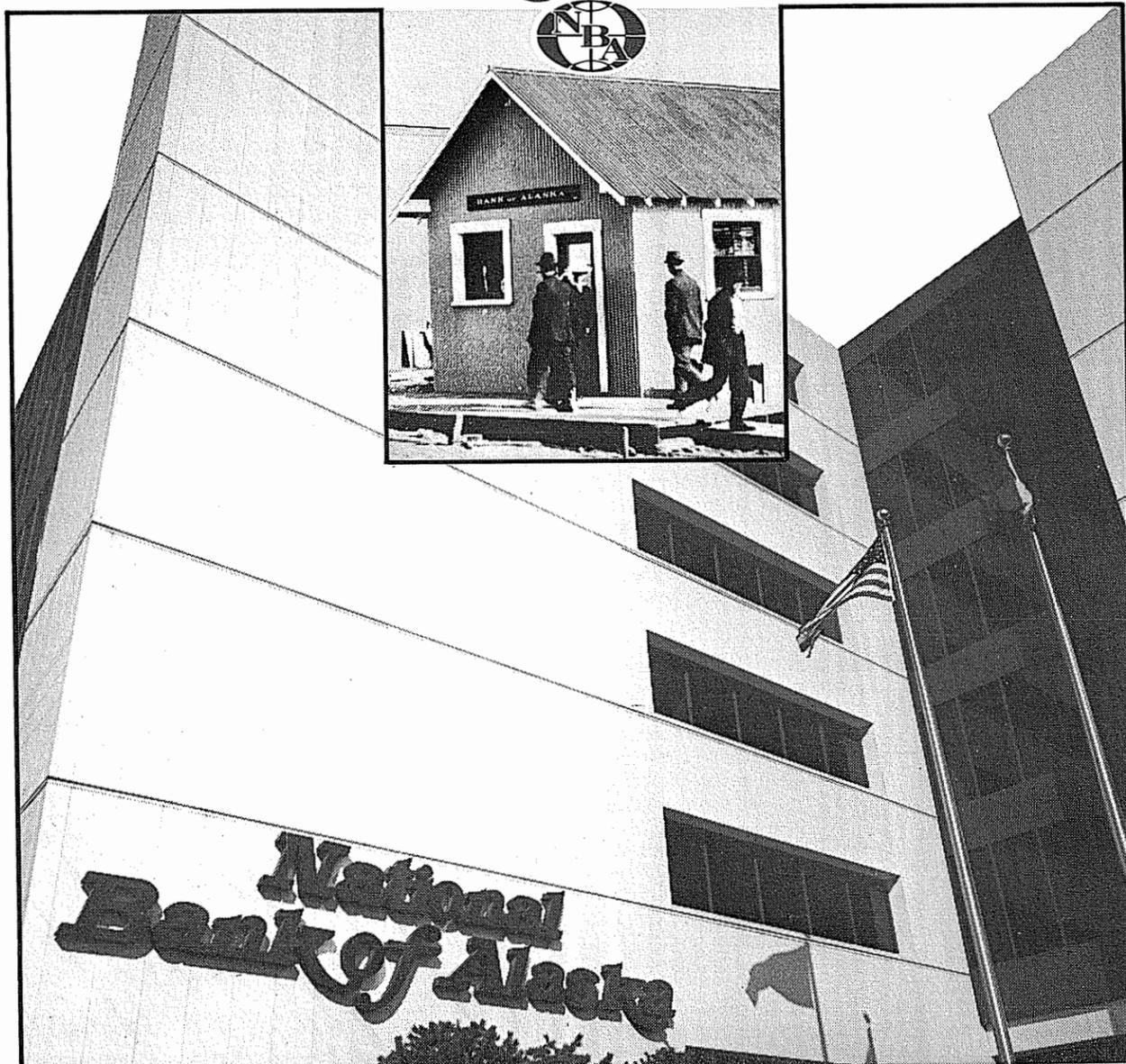


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Resource Review

August 1989

Alaska's well-being firmly tied to its resource industries

Without resource development at least half of state's population would have to go somewhere else to live

Editor's Note: This special feature focuses on the economic value of Alaska's resources to the state's economy. This article is offered to help Alaskans and key policy makers recognize the importance of resource development to the economy and their own livelihoods.

