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OA/ID Number: 13859
Folder ID Number: 13859-005

Folder Title:
[Alaskan Oil] Pipeline [Research Materials Collected by Peggy Dooley, Research Assistant] [4]

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THE WHITE HOUSE

WASHINGTON

March 15, 1991

MEMORANDUM FOR PHILLIP BRADY

FROM: **PEGGY DOOLEY** PD

SUBJECT: **ALASKAN OIL PIPELINE -- DIRE PREDICTIONS**

In the debate prior to the construction of the trans-Alaska pipeline, a wide array of predictions were made as to what the pipeline's effect on Alaska's wilderness would be. Following are some of the more dire predictions made at the time -- some are outrageous, some merely fretful. None of these forecasts has turned out to be as terrible as put forward, and many have simply not occurred:

Oil coursing through the pipeline at up to 170 degrees F. would thaw the subsoil into a trans-Alaska quagmire, with incalculable consequences.

Oil on Ice, Tom Brown, Sierra Club, San Francisco, 1971, p. 10

The simple passage of a tracked vehicle that destroys the vegetation mat is enough to upset the delicate balance and to cause the top of the permafrost layer to thaw. . . . Once the equilibrium is upset, the whole process can feed on itself and be practically impossible to reverse.

ibid, p. 11

Another problem posed by arctic oil development is the widespread mining of gravel. The gravel lining the beds and banks of North Slope rivers is important not only to some fish, which lay their eggs in it, but to the water quality. In some cases, in fact, removal of gravel can cause disastrous silting.

ibid, p. 68

In order to build the pipeline north of the Yukon River, the industry consortium, the Alyeska Pipeline Service Co. (ALPS), first must construct an access road through the now trackless area. . . . The possibility has thus been raised of opening a vast amount of wilderness to the certainties of litter, man-made forest fires, the scarring of terrain by four-wheel-drive vehicles and increased hunting pressure on several species of game.

ibid, p. 74

"I personally don't think there is any question but that the Barren Ground grizzly is going to go," says David M. Hickok of the University of Alaska. "He is extremely curious and is going to be nosing around garbage dumps. He also presents a certain menace. So he is going to get shot. There may be 'no guns in camp,' but he's going to get shot. Same for the wolves and the Dall sheep."

ibid, p. 99

NOTE: All the above-mentioned species are still present in the pipeline area.

The construction of the trans-Alaska pipeline may be the coup de grace that will finally convince the rest of the world that we are no longer a civilized nation.

New York Times, Letter to the Editor, Kenneth Quade, Pembine, Wis., August 7, 1972, p. 26, col. 4

Timber: 28 per cent of the area supports timber growth. Leaving this plant cover in a natural state has favorable social, biological, and physical impacts. **The esthetics of an undisturbed forest are important to some people.**

Oil and Natural Gas Pipeline Rights-of-Way, Hearings before the House Subcommittee on Interior and Insular Affairs, May 22, 1973, "Response to Final Statement of Department of Interior on Trans-Alaskan Pipeline by University of California at Santa Cruz Task Force"

A proliferation of these and other lines and roads will eventually turn the wonderland into a junkyard.

ibid, June 7, 1973, Statement of T.Y. Lin, Professor of Civil Engineering, University, Berkeley, California

The associated 361-mile road from Livengood to the North Slope will open this heretofore unblemished wilderness, resulting in increased hunting pressures that will threaten the populations of grizzly and brown bear, polar bear, and mountain sheep; increased forest fires that will destroy forage for caribou and mountain sheep; and rapid deterioration of the "spectacular fishing quality" of northern streams.

ibid, brief submitted to hearing: U.S. District Court for the District of Columbia, The Wilderness Society, Environmental Defense Fund, Inc., and Friends of the Earth, et al., v. Rogers C.B. Morton, Secretary of the Interior, et al., Civil Action No. 928-70, July 17, 1972

CARIBOU

MR. RUNNELS. What I am trying to say is: I don't know the habits of the caribou. How would the construction of this pipeline in your opinion and what you are basing your facts on -- how would this stop the migration of the caribou?

MR. SMITH. It would act as a wall.

MR. RUNNELS. How would it act as a wall?

MR. SMITH. It would either be too high for them to jump or unable to get under it or turned away from it.

Oil and Natural Gas Pipeline Rights-of-Way, Hearings before the House Subcommittee on Interior and Insular Affairs, May 21, 1973, Statement of Anthony Wayne Smith, President and General Counsel, National Parks and Conservation Association, and Chairman, Environmental Coalition for North America

MR. CLAUSEN. . . . Could you be more specific in light of your expertise? What effect would it have now on the fish and wildlife?

MR. FROME. I believe it would destroy the habitat, food supply, of the great caribou herds. It would have serious impact on the finest fisheries in North America. . . . the impact would be serious and devastating and long-lasting on fish, wildlife, and ecosystem.

ibid, June 7, 1973, Statement of Michael Frome, Conservation Editor, Field and Stream

ON THE OTHER HAND:

Sheaves of reports have discussed the example of Prudhoe Bay, where caribou of the central Arctic herd feed beside roads, and the herd, which live in the vicinity year-round, has increased from 5,000 to 18,000 head in the past 15 years.

National Geographic, "Oil in the Wilderness, An Arctic Dilemma," December, 1988, p. 868

Since 1970, scientists have tried to measure the impact of man and drilling on flora and fauna of the Arctic slope. . . . Caribou of the central Arctic herd graze along the runways, they hide from the summer sun in the shade of elevated pipelines, they stick their faces up to ventilation exhausts to blow biting flies out of their eyes. Ducks, swans and foxes abound.

Los Angeles Times, "Mideast Crisis Endangers Pristine Alaskan Refuge," John Balzar, August 26, 1990, p. 1

"You've got these bleeding hearts who are worrying about a bunch of caribou bumping their heads on a pipeline, when they ought to be worried about being victims of the Middle East oil cartel."
Ohio Sen. Bill Saxbe

"A lot of people worried that the Alaskan Pipeline was going to interfere with the mating habits of the caribou. They found out that the pipeline created some heat, and the caribou started breeding five times faster than they did in Mother Nature."
Ohio Governor Jim Rhodes

FAR, FAR OUT

ALASKA PIPE DREAM

One fine day like the day after tomorrow while the Canadian Energy Minister was minding his own business by saying the Alaska oil pipeline was really an "internal matter" in the U.S.A. and not for Canadians to jump into, one fine day in the not too distant future while the Energy Minister was talking he suddenly noticed that one leg of his trousers was wet, and hoping it was not what he thought it was, he reached down and determined that in fact it was not an internal matter at all but an external matter of oil, and yet not pure oil for when he inspected his hand and when he rushed to the lab to find out why blood was mixed with oil and whether or not it was his blood mixed with their oil or their blood mixed with his oil or whatever, he was informed by the laboratory hired by the oil company that there was really nothing to worry about at all, since the blood would not stop the oil from working perfectly in American war machines and automobiles, not to mention the Mayor of Montreal's automobile, and in any case the blood was not the Canadian ministry's blood and it was not the American people's blood, **it was simply the blood of one billion waterfowl who had been unable to feed in the tundra which had been disrupted by the perfectly innocent pipeline, and it was simply the blood of one billion fish in Canadian waterways and one billion fish in Canadian seaways who were no longer able to eat the plankton now flavored with salted oil, and it was simply the blood of one billion deer in the Northern Territory and one billion other wild animals in other frozen territories in the Siberia of Canada which had gradually become unfrozen for the first time in recorded time due to the world's largest oil spill which had resulted from earthquake pipeline rupturings which caused a great wash of hot underground oil to pour eastward from Alaska all over the geologic underground strataface of Canada, so that the St. Lawrence dripped both oil and animal blood into the water supply of Montreal,** but this was strictly an Internal American Matter, and we were not concerned at all, at all . . .

Lawrence Ferlinghetti is a poet who lives in San Francisco where there is no tundra.

Editorial, New York Times, July 28, 1973, p. 23, col. 3

I believe the construction of the Trans-Alaska pipeline will eventually result in a crisis for the Nation. The seriousness of the crisis could rival and even exceed the turmoil Vietnam created for the country, . . .

. . . I estimate the size of at least 20,000 square miles and the possibility 50,000 square miles will be devastated by oil spills and permafrost erosion.

. . . But after oil exploitation, this area could be damaged beyond repair for centuries. Its value as a nesting area, wildlife refuge, and the values of virgin wilderness with its intangible effects on the human psychic may never be recovered.

. . . The trans-Alaska pipeline is to be constructed under strict stipulations. But what good are stipulations if they are not viable? And they won't all be viable because this is a new experience for both the oil industry and Government. Plus gentlemen, you would be surprised what a case of Scotch can do to stipulation.

. . . If Hitler had the ovens and Stalin had the salt mines, then we have the equivalent in the oil industry.

. . . Pick up a dictionary and notice how few words separate prosperity and prostitution. . . . We are prostituting our natural resources in the form of materialistic gluttony that is resulting in global suicide.

Oil and Natural Gas Pipeline Rights-of-Way, Hearings before the House Subcommittee on Interior and Insular Affairs, May 21, 1973, Statement of Kenneth Quade, Concerned Citizen, Pembine, Wis.

cc: David Demarest

an alternative. One reason for that, paradoxically, is that the present situation is so caught up in radical, postadolescent attitudes. If there are some tentative moves toward labor internationalism, there are established and profound tendencies toward capitalist internationalism. Technology has literally burst the bounds of the nation state, as the members of the Common Market or the denizens of the international money market (which is only about twenty years old) can testify. Therefore what is required ultimately for the solution of these antagonisms is structural change in the very organization of world power: not only the growth of international institutions but, if Socialist, or at least social, international institutions.

That is not going to happen tomorrow. Therefore even in defining this necessity one has to search for intermediate solutions which will promote the final goal but are also attainable within the rather miserable constraints of the present. And at least one strand of a solution can be stipulated. If America had a genuine full-employment policy—one which guaranteed every worker a decent job—then the greatest single incitement toward labor protectionism would be removed in the best possible way. There are many reasons to struggle for that full-employment policy; it is good in and of itself; it provides the only context in which economic racism and sexism can be combated, etc. But the peace movement has the opportunity to stress its own special reasons for championing full employment: that it opens up the possibility of American union policies which coordinate with the labor movement of the globe and which unite, rather than divide, the workers of the various countries.

I suspect that I have mainly demonstrated how incredibly difficult it is going to be to build a peace movement. Yet I see no alternative to accepting the challenge. And I think that the crucial step forward is for peace activists to define and develop those domestic issues which are also international, to elucidate the immediate economic stake which American working men and women have in a more just earth. That is frightfully hard and utterly imperative. □

UNSAFE AT ANY WIDTH

THE TRANS-ALASKA PIPELINE

ROBERT REINHOLD

A line of frontier terrain 92 feet wide and nearly 800 miles long stands between the United States and what could be its biggest ecological blunder. This strip of land is what the oil companies, eager to exploit the remote Alaskan oil fields, do *not* have and (it is what the courts have ruled) they must have (in addition to the 54 feet of right of way already under their control) if they are to build their pipeline from Prudhoe Bay, on the Arctic Ocean, to the port of Valdez, on the Gulf of Alaska. At peak production 2 million barrels of oil would pass through the pipeline each day, to be picked up at Valdez by tankers and taken to market on the U.S. West Coast. (At least that is where the oil companies say they will market it, but there is reason to think they may be lying.)

The pipeline would be the largest private construction project ever undertaken, but well worth it to the companies which have already sunk $5 billion into their Alaskan ambitions, for the oil at the source of the line—the three enormous pools in the Prudhoe Bay area, an underground petroleum ocean as large as Massachusetts—is thought to be the largest such discovery on this continent. Conservative estimates put it at 10 billion barrels; moderately optimistic estimates increase that to 40 billion barrels. Even at the lowest estimate, it would be 25 per cent of the proved reserves of oil within the fifty states.

If one looked at it merely as a big bowl of energy sitting there ready to help feed an energy-hungry nation, there would be no reason to debate the method or route for bringing it out. But the geography of this oil is very special.

The pipeline would cross the entire state, north to south, and would roughly parallel the border between Alaska and Canada. By splitting Alaska, according to the oil companies' plan, the pipeline would for all practical purposes take out America's forty-ninth state as the private domain of the companies and would also be the first giant step toward destroying the last authentic wilderness available to those living under the U.S. flag. Only about a tenth of U.S. lands are still in a wilderness condition, and virtually all of this wilderness is in Alaska—more priceless in a sense than the oil itself: once it is gone, it will be gone forever, whereas the oil is only another form of expendable energy, which in any case must eventually be supplanted by nuclear or other fuels. Moreover, the wilderness is still in public hands, most of it owned by the federal government and the rest by the state of Alaska, and its future is still fortunately protectable by the pressures of public opinion. So the debate over how the oil should be handled is not a futile debate at all.

At the moment, the oil companies are being held at bay by an old, mildewed law, the Mineral Leasing Act of 1920, which the companies had assumed was defunct because they had successfully violated it many times in the past, and by the almost miraculously successful court battle waged by The Wilderness Society, Friends of the Earth and the Environmental Defense Fund.

If it had not been for these groups, the oilmen would have carried away Alaska four years ago. The cocky petroleum moguls were so certain that they had the whole deal sewed up that they bought $100 million

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worth of pipe from Japan (probably through barter for future oil delivery) and laid out the pipe along several portions of the chosen route—a bit of arrogance that is reportedly costing them $5 million a month just to fight the rust. They had good reason to be confident—the Nixon crowd was eager to turn over the oil-rich wilderness to them. But unfortunately for their plans, the great environmentalist movement of the 1960s had culminated in the National Environmental Policy Act of 1969, which requires the federal government to justify the exploitation of federal lands with an environmental impact statement showing that a project balances out on the side of public good. Court battles built around the NEPA Act destroyed the oil companies' timetable.

Ultimately, they will probably win, big corporations habitually with consumer encounters. During this lull in the fighting, however, we do well to review what has been done to us thus far and what is being prepared.

The discovery leases to the Prudhoe Bay oil fields were granted by Interior Secretary Stewart Udall in June 1964—well timed, if such was the intent, for a *quid pro quo* for oil company contributions to Lyndon Johnson's campaign that year. Udall often talks as though he were on the side of the environmentalists; he has not always acted that way. He is the fellow who also granted the Santa Barbara offshore oil leases and in 1965, with only an obscure notice in the *Federal Register* to warn the public, opened part of the Arctic Wildlife Range to the mauling of oil explorers.

The search for oil on the North Slope (the northern slope of the Brooks mountain range at the top of Alaska) had been going on without much luck for two decades, mostly conducted at taxpayers' expense by federal geologists. Despite this record, oilmen were certain that a rich field awaited the lucky driller.

If one were of a suspicious frame of mind, one might even suspect that the government knew where the oil was to be found, for when the first productive leases were granted they went to companies which have had an unusual amount of good luck in their dealings with the government in recent years: Atlantic Richfield Co. (ARCO), Humble (a subsidiary of Standard Oil of New Jersey) and British Petroleum (B.P.).

Atlantic Richfield and British Petroleum are the kingpins of the Prudhoe Bay adventure. In January 1967 the discovery well came in for ARCO. The previous year, ARCO had been created without a particle of trouble, even though a number of antitrust principles seem to have been violated in the merger of the Atlantic Refining Co., one of the largest distributors in the East, with Richfield Oil Co., one of the largest distributors on the West Coast. This merger, creating a company with combined assets of $1.4 billion, was the largest on record, and to say that it suppressed competition is putting it mildly—but the Justice Department did no more than grumble a bit. Moreover, in 1969 Atlantic Richfield gobbled up Sinclair, worth $1.81 billion, and once again the Justice Department did nothing except force Atlantic Richfield to divest itself of $400 million worth of Sinclair's retail distributorships—that is, ARCO had to sell most of Sinclair's 10,500 filling stations in the Midwest and the East. (The year before this merger was granted, a Sinclair executive worked as an advance man for the Nixon-Agnew campaign while still on the company payroll—a violation of the Corrupt Practices Act.) And guess who bought the stations—British Petroleum, which by 1969 was ARCO's partner in the Alaskan venture.

One reason why ARCO had plenty of money to bid on the Alaskan leases was that the company had been receiving some striking favors from the Internal Revenue Service. From 1962 to 1968, ARCO earned a net income of $797 million but paid not one penny in income tax.

Of course, it's possible that the IRS thought Atlantic Richfield was a government agency, there's been so much interplay between ARCO and the bureaucracy. ARCO has subsidized some of the films circulated to the public as "government" films by the Interior Department's Bureau of Mines. And when Hollis Dole quit as Assistant Secretary for Mineral Resources at the Department of the Interior a few weeks ago, it was natural that he headed straight for a top management post with Atlantic Richfield.

As for British Petroleum, it parlayed its holding in Alaska into fulfilling a long-time dream. For twelve years B.P. had wanted to penetrate the United States market, but it had consistently failed to find a crack to slip through. It was handicapped, for one thing, by British restrictions on taking much money out of the country. With its oil discovery in Alaska, however, B.P. was in a position to strike. By cleverly bartering oil from future production in Alaska, B.P. was able not only to swing the purchase of the Sinclair service stations from ARCO but also bought Standard Oil of Ohio (this first company founded in the Rockefeller oil empire), thus giving B.P. nearly 4 per cent of the U.S. market. For emphasis, let me state again what happened: B.P. took *our* oil—oil lying under federal lands and belonging to the U.S. citizenry—and used it to buy a major slice of the U.S. market. That's a neat trick.

The move also tightens the ties of the international oil giants. Standard of Ohio gave B.P. an excellent marketing and refining operation in this country; B.P. gives Sohio one of the world's great supplies of crude oil to draw on. Even without being able to tap its new Alaskan possessions, B.P. regularly produces more crude oil than any other company. For years B.P. has been a major partner with U.S. oil firms in the exploitation of the Mideast and African fields, and has accounted for its share of violence. As one industry spectator put it, "On account of British Petroleum's whining, Anthony Eden initiated the Suez War. On account of British Petroleum, the Ibos decided to secede from Nigeria and fight to the death for honor and oil revenues." It may not be fair to lay so much of the blame for these flare-ups at British Petroleum's door, but the firm's adventurous nature has been well proved over the years. With B.P. and one wing of the Standard Oil empire in open partnership with this country, anything can happen—as future developments in Alaska are likely to show.

In 1969, in a lease auction that brought Alaska nearly a billion dollars—$900,220,590 to be exact, which was

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nearly 50 per cent more than had ever been obtained via an oil lease auction before—four other companies joined the consortium: Mobil, Phillips, Union and Amerada Hess. These, along with the original three leaseholders (who controlled more than 80 per cent of the leased land), called themselves the Alyeska Pipeline Service Co.

Actually the big three (ARCO, B.P. and Humble) had preferred their old alliance, known as the Trans-Alaska Pipeline System (TAPS), for TAPS had no formal corporate structure at all and therefore was almost immune from government regulation. Its friend, then Secretary of the Interior Walter Hickel, complained that "by the time all the principals could be telephoned in Texas, New York, California and London, it could take weeks just to get an agreement on what color to paint the toilets in the construction camps." ARCO, B.P. and Humble loved that anarchistic freedom, but to let their allies in the Interior Department save face, they agreed to enter into the formal corporate arrangement with the other four companies under the Alyeska Pipeline Service Co. umbrella.

With only seven companies involved in the biggest pool of oil on the continent, and with only three companies dominating the pool, the concentration of ownership was obviously so intense that the staff of the Justice Department's antitrust division recommended that Alyeska be investigated to see if its control of the proposed pipeline violated federal laws. That was in 1971 and John Mitchell, who was still Attorney General at the time, overruled the recommendation for an investigation. His veto memo read in part: "In view of what's going on this is not the time." Among the things going on at that time was the gathering together of the largest political slush fund in history—with a major share of it coming from the oil companies.

But of course the oil companies had not waited until the 1972 campaign opened to buy favor. There had also been 1968, an election during which the Yankee sheiks contributed more money to Nixon's campaign than had ever before been contributed to a Presidential election by any one industry. Robert Orville Anderson, chairman of the board of Atlantic Richfield, is alleged to have given more than $100,000 to Nixon that year, his reasons being so obvious that they were even mentioned in such places as Lloyd Shearer's *Parade* magazine column (January 26, 1969)—Anderson being identified as "the kingmaker who influenced Nixon to choose Hickel instead of Gov. Tim Babcock of Montana as his Secretary of Interior. Hickel proved most cooperative when Atlantic Richfield made a fabulous oil strike in Alaska."

Indeed he did. Before coming to Washington, Hickel was governor of Alaska, and he was so eager to help the oil companies open up the North Slope that he had built a highway from Fairbanks to the Arctic Ocean, a distance of about 400 miles, so that trucks could carry equipment to the drilling site. (Up to then, all equipment was flown in.) The highway was a budgetary, engineering and ecological disaster. It was supposed to cost $125,000 but ran to $1 million; it was so poorly constructed that after the first winter it resembled a drainage ditch more than a road, and was impassable. Ecologically, because of the destruction it caused to the tender frozen soil of that region, it was what one University of Alaska professor called "the biggest screw-up in the history of mankind in the Arctic." George Marshall has written of the Hickel Highway that it was "the first violent change, the first major intrusion of the modern industrial world" into the last great wilderness in North America, and all the more shocking because "the great Range [Brooks Range] had been split and its unity with past ages destroyed—destroyed without a public decision, destroyed without the knowledge of most Americans."

Once in the Interior Department, the unrepentant Hickel was ready to try again to build roads or pipelines or anything else that the oil companies wanted. Only three days after the Interior Department published a scientist's warning that burying the 48-inch pipeline carrying oil at 140 degrees would create serious problems by thawing frozen ground along its route and causing the pipeline to buckle and rupture, Hickel met with oil company officials and assured them that such criticisms would not interfere and "the pipeline will be built." Publicly he conceded that he and oil officials had reached a "full understanding" that the Interior Department would not stand in their way. Pressure to build the pipeline was coming also from the Department of Commerce, where Maurice Stans was then Secretary. He, too, overruled environmental scientists in his department. Stans's pro-oil position paid off royally when he later became chief fund raiser for Nixon's 1972 campaign.

Even though then Under Secretary of the Interior Russell E. Train admitted that government officials did not know the answers to all the environmental problems raised by the proposed pipeline, he said, in October 1969, that he was recommending that Hickel go ahead and approve the construction permit. As Hickel later admitted in his book, *Who Owns America?*, the oil companies at that time had made no environmental safety plans at all and didn't care to make any. That didn't seem to bother either Hickel or Train. Later Nixon would make Train head of his Environmental Council, a responsibility that did not change Train's opinion that building the pipeline was a swell idea.

Other pressures to build the line came from Alaska officials, whose greed for money had become extravagant after they got the $900 million lease money in 1969. For a state whose entire budget came to only $154 million that same year, it was heady stuff, promising all sorts of delicious rake-offs and fringe benefits. And Alaska still controlled 800,000 acres which it could lease, pocketing 12.5 cents of every net dollar earned. As former Gov. Keith Miller shouted with joy on the evening of the great leasing, "Tomorrow we will reach out to claim our birthright! We will rendezvous with our dreams!" As far as most Alaska officials were concerned, the oil companies could come in and drill every square yard of the state. Right now, *Now!* Every day of delay was costing plenty in royalties. It was also costing the state in another way: the royalties would come from net profits, and the delay in building the pipeline had raised the probable cost of the line by several billion

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dollars. This would have to be paid off before Alaska got another penny.

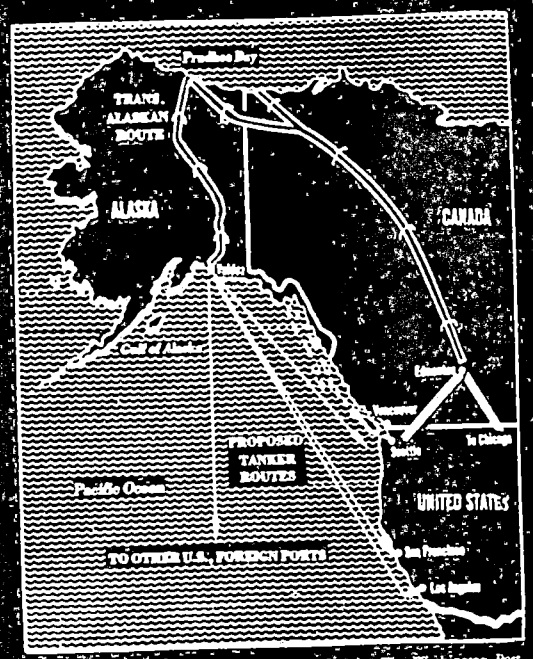
As the cost of waiting mounted, Alaska politicians got a bit hysterical and began writing all sorts of laws—which the oil companies have challenged in court—to guarantee that they would get at least a few hundred million dollars income every year—a modest sum, argued Gov. William A. Egan, that would in no way "diminish the opportunity for industry to make huge, huge profits, a billion dollars a year." In a sensible but rather pathetic moment, Governor Egan warned Alaskans that "we must still be mindful that the primary obligation of the companies involved is to the stockholders and board rooms in New York, Los Angeles and Houston. The sheer size of the enterprise in Alaska demands effective public control or we will have an economic state, larger and more powerful than the political state which contains it." That was a classic case of whistling in the dark. Alaskans not only "will have" but indeed do have, and have had from the moment the North Slope leases were let, an economic giant sitting in their political pygmy lap.

The political and corporate allies had begun to fight among themselves because the conservationists were making them nervous, even frightened. Despite the friendliest possible cooperation from the Nixon Administration, things were not going smoothly for Alyeska Pipeline. The oil consortium had supposed that it would get such quick approval from the Interior Department that it would be in operation by 1972, but the oilmen had reckoned without the opposition of environmentalist groups who filed a lawsuit in 1970 and stopped the project dead in its frozen tracks.

