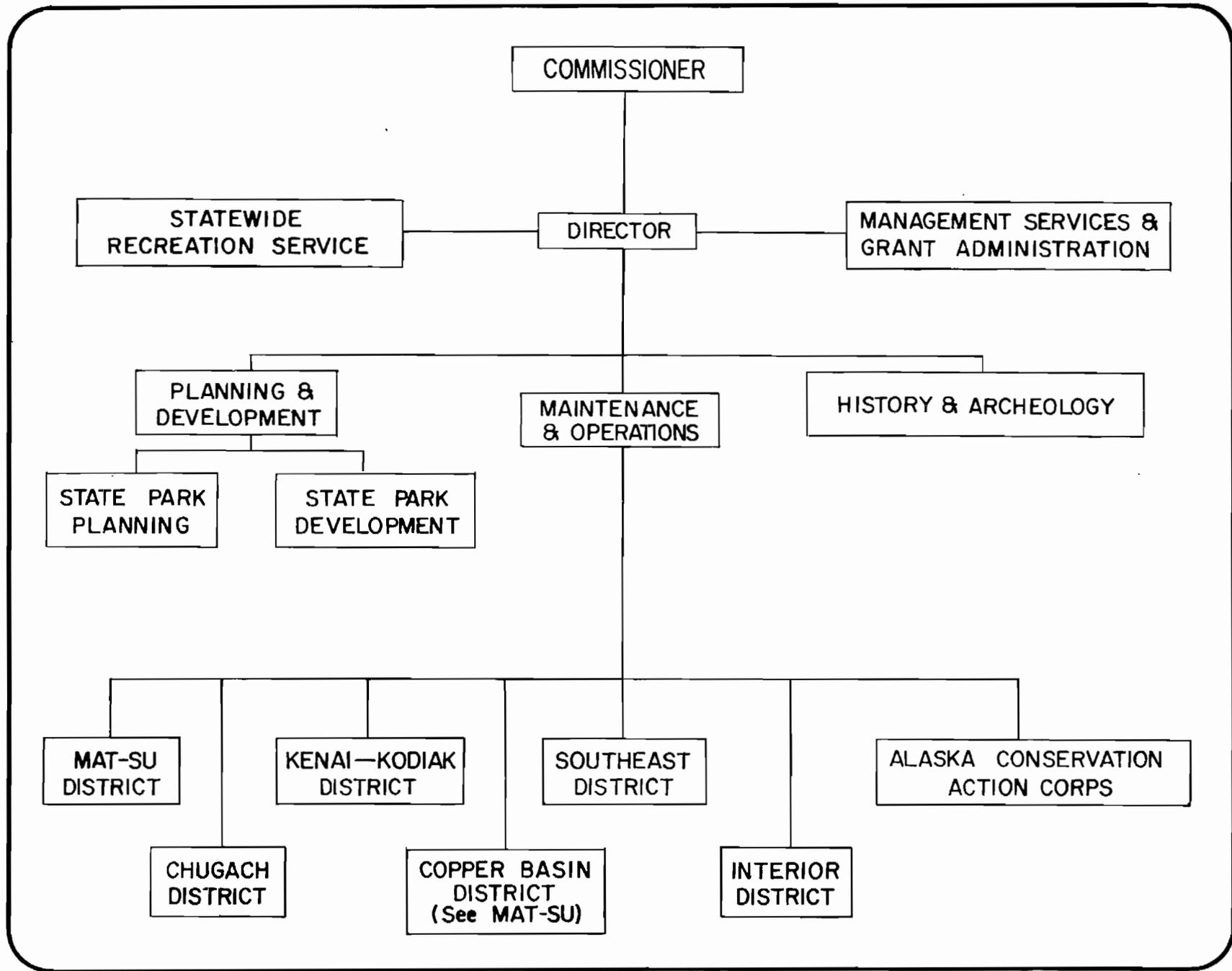
	<u>Production</u>	
	<u>Bbls. or MCF</u>	<u>Bbls. or MCF/Day</u>
Oil	170,561,168	467,291
Water	24,500,683	67,125
Casghd. Gas	206,960,972	567,016
Dry Gas	149,327,170	409,116
Condensate	430	1.2
Nat. Gas Liquids	864,610	2,369

With the startup of the Prudhoe Bay Field during 1977 the following increases were noted compared to 1976. Oil production increased 154%, natural gas liquids increased 12.3% and gas production was 31.7% over 1976.

The production for the month of December, 1977 was estimated to obtain the above totals. Corrected totals will appear in the Division's Statistical Report which will be published during the first half of 1978.



*Alaska Division of Parks  
619 Warehouse Drive  
Anchorage, Alaska 99501*



## *Director: Terry A. McWilliams*

The Alaska Division of Parks is responsible for the planning, development, and operation of a system of state parks and historical sites. Besides preparing and maintaining a statewide comprehensive outdoor recreation and historic preservation plan, the Division administers federal and state grant-in-aid programs in the areas of outdoor recreation and historic preservation. It also administers the programs of the Alaska Conservation Action Corps.

Article III, Section 7 of the Alaska State Constitution speaks to the need for "the acquisition of sites, objects, and areas of natural beauty or of historic, cultural, recreational, or scientific value." It further stated that the Legislature may reserve these areas for the public and provide for the use, enjoyment, and welfare of the people of Alaska. In 1959 the Legislature enacted statutes to provide for a system of parks and recreational facilities for the enjoyment and education of its citizens and for the attraction of visitors to the State.

In 1970 the Commissioner of Natural Resources established the Division of Parks under the authority of Alaska Statute 41. Prior to this, park and recreation functions of state government had been in the Division of Lands.

Recreation is an experience that requires resources and time. It involves satisfaction of many of our senses - climbing a mountain, hiking in a wilderness, catching a fish, or simply exploring a beach with children. The challenge is in planning and implementing a program which lies lightly on the land and responds to the desires of Alaskans.

Recent studies have shown there is importance in providing recreation opportunities in non-urban areas. Geographically, of the 1.5 million acres in state park status and of the two million acres proposed for state parks in current legislative programs, 95 percent of the acreage is within 100 miles of one or more of the state's larger communities. Conversely 73 percent of the existing seven million acres of federal parks, and the proposed 32.9 million acres of federal reserves under the D-2 studies are more than 100 miles from these

population centers. The development of recreation opportunities and programs on the local level must receive high priority.

There are 218 campsites in the national parks of Alaska and 1587 visitor use sites in State Park facilities. This points out the recreation-user orientation of state facilities and the preservation orientation of federal parks. State recreation areas like Nancy Lake and Captain Cook are responsive to recreation demands by Alaska's people. They are prototypes of user areas established throughout Alaska by the Division of Parks. There is an insatiable thirst for outdoor recreation opportunities on land or water, in summer or winter.

Success in carrying out all park programs lies in visitor satisfaction - visitor satisfaction as a meaningful experience both personally and environmentally. This is the major responsibility of the Alaska Division of Parks.

### ALASKA STATE PARK SYSTEM

The Alaska State Park System is divided into four use areas:

1) Waysides: Sites with unique natural features of scenic beauty were chosen to encourage the use of these facilities. After statehood, 32 such areas were transferred from the federal government to the Alaska Department of Natural Resources. Today there are fifty waysides in the system, ranging in size from several acres to several hundred acres. Thus, while each of these areas may in effect be a small "recreation or park area," they are designed and managed primarily for the highway traveler.

2) Recreation Areas: The primary purpose of a recreation area is to provide a wide spectrum of outdoor recreational opportunities which may include snowmobiling, vehicular camping, and possibly off-road vehicle driving on one end of the spectrum; and opportunities for nature study, cross-country skiing and hiking on the other. The range of



*The State Parks are natural areas for photography.*

opportunities depends on the size of the area, the capability of the ecosystem to support the activities, and the demand for each activity.

A recreation area need not contain a particular geographic feature or value of outstanding significance, but the area must be aesthetically pleasing and capable of supporting a wide variety of activities. Recreation areas are destination sites, and people will generally stay from several days to several weeks.

Recreation areas generally range in size from 1,000 to 100,000 acres. There are presently four recreation areas in the system: Captain Cook, Chena River, Harding Lake, and Nancy Lake.

3) **State Parks:** A state park designation is reserved for those areas with outstanding natural, cultural, or scenic values of significance. Development is controlled to ensure that use levels do not impair the resource. Usually the exact purposes of each state park area are identified in the park's enabling legislation. There are presently four state parks in the system: Chugach, Denali, Chilkat, and Kachemak Bay.

4) **Historic Sites:** Historic sites commemorate significant periods in Alaska's past, including examples of Alaska Native culture, the Russian-American era, and World War II. The primary purpose of these areas is to preserve and interpret features and areas relevant to the historic theme of the site. Overnight camping and picnic facilities are often located on the perimeter of the area and are designed to accommodate visitors rather than create a camping experience. At present, there are five historic sites in the system: Old Sitka, Baranof Castle Hill, Totem Bight, Fort Abercrombie, and Rika's Landing.

Alaska's State Park System attempts to respond to the needs of its users. Park and recreation councils have been formed at the local level by individual users and groups interested in park issues. They are non-governmental, and are of great assistance to the Division of Parks as a source of information on local needs and as a measure to the Division's performance. Community desires have become an increasingly important guide to the development and management of park programs for the State.

Organizationally, the Alaska Division of Parks is divided into five major operational sections coordinated by the Director's Office in Anchorage: Planning and Development, Statewide Recreational Services, History and Archaeology, Management Services and Grant Administration, and Maintenance and Operations.

The Director's Office responsibilities include liaison to the Land and Water Conservation Fund of the federal Heritage Conservation and Recreation Service (formerly Bureau of Outdoor Recreation) and its accompanying programs, supervision of the Statewide Comprehensive Outdoor

Recreation Plan, overall policy decisions, appropriate legislation, and guidance of the Recreation Advisory Committee and its associated local park and recreation councils.

#### PLANNING AND DEVELOPMENT

Assistant Director: George A. Hall

The planning, development, and realty functions are conducted by the staff in the Director's office under the direction of the Assistant Director. Accomplishments during 1977 included completion of the Upper Huffman access to Chugach State Park, the Troublesome Creek Trailhead in Denali State Park, and the Dry Creek campground, near Gulkana. Eight acquisition projects were completed in three different parks, and the Chilkat State Park development project in Haines was placed under construction contract. Planning projects included the creation of a statewide visitor survey, and site development plans for Chugach and Denali State Parks and Dry Creek Wayside. Master plans are currently being prepared for Chugach State Park, Totem Bight State Historical Park, and the Quartz Lake Recreation Area. In addition, this office coordinates National Forest land selections, state land selections for parks and recreation, and the coastal management program as it relates to recreation.

This office is also responsible for the management of the real-estate acquisition and disposal program within the Division. This includes the management of the 1976 Park Bonds acquisition projects.

#### PARK DEVELOPMENT SECTION

Chief: John A. Pierog

This section is charged with the construction of new facilities, surveys, and major maintenance projects beyond the capability of the district staff.

#### STATE PARK PLANNING SECTION

Chief: Neil C. Johannsen

This section is responsible for park system planning, regional master and site planning, and coastal management. The planning projects range from Totem Bight in Southeast Alaska to the Chena River recreation area near Fairbanks. It is also responsible for drafting legislative proposals relating to the State Park System.

#### STATEWIDE RECREATION SERVICES SECTION

Chief: Nathaniel M. Goodhue, Jr.

This section is responsible for preparation of the Statewide Comprehensive Outdoor Recreation Plan and related functional studies. It works with local governments to foster the acquisition and development of park and recreation programs throughout the state. It works closely with the Recreation Advisory Committee in allocation of Land and Water Conservation Funds. With the passage of the Alaska Youth Hostel System Act in 1977, the Section was made responsible for inventorying potential youth hostels and assisting local groups interested in starting them.

#### HISTORY AND ARCHAEOLOGY SECTION

Chief: William S. Hanable

State Archaeologist: Douglas R. Reger

State Historian: Michael S. Kennedy

This section is responsible for identification, preservation, and interpretation of Alaska's historic and prehistoric resources. Although some of these resources are in areas of the Alaska State Park System, most are not. Thus the activities of this group extend beyond the boundaries of the State Park System.



*Archaeological sites in State Parks are studied by University students.*

The year saw the total number of sites recorded in the Alaska Heritage Resource Survey stabilize at 5,000, and Alaskan properties listed in the National Register of Historic Places total 85. At the end of 1977, an additional eighty nominations to the National Register were awaiting federal approval before entry in that catalog of cultural resources. During the year, hundreds of public projects were reviewed for their possible effect on historic sites and the History and Archaeology Section was able to assist both federal and state agencies in carrying out their plans with reduced impact on historic places.

The Historical Marker Program expanded in 1977 with the assistance of a grant from the National Endowment for the Humanities. Other interpretive efforts also increased, with archaeological excavations at Beluga Point in Chugach State

Park and at the Izaak Walton Wayside on the Kenai Peninsula. The public also participated in three historic preservation seminars offered by the staff. Publications in 1977 are listed on the back pages of this report.

#### Historic Sites Advisory Committee

In 1977 the committee reviewed 79 nominations to the National Register of Historic Places, approving 58. The committee also agreed with the State Historic Preservation Plan for 1977-78 and recommended allocations for the \$520,000 received from the National Historic Preservation Fund. A new Archaeological and Historical Data Emergency Recovery Fund, which would provide money for necessary survey and salvage of endangered properties when no other funds are available, was also recommended by the committee.

#### MANAGEMENT SERVICES AND GRANT ADMINISTRATION SECTION

Chief: Katherine M. Torzy

This Section was established to provide clerical and accounting support along with management services to the entire Division to keep an accurate account of funds under the various programs. These funds service local governments, state agencies, and individuals involved in providing outdoor recreation and historic preservation opportunities. In 1977, \$2,600,000 in land and water conservation funds and \$200,000 in historic preservation grant were allocated by the Division of Parks. Also, the State Trails and Footpaths Fund and the State Outdoor Recreation Open Space and Historic Properties Development Fund were administered by the Division.

## MAINTENANCE AND OPERATIONS SECTION

Chief: Jeane B. Comer

The coordination of the daily operations of park areas and the Alaska Conservation Action Corps is the responsibility of this section. This is facilitated on a statewide basis by six management districts, with the Chief of Maintenance and Operations stationed in Anchorage.

### Matanuska-Susitna and Copper Basin Districts

Superintendent: Lawrence D. Wilde

The combined districts cover an area north of Anchorage to a point south of Mt. McKinley National Park. They include the Denali State Park, the Nancy Lake Recreation Area, and the state waysides on the lower Glenn Highway and the lower Richardson Highway from Glennallen to Valdez.

The Tokositna extension of Denali State Park is the subject of a cooperative State-Federal development study relating to the abutting D-2 land and to the development of visitor facilities.

### Kenai-Kodiak District

Superintendent: Michael D. Lee

The District includes Kachemak Bay State Park, the Captain Cook Recreation Area, and the waysides and facilities along the Sterling Highway on the Kenai Peninsula and on Kodiak Island.

### Chugach District

Superintendent: Daniel A. Robinson



*The low hills and peaks provide an opportunity for young climbers in State Parks.*

This district is responsible for the operation of the Chugach State Park, which is largely within the Anchorage Municipal boundaries and includes waysides and a swim beach north of Anchorage.

A series of conservation education and outdoor education programs were conducted in 1977, which included geology, bird life, area history, and avalanche awareness along with winter survival.

The historic Crow Pass Trail through Chugach State Park has historically received heavy use. In 1977, restoration of the trail was completed by the Girl Scouts as a Bicentennial project, with park personnel providing advisory and engineering assistance. Hikers may travel from Girdwood to Eagle River across the park, thus retracing the historic route of both the mail trail and early pioneers.

### Interior District

Superintendent: Vacant

The District includes an area stretching from the Canadian border to the Chena River, north of Fairbanks, through which pass a large number of the visitors traveling the Alaska Highway. The Chena River and Harding Lake Recreation Areas are in this district.

### Southeastern District

Superintendent: Hilton J. Wolfe

The Southeastern District includes parks located in Ketchikan, Sitka, Wrangell, Juneau, and the Haines-Skagway area.

An extensive project underway at Chilkat State Park in Haines will include development of the Chilkat Peninsula with marine, camping and day-use facilities. The project is scheduled for completion in 1980.

Totem Bight, in Ketchikan, continues to attract the largest number of visitors in the district. Renovation of the Community House is underway and should be completed by early summer of 1978. The park complements the cultural heritage program now functioning in the municipal center. Forest selections for state recreation use from the Tongass National Forest were also coordinated out of this district office.

### Alaska Conservation Action Corps Section

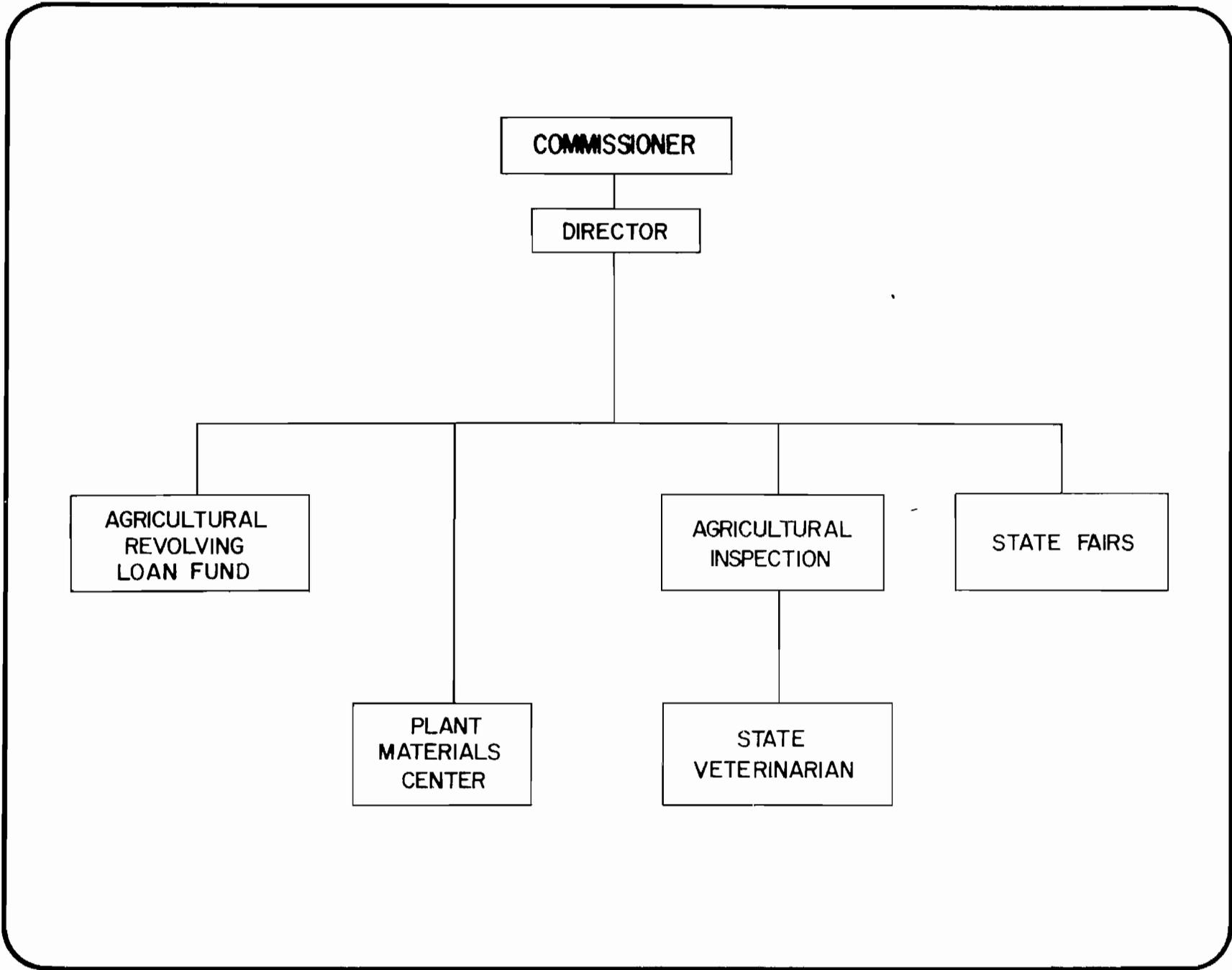
Chief: William G. Wright

Alaska Conservation Action Corps operated two camps in 1977 which are located at Bonanza Creek, near Fairbanks, and at Alcantra, near Wasilla. Enrollees are Alaskan youth, age 15-18, representing a cross section of Alaska ranging from Ketchikan to Barrow.

Forty enrollees attended the Bonanza Creek Camp Program for an eight-week resident program in an outdoor wilderness setting. The Alcantra Camp operated two five-week sessions and provided an opportunity for eighty youths to understand resource management. Work projects at both camps included nature-trail construction, reforestation, fish surveys, renovation of a log cabin and cache, and maintenance. Working on an excavation site at the isaak Walton wayside introduced several enrollees to ancient Alaskan lifestyles; a hearth dated 1500 years ago was uncovered. The group also provided data to the Capitol Site Planning Commission.



*Alaska Division of Agriculture*  
*P. O. Box 1088*  
*Palmer, Alaska 99645*



## Director: Allan K. Linn

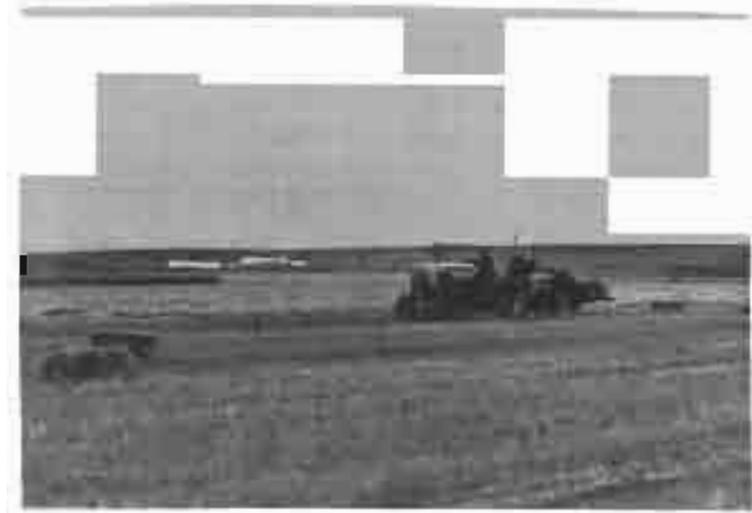
The Alaska Division of Agriculture directs, administers, and cooperates in certain experimental work for promoting and developing the agricultural industry in Alaska. It procures and disseminates information concerning agriculture to the general public. The Division is charged with the prevention of the spread of pests, disease, and toxic substances through the regulation of transportation of agricultural products. This is accomplished through animal and plant quarantine and inspection, rabies and weed control, and animal testing. This division administers the Agriculture Revolving Loan Fund and the Pest and Disease Fund, along with administering the soil conservation laws of Alaska. It is also obligated to promulgate milk labeling and grading regulations; administer grants to fair associations; provide meat inspection under the Federal Wholesome Meat Act; maintain a plant materials center and provide seafood inspection.

To accomplish these tasks, the Division is grouped into five sections: Agricultural Inspection, Plant Materials Center, Agricultural Revolving Loan Fund, State Fairs, and Administration and Support.

### AGRICULTURAL INSPECTION SECTION

Chief: Dr. Fred S. Honsinger, State Veterinarian

The Agricultural Inspection Section, under the direction of the State Veterinarian, is the largest section in this division and has employees in Juneau, Anchorage, Palmer, Kodiak, and Fairbanks. This section is responsible for protecting human health and for fostering economical production by inspecting plant and animal food destined for consumers. Agricultural inspection is also responsible for the prevention and eradication of diseases of animals (such as brucellosis) and plants. A cooperative agreement with the Animal and Plant Health Inspection Services of the U. S. Department of Agriculture (USDA) enables the Division to maintain a high level of services at a low cost. Seafood inspection was initiated July 1, 1977.



*Cereal grain harvest on the OHM farm at Delta Junction being followed by straw baling for livestock bedding.*

There were 1,868 compliance and evaluation inspection reviews conducted in 1977, resulting in the detention of 6,222 pounds of processed meat, of which 5,377 pounds were condemned. Processed meats inspected in-plant totaled 5,712,436 pounds. Slaughterhouse inspections involved 1,031 animals totaling 365,030 carcass pounds. Field and plant inspections related to the milk and frozen dessert sanitation program numbered 219. Under the Animal Health Program, 7,988 animal laboratory and field tests were carried out. The importation and exportation of 20,938 animals entailed processing of 15,112 health certificates.

Produce inspection certificates, totaling 1,018, were issued on 226 tons of produce, and 81 tests of seed and grain were conducted. The acreage of potatoes, grain and grass inspected for certification totaled 587.

## PLANT MATERIALS CENTER

Manager: Robert H. Parkerson

The Alaska Plant Materials Center, located southeast of Palmer, is a working farm that serves as a plant laboratory. In it plant materials, both woody and herbaceous, are evaluated for their suitability to Alaskan agriculture, soil and water conservation, and industry. The Center is charged with providing storage and processing of seed in cooperation with the USDA Soil Conservation Service and the University of Alaska Agricultural Experimental Station. The Plant Materials Center now has 62 acres in foundation grain seed production and 82 acres in foundation grass seed. Evaluated raspberry, currant, and strawberry stock is maintained at the Center in the interest of making it available to Alaskan producers for the people of Alaska.

The Center operates the only official seed-testing laboratory in the state, where seed lots are checked for germinability, freedom from other seed and foreign matter.

## AGRICULTURAL REVOLVING LOAN FUND

Loan Administrator: Douglas L. Jacobson

The Agricultural Revolving Loan Fund was created by the 1953 Territorial Legislature "to promote the more rapid development of agriculture as an industry throughout Alaska by means of long-term, low-interest loans." The law as now amended authorizes a five-million dollar operating level. Appropriations from the General Fund to date have amounted to \$3,640,000.

In 1970, the Legislature authorized the Fund to sell loans to the Alaska Department of Revenue as a means of additional financing. Principal balance of loans sold to Department of Revenue at the end of Fiscal Year 1977 was \$453,779.92. All loans sold under this program bear 5.5 or 6 percent interest and the Fund retains 1/2 of 1 percent

for servicing the "sold" loans.

The Agricultural Loan Fund Board meets periodically to review policy, evaluate loan applications, and review status of the Fund. Daily operations are handled by a loan administrator, a loan examiner and two loan clerks, all located in Palmer.

Four types of loans are authorized: a) farm-development loans for up to \$200,000, which may be made for thirty years with interest not to exceed six percent; b) chattel loans for up to \$100,000, which may be made for seven years or the useful life of the chattel and bear 6 percent interest; c) short-term loans that amortize within one year in amounts not exceeding \$25,000 to any one borrower and bear 6 percent interest; and d) irrigation loans bearing 4 percent interest; which may be written for as long as twenty years if fully secured by real estate.

At the end of 1977, the Fund was servicing 205 loans involving 117 different borrowers scattered from Juneau to interior Alaska. Fifty-four percent of the Fund was loaned in the Matanuska-Susitna area, 28 percent in the Tanana-Delta area, eleven percent in the Kenai Peninsula, and the rest in other areas. A breakdown of loans by type is as follows:

Short-term loans	\$ 362,333.29
Chattel loans	579,315.27
Farm-Development loans	3,157,007.75
Irrigation loans	297,507.96
Total (as of 6/30/77) =	<u>\$4,396,164.27</u>

In addition to loans made from the Revolving Loan Fund, the Section administers a special \$150,000 loan made available by the Legislature to construct a slaughter facility at Kodiak. Repayments of principal on this 25-year loan revert to the General Fund instead of to the Agricultural Revolving Loan Fund account.



*Matanuska Valley egg ranch of Mr. Gene Jenn where over eight thousand laying hens produce for Alaskans.*

Since inception, \$9,806,479 in new-money loans have been issued; losses on loans have been only \$232,359 or 2.2 percent. The ARLF is unique in that it is one of the few state loan programs which has, paid all its operating costs and still absorbed losses. As of June 30, 1977 the ARLF has retained earnings in the sum of \$333,392 in addition to a 3 percent reserve for losses on loans.

Receipts for Fiscal Year 1977 (FY 77) were \$779,222, including \$234,516 in interest. Net income was \$63,841.

Fifty-three loans totaling \$776,701 were made in FY 77; 48 loans were paid in full; six loans were re-written or reamortized totaling \$63,396; three loans were assumed by different clients; and eight loans worth \$40,643, were written off.

The Agricultural Revolving Loan Fund continues to be a prime source of credit available to the Alaskan farmer,

having provided 38 percent of chattel loans and 31 percent of farm development according to the most recent survey.

## STATE FAIRS

Chief: Edward D. Kern

State Fairs is essentially a "pass-through operation." Funding varies by locality and year for both operational and capital funds. Because no staffing is devoted to this item, the program has not retained a consistent pattern for development. The Section is funded to provide support to fairs for encouraging the display of Alaskan products, both agricultural and cultural, and to provide assistance for upgrading and maintaining their facilities.

In Fiscal Year 1977, eleven fairs received \$116,500 under the State Aid to Fairs Program. Capital improvement funds delivered to six fairs totaled an additional \$226,000.

## ADMINISTRATION AND SUPPORT SECTION

The Administration and Support Section, under the supervision of the Director, provides the necessary administrative services for the Division involving personnel, budget supervision and procedures. It maintains liaison and works with other agencies and the general public to see that the Division is meeting their needs.

### Agricultural Extent

Of Alaska's total 375 million acres, 1.6 million areas were listed as "land in farms" in the 1974 U. S. Census of Agriculture. Most of this consists of grazing lands leased from the U. S. Government, mostly in the southwestern and western parts of the state. About 70,000 acres are in land for farms, one-third of which is in crops for harvest and the rest in pasture and uncleared lands.

## Crops

Grass, hay, grain, and silage crops are the chief agricultural crops of the state. Grass hay accounts for about 42 percent of the total harvested acres of the state; grain hay approximately ten percent; and silage crops approximately 26 percent. Oats and barley constitute 17 percent of the product, with potatoes and other vegetables making up the remaining six percent. These figures are based on averages over the prior 15 years.

The actual crop values and figures for the 1977 growing season in Alaska will be available from the Department of Natural Resources in June of 1978.

## Livestock and Poultry

### Dairy

Milk cows that have calved numbered 1,500 head on January 1, 1977, 100 less than the previous January 1. There were 500 head of dairy replacement heifers of 500 pounds or over. Value of all dairy cows and replacement heifers as of January 1, 1977 was \$1,090,000, about \$38,000 less than a year earlier.

Milk Production in 1976 totaled 16.0 million pounds, 800,000 pounds less than in 1975. The value of milk produced, at \$2,888,000, was \$71,000 more than a year ago. The 1976 value per hundredweight of \$1805 was the highest of record.

### Beef

Beef stock numbered 5,700 head, 700 less than January 1, 1976. Beef-cow numbers, at 2,300 head, were 200 less than the previous year. Replacement heifers are estimated at 500 head.

Total value of all beef stock on January 1, 1977 was \$1,990,000, a decrease of \$112,000 from a year earlier. The main beef herds are located on Kodiak and other islands along the Aleutian Chain and on the Kenai Peninsula.

### Sheep

Wool production of 51,000 pounds was the smallest on record. The 5,200 head shorn was 1,300 less than in 1975. Fleece weight of 9.9 pounds was slightly below the previous year. Value of 1976 wool crop was \$45,000.

### Hogs

There were 800 hogs and pigs on Alaska farms on December 1, 1976, or 100 more than the previous year. Total value of hogs on December 1, 1976 was \$103,000, compared with \$76,000 on December 1, 1975.

### Poultry

Chickens on farms and commercial laying flocks totaled 32,000 on December 1, 1976. Value of all chickens on December 1, 1976 was \$122,000, or \$30,000 above 1975 and \$20,000 above 1974.

Egg production totaled 500,000 dozen in 1976, 75,000 dozen more than in 1975 but 33,000 dozen less than in 1974. Value of eggs produced in 1976 was about \$570,000, or \$145,000 more than the previous year.

# 1977 Publications

## ALASKA DEPARTMENT OF NATURAL RESOURCES

### Department of Natural Resources - 1976 Annual Report

A narrative report of the responsibilities and achievements of the Department during the 1976 calendar year. - No charge.

## PLANNING AND RESEARCH SECTION

### Resource Bibliography Susitna River Basin

A comprehensive annotated listing of published data and ongoing research within the Susitna River valley. - No charge.

### Resource Assessment of Current d-2 Lands

A comparative analysis of Alaska's resources as affected by four d-2 land proposals based on DNR's computerized statewide resource assessment. - No charge.

### Alaska Coastal Land Status/Use Atlas

The atlas shows land status, subsurface and surface land uses of Alaska's coastal areas at the map scale of 1:250,000. - No charge.

### North Slope Borough Water Study, A Background for Planning

An inventory of traditional and present water uses in eight North Slope villages. - No charge.

### Petroleum Development Study - North Slope of Alaska

This study compiles technical data related to North Slope petroleum development and formulates alternative petroleum development scenarios covering the entire North Slope. - No charge.

## ALASKA DIVISION OF LANDS

### Alaska Land Lines

A monthly publication highlighting month-to-month activities of the Division of Lands. - No charge.

### The Delta Land Management Planning Study - Volume III

A socio-economic analysis of the study area and four possible alternative futures for the area. - No charge.

### The Delta Land Management Planning Study - Volume IV

General recommendations; agriculture, greenbelts, rural homesites, recreation, wildlife, forests, minerals; appendix: citizen council comment. - No charge.

### Kenai Resource Inventory: An Annotated Bibliography

Organized by resource category; includes performing and sponsoring organizations; source type and location; geographical area and applicability rating; and brief description. - No charge.

## THE ALASKA DIVISION OF LAND AND WATER MANAGEMENT

### Registered Log Brands - 1976

An official list of timber property brands registered with the State of Alaska as of December 31, 1976. - No charge.

### Kenai Peninsula Commercial Timberland - By Acres and Volume

A statistical and narrative report of the commercial timber capabilities of the Kenai Peninsula, Alaska. - No charge.

ALASKA DIVISION OF MINERALS AND ENERGY  
MANAGEMENT

Analysis of Prudhoe Bay Royalty Natural Gas Demand and  
the Proposed Prudhoe Bay Royalty Natural Gas Sale

This analysis considers the implications of the sale of royalty gas in-state and whether it will satisfy potential in-state gas volumes and natural gas supplies when needed.  
- No charge.

Study of State Petroleum Leasing Methods and Possible  
Alternatives

This report analyzes the methods and policies of competitive leasing of state lands for oil and gas purposes.  
- No charge.

Oil and Gas Demand in Alaska

A report of rising energy demands in Alaska's future. - No charge.

Incentives for Exploration and Development on Alaska's  
North Slope

This report discusses higher wellhead prices of crude oil as an incentive to increased development on the North Slope of Alaska. - No charge.

Potential Oil or Gas Lands in Chugach and Tongass National  
Forest

A resource inventory study as an aid to future state selections in the national forests. - No charge.

OCS Leasing Review of Federal Regulations

A review of eight OCS areas which are ranked according to their energy development potential. - No charge.

Pre-leasing Procedures Analysis Suggested Pre-Leasing  
Procedures Program

A presentation of recommendations to modernize Alaska's resource pre-leasing procedures. - No charge.

ALASKA DIVISION OF GEOLOGICAL AND  
GEOPHYSICAL SURVEYS

Geologic Reports: The geologic report serves to communicate new data and original ideas to professional peers. It is a summary of original work on a geologic problem and the degree of peer review, editing, and revision is exhaustive to ensure the highest level of accuracy.

No. 45, "Geology of the Rainbow Mountain--Gulkana Glacier Area, Eastern Alaska Range, Alaska" by G. C. Bond. - \$3.

No. 46, "Geology of the Eureka Creek Area, East-Central Alaska Range, Alaska," by J. H. Stout. - \$5.

No. 49, "Gravity Survey of the Beluga Basin and Adjacent Area, Cook Inlet Region, South-Central Alaska," by S. W. Hackett. - \$2.

No. 50, "Metamorphic Rocks of the Toklat-Teklanika Rivers Area, Alaska," by W. G. Gilbert. - \$3.

No. 54, "Salinity Study, Cook Inlet Basin, Alaska," by D. L. McGee - \$3.

No. 55, "Short Notes on Alaskan Geology - 1977," an Assortment of Articles on Recent Geologic Findings in the State. - \$2.50.

No. 56, "Aeromagnetic Map of Southwestern Brooks Range, Alaska," by S. W. Hackett. - \$2.

Information Circulars: Information on a variety of subjects from mining laws and how to stake a claim to scuba diving for gold are discussed in this series of pamphlets. The following information circulars were revised in 1977.

No. 7, "Alaskan Companies and Prospectors."

No. 16, "Alaska Map Information."

No. 20, "Aeromagnetic maps of quadrangles."

No. 21, "Open-File Reports."

### Mines and Geology Bulletin

A quarterly publication highlighting topical Alaskan mining and geological news. - No charge.

**Open-File Reports.** The open-file report serves the immediate functions of providing the public with a timely summary of research and inviting reader feedback of errors of thought or fact so that corrective steps will be taken before additional funds are expended for more refined publications.

During 1977 the following open-file reports were published:

No. 103, "Reconnaissance Geology of the South-Central Talkeetna Mountains," by D. L. McGee and M. W. Henning.

No. 104, "Potential Petroleum Reservoir and Source Rocks in the Kamishak-Iniskin-Tuxedni Region, Lower Cook Inlet, Alaska," by W. M. Lyle and J. A. Morehouse.

No. 105, "General Geology and Geochemistry of the Healy D-1 and Fairbanks A-1 Quadrangles, Alaska," by W. G. Gilbert.

No. 106, "Aeromagnetic Map of Northern Alaska," by S. W. Hackett.

No. 108, "Reconnaissance geochemistry of parts of the Fairbanks A-4 and Healy D-2, D-3, and D-4 Quadrangles, Alaska," by T. K. Bundtzen and W. G. Gilbert.

No. 109, "Alaska's Uranium Potential," by G. R. Eakins and others.

No. 110, "Photointerpretation Map of Surficial Geology, Fox River to English Bay, Alaska," by J. R. Riehle.

No. 111A, "Photointerpretation Map of the Surficial Geology of the Southern Kenai Lowlands, Alaska," by R. D. Reger.

No. 111B, "Photointerpretive Map of the Geologic Materials of the Southern Kenai Lowlands, Alaska," by R. D. Reger and C. L. Carver.

No. 111C, "Slope Map of the Southern Kenai Lowlands, Alaska," by J. T. Kline.

**Aeromagnetic Maps:** Aeromagnetic maps are the result of a continuing long-range cooperative program with the U. S. Geological Survey to acquire extensive geophysical coverage of Alaska. USGS 1:63,360-scale maps are used as a base, and aeromagnetic survey information obtained from an airborne magnetometer is overprinted in red. These maps are available from any Division mining-information office for \$1.00 (\$1.10 postpaid). A list of these maps is also available from these offices.

**Contributions to National Publications:**

"Land reclamation - An integral part of the only operating coal mine in Alaska," by C. N. Conwell: The Coal Miner, Sept. 1977, p. 21-30. No charge.

"The periglacial environment," by H. M. French: Arctic and Alpine Research (R. D. Reger, reviewer), v. 9, no. 3, p. 320-321. No charge.

**Individual Reports:** These are reports that are prepared primarily in response to questions from the public at large and from state and federal officials. Copies of these reports may be examined at any mining-information office.

"Mineral Potential Study of Chugach and Tongass National Forests."

"Hard-Mineral and Uranium Inventory, Statewide."

"Survey of Mineral Programs by Industry."

"Mineral Resource Evaluation of Selected Areas."

"Geology and geologic hazards of the western coast of the Kenai Peninsula from Kenai to English Bay, Alaska."

"Stratigraphy and initial interpretation of stratigraphic section A, archaeological site Anc54, Turnagain Arm, Alaska."

"Possible gold recovery within the Highway Right-of-Way, Dawson Bench Area, Fox, Alaska."

#### Miscellaneous Publications:

"Bibliography of the Cook Inlet, Alaska, 1969-76," compiled by D. L. McGee and others. - \$2.

"1965 INQUA Conference Guidebook to Central and South-Central Alaska" (reprint), by VII Congress of the International Association for Quaternary Research - \$4.

#### Miscellaneous Maps:

The following maps were produced by the Division during 1977:

"Energy Resource Map of Alaska" (6-color), scale 1:2,500,000 - \$2.50.

"Satellite Photomap of Alaska," scale 1:1,000,000 (5 sheets). - \$7.

#### Papers given at conferences and workshops:

"Cook Inlet-Susitna Coal Fields," by C. N. Conwell. Given at Geological Society of Canada annual meeting, Vancouver, B. C., April 1977.

"Regional Setting of Southern Brooks Range Copper Deposits," by W. G. Gilbert and M. A. Wiltse. Given at Geological Society of Canada annual meeting, Vancouver, B. C., April 1977.

"Tectonics, Mid-Paleozoic Volcanism and Mineralization in the North-Central Alaska Range," by W. G. Gilbert and T. K. Bundtzen. Given at Alaska Geological Society Symposium, Anchorage, April 1977.

"The History, Present Legal Regime, and Future of Marine Mining in Alaska," by C. N. Conwell. Presented at Underwater Mining Institute, Seattle, WA, November 1977.

"General Geology and Mineral Deposits of Southeastern Alaska," by T. K. Bundtzen. Given at Northern Cordillera Mineral Deposits Workshop, Whitehorse, Y. T., December 1977.

"Volcanogenic Massive Sulfide Mineralization in the Alaska Range," by W. G. Gilbert. Presented at Northern Cordillera Mineral Deposits Workshop, Whitehorse, Y. T., December 1977.

## ALASKA DIVISION OF OIL AND GAS CONSERVATION

### Oil and Gas Bulletin

This bulletin is a monthly publication that recounts monthly activities of the Division with regard to hearings, orders, regulations, notices, and news items. It also includes reports of drilling permits issued, recently-released well information, and tabulations of oil and gas production and injection volumes for each well in the state on a monthly incumulative basis. Well biographical and production data has been made available in digitized form and can be purchased from local data processing firms. - No charge.

### 1977 Annual Statistical Report

The annual Statistical Report shows the production and injection data which is tabulated by well, by pool, and by field for each month of the year. Other production statistics along with maps and charts of the producing fields are included. Inventories of ditch cuttings and core chips from wells drilled in the state that are available for inspection by the public are listed. Materials specifically prepared from these cuttings and core chips are also available for inspection by the public as listed. - No charge.

## Special Reports

During 1977 one special report was completed and made available, "Prediction of Reservoir Fluid Recovery, Sadlerochit Formation, Prudhoe Bay Field, Supplement A," by H. K. van Poolen and Associates, Inc. and the Division of Oil and Gas Conservation. - No charge.

## ALASKA DIVISION OF PARKS

### Alaska Outdoor Recreation Plan

This is an annual report of the statewide comprehensive outdoor recreation plan. - No charge.

### Alaska State Park System

A brochure describing the services available within the Alaska State Park System. - No charge.

### A Guide to Alaska's Historical Agencies

A joint publication with the Alaska Historical Commission, Alaska Historical Library, Alaska State Archives, and Alaska State Museum. - No charge.

### Alaska History News

A newsletter issued every second month. A joint publication with the Alaska Historical Commission and Alaska Historical Society. - No charge.

### Archaeological Survey Projects - 1976

No. 16 in the history and archaeological series. - No charge.

### Alaska Mining History: A Source Document

No. 17 in the history and archaeological series. - \$7.

## Pamphlets - No charge

### Nancy Lake State Recreation Area

### Hunting in Chugach State Park

### Nancy Lake State Recreation Area Winter Trails

### Hillside Trail System - Chugach State Park

### Denali State Park

### Chugach State Park

### Winter Guide to Chugach State Park

## ALASKA DIVISION OF AGRICULTURE

### Alaska Agriculture Statistics - June 1977

A joint statistical publication of the Division of Agriculture and the USDA, Statistical Reporting Service. - No charge.

### Market News

A weekly publication disseminated by the Division of Agriculture to the industry. - No charge.

# Addresses

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