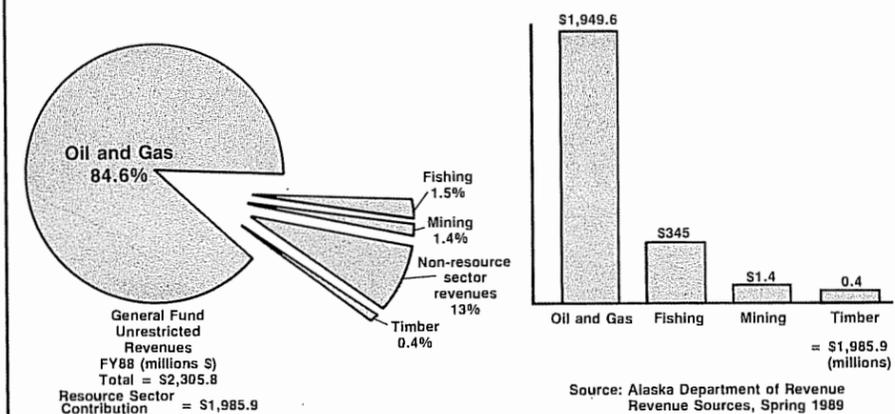
With its rich endowment of oil and gas, fish, minerals and forests, Alaska is America's treasure chest of natural resources. Some of these resources are in the process of being developed while others have been identified but are not currently under development. Others remain undiscovered in a state that has barely scratched the surface of its resource potential.

As national and global consumption trends demand more resources, Alaska will play an important role in supplying a vital array of natural resources. And through the wise use and management of its resources, Alaska has the means to diversify its economy and generate new wealth for its citizens and the nation while meeting global market demands.

Resource exploration, extraction and processing have been at the heart of Alaska's economy since statehood. For decades, it has been recognized that the state's future lies in sound resource development.

(continued on page 4)

Resource Sector Contributions To State Treasury



*This table reflects each industry's contribution to the state treasury through taxes and other fees. However, the figures DO NOT reflect local taxes and each sector's total economic contribution to Alaska's economy since wages and salaries, private sector contracts and general purchases are not included in the tallies.

"If we consider all costs and benefits, the taxpayer is getting his money's worth in the Tongass timber sale program." — see page 7.



Message from the Executive Director

by
Becky L. Gay

Producers versus consumers

Critical issues confront Alaska

For many reasons and especially because of the spill, 1989 has been a rough year for the resource sectors. As Labor Day draws closer, each citizen is putting finishing touches on the summer none of us will forget.

As we look ahead, it is easy to feel overcome by what battles producers of our society are facing. Nowhere is the war more daunting than in Washington, D.C.. The last summer of this decade leaves Alaska still firmly in the grip of the federal government on many issues critical to the engine which drives Alaska's economy — its resource industries.

For example, much has been said about the ANWR being "on ice." It could be self-fulfilling prophecy if we all act that way and do nothing. Although it may be true that the pro-development side has been "seriously wounded and is bleeding heavily" in the wake of oil-spill madness, I can assure you the other side is moving full steam ahead to close ANWR forever as a Wilderness. Don't give up yet!

The Tongass situation is worse than we imagined it could get. Congress is bending over backwards to make sure Alaskans won't work in the largest national forest in the nation exactly at the same time the timber markets are rebounding for

Alaska products. In trading commodities, timing is important, but supply is even more crucial. Congress is making sure Alaskans have neither.

This year will mark the reauthorization of the **Magnuson Act**, which created the 200-mile fishing zone. Will shore-based preferences be given to processors so that Alaska can surge ahead in bringing the fleet to shore for value-added work? The battle for Alaska fisheries in the years ahead will be between Americans as Alaska seizes its rightful place in harvesting and processing. On the international scene, will the high-seas interception be solved at the federal level?

From another quarter comes a move to repeal the **1872 mining law**. If successful, this could bring a halt to mining on federal lands that could impact Alaska even worse than all the lawsuits filed by the preservation groups. They are losing in the courts, so now they are seeking to change the law. Good tactic, wrong solution.

Out of the closet is the dreaded "**no net loss of wetlands**" attempt. If this becomes legislation, Alaska can forget developing on anything even loosely-defined as wet. It seems a crime to make Alaska pay for New Jersey developing its wetlands, but that is exactly what is in the making if this becomes national policy. Just think of Alaska as the nation's storehouse of wetlands, because everyone else will.

Why us? Remember, 60% of Alaska lands are still retained by the federal government. It is a big tail wagging this dog.

What can you do? Lots! For starts, you can support groups which are fighting the uphill battle for you — like RDC. At least you can help "level the playing field" by not funding the other side.

RDC is swimming upstream against a big current, but it is there to the bitter end. And just like the salmon which tries and tries until it dies, RDC will keep trying to bring sense to resource politics which affect Alaska. Americans must realize that we are producers, not just consumers. RDC is proud to be fighting for the producers. Stay with us because the next round will require all hands on deck!

RDC Strategies to be reworked

Organizations across Alaska are looking toward the 1990s as they plan for the state's economic future, and RDC is no different.

RDC staff is currently organizing meetings for its resource experts to assist in updating its "New Strategies for Advancing Alaska's Economy, 1986-1990." The new document will look at RDC's original goals and guidelines, and report on progress made since the first "Strategies" book was released. More importantly, the new handbook will project into the 90s, outlining reasonable paths to economic and resource development.

In addition to providing the private sector with a working blueprint for the coming decade, it is hoped the "Strategies" will be used widely during the important upcoming gubernatorial election, and other state races.

To help in this task, locate your copy of the "Strategies" or contact RDC for copies of specific resource sections. Then, update the sections, add new proposals and turn in your suggestions to RDC staff at 807 G Street, Suite 200, Anchorage.

Thanks for your help.

The Resource Development Council (RDC) is Alaska's largest privately funded nonprofit economic development organization working to develop Alaska's natural resources in an orderly manner and to create a broad-based, diversified economy while protecting and enhancing the environment.

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Writer & Editor
Carl Portman



Taxpayer getting money's worth out of Tongass timber sales

Editor's Note: The U.S. House passed a bill last month revising timber management operations in the Tongass National Forest. It is unlikely that any Tongass timber reform legislation will appear in the Senate until the middle of September. Senators Frank Murkowski and Tim Wirth are attempting to come up with compromise legislation less restrictive than the House version. The two senators have yet to strike a compromise, but when they do, their proposal will go to the Senate Energy and Natural Resources Subcommittee, then to the full committee before heading to the full Senate. If passed by the Senate, the bill would be addressed by a conference committee. As a result, a final ending to the Tongass debate is unlikely this year.

Legislation which recently passed the U.S. House concerning the Tongass National Forest will either immediately kill off the timber industry dependent on the Tongass or at best leave it to die a lingering death. The intention of H.R. 987 is obvious.

In the debate preceding the vote, those in favor of drastic Tongass reform gave two basic reasons why H.R. 987 should be enacted. One was the same old story about stopping the "rape" and "deforestation" of the Tongass, despite the fact that two-thirds of the commercial timberland is already closed to logging. The other reason given for radical reform was to end a deficit timber sale program, considered by some to be a waste of taxpayers' dollars.

In 1988, the Forest Service received 87 cents back for each dollar spent on timber sales in the Tongass. During poor markets of earlier years, the government received less, and those earlier numbers are the ones most often cited by detractors.

While speaking in strong support of H.R. 987, Congressman Clarke from North Carolina said, "It's clear that the Tongass timber sale program is one of the worst cases, probably the worst case, of below-cost timber sales in the nation." Fortunately, Congressman Don Young had the opportunity to remind Mr. Clarke that the national forest in North Carolina returned only 57 cents back to the Treasury for every dollar invested by taxpayers.

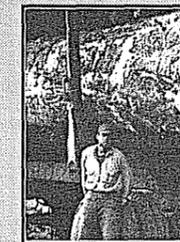
According to Government Accounting Office and U.S. Forest Service numbers, there are 56 national forests which returned less to the Treasury per dollar for the national forest timber sales program last year than the Tongass did. Included in this list is the Chugach National Forest which returned 2.5 cents on every dollar. Fifty-four percent of the national forests had deficit timber programs in 1988. A couple of hundred hypocrites in the House supported H.R. 987 on the grounds of stopping the deficit timber sale program on the Tongass.

Something is wrong when over half of the national forests in this country appear to lose money selling their timber resource. A large part of the problem is a profit-loss accounting system, similar to that used by private business, being used for a government agency not run like a private business. This accounting system also fails to show all timber related benefits, most of which are investments in the land and local economy.

The 87 cents returned per dollar on the Tongass is for actual receipts received. The Tongass timber sale program does not get credit for the annual \$40 million in taxes, Social Security and other payments to the federal government, plus jobs for thousands of Alaskans with a payroll of \$118 million and a cumulative value to local, state and federal economies of \$486 million.

There are also other benefits of harvesting timber which are not credited to the timber sale program. Besides logging and supply use, the national forest road system is used by recreationists, wildlife enthusiasts, fishermen and hunters who never contribute to its construction or maintenance. These same logging roads are also vital to the Forest Service for continuing management of the forest, including future timber sales, fire suppression, fish and wildlife enhancement and campground establishment.

Another issue where credit should be given the timber sale program is for silvicultural improvements which result from logging. Each year diseased and insect blighted timber are harvested along with culls, snags, and other decaying low value trees. These old growth stands are growing slowly or not at all, with rot, windthrow and disease taking more wood annually than is grown. The timber



Guest Opinion

by
Steve Connelly

sale program creates vigorous young stands of trees that help balance the annual net loss naturally occurring in the old growth.

These young stands also consume carbon dioxide and give off oxygen at six times the rate of an old growth stand of trees, as reported in the July 1989 issue of **Journal of Forestry**. Old growth forests, like the Tongass, that experience an annual net loss of biomass volume are net sources of carbon.

Indeed, what dollar value can be placed on a practice which helps combat the greenhouse effect? If these and other values could be monetarily credited to the Tongass and other national forest timber sale programs, we would have few deficit sales and a more accurate representation of the worth of the timber sale program.

But why is timber use expected to turn a net revenue when recreation, wilderness, watershed, wildlife and fish uses do not? If maximizing net revenue on our national forests is a goal, as is implied by H.R. 987 and the accounting system used, then they should be managed solely for the highest revenue producing use. This happens to be wood production. Take away all of the harvesting restrictions typical of multiple use management and a net profit could easily be made from timber sales. To gain the greatest efficiency and revenue, this would include a close integration, both economically and technically, between industry and timber supply. This is presently not done and helps contribute to inefficiency on the part of the Forest Service and industry.

The purpose of our national forests, however, is not to make a profit. The Multiple Use-Sustained Yield Act of 1960 states that consideration is to be given to the relative values of various resources, "and not necessarily the combination of uses that will give the greatest dollar return..."

If we consider all costs and benefits, the taxpayer is getting his money's worth in the Tongass timber sale program. The loggers pay for the wood they harvest and at the same time help create a healthier, more vigorous forest. They also help create a healthier, more vigorous economy for us all.

Steve Connelly works for Ketchikan Pulp Company in Thorne Bay. He is a former intern of the Resource Development Council.

Hatcher Pass resort advances

The decision to amend the Hatcher Pass Management Plan became final last month, allowing proposed recreational development in the area to expand from a compact ski resort to a four-season international-scale destination resort proposed by Mitsui, Ltd.

Lennie Gorsuch, Commissioner of the Alaska Department of Natural Resources, described the plan amendment as necessary to ensure that an international scale resort could be located at Hatcher Pass. The original plan as adopted in 1986 would have only allowed for a small, compact ski area. The amendment opens the door to a larger facility capable of attracting the international visitor during all four seasons.

Mitsui was awarded a state lease in 1987 to develop a ski area on 3,440 acres. An additional 8,090 acres was included in the lease, although the addition could not be developed without an amendment to the management plan.

RDC spent a considerable amount of time and effort reviewing the plan and Mitsui's development proposal. RDC's Tourism Division Director, Don Follows, serves on the Citizens Advisory Board. RDC board members and staff attended numerous public hearings and Advisory Board meetings in a successful bid to encourage the needed amendment.

Commissioner Gorsuch's decision to amend the plan moves the project closer to reality. The Commissioner noted that the state has "taken great pains to ensure that the environment of this special area is protected."

Resources drive economy

(continued from page 5)

of modern, innovative management practices, the output of the forest industry could more than double within five years on less than 50% of the state's yearly sustainable yield of timber.

Sources: Alaska Loggers Association, Alaska Division of Forestry, DNR

Tourism

The unparalleled natural beauty of the Great Land has long been one of Alaska's greatest resources, attracting hundreds of thousands of visitors to a subcontinent land where the scenery never stops.

Visitor trends between 1985 and 1988 reveal a 14% increase in visitor arrivals, a 4.4% annual rate of growth. Visitor volume in the summer of 1988 was 536,000, up 2% from the peak year of 1986. Resident arrivals, on the other hand, reflected economic and population trends and declined by 16% between 1985 and 1988. Resident arrivals to Alaska in 1988 amounted to 173,400. Visitors composed 76% of all incoming passenger traffic in 1988. Overall, total arrivals rose nearly 5% in the past three years, due entirely to the influence of the visitor industry on the Alaska passenger transportation industry.

Economic Value

- Total in-state expenditures attributed to tourism in 1988 was \$446 million with out of state expenditures at \$643.9 million for a net economic impact of \$1.09 billion. It is estimated that 75% of all out of state expenditures related to Alaska tourism have an impact on Alaska's economy.
- In addition, there are 21,603 full-time equivalent jobs in Alaska created by tourism. Numbers vary greatly between the peak season in summer and the off-season in winter. Employment levels, however, are not based on those positions dependent solely on servicing visitors. Employment estimates include employees working in the hotel, food services and retail sectors that cater to a wider segment of the population.

Sources: Alaska Visitors Association, Alaska Department of Labor

Agriculture

Alaska has the soil, climate and water resources to become virtually self-sufficient in beef, pork, feed grain, dairy products and fresh vegetables and to export a variety of agricultural commodities as well. However, the industry has yet to begin to realize its potential. Alaska agriculture requires development of the total industry system, including production, processing, transportation, marketing and financing.

By soils classification studies and best estimates, Alaska has an agriculture land base in the range of 126 million acres. But, when climate limitations, geographic locations and competing land uses are projected, production estimates can reasonably be made for a useable agriculture land base of 9.5 million acres of tillable soils, 9.8 million acres of domestic livestock range and 12-15 million acres for reindeer grazing.

Economic Value

- In 1988, Alaska's farm commodities cash receipts totaled \$28.9 million, more than double farm cash receipts logged for 1978. Well over 600 people were directly employed in the industry in 1988.

1988 crop and commodity values included:

Milk \$6.2 million
Hay \$3.4 million
Potatoes \$3.3 million
Meat and by-products sales \$1.4 million

Vegetables \$817,000
Barley \$775,000

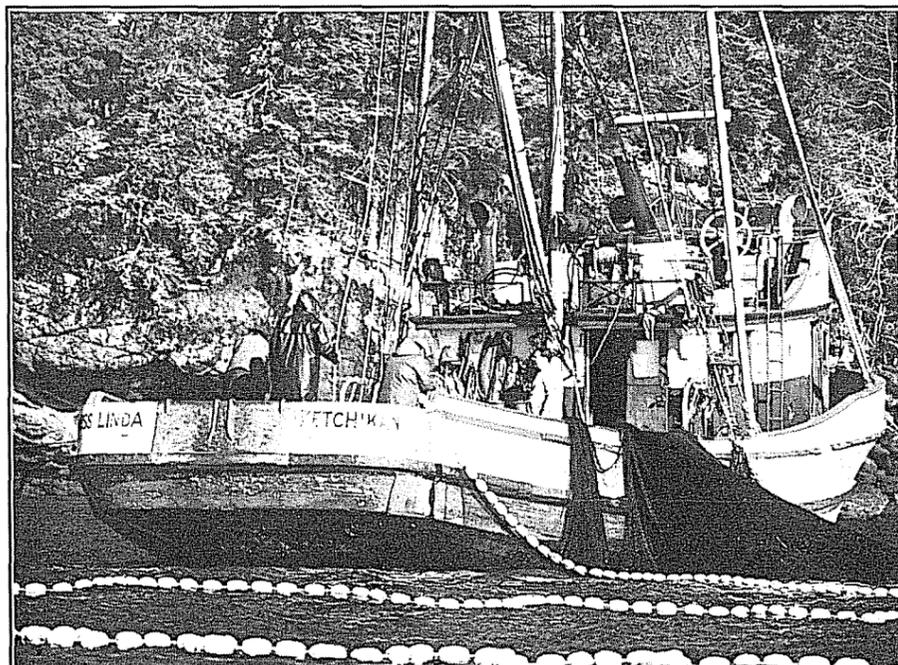
Sources: Alaska Division of Agriculture, DNR

Land Status

Any discussion of Alaska's resources and the state's economic opportunities would be incomplete without an overview of land status. While Alaska may have barely scratched the surface of its resource potential, many future opportunities to expand and diversify the economy may be lost under relatively new government policies affecting land use in general and federal Wilderness in particular. These policies have led to the continuing withdrawal of giant amounts of land from many productive multiple uses, leaving striking implications for resource development, utilities, local government and even recreation and tourism.

Alaska is a public-owned state, less than one percent of the land mass is in private ownership. It is on Alaska's vast public lands where most future resource development will occur, yet much of this land has been isolated as islands in a sea of parks and refuges the size of some states.

If Alaska is to enhance its competitive position in the world marketplace and diversify its economy, reasonable and economical access must be provided to resource deposits. Transportation systems within or across withdrawn lands, especially parks, monuments, preserves and refuges, are a key ingredient to keeping options open and meeting the needs of an uncertain future.



The ex-vessel value for Alaska's seafood industry in 1988 was \$1.7 billion, of which \$740 million was in salmon harvests alone.

Spill prevention and response plan unveiled

Oil-eating bacteria cleans beaches

Alyeska Pipeline Service Company has unveiled what some consider as the most comprehensive plan of its kind in preventing catastrophic oil spills in the marine environment. The "Tanker Spill Prevention & Response Plan" will cost the company at least \$45 million a year and assure a quick response to emergencies.

"It's probably the first plan in the world that addresses a big spill," said Nick Mitchell, a BP official on loan to Alyeska. "We are doing something that is totally new - we had to look at it afresh."

However, Mitchell cautioned that it is not possible to guarantee response performance as called for in the plan because of a number of variables such as weather and sea conditions.

New escort and emergency response vessels, as well as much of the spill containment gear highlighted in the plan, are on hand, deployed through Alyeska's interim plan. That plan was ordered by the state following the March 24 oil spill.

The new plan specifically addresses a spill of the magnitude of the Good Friday incident in Prince William Sound. It calls for oil spill equipped vessels to never be more than a half-mile from a tanker. The vessels can tow a tanker in the event one becomes disabled.

The plan includes an extensive inventory of booms, skimmers, lightering equipment and storage vessels. Alyeska has also undertaken to supply, in advance, the five fish hatcheries in Prince William Sound with booms for their protection.

New elements included in Alyeska's plan are community response centers, the formation of a citizens advisory committee, the stockpiling of spill equipment at strategic points of the Sound and a new management structure designed to react quickly to a spill.

Oil eaters offer best chance

Meanwhile, the Environmental Protection Agency has given Exxon permission to spread a fertilizer over miles of beaches in Prince William Sound to prompt naturally-occurring bacteria into an oil-eating frenzy. The fertilizer appears to offer the best chance for Prince William Sound beaches to recover relatively quickly from the spill.

The fertilizer, Inipol EAP22, shortens the time required to grow large populations of naturally-occurring microbes that feast on hydrocarbons. The hydrocarbon-eating bacteria thrives naturally in the rain forests of Southeast Alaska, feeding on large amounts of hydrocarbons released by conifers. The region's wet weather washes the hydrocarbons into the water, and coastal current carries them to Prince William Sound where they are consumed by more bacteria.

The fertilizer fortifies the bacteria present in the Sound, allowing it to reproduce much faster. Tests have revealed that bacteria population on fertilized areas have exploded. What's more encouraging is that the bacteria appear to be working themselves down beneath the surface to get at oil below the gravel.

The overall result is a dramatically clean beach in a relatively short period of time, according to scientists with the EPA. However, the microorganisms should not be viewed as a miracle clean up agent, scientists warn, since some of the most weathered oil will resist degradation.



Thoughts from the President

by Pete Nelson

Achieve Potential

I am very pleased to serve as the new President of the Resource Development Council, an organization that my predecessors helped create in an effort to advance sensible development of Alaska's natural resources. As I look to the future of RDC, I salute our past leaders who established a firm foundation from which continuing work can be accomplished.

Advancing resource development has never been easy or cheap. But the tragic accident on Bligh Reef has put new dimensions to the efforts to acquire approvals to explore and develop and to the cost of operating safely. Even so, the oil and gas industry is committed to Alaska, demonstrated by its substantial North Slope and Cook Inlet investments and its involvement in the communities in which its many employees live and their children attend school.

As President, I intend to directly involve the Board of Directors and other members in RDC's effort to promote development of Alaska's oil, timber, fisheries, mining and tourism industries while protecting the environment. I recognize the value of individual participation in our efforts and intend to encourage more of it.

Yes, we experienced a difficult setback recently and the oil industry has and will continue to re-evaluate and improve oil spill contingency criteria. But we need to get on with the important business facing our state. We need to create a business climate that will encourage continued development of our resources and attract other investors to do business here.

Overall growth is currently dependent upon the stabilization of the oil industry, but we must not lose sight of the fact that if we do not encourage development in timber, fisheries, tourism and mining, and the flow of oil is cut off for any reason, the recession we have experienced in the last few years will seem like a thriving economy.

With proper planning, reasonable policies and regulations, Alaska can transform its awesome potential into great wealth and independence. The year ahead promises to be an exciting one. I look forward to working with RDC and its members as we strive to achieve that potential.

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Alaska's resource industries

Key to economic prosperity

(continued from cover)

opment. The Alaska Constitution even acknowledges that fact and sets forth a policy calling for maximum use of its land and resources.

The economic well-being of Alaska is so firmly tied to resource development and production that the livelihoods of most Alaskans, in one way or another, depend on the utilization of the state's renewable and non-renewable resources. A recent editorial in the Anchorage Times pointed out that without resource development at least half of the state's population would have to go somewhere else to live. And the remaining people would experience a revolutionary change in their lifestyle.

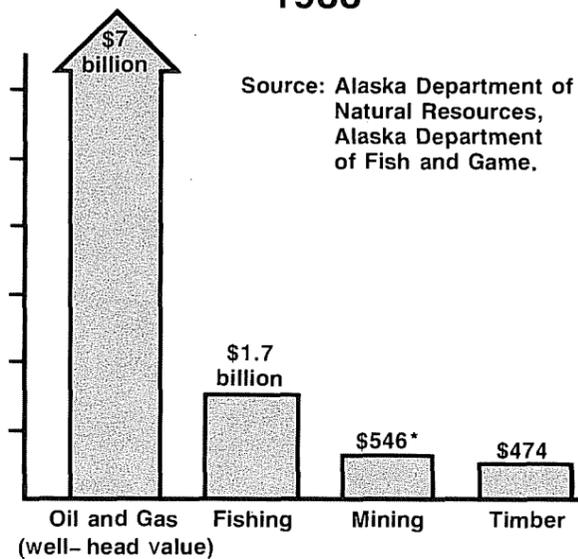
Revenues generated from the development of just one resource itself, oil and gas, finances the vast majority of state government, including general operations, payroll and services. Schools, public health care facilities, airports, highways, port facilities, fish and game programs and the state's environmental protection programs also receive a majority of their funds from revenues derived from development and sale of the state's petroleum resources.

Through the wise and purposeful development of Alaska's abundant resources, Alaskans today enjoy the amenities of the 20th century. Resource development provides economic stability, individual wealth, and personal opportunity for those who choose to live in America's last frontier. As a result, Alaskans enjoy the best of two worlds — the modern conveniences of the hi-tech generation in a bountiful land of wide-open wilderness, dazzling glaciers and blue-water fjords.

Environmental Protection

As does any activity associated with man, resource development in Alaska does make a visual and physical impression on the environment during the life of the project. But environmental protection is basic to Alaska development. It is not an optional expense, but is considered a cost of doing business in Alaska.

Alaska Resource Sector Production Values 1988



*Mining resource value not only includes production values, but expenditures for exploration and development efforts.

Alaska industries are applying the latest environmental technology to their operations. As a result, Alaska's major industries are continuing to improve their environmental records, building on past experiences here and elsewhere. In addition, stringent local, state and federal regulations have evolved to ensure that development takes place in harmony with the environment. Major development projects may require permits from as many as nine environmental agencies. Some projects may require years to secure all the necessary permits.

Extensive studies and monitoring operations are routinely required to determine the effects of development on natural resources. Effective mitigation measures are required by regulatory agencies charged with protecting the environment.

Resource developers in Alaska recognize that the quality of the environment must be maintained. However, development must also be encouraged to assure economic prosperity. Only a strong economy can afford high-quality and high-cost environmental protection. The two go hand-in-hand and no place is it more obvious than in the 49th state — Alaska.

Oil and Gas

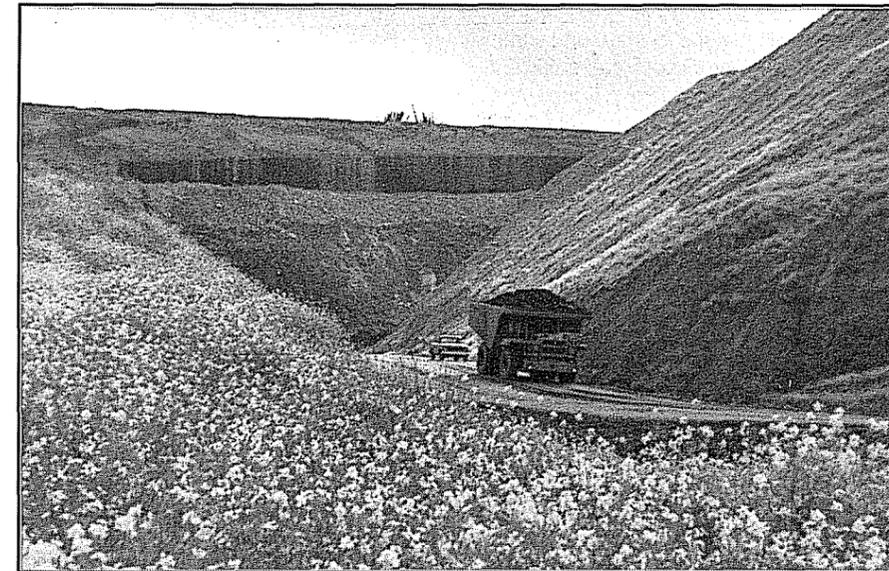
Oil production is the mainstay of Alaska's economy, accounting for 85% of the state government's total income and 95% of its tax revenues. In the private sector, oil and gas development contributes enormously to the economy through construction, purchasing, employment and other activity.

struction, purchasing, employment and other activity.

Alaska North Slope oil production has also had a strong positive effect on U.S. oil production, thereby reducing imports and increasing the Gross National Product. North Slope oil fields account for approximately 25% of America's daily oil production.

Economic Value

- North Slope production reduced oil imports by more than \$120 billion through 1985. The total value of North Slope production, including future years, is far greater than this. On an annual basis, Alaska production displaces between \$12 billion to \$20 billion of imported oil.
- The increase in Gross National Product directly related to Alaska oil production was about \$30 billion in 1980, and exceeded \$19 billion in each year since 1980. Further, it is estimated that world oil prices were lowered by one to three dollars a barrel in the first half of the 1980s because of Alaska oil production.
- The oil industry has invested approximately \$45 billion developing Alaska oil fields, boosting economies in all 50 states.
- Over 700 million barrels of oil were produced in Alaska in 1988 with a well-head value exceeding \$7 billion.
- In 1987, Alaska oil production reduced America's outlay for im-



Half of Alaska's coal production in 1988 was exported to Korea, Taiwan and Japan. Based on exploration, development and production figures, the value of Alaska's mining industry was \$546 million in 1988.

ported oil by more than \$12 billion. Development of new oil prospects in the Alaska arctic has the potential to reduce foreign trade deficits, too. Without continuing exploration of Alaska's resource lands, oil imports will increase and trade deficits will rise.

- In fiscal year 1988, the oil and gas industry paid the State of Alaska \$816 million in severance taxes, \$695 million in royalties, \$158 million in corporate income taxes and \$96 million in property taxes. Total taxes and royalties paid to the State of Alaska by the oil industry in 1988 were \$1.765 billion.
- Since 1980, the State of Alaska has received over \$26 billion in taxes and royalties from oil.
- Over 8,550 Alaskans were directly employed by the oil industry in 1988.
- Earnings of the Permanent Fund totaled \$437.7 million in fiscal year 1989. Dividends paid to each Alaska resident in 1988 exceeded \$826. As of April 30, 1989, the balance in the oil-financed Permanent Fund was pegged at \$10,069,831,000.

Sources: American Petroleum Institute, Alaska Division of Oil and Gas, DNR, Alaska Department of Labor

Fish

Alaska's vast and varied fisheries resources offer substantial development opportunities to Alaska. More fish and shellfish are harvested off Alaska's coast than in the rest of the United States combined, and management of this resource is vitally im-

portant to Alaska's economy. The potential for significant mariculture and seafarming development, combined with increasing demand for new, more value-added fish products, offers new economic growth and opportunities for Alaska.

Economic Value:

- The ex-vessel value for Alaska's seafood industry in 1988 was \$1.7 billion, of which \$740 million was in salmon harvests alone. Ground fish accounted for \$670 million while shellfish contributed \$237 million to the tally. The ex-vessel value of halibut was pegged at \$75 million with herring harvests totaling \$56 million.
- Traditionally, Alaska's seafood industry has been one of the state's largest private sector employers, employing persons in manufacturing, trade, services and transportation sectors. As many as 16,700 people were employed in seafood processing during the 1988 peak season while 4,200 were employed during the off season. The average annual employment level in seafood processing in 1988 was 7,800. Of those employed in seafood processing, 46.5% were non-residents.
- Over 30,000 people were employed as fish harvesters during the 1988 peak season. The average annual employment figure for seafood processing and harvesting in 1988 was 15,600.
- The total industry seafood harvest in 1988 exceeded 5.1 billion pounds. In-state processing totaled

1.78 billion pounds with the balance processed at sea or abroad.

Sources: Alaska Department of Fish and Game, Alaska Department of Labor Minerals

Hardrock minerals may well be Alaska's greatest undeveloped resource. Of the 30 minerals the United States must now purchase abroad, 22 are found in Alaska. Many occur in commercial concentrations.

With the development of major world-class mineral deposits underway, the minerals industry offers tremendous economic growth potential. However, about 60% of land in Alaska classified as mineral terrains is closed to exploration. Access to mineral deposits is also difficult given the lack of transportation systems and the vast amounts of land withdrawn into conservation system units. In lands of high mineral potential that remain open, great difficulty is encountered in developing mineral resources because of the land planning process and statutory and regulatory requirements.

Economic Value

- Based on exploration, development and production figures, the value of Alaska's minerals industry was \$546 million in 1988, an increase of 72% over the previous year. In addition, 4,900 people were directly employed by the industry in 1988. Much of this employment is in rural Alaska where jobs are most scarce.

Sources: Alaska Division of Mining, DNR

Forestry

Alaska is a world-class timber resource. America's most northern state holds one of the largest untapped timber resource reserves on the Pacific Rim. In fact, some 16% of the forested lands in the United States are located in Alaska. This encompasses more than 28 million acres of potentially economically-productive woodlands offering a net volume stock of 49.4 billion cubic feet.

As world consumption trends demand more forest products, Alaska will play an important role in supplying those products. With its ice-free ports and protected waters, Alaska is an ideal location for the export of forest products.

Economic Value

- The Alaska forest industry in 1988 was a \$474 million business, employing about 4,200 people directly and 7,560 indirectly. Direct timber industry payroll for 1988 exceeded \$149 million. Yet when compared to Alaska's wood products potential, one could say Alaska's timber industry is a sleeping giant. With proper investment and application

(continued on page 6)