Would the Alyeska companies pollute their domain as hideously as had the oil explorers at Naval Petroleum Reserve No. 4, just to the east of Prudhoe Bay?—a pollution still marked a quarter century later by disintegrating Quonset dormitories, squalid recreation shacks, rusting bulldozers, broken mobile cranes and hundreds of rusting oil drums: a vast garbage dump, laced together by miles of ruts through the tundra that will never heal. As a final insult, the federal workers who plundered that field had even left dirty plates sitting on their mess-hall tables. There was no reason to think Prudhoe Bay oilmen would act any differently, for, as one confessed to *New York Times* writer Steven Roberts, "We like to think we're socially responsible, but in the long run our aim is to make money." Would there be endless leaks from the pipe? Would the forty-one-ship tanker fleet planned by the Alyeska consortium spill so much oil into the waters between the port of Valdez and Puget Sound as to ruin the annual $58 million fishing industry?

Under the National Environmental Policy Act, the Interior Department is required to answer such questions. In April 1970, responding to the environmentalists' lawsuits, U.S. District Court Judge George L. Hart, Jr., issued an injunction stopping construction of the pipeline until Interior came up with some answers.

Thereupon Interior threw together an environmental impact statement that was only 200 pages long and so ridiculously superficial that, under a barrage of hoots and jeers and catcalls from press and Congress, it was



Joseph Mastrangelo; The Washington Post

withdrawn and Interior settled down to a different form of attack: overkill. On March 20, 1972, a new statement was launched, this one running to 3,500 pages.

No sooner was it off press than Judge Hart, exhausted and drained of juices by being squeezed in the industry versus environmentalist vise ("I'm dead tired," he announced), ruled that this satisfied him and lifted his two-year-old ban on construction. Rogers Morton, who had succeeded Hickel at Interior, also announced his complete satisfaction, and said that he would issue a permit for building the pipeline as soon as he legally could.

Again, environmentalists fought back. Why not, they asked, hold public hearings on the question? Because, said Morton, public hearings would only add a "circus" atmosphere to the decision-making. However, though a public hearing was banned, Morton did give the public forty-five days to read, digest and submit written replies to Interior's 3,500-page environmental impact statement. For anyone coming cold to the debate, that would have been too brief a time in which to prepare rebuttal (made all the more difficult by Interior's "running out," so they said, of the statement and not getting a new supply for a couple of weeks), but for The Wilderness Society, Friends of the Earth and Environmental Defense Fund—which had kept right on top of the situation all along—it was plenty of time. They pulled together a counter argument running to 1,300 pages. Their rebuttal contained no mincing tea-party complaints but was heavy with scientific assessments.

Altogether seventy-five experts, whose opinions could be ignored only by willingly ignorant bureaucrats, trooped forward to assist them—men like Dr. Harry Brandt, chairman of the University of California (Davis)

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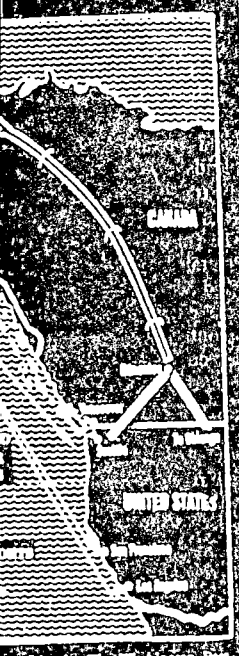

Minneapolis The Washington Post

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Department of Transportation engineer who pointed out the questionable quality of the pipe, and Dr. Donald H. Gray, a Canadian professor of civil engineering at the University of Michigan, who warned that Interior Department and the Alyeska consortium of doing sloppy and inconvenient research into the effect of potential landslides on the pipeline.

It's doubtful that Morton and the Interior gang gave this rebuttal the time it merited, however, for on May 11 (only four days after his deadline for the filing of rebuttal) Morton announced that he had made up his mind and would give a go-ahead to the pipeline as soon as the courts got out of his back. He didn't try to report the rebuttal; he simply ignored it, and Stewart Brandborg, executive director of The Wilderness Society, was hardly out of line when he complained that Morton's invitation for comments was a mere charade.

Indeed, the charade had been proved long before the rebuttal was submitted. It was proved at the moment when the Interior Department's own environmental impact statement was released, for that contained even stronger evidence against the proposed trans-Alaska pipeline. Everywhere in the 4,000 volumes are chilling warnings. The following are some of the things that Interior's own experts have to say about something like this. (Direct quotes are from Interior's own documents.)

Every year Alaska has more than 1,000 earthquakes; most of these are slight, but the pipeline would cross three fault zones where two dozen significant earthquakes have been recorded in this century. Any point along the southern two-thirds of the proposed pipeline route could be subject to an earthquake of magnitude greater than 7.0 on the Richter scale. And in some areas earthquakes of up to 8.5 magnitude should be anticipated. (The Alaskan earthquake of 1964, which cost $500 million in damage and caused a tidal wave that washed out the old town of Valdez, had a magnitude of 8.3. The energy released by that earthquake was twice as great as the San Francisco quake of 1906.)

Aside from quakes, much of the ground along the pipeline route is highly unstable. Landslides could be common-place, and they would cause pipelines leaks and ruptures. In the event of a pipeline rupture, 14,000 barrels of oil could leak out during the time required for pump station shutdown and valve closure. After shutdown and valve closure, up to an additional 50,000 barrels of oil could drain from the pipeline at some locations. With smaller leaks, as much as 750 barrels of oil could be lost every day without being detected.

Since the pipeline would cross 350 streams, there would be major water pollution. As for land pollution, Atlantic Richfield admits that a spill of 25,000 barrels—a moderate spill by Alyeska standards—would cover 6.6 acres in winter in level country. (ARCO gives no estimate for hilly country in the summertime when oil would run further and faster.) "There are no methods to remove oil from terrestrial surfaces without some destruction of vegetation." Some of the plant life along the pipeline route is found in no other part of the world. It could be wiped out.

Many miles of the pipe would be laid underground. Ditches to receive the pipe would be 6 feet wide and 7 feet deep; while the ditches lay open, they would be a trap for moose, caribou and bears, and it is doubtful that any of the hooved mammals or bears could escape without assistance.

Between Deadhorse and the Yukon River, a road 361 miles long would be built parallel to the pipeline. It would be laid on a base of gravel between 3 and 5 feet thick—requiring the excavation of about 21 million cubic yards of gravel, much of which would be scooped out of rivers beds, with great harm to fish life. The entire pipeline project would require quarrying about 67.5 million cubic yards of material, and this wouldn't count the 16 million cubic yards needed for developing the oil field itself. Where this mutilative bleeding stops—or where it scars—would be left in the tundra. Many of the quarries would have to remain open because from time to time maintenance material would be required.

Biologists are afraid of what the sulfur dioxide emitted from the pump stations would do to the lichens which are the primary forage of caribou; they are also afraid of the harmful effects to wildlife from the noise around the pump stations—which would be at a decibel level of 100 feet, equivalent to a noisy industrial area.

Basing an estimate on the experience of the worldwide tanker fleet, the Alyeska Pipeline Service Co. fleet would have an average of 1.69 collisions or groundings each year. From these, plus the ill-spill cleaning at sea that always occurs, plus the accidental discharges in ports and at docks that always occur, experts foresee a total of 613,000 barrels of oil washing around in the surf and gumming up the beaches and ruining oyster beds and fishing grounds. That's the equivalent of a twelve-million-gallon oil spill a year.

The Prudhoe Bay oil field is expected eventually to cover about 880 square miles, and while that is only 0.15 per cent of Alaska's total land surface, it is quite enough—coupled with the pipeline and roadways feeding into it—to leave indelible evidence of man's presence, gouged, smeared, torn and built across so much of the terrain that "north of the Yukon River the proposed project would irreversibly and irretrievably affect wilderness values." From the road north would spew other roads, and from them still others, until the Coke bottles and Schlitz cans cover the track of the caribou and many spots irretrievably and irreversibly pieces of wilderness are.

Thus spake the government's own experts. And the Nixon Administration casually ignored them one and all.

That would have been that, except for the environmentalists. They appealed Hart's decision, and the U.S. Court of Appeals, on last February 8, sided with them, but indirectly. The court ignored the environmental questions and based its rulings solely on the Mineral Leasing Act of 1920, which limits rights of way across federal lands to 25 feet on either side of the pipe. So the Alaska pipeline would have only a 54-foot right of way (counting the 4-foot diameter of the pipe). The oilmen say this is an impossibly narrow corridor to work along. Some of their equipment is truly mammoth. But that's what the law says and that's what the court ruled, shrugging its beautiful shoulders and remarking, "We

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have no more power to grant their request [that is, the oil companies' request for a width waiver], of course, than we have the power to increase Congressional appropriations to needy recipients."

How the oilmen pulled their hair in rage. The very idea: interpreting the law exactly as it is written, when the Interior Department and other courts had been winking at the law for decades! On April 2, the U.S. Supreme Court said it would let the lower court's ruling stand, and thus the whole question was thrown back to Congress.

That is a terrible blow to the oil companies, for they know how slowly things move in that quicksand body. Some oilmen have urged President Nixon to declare a national emergency as one way to get around a drawn-out debate, but Secretary Morton says he doesn't think Nixon will respond to their prayers in that fashion. More than likely, he will simply cooperate fully with the oil companies as they increase the pressure on the public and Congress by withholding an ample supply of gasoline and heating fuel—a kind of coercive maneuver the companies have been using for several years. It is part of their high-pressure "energy crisis" propaganda campaign ($3 million spent on it via TV and the national press last year) to persuade us that if we would only let them drill and pipe anywhere they want, with no consideration for the environment, we wouldn't have trouble getting fuel.

The Congressional debate has veered sharply away from the simple question of the right-of-way width and into the much more important question of whether the trans-Alaska route is the correct one at any width. At present, the only seriously proposed alternative to a trans-Alaska pipeline is a trans-Canada pipeline, to be built down through the Mackenzie River Valley to Edmonton and then on to the central United States.

Canadian officials much prefer this pipeline proposal. First of all—though this route would also have many environmental defects—it is much more comforting for them to contemplate than the specter of a tanker fleet dumping 600,000 barrels of oil onto their West Coast beaches each year. And, second, if the pipeline were built across Canada it could also be used to ship Canadian oil—which is the kind of thrifty piggyback that our less affluent neighbors to the north can certainly be forgiven for thinking about. (See "Arctic Pipeline: Known Problems and Effects" by Quincy Dadlaman, *The Nation*, October 2, 1972.)

But the trans-Canada route is being advocated most loudly, and sometimes almost threateningly, by a group of Middle Western and Eastern members of Congress of both parties who are under tremendous pressure from constituents who have been getting shorted in the distribution of petroleum products. Any time the oil companies crimp back on fuel oil and gasoline supplies, the Midwest feels it the worst, and the East Coast feels it next worst.

In recent months Sen. Walter Mondale of Minnesota has become perhaps the major spokesman among the trans-Canada advocates. With Mondale in it, we may be seeing a warm-up fight between two men who are spoken of as serious contenders for the Democratic nomination in 1976, for squared off against him is Sen. Henry Jackson of Washington, the major spokesman for the trans-Alaska clique. Jackson, chairman of the Senate Interior Committee, is in a powerful position to help the oil industry with which he already stands high. If he can deliver the trans-Alaska route to his pals, he will have an even greater claim to their campaign funds. On the other hand, Mondale would gain tremendous support throughout the Central states and New England if he could somehow help achieve the miracle of redirecting the Arctic oil in their direction via a Canadian pipeline. He would also have a good chance of coming out of the fight as "Mr. Environmentalist"—a title that Jackson has claimed for some time, but which he could forfeit as a result of this issue. Already he has lost face with groups that used to admire him. The Wilderness Society, for example, accused Jackson of rigging his hearings on the pipeline last March by tricking critics into staying away, while the witness panels were loaded with such people as Thornton F. Bradshaw, president of Atlantic Richfield, and Edward L. Patton, president of Alyeska Pipeline Service Co.

The arguments for building the trans-Canada pipeline may not be the best in the world, but the arguments for building the trans-Alaska pipeline are often just plain stupid. Secretary Morton, for instance, says it's necessary for our "national security" to keep the oil totally in U.S. hands all the way to market—the implication being that Canada, our closest ally, can't be trusted in an emergency. Morton's argument disregards two obvious points: (1) In a war the trans-Alaska oil would have to dodge submarines half the way to the United States, whereas the trans-Canada oil would be routed so deeply through the boondocks all the way to market that submarines would get frostbite trying to find it; and (2) far from being an unreliable source of oil, Canada has usually tried to sell us more than our companies (preferring the bigger bargains in the Arab countries) have wanted to buy. In any event, the Department of Defense, apparently embarrassed by Morton's foolishness, has pointedly refused to endorse the national security argument for the trans-Alaska route.

The commercial arguments against the trans-Canada route are just as phony. The Alyeska Pipeline consortium keeps saying that the Canadian route just wouldn't work, that it would cost too much money, that it's a lousy idea, that it would take too long to build, etc. This is a perfect example of how corporate hotshots don't realize that just plain people are capable of reading trade magazines. Anyone with any curiosity about the problem has only to go to such a ready source as *Oil and Gas Journal*, for example, to find that a group of oil companies—in fact, some of the same companies that are in the Alyeska group and are claiming the Canadian route is a bad idea—are saying out of the other side of their mouths that building a pipeline down through the Mackenzie Valley is perfectly feasible. More than feasible, they are saying it is the *only* way to bring natural gas out of the Prudhoe Bay fields. Moreover, they intend to start building a natural gas pipeline down through Canada by late summer and hope to have it completed within four years. This is to repeat, a natural gas pipeline; but they expect to build an oil pipeline along the same route eventually.

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So why not build it now? Short of peering in explana-
tion out of Alyeska executives' one can only speculate.
However, there are two fairly good guesses.

(1) The Canadian pipeline would make the tanker-
to-market routing inflexible, whereas the trans-Alaska
pipeline, by feeding into a tanker fleet, would give the oil
companies a way to play with their commodity on the
national and world markets.

At first the Alyeska oil companies were quite candid
about their intent to sell some of the oil to Japan (some
are still candid about it). In an interview with *National
Journal* last March, Ronald H. Merritt, economics and
supply coordinator for B.P. Alaska Inc., said flatly that
perhaps by 1980 there would be 400,000 or 500,000
barrels-a-day surplus (that's one-fourth the Alyeska pro-
duction at predicted peak) above what the West Coast
of the United States could consume and it that were the
case it might be sold to Japan. Depending only on where
the higher profits lay, he said, you reach the point where
it's a matter of indifference from the oil companies' point
of view whether to sell it to Japan or the West Coast.
(Japan has recently become a major partner with B.P.
in the Mideast.)

When the same philosophy was expressed earlier by
other oil company executives, conservationists and con-
sumers raised hell at the idea that Alaska's wilderness
would be raped not to lower petroleum prices for the
United States but to add to Tokyo's smog. The criticism
became so loud that some Alyeska executives began pre-
tending they hadn't said they would sell to Japan except,
maybe, on a swap basis (ship Alaskan oil to Japan and
receive an equal amount of Japanese-owned Middle East
oil which the oil companies would then bring into the
more profitable market on the East Coast. This shuffling
of oil with Japan would give the companies an estimated
$100 per cent markup over what they could earn if they
carried their Alaskan oil directly to the West Coast. For
one thing, by avoiding coastwise traffic they could use
foreign-flag ships with their low-paid crews. (The Jones
Act requires U.S.-flag vessels for coastwise commerce
but not for foreign traffic.)

Another way of "profiting" the Alaskan oil on the
high seas to achieve greater profits was discovered by
Rep. Les Aspin last year. He uncovered a secret docu-
ment showing that Amerada Hess (one of the Alyeska
companies) wanted to build a pipeline across Costa Rica.
Amerada Hess would ship some of its Alaskan oil through
this pipeline, out the other end into another fleet of
tankers which would carry it to Amerada refineries in
the Virgin Islands (where Amerada recently expanded
its refinery capacity from 50,000 barrels a day to 450,000)
and thence to the higher-priced East Coast markets. All
of this, too, could be carried in foreign-flag tankers.

During last winter's fuel shortage, Amerada Hess was
permitted to increase its imports of heating oil by 6
million barrels. (Questioned by the Washington *Star*,
H. W. McCollum, board chairman, denied that the com-
pany received this favoritism because he and other
executives had given Nixon's campaign $50,000 in 1972.)
But since the government didn't specify where Amerada
Hess had to sell its precious cargo, the company sold

most of it on the East Coast market and allowed virtually
none at all to go to the much harder pressed Central
states. With that kind of commercial consistency directing
the Alyeska companies, politicians from the Central
states are understandably leery of any vague promises
of "fair play" in the marketing of the Alaskan oil. They
feel that if it isn't piped right to their front door, across
Canada, they probably won't get any of it, or at least
none at a fair price. And they're probably right.

(2) Another likely reason why the Alyeska companies
are pressing for the trans-Alaska route is that if the trans-
Canada pipeline came first, the environmentalists would
be in a strong position to argue against ever building
across Alaska. The companies want to forget the trans-
Alaska pipeline now because once they spoil the virginity
of the region in that way, it will be much less difficult to
persuade the public that doing it "just once more" some-
where else—either through another pipeline or lots and
lots more drilling—wouldn't spoil the state's purity more
than it had already been spoiled.

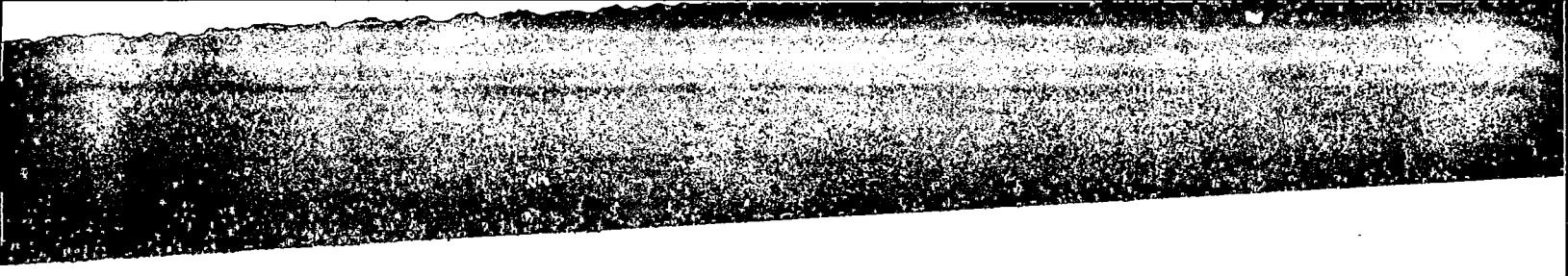
One thing is certain: the Alaska pipeline is just the
beginning of the environmental despoilment the oilmen
have in mind. There are at least ten promising sedimen-
tary basins in Alaska that they want to get their drills
into. As for the Continental Shelf around Alaska, the
Oil and Gas Journal (February 28, 1972) describes it as
"an untested but challenging province that some day
should yield billions of barrels of oil." In the Arctic Is-
lands, oil experts estimate, there is a reservoir with at
least 5 billion barrels of recoverable oil, which would
be worth, after all expenses, at least half a billion dollars
at today's prices. Hickel, no doubt using estimates sup-
plied by the oil companies, sees 100 billion barrels of oil
coming out of the Arctic. But the International Petroleum
Encyclopedia of 1972, an industry publication, is even
more optimistic: ". . . crude oil potential of the Gulf of
Alaska Tertiary province is 40 billion barrels, the Depart-
ment of Interior disclosed in 1971 estimates. This com-
pares with 125 billion barrels for the North Slope. Interior
also says there are 120 trillion cubic feet of natural gas
and 22.2 billion barrels of natural gas liquids possible
there."

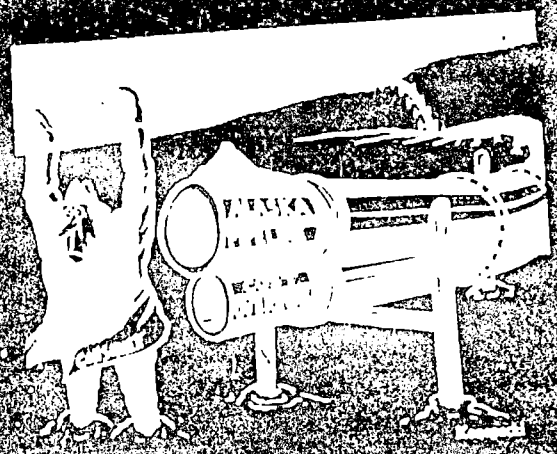
Any way you add up those dizzying figures, they come
to a situation which makes the oil companies lust. But
they want their long-term investments to be made with a
guarantee of easy access. They want to be rid of the
pesky environmentalists. They want to drill and pipe and
gouge and ship wherever they want, whenever they want.
And the best way to guarantee that this can be done is
to "take out" all areas of the Arctic with pipelines, from
which there can be no environmental retreat.

And, in turn, the best way to force the pipelines
through the wilderness is to intimidate the U.S. public
with fuel oil and gasoline shortages. The strange things
to be done 'neath the midnight sun will have their prob-
able beginnings in these even stranger shortages, which
are being concocted in the U.S. market right now. When
motorists drive up to the gasoline pump and find it empty,
or full of "emergency" felony-priced gas, they may begin
to discount the value of untouched tundra and healthy
caribou. At least that's what the board-room executives
are betting their B.P. on. □

PROMISES AND BETRAYALS

THE TRANS-ALASKA PIPELINE

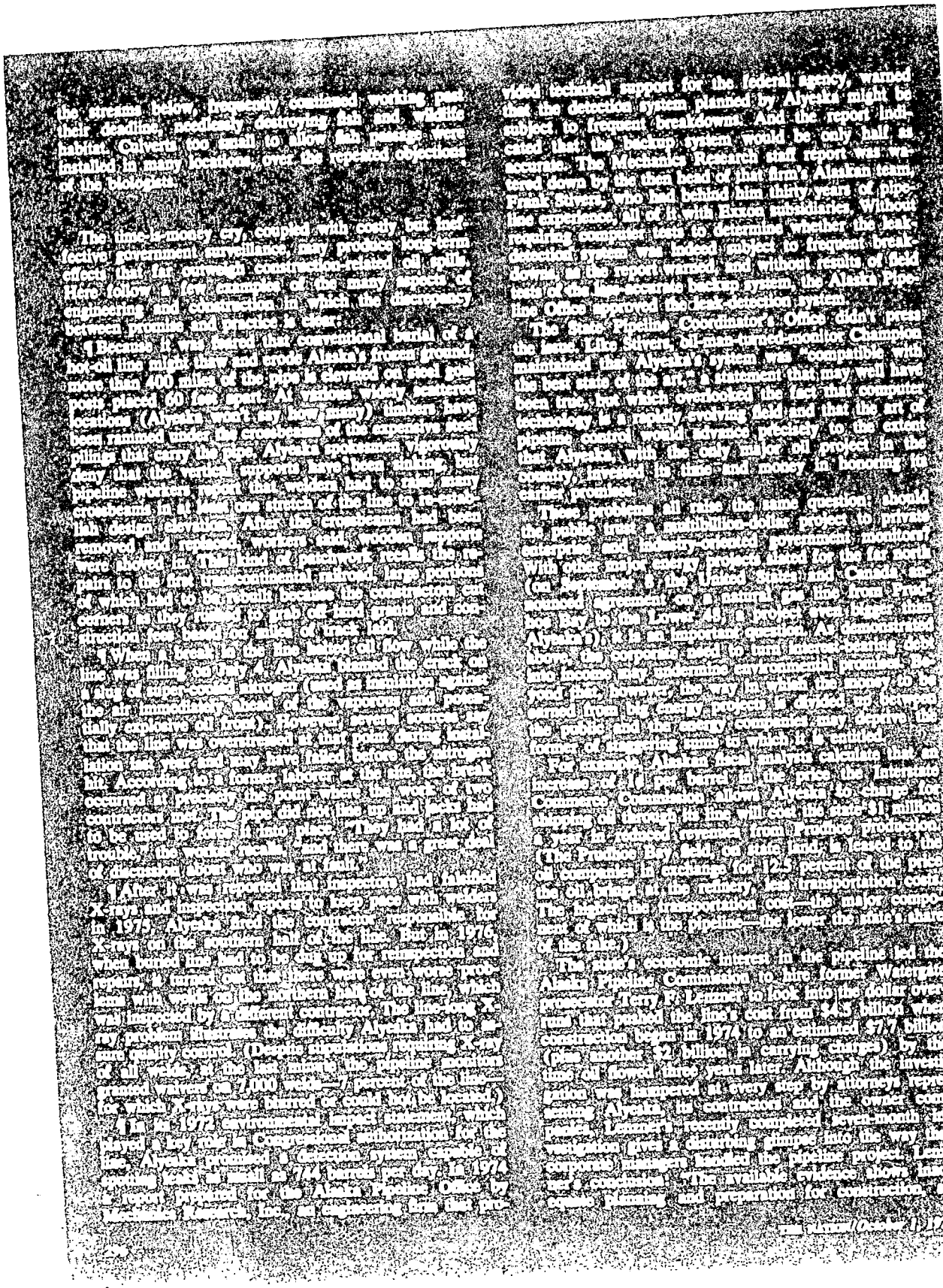




advised of a spill. During thirty-eight months of continuous operation, there were more than 300 such reports, were issued. But the number of spill-reporting enforcement actions fell apart in June 1975, when Alyeska put out an apparently routine report about a spill from a broken field line beneath the Galbraith Lake airstrip in the Brooks Mountain Range, 190 miles north of the Arctic Circle. Although virtually all of Alyeska's spill reports before and since had given an estimate of the amount of oil involved (usually a few barrels), the report on the Galbraith spill did not provide a figure for the discharge. Galbraith was perched at the summit of a 4,000-foot mountain. Not only was the Galbraith spill the largest on the project to that date, the sum of all spills reported on the project up to then was only 53,000 gallons.

According to the official tally, 360,000 gallons of oil and petroleum products were spilled on or near the right of way during construction. Evenly distributed, that would come to 700 gallons per mile, or slightly more than a pint for every foot of pipeline. And Alaska Commissioner of Environmental Conservation Ernest Mueller believes that realistic total—including all unreported and underreported spills—would top 1 million gallons.

Where, then, were the state and federal pipeline monitors, who ran up a $30 million bill patrolling the right of way? Although the construction agreement between Alyeska and the state and federal governments prohibited oil spills and gave the latter authority to halt work if Alyeska did not prevent them, the department chiefs, if Alyeska did not prevent them, the department chiefs, if Alyeska dumped petroleum products into a stream, flood by an Alyeska dumper, petroleum products into a stream, flood by an Alyeska dumper, petroleum products into a stream, flood by an Alyeska dumper,



ineffective management structure characterized by confusion and unclear lines of responsibility and authority, and a willingness to sacrifice prudent business judgment to political expediency."

Among Lemmer's findings:

¶ In a subpoenaed interview, Alyeska's Peter DeMay, vice president for construction, said the corporate owners ignored Alyeska's repeated recommendation that more money be spent for critical planning in the early stages because the companies wanted to avoid the appearance of being irrevocably committed to construction of the line while still awaiting Congressional approval. DeMay told Lemmer: "Political atmosphere [the owners] didn't want to make it appear they were going ahead with the project full blast while they were having all these problems in Washington."

¶ Contrary to Lemmer's belief that poorly planned, ill-executed field work largely screened by Alyeska as a result of inadequate performance standards and to establish an effective contractor cost incentive system, warehousing and inventory control were poor. Materials and contractors frequently ordered were not fully inadequate and construction equipment already mobilized in remote locations, at a cost of tens of millions of dollars, was left idle for months.

¶ Evidence of lack of cost consciousness by Alyeska's owners is Alyeska's decision to spend millions of dollars to purchase [pipeline coating] equipment that was tested and found to be inappropriate for Alaskan use, and pay additional millions for another inappropriate type. According to Lemmer, purchase of yet a third type, according to reporting after reporting the problems with the second type, (unnamed sources in Raytheon), ARCO, Lloyd C. Foy (unnamed sources in Alyeska construction boss Moore added in his memo to Alyeska construction boss Moore will not only be well to destroy this report [to the owners] but will go on to be well to destroy this report [to the owners] but will go on to be well to destroy this report [to the owners] but will go on to

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The Great Alaska Pipeline Controversy

It's the No. 1 conservation flap of all time, and so far there are no winners—to the agony of our biggest state

By Paul Friggens

Four years ago, word flashed round the world that there was black gold buried deep beneath the desolate permafrost of Alaska's North Slope, a 1000-mile-wide wilderness that gently descends the 150 miles between the Brooks Range and the Arctic Ocean. In the flat, featureless tundra near Prudhoe Bay, oil companies had tapped one of the world's greatest energy reserves—conservatively estimated at 10 billion barrels of oil. Soon more than 3000 men were laboring in round-the-clock shifts in isolated drilling camps. Nearly 80 wells were drilled, many at a cost of $2 million to $4 million apiece, as the oil companies gambled some $2 billion in exploration and drilling rights. Alaskan business boomed.

But today the great Alaska oil rush is stopped dead. The towering oil rigs on the North Slope are "stacked," the derrick lights dimmed, and fewer than 300 men, mostly caretakers, remain in the frigid ghost camps to guard mountainous piles of pipeline and silent fleets of bulldozers and trucks. Shutting down everything, the oil-company men have quietly packed their bags, leaving behind bankrupt airlines and drilling-supply firms, soaring unemployment and welfare rolls. "Already," says Alaska Gov. William Egan, "because of the pipeline delay, the state stands to lose $1.2 billion in expected oil revenues, and Alaskans themselves have lost additional hundreds of millions." Each year now, the state budget requires deficit financing to the tune of $100 million.

What happened? What brought the great boom to a halt?

Pipe Dreams. Sitting atop one quarter of the nation's proven crude-oil reserves, the oil companies have been locked for more than three years in a struggle with conservationists over construction of an 800-mile pipeline to bring the oil to market. Alaska has become the nation's No. 1 test case for the future of our natural resources, pitting free enterprise against the nation's growing environmental concerns.

As originally blueprinted, the 48-inch-diameter pipeline would cost about $1 billion and extend from Prudhoe Bay on the Arctic Ocean southward to the ice-free port of Valdez on the Gulf of Alaska. There, huge new oil tankers, ranging up to 250,000 tons in size, would load for West Coast cities. The pipeline would traverse some of the wildest, most environmentally sensitive country on earth—frozen tundra, three rugged mountain ranges, 70 streams and rivers, one earthquake zone. It would have to carry oil at 140° F. across 400 miles of permafrost without melting it, and be routed to avoid serious damage to delicate tundra and wildlife.

Altogether it would be the biggest non-government construction project in history—so big that seven major oil companies organized a giant consortium, Alyeska Pipeline Service Company, to build it. The companies prepared to mobilize from 8000 to 10,000 men and a vast armada of machines, and confidently predicted that Alaskan crude oil would flow to market in 1972—at first at a rate of 600,000 barrels a day, eventually at 2 million.

But the pipeline wasn't built.

There were two unexpected roadblocks. First, in a flood of lawsuits, Alaska's emerging natives—some 60,000 Eskimos, Indians and Aleuts—laid claim to virtually all of the great state's 375 million acres, effectively blocking the granting of any pipeline right-of-way permit. Finally, Congress, in December 1971, voted Alaska's natives nearly $1 billion in cash and 40 million acres of land, and settled that matter.

The second roadblock was the conservationists. When the oil companies planned the engineering of their giant pipeline in 1969, they complied with the then-existing environmental stipulations. But environmental concerns were rapidly growing. Congress, later that year, enacted a new and stricter law, the National Environmental Policy Act. Then, in March 1970, three small but powerful conservation groups—the Wilderness Society, Friends of the Earth, and the Environmental Defense Fund—charged in court that the pipeline didn't meet the new standards, that it would lead to "irreparable" environmental degradation of a significant part of the "last great wilderness in the United States." They cited adverse effects that the pipeline would have on plant and animal life along its route, and claimed there would be disastrous oil spills caused by earthquakes and tanker accidents. In April 1970, the conservationists were granted a

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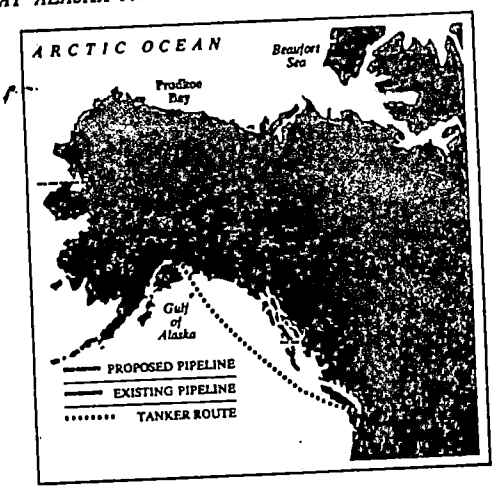
temporary injunction enjoining then Secretary of the Interior Walter J. Hickel from issuing a construction permit.

Back to the Drawing Board. Halted by the court action, Alyeska took a new look at its pipeline. There was no question but that a line built without due concern for the environment could result in irreparable damage. As Max Brewer, a distinguished scientist with 21 years' arctic experience, told me, "The oil people are used to engineering pipelines as they go, but this can't be done in the complex, inhospitable arctic." Even so, eager to exploit their discoveries, they had plunged ahead with their design. Privately, some oil people admitted that they had underestimated the task.



To meet the stricter government standards, Alyeska has since expended some $350 million in massive new pipeline engineering and environmental studies. Ferrying drilling crews into the remote area by helicopter, in bitter arctic winter and mosquito-infested summer, for example, it has taken nearly 18,000 soil samples along the pipeline's route. In addition, the Interior Department has made a two-year-long, six-volume environmental-impact review costing more than $9 million. A multitude of federal and state agencies, universities and research institutes and consultants have been involved. Probably no private engineering project in history has been so exhaustively examined.

As a result, much of the pipeline has been re-engineered. Today, wherever necessary, the plan is to route the line to avoid unstable ground and geologic hazards. If or when it is completed, about half the line will be insulated and elevated on steel piles or gravel ledges to avoid melting the permafrost, and a few buried miles of pipe will be refrigerated to keep the ground frozen. The other half will

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be buried in rock or freely draining gravel or sand. Where it crosses rivers and flood plains, the pipe will be concrete-coated and anchored deep to prevent pipe damage resulting in environmental damage.

Because earthquakes are a hazard, engineers have designed the pipeline to sustain a horizontal movement of 20 feet, and three feet vertically, without rupture. The entire line will be continuously monitored from a computer-control center at Valdez. Remote-control cutoff valves will detect any pressure changes and seal off the line on both sides of a leak or rupture within minutes. To prevent ocean oil spills, the crude will be carried in new, super-safe, U.S.-built ships, and no dirty ballast will be dumped at sea. Alaska has just passed a tough new oil-pollution law and promises "strict regulation."

With similarly unprecedented precautionary measures, Alyeska seeks to protect fish and wildlife. At Prudhoe Bay, I saw a 10,000-foot-long, simulated pipeline, designed to be tested on migrating caribou. The caribou grazed contentedly among the oil rigs and were free to wander through the line's convenient overpasses and underpasses. Biologists have located and mapped the nesting sites and breeding grounds of rare bird species and mountain sheep along the pipeline route, and have catalogued the habits of the salmon and grayling during spawning. Construction timetables will be set so as not to disrupt them. Though the cost of the pipeline has ballooned from nearly $1 billion to over $3 billion, the nation's biggest conservation controversy appears to have paid, for the ecologists, large dividends.

"A Model for the World." The basic conflict, however, remains unresolved. Last May, after months of deliberation, Secretary of the Interior Rogers C. B. Morton indicated his intent to issue a permit for the pipeline. He declared it to be "in the national interest," and stressed that Alaskan oil would offset the need for foreign oil and increase the U.S. tanker fleet operating on the high seas. Morton conceded that there would be "some environmental costs and risks," but gave assurance that possible damage would be protected against by extraordinarily rigid government stipulations.

Morton's decision was widely welcomed in Alaska. Says Walter Hickel: "Four years ago, neither industry nor government had the requisite knowledge to build a line in the arctic. Today the trans-Alaska pipeline can be environmentally safe and a model for the world."

All of the state's newspapers, banks and business officials support building the pipeline. They point out that pipeline construction alone will generate an estimated 22,000 new jobs. Then there are the state's 60,000 natives, who look to their $500 million in oil revenues. "The overshadowing consideration among Alaskans today," says the Anchorage *Daily Times*, "is that the pipeline opens the way for a great new era of economic growth."

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Stopping the Flow. Some conservationists, however, are still unalterably opposed to the trans-Alaska pipeline and determined, as one leader vowed, "to use every legal handle we can find to stop it." They don't agree that Alaska oil is vitally necessary to our security. They question Secretary Morton's findings. They insist that the pipeline will open all Alaska to exploitation and thus be a threat to the whole of our last great wilderness area.

Most conservationists are not averse to the use of North Slope oil. Instead of the Alaska pipeline, they urge the building of an alternative line from Prudhoe Bay down the Mackenzie Delta, in Canada, to Edmonton, and thence into the United States at some point in the Midwest. But oil companies, state officials and Interior Secretary Morton sharply disagree. They argue that the Canadian line's greater length—2200 vs. 800 miles—would pose additional environmental hazards, and that it would cost vastly more (estimates range from $4 billion to $8 billion for construction), involve at least three to five years' additional construction time and thus prolong Alaska's fiscal agony.

Last summer, the conservationists asked the U.S. District Court in Washington, D.C., for a permanent injunction that would kill the pipeline. In August, the court lifted the ban. Now anticipated appeals will probably take the case to the U.S. Supreme Court. This means that the pipeline cannot be completed and oil cannot flow before 1975 or 1976 at the earliest—if it ever flows at all.

Lessons Learned. While Alaska agonizes, and the courts continue to deliberate, what are the lessons for the rest of us in this high-stakes conservation flap? Briefly, these:

- Never again can free enterprise boldly barge in to develop a resource without giving serious concern to the environment. But somehow we must find a balance, a trade-off, through which we can develop our natural resources in an orderly way and look to ecology, too. Warns Governor Egan: "If every great private project were subjected to the same exhaustive scrutiny and costly delay as this pipeline, the nation would face economic stagnation."
- We need more sober, informed discussion about both ecology and economics, in place of so much public clamor and hysteria. This project has nearly been talked to death, while Alaska, with only 300,000 population and unprecedented economic problems, is denied rightful development of its natural resources.

In short, we need better balance and perspective in our thinking. As Walter Hickel observes: "To care for the wildlife and nature, while disregarding the needs of the people, is neither human nor humane. We must have *total* concern."

Be the life of your party—vote. —Jack Herbert

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the dominant defense issues in fact, to the superb work of groups like Mem for Peace Through Law, the Center for tion, the Brookings Institution and SANE occasional *ad hoc* committees consisting ers of the defense community.

...then, take me years to become familiar ...ym and jargon in the defense area, ...the Pentagon's vocabularly as its ...nse against Congressional overkill— ...nclusions I reached regarding ... ...rojects were based on solid evidence, ...owledge of recent history, for example, ...y years' experience on the Hill to ... ...r carrier, CVN-70, will become a fact ...or a place to happen. Similarly, one ... regarding the wasteful concurrency ...d into our Trident program, the ... ...nt of our forces in Europe, the ... ...our three services, and the importance ...do of our support and combat ... ...ent a professional lifetime in the mil...

...mber three is that there are no ... ...s to trimming procurement bills. ... ...es had been bloodied in every ... ...specific weapons systems. Rep. ... ...t second former from Wisconsin ... ...Armed Services Committee, ...charitably came to be called the ... ...Notwithstanding any other provisi... ...he Aspin measure would have ... ...the final authorization and ... ...return to Congress with its plan for ...reduction, if Congress failed to ... ...the Pentagon plan would have ...

...ameyer the amendment had a ... ...me most weapons systems come before ...major authorization, the bureaucrats ...to their birth have long since bec... ...strial and political constituencies in ...hem, and their discontinuation ... ...cities where they are produced. The ...kirted all these problems. It also ... ...ervative budget cutters, who would ...ing to save money except reduce the ...can wipe out the world's population ...amendment passed the House, 242 to ...nsternation of senior Armed Services ... who quite realistically regarded it as ...ence in their handling of this year's ...d one day later, a similar effort was ...enate. As of this writing the Aspin ...ed in conference. I supported the ...t resort, I shall support it again, ... as a last resort. While attractive to ... discussed, the amendment is in my ... a long-range device for reduction ... this false promise that we will ...

...to be able to develop new, costlier and more ... hardware while still keeping tens on the over... ...ths of the defense budget. This is, at best, a dubious ... ...and a signal to Pentagon planners ... Congress is neither willing nor able to apply even ...al constraint to the galloping arms race.

Second, putative savings from such an approach are ... ...to those illusory. Even during the very session in ... the measure is enacted. We are dealing, after all, ... authorization bill. The appropriation process still ... ...ahead. At best, even the House Appropriations ...mittee can be expected to cut somewhere in the ...borhood of $1.5 billion from the amount authorized ... ...entire procurement category. An amendment ... ...ly to money recommended in the authorization bill ... apply an open invitation to the Appropriations Com... ...to consider slashes in actual appropriations much ... ...ld not, should, where it recedes on to its ... ...mount. Moreover, because the dollars freed ... by the amendment ...

...Third, to a Congress in one of the most sophisticated ... ...ly periods in the history of American ... ...ments, which manages to spend more ... ...ense than the rest of the world combined, convert arms ... ...ability. That sort of leeway is unlikely to be ... ...ained in the hue and cry by annual selling amendments ... ...they are likely to impede it. Could even the fer... ...ities of Lyndon Johnson annual budget requests ... ...ssage of any freshman senator's amendment, our ... ...annual battle in committee and floor executive ...sion on weapons while frustrating in the short run ... ...not be abandoned. Again in return to the familiarity ... ...ld, by the time a weapons system is presented ... Congress for its final consideration, the public ...

THE ALASKA PIPELINE

AFTER ECOLOGY, MONOPOLY

...AY GAY KELLY

...two years of hassling over ecology and then over ... ...ty, have obscured another element of the Trans-... ...Pipeline controversy—the restriction of competi... ...ong to be dominated by the three oil giants who control ... ...90 percent of the leased land in the Prudhoe Bay ... ...and more than 50 percent of the $3.5 billion ... ...by which it could appear the move to market ... ...ates vary, but these companies—Exxon, Atlantic ... ...and the British Petroleum-Standard Oil of Ohio ...ation—seem to be proposing a hold on Prudhoe ...ly equal with the United States' proven oil reserves. ... control of both the resources and the means of ...ting it will enable the companies to set the price ... crude oil on the West Coast, where they and Exxon ...ady account for much of the domestic ...ction. Their position if the Alaska pipeline is built ... ...gain, it has already been lost. That is perhaps true ... when the incumbent Administration lines up forcefully ... behind the program and has as its ally an Armed Services ... Committee dominated by pro-military hard liners. Except ... ...in the circumstances contempt, as happened with the ... ABM system, building a national consensus against a ... particular weapons system is a difficult undertaking. Better ... than 60 per cent of the people nationwide are telling Mr. ... Gallup that we are spending too much on defense, ... only a relative handful has even formulated opinions on ... Trident, the B-1 or the CVN-70.

But consider what that figure may soon mean to a ... national administration committed to the reality as well as the rhetoric of arms control. Odds are, unspecific ... that is, against a dozen battles for every issue, those ... who have been fighting each weapon system piecemeal ... request have been creating a political climate conducive ... to unanimous reform.

While it is true that the Aspin amendment ... individual items in the military procurement bill, the ... public clearly regards the whole package as far too big. ... The result, it will mean an increasingly dim outlook ... future national candidates to campaign on cost-cutting ... and increasingly easy fare for rational discussion of ... power and the economics of disarmament.

So I shall continue to vote against programs I consider reckless, wasteful and provocative, and to work against such proposals as a junior member of the House Armed Services Committee. So too, I shall continue to tell the military what I think they should do, rather than what it can do. I shall continue to feel more frustrated than ever with Burkhalter candidates who refuse to decide to advocate common sense in military expenditures. I do not like to vote "present" on any issue. I do not like to find that some of the essential public work that I have done ... [illegible]

...ay Gay Kelly ... ...the Anchorage Times and the Fairbanks News-Miner, is ... ...writing a book on the settlement of Alaska ... ...claims and oil development. ... ...

Crossword Puzzle No. 1510

PUBLICATIONS

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the oil companies first underestimated the North Slope's potential in order to minimize the value of their holdings and to evade the deduction that the proposed pipeline would be only a first step in developing the American Arctic. Now proponents of the Alaska pipeline predict enough oil to justify both this pipeline and a second one through Canada, while conservationists and Midwesterners who want the oil to come to their refineries rather than to those on the West Coast quote a conservative figure to support their contention that it is a question of one pipeline or the other unless more oil is discovered in the Canadian Arctic.

For Prudhoe Bay, center of the most intensive exploratory drilling, the figure generally used by the petroleum industry has been 9.6 billion barrels of crude oil, an estimate made in 1969 by De Golyer and MacNaughton, a respected Texas petroleum consulting firm, for the Cabinet Task Force on Oil Import Controls. Three years later, one of the North Slope giants, ARCO, began talking about 16 billion barrels, but the American Petroleum Institute, the official trade organization of the industry, continued to use 9.6 billion. But while the industry would admit to the existence of only 9.6 billion to 16 billion barrels of oil on the North Slope, others were less conservative. Even De Golyer and MacNaughton upped the figure to 25 billion. This guess is supported by information the Navy recently released about the results of its exploratory drilling after World War II in Naval Petroleum Reserve #4 (Pet Four) to the west of Prudhoe Bay. Prodded by Congress, which is considering legislation to open that 23-million-acre reserve to exploration and development, the Navy admitted that there were probably 14 billion or 15 billion barrels of oil there. The U.S. Geological Survey estimate for Pet Four is somewhat broader—between 10 billion and 33 billion barrels—and USGS's figures for Alaska's ultimate total oil production go as high as 117 billion barrels, a figure that includes other parts of the state. And the 300-billion-barrel figure which Alaskan members of Congress like to quote comes from their optimistic Governor, William A. Egan, and presumably reflects the research of the Alaska Department of Natural Resources.

In any case, there is a lot of oil. In 1971, the country's "proven reserves" were only 38 billion barrels. Thus, using the most conservative estimate, 9.6 billion, the North Slope contains about one-fifth of the crude oil reserves. "A junior Persian Gulf," commented Sen. Henry M. Jackson (D., Wash.), whose Senate Interior Committee spent the spring tackling legal obstacles to the construction of the Alaskan line, in the course of which members considered and rejected ways to regulate the ARCO-Exxon-British Petroleum bonanza.

The oil companies acquired roughly two-thirds of their leases on the North Slope before ARCO announced in 1968 that it had found commercial quantities of oil at Prudhoe Bay. And these leases were had at quite a bargain—the $900-million lease sale in 1969 brought the state of Alaska almost ten times what it had made from all twenty-two previous lease sales, including three for land on the North Slope. Most of the leases acquired before 1969 are held by Exxon, ARCO or B.P., the major partners in the pipeline venture, or by a combination of these companies. B.P. owns or controls leases on about 55 per cent of the Prudhoe Bay formation; ARCO controls 20 per cent; Exxon, 20 per cent. The remaining 5 per cent is held by other companies, including Mobil, Phillips, Union Oil and Amerada-Hess, all of which also own small portions of the proposed pipeline.

After the 1969 lease sale, more companies became involved on the North Slope. Some are major integrated oil companies, like Texaco, Shell and Gulf (which holds its leases jointly with B.P.), but many are so-called "independents"—companies which are not involved in all four phases of the business—production, transportation, refining and marketing.

Obviously, access to the pipeline will influence future lease sales. No company is going to buy a lease without first making sure that it can get the oil to market. Both the state of Alaska, as the real owner of the oil at Prudhoe Bay, and the federal government, as owner of the oil in Pet Four, have a stake here, too.

In addition to holding most of the leases, as far back as 1964, the three major North Slope companies have made a variety of operating agreements which further solidify their control over the resource. The 1964 Arctic Slope Agreement between ARCO and Humble (now Exxon) provided for equal sharing of all exploration and development north of the Brooks Range and east of Pet Four. It further stipulated that neither company would sell its interests without first offering them to the other company. In 1968, B.P. became the beneficiary of this agreement when ARCO acquired the Sinclair Oil Co. which, with B.P., held a substantial number of joint leases on the Slope.

Exxon, ARCO and B.P. have also negotiated a number of unit operating agreements to insure the efficient development of Prudhoe Bay. Unitization, which is not unusual, involves pooling equipment and prorating profits and dry-hole losses among all the participants, according to individual acreage and reserves. In view of the cost of exploration and development in the Arctic (ARCO sank $4.5 million into its first well, Susie Unit #1, before deciding in January 1967 that it was a dry hole), unitization is economically wise. It is also a way to conserve the resource. However, as Lamont observed in a letter to Sen. Floyd Haskell (D., Colo.), a member of the Senate Interior Committee, "the situation is entirely different when unit agreements between these major companies could cover one-fourth of all United States proven reserves."

The Alyeska Pipeline Service Co., which proposes to construct the 48-inch, hot-oil pipeline from Prudhoe Bay to Valdez, an ice-free port on the Gulf of Alaska, is owned by seven oil companies. This, too, is not unusual. Most U.S. pipelines are owned by one or more oil companies. ARCO and B.P.-Sohio each owns 28.1 per cent of Alyeska; Exxon owns 25.5 per cent; the rest is divided among Mobil (8.7), Phillips (3.3), Union Oil (3.3) and Amerada-Hess (3). As projected, the pipeline has a top capacity of 2 million barrels a day. It was designed with the API's 9.6 billion barrels in mind. (Its capacity can be increased by converting the single line into a pipeline "system.")

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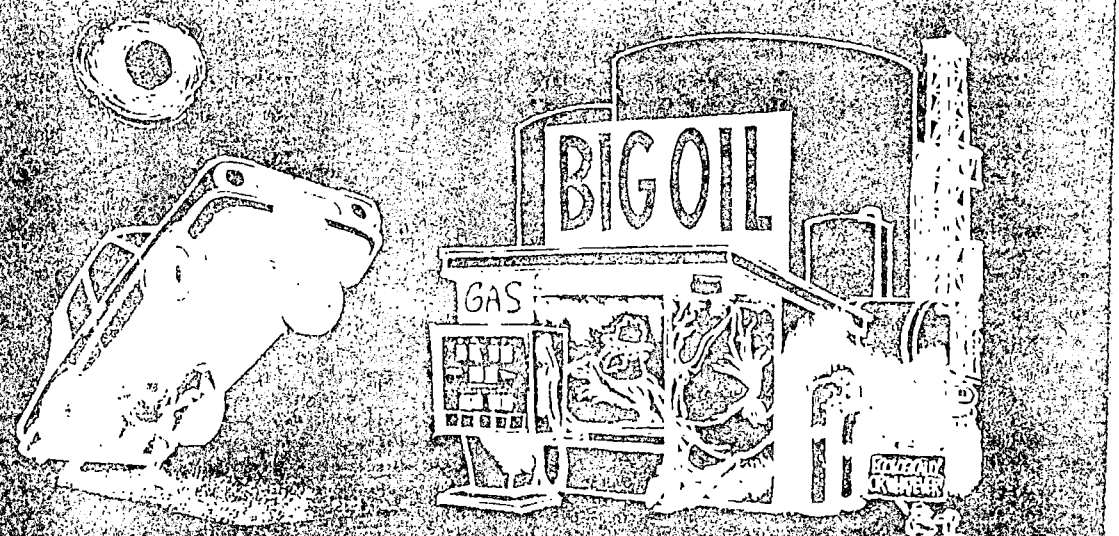
[illegible] to the pipeline. The way
it works is described in detail in the June 1973 pre-
liminary FTC staff report on the commission's investiga-
tion of the petroleum industry, and referred to some
members of the Senate last summer. The report says:
"Through the pipeline system, crude oil is transported
at a low, constant, low-pressure (about a 7-mile
per hour) rate. Each batch of crude only moves there
is flow in the line for it, and then line pressure must
be increased or decreased to adjust for the desired flow
rate. The scheduling of pipeline input is very complex
and must be worked out in advance of the shipment-
because of this process, an independent crude producer
may have great difficulty in securing a place in the
line, especially if he does not have storage facilities at the
making station and/or has a relatively small amount
to ship."

The FTC concluded that these arrangements con-
stitute a barrier to competition in two ways: producers
who do not own pipelines can run out of room in the
pipeline and they could be excluded from or limited in their use of the pipeline.
Certain provisions in the Hepburn Act of 1906 which
made oil pipelines "to be common carriers only" subject to
Interstate Commerce Commission regulation. However,
the Commission clearly gave the ICC less power over oil
pipelines than over railroads or gas pipelines. In fact,
the ICC works closely with the API to set rules and
policies governing the regulatory process. Executive
Secretary of the ICC noted in a 1968 report that "a
continuing problem for the
[illegible] owners of pipelines (the company
owns, controls or has a substantial interest in the
pipeline) is the independent producers and re-
fining actually pay the transportation charges. Further-
more, pipeline owners only employ a variety of interesting
devices designed to fix or limit the use of their pipe-
lines by independents, including [illegible] charges
and limited storage facilities."

For example, the Colonial Pipeline, a petroleum
products pipeline from Port Arthur, Tex., to New York
City, is owned by Texaco, one of its owners, with Colonial-
owned facilities and a 60-mile feeder pipeline from
Texaco's Venice, La., refinery to the main pipeline. But
Transcontinental another Louisiana refinery, which did not own
a share of the pipeline, is to build its own storage facilities
and a 120-mile feeder pipeline to a feeder point at Co-
lumbia, Miss., even though the second refinery was only 50
miles from the Texaco facility, half the distance to Co-
lumbia. This, plus some other financial juggling, ultimately
meant that the transportation cost to New York was
20¢ a barrel for Texaco and 40¢ for the other company.
The System, as Rep. Donald Fraser (D., Minn.) re-
marked recently, is as if "General Motors owned the
Interstate Highway System and charged a special toll for
all cars that it did not manufacture."

Pipeline abuses were among the antitrust violations
which led in 1911 to the dissolution of the Standard
Oil Colossus. However, the individual companies which
rose from its ashes went right on using control of
pipelines to limit competition. In fact, pipeline abuses
were among the violations that formed the basis for
the Federal government's omnibus "Mother Hubbard"
antitrust suit against all the integrated oil companies
and the API, a suit that was dropped in 1940 so that
it would not interfere with the industry's war effort. Al-
though portions of this case were eventually resolved,
the government decided that it was unable to originally
conceived (there were more than 100 defendants) and
pipeline abuses have continued unabated.

Above and beyond this common practice, the Alyeska
pipeline is to be what is called an "undivided interest"
line. That means, in effect, that the pipeline is controlled
as if it were a private pipeline owned on the books of



UMI

at 12 and heard a report of border skirmishing.

Back to Moscow: The Nation's correspondent in Israel

each of the seven oil companies involved in the venture. Each company owns a subsidiary which operates a theoretical pipeline with a capacity equivalent to the percentage of its ownership of the Alyeska line. BP-Sohio will own a pipeline able to move 562,000 barrels of crude oil a day across Alaska, so will ARCO. Exxon's pipeline could move 510,000 barrels. The other four pipelines would be much smaller. Under this arrangement, an independent shipper must use the facilities of one of the owners and should his shipment be more than that pipeline owner is willing to handle, he must approach the other owners. It is a cumbersome, time-consuming process and one conducive to industrial bullying.

Added to their holdings in California, including newly discovered fields in the Santa Barbara area, the Alyeska arrangement will give the three major North Slope companies control over about three-fourths of the proven reserves of Alaska and California. Accordingly, they will control the prices of domestic crude on the West Coast. M.A. Adelman, professor of economics at M.I.T. and an authority on the cost of crude oil production, has stated that North Slope oil can be produced and delivered on the West Coast for less than $1.20 a barrel. (This figure does not include Alaskan severance taxes, which are the subject of substantive current litigation.) However, crude oil from Alaska's Cook Inlet was selling for $3.67 a barrel in Los Angeles in 1970, and North Slope oil is expected to bring anywhere from $3.85 to $4.22 a barrel. It is no wonder the oil companies were reluctant to build their pipeline through Alaska rather than Canada. Imported crude oil will be cheaper (for a time now), but Exxon and BP are vast international companies and are able to prevent it from competing with domestic oil for the West Coast market.

Even if Alaska's forecasts of reserves are not as great as Governor Egan's optimistic 300 billion barrels, Prudhoe Bay and vast undrilled reserves along the Gulf of Alaska remain to be tapped. It is clear that the companies which dominate the Alaskan oil fields will soon dominate the country's domestic supply of oil, unless the federal government, Congress or the courts intervene.

In late 1969, after the details of the various operating agreements among the partners in Alyeska, Exxon's vice president for the Trans-Alaska Pipeline System were revealed, the Justice Department began a preliminary investigation into the matter, the result of which, TAPS was organized. By February 1970, the investigation was far enough along for the department to inform Interior Secretary Walter J. Hickel, who was about to approve construction of a portion of the pipeline system, that TAPS had antitrust problems. Native and conservationists' lawsuits subsequently prevented Hickel from issuing the necessary permits, and both the Interior and Justice Departments devoted their time to resolving the legal obstacles raised by these suits. In the summer of 1970, TAPS reorganized as Alyeska. The next year, the Justice Department issued a series of civil investigative demands—that is, administrative subpoenas—which were approved by Asst. Atty. Gen. Richard W. McLaren's office. However, in August 1971, Atty. Gen. John N. Mitchell shut down the investigation, reportedly with the comment, "In view of what is going on, this is not the time." After Mitchell's veto, the Justice Department sought voluntary submission of certain information from the owner companies and solicited pledges of cooperation, but few, if any, the investigation is now apparently in limbo.

This year, while considering legislation to speed construction of the Trans-Alaska Pipeline, the Senate was presented with a variety of proposals designed to discourage anti-competitive practices in the petroleum industry. These ranged from requirements that the Alyeska owners divest themselves of their pipeline to legislation outlawing the vertical integration which makes oil companies so profitable. The proposals came in the wake of a short-term energy crisis in certain areas of the country and publication of the FTC report. However, Senator Jackson, who was managing the Trans-Alaska Pipeline bill on the Senate floor, was adamant about the need for getting it through Congress quickly and was threatening its chances with cumbersome and unpopular provisions. So the Senators who had proposed these amendments—Hart, Hatfield and Frank E. Moss of Utah—withdrew them. All have since been introduced as separate pieces of legislation.

Hart, who is antitrust and monopoly subcommittee already does so much work in this area, plans full hearings this fall on what he calls the "structure problem" of the industry. Senator Jackson has asked the Senate permanent subcommittee on investigations to look into the allegation of anti-competitive practices contained in the recent FTC report. Both Hart and Rep. Robert W. Kastenmeier of Wisconsin have asked the Attorney General to furnish the Justice Department's Alyeska investigation. And Hart has also asked the FTC to look into the Alaskan situation.

The federal government has taken a first step against the oil giants, although it may be years before it produces any positive results. On July 17, the FTC filed the first complaint of its sort, against Exxon, ARCO, Mobil, Texaco, Gulf, Standard Oil of California, Standard Oil of Indiana and Shell, charging them with having combined or agreed to engage in anti-competitive practices to monopolize the refining of crude oil into petroleum products and maintain a non-competitive market structure in some parts of the United States.

Hart was jubilant on July 17. "I feel like we won the Irish Sweepstakes," he told a reporter. Meanwhile, his subcommittee will consider a variety of bills, including one to prevent a company from engaging in more than one of the four aspects of the industry. The Hart amendment Moss tried to attach to the pipeline bill the day before the FTC filed its complaint.

Hart, like a small but growing number of Senators and Congressmen, believes that monopolistic practices are a major cause of the short-term energy crisis. For my part, I've said of the withdrawn Moss amendment, I have seen enough evidence to convince me that divestiture is the best step to take toward solving the energy crisis. Yet, largely in response to this energy crisis, Congress last summer expedited construction of the Trans-Alaska Pipeline, one more giant link in this monopoly. ☐

BOOKS

Economics:

CORPORATE POWER AN
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VICTOR LASKY

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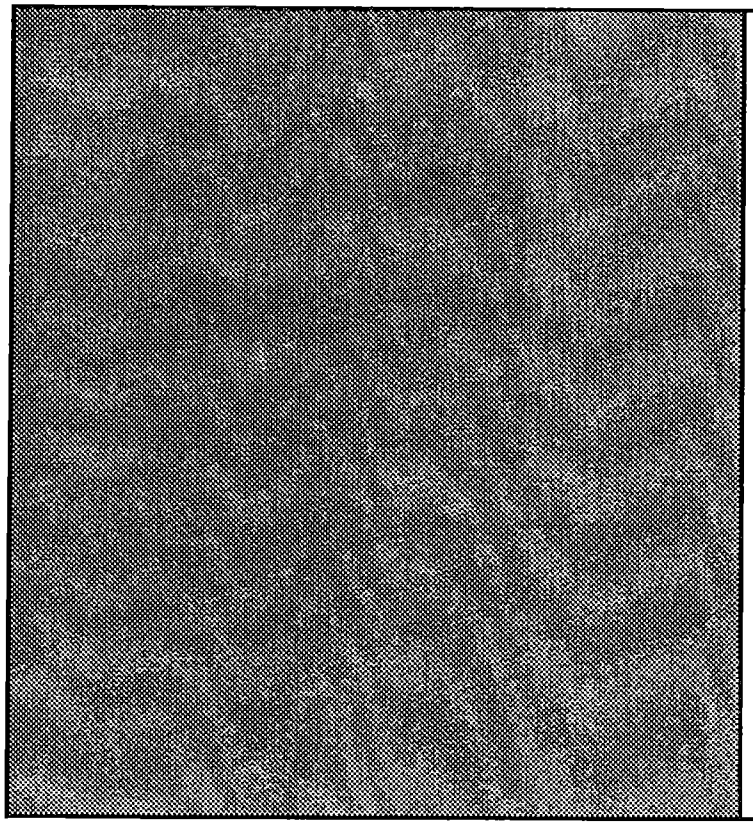
Securing America's Energy Future



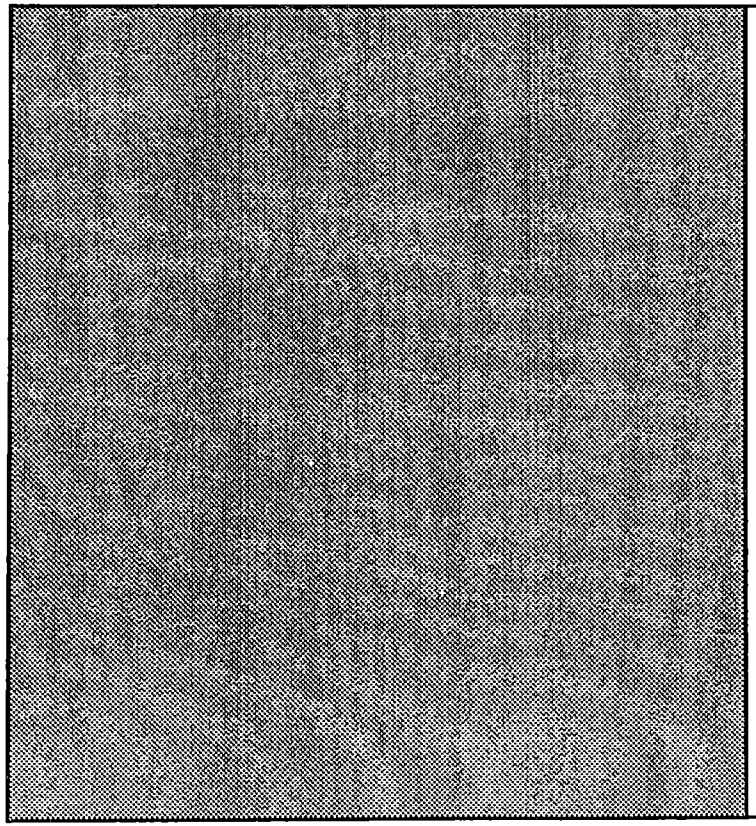
Testimony of

William F. Martin

Before the
Subcommittee on Energy and Power
of the
U.S. House of Representatives

February 27, 1991

Securing America's Energy Future



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*William F. Martin was formerly Deputy Secretary Department of Energy from 1986 to 1988, Executive Secretary of the National Security Council from 1985 to 1986 and Special Assistant to the President for National Security Affairs from 1983 to 1985. Mr. Martin coordinated the Reagan Administration report, *Energy Security: Report to the President* which was published in 1987. Mr. Martin is presently a Partner of Washington Policy and Analysis - A Miller & Chevalier Consulting Group - in Washington, D. C.

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Executive Summary

The Committee has asked some challenging questions to frame the discussion of energy problems and goals at this hearing. Let me summarize my testimony by answering several of them.

What is the outlook for U.S. energy between now and the year 2010 assuming "business as usual ?" U.S. energy demand will grow from about 76 quads of energy today to as much as 95 quads in the next twenty years, based on reasonable assumptions about economic growth (2.5% per year) and oil prices (real oil prices rise from $18 to $25 over the period).

What supply options are available to meet this demand and what level of oil imports will result to balance supply and demand? Over the next twenty years, due to the aging U.S. geological base, domestic oil and gas production is likely to fall. Coal production will continue to meet some 50-60% of electric needs, the higher range being more likely if clean coal technology is deployed. Nuclear power will increase slightly due to plants under construction, but no new orders are anticipated in the near future and, as the nuclear plants now operating reach the end of their useful life and are retired, nuclear's share in the U.S. energy mix will eventually drop. Natural gas demand is likely to increase, stimulated by the provisions of the Clean Air Act. Despite some penetration by alternative fuels, the transportation sector will continue to rely heavily on gasoline. We can expect continued gains in energy efficiency, particularly as turnover of existing stock in industry, homes and autos replace less- efficient older technology. These "business as usual" assumptions lead to the conclusion that available U.S. domestic oil supply will fall far short of demand expectations. Oil imports — the "swing source"— are likely to rise from almost 8 million barrels per day (mbd) today to as high as 14 mbd by the year 2010.

What level of oil imports will other nations require and what does this imply for OPEC production levels? Oil imports are also likely to rise in most nations unless energy policies are substantially adjusted. Production in the North Sea cannot keep pace with European oil demand, which has been increasing due to slowdowns in coal and nuclear power programs. Japan has a national energy program in place to stabilize oil imports over the next twenty years, but to achieve this commendable goal a major effort is required to site new electrical production facilities and to develop alternative fuels and/or constrain gasoline use in a rapidly increasing auto fleet. Developing countries—particularly in East Asia, Eastern Europe and the Soviet Union — are also increasing their oil demand. We expect that under a "business as usual" scenario consistent with the U.S. import levels — cited above, OPEC production may have to increase from 23 mbd today to as much as 40 mbd by 2010. Most of the increase in OPEC production would have to come from the Persian Gulf region. Saudi Arabia, in particular, may be asked to increase its production to between 15 and 20 mbd, roughly 300-400% of its pre-war 1990 OPEC quota.

Is this a prudent level of U.S. oil imports, based on international oil market vulnerability? It is clear that higher levels of oil imports may be more economically efficient for the United States — at least in the short term. Other energy options — both supply and demand — are far more expensive. At the same time, we know that over-reliance on Middle East producers can pose serious national security problems. Concentrating so much of the world's oil production in the volatile Persian Gulf region is unwise; certainly, an OPEC production level of 40 mbd under the business as usual scenario is not in the U.S.' best national interest. Also, Saudi Arabia may have serious and legitimate reservations about more than doubling their present production levels. As demand rises and OPEC production is stretched, we would expect another shock in oil prices. Higher levels of dependency also reduce our foreign policy flexibility as former Energy Secretary James Schlesinger has so eloquently described. Keeping OPEC production at more moderate levels is in both our long term economic and foreign policy interests.

What would be a prudent level of OPEC production and what would this imply for U.S. imports? An overall OPEC level of 30 mbd by 2010 would be more sustainable and prudent. OPEC's major swing producer, Saudi Arabia, would have to expand production to 10-12 mbd, but such a level would not put undue pressure on the Kingdom's large resource base. This level would allow some increase in oil imports for Europe, Japan and United States, as well as developing nations dependent on oil for their economic development. Achieving such a sensible global balance would require that the U.S. import no more than 10 million barrels per day by the year 2010 with comparable commitments by other OECD nations.

Can U.S. oil imports be "capped" at a level of around 10 mbd? This testimony recommends that the U.S. embark on an effort to keep oil imports below 10 million barrels a day (mbd) by the year 2010 which would correspond to an OPEC production level of 30 mbd. The President's National Energy Strategy and recommendations by the Congress suggest that this level can be achieved. Achieving this would require a relatively active (but not excessive) U.S. energy policy to stimulate energy supply options and enhance energy conservation opportunities, based primarily on market forces.

What policies are required? Keeping oil imports at this more reasonable level will require: development of frontier oil and gas reserves, support for clean coal technology, a reduction in gasoline use in automobiles of 20% by the year 2010 through a gasoline tax, more stringent CAFE standards and/or support for alternative transportation fuels, expanded research for energy efficiency technologies and renewable energy sources, redesign of licensing procedures for nuclear power plants, resolution of the nuclear waste problem and greater deregulation of our electric utility sector.

What would be the contribution of individual policy actions in reducing our imports from 14 mbd to 10 mbd? The major contributing factors would be development of frontier oil and gas which could add 1.5 million barrels per day to expected U.S. production levels, and a more aggressive approach to efficiency and/or implementation of alternative fuels in the transportation system yielding a savings of 1.5 mbd. All other recommended actions combined would probably reduce oil imports another 1 mbd. The reality is that to make a dent in our oil imports we need to be fairly aggressive on both adding to supply and cutting demand. Pursuing just one goal without the other will, over the long run, be insufficient.

What is the maximum we could expect to achieve if we launched a major effort to reduce imports? If the United States really wanted to, we believe that oil imports could be kept at today's level of 8 million barrels per day — but this may require unsuitable government regulations inconsistent with market principles and very expensive supply options. Energy insurance is expensive — we should just "buy" as much as we need. Keeping oil imports at a level of 10 mbd will not make the United States totally secure, and certainly not energy independent — but it may be just about the maximum we can afford.

Recognizing that we live in an interdependent worldwide energy market, what steps can the U.S. take to encourage other nations to limit their oil dependence on the Gulf? Our individual energy security is, in reality, a collective security problem which we share with other oil consuming nations. The President and Secretary Watkins should consider promoting an international energy security initiative within the International Energy Agency and at the next Economic Summit meeting in London — calling on all nations to expand alternatives and conserve energy. If other nations fail to adopt comparable energy policies then tough actions we take at home — like opening ANWR or reducing gasoline consumption in our autos — will be negated. Likewise, we can understand why there is so much concern in Europe and Japan about the energy policies of the U.S. We, in turn, through inaction, can negate any gains other countries make in reducing their dependency on the Persian Gulf.

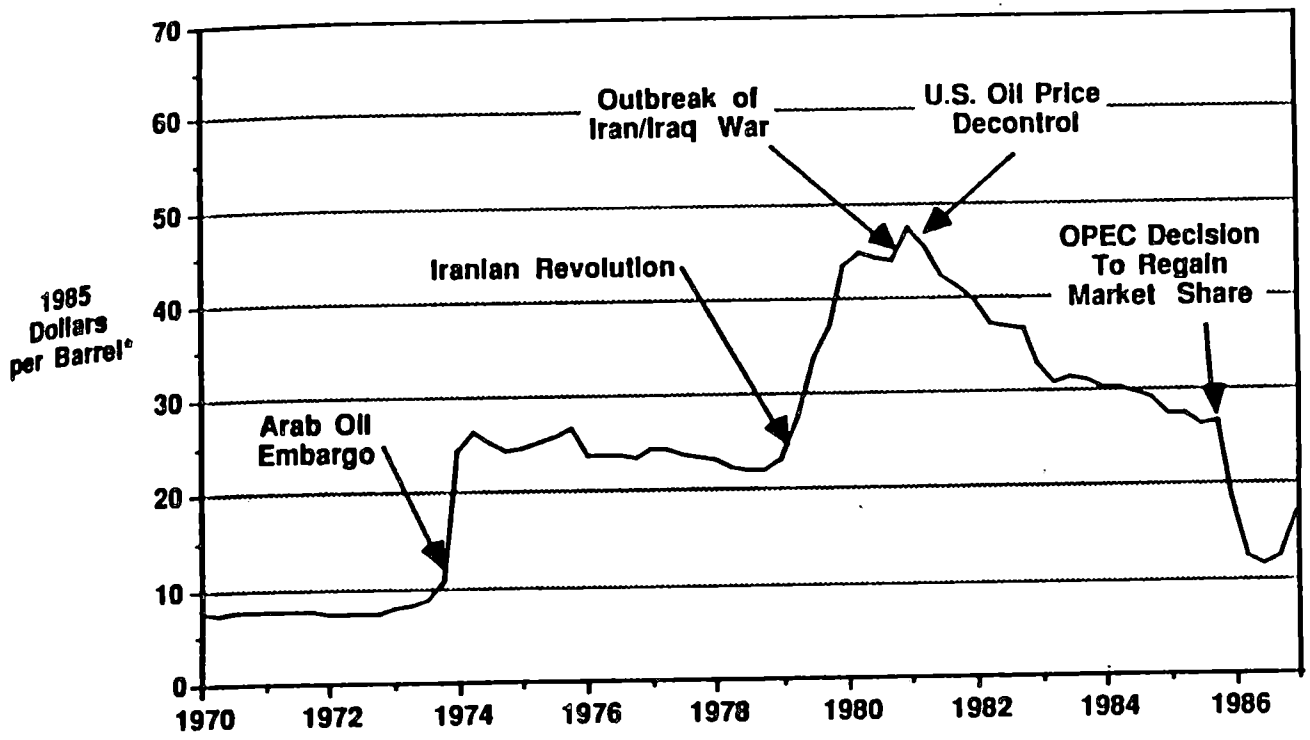
Can we achieve an international coalition for energy security and environment quality for the New World Order? The President has achieved an unprecedented degree of Allied cooperation in the political-military dimension of the Gulf crisis. It would be appropriate and appreciated if the U.S. were now poised to assume a leadership position in crafting sensible international energy and environmental policies.

What added protection do we need in the event of future oil market disturbances? Since even under the best of circumstances worldwide dependence on the Persian Gulf is likely to increase, we should continue domestic and international efforts to build strategic oil reserves. A billion barrel SPR in the U.S., coupled with a billion barrels of reserves by our IEA partners, is an essential goal for our long term energy security.

PART I - RESPONSE TO CRISIS

There have been some important lessons learned in coping with oil market disruptions

Oil Prices Reflect International Events



* Average quarterly cost of crude oil imported by U.S. refiners.

• Today's situation is a reminder of the serious problems the U.S. and other OECD countries encountered in the 1970s and 1980s in securing adequate oil supplies. Revolution, war and a politically-inspired embargo resulted in several major supply disruptions that sent prices sky-rocketing and wreaked havoc on international oil markets in 1973-74 (the Arab Embargo), 1979-80 (the Iranian Revolution) and the Iran-Iraq war (1981-86) and, most recently, in 1990 (Iraq's invasion of Kuwait).

• Oil consuming countries learned some very important lessons from the last two decades:

—*International oil markets are extremely interdependent* — a loss of supply anywhere in the world affects prices for all nations;

—*Energy could be used effectively as a political weapon* especially if the world was caught unprepared; and

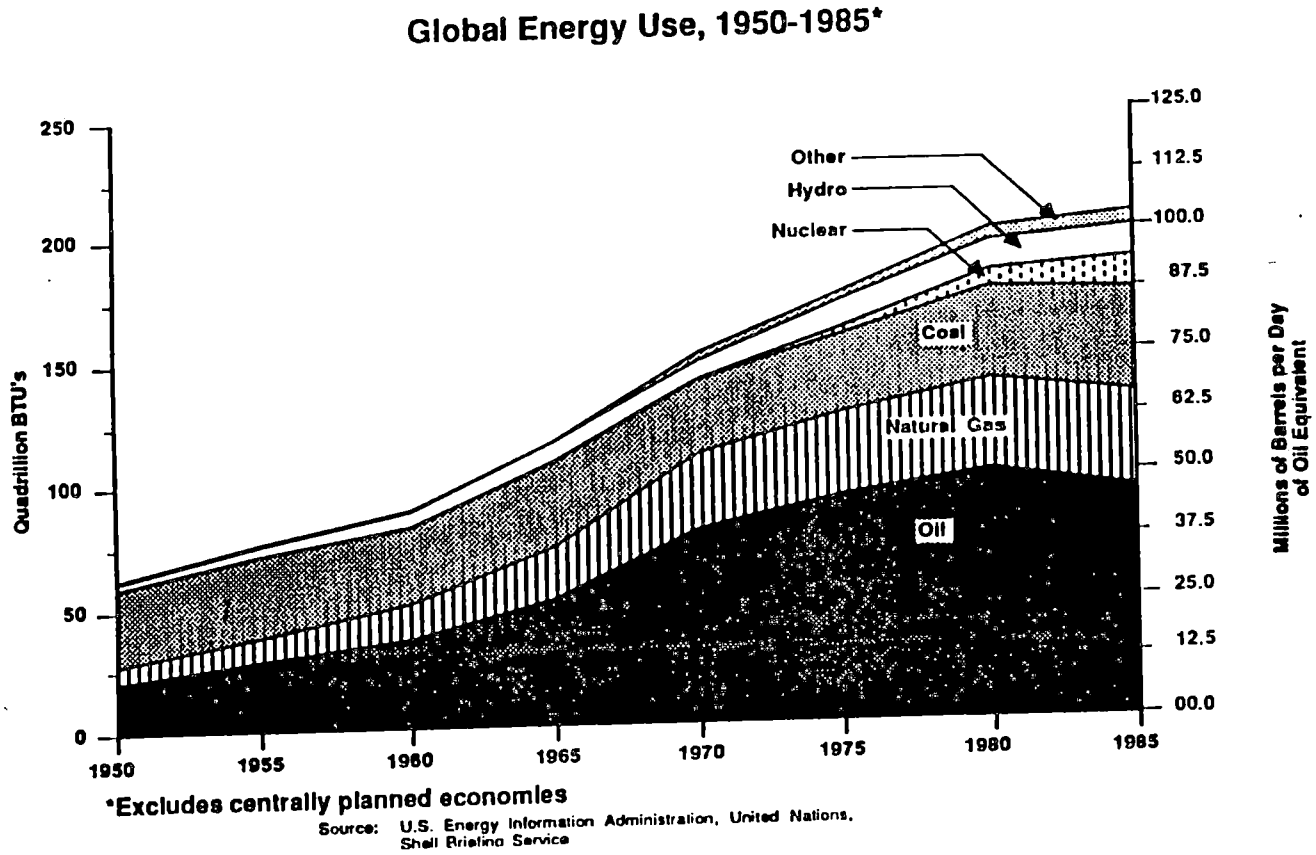
—*Government efforts to control prices and allocate oil supplies* were unsuccessful and led to confusion, tightening supplies and consumer hardship. Allowing market forces to allocate worldwide and domestic supplies and set prices kept world oil markets in equilibrium and minimized price increases.

• The U.S., together with other IEA countries, developed a variety of *oil market strategies* to cope with disruptions including the IEA emergency sharing system, plans to build and coordinate stockdraw in the event of a disruption, and measures to curtail abnormal purchases of crude during times of market disruptions.

• President Reagan's Energy Security study in 1987 and members of this Committee warned that lower prices would encourage greater dependency on oil — increasing our vulnerability to future disruptions — and encouraged action to counter that trend; nevertheless, attention to energy security matters dwindled in those days of cheap, plentiful fuel. As we entered the late 1980s, a sense of complacency regarding energy supply issues emerged in many consuming countries.

• Saddam Hussein's cruel invasion of Kuwait on August 2 altered this situation, perhaps forever, by reminding us our vulnerability had not disappeared and, for the U.S. and other countries, had actually grown worse.

Effective international response — led by the United States — has reduced oil market volatility during the Gulf war



• A combination of factors have brought about a remarkably calm oil market situation, despite real and potential supply disruptions. We have learned the lessons of history well and a number of actions have been taken which have contributed to market stability. These include:

—*Stepped up production* by OPEC nations since last August. The Saudi Arabians, in particular, have contributed to market stability by increasing production by as much as 3 million barrels per day.

—*Lower demand* brought about by economic slowdown fueled, in part, by higher energy prices. OECD economic growth fell below 1% for the last six months, bringing about a drop in oil consumption. Nevertheless "pent up" demand in non-OECD areas could easily erase these gains once the world economy begins to recover.

—*A successful war campaign*, demonstrating that the coalition forces can successfully defend Middle East oil fields.

—*Coordinated release of IEA stocks* and demand restraint by industrialized countries at the outbreak of the war.

—*Timely and accurate information* about oil markets by DOE's operation center have reduced speculation based on rumor.

• Officials of the Bush Administration — the White House, State Department and DOE— should be commended for waging an effective campaign to moderate steep price fluctuations, thereby protecting the U.S. and the world economy from potentially far more damaging price increases.

• As we look ahead toward successful resolution of the war, there will be *downward pressure* on oil prices due to reduced uncertainty and a probable increase in supply, with a good possibility of prices dropping to between $12 and $18 per barrel. Such a development will be well received by a world economy struggling out of a modest regression. At the same time, however, lower oil prices will tend to bring about uncertainty about future energy investment — both to conserve and to develop alternatives to oil.

Despite short term successes our long term vulnerability remains

Danger Signals

- **Falling non-OPEC production**
- **Slow rate of alternative energy development**
- **Increased reliance on Persian Gulf oil**
- **Middle East political instablity**

• Saddam Hussein's aggression is a stark reminder that we cannot afford to take our energy security for granted, now or in the future. Trends that have increased our vulnerability to oil shocks in the past persist and are seemingly irreversible, including:

—*Oil production outside of OPEC is faltering.* With the exception of OPEC countries, most other major oil producers (U.S., USSR, Mexico) have reached their peak and production from traditional sources has leveled off or is in decline. OPEC's share of the oil market, held in check during periods of high exploration and drilling in the 1980s, is once again on the rise.

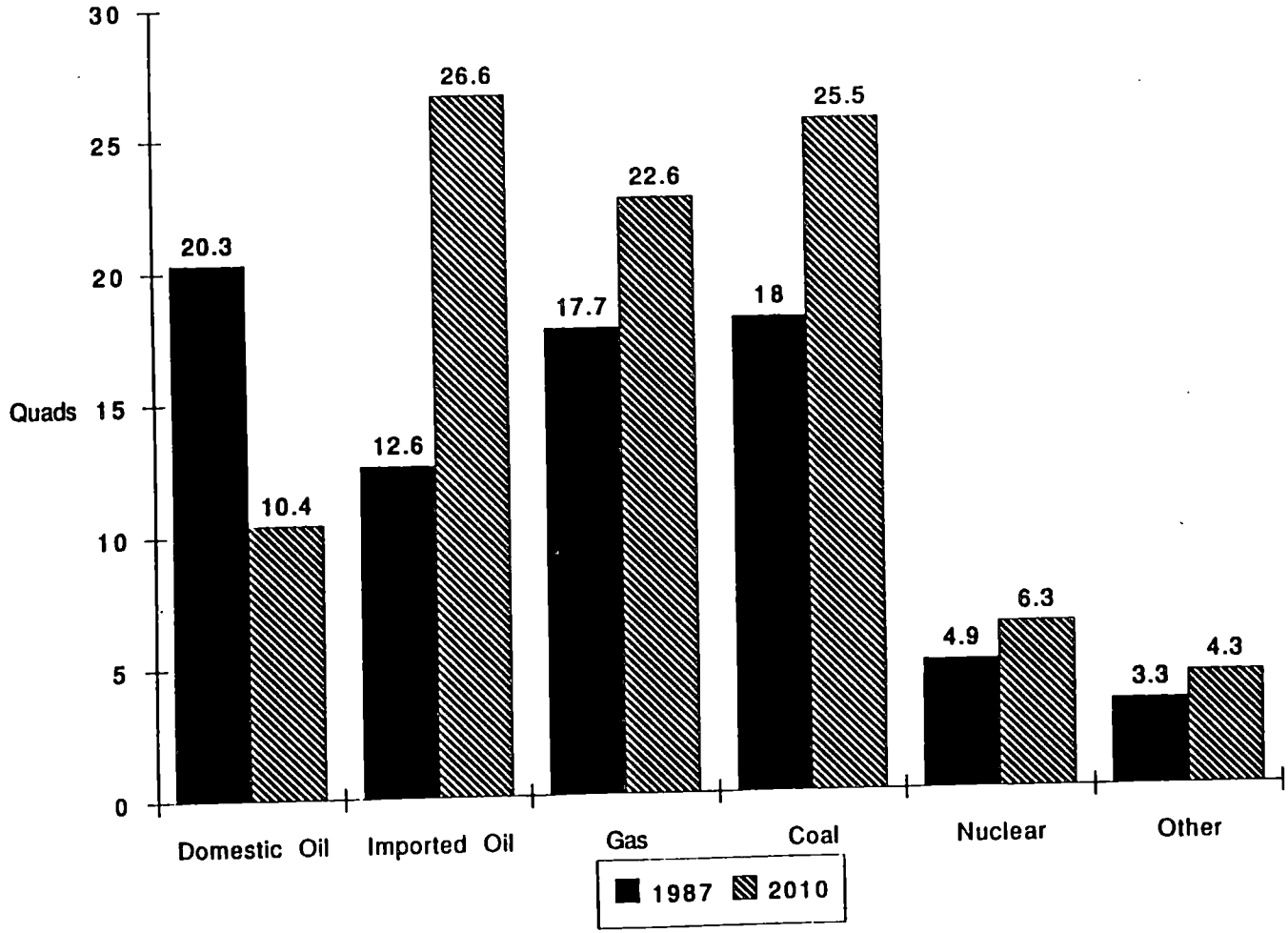
—*Oil reserves are concentrated in the Persian Gulf.* The disruption that we are struggling with today focuses on oil production: Hussein is in control of about 8% of current world oil production capacity. A more ominous fact is that 25% of the world's proven oil reserves are in Iraq and Kuwait. In total, 63% of the world's known oil reserves that can be recovered economically with current technology are in the countries surrounding the Persian Gulf. As time goes on, and non-OPEC production continues to decline, our dependence on Persian Gulf oil supplies will grow even stronger. We estimate that if OECD nations implement "minimal energy policies", OPEC production may have to climb to as much as 35-40 million barrels a day by the year 2010 with Saudi Arabia required to produce some 15-20 mbd.

—*Continued Middle East conflict.* Revolution, wars and other armed hostilities that have affected life in the Middle East for centuries show no signs of abating. In addition to the ongoing Arab-Israeli conflict, the resurgence in Islamic fundamentalism, the use and spread of terrorism, and failure of the UN forces to sustain a peace-keeping mission in Lebanon, Saddam Hussein's tactics are a reminder of two new threats to stability and peace in the region: the growing ability of countries to acquire advanced military technology and the rising dissatisfaction over the gap between the "haves" (in Kuwait, Saudi Arabia, UAE) and the "have nots" (in Jordan, Syria, Iraq, and Yemen).

—*Slow development of energy alternatives.* Fluctuations in the oil price which discourages energy investment, concern over the environment arising from energy production and use, and public skepticism over the safety of nuclear power — could slow the development of alternatives and conservation.

PART II - U.S. NATIONAL ENERGY STRATEGY

U.S. Energy Prospects, 1990-2010: Even with development of alternatives and conservation our oil imports are likely to rise



• The Committee has asked my views on energy supply and demand over the next twenty years. Obviously this depends on many assumptions about economic growth and world oil prices, as well as public policy decisions.

• The pie charts above show my base estimate, based on the WEFA econometric model, which was run using assumptions of economic growth averaging 2.5% per year (roughly the rate of growth we have seen over the past twenty years) and a rising real world oil price from about $18 today to $25 (in real terms) by 2010.

• The results show:

—*Rising demand* for energy from 76 quads to 96 quads by the year 2010. This represents a relatively low energy/GNP growth ratio, signifying considerable conservation.

—*Domestic oil production* is foreseen to drop from 20 quads to 10.4 quads — this assumes continued deterioration of our lower 48 production and no new development in Alaska. If the ANWR reserve can be successfully developed in an environmentally sensitive manner, then perhaps another 3 quads could be added, bringing total U.S. production to around 13.5 quads.

—*An increase in coal production* from 18 quads to 25.5 quads. This reflects the model's assumption that coal remains a competitively-priced fuel for electricity generation. This relatively optimistic projection assumes rapid deployment of clean coal technology, so that emission standards rising out of the newly enacted Clean Air Amendments can be met in a timely and economically efficient manner.

—*An increase in natural gas* from 17.7 to 22.6 quads. This is a modest projection of natural gas consumption arising from greater needs of the utility sector to conform with the Clean Air Act. We foresee a relatively stable supply from the lower 48. Growth in demand is met mainly by expanded imports from Canada, use of existing LNG facilities and a small, but growing, contribution from Alaskan North Slope gas by late in the period.

—*Nuclear energy* is assumed to grow from about 5 quads to 6.3 quads. This assumes that plants under construction come on stream during the period, but that no new orders are forthcoming.

• The bottom line is that U.S. *oil imports* are likely to rise — even in this relatively optimistic scenario — to 26.6 quads or almost 14 million barrels per day by the year 2010.

What is the likely range of worldwide demand on OPEC under different energy policy approaches?

Illustrative Scenarios — Oil Imports In the Year 2010
(mbd)

Scenario	U.S. Imports	Required OPEC Production	Required Saudi Production	Comment
Minimal Energy Policy	12-14	35-40	15-20	Low cost in short term — long term vulnerability.
Bush NES, Congressional proposals	10-12	32-34	12-14	Middle of the road. Balanced between short term costs and long term security.
Aggressive global energy policy	8-10	27-29	8-9	Very expensive but security benefits.

• It is interesting to speculate on the degree of the long term energy vulnerability confronting the U.S. and other consuming nations. To illustrate the scope of the potential threat, we have formulated three long term energy strategies which are "policy excursions" on our basic econometric analysis of long term domestic supply and demand conditions, extended to include international energy prospects and policies.

• *Minimal energy policy response.* This scenario assumes that no significant change in current U.S. or OECD-wide energy policy. The basic strategy is to import oil, relying increasingly on the lowest cost suppliers from the Persian Gulf and protect the free flow of oil, when necessary, with military muscle. Rising OECD oil needs, coupled with growing demands in LDCs, Eastern Europe and the Soviet Union could result in required OPEC production of some 35-40 million barrels per day by the year 2010. OPEC production to meet this level would require Saudi Arabia — the producer with the largest reserves — to increase production to some 15-20 million barrels a day. This is an attractive scenario in the short term because, under normal market conditions, increased oil supply will lower oil prices and fuel economic growth, but the long term security costs of increased reliance on Gulf supplies could be severe.

• *Middle of the Road Energy Policies.* The President's proposals and many in the Congress are a commendable effort to improve our domestic energy situation. Certainly some U.S. resources will have to be expended today to provide for lower imports in the years ahead. However, such a "balanced" approach would probably still lead to U.S. imports of between 10-12 mbd by the year 2010 — a level that many policymakers and analysts feel is too high. Furthermore, OPEC production levels would have to rise to some 30-33 mbd, with Saudi Arabia producing at levels around 15 mbd to ensure that U.S. oil imports do not rise still higher.

• *Aggressive Energy Policy.* The last scenario illustrates that U.S. oil imports could be kept at today's level with a very aggressive "all out" approach which could be quite costly and probably result in excessive regulatory burden. Nevertheless such an approach, coupled with a comparable level of effort from other OECD nations, could reduce our collective long term vulnerability and allow non-OECD nations a greater share of economically priced oil. By keeping our dependence low over the long run, we would also encourage a market environment of lower oil prices.

• *Tough choices.* The ultimate question we face is how much are we willing to spend for security? How expensive do we want our energy "insurance bill" to be? The challenge is to assess the various costs and benefits of energy options and combine them into a meaningful program which carefully balances the price we are willing to pay with the risks we are willing to face. On the next pages I recommend an energy policy which exceeds the moremodest middle of the road approach — while falling short of the most costly, intrusive, aggressive scenario — with an overall object of capping U.S. imports at no more than 10 mbd, implying an overall OPEC production around 30 mbd.

A Ten Point Plan

THE GOAL:

Providing for U.S. Energy Security in a Environmentally-Sensitive, Cost-Effective Manner

STRATEGIES:

- Build our strategic oil stocks and encourage IEA countries to do the same.
- Freeze imports at today's levels.
- Reduce harmful power plant emissions.

TACTICS:

- Maintain a strong domestic oil and gas industry.
- Conserve and diversify energy resources.
- Remove regulatory obstacles to efficient energy production and transport.
- Foster international cooperation, including cost-sharing.

The U.S. cannot afford for national security reasons to import as much as 14 million barrels of oil by the year 2010; at the same time we probably cannot afford the financial resources it would cost to keep imports at today's level. In my view, a reasonable "energy insurance policy" for the U.S. would be to limit imports to 10 mbd. Such an objective would require action to:

- Shore up domestic production of *oil and gas* by providing tax incentives for oil exploration, focusing on field extension and enhanced recovery and allow further exploration in frontier areas (Alaska) and offshore in an environmentally-sensitive manner.

- Encourage greater use of *natural gas* in alternative fuels for transportation and electrical power plants through more timely FERC approvals of transportation routes and timely implementation of the Clean Air Act. Efforts to "modernize" the functions of FERC should be pursued, including the Administration's recommendation that the functions of this agency be transferred to the Department of Energy.

- Reevaluate *nuclear power* in light of growing concern over the greenhouse effect. Encourage research into modular standardized designs, push forward on the contentous nuclear waste issue, streamline nuclear licensing procedures and ensure that regulation results in high standards of nuclear safety.

- Maintain *coal's* important position in the U.S. energy mix while protecting the environment by encouraging the development and rapid deployment of clean coal technology. Joint-country coal research could be pursued under the auspice of the IEA as a cost-effective, efficient way to spur technology development. With regard to global coal consumption, the Administration's proposal to support coal slurry pipelines can help improve the competitiveness of U.S. coal exports.

- Reduce oil use in the *transportation sector* by 20% through implementation of a gasoline tax, enhanced CAFE standards and/or strong support for alternative fuels, especially methanol and electric vehicles. An analysis of the costs and benefits to the overall economy of these alternatives should be systematically performed to facilitate an informed debate. The National Academy of Science study on fuel efficiency is likely to provide a very important contribution.

- Increase federal funding for promising *conservation and renewable technologies*, especially projects where joint industry-government funding is possible and practical. Enlist the talent at our "scientific power houses" — the U.S. National Laboratories — to develop renewable and alternative energy, utilizing joint-country research wherever appropriate.

- Maintain the *tax credit* for renewable technologies.

- Seek greater deregulation of *electric generation* with prudent concern for reliability of service and cost competitiveness.

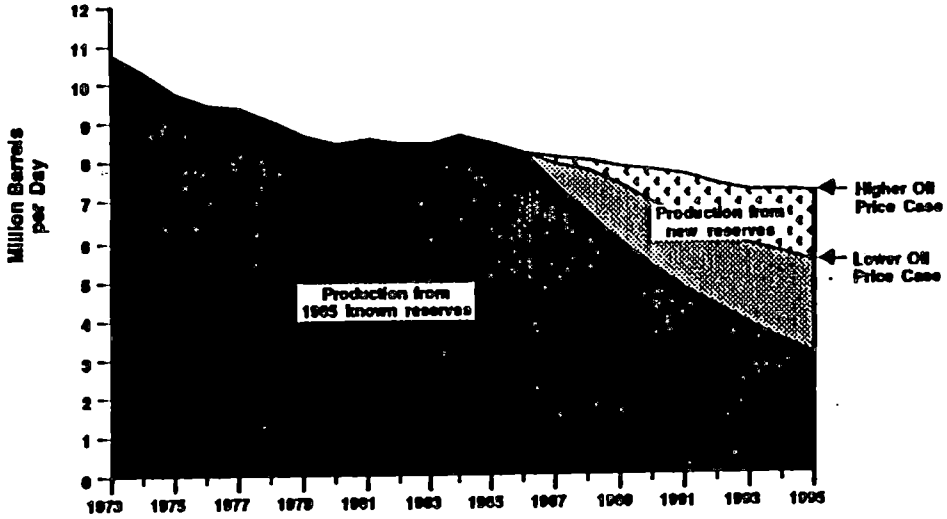
- Build a 2 billion barrel *strategic petroleum reserve* — half coming from the United States and half provided by other IEA countries.

- Initiate a strong *international energy program*, aimed to reduce the collective dependence of oil consuming nations using the IEA and Economic Summit process, to keep energy security issues at the top of the international foreign policy and economic agenda. Such action will ensure that there is a collective and individually comparable effort not to exceed an OPEC production level of 30 mbd.

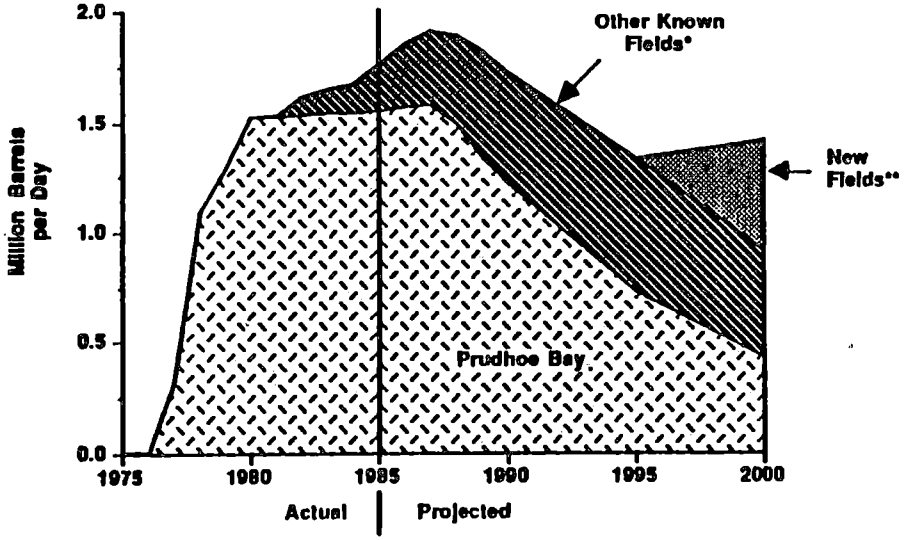
A Competitive U.S. Oil Industry is Vital to Our Energy Security

Crude Oil Production From the "Lower 48"

(Includes Natural Gas Liquids)



Alaskan North Slope Oil Production



*Includes Kuparuk, Lisburne, Milne Point, NGL Project, Gwydyr Bay, Point Thompson, Seal Island, and West Sak.

**Includes potential development of the Arctic National Wildlife Refuge (ANWR).

• Sustained lower oil prices since 1986 inflicted serious damage to the *U.S. oil industry*. Many "high cost producers" were driven out of business, production dropped, investment plummeted and thousands of skilled oil industry personnel were laid off. Primarily because of the collapse in oil prices during 1986, U.S. crude oil and natural gas production declined by 12% over the 1986-89 time period. "Lower 48" production began to decline in 1986-87, and the pace of the decline in the future will depend, in part, on oil prices, government policies, and other factors.

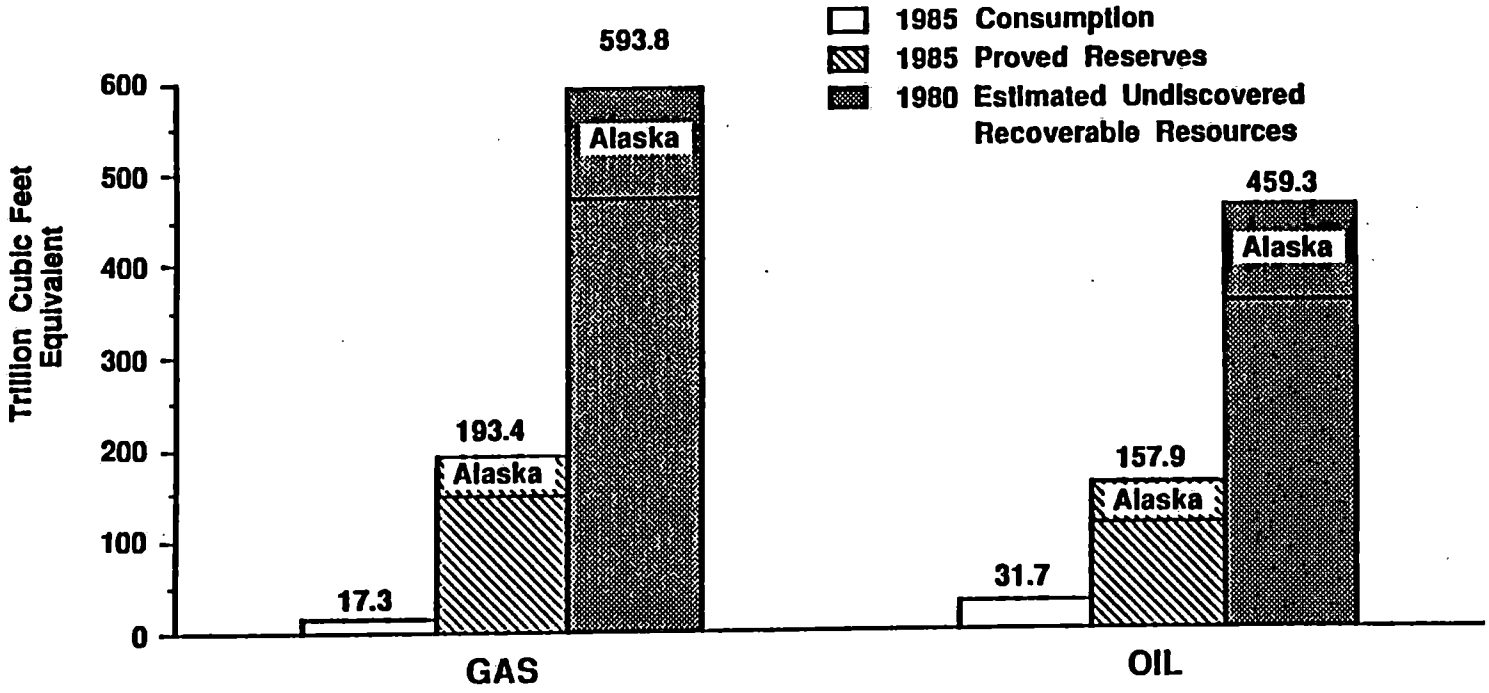
• Like many oil economists, we believe that *oil prices* are likely to fall to between $12-$18 in the months following a successful conclusion of the Gulf war. This will bring welcome relief to a world climbing out of a recession, but it will also bring increased uncertainty to the energy investment climate.

• Our most promising oil and gas reserves lie on federal lands in *frontier areas and offshore*. ANWR is estimated to have up to 9.2 billion barrels of recoverable oil, which would support production of about 1.5 mbd. A mean estimate of the undiscovered recoverable oil underlying the Outer Continental Shelf (OCS) is more than 12 billion barrels. Substantially larger amounts of oil and gas may exist beneath the coastal plain of ANWR and the OCS, but its existence can only be verified by exploration.

• The Congress and Administration should also consider instituting favorable *tax treatment* for new oil and gas exploration. We estimate a 10% tax credit for production arising from new exploration would contribute another 300,000 barrels to U.S. supply at an annual cost to the Treasury of $740 million.

• High priority should be given *building a consensus* between the Administration, Congress and important environmental groups as to the future development of domestic reserves in a timely and environmentally sensitive manner.

U.S. Natural Gas Resources are Comparable to Oil Resources



Source: Energy Information Administration

• U.S. natural gas *resources* are large when compared to current domestic gas consumption. At the end of 1989, the U.S. had approximately 168 trillion cubic feet (tcf) of proven reserves, compared with consumption in 1989 of 19 tcf.

• We expect demand for gas to increase by about a third to almost 23 tcf over the next twenty years due to increased needs for electric utilities to comply with stricter emission standards brought about by the Clean Air Act. In addition, an increasing amount of natural gas can be used to fuel the beginning of an alternative fuel industry.

• Domestic gas production in the lower 48 is not likely to increase over this period. Therefore, customers will have to look to supplies from Canada and over the longer term Alaska. There is the possibility that existing LNG facilities will be brought on line again to bring supplies from Algeria, Norway, Nigeria and other producers who have expressed an interest in shipping LNG to the U.S.

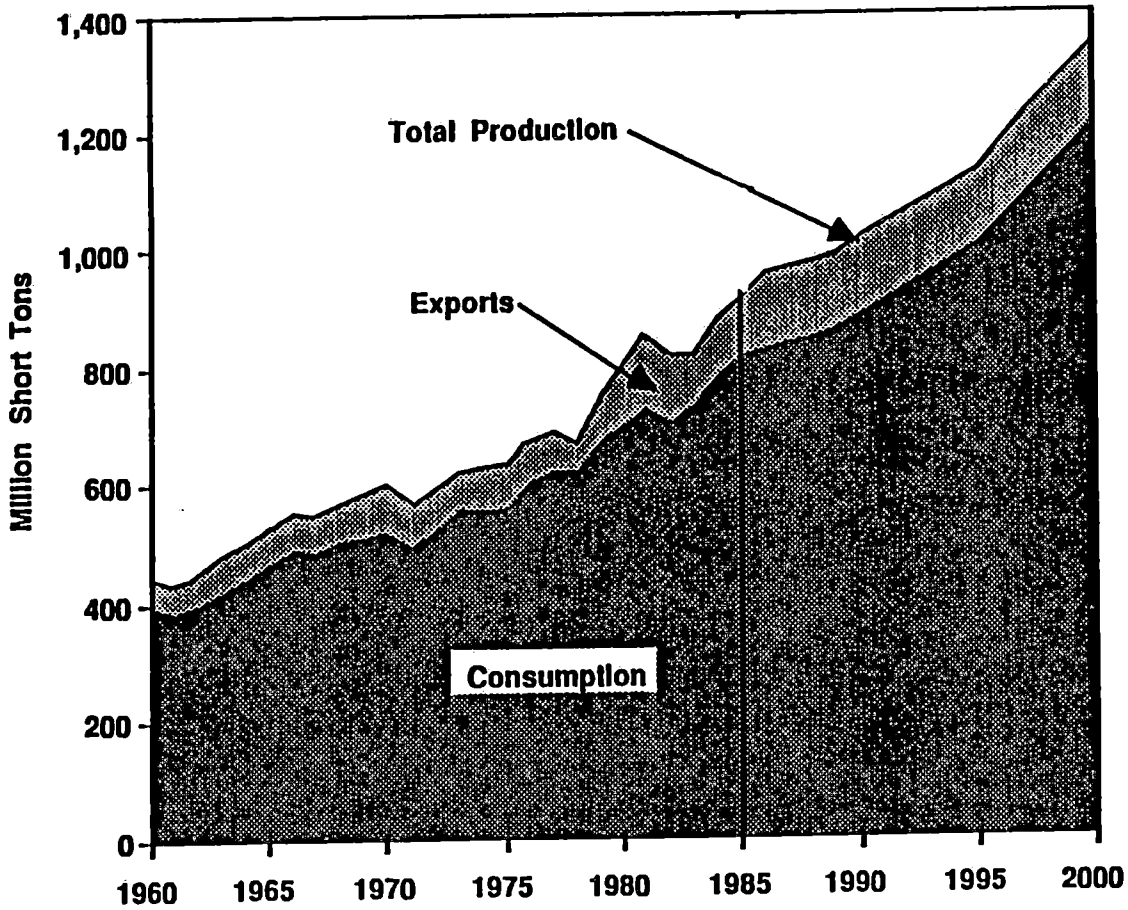
• Government policy in the first two years of the Bush Administration has been very successful. The removal of price controls in the *Natural Gas Wellhead Decontrol Act of 1989* was an important development for the domestic gas industry. Also, the *Clean Air Act* will help stimulate gas use at the same time that it helps improve our urban air quality.

• However, additional action is needed to address some of the remaining regulatory impediments to an efficient natural gas industry including restricted access to pipelines and end-use restrictions. In my judgement, over-regulation of natural gas has stifled its efficient production, transport and use. A freer gas market would benefit consumers, the energy industry and the Nation. A combination of *regulatory reforms* (including the possibility of folding FERC functions into the DOE) and comprehensive legislation could increase the competitiveness of natural gas and lower prices paid by consumers.

• Through a sensible approach of deregulation and streamlining the permitting process of FERC, most of these recommendations can be achieved without adding to the national deficit.

Coal has substantial potential to limit dependence on imported oil in an environmentally sound manner

Actual and Projected U.S. Coal Production



• Coal meets almost 60% of our electricity needs today and it will continue to be the "work horse" of our electrical utility sector in the years ahead.

• Significant progress has been made in reducing harmful emissions and pollutants over the last decade, but further progress is required to satisfy the public's demands for cleaner air. The Clean Air Act will allow for the continued use of coal in an environmentally-sensitive manner.

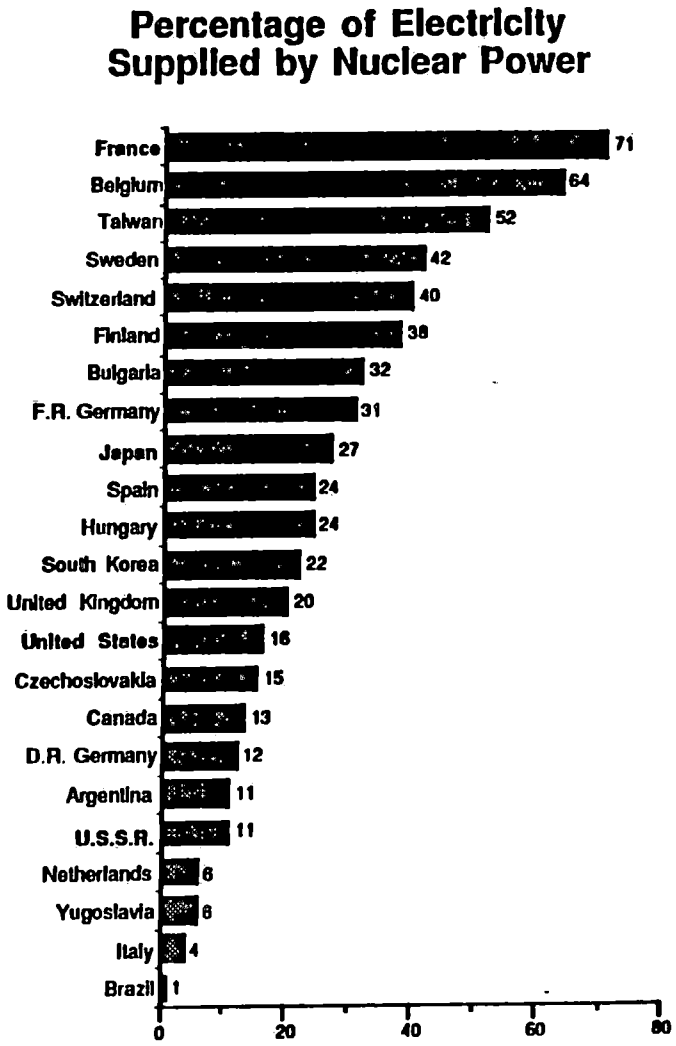
• We must also continue efforts to fully understand the impact of CO_2 burning on the greenhouse effect. The International Panel on Climate Change is playing a useful international role in determining the scientific basis of global warming and, at the same time, considering potential policy responses consistent with our economic priorities. I am impressed that the President's NES and the Congress' Office of Technology analysis concludes that the U.S. can make an effective contribution to this potential problem through prudent, cost-effective energy and environmental policies.

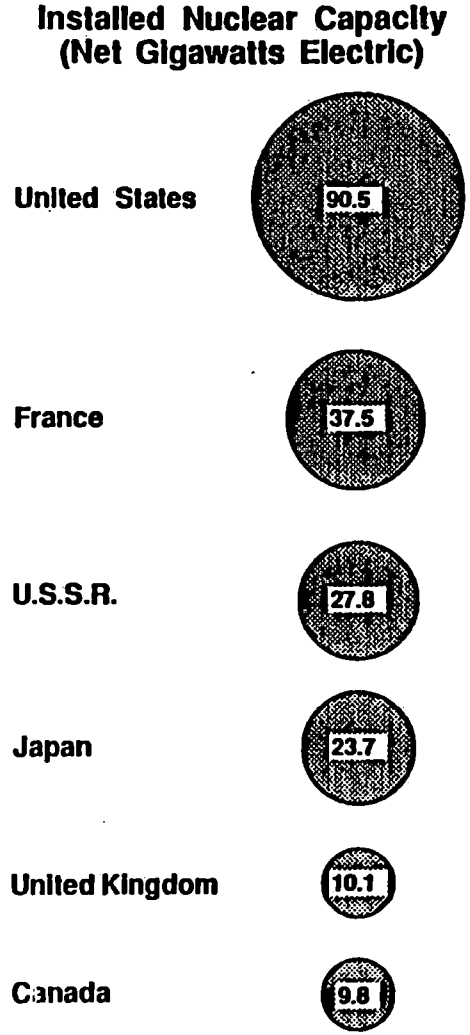
• Our best government coal option at the moment is to continue funding for DOE's *Clean Coal Technology Program* — an innovative program which establishes a useful government-industry partnership. Once these technologies are developed and demonstrated, we should follow the excellent suggestion made by the President's National Energy Strategy to examine regulatory means to commercialize them more rapidly.

• Finally, the Administration should support a strong coal export program. Over the last decade the U.S. coal and transportation industries have improved their competitive position and are well situated to expand coal exports to the Pacific nations and to Europe. At the moment, however, some European nations still subsidize their highly unprofitable coal industries. Such subsidies go against the spirit of free trade and should be eliminated, thereby paving the way for greater imports of competitively-priced U.S. coal. Our industry might also look for ways to couple selling coal with clean coal technologies or state-of-the-art electricty generating equipment, thereby providing our trading partners with a clean and reliable energy source and system.

• These policies should not result in undue drain on our Federal budget. Given that the five year Clean Coal Technology Program is about to be completed, it is reasonable to expect that greater use of coal and coal exports and the successful commercialization of clean coal technologies, will in fact generate revenue for the Federal Treasury.

Nuclear power deserves another look in light of energy security and environmental concerns





• The over one hundred nuclear power plants in the United States today supply over 15% of U.S. electrical needs. As we look toward the future nuclear power can help improve energy security and enhance environmental quality. At the same time, nuclear power's future is likely to depend upon whether three conditions can be satisfied:

—Nuclear power should be able to compete with other sources of electricity supply in the marketplace on its economic merits, as it did in the United States in the early 1970's and as it does in many other countries now.

—The safety of existing and future nuclear power plants must continue to be satisfactorily demonstrated, so that general public acceptance is restored.

—Progress must be evident in the siting and building of high-level waste-management systems in a safe and publicly acceptable manner.

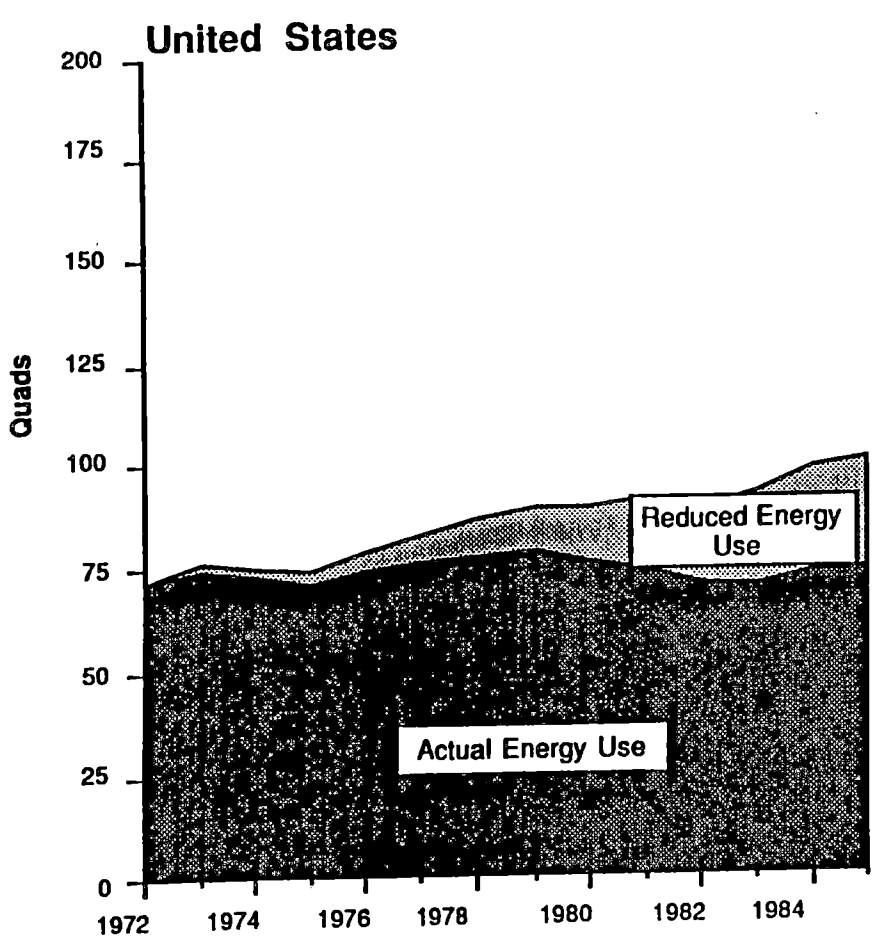
• In the United States, utilities will be unlikely to order new plants until several interrelated *issues* are satisfactorily resolved. These include:

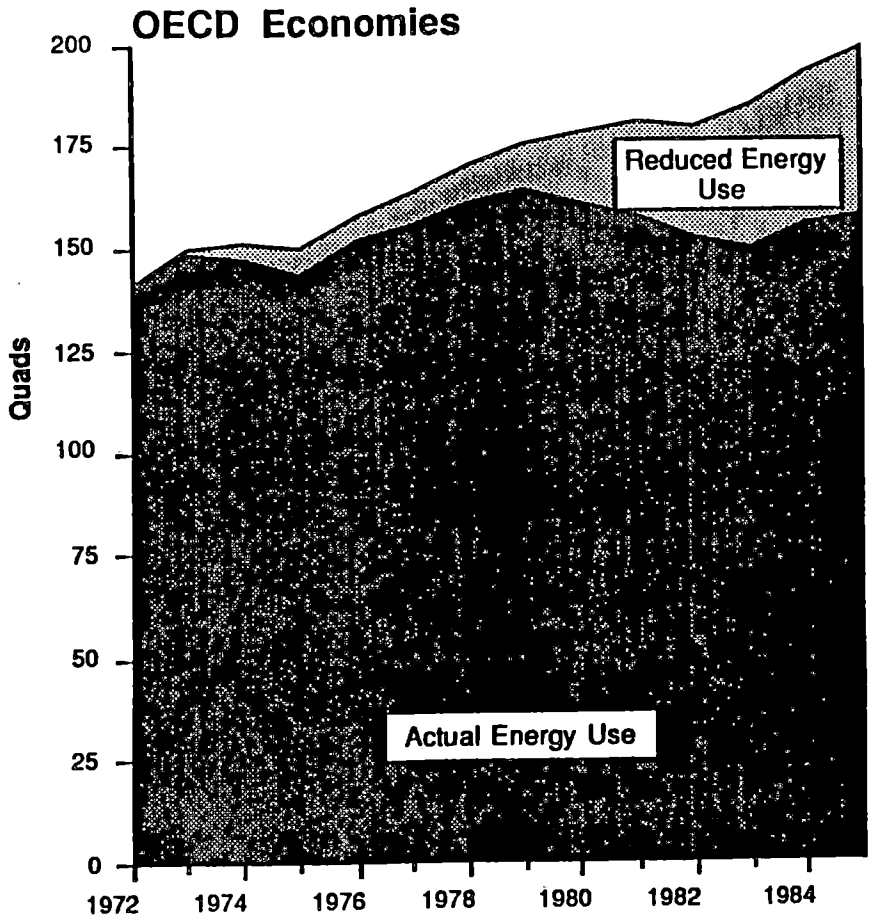
—Establishment of an appropriate balance between prospective risks and prospective rewards for utilities that invest in new capital-intensive generation.

—Continued forward progress in the deployment of satisfactory waste-management systems.

—True "one stop" licensing that removes the likelihood that a license will be denied after a sizeable investment has been made in plant construction.

Energy efficiency, alternative fuels for transportation and renewable energy resources improve energy security and environmental quality





• Today, the United States uses virtually no more energy (and less oil) than it did in 1973 — although its population is still expanding and the Nation continues to turn out more products and services. Without the improvements in *energy productivity* that have taken place since 1973, the United States would now require the equivalent of about 14 million more barrels of oil every day.

• Advances in *technology* have accounted for two-thirds of the recent energy-productivity improvements in U.S. industry and three-fourths of those in transportation—resulting in more product output per energy unit and more miles per gallon. Energy efficiency has also improved in other OECD countries.

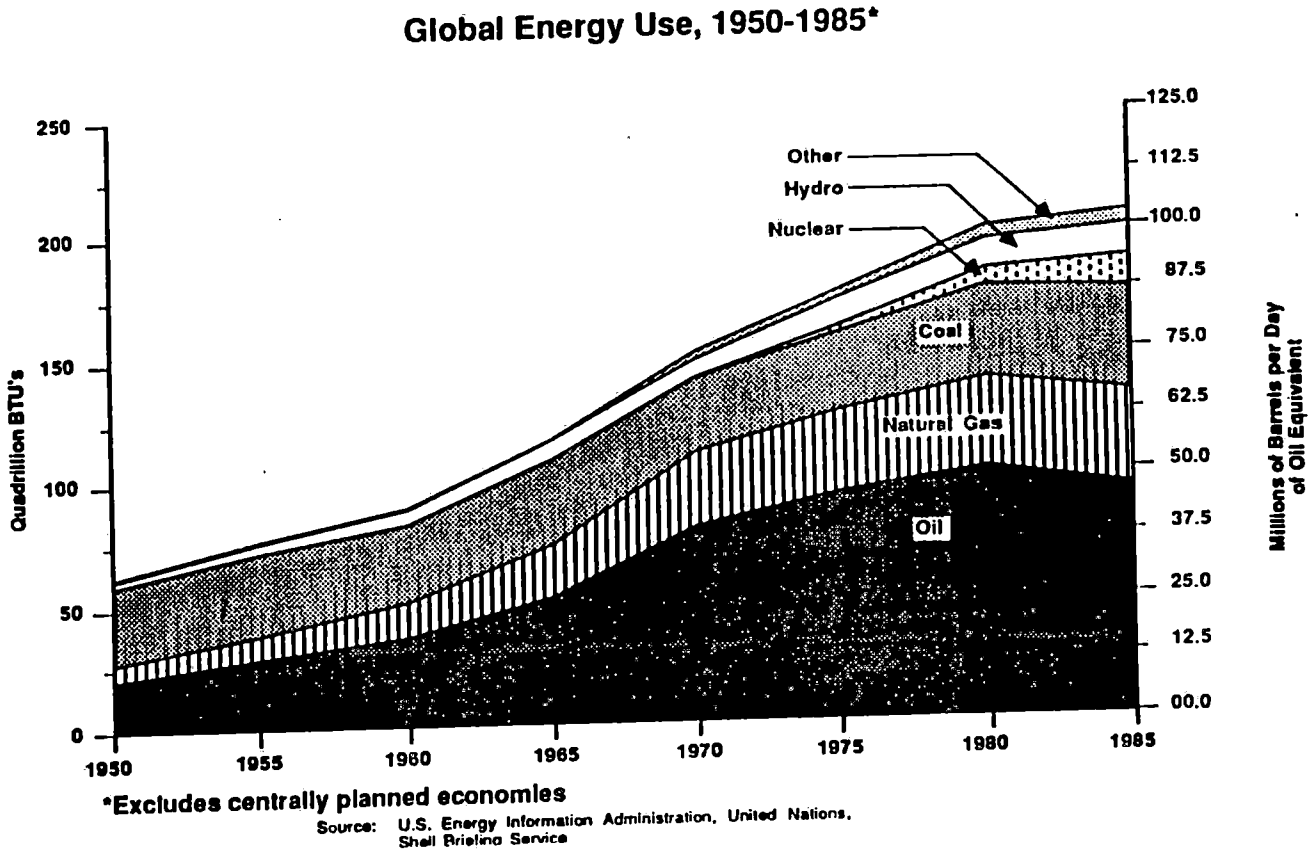
• The most heavily oil dependent sector remains *transportation*. U.S. transportation uses more oil each year than we produce, accounting for more than 60 percent of all oil use. Therefore, continued priority should be given to improving automobile efficiency standards, as well as in encouraging greater use of alternative fuels such as natural gas derived fuels (e.g., methanol) and electric vehicles.

• The majority of *renewable energy* used in the world now comes from large hydroelectric plants and wood fuel. Hydroelectric plants provide 20 percent of all electricity, or 8 percent of total free-world energy use. The United States and the rest of the world will, in time, rely more heavily on essentially inexhaustible renewable energy sources, including many diverse sources such as solar, wind, geothermal, water, and biomass energy. At the moment, however, these sources represent only a small percentage of our total energy use and their competitiveness has been harmed by several years of depressed oil prices. Retaining a tax credit for renewable sources, and increasing funding for those technologies that hold commercial promise would ultimately reap a solid long term investment.

• Many of the recommendations made in this testimony are supply oriented but it is important to note that conservation should be given *equal* weigh, including reducuing gasoline in transportation through greater use of alternative fuels. Reliance on the market has proved to be a successful strategy, but if we are once again in for lower oil prices, then the Administration and Congress should develop policies to maintain conservation's momentum. I look forward to hearing from others on the panel and elsewhere strategies that advance economic efficiency and make economic sense.

PART III — INTERNATIONAL ENERGY SECURITY

The U.S. cannot "go it alone." All nations must reduce reliance on Gulf oil.



• In addition to efforts undertaken by the U.S. and other individual countries to limit their vulnerability to energy disruptions, *coordinated international energy action* can make important contributions to global energy security. A nuclear power plant in Japan, a clean-coal generation project in Italy, a geothermal project in Central America or a hydropower plant in China all serve to reduce world demand for oil—and all countries reap the benefits. Important alternatives include:

• *Coal,* which has increasingly been used as a substitute for oil in generating electricity in the U.S., Japan and other countries, can be expanded further to reduce oil consumption in the utility sector. The contribution of clean coal technology will enable expanded coal use with an overall reduction of harmful emissions. Expanded international trade in steam coal can help lower energy costs in coal-importing countries. Efforts should be made to reduce domestic production subsidies in Europe (particularly in Germany, the UK and Belgium) which raise costs and lower economic efficiency. As noted in the President's National Energy Strategy, U.S. clean coal technology exports can improve the global environment and enhance the energy security of our trading partners.

• The environmentally superior attributes of *natural gas*—and its abundant worldwide reserves and relative low price—will make it the world's fastest growing fossil fuel in the next two decades. Increased production in the North Sea, Alaska, the Middle East and the Pacific Basin would help ensure supplies that could keep pace with demand. European efforts to deploy timely investment in gas infrastructure and diversify gas supplies would contribute to a more secure supply of natural gas in the years to come. Japan is evaluating the economic attractiveness and security of alternative supplies — from the Middle East, Pacific Basin, Soviet Union and Alaska.

• *Nuclear power* has been a major contributor to reducing major energy consumers reliance on imported oil (including the U.S., France and Japan) in the utility sector, and continued or expanded use could extend these benefits further. Public opposition remains a constraint to further development of nuclear power, but new, more modular and standardized designs may help nuclear energy regain its momentum. International efforts to develop the new generation of "inherently safe" reactor technology, establish efficient and safe procedures for nuclear waste disposal, and enforce stringent international public safety standards will help protect nuclear's role in the global energy mix.

• *Finding substitutes for oil in the transportation area* offer promise for the future and would provide substantial security benefits by reducing dependence on oil; international research collaboration could help bring these technologies to market in a timely, cost-effective manner. Non-oil-based transportation fuels offer special promise in this regard, since most of the world's oil consumption is devoted to the transportation sector. International research programs on effective, economic conversion technologies for non-petroleum transportation fuels such as electric vehicles, and natural gas-based fuels such as methanol, and high quality coal-based transportation fuels could go a long way toward realizing the potential contribution of renewable resources to worldwide energy security.

The IEA should coordinate short term responses and long term energy policies

> "The problem we face is not just an oil problem--it's an energy problem. And it is not just a domestic problem--it is international. We simply cannot view the U.S. in isolation. After all, a barrel of oil or unit of energy saved, produced or stockpiled anywhere is one less barrel that has to be produced in the Persian Gulf."

William F. Martin, Deputy Secretary of Energy
"Energy and National Security: The Past and Future Crisis"
Council on Foreign Relations, Washington, D.C. 4/29/87

• Over the past fifteen years, the *International Energy Agency* has played a useful role in coordinating both short term responses to energy emergencies and pursuing long term energy policies that reduce collective dependence on instable sources of oil. In the months ahead, the IEA should use the opportunity to highlight the importance of energy security in a number of areas including:

• *Oil stock policies.* The U.S., Germany and Japan account for nearly all government controlled stocks in IEA countries. Stocks act as a very important source of stability in a crisis and their use "buys time" for diplomacy. The U.S. and its Allies could take a tougher stand in the Gulf knowing that their oil reserves were sufficient to provide adequate supplies in the event of a Middle East oil cutoff. The IEA should commit to the establishment of a 2 billion barrel reserve level — half coming from the U.S. and half coming from other nations — to bolster our responsiveness to oil shocks in the future.

• *Consideration of a Minimum Safeguard Price.* Faced with the prospects of fluctuating oil prices, the IEA might consider reestablishing a minimum safeguard price (MSP) — an initiative which was first implemented in 1977 at a price of $7 per barrel. The MSP acts as a IEA-wide floor price for oil, thereby providing a more stable environment for long term energy investments. This policy is not without its critics. The MSP would essentially act as a tax, thereby dampening economic activity. The OECD and IEA might be encouraged to prepare an economic analysis of the costs and benefits of this policy on OECD countries' energy situation and economic competitiveness.

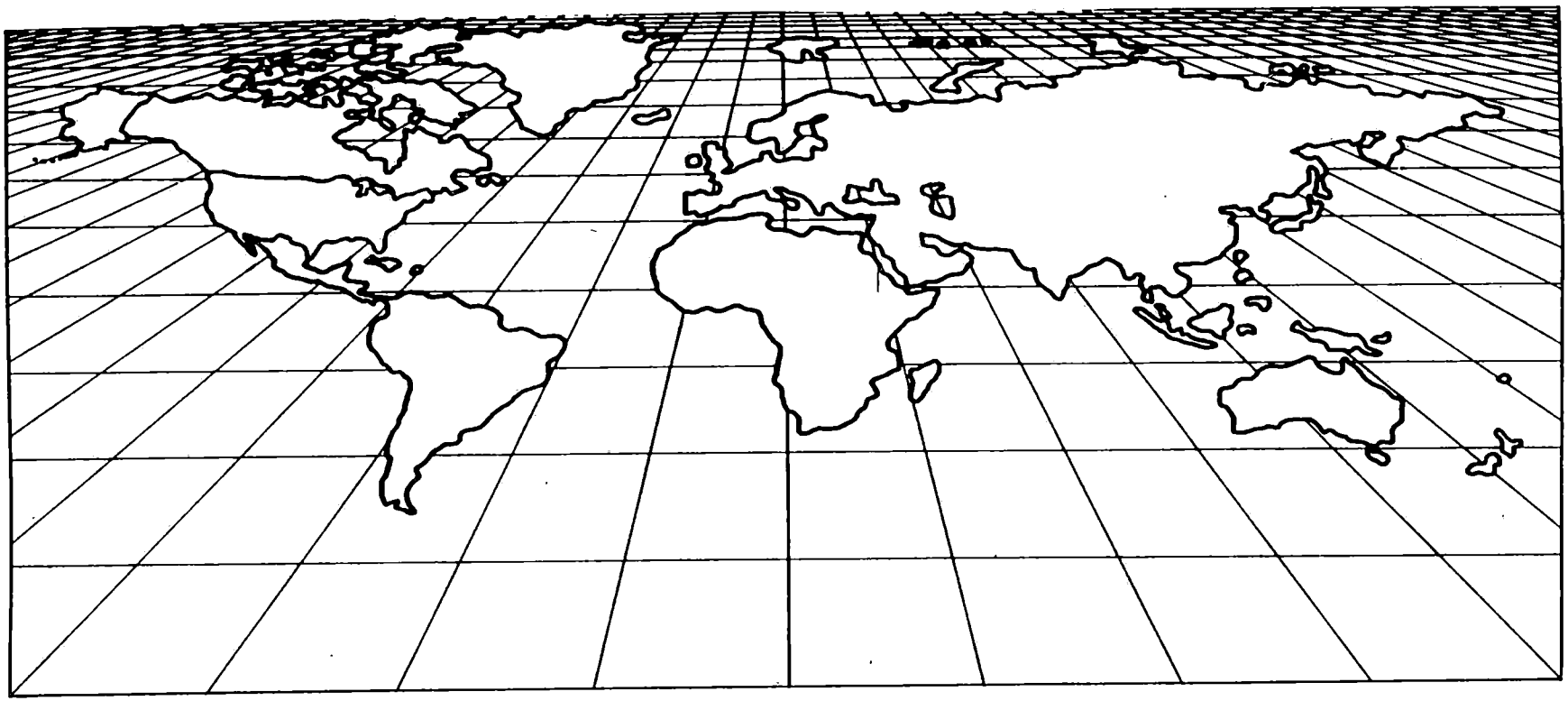
• *Support for Developing Nations and Eastern Europe.* Nations outside the OECD will soon consume over half of the world's energy. Therefore, OECD nations have a special interest to assist energy supplies and energy efficiency development in rapidly industrializing nations, including Eastern Europe. The IEA should be encouraged to continue its energy policy assessments of East European nations, while lending agencies such as the World Bank and AID should expand their energy lending practices, based on sound, market-based energy policy programs. Efforts should be made, wherever feasible, to transfer appropriate energy technologies (particularly renewables) from industrialized countries to the developing world.

• *Long Term Energy Policies.* The IEA should continue its efforts to evaluate long term energy policies of Member governments. One of the best energy policy books produced is the annual review of IEA energy policies. This represents a roadmap for reducing our collective dependence on imported oil in an environmentally sensitive manner. The recommendations in this excellent publication, however, are not self-fulfilling but need political backing and strong support for their implementation in all Member nations.

• *Joint Research and Development.* All nations face budget problems. Therefore the time is ripe for a reevaluation of international energy R and D priorities to identify areas where expertise and expenses can be shared for the benefit of all participating nations.

• *Coordination of Economic, Environmental and Energy Policies.* The IEA, and its sister organization the OECD, are well placed to provide analytical approaches to finding a balance between energy, environmental and economic policies. Some energy policies have potentially major economic consequences — such as gasoline taxes and import fees. Likewise, environmental policies — such as restricting CO_2 — have major economic and energy impacts. The OECD and IEA secretariats are uniquely qualified to analyze multi-disciplined policies and their joint effects.

Conclusions



• Mr. Chairman, in conclusion, let me say that the task of the President and Congress to construct a balanced energy policy is not easy, but the time is excellent to do so and a good start has been made by the President, Secretary Watkins, Senators Johnson and Wallop and by this Committee.

• Over the next weeks the Committee will not only struggle with energy policy, but will have to consider broader national objectives — such as our economic prosperity, environmental quality and national security. Ultimately the costs and benefits of our energy policies must be weighed against their impact and contribution to these other important objectives.

• The program identified in this testimony achieves many national objectives. It relies on market forces, but with a prudent regard for national security. It is based on healthy — but not overly optimistic — economic projections. Overall, environmental quality would be improved. Finally, national security objectives are enhanced by maintaining oil imports at a level which will keep reliance on the Middle East at a sustainable level.

• Finally, we must not view this as a "national" energy strategy. Our energy security is very much dependent on the actions or inactions of other nations. We must seek to strengthen our cooperation with other OECD nations to pursue our common goals of secure, affordable long-term energy supplies; at the same time we must begin the interesting and challenging task of integrating both developing nations and formerly centrally planned economies into the world economic and energy system.

Any questions about this testimony can be addressed to:

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Washington, D.C. 20005

(202-626-6087)

6/20/77 - pipeline starts
7/4/77 - explosion, pipeline closed for 1 wk

4/17/77 II 3:2
6/3/77 II 9:3

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7/14/73 54:3
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7/17/73 - Sen. vote 49-50
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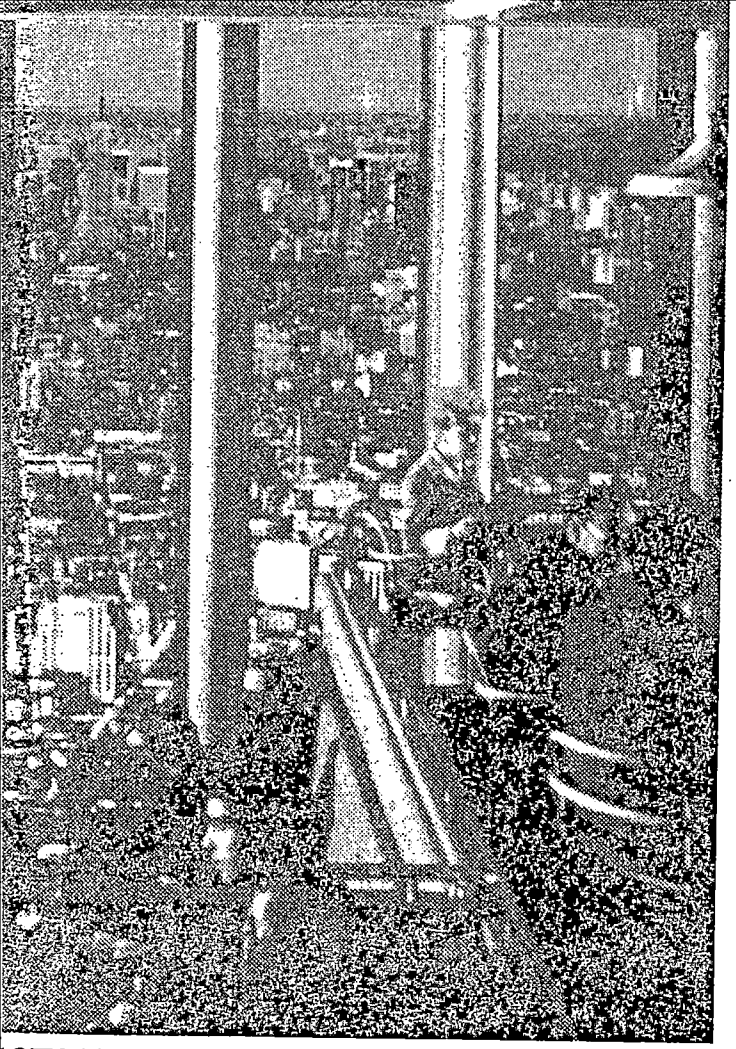

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...agencies said the pact could be altered as a result.

Economists who have studied the spill for the state and Federal governments said today that the $1.1 billion settlement represents only a portion of the actual value of the damage to fisheries, water, wildlife and land. The economists said the Exxon Valdez disaster will have caused $2.5 billion to $5 billion in damages from the time of the ...hoped that Exxon would be required to pay $1 billion in a one-time payment that could generate permanent income through annual interest payments. Thus, the annual payments, spread out over 10 years, are much less valuable to the state's efforts to clean up and study the effects of the spill.

Senator Frank Murkowski, a Republican from Alaska, said today that Alaska was fortunate to have gained a settlement. The alternative was years ...ment between Exxon, Alaska and the Federal Government and lifted his injunction. But in an order he signed this afternoon, Judge Sporkin said he would review the settlement after it is signed to make sure the rights of the villages are ensured.

"The court shall retain jurisdiction over this matter to ensure that the defendants' representations are carried out so the plaintiffs' rights are protected," Judge Sporkin wrote in the order.

Bush Digs In on Arctic Drilling Plan

WASHINGTON, March 12 (Reuters) — President Bush will veto any national energy strategy that does not include his proposal allowing drilling in part of the Arctic National Wildlife Refuge in Alaska, the Secretary of Energy told a Senate hearing today.

Both the White House energy plan and a Senate version propose opening a 1.5-million-acre coastal plain in the wildlife refuge to oil and gas drilling, a provision that environmentalists and some lawmakers oppose.

Testifying today before the Senate Energy and Natural Resources Committee, the Energy Secretary, James D. Watkins, said that any strategy that does not include drilling in part of the wildlife refuge "is a veto-able issue with the President."

Mr. Watkins also told the panel that if no new large oilfields were developed on Alaska's North Slope, where the refuge is situated, declining production would probably force the Trans-Alaska Pipeline to shut down within 18 years.

The two largest oilfields in North America are on the North Slope. One is the Prudhoe Bay field, the most prolific in the nation, and the other is the Kuparuck River field. These two fields and five smaller ones nearby produce from 1.8 million to 2 million barrels of crude oil a day, about 25 percent of American domestic production.

Decline in Oil Output Seen

But Mr. Watkins said today that there was already evidence of a decline in the oil flow from the North Slope. And an Energy Department study whose results were issued today predicted that by the year 2009, the use of the Trans-Alaska Pipeline, which carries oil from the North Slope down the 800-mile length of the state to ports on Alaska's southern coast, might no longer be technically or economically feasible if North Slope production drops, as expected, to less than 300,000 barrels a day.

Estimates of the amount of oil to be found on the Arctic coastal plain range from zero to between 500,000 and 2 million barrels a day. "It could be a small Middle East," Gov. Walter J. Hickel of Alaska, an enthusiastic advocate of the drilling provision, said at the hearing today.

Among the critics of the proposal is Senator Bill Bradley, Democrat of New Jersey, who is an Energy Committee member and favors a national energy strategy that places greater emphasis on conservation and less on production.

Mr. Bradley has proposed raising the price that Americans pay for their oil through higher taxes. Today he said the United States could either raise taxes or adopt a policy of "In Fahd We Trust" in which the nation would continue to be dependent on the Saudi king and the leaders of other major oil-producing nations.

Environmentalists today also reiterated their opposition to the Arctic refuge drilling. Brooks Yeager, vice president of the National Audubon Society, said the drilling would "destroy one of the earth's last great dynamic ecosystems."

But Mr. Hickel disagreed.

"We are tired of those who distort the arguments about A.N.W.R.'s coastal plain," he said. "It is a barren, marshy wilderness in the summer, infested with uncountable mosquitoes, and locked in temperatures of 60 and 70 degrees below zero for up to nine months of the year."

The New York Times

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S641-46.2: Aug. 19, 1970. p. 49-110.

Witness: **LIFF, Noah,** chm, Task Force on Disposal of Obsolete Automobiles, Inst of Scrap Iron & Steel, Inc; accompanied by **Story, William S.,** exec vp.

Statement: Reasons for opposing S. 4204; support for S. 4197 with modifications. (p. 49-55)

Discussion: Transportation costs for scrap; steel industry needs for scrap. (p. 55-60)

Insertions: "Special Report: The Abandoned Car Crisis," by the Institute of Scrap Iron and Steel (p. 61-62).

Proceedings of the National Conference on the Abandoned Automobile (p. 63-110).

S641-46.3: Aug. 19, 1970. p. 111-115.

Witness: **MORRIS, Raymond E.,** managing dir, Natl Auto and Truck Wreckers Assn.

Statement and Discussion: Describes auto and truck wrecking industry; comments on proposed legislation.

S641-46.4: Aug. 26, 1970. p. 117-236.

Witness: **STITT, William,** Spec Asst to Asst Sec for Planning and Evaluation, HEW; accompanied by **Vaughan, Richard D.,** Dir, Bur of Solid Waste Mgmt.

Statement: Reviews magnitude, causes, and remedies of abandoned car problem, inventories of processors and dismantlers, and incomplete reutilization of scrap by steel mills and foundries; reports proposed legislation is not a comprehensive answer to problem. (p. 117-122)

Discussion: Analyzes higher scrap prices and fines and penalties as solutions to problem. (p. 122-236)

Insertion: "The Auto Wrecking/Dismantling Industry," draft of Commerce Dept and Business and Defense Services Administration study (p. 137-235).

S641-46.5: Aug. 26, 1970. p. 237-240.

Witness: **KARR, Richmond,** roadside dev engr, Vt St Hwy Bd.

Statement and Discussion: Describes Vermont plan to dispose of undesirable scrap metal accumulation.

S641-46.6: Brief Testimony.

Witnesses: **GURNEY, Edward J.,** (Sen, R-Fla), p. 36-41.
JAVITS, Jacob K., (Sen, R-NY), p. 27-36.
PACKWOOD, Robert W., (Sen, R-Oreg), p. 42.

Statements and Discussion: Brief items of testimony explaining provisions of and supporting S. 4197 and S. 4204.

S641-47 **PROBLEMS OF ALASKA.** July 6-8, 10, 1970. 91-2. † ●Item 1045. vi+426 p. il. Y4.P96/10:Al1/7. 17717(70). 72-609632.

Joint hearings with the Committee on Commerce on problems in Alaska dealing with transportation, oceanography, the Coast Guard, harbor facilities, and results of the 1964 earthquake. Includes submitted statements and correspondence throughout hearings, a statement of the Trans-Alaska Pipeline System (p. 259-263) and:

a. Parker, Walter B. "Social Impact and Suggested Goals for Alaska's Transportation System" (p. 406-424).

Hearings on July 6 held in Kodiak, July 7 in Anchorage, July 8 in Fairbanks, and July 10 in Juneau.

(For summaries of brief items of testimony, see S641-47.5 and S641-47.7.)

S641-47.1: July 6, 1970. p. 2-13.

Witness: **WHITE, Wilton,** chm, Kodiak Island Borough.

Statement and Discussion: Recommends locating the Trident program of marine resources and fisheries research in Kodiak; describes need for harbor expansion in Kodiak.

S641-47.2: July 6, 1970. p. 13-16.

Witness: **MIYAHARA, Tak,** Wakefield Fisheries.

Statement and Discussion: Need to maintain Bureau of Commercial Fisheries as a practical, individual unit, and to coordinate biological and oceanographic research data.

S641-47.3: July 6, 1970. p. 16-22.

Witness: **DYSON, Oscar,** Fishermen's Assn.

Statement and Discussion: Reports Coast Guard ill-equipped and under-staffed to handle its duties in Alaskan waters; opposes internationalizing 200 meter level; discusses intrusion of foreign fishing vessels in Alaskan waters.

S641-47.4: July 6, 1970. p. 22-28.

Witness: **HAMMOND, Robert E. (Rear Adm.),** Cmdr, 17th Coast Guard Dist, Juneau, Alaska.

Statement and Discussion: Coast Guard activities in Alaskan waters; problems of oil pollution.

S641-47.5: Brief Testimony, Kodiak, Alaska.

Witnesses: **DENNING, Carl (Dr.),** gen practitioner, p. 33-34.
LEE, John H., chm, Puget Sound Tug & Barge Co, p. 28-31.
RESOFF, Pete, mayor, Kodiak, p. 31-33.

Statements and Discussion: Brief items of testimony praising Coast Guard maritime accident activities and air evacuations.

S641-47.6: July 7, 1970. p. 39-68.

Witnesses: **HARDIN, E. L., Jr.,** Dist Engr.
GEORGE, Warren, Chief, Engineering Div, Alaska Dist, both from Army Corps of Engrs.

Statements and Discussion: Need to develop Kodiak small boat harbor; damages caused in Anchorage by 1964 earthquake; problems remaining in earthquake slide area.

Insertion: Final Recommendations on Risk Classification, Anchorage and Vicinity, joint release by Army Corps of Engineers, Task Force 9, Alaska (p. 54-56).

S641-47.7: Brief Testimony, Anchorage, Alaska.

Witnesses: **GOTTBERG, Robert,** vp, Mortgage Dept, Natl Bank of Alaska, p. 75-76.
SHARP, Robert E., city mgr, Anchorage, p. 76-87.
SMITH, Lloyd A., representing a property owners group, p. 71-73.
TVEIT, James H., FHA, p. 68-71.

Statements and Discussion: Brief items of testimony concerning land development and mortgage load insurance in the high risk area of the 1964 earthquake slide in Anchorage.

S641-47.8: July 7, 1970. p. 89-152.

Witness: **MANLEY, John E.,** gen mgr, Alaska RR; accompanied by **Heiss, Harold,** Spec Asst to Fed RR Administrator, DOT.

Statement and Discussion: Operation and budget of Alaska Railroad; determination of railroad saleable assets; rate of railroad growth compared to other transportation systems in Alaska; question of retaining railroad under Federal authority. *(For further discussion, see S641-47.9.)*

Insertions: Alaska Railroad Enabling Act, text (p. 92-94).

Equipment register and charts on Alaska Railroad assets and liabilities, tonnage, revenue tonnage, and summary statements for income, expenses, and operations, FY69 (p. 95-125).

History of Alaska Railroad (p. 126-137).

S641-47.9: July 7, 1970. p. 153-204.

Witness: **SWALLING, A. C.,** chm, Northern Ops of Rail Transportation and Hwys Commission (NORTH).

Statement and Discussion: (Includes testimony from S641-47.8.) Recommends establishment of State transportation authority and a delay in any decision to sell Alaska Railroad; discusses relationship of Alaska Railroad to oil fields and pipe line.

Insertions: Report of the NORTH Commission to the Governor of Alaska (p. 169-177).

Arctic pipeline economic analysis (p. 183-194).

Alaskan legislation to incorporate the Alaska Railroad, text (p. 200-204).

S641-47.10: July 7, 1970. p. 205-208.

Witness: **FROID, Stanley H.,** vp, Tudor Engineering Co.

Statement and Discussion: Describes feasibility study of northern extension of Alaska Railroad. *(For further testimony, see S641-47.15.)*

S641-47.11: July 7, 1970. p. 209-214.

Witness: **BROWN, Lyle K.,** Regional Dir, FAA.

Statement and Discussion: Alaska aviation services needing expansion.

S641-47.12: July 7, 1970. p. 215-222.

Witness: **WAKEFIELD, Harry A.,** dir, Alaska Div of Aviation.

Statement and Discussion: Describes Alaskan 5-year aviation program.

Insertion: Capital improvement project proposals, 1972-76 (p. 219-222).

S641-47.13: July 7, 1970. p. 222-224.

Witness: **BLODGETT, Robert R.,** St sen.

Statement and Discussion: Personal dissatisfaction with aviation progress in Alaska.

S641-47.14: July 8, 1970. p. 234-248.

Witness: **OLSSON, John P.,** Dep Under Sec, DOT.

Statement: Background, terms, and status of Alaska rail-highway corridor study. (p. 234-237)

Discussion: Financial breakdown of Alaska Railroad revolving fund; Alaska exclusion from Federal interstate highway fund. (p. 237-248)

S641-47.15: July 8, 1970. p. 249-258.

Witness: **FROID, Stanley H.,** vp, Tudor Engineering Co.

Statement and Discussion: (For previous testimony, see S641-47.10.) Reviews feasibility study recommendations for northern rail-highway corridor; discusses complete transportation systems corridor versus railroad corridor.

H501-20.6: July 20, 1976. p. 338-371.

Witnesses: **McGINTY, John M.,** pres-elect, Amer Inst of Architects.
FEINBERG, Kalman N., exec asst, Dubin-Bloome Assocs.
SAULS, Marshall N., vice pres, Property Mgmt and Dev, Rich's, Inc.

Statements and Discussion: Support for Title IV; importance of monitoring cost effectiveness of conservation measures and requiring an energy audit; overview of Dubin-Bloome studies on electrical energy consumption in New Jersey and existing energy consumption in Long Island, N.Y. (graphs, p. 344-347); success of efforts (charts, p. 364-367) to determine reasons for and control of increased electrical use in Rich's Atlanta, Ga., stores.

Insertion: "Scope of Current Energy Conservation and Solar Energy Projects," reviewing Dubin-Bloome consulting projects as of May 1976 (p. 348-359).

H501-20.7: July 20, 1976. p. 373-434.

Witnesses: **BREUCHERT, Carl J.,** chm, energy conservation committee, Mechanical Contractors Assn of Amer (MCAA).
ASPENSON, Richard L., mgr, Energy, Conservation and Utilities, Minn Mining and Mfg Co (3M Co).
HAUSZ, Walter, member, professional staff, General Electric Center for Advanced Studies.
GIBBONS, John H., dir, Environment Center, Univ of Tenn.

Statements and Discussion: Proposals for expansion of energy conservation incentives to include tax credit plan for energy saving systems investments; potential for joint production of heat and power as means to conserve energy in the industrial sector (charts, article, p. 414-424); support for Title IV.

Insertion: "Energy Conservation: Opportunity for Mechanical Contractors," MCAA rpt, 1974 (p. 385-391).

H501-20.8: July 20, 1976. p. 435-446.

Witnesses: **McCLINTOCK, Michael,** adjunct prof, Center for Energy Studies, Boston Univ.
CRONIN, Paul W., chm, govt relations committee, Solar Energy Industries Assn.
PRICE, Travis Lee, architect, alternate energy designer, NYC.

Statements and Discussion: Support for increasing H.R. 12169 assistance to solar energy projects; need to aid low income homeowners.

H501-20.9: Additional Testimony.

Witnesses: **BROWN, George E., Jr.,** (Rep, D-Calif), p. 44-48.
DRINAN, Robert F., (Rep, D-Mass), p. 48-55.
O'NEILL, Thomas P., Jr., (Rep, D-Mass), p. 55-56.
KOCH, Edward I., (Rep, D-NY), p. 56-57.
McCORMACK, Mike, (Rep, D-Wash), p. 57-65.

Statements and Discussion: Support for various energy conservation proposals.

H501-21 MUNICIPAL BONDS RATING REGULATION.

June 23, 24, 1976. 94-2.
iii+101 p. † CIS/MF/4
•Item 1019.
°Y4.In8/4:94-115.
MC 77-2473. LC 76-603739.

Committee Serial No. 94-115. Hearings before the *Subcom on Consumer Protection and Finance* to consider H.R. 675 (text, dept rpts, p. 5-12), to amend the Investment Advisers Act of 1940 and establish SEC-administered standards for investment agencies rating of municipal bonds. Also establishes SEC registration requirements for rating agencies and grievance procedures for appeal of unsatisfactory bond ratings.

Testimony focuses on recent controversy over leading investment agencies' downgrading of NYC municipal bond issues.

Includes correspondence and submitted statements (p. 94-101).

H501-21.1: June 23, 1976. p. 13-20.

Witness: **LOOMIS, Philip A., Jr.,** Commr, SEC.

Statement and Discussion: Objections to S. 675; preference for public disclosure legislation to provide accurate and timely rating information.

H501-21.2: June 23, 1976. p. 20-26.

Witness: **GOULD, George,** finance committee chm, Municipal Assistance Corp. (MAC), NYC.

Statement and Discussion: Objections to Moody's Investors Service rating criteria for and downgrading of MAC bonds.

H501-21.3: June 23, 1976. p. 26-43.

Witness: **HARRIES, Brenton W.,** pres, Standard and Poor's Corp.

Statement and Discussion: Summary of rating procedures; predicted adverse effects of federally mandated ratings on municipal bonds marketability.

Insertion: Standard & Poor's municipal bond rating criteria (p. 34-39).

H501-21.4: June 24, 1976. p. 45-63.

Witness: **PHILLIPS, Jackson,** exec vp, Moody's Investor Service, Inc.

Statement and Discussion: Opposition to bill's interference in established procedures for bonds rating; justifications for downgrading MAC bonds in light of NYC potential for default.

H501-21.5: June 24, 1976. p. 63-69.

Witness: **GOLDIN, Harrison J.,** compt, NYC.

Statement and Discussion: Support for bill, and needed Federal action to improve municipalities' credit ratings.

H501-21.6: June 24, 1976. p. 69-83.

Witnesses: **MALONY, Matthew,** mgr, municipal bond div, Fitch Investors Service, Inc.
CACCHIONNE, Mario R., employee.

Statements and Discussion: Purposes and operations of bond rating agencies; criticism of Moody's downgrading of MAC bonds.

H501-21.7: June 24, 1976. p. 83-88.

Witness: **SOLARI, William J.,** vp, Donaldson, Lufkin and Jenrette Securities Corp.

Statement and Discussion: Consequences of excessive reliance on bond ratings.

H501-21.8: June 24, 1976. p. 88-94.

Witnesses: **REILLY, James F.,** financial counselor, Ketchum, MacLeod and Grove Inc.
NASH, John M., vp.

Statements and Discussion: Viewed unresponsiveness of bill to investors' needs; advantages of improved communication between rating agencies and investing public.

H501-22 ALYESKA OIL PIPELINE OVERSIGHT.

June 21, 1976. 94-2.
iii+175 p. il. † CIS/MF/4
•Item 1019.
°Y4.In8/4:94-125.
MC 77-4058. LC 77-600508.

Committee Serial No. 94-125. Hearing before the *Subcom on Energy and Power* to examine problems surrounding alleged falsification of X-ray test results used to verify the adequacy and safety of welds along the Trans-Alaska Pipeline System (TAPS).

Reviews charges of construction contractors' noncompliance with welding quality standards, and examines efforts by the Alyeska Pipeline Service Co. and responsible Federal agencies to investigate possible faulty welding cover-ups and correct TAPS construction deficiencies.

H501-22.1: June 21, 1976. p. 4-27.

Witness: **KELLEY, Peter L.,** former radiographer, Ketchbaw Industries.

Statement and Discussion: Allegations concerning falsification and subsequent cover-up of TAPS welding X-rays; claimed absence of Federal inspectors along pipeline construction route; operational aspects of X-ray verification procedures; suggested reasons for X-ray results falsification.

H501-22.2: June 21, 1976. p. 28-106.

Witness: **BARNUM, John W.,** Dep Sec, DOT; accompanied by **Curtis, James T., Jr.,** Dir, Materials Transportation Bur; **DeLeon, Cesar,** Act Dir, Office of Pipeline Safety Ops (OPSO); and **Ulrich, Lloyd L.,** Tech Div, OPSO.

Statement and Discussion: Explanation of DOT and Interior Dept cooperation in enforcing pipeline welding and corrosion control standards; clarification of quality control monitoring procedures (memo, p. 39-43); unworkability of on-site inspection to insure quality standards compliance for each weld; description of TAPS pipeline fabrication specifications. (p. 28-55)

Definition of OPSO responsibilities regarding TAPS safety verification; investigatory efforts to determine nature and extent of welding defects; likelihood of defectively welded pipes to split under high-pressure flows, and results of tests to determine pipeline stress capabilities; plans for repairing defective welds, and efforts to improve OPSO surveillance of contractors' welding practices. (p. 55-106)

H501-22.3: June 21, 1976. p. 107-140.

Witness: **FRIZZELL, D. Kent,** Under Sec, Interior Dept; accompanied by **Rollins, Andrew P., Jr. (Maj. Gen., ret.),** Authorized Officer, Alaska Pipeline Office; and **Latz, John E.,** Technical Asst to Under Sec.

Statement and Discussion: Interior Dept efforts to verify effectiveness of TAPS quality assurance program, including granting of stopwork authority to Alyeska quality control division; claimed presence of Federal inspectors along pipeline route, and reasons for failure to detect welding quality misrepresentations; prospects for effecting weld repairs within TAPS completion deadline.

H501-22.4: June 21, 1976. p. 141-152.

Witness: **McCAMISH, Harley M.,** mgr, div ops, pipeline and production div, Bechtel Corp.

Statement and Discussion: Bechtel's role in quality assurance and performance evaluations of TAPS welding; defense of radiographic evaluation procedures and results.

H501-22.5: June 21, 1976. p. 153-175.

Witness: **PATTON, Edward L.,** bd chm, chief exec officer, Alyeska Pipeline Service Co; accompanied by **Von Rosenberg, Edgar L.,** professional engr, Exxon Production Research.

Statement and Discussion: Assurances of TAPS structural safety, and efforts to correct welding deficiencies; results of fracture mechanics testing of TAPS welds; justifications for Alyeska assumption of future radiographic verification responsibilities.

H501-23 REGULATORY REFORM, VOL. 6: Public Witnesses; Federal Rate Regulation of Electric Utilities; Wholesale Power; Gulf Warranty Case.
June 6, 7, 12, July 16, 31, 1976. 94-2. viii+800 p. il.
† CIS/MF/11 •Item 1019.
°Y4.In8/4:94-85.
MC 77-9057. LC 76-602163.

Committee Serial No. 94-85. Continuation of hearings before the *Subcom on Oversight and Investigations* to consider the need for reform of nine Federal regulatory agencies. This volume examines proposals for citizen participation in agency proceedings, additional agencywide recommendations, and the following issues related to individual agency activites:

a. FTC trade regulations governing door-to-door selling and other marketing enterprises.

b. EPA review during 1973-75 of a 1972 decision to ban use of DDT as a pesticide.

c. Federal-State roles in promulgation and enforcement of National Highway Traffic Safety Administration (NHTSA) safety standards.

d. FPC regulation of electric utilities wholesale rates and sales related to customer complaints following successive rate increase applications filed by Nevada Power Co., power supplier for Henderson, Nev., through the California-Pacific Utilities Co. and by Indiana-Michigan Electric Co. (I&M), power supplier for 15 municipal utilities and 7 rural electric cooperatives in Indiana.

e. FPC performance and pending enforcement case (commonly known as the Gulf Warranty Case) in connection with Gulf Oil Corp. failure to fulfill its natural gas delivery obligations in New Jersey under a 1963 contract with Texas Eastern Transmission Corp.

Hearing on June 12, 1976, was held in Las Vegas, Nev.; on July 16, in Richmond, Ind.; and on July 31 in Hackensack, N.J. Appendix (p. 238-298) contains submitted statements and correspondence and:

a. Speer, Edgar B. (bd chm, US Steel Corp), "Are the Regulatory Agencies Changing Our Government?" address questioning regulatory agencies' control over the private sector, Mar. 15, 1976 (p. 267-275).

b. Robson, Margaret (consultant, Natl Small Business Assn), comments suggesting reform or abolition of Consumer Product Safety Commission, with related news excerpts, Apr. 29, 1976 (p. 275-283).

Includes submitted statements (p. 468-472).

H501-23.1: June 6, 1976. p. 2-76.

Witnesses: **CLAYBROOK, Joan B.,** dir, Public Citizen's Congress Watch.
LENNY, David M., staff atty.

Statements and Discussion: Critique of pending legislative proposals relating to regulatory reform, including provision for congressional veto of agency rules (summary, p. 13-17); suggested strategies to advance consumer interests, including establishment of a central consumer agency, citizen access to courts, and civil service accountability procedures.

Insertions: "Proposals for Reform of the Federal Regulatory Agencies," Congress Watch memo with table showing legis status of Administrative Conf of the U.S. recommendations, 1968-76 (p. 30-38).

Review of regulatory issues in automobile, energy, and food, drug, and cosmetic industries, statement of Ralph Nader (p. 44-51).

Citizen access to Fed courts for judicial review of agency actions, R. Nader testimony before Senate Judiciary Committee *Subcom on Administrative Practice and Procedure,* on S. 3296, the Administrative Procedure Act of 1976 (p. 63-73).

H501-23.2: June 6, 1976. p. 76-115.

Witness: **OFFEN, Neil H.,** sr vp, legal counsel, Direct Selling Assn; member, FTC Issues Working Group, Chamber of Commerce of USA.

Statement and Discussion: Dissatisfaction with delay and viewed ambiguity of FTC decision on Federal preemption of local direct sales contract terms; digest of prior testimony on FTC trade regulation proposals, including support for S. 2408 provision for judicial review of rules' content (summaries, p. 86-106, passim); value of increased congressional scrutiny of FTC interaction with business and consumers.

H501-23.3: June 7, 1976. p. 115-191.

Witness: **HAZELTINE, William E.,** mgr-environmentalist, Butte Cty Mosquito Abatement Dist, Oroville, Calif.

Statement and Discussion: Analysis of two versions of EPA scientific report (texts, p. 131-141, 148-157) on DDT effects, charging EPA manipulation of information to support pesticide ban; claimed EPA violation of Freedom of Information Act by refusing inspection of documentary bases for original decision; questioned validity of litigation upholding EPA action.

Insertions: "Toxicology of DDT: An Overview," Leonard R. Axelrod, Dir, Criteria and Evaluation Div, Office of Pesticide Programs, EPA (p. 141-147).

"Review Based on Scientific Evidence of the Decision Banning the Use of DDT," L. R. Axelrod, June 5, 1975 (p. 148-157).

"Case Study: An Outsider's View of the DDT Decision," Angus A. MacIntyre, prepared for Natl Research Council, Jan. 1975 (p. 158-172).

Environmental Def Fund v. EPA DC Circuit Court affirmation of EPA Administrator decisions on DDT usage, 1973, text (p. 176-183).

H501-23.4: June 8, 1976. p. 193-237.

Witness: **VIEG, Karsten J.,** dir, traffic safety, Ill Dept of Transportation.

Statement and Discussion: Recommended changes in NHTSA approach to administration of highway safety standards to emphasize cooperative Federal-State development of priority safety program areas; importance of cost analysis of research allocations given probable increased politicization of traffic safety funding; costliness and questionable benefits of vehicle inspection programs.

Insertion: "Periodic Motor Vehicle Inspection: Its Accident Prevention Potential, Cost and Benefit," Larry F. Wort (Ill Dept of Transportation) prepared for Ill. Motor Vehicle Laws Commission, Apr. 12, 1976, with graphs (p. 210-228).

H501-23.5: June 12, 1976. p. 303-317.

Witnesses: **LUNDBERG, Rex W.,** commr, Consumer Aff, Nev; also on behalf of:
O'CALLAGHAN, Michael, Gov, Nev.

Statements and Discussion: Summary of local utility issues; importance of legislation to forbid FPC authorization of rate increase implementation prior to hearings.

H501-23.6: June 12, 1976. p. 326-334.

Witness: **TYNES, Rex A.,** consulting engr, Las Vegas.

Statement and Discussion: Need to prohibit utility applications for successive rate increases before resolution of original request (pancaking).

H501-23.7: June 12, 1976. p. 353-411.

Witness: **JOURNEY, Drexel D.,** Gen Counsel, FPC.

Statement and Discussion: Review of FPC cost-based ratemaking process for wholesale electric power; analysis of pending legislative proposals affecting electric utilities; explanation of "top sheet" (summary cost data) presentations to expedite rate regulation proceedings; implications of recent judicial interpretations concerning Federal and State ratemaking jurisdictions.

Insertions: Public and staff input to FPC regulatory process, FPC administrative orders, Docket No. RM 76-12, and memo, Apr. 1, 1976 (p. 358-377).

Nevada Power Co. applications to FPC for rate increases to wholesale customer California-Pacific Utilities Co., FPC Docket Nos. E-8721 and E-9104, Apr. 9, Nov. 12, 1974 (p. 379-385).

Comments on S. 3311, the Electric Utility Coordination Act, and S. 3310, the Electric Utility Rate Reform and Regulatory Reform Act, and draft bill to amend section 206 of the Federal Power Act to expedite FPC ratemaking, FPC staff analyses and correspondence, Apr., June 1976, Sept. 1975 (p. 388-401).

H501-50 ALYESKA OIL PIPELINE OVERSIGHT.

Dec. 14, 1976. 94-2.
iii+129 p. † CIS/MF/4
•Item 1019.
°Y4.In8/4:94-158.
MC 77-9066. LC 77-601552.

Committee Serial No. 94-158. Supplemental hearing before the *Subcom on Energy and Power* to investigate additional allegations of falsification of X-rays used to verify the safety and integrity of double-joint welds along the Trans-Alaska Pipeline System (TAPS). Charges arose during testimony by radiographic subcontractors during Dec. 10 subcom executive session hearings on alleged involvement of Bechtel Corp., the TAPS quality control contractor, in radiograph falsification.

H501-50.1: Dec. 14, 1976. p. 4-13.

Witnesses: **OLIVE, Donald W.,** organizer, Intl Union of Operating Engrs.
POWDERS, Kenneth R., organizer.

Discussion: Personal knowledge of additional X-rays falsification.

H501-50.2: Dec. 14, 1976. p. 13-42.

Witness: **BARNUM, John W.,** Dep Sec, DOT.

Statement and Discussion: Review of DOT testing efforts to verify adequacy of TAPS welds; explanation of procedures for investigating X-rays falsification, and results of Coast Guard weld identification and X-ray verification activities (summary, p. 33-34).

H501-50.3: Dec. 14, 1976. p. 43-122.

Witness: **FRIZZELL, D. Kent,** Under Sec, Interior Dept; accompanied by **Latz, John E.,** Technical Asst to Under Sec; and **Rollins, Andrew P., Jr. (Maj. Gen., ret.),** Authorized Officer, Alaska Pipeline Office.

Statement and Discussion: Disputed credibility of subcom staff findings and unidentified witnesses' assertions regarding extent of additional X-rays falsification; clarification of memo (text, p. 98-104) on efforts to coordinate radiographic verification with welding repairs; defense of Interior Dept investigation of TAPS welding deficiencies.

Insertion: Exchange of correspondence regarding original allegations of radiograph falsification, K. D. Frizzell and Subcom Chm, Aug.-Dec. 1976 (p. 44-73).

H501-50.4: Dec. 14, 1976. p. 123-129.

Witness: **PATTON, Edward L.,** bd chm, Alyeska Pipeline Service Co; accompanied by **Wormeli, John,** sr welding engr.

Statement and Discussion: Refutation of charged noncompliance with welding repair orders.

H501-51 CONDUCT OF THE EPA'S "COMMUNITY HEALTH AND ENVIRONMENTAL SURVEILLANCE SYSTEM" (CHESS) STUDIES.

Apr. 9, 1976. 94-2.
vi+419 p. il. † CIS/MF/7
•Item 1025-A.
°Y4.Sci2:94-2/109.
MC 77-9152. LC 77-601622.

Joint hearing before the *Subcom on Health and the Environment* and the Science and Technology Committee *Subcom on Environment and the Atmosphere* to investigate recent charges of data analysis irregularities in the EPA's Community Health and Environmental Surveillance System (CHESS) studies program. (For complete summary, see H701-29.)

H501-52 ENFORCEMENT OF EQUAL OPPORTUNITY AND ANTIDISCRIMINATION LAWS IN PUBLIC BROADCASTING.

Aug. 9, 10, 1976. 94-2.
iv+262 p. il. † CIS/MF/5
•Item 1019.
°Y4.In8/4:94-139.
MC 77-7464. LC 77-600768.

Committee Serial No. 94-139. Hearings before the *Subcom on Communications* to determine agency responsibility for enforcement of equal employment opportunity and anti-discrimination laws in public broadcasting. Examine civil rights responsibilities of Corporation for Public Broadcasting (CPB) and CPB treatment of women, minorities, and the handicapped in employment and program content policies.

H501-52.1: Aug. 9, 1976. p. 2-12.

Witness: **STOKES, Louis,** (Rep, D-Ohio)

Statement and Discussion: Charged CPB failure to adequately enforce Federal civil rights laws in public broadcasting.

H501-52.2: Aug. 9, 1976. p. 12-15.

Witness: **ABZUG, Bella S.,** (Rep, D-NY)

Written Statement: Need for a single Federal agency to assume responsibility for nondiscrimination in public broadcasting.

H501-52.3: Aug. 9, 1976. p. 15-72.

Witness: **LOOMIS, Henry,** Pres, CPB.

Statement and Discussion: Claimed CPB compliance with and enforcement of equal opportunity laws; explanation of CPB authority to insure compliance by its grantees and contractors; efforts to encourage licensees to increase women and minority employment.

Insertion: CPB comments before FCC on nondiscrimination in employment policies and practices of broadcast licensees, Oct. 10, 1975 (p. 48-64).

H501-52.4: Aug. 9, 1976. p. 72-84.

Witness: **POTTINGER, J. Stanley,** Asst Atty Gen, Civil Rights Div, Justice Dept.

Statement and Discussion: Confirmation of CPB obligation to insure nondiscrimination in public broadcasting employment; suggested HEW role in monitoring CPB grantees' compliance.

H501-52.5: Aug. 9, 1976. p. 85-142.

Witness: **GROSSMAN, Lawrence K.,** pres, Public Broadcasting Service (PBS).

Statement and Discussion: PBS commitment to and alleged success in insuring equal employment opportunity in public TV; objection to CPB role as enforcer of anti-discrimination regulations; need for enforcement by Federal agencies.

Insertions: Analysis of amendment to H.R. 14232, the CPB approp bill, relating to regulation of equal opportunity in public broadcasting, PBS memo, Aug. 9, 1976 (p. 97-128).

PBS employment analyses, 1974-76 and 1972-75, Aug. 9, 1976, with tables (p. 129-136).

H501-52.6: Aug. 9, 1976. p. 143-154.

Witness: **GERRY, Martin H.,** Dir, Office for Civil Rights, HEW.

Statement and Discussion: Clarification of HEW responsibilities for anti-discrimination enforcement in public broadcasting.

H501-52.7: Aug. 10, 1976. p. 155-254.

Witness: **WILEY, Richard E.,** Chm, FCC; accompanied by **Shiben, Richard J.,** Chief, Renewal and Transfer Div, Broadcast Bur.

Statement and Discussion: Review of FCC rules and proceedings to insure nondiscriminatory employment practices by public broadcast licensees; justification for exemption of small stations from affirmative action program; effect of FCC enforcement efforts on broadcasters' employment practices.

Insertions: FCC decision involving Alabama Educ TV Commission application for license renewal for eight stations and construction license for one station, FCC 74-1385 (p. 174-210).

"Affirmative Action Plan for Employment of Physically Handicapped and Disabled Veterans," FCC (p. 216-223).

FCC minority employment, by pay grade and occupation code, July 18, 1976, tables (p. 226-246).

H501-52.8: Aug. 10, 1976. p. 254-262.

Witness: **WALSH, Ethel B.,** Vice Chm, Equal Employment Opportunity Commission.

Statement and Discussion: Need for Government enforcement, together with private action and voluntary compliance, to eliminate employment discrimination.

H501-53 FEDERAL POLICIES RELATING TO THE OPERATIONS OF PASNY.

Sept. 29, 1976. 94-2.
iv+279 p. † CIS/MF/5
•Item 1019.
°Y4.In8/4:94-154.
MC 77-9063. LC 77-601335.

Committee Serial No. 94-154. Hearing before the *Subcom on Energy and Power* to evaluate the effectiveness of FPC oversight of Power Authority of the State of New York (PASNY) wholesale power marketing practices. PASNY presently sells electric power produced from an FPC-licensed Niagara River hydroelectric project initiated under the Niagara Redevelopment Act of 1957. Controversy centers on whether PASNY has adequately fulfilled the terms of its license which stipulate that 50% of the Niagara power be sold to municipal utilities or cooperatives (preference customers) at reasonable rates.

H501-53.1: Sept. 29, 1976. p. 3-271.

Witnesses: **FITZPATRICK, James A.,** chm, PASNY; accompanied by **Moore, Thomas,** gen counsel.
CORSO, Ronald A., Dep Chief, Div of Licensed Projects, Bur of Power, FPC; accompanied by **Lamke, Daniel C.,** Office of Gen Counsel.

Statements: Chronology of Niagara hydroelectric project development; defense of PASNY power sales to industrial and out-of-State customers in light of New York municipalities unwillingness to purchase bulk power supplies at the time of initial offering; reasons for PASNY inability to meet current power demand of preference customers. (p. 3-76)

H441-10 ALASKA NATURAL GAS TRANSPORTATION SYSTEM.
Oct. 9, 1975. 94-1.
iii+340 p. il. † CIS/MF/6
•Item 1023.
Y4.In8/14:94-36.
MC 76-3753. LC 76-601272.

Committee Serial No. 94-36. Oversight hearing before the *Subcom on Public Lands* to consider status of Interior Dept planning for the Alaska natural gas transportation system. Focuses on the following industry group proposals:

a. Arctic gas study group (Arctic Gas Co. and 13 other American and Canadian companies), trans-Canada pipeline proposal to carry Prudhoe Bay, Alaska and Mackenzie Delta gas from Alaska North Slope to lower 48 States.

b. El Paso Alaska Co., proposal for trans-Alaska pipeline to carry Prudhoe Bay gas to liquefaction facilities in southern Alaska, and by sea in tankers to U.S. Pacific Coast.

c. Alberta Natural Gas Trunk Line Ltd., Canada and Westcoast Transmission Co., British Columbia, all-Canadian pipeline proposal to serve Canadian markets.

H441-10.1: Oct. 9, 1975. p. 1-238, 255-259.

Witness: **CARLSON, Jack W.,** Asst Sec for Energy and Minerals, Interior Dept; accompanied by **Anderson, Robert,** project mgr, Aerospace Corp. study.

Statement and Discussion: Description of various Alaskan pipeline route proposals, including land use implications and other unresolved issues; preliminary results of Aerospace Corp. economic and risk analysis of alternative transportation systems; feasibility of capital market funding for proposed projects.

Insertions: "Multimodal Transportation and Utility Corridor Systems in Alaska: A Preliminary, Conceptual Analysis," Interior Dept study Oct. 1974, with summary of major statutes and regulations, maps, and tables (p. 4-103).

"Alaska Natural Gas Transportation System: Draft Environmental Impact Statement," Interior Dept study on Arctic Gas Co. application, for right-of-way across Federal lands, June 1975 (p. 105-133).

"Financial Problems Associated with Development of Transportation Systems for Arctic Gas," prepared for Interior Dept by Hiram C. Caroom, finance prof, Loyola Univ, Aug. 25, 1975 (p. 135-222).

H441-10.2: Oct. 9, 1975. p. 238-255, 260-283.

Witness: **KATZ, Julius L.,** Dep Asst for Economic and Business Aff, State Dept.

Statement and Discussion: History and current status of negotiations with Canadian government on transit pipeline treaty; explanation of recent change in Canadian bilateral accord position; differences between pipeline taxing authority of States and Canadian provinces; assessment of potential interference with pipeline construction caused by Canadian native claims settlement difficulties.

Insertion: "Expanded Guidelines for Northern Pipelines," tabled in Canada's House of Commons, June 28, 1972, by Jean Chretien (p. 271-283).

H441-10.3: Oct. 9, 1975. p. 283-340.

Witness: **SMITH, Don S.,** Vice Chm, FPC.

Statement and Discussion: Status of pending Arctic Gas and El Paso Alaska Co. applications; extent of estimated Alaskan and other U.S. natural gas reserves (tables, p. 284-290, passim); probable schedule for FPC decision and time span of possible resultant litigation (summaries, p. 306-307); description and estimated costs of pipeline proposals, including anticipated gas liquefaction and shipping costs under El Paso plan.

Insertions: FPC certification of gas pipeline facilities, major contested applications, 1945 to present, table (p. 314).

El Paso Alaska Co. et al., FPC Docket Nos. CP75-98 et al., testimony of Walter B. Williston, Queen's Counsel, Canada, Mar. 19, 1975 (p. 320-340).

H441-11 OVERSIGHT HEARINGS ON CONSTRUCTION ON TRANS-ALASKA PIPELINE.
Feb. 12,. Mar. 11, 13, Apr. 15, Aug. 8, Dec. 11, 1975. 94-1.
iv+544 p. il. † CIS/MF/8
•Item 1023. Y4.In8/14:94-5.
MC 76-3750. LC 76-601621.

Committee Serial No. 94-5. Oversight hearings before the *Subcom on Public Lands* to consider various aspects of the planning, construction, and utilization of the Trans-Alaska Pipeline System (TAPS). Hearings, held on Feb. 12 and Aug. 8, 1975, in Anchorage, Alaska, assess the impact of materials shortages, labor disputes, and environmