alaska's resources

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Recorder's Office taken over

As the result of an executive order issued by Governor Jay Hammond, responsibility for the State Recorder's Office and the Central Uniform Commercial Code file fuctions were transferred from the Department of Commerce and Economic Development to the Department of Natural Resources efffective July 1, 1980. The responsibility for these functions is assigned to DNR's Division of Technical Services.

The State Recorder's Office is headquartered in Anchorage (in the State Court Building at Fourth and K) with district offices in Juneau, Kenai, Nome, Fairbanks, Ketchikan, Homer, Bethel, Palmer and Anchorage.

The Uniform Commercial Code Central File was transferred to Anchorage from Juneau and is currently located on the second floor of the Division of Technical Services. Arrangements have been made to forward all UCC mail to the new Technical Services address. All written inquiries and filings under AS 45.05.768(3) should be made to the following address:

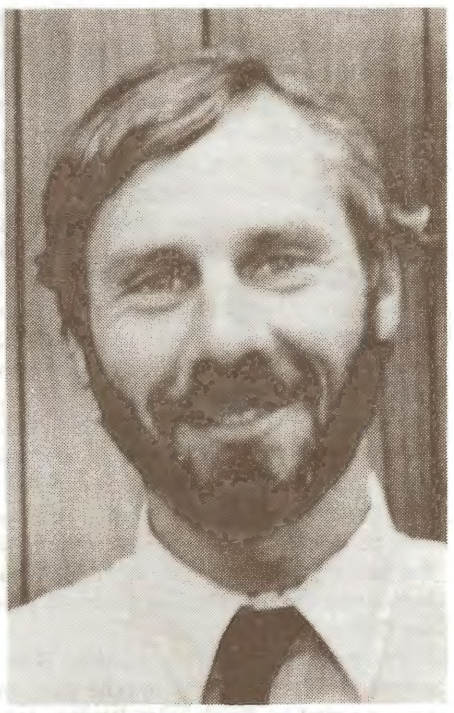
Uniform Commercial Code Central File
Department of Natural Resources
Division of Technical Services
P.O. Box 3336
Anchorage, Alaska 99510

Reed Stoops named director of Division of Research & Development

Reed Stoops, previously special assistant to DNR Commissioner Robert LeResche, has been named director of the department's Division of Research and Development. Prior to working as LeResche's assistant for the last two years, Stoops spent one year as an assistant to the Senate Resources Committee, and, before that, he worked for the Division of Community and Rural Development in the State Department of Community and Regional Affairs. In all his experience with the state government, Stoops has done extensive travel throughout Alaska.

Stoops succeeds Amos "Mo" Mathews as director of the Anchorage-based division which combines the once-separate planning and policy units of the department. The division secures and retains title to state lands, researches and formulates resource policy and program options, develops and maintains a computerized land and resource information system (ALARS), and develops regional land and resource plans in order to recommend options for state land and resource use.

Although Stoops' headquarters will be in Anchorage, he will spend a great deal of time working with LeResche and his staff in Juneau. The new director says he has committed the division to work more closely with people in various parts of the state, beginning with the assignment of a member of the planning staff to work in Fairbanks.



"I have a real concern about and commitment to state land selections," says Stoops, "and am committed to working toward the rapid fulfillment of statehood entitlements to solidify our resource base and to begin to realize benefits long overdue."

According to Stoops the Division of Research and Development is now working on regional planning whereby greater certainty will be created in terms of land management. "This will allow various resource constituencies in the private sector opportunities for doing their own long-term economic planning," he says.

Stoops notes that one way in which the division will serve not only the rest of the department, but the people of Alaska as well, is by establishing a first class computer resource system with ALARS.

"Upon completion of our state land entitlement, the department will be the third largest land manager in the United States. Computerization is essential to help prevent an ever-expanding bureaucracy and to handle increasing responsibility," he explains. "It will also dramatically improve our ability to provide prompt and accurate resource information to the public."

Five-year oil and gas leasing schedule revised

The revision of the state's Five-Year Oil and Gas Leasing Schedule, required by a bill passed in the recent legislative session, was completed in July. The revised schedule indicates that, as in the past, the state plans to conduct an average of three oil and gas lease sales each year during the next five years.

The new schedule adds an additional Beaufort Sea sale in 1983, moves several sales for coordination with planned federal offshore sales and reschedules several upcoming sales to allow for legally mandated presale analyses, which include geologic assessments.

Under the revised leasing schedule, the department will hold two lease sales in FY 81, which began July 1. A sale of relinquished tracts on the Arctic Slope was held September 16. (See article on page 6.) Acreage in the Upper Cook Inlet and Lower Susitna Valley will be offered next spring.

Four sales are scheduled for FY 82, including acreage on the Kenai Peninsula, in Lower Cook Inlet, the Beaufort Sea, and in the uplands south of Prudhoe Bay. Three sales a year are scheduled for FY 83 and FY 84, including acreage in the Middle Tanana and Copper river basins, Nortorn Basin, the Beaufort Sea, Upper Cook Inlet, Bristol Bay Uplands and Minchumina Basin. The third Beaufort Sea sale is scheduled for FY 85.

A provision requiring revision of the five-year schedule was included in a bill that changed the scheduling requirements for oil and gas lease sales. The legislation, sponsored by Governor Jay Hammond, allows more flexibility in the scheduling of sales and clears up legal uncertainty about scheduling requirements.

DNR Commissioner Robert LeResche said the revised schedule includes a range of sales which will allow for implementation of the legislature's stated goal of increasing participation by small bidders and the public, while continuing to proceed with the most aggressive leasing schedule which can be responsibly executed.

"There is no responsible shortcut to the geologic evaluation process," LeResche said. "During preparations for the joint state-federal Beaufort Sea sale last December (See *Alaska's Resources*, Vol. XXI, No. 1), which was the first major state sale since the mid-1970's, the state depended heavily on the resources and personnel of the federal government. These federal resources will not be available to use for many future state sales, and therefore it is necessary to develop this expertise within state government and acquire seismic information on our own. We are required by law to maximize the economic returns to the state from the sale of oil and gas resources, and geologic analyses are an integral part of that requirement."

The legislature appropriated $2.2 million to the department for seismic data acquisition and the hiring of 14 new geologists, geophysicists and related personnel.

1980 fire season lighter

The 1980 summer fire season was lighter than that of 1979, according to Ray Settles, assistant state forester in charge of fire management. Settles attributed this to the lack of a "real lightning season" this year and many more wet storms than usual.

Fairbanks was the heaviest hit this summer in terms of acres burned. The North-central District Office of the Division of Forest, Land and Water Management reported 109 actions taken with a total of 58,554 acres burned.

The State of Alaska, through the Department of Natural Resources' Division of Forest, Land and Water Management, is responsible for fire suppression on more than 30 million acres of Alaska land. The state has a cooperative agreement with the U.S. Bureau of Land Management for fire management on approximately seven million acres, portions of which are federal land and portions of which are state-managed lands.

Fire management by the state is handled through the three district office unless the fire is considered a major state fire, at which time it is managed from the Anchorage headquarters of the division. Each district has a district forester: In Fairbanks it is Les Fortune, in Juneau Paul Maki, and in Anchorage Skip Harding. Further, each district's area office has responsibility for initial attack on a fire.

Initial attack crews are made up of forest technicians trained for fire fighting. These forest techs are hired each summer as permanent seasonal employees of the state. About 80 are hired to work from May 1 through mid-September, the fire season.

In addition, the state hires village crews to assist with major fires. Two years ago the state began training village crews, a task originally done by the Bureau of Land Management (BLM). There are approximately 263 listed, organized village crews in the state. These crews are made up of 16 village residents trained to work together as a team to fight fires.

Seven village crews were called to work on the Ferguson Farm fire which burned about 7,000 acres at Delta last spring. Another nine village crews augmented the state's forces on the Blair Lakes fire which burned some 50,000 acres near the Fairbanks military bombing range. Smoke from this fire closed the Fairbanks airport and Ft. Wainwright temporarily in early summer.

There were two other "major" fires this season, according to Settles: Tract "J" at the Delta agricultural project, and a 250-acre fire at Wickersham Dome near Fairbanks which the state fought for BLM. A prescribed burn was scheduled for late September in Haines to rid the area of slash and improve its chances of reforestation by lessening competition and preparing an exposed seed bed.

Changing land ownership patterns are playing a large role in the state's planning for future fire suppression. The settlement of (d)(2) claims will result in the state's taking on responsibility for land areas which, by the end of 1985, will suffer 37 percent of the lightning-caused fire problems in the state. This is compared to only four percent of those problems which were under the state's management last year. These lightning-caused fires, which predominate in Alaska's interior regions, are in addition to the 85 or more percent of man-made fires currently under the state's management responsibility.

Navigability may determine land ownership

According to the federal Submerged Lands Act of 1953, title to all lands beneath navigable bodies of water belongs to the states. For Alaska, that may involve as many as 16 million acres of land above and beyond the state's upland entitlement to 104.5 million acres under the Statehood Act.

"Not only could this mean additional land for the State of Alaska," explained Ron Swanson, Department of Natural Resources navigability project manager, "but it also means the state may be entitled to submerged lands under waterways which are surrounded by federal lands or those lands under private ownership by Native corporation and others."

In terms of the oil and gas potential, and saleable materials such as river basin gravel, such ownership could be very valuable to the state. It would also mean the state could provide access to most of Alaska's waterways for sportspersons and recreationists.

In order to substantiate its claim to these submerged lands, the state has embarked on a project to document the navigability of the waterways.

"According to the Supreme Court, navigability of a waterway is defined as supporting 'trade, travel or commerce, or susceptibility to those uses, while in its ordinary state, " explained Swanson.

To accomplish this documentation, the Department of Natural Resources' Division of Research and Development has a staff of historians working to gather data which could be used to substantiate navigability of Alaska's waterways.

According to one of the state's historians, Richard O. Stern, there are several ways of gathering the data. "After the geographic area of concern has been determined, we do a published literature search," he said, "looking for both primary and secondary references to uses which would be considered trade, travel or commerce. We also go into the area and talk with local people."

"After that, we begin archival research," added Historian Gary Stein, who has been researching the middle and lower Yukon River area. His research frequently is based on the references gleaned from published materials and oral interviews.

Some of these references are more obscure than others—perhaps only a mere mention of a person who might have traveled the waterway. If such a person did travel the waterway, and if a diary was kept of those travels, the historians have gathered yet another piece of data which can be used to substantiate the use of a particular waterway for navigation. All such data are noted and compiled as background substantiation.

This summer, the state had three student interns (See related article on page 3.) researching the Bristol Bay drainage. Their work constitutes the base for one regional navigation report which documents water usage. These reports are being compiled under a cooperative agreement with the Bureau of Land Management (BLM).

"Working with BLM on a regional basis is helpful in that we can divide up the state for research and avoid duplications," explained Stern. "We don't bother to research in great detail those bodies we (the state and BLM) agree are navigable—like the Yukon River—but, instead, concentrate on those, such as the Gulkana River, where title navigation is in dispute."

BLM's historians go one step further than the state's in their analysis and interpretation of the historical information they gather; they make recommendations to BLM's land conveyance personnel as to the navigability of waterways.

"When BLM conveys the land to the state or a Native corporation, they make the navigability determinations," explained Stern. "But if the state has data which indicate use of a waterway for navigation, and the BLM maps do not show such a determination, DNR recommends to the Attorney General's Office that an appeal be filed on the contested waterway."

This is what has happened in the Gulkana River area where land has been conveyed to Native corporations of the Copper River area.

"Within a month we will be going to court to contest BLM's determination that the Gulkana River is non-navigable," said Swanson. "At the same time, we will be documenting the navigability of the Upper Susitna River; historical uses follow the same pattern in that area as in the Gulkana area."

In the case of the Susitna River, submerged lands in the middle part are now claimed by Cook Inlet Region, Inc., while the state has an uncontested claim on the lower part of the river. "If the state proves use of the upper portion, then submerged lands in the area of the proposed Susitna hydroelectric project won't have to be purchased from the Native corporation," said Swanson.

In other cases, the Native corporations are pleased with navigability determinations of waterways on their lands. Doyon, Ltd., a Fairbanks-based Native corporation, appealed to the Alaska Native Claims Appeals Boards that, based on navigability, the state owned the submerged lands of the Kandik and Nation rivers (tributaries of the Upper Yukon River)—lands which had been conveyed to Doyon. The presiding administrative law judge agreed, and that ruling allowed Doyon to select more usable land elsewhere as part of its entitlement under the Alaska Native Claims Settlement Act.

In essence, the state is suing the federal government for a wrong title action in conveying land which it did not own. The most difficult part of preparing for the court cases which will ensue is that few precedents have been established, according to Swanson. "We plan to put together several types of navigability court actions," he explained, "which cover several types of waterways uses. Then when we go to court, we will be not only settling a particular case, but also setting precedents in terms of court cases for certain types of situations."

"The historical evidence we have to use for substantiation is different in different cases," remarked Stein. "We have few Alaska cases to go by in terms of preparing our case: Due to Alaska's unusual physical characteristics and historical legacy, there are no cases in the Lower 48 to which we can make analogies in preparing our legal and historical cases on navigability."

The pressures for obtaining judicial rulings on waterbody navigability will be even greater if Alaska lands legislation passes. If it does, the state will have to initiate court actions, on cases involving navigability of waterways on Native lands, within five years of the date of the transfer of land.

"This will require a much more intensive state effort," said Swanson, "but the background research already scheduled, together with several planned court actions to clarify navigability criteria, will provide a good base for the state's future legal efforts."

"Mining in Alaska's History" conference staged in fall

The State of Alaska's historical agencies—the Alaska Historical Commission, the Division of Libraries & Museums, the Office off History & Archaeology and the State Archives—staged a three-day history conference entitled Mining in Alaska's Past, September 18-20 in Anchorage. This major history conference was designed as a public forum where scholars could share their knowledge about mining in the development of Alaska.

This was the fourth in a continuing series off annual statewide conferences sponsored by the Office of History & Archaeology, Division of Parks, Department of Natural Resources, according to Michael S. Kennedy, conference coordinator.

"Conference activities related to statewide identification and evaluation of sites, structures and objects significant in Alaska's mining history," said Kennedy. The conference was funded by matching funds provided by the National Historic Preservation Act of 1966 (federal and state) and a special grant of $1,000 from the Alaska Historical Commission.

Co-operators and co-sponsors of the conference included the Alaska Historical Society; Alaska Miners Association; C. C. Hawley & Associates; the University of Alaska, Anchorage and Fairbanks, Departments of History; Alaska Pacific University; the School of Mineral Industries at the University of Alaska, Fairbanks; the Alaska Humanities Forum; and the Heritage Conservation & Recreation Service.

During the first session of the conference, participants explored application of the National Register of Historic Places to mines and miners. State Architectural Historian Alfred Mongin chaired the preservation workshop which dealt with such subjects as the Alaska Heritage Resource Survey, documentation of historic properties, tax and legal parameters of historical preservation and the availability of matching grant monies for preservation projects.

The Cook Inlet Historical Society was celebrating its 25th anniversary that weekend and invited the 138 conference participants to a reception and program revolving around the celebration. The following day was spent in a series of symposiums at which persons prominent in the fields of mining or history presented papers on various topics pertinent to the conference subject.

The evening of the conference's second day centered around a banquet at which C. C. Hawley was master of ceremonies, and Dr. Earl H. Beistline, dean of the School of Mineral Engineering in Fairbanks, gave a keynote address entitled "The Fairbanks Exploration Company as Witnessed by John C. Boswell; A Brief History of the School of Mines." His talk was accompanied by a movie.

On the final day of the conference, a variety of other interesting papers was presented. Throughout the conference, panels composed of well-known persons in both mining and history, discussed the papers presented. Included in the panels were Dean Earl Beistline and Dr. Ernest N. Wolff from the School of Mineral Industries; Division of Parks employee Alfred Mongin; Dr. Robert A. Frederick, past executive director of the Alaska Historical Commission; Phil Holdsworth, one-time territorial and the first State Commissioner of Mines; Department of Natural Resources Deputy Commissioner Geoff Haynes; William Hannabel, executive director of the Alaska Historical Commission; and Doug Reger, State Archaeologist and acting chief of the Office of History and Archaeology.

Previous statewide history conferences include Historic Preservation, The Church in Alaska's Past and The Sea in Alaska's Past. Themes for future conferences include education, transportation, business and industry, and forestry. According to Kennedy, the statewide history conferences play an important public informational and educational role. The proceedings of each are published by the Office of History and Archaeology, thus augmenting the source data on Alaska history.

alaska's resources

Dedicated to the wise use and conservation of Alaska's natural resource values. Published by the Alaska Department of Natural Resources. When giving notice of change of address, please include old and new addresses. Allow eight weeks for subscription, renewal or change of address to become effective.

Jay S. Hammond, Governor
Robert E. LeResche, Commissioner
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and DNR Graphics

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index to subjects

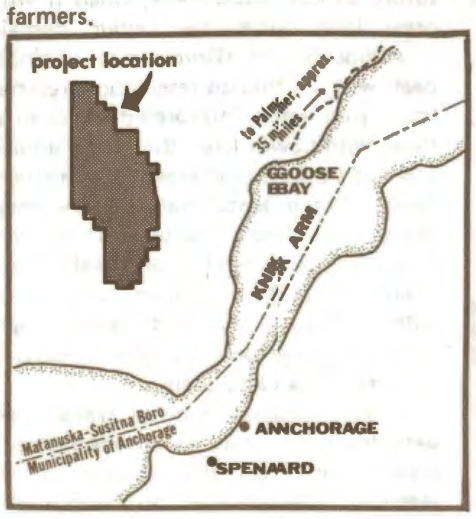
A symbol has been designed for each of the divisions in the Department of Natural Resources. Each of these symbols depicts one of the primary functions of the division's operation. These symbols are used with articles in *Alaska's Resources* to help identify the division involved in the subject of the article.

- Division of Administration and Management
- Division of Agriculture
- Division of Forest, Land and Water Management
- Division of Geological and Geophysical Surveys
- Division of Minerals and Energy Management
- Division of Parks
- Division of Pipeline Surveillance
- Division of Research and Development
- Division of Technical Services

Pt. MacKenzie marked for agricultural development

On March 6, 1981, the Department of Natural Resources will conduct an agricultural interest rights lottery on approximately 15,000 acres of land in the vicinity of Pt. MacKenzie, across Knik Arm from Anchorage. The lottery, which is open to prequalified farmers, is one step in meeting needs expressed by dairymen in the state.

According to Paul Huppert, vice chairman of the Alaska Agricultural Action Council, a request for the state's cooperation in the provision of additional dairy lands came to the council in September 1979. Most of the dairymen had farms in the Matanuska Valley, but prices for subdivided land there had become too great for purchase by farmers.



It appeared that the Pt. MacKenzie area, located south of the Matanuska Valley, would be ideal for future dairy development. It is loccal, adjacent to current dairy operationss and near manufacturing plants. Thesse plants have been shipping in, from the State of Washington, two million pounds per month of raw milk for processing. It has been estimated that a miinimum of 3,000 more dairy cows, with average production, are needed locally to relieve this dependence on important sources of raw milk.

An economic sttudy of the Pt. MacKenzie area indiicated feasibility for 50- to 150-cow herds on each of the tracts to be offered at the March lottery: Nineteen of the 31 parccels to be offered have been specifically reeserved for dairy development. Two of the tracts are owned by the Matanuska-Susitna Borough. The borough assembly recently passed a resolution to include the parcels in the lottery with proceeeds going to the borough treasury.

Responsibility for the development of the Pt. MacKenzie Project rests with the Agricultural Action Council, while responsibility to administer the lottery disposal rests with DNR's Division of Forest, Land and Waterr Management as part of its land disposal program. The council has contracted with other DNR divisions to provide preliminary services as well.

"The Division of Technical Services (which provides surveying) and the Division of Geological and Geophysical Surveys have been superb in their cooperation," said Huppert im describing the progress being made in preparation for the sale.

Other developments which will be supportive of the project include the borough's planned extension of Knik Road to Goose Bay with gravel roads leading to the parcels. Another proposed borough project is a port facility for shipping Alaska products.

Huppert says he predicts a minimum of 300 applicants for the land.

"We're looking for serious operators who can do the job," said Huppert, explaining that prequalification of applicants will be based on residency, experience and financial capabilities of the applicant as well as evidence of a viable farm plan. The prequallification period began in mid-October. An "Invitation to Participate and Prequalify for the Pt. MacKenzie Agricultural Project" was provided in early October, according to Ray Mann and Debbie Robertson of the Division of Forest, Land and Water Management's Southcentral District Office in Anchorage.

Huppert described the Pt. MacKenzie Project as one portion of the council's aim to have 600,000 acres of Alaska land committed to agricultural production by 1990.

"We already had 17,000 acres in production when we began our study for the Delta Barley Project in 1976," explained Huppert. "Delta added 50,000 acres, and Pt. MacKenzie will add 15,000 more." A Delta II Project and a Nenana Project are scheduled for development disposal next year.

Huppert says production is possible by as early as November or December of 1981. He expects to see a large percentage of the dairy farmers in production by the fall of 1982, and most of them by fall of 1983. After purchase of the agricultural interest rights, farmers must clear the land, provide necessary structures and then ship in cattle. That last step is one of the larger problems, according to Huppert. Clearing of the land has been made somewhat easier by way of the state's timber sale held on Pt. MacKenzie land earlier this year. Although not all the timber contracts were sold during the August 18 sale, Division of Forest, Land and Water Management Director Ted Smith says any timber sold will be removed by March 1, 1981.

New mining claims top 5,000

by Frank Larson, DGGS

The number of new mining claims filed with the State Recorder's Office totaled 5,012 for the three-month period ending September 1. This is the second time this year the quarterly total exceeded the 5,000 mark. During the March-April-May quarter, 5,795 new claims were filed—a threefold increase over the preceding three-month period.

The DGGS mining information office in College had processed 12,640 new claims by the end of August, more than double the number that had come in by the same time last year, according to mining specialist Mildred Brown.

"This is directly attributable to the high prices of gold this year," she said.

The number of visitors seeking mining information has also increased dramatically over last year's figures. During the first five months of 1979, there were 606 visitors to the information office; during the same five-month period this year, 1,682 people sought information, according to Brown.

Most of the new mining claim activity has centered in the Fairbanks-Circle area this part quarter. Shown below are the totals by recording district:

	June	July	August
Fairbanks	361	1,240	998
Manley Hot Springs	73	4	42
Nulato	31	14	23
Mt. McKinley	0	2	0
Nenana	8	15	6
Rampart	0	6	0
Fort Gibbon	9	2	0
Kotzebue	4	0	0
Talkeetna	28	152	334
Palmer	14	72	95
Nome	42	100	65
Juneau	125	37	6
Haines	18	5	7
Skagway	0	1	0
Petersburg	45	30	30
Ketchikan	3	58	17
Anchorage	13	0	16
Cordova	1	0	14
Chitina	20	8	2
Bethel	0	0	59
Kuskokwim	720	0	5
Kodiak	30	0	2
Total Claims Filed	1,545	1,746	1,721

DNR uses student intern program

The best part of using the Student Intern Program, in the estimation of Tom Bergstrom, director of the Division of Administration and Management, is that it encourages Alaska's young people to work in Alaska and gives them an opportunity to get summer jobs related to their education.

"The state invests a great deal of money in student loans for Alaskans to attend colleges and universities instate," said Bergstrom. "Additionally, many students use their loans to attend out-of-state schools, particularly those students majoring in veterinary science, law, forestry and other professional studies which are not offered in Alaska. The Student Intern Program provides a way for these young people to work in Alaska during the summer and put their education to work for them, for us and for the possibility of future employment with the state."

The Student Intern Program is designed for high school, college undergraduate and graduate students. Although it has been in existence since 1976, this is the first year the Department of Natural Resources has used the program.

"I first decided to try it in March when the Division of Research and Development said it wanted some student interns to do field survey work for the navigability project," explained Bergstrom. "In the past, we had used students from the WICHE (Western Interstate Commission on Higher Education) program. But those students are usually not Alaskans. I wanted to do everything possible to give Alaska students—going to school up here or Outside—every opportunity to work for the state."

The department employed 62 students this summer in eight of its divisions. All were college undergraduates or graduates working in positions as varied as dam inventorying for the Division of Forest, Land and Water Management, geologic field studies for the Division of Geological and Geophysical Surveys, and assisting the Division of Minerals and Energy Management with upcoming oil and gas lease sales.

"Employment with the state under this program is restricted to students pursuing a course of study in a field related to the job," explained Marianne Brustad, personnel officer for the department.

For example, Frank Okamoto, a post-graduate student at the University of Alaska, Anchorage, spent the summer working with the Division of Forest, Land and Water Management. He earned his bachelor degree in biological science in 1978 and is currently working for degrees in chemistry and environmental engineering.

Okamoto's job this summer involved devising a sampling strategy for the state to use in its joint water use program with the U.S. Geological Survey.

"It is a strategy to be used next year to determine how much water is used, with flow meter equipment and basic statistics, by the seafood industry," explained Okamoto. His strategy will be implemented next year in the data collection portion of the water management use program.

In addition to allowing Okamoto to make field trips to Ketchikan, Petersburg, Kodiak and Bristol Bay to observe the seafood processing industry, the summer experience "exposed me to what actually goes on in government," he said. "It was a rare opportunity to be a part of a system which is helping the people of Alaska."

That's important to Okamoto: He has been an Alaska resident for 17 years and plans to live and work here permanently.

Not all aspects of the Student Intern Program work perfectly, and recommendations based on the department's experience will go to improve the program's use for DNR and other state agencies as well, according to Brustad.

"One of the biggest problems for these students," explained Bergstrom, "was that they didn't realize all new state employees have to wait as long as six weeks for the first paycheck. Six weeks is half the summer; and because they were hired as temporary employees, we could not even give them mid-month draws to tide them over."

For Mimi Meiser, the wait was well worth it in terms of the experience she gained working with the Division of Research and Development's Land and Resource Planning Section. Meiser is an August graduate of the University of Idaho in Moscow. She received her Bachelor of Science degree in Forest Resources and came back to Alaska to "try it out." A 1974 graduate of Anchorage's Dimond High School, Meiser was familiar with the Susitna River area and moved right into working with the Susitna Area Plan.

"Most of what I worked on this summer was data collection for the transportation element of the Susitna Area Plan," she said, "and a preliminary look at the resources on state lands in the Matanuska Valley."

Meiser sees real potential in the Student Intern Program for students as well as for the department. "It gave me a great deal of help in finding the direction I want to go for graduate school when I return next year," she concluded.

For DNR, the program has provided a pool of educated Alaskans available for temporary summer work in a variety of projects. In many cases, the work involved is in the field and necessarily seasonal.

"Generally, the students we have employed this summer have been enthusiastic and competent," commented Brustad, "and therefore good employees."

The future of

—We never know the worth of water till the well is dry.—

English proverb

Alaska's seemingly bountiful supply of water may not be what it appears, according to Bill Long, chief of the Water Resources Section of the Division of Geological and Geophysical Surveys.

"The general problem," Long explains, "is that, while there is a large volume of water in Alaska, it is not distributed evenly throughout the state, nor throughout the year."

QUANTITY & QUALITY

Extensive glaciation and permafrost, which underlies 80 percent of the state, render a significant portion of Alaska's water resources unavailable. With less than five inches of precipitation per year, the North Slope is technically a desert. Ground water is unavailable in this area where permafrost may go as deep as 2,000 feet.

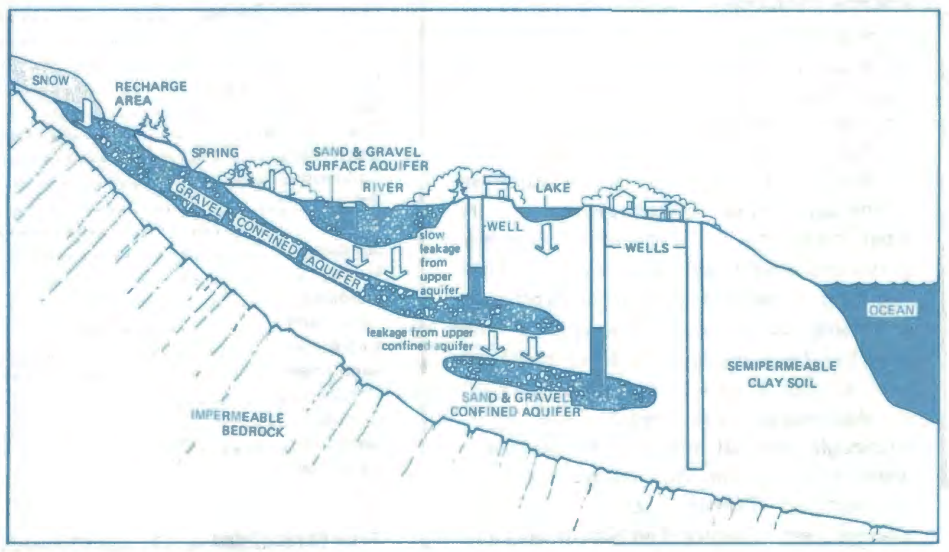
A 1977 report to the Department of Natural Resources, by Frank J. Trelease, said ground water supplies in Anchorage, Kenai and near Fairbanks were becoming critical. In Southeast Alaska, communities usually depend on rain as the major source of supply, using the small rivers and streams in the areas for domestic water. When there is no rain—as has happened for several days at a time the past two summers—problems begin.

Alaska's primary industries—fisheries, timber, petroleum, mineral extraction and canneries—all require vast quantities of water. Potential development of any of these industries depends on well-managed sources of water supply.

Ground water supplies in the area of Ester Dome and Murphy Dome near Fairbanks are laced with arsenic, causing concern to health officials. These waters are stored in fracture zones in mineralized rock; consequently, minerals in the rocks—in this case, primarily arsenic—are dissolved in the water.

Beyond Alaska's internal concerns with water supply, the state also must be aware of interest shown by the Outside world. Alaska's water resources development potential has been noted by the Lower 48, especially the arid Western states. There, water shortages are becoming increasingly more prevalent.

"The issue of the future water sufficiency of our nation may be the most important domestic concern we have to face, overshadowing even the energy shortage," according to Senator Carl Curtis (R-Nebraska), as quoted in the *Washington Post*.



This figure shows ground water movement and subsurface conditions.

WATER MANAGEMENT

Questions of prior appropriation, Alaska Native water rights, federal reserved and non-reserved water rights, and the nature of the resource itself point up the critical need for an effective system of water resource management in Alaska.

Water management is one of the prime responsibilities of the Department of Natural Resources' Division of Forest, Land and Water Management. It works with the department's Division of Geological and Geophysical Surveys, which conducts, in close cooperation with the Water Resources Division of the U.S. Geological Survey, surveys and evaluations of Alaska's surface and ground water supplies. For the most part, situations involving water quality and environmental controls are the responsibility of the Department of Environmental Conservation or, when fish and wildlife are affected, the Department of Fish and Game. Tri-agency functions exist when all three departments of the state are involved in water-use situations such as mining and hydroelectric dams.

Management of Alaska's water rights is specifically spelled out in the 1966 Water Use Act, and responsibility for this management is assigned to the Water Section of the Division of Forest, Land and Water Management. Brent Petrie was chief of this section until mid-September, at which time he moved to a position with the Alaska Power Authority. Pending the arrival of a new chief, Greg Doggett acts in that capacity.

"Traditionally," says Petrie, "allocation of water is the responsibility of a state government." Articles Three and Thirteen of the Constitution of the State of Alaska reserve all surface and subsurface (ground) waters to the people of the state for common use. The Water Use Act (AS 46.15) specifies the means of adjudicating water rights and appropriating and distributing water.

FEDERAL WATER RIGHTS

Adjudicating the rights to appropriation of water has been the source of controversy in the United States since the discovery of gold in the West and the subsequent race to settle there. Development of current water rights legislation is based on issues which arose between miners and the U.S. government in the mid 1800's. Basically, although the United States owned all western lands not privately held under previous sovereigns and possessed the power to dispose of these lands and the water—together or separately—the federal government acquiesced and permitted those persons whose rights were recognized by the developing local customs and rules to possess the public lands and waters and to divert those waters out of their watersheds and across the public lands to distant mining claims and irrigated tracts.

According to the 1975 *B. Y. U. Law Review*, the existence of federal authority to dispose of water on one hand, and the actual disposition of that water under the growing doctrine of prior appropriation on the other, resulted in conflict between the first appropriator of water and the federal patentee who claimed an unencumbered title.

A series of legislative and legal procedures followed—each further defining the state's authority in water appropriations versus the federal government's.

RESERVED RIGHTS

Because the states created and enforced comprehensive systems of water law, a pattern of reliance on state law developed, and the role of federal law was ignored for many years. No one considered what right the federal government had to make use of the unappropriated water to fulfill its own purposes: No one considered how such a right might be established and recorded—until 1908. Then, the U.S. Supreme Court decided, in the case of *Winters v. United States*, an issue which led to what became known as the *Winters doctrine*—namely that the federal government reserved water rights, with the claim to an early priority and a right to expand the use of water in the future as the need arose, when it withdrew land from the public domain.

Although the *Winters* case originally dealt with an Indian reservation, reserved lands were later interpreted to mean all those withdrawn from the public domain and not subject to disposal. This included parks, monuments and military reservations as well. Courts determined that, with a federal withdrawal of land from the public domain, an implied withdrawal of reserved water rights sufficient to accomplish the purpose of the reservation also occurs.

"These federal reserved water rights date from the date of the reservation," says Petrie, "for the *purposes* of the reservation. Much is left to interpretation with that definition."

NON-RESERVED RIGHTS

With the reservation theory having been clearly defined as the exception to the rule of federal deference to state law in the acquisition of water rights, the United States sought to develop a new, expanded concept of federal water rights. In the past few years, in the process of legally clarifying the scope of reserved rights, a non-reserved federal water rights doctrine has emerged. Non-reserved federal water rights are those governing water resources sufficient to carry out congressionally-mandated management programs on the federal lands, whether reserved rights are involved or not.

Western states' objections to this doctrine have been loud and clear. The State of New Mexico argued that "they (the United States) seem to say we really don't need the reservation doctrine, that the United States could by fiat say that we now want water in the West, we are going to use water for this purpose, therefore it is ours—that is not true."

"In Alaska, this non-reserved federal water right doctrine affects vast areas of national parkland," says Petrie. "It would appear that all the federal government has to do is say it needs the water to carry out its congressionally-mandated purpose of aesthetics and public recreation, and the state loses all control over the waters within the boundaries of that park."

Another situation in which federal reserved water rights will have to be adjudicated is for hydropower sites that may affect water flows through areas now within the boundaries of national monuments.

Ship Creek, source of approximately one-half of Anchorage's water supply, is one such case. A military reserve, established in the Anchorage area during World War II, shares Ship Creek with the city, a few large-quantity-water-using industries and the State Fish and Game fish hatchery.

"Fort Richardson has grandfather rights to Ship Creek from way back in 1942," says Petrie, noting that if all users of Ship Creek water used their full allocations, the creek would be dry part of the year.

"A U. S. Army Corps of Engineers study shows that Anchorage can produce only about three to five million gallons of water a day from ground water sources," explains Petrie.

Alaska Water Resources Board

The Alaska Water Resources Board, created by the Water Use Act of 1966 (Article 3 of Alaska Statue 46.15), serves as an advisory group to the governor of Alaska on all water-related matters in the State of Alaska.

The board is composed of seven appointed (by the governor) members having a general knowledge of the use and requirements for use of the waters in the state and the conservation and protection of these waters. The commissioners of the Department of Environmental Conservation and the Department of Natural Resources also sit on the board.

Current members of the board are Peg Tileston of the Alaska Center for the Environment; LeVake Renshaw, an Anchorage mining engineer; Kodiak management consultant Richard Sims who is chairman of the board; David Vanderbrink, a commercial fisherman in Homer; Wayne Westberg of MW Drilling; Charles Johnson, Executive Secretary of Kawerak Corporation in Nome; attorney Frederick Boness, former deputy commissioner of the Department of Natural Resources; Ernst Mueller, Commissioner of the Alaska Department of Environmental Conservation; and Commissioner of the Department of Natural Resources, Robert LeResche or his designee (normally this is Divsion of Forest, Land and Water Director Ted Smith).

The Water Resources Board functioned as an active group from the passage of the Water Use Act in 1966 until 1975. It did not meet in 1976 and 1977. Late in 1977, a concerted effort was made to re-establish the board as a citizens' advisory group to provide input on an increasingly complex array of water resources issues facing the state. Governor Jay Hammond made appointments to fill existing vacancies on the board, and it began meeting regularly again in May 1978.

The statute establishing the Water Resources Board explicitly details the duties of the board in advising the governor on all matters relating to the use and appropriation of water in the state, including, but not limited to: the effect and adequacy of all state laws and regulations governing the establishment of water rights; the multi-purpose uses of water; the prevention of pollution and the protection of fish and game; studies of the state's water supplies and plans for future requirements; development of water resources; participation of local governmental units in the management of water resources; lands which are or may be needed for dams, reservoirs, flood dams, flood ways, canals or ditches for the impoundment, storage, flow and control of waters.

The board deals with a wide range of topics at its meetings. Generally, a presentation of a topic is given by an agency representative, and this is followed by a discussion of the topic by board members. Action taken by the board is usually in the form of a resolution to the governor or letters to the department commissioner requesting the action.

Recenty the board has addressed matters relating to administrative efficiency on the part of agencies dealing with the public and policy matters which cut across agency lines of responsibility. In March 1980, the board assumed the duties of the State Water Quality Planning (208) Policy Advisory Board.

The next meeting of the Water Resources Board is scheduled for December 3-5, 1980, at the downtown community center, 325 East Third Avenue, Anchorage. The board meets from 8:30 a.m. to 4:30 p.m., and there will be a special public comment session, December 4 from 7:30 to 9:30 p.m.

Alaska's water

Three methods of expansiion have been proposed: develop aadditional groundwater resources; construcct a dam on Ship Creek to store excesss spring runoff; establish a storage dam or water-well field on Eagle River..

"In order to determine howw to best manage the water supply and dewvelop the resource," explains Petrie, "Aanchorage needs to know how much is tthere and how much needs to be delivereed downstream. But Elmendorf Air Foorce Base claims federal reserved rights: to the water and has not quantified thesse claims. Without knowing this informattion, the city can't invest in a Ship Creeek dam. This forces it to pursue more eexpensive options such as a dam at Eaglee River."

All federal reserved water rigghts have to be adjudicated in court for tthe federal government to be bound bby them, according to Petrie. "The soverreign can be sued in state court under the McCarran Amendment to quiet title to Shnip Creek water rights," Petrie says, "butt it takes manpower, time and money—ass well as quantified data regarding federall uses—to do this."

On Ship Creek, there are avaailable 25 to 30 years of hydrological records. According to Petrie, it is the besst stream in the state on which to try to aadjudicate water rights due to the amount of information available. But that's not so elsewhere in the state where otther rights must be adjudicated.

NATIVE WATER RIGHTTS

Native, or aboriginal, watter rights pose yet another complicated sett of legal determinations. One village corrporation, Paug-Vik Ltd., Inc., of Naknekk, claims its shareholders have aboriginall title to the land and aboriginal rightss to use of Alaska's water based on aaboriginal occupancy. The corporation ssays the United States government is under a moral and legal obligation to prrotect the Natives' aboriginal use area datting from the time it acquired Alaska frrom Russia in 1867. Based on this concept, only the United States could extinguissh those property rights, assuming it had coriginally bestowed "Indian title" to tthe land.

In the view of many, those aaboriginal rights were extinguished with the enactment of the Alaska Nativee Claims Settlement Act (ANCSA) of 1971. Pending conveyance of Nativve lands selected under ANCSA, legal title to Native-selected land remains with the United States. This could meean that Natives have federal reserveed water rights since the passage of ANCSSA as the land has been withdrawn from tthe public domain for a specific purposes—namely conveyance to the Natives.

Natives say that their aborigirnal rights to the water were not extinguishhed under ANCSA; that those rights were only extinguished on those lands nott selected and for which compensation was given.

The Alaska Superior Courtt case of *Paug-Vik v. LeResche* is the conly litigation to date which has addreessed the issue of Alaska Native wateer rights. Paug-Vik's aboriginal title lands.

Settlement of this case could have far-reaching effects on the outtcome of Native water rights issues.

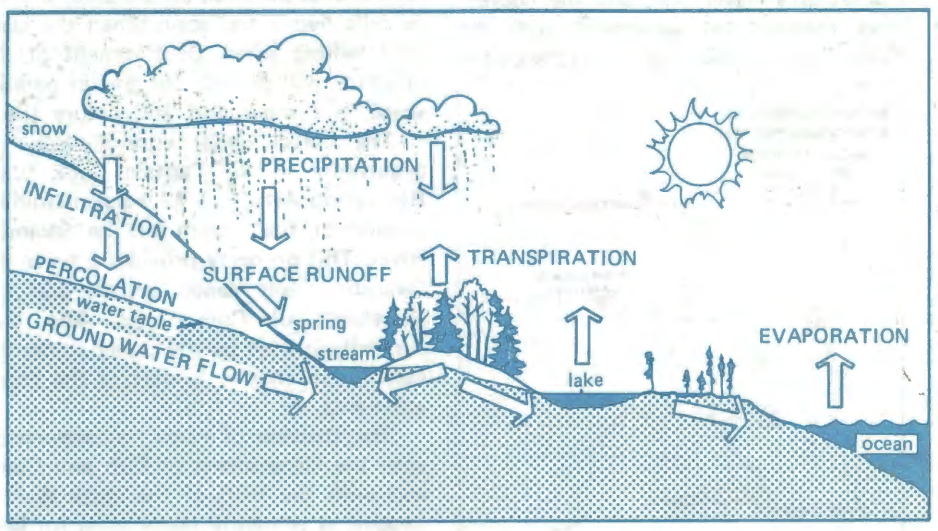
DATA COLLECTION

In order to adjudicate these aand other water rights, the state needs mcore information about water resources and use.

The state agency charged with developing that necessary data barnk is the Water Resources Section of the Division of Geological and Geophysical Surveys (DGGS).

"The division's approach tto evaluation of the state's water ressource is to evaluate surface waters—streamms, lakes, swamps and glaciers—and groundwater—that which is under the gground in permeable materials," explainss Long. "Although water quality is not so much our concern, we do make basiic evaluations as to whether it is potable (suitable for drinking) and as to its origiinal condition with regard to silt, natural chemical pollutants, swamp problems, etc."

In evaluating surface water, ten years of records are needed for statistical evaluation, according to Long. He says it takes a good deal of equipment and manpower to adequately measure discharge of the major streams in Alaska, but that, fortunately, U.S. Geological Survey (USGS) has had an active hydrology program in Alaska since shortly after World War II. USGS has kept good records for most of the larger streams, those along highways and those near areas of higher population density situations.



The hydrologic cycle is depicted in this figure.

Records of streams discharge are used in a variety of situations: building bridges and highways, managing water supplies for people, predicting flood hazards, sustaining wildlife habitat, developing power generation, predicting and controlling erosion. A stream's discharge is the volume of water in a stream at a given time. Discharge records allow identification of high flow and low flow data. Records are also kept of the comparisons of sediment content in streams at various times.

"Streams are constantly changing," says Long, "and we can deal with those changes in a limited way. For example, the Division of Parks came to DGGS to gain information about erosion of waysides and campgrounds in order to budget for control of this problem."

The DGGS Water Resources Section is only three years old. Its use of one stream reconnaissance surveying technique is also new. "We are surveying cross sections of streams," explains Long. "A dynamic balance exists among the depth, width and velocity of a stream," he continues. "It has been determined that most material in a stream is moved when the stream is at bank full flow, as compared to more common, lower bank flow levels or during floods. Bank full flow takes place every 2.2 years on the average."

Reconnaissance stream system surveys allow hydrologists to predict flows and flooding characteristics of the stream before a decade's statistical data are available. If any one element of the dynamic balance is changed, the others must change to compensate and thus maintain the relationship. For example, if excessive amounts of sediment build up in the streambed, its depth is decreased. In order to maintain the dynamic balance, either the width or the velocity of the stream will increase to compensate. These things must be kept in mind when bridges are built or retaining walls are placed in streams to maintain the width.

Lakes, another major source of surface water, are not surveyed by the state as completely as are streams.

"Lakes are a visible part of the water table, and their level fluctuations show changes in the water table," explains Long. "We do some level measurements and some chemical quality measurements, but more should be done."

He cited the Kenai area as a case in point. When ground water was used by industry in the area, the levels of nearby lakes went down. However, the area was experiencing several years of low precipitation which complicated interpretations. Evaluations of both the surface and ground waters need to be made to know how much can be taken from either without hurting the other.

There is one aspect of water resources surveying which is unique to Alaska: glaciers. "Non-glacial streams are very different from glacial ones," says Long. "A non-glacial stream has a fairly stable pattern, whereas glacial streams have a braided pattern. They change almost daily. All of us see many stream valleys filled with glacial debris or outwash. Old and recent outwash of the Matanuska River presently provides nearly all the sand and gravel used in Anchorage; gravel trains run daily from the Palmer area."

Alaska also has more than 100 glacial outburst lakes with accompanying floods. Up until a few years ago, Lake George, at the head of Knik River north of Anchorage, was subject to annual glacial outbursts. Each spring, ice and snow which had blocked the lake's exits, melted enough to allow the built-up lake behind it to burst through and flood down the Knik River. Beluga River near Tyonek and even the Kenai River are also subject to glacial outbursts. Another type of flooding typical of Alaska rivers is caused by ice jams of major rivers such as the Yukon, the Kuskokwim and the Tanana. These rivers experience ice jam flooding during breakup and overflow flooding during the winter.

Ground water evaluations are done from well observations and, thus, the ground water data base in Alaska is good only in and around major population centers, according to Long.

The recording of information on water well logs is one of the contributions to ground water information in the state. The State of Alaska has a water-well-log law which requires the drilling contractor to submit well data to DGGS. "Many well drillers see this as an infringement on their privacy." says Long, "but the data collected are invaluable for analysis of ground water systems."

"In fact," adds Petrie, "many lending institutions require well logs before they will process home loans." He cites examples of using that data to assist local residents. "In one area near Fairbanks, " he says, "some residents in permafrost areas have shallow wells only 12 to 15 feet deep—just above the permafrost. Septic tank effluent goes into the same level because the permafrost is impermeable. This causes obvious pollution and health problems. Reputable well drillers will always give the client a water well log which records, among other things, the geologic formations through which the well was drilled. In this way, residents can determine if they are susceptible to such problems."

WATER RIGHTS PERMITS

Petrie sees the state's water rights permitting system as a management tool. "By using geologic and hydrologic data in conjunction with economic development

(continued on page 6)

Beyond crisis management

Alaska's Resources *is pleased to present a guest editorial on the subject of water by Richard H. Sims, chairman of the Alaska Water Resources Board. Sims is principal in a private consulting firm, Sims & Associates, in Kodiak. He is also president of R G Bert Motor Company and controller of Sweeney Insurance, both located in Kodiak. In addition to chairing the state's Water Resources Board, Sims chairs the 208 Policy Advisory Committee which advises the Department of Environmental Conservation in all waste water disposal matters. Sims graduated from Colorado State University with a Bachelor of Science degree in business administration. He came to Alaska in 1964 to work in the fishing industry with Del Monte Foods, and has served on the boards of directors of several fish companies. He also has served on the board of directors of the Alaska State Chamber of Commerce, the Kodiak City Council and the borough assembly. In his work as chairman of the Water Resources Board, Sims has represented the state in various water-related activities throughout the nation.*

by Richard H. Sims

Although water is second only to air in importance to our survival on this planet, we seldom give water any direct concern until we find that either there is none or else what is available is polluted.

The responsibility for determining the availability and allocation of the state's waters lies with the Department of Natural Resources. This is a thankless task and one that is absolutely mind-boggling in magnitude. When you consider the size of our state and the widely diverse climatic conditions (arid and desert-like in the north; tropical forests in the south), there is little wonder that most decisions and regulations are based on an attempt to solve the immediate conflict only.

The rapidly changing status of land ownership and land use in Alaska, along with the implied (if not stated) right to those waters associated with the land, should make it obvious that the resolution by conflict of water allocations is no longer a valid approach. As an example, it makes little sense to distribute to the public for residential use state lands that are in areas where there are known water shortages or where grounds are unsuitable for septic systems. Using this example, all the beneficial effects of the land disposal will be offset by the eventual conflict created over water allocation or disposal. The need for comprehensive inclusion of water availability and disposal data in all land use decisions should be obvious.

On a more positive note, the waters of Alaska represent a virtually untapped energy source. In various areas of our state, the potential use of this renewable resource has exciting possibilities. Just a few of these potentials are resource development (mineral extraction, timber harvesting, etc.), hydroelectric power generation, geothermal energy and ground-water heat extraction.

These are just a few of the existing and potential water uses which no longer can be administered by crisis management. We must develop a comprehensive water management program that crosses the bounds of the various state agencies affecting management decisions, and implement a rational scientific method for developing our state's water resources without conflict.

We can do it. The time is now.

Kenai lowlands added to State Parks

State park waysides on the Kenai Peninsula are filled to overflowing every summer. To relieve this overcrowding, and to develop facilities to accommodate the recreational needs of local residents as well as other Alaskans and visitors, the Division of Parks is working on a program of Kenai Lowlands acquisitions.

Last year, a request was made for $2 million for the acquisition of nine Kenai Lowland areas. State Representative Hugh Malone, supported by Kenai Borough Mayor Don Gilman, approached Anchorage legislators and asked them to support an appropriation for these Parks acquisitions in consideration of the high impact Anchorage recreationists have on the Kenai Peninsula.

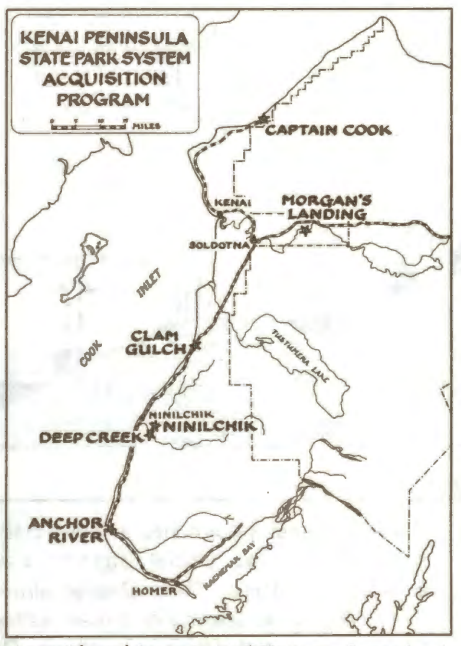
As a result, $1.25 million was committed as an FY 81 appropriation. Meanwhile, the Alaska Department of Fish and Game has received a statewide access appropriation for $250,000 which will be devoted to the Kenai Lowlands. Given the availability of $1.5 million, the Division of Parks mapped out its priorities for improvements on the Kenai Peninsula.

"Our first priority is to shore up the recreational wayside system," says Parks Chief of Planning Jack Wiles. "We have been operating a parking lot management system. Now we need to acquire additional acreage to round out the diversity of recreational uses on the Kenai Peninsula."

First priorities for acquisitions are at Ninilchik, Deep Creek and Anchor River. (See *Alaska's Resources*, Vol. XXI, No. 1, regarding acquisition of property at Anchor River.) After those needs are met, attention will go to Clam Gulch, Captain Cook State Recreation Area and a new area along the Kenai River. Potential acquisition of land at Scout Lake and Starisky Beach was deferred until next year.

According to Wiles, appraisal and purchase have already been made on 26 acres at Fisherman's Haven on Deep Creek, and appraisals are being completed on additional properties fronting Deep Creek.

The acquisition of Fisherman's Haven was supported by residents of Ninilchik and the Kenai Peninsula Borough. The borough passed a resolution endorsing the acquisition and offering, under a lease agreement, 40 acres of borough-owned land which lies between the existing 40-acre state wayside and Fisherman's Haven. The acquisition of the Fisherman's Haven site, and the cooperative management agreement with the Kenai Peninsula Borough, will provide the



recreational user a public-use river corridor from the Sterling Highway to the waters of Cook Inlet.

A 65-acre parcel located upstream of the Sterling Highway bridge at Ninilchik is being considered for acquisition to relieve overcrowding along the highway and beach leading to the present Ninilchik Wayside. A residence on the property could be converted to a park operation building to serve the Clam Gulch, Ninilchik and Deep Creek areas. This property would provide the area with a much-needed campground which extreme tides and beach erosion make impossible at the present Ninilchik Wayside.

The existing 46-acre Clam Gulch Wayside has a limited capacity to meet the high recreational-use demand placed on the site. It is not unusual to have a three-day visitor use of more than 3,000 people and 500 vehicles during the spring and summer months. An adjacent 158-acre parcel is ideally suited to meet recreational demands on the area, and the parcel's owner has approached the state as a willing seller. Development of the property will provide for greater parking space, a campground and nature trails.

The parcel under consideration for acquisition at the Captain Cook State Recreation Area is a 42.4-acre inholding located at the mouth of the Swanson River. This property provides a tie to the Swanson River canoe system and the shorelands of Cook Inlet. The area currently is used by the public under the assumption that it is part of the recreation area.

The Division of Parks, in cooperation with the Department of Fish and Game and with the help of the Izaak Walton League, is presently negotiating for land at the mouth of the Anchor River and further upstream. The acquisition of those key parcels of land will provide two public-use corridors along the Anchor River from the Sterling Highway to the waters of Cook Inlet.

Morgan's Landing is a 137-acre parcel of land on the Kenai River between Sterling and Soldotna. The property has an existing road system, small campground, one-half-mile landing strip and a log house which could be used as a park visitor center and ranger station. The state's two existing access parks on the Kenai River—Izaak Walton Wayside and Funny River Wayside—are both relatively small and do not encompass enough acreage for additional development of individual campsites. Acquisition of the Morgan's Landing site would allow the development of a sport fishing park. Used in conjunction with an adjoining piece of state public interest land, this area can be developed for winter use by Kenai Peninsula residents for dog mushing and cross-country skiing.

"During the appraisal process, some of these parcels may fall out of the acquisition package," said Wiles, "and we will be approaching the legislature this fall for additional funds to pick them back up as well as to do some other things on the Kenai Peninsula."

Some of those additional items are improvement of the wayside at Starisky where there is a unique beach and a natural spit. Wiles says the Division of Parks also wants to acquire more property along the Kenai River. Development of Kachemak State Park, with a park ranger located in Homer, is presently awaiting decisions on land exchanges with Native corporations.

Land lottery automated

Since September of last year, the Division of Research and Development ALARS (Alaska Land and Resources System for computer information management) section has been involved in automating the previously-manual lottery system for land disposals. ALARS was requested to devise this automated lottery program by the Division of Forest, Land and Water Management, the DNR division responsible for land disposal. The request was made due to the vast number of applications for available land parcels and the personnel hours spent on previous lotteries using a manual system.

Both the January and June 1980 lotteries have used the automated system. During the January sale, there were approximately 13,000 applications for 1,800 parcels of land. More than 29,000 applications were filed on 5,359 parcels or entries during the June sale.

In order to efficiently manage these lotteries, the Land Section of the Division of Forest, Land and Water Management needed the ability to produce statistical data sorted in a variety of sequences such as last name, parcel number, etc. The system designed by Jay Mead was planned as a stand-alone system, with complete control and maintenance responsibility resting with the Land Section after implementation. According to Tim McCarthy, coordinator of the June lottery, the system performed during the sale precisely as it was designed, with no problems.

The files for the January and June lotteries are maintained and updated every week by the Land Section in order to enter necessary changes such as address changes, relinquishments or over-the-counter sales. These files will be used in subsequent lotteries to disqualify a previous winner.

The next land lottery filing period is scheduled to begin in November 1980; the December sale will be devoted to remote parcels with approximately 50,000 acres made available.

Statistics from the June 26 and 27 lottery are shown below.

LAND DISPOSAL PROGRAM
June 26-27, 1980

type of offering	*acres offered*
subdivision lottery	23,934
agricultural lottery	15,369
homesite lottery	735
homesites by residency	1,284
remote parcel lottery	11,400
TOTAL ACREAGE OFFERED	52,722

total number or parcels, or entries, statewide = 5,359

total number of applicants = 7,358

total number of applications = 29,593

total number of parcels, or entries, sold = 1,909

number of remaining parcels = 3,450 (of which 3,053 are subdivision parcels)

(As of August 15, an additional 400 parcels had been sold over the counter.)

WATER (continued from page 5)

plans, we can determine the best uses for Alaska's water and thus maintain a a water resource managment system using the permit process to solve problems," he says.

In the last three years, the Department of Natural Resources received approximately 1,000 water rights applications each year. This year—through mid-July—250 applications have been received for mining water rights alone. "There had been only about 75 such mining water applications a year before this year's 'gold rush,'" says Petrie.

Most water rights applications are for domestic water use. Under the Water Use Act of 1966, definition of prior appropriation of water rights and a procedure for applying for water rights were established. The Department of Natural Resources adjudicates any conflicting applications or claims.

The doctrine of prior appropriation allows the first appropriator of water a priority of right over subsequent appropriators. To acquire an appropriation, a person files an Application for Water Rights, along with a $25 filing fee. The date/time stamp on the completed, submitted application is the applicant's statement of priority over water use. After adjudication, a permit is issued for the development of a water source and construction of a means for use.

Once a person is able to prove beneficial use of the water, a certificate of appropriation is issued. This legal document conveys water rights which are attached to the land where the water is being used and which continue in effect as long as the water is used. If the land is sold, the water rights go with the land unless they are specifically severed with DNR's approval.

In Alaska, there are no rights to ground water based on ownership of overlying land, and there are no rights to surface waters based on ownership of adjoining or surrounding land.

DAM SAFETY

Within the realm of water management, dam safety is a growing concern, according to Petrie. DNR, through an agreement with the Alaska District, U.S. Corps of Engineers, has identified nearly 300 non-federal dams in the state, 80 of which are more than ten feet high and impound more than 50 acre-feet of water. In the last two years, three dams had to be breached for safety reasons.

"The problem is not with hydroelectric dams," Petrie says. "Those are routinely inspected by the Federal Energy Regulatory Commission, and the utilities tend to care for and maintain their investments. The biggest problems are with small, recreational impoundments and small, short-term water supply dams which have not been engineered and have no maintenance programs."

FUTURE MANAGEMENT CONCERNS

Adjudication of domestic and mining rights, federal reserved and non-reserved water rights, and Native water rights will

(continued on page 8)

Oil & gas lease sale held

Thirty-four leases were awarded as a result of Competitive Oil and Gas Lease Sale No. 31. The sale, which consisted of acreage on the North Slope south of the Prudhoe Bay field, was held September 16 in Anchorage.

Department of Natural Resources Commissioner Robert LeResche said an additional 43 leases will be awarded to groups of individuals led by Cliff Burglin of Fairbanks as soon as appropriate documents are on file with the Division of Minerals and Energy Management.

The commissioner rejected all bids on Tract No. 72 due to an administrative error discovered after the sale. He said this tract, as well as four others that were deleted prior to the sale, would be offered in an upcoming lease sale.

Seventy-eight tracts, covering 198,801 acres, were offered in Sale No. 31. All of the tracts received bids: There were 195 bids submitted.

Apparent high bids exceeded $12 million—the total amount received by the state in apparent high bids was $12,771,301.72. The total amount of money "exposed" at the sale (total amount bid, including unsuccessful bids) was $16,074,615.01.

Five of the tracts received bids of more than $1 million. The highest bid was for Tract No. 9, with Mobil and Phillips offering $1,256,000 for the tract. Mobil and Phillips were the apparent high bidders for Tract No. 8, the tract receiving the second highest bid of $1,254,400. Phillips was the apparent high bidder for Tracts No. 46, No. 48 and No. 50, with offers of $1,026,560 for each tract.

Judge halts timber sale

Approximately two yeaars ago, the Alaska State Legislature enaccted a statute allowing the state to negcotiate, rather then bid, timber sales with the private sector if three criteria are met: 1) a high level of local unemployment, 2) an under-utilized timber manufacturing capacity, and 3) an under-utilized allowable cut of state timber locatted within an area proximate to the manufacturer.

Kenai Lumber Company—the Louisiana-Pacific mill in Seward—requested a negotiated timbeer sale, under the statute, for the area arosund Icy Bay. Currently, the Cape Yakattaga/Icy Bay area is being logged by Southcentral Timber Company under preevious timber sales by the state. Previouslyy, most of the lumber for Kenai Lumber Company came from Chugach National Foreest. However, this area is involved now with land status questions stemming from ((d)(2) action, and there is little timber for ssale.

In response to the reequest for a negotiated timber sale by the Seward mill, DNR Commissiomer Robert LeResche decided that onlyy two of the three conditions of the statute were met and denied the request.

"After a review of timtber resources in Southcentral Alaska in areeas proximate to the Kenai Lumber Company mill," said LeResche in his letter tto the Seward company, "I do not finnd an under-utilized allowable cut iin quantities of timber sufficient to maintain a supply of timber to the Kenai Lumlber Company mill. Even if the definition oof 'proximate' to the Kenai Lumber Compaany mill were stretched to Cape Yakatagaa, the timber resource in that region is aalready being overharvested. . . . The Caape Yakataga area, if it were considered ıproximate to Kenai Lumber Company, wwould also be proximate to Haines and KIlawock where other under-utilized mills exiist."

However, because of interrest expressed by not only Kenai Lumbber, but also other potential purchaserrs, Governor Hammond decided to hold a 40-million-board-foot competitive ssale at Cape Yakataga in October.

On October 21, the saale—scheduled to take place by outcry auction two days later—was stopped by U.S. District Court Judge James von der Heydt. He issued a temporary resttraining order halting the sale until furtheer court hearings can be held. His actionı was based on a suit filed by a timber comıpany claiming that a condition of the salee violates the U.S. Constitution. South-Ceentral Timber Development, Inc., claimıs the state cannot sell the timber— vallued at $8.35 million—with the sale concdition that it undergo primary manufaacture within Alaska. The company, whicth is owned by Iwakura-Gumi Lumber Cco., Ltd., of Tomakami, Japan, claims thaat stipulation violates the commerce cllause of the constitution.

Ted Smith, director of DNR's Division of Forest, Land and Water Management, said the state has routinely included the "Alaska manufacture" requirement in timber sales since 1960. The requirement stipulates that logs must be cut into cants—squaring off the round sides—in Alaska.

The concept is a carry-over from a longstanding stipulation of U.S. Forest Service timber sales, according to Smith. Its purpose is to boost the Alaska economy. Smith said the Alaska manufacture rule gave the pulp mills in Southeast Alaska a start.

"Obviously we feel it's constitutional," Smith said, adding that the stipulation has never been challenged before.

In its suit, South-Central Timber said the sale would harm the company because the Alaska manufacture condition excludes it from the bidding process. The 13-year old Anchorage-based company, which has timber processing facilities at Icy and Jakalof bays, does not now have a mill capable of processing that volume of wood, according to the suit.

The state will not allow South-Central Timber's Jakalof Bay mill to process the Icy Bay timber because it can't meet environmental restrictions, according to Floyd Beach, mill manager for the company.

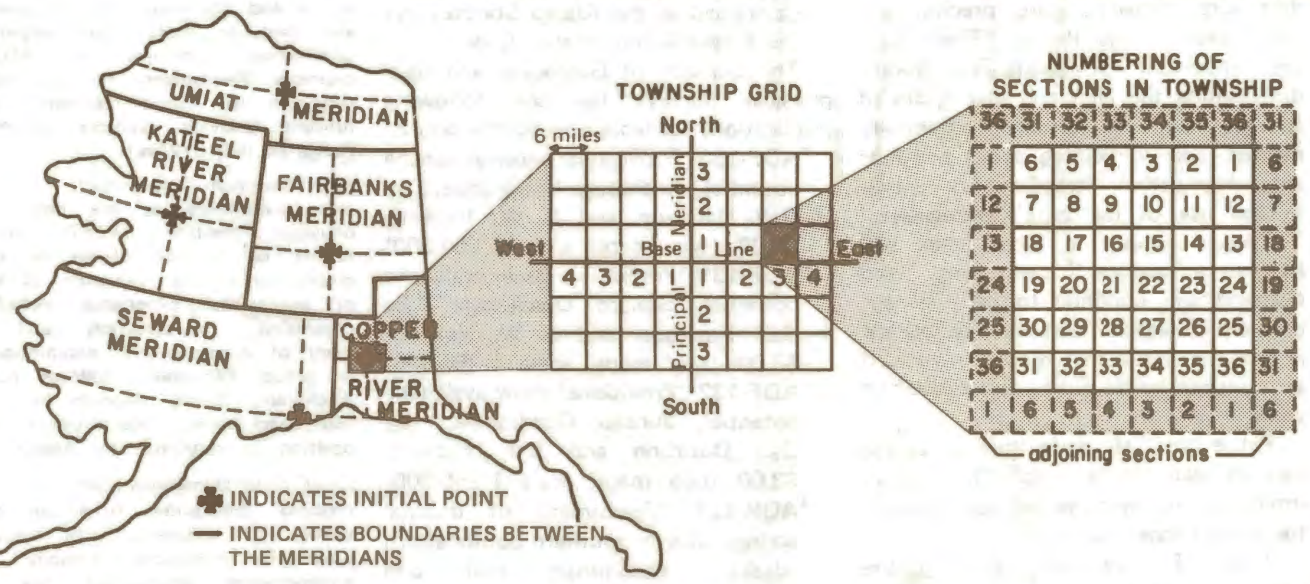
In an unrelated protest against the timber sale, the National Wildlife Federation, affiliated with the Alaska Sportmen's Council, Inc., had asked the state to halt the sale because it violates the Land Use Policy Act of 1978 and the Forest Resources and Practices Act of 1978.

HOW TO

read a status plat

One of the functions of the Department of Natural Resources is the maintenance of a complete record of all actions that affect, have affected or will affect the ownership and use of state lands and resources.

To implement this function, the Division of Technical Services is responsible for managing and maintaining a visual plat record system. Original plats are maintained in the division's Anchorage office, and copies are available in the Division of Forest, Land and Water Management District Offices in Fairbanks, Juneau and Anchorage.



A basic knowledge of land description is essential in order to make use of land status records. **This column—covering meridians, townships, ranges and sections—is the first in a four-part series about how land is described.** Subsequent columns will cover aliquot parts, legal descriptions, lots, surveys, status plats, the Historical Index, transactional documents and—finally—the use of ALARS, the department's computer information management system, for status plat information retention.

MERIDANS

All surveys in Alaska start from one of the five initial points shown on the accompanying outline of the state. These points give their names to the meridian units: the Seward Meridian (S.M.), the Fairbanks Meridian (F.M.), the Copper River Meridian (C.R.M.), the Kateel River Meridian (K.R.M.), and the Umiat Meridian (U.M.).

The dash line shown extending east and west of the initial point of each meridian is the base line for that meridian. The line shown running north and south through the point is the prime meridian. Rectangular survey is related to the initial, or starting, point of each meridian (shown as a cross) with the townships numbered north and south of the initial point, and the ranges numbered east and west of the same point.

TOWNSHIPS, TIERS AND RANGES

A township is a unit of land survey six miles square. Townships are located in **tiers** north and south of the base line and in **ranges** east and west of the prime meridian. By numbering tiers and ranges, a township can be described relative to an initial point. The location of Anchorage would be described as Township 13 North, Range 3 West, Seward Meridian (usually written T. 13N; R3W; S.M.) This is defined as the thirteenth township north of the initial point, and in the third range west of the same point on the Seward Meridian.

The X on the township grid pictured here shows the location of the township described as T. 1N; R3E. Because the method of location is the same for all meridians, the name of the meridian (i.e., Copper River Meridian) is essential to each land description for proper identification of the land.

SECTIONS

As mentioned before, a township is a unit of land measuring six miles by six miles and containing 36 square miles. Each of these 36 square miles is known as a section (usually containing 640 acres). Each of the sections in a township is numbered to designate its location within the township.

The sections are numbered 1 through 36 in a set pattern or sequence beginning with the northeast corner section and numbering to the left, or west, across the top, or north, tier of sections. The numbering, beginning with section 7, then drops to the tier below (south of) section 6 and continues to number to the right, or east, through section 12. The pattern then repeats until all six tiers are numbered with six sections each.

Remembering the numbering pattern or sequence will enable a person to locate any section by number on a map showing the township grid even though the section numbers are not shown. The pattern is shown on the accompanying plat. Note that the numbered sections of the *adjoining* townships are shown as shaded sections.

(to be continued in next issue)

YOU ARE INVITED TO SUBSCRIBE TO *ALASKA'S RESOURCES*

This is the second issue of *Alaska's Resources*, the newsletter of the Alaska Department of Natural Reesources, in its new tabloid format. Publication of this newsletter is scheduled on a bi-monthly basis beginning with this issue.

For the second time, *Alaska's Resources* is being mailed not only to those of you who requested a subsscription to it or to its predecessor, *Alaska Land Lines*, but also to all whose namees appear on the *Lands for Alaskans* land disposal mailing list, to those on the Division of Agriculture's mailing list, to special mailing lists of the Division of Pipeline Surveilliance and the Division of Parks and to those who responded to the Public Interest Landis survey mailed last February. This means, of course, that some of you may receive muultiple copies. For this we apologize.

Now that you have had a chance to see the new *Alaska's Resources*, we invite you to become regular subsscribers. A new mailing list will be devised using the information you provide on the subscription form below. This new list will go into effect with the December-January issue of *Alaska's Resources*.

If you wish to continuee receiving this free, bi-monthly publication of the Alaska Department of Natural Reesources, it is important that you complete and return the subscription form before December 30, 1980. Only those persons requesting subscriptions at this time will have their names placed on the new mailing list; previous mailing lists for *Alaska's Resources* will not be used after December 30, 1980.

We hope you find reading *Alaska's Resources* informative and enjoyable. We welcome your comments. Please address them to Editor, *Alaska's Resources*, Department of Natural Reesources, 323 East Fourth Avenue, Anchorage, AK 99501.

Yes, I wish to receive the DNR newsletter, *Alaska's Resources*.

Addressee (last name first) _____

_____

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Street address _____

City, state (two-letter state abbreviation) & zip code _____

Number of copies desired _____ **(for companies, libraries, etc.)**

Note: This subscription form supercedes any others you may have completed in the past for *Alaska's Resources* or *Alaska Land Lines* (the preceding publication). In order to receive this publication after December 30, 1980, you must complete this form and return it. Please do not complete multiple forms; there is a space above to indicate need for multiple copies. Thank you.

Editor
Alaska's Resources
Department of Natural Resources
323 East Fourth Avenue
Anchorage, Alaska 99501

WATER (continued from page 6)

become increasingly time-consuming in the future according to Petrie. He sees the time and money necessary to accomplish this job as one of the highest priorities of effective resource management in Alaska for the future. He cites coastal areas which are traditionally winter-water scarce as one problem for which water resource development and management will have to gear up to meet demands. Also, the development of mini and major hydropower projects will need water rights issues cleared up for appropriations.

The collection of data to adjudicate these cases is clearly an important priority, agree Long and Petrie.

"We need to operate index stations year-round throughout the state to record data such as temperature, precipitation and runoff," says Petrie. "These data are important in predicting floods, determining the high and low cycles of streams and the stroage potentially needed, and in helping avoid conflicts among navigation, recreation and fisheries in the use of the state's waterways."

"Water supply in local areas will become a problem," says Long, "and flooding will continue to be a serious problem in Alaska. There are ways we can reduce the impacts of these problems if we continue to do survey and evaluation work."

Petrie points to agriculture as a large user of water in the state. "In Alaska's interior, there are projected water deficits for some crops," he says.

Long is concerned about future projects in relation to erosion problems. "Erosion will continue to be a serious problem because of glacial stream shifting," he says. "And hydro projects will have to consider carefully sediment and in-filling conditions, especially if they are constructed on glacial systems."

Both men see mining as a significant factor in the future of Alaska's water resource.

WATER LEGISLATION

There are potential problems in Alaska's future with regard to water, no matter how bountiful the supply may seem. Yet, as Long puts it, "none is beyond reasonable solutions and decisions." Petrie sees recent legislation as helping to create those reasonable solutions and decisions.

Specifically he refers to three pieces of significant legislation passed by the 1980 Alaska Legislature: Senate Bill 395 which repealed a territorial law which made the state liable for damages from federal river, harbor or flood control projects; House Bill 118 which dealt with in-stream flow; and House Bill 779 which replaced a never-used 19-page geothermal leasing act.

"There never was an application for a geothermal lease under the old law." remarks Petrie. "With this new piece of legislation, the legislature revised geothermal and water laws to define leasable geothermal resources as those waters above 120 degrees centigrade. This will simplify the leasing of geothermal resources and encourage development of hydrothermal resources—a renewable energy source."

Waters less than 120 degrees centigrade are now administered under the Water Use Act under which water rights are much easier to obtain as compared to geothermal leases. The Division of Minerals and Energy Management is responsible for geothermal leasing on state lands, and the Bureau of Land Management will be responsible for geothermal on federal lands.

"This law protects geothermal resources and also slices through artificial bureaucracy which was an impediment to the development of alternative energy," explains Petrie.

House Bill 118, the in-stream flow bill, governs in-stream use of Alaska's waters. "Certificates of appropriation for water rights are for diversion or withdrawal of water," explains Petrie. "This law makes it possible to get a certificate of reservation to insure the water level for in-place, in-stream uses such as hydroelectric projects, fisheries, wildlife habitat, navigation, water quality and recreation."

With careful management—based on thought-out legislation and the collection and evaluation of geologic and hydrologic data—the people of Alaska need never stand around a dry well reminiscing about the water's worth.

Public Notices

PUBLICATIONS

The Division of Forest, Land and Water Managment, Information Office, has two new fact sheets available to the public. Call or write for copies of:

*Water Rights

*Approved Burn Barrel Requirements

The Division of Minerals and Energy Management has updated and reprinted the following publication which is available from its offices as well as all DNR district offices:

*Regulations and Statutes Pertaining to Mining Rights on Alaska Lands as Contained in the Alaska Statutes and the Alaska Administrative Code

The Division of Geological and Geophysical Surveys has the following publications available now for the public:

*AOF-130 "Provisional snow avalanche potential, Anchorage Quadrangle," by Gail Davidson and S. W. Hackett; $3.00 (two maps, scale 1:250,000)

*AOF-131 "Provisional snow avalanche potential, Seward Quadrangle," by Gail Davidson and S. W. Hackett; $3.00 (two maps, scale 1:250,000)

*AOF-132 "Provisional snow avalanche potential, Juneau Quadrangle," by Gail Davidson and S.W. Hackett; $3.00 (two maps, scale 1:250,000)

*AOR-127 "Assessment of thermal springs sites in southern Southeastern Alaska - Preliminary results and evaluations," by Roman J. Motyka, Mary A. Moorman and John W. Reeder; open-file report with 72-page text on 12 geothermal hot-spring sites; $3.50

*AOR-134 "Preliminary geology of the McGrath - Upper Innoko River area, western interior Alaska," by T. K. Bundtzen and G. M. Laird; $4.00 (two maps, scale 1:63,360 and 1:125,000)

In addition, DGGS has updated two oldies but goodies in the Information Circular department:

*IC-3 "Hand-placer mining methods" (ten pages; four figures); free

*IC-18 "Amateur gold prospecting" (five pages); free

Order any of these DGGS publications from DGGS, P.O. Box 80007, College, AK 99708, phone 479-7062.

EMPLOYMENT

For the following employment positions, the Department of Natural Resources frequently is looking for specific background experience in addition to the minimum qualifications required.

Chief, Lands Section — requires graduation from a college or university with a degree in business administration, economics, law or related field, preferably including courses in real estate, property appraisal and land or urban planning. Also requires five years of progressively responsible experience in land management, and real estate or land planning and appraisal activities. Permanent, fulltime position available in Anchorage. Range 22. ($40,068/an.)

Petroleum Geophysicist — requires a degree in geophysics or geology and four years of professional experience as a geophysicist involved in interpretive work in oil and gas exploration. Master's degree and two or more years experience in geophysical activities in Alaska are desirable. Recruitment for this position is restricted to Alaska residents. Permanent, fulltime position available in Anchorage. Range 24. ($45,372/an.)

Chief Petroleum Geophysicist — requires same experience as the petroleum geophysicist position EXCEPT requires a Master of Science degree or higher in geophysics and a minimum of ten years of geophysical experience including data processing, interpretation and management of a geophysical exploration section or group. Permanent, fulltime position in Anchorage. Sallary depends on experience and background. Recruitment for this position is restricted to Alaska residents.

Chief, Water Management Section — requires graduation from an accredited college or university with major course work in hydrology, geology, civil or environmental engineering, law, economics, geography or other related fields related to the administration of ground water sources, and four years professional experience in water resource management, including two years of supervisory experience. Recruitment for this position is restricted to Alaska residents. Permanent, fulltime position in Anchorage. Range 22. ($40,068/an.)

The State of Alaska, Department of Natural Resources, strongly encourages that minorities, women and the disabled apply for these positions.

Information and applications for these and other positions are available from the State of Alaska, Department of Administration, Pouch C, Juneau, AK 99811 or the Department of Natural Resources, Personnel Office, Pouch M, Juneau, AK 99811.

EQUAL OPPORTUNITY EMPLOYER

Directory

In order to assist the public in reaching the proper Department of Natural Resources office, the following directory of phone numbers is provided:

Division of Agriculture

seed and plant production (Plant Materials Center) 745-4469
Agriculture Revolving Loan Fund 376-3276
agricultural development and land management 376-3276

Division of Administration and Management

accounts receivable records 279-5577

Division of Forest, Land and Water Management

For matters regarding:
.rights-of-way .timber sales .land leases and permits .water rights .forest fires .land disposal .burning permits .trespass information .land status .trans Alaska pipeline
call any of the division's district offices:
Juneau 465-2415
Fairbanks 479-2243
Anchorage 349-4524

Division of Geological and Geophysical Surveys

For geological information pertaining to .minerals .gas and oil .glaciers .water .geologic hazards .geothermal .coal .uranium
call either DGGS office:
Anchorage 277-6615
Fairbanks 479-6123

Division of Minerals and Energy Management

oil and gas lease sales and administration 263-2260
mining claims 263-2260

Division of Parks

Alaska State Park System (parks, waysides, etc.) 274-4676
Chugach State Park 279-3413
historic and archaeological resources (National Register of Historic Places) 274-4676
Youth Conservation Corps; Young Adult Conservation Corps (Alaska Conservation Corps) 274-4676

Division of Pipeline Surveillance

gas pipeline 456-4835

Division of Research and Development

federal/state land status (including navigability and easements) 279-5577
coastal zone management 279-5577
Joint Federal-State Land Management Task Force 279-5577
Alaska's Resources 279-5577

Division of Technical Services

State Recorders Office 264-0595
Uniform Commercial Code 276-8107

State of Alaska
Department of Natural Resources
323 East Fourth Avenue
Anchorage, Alaska 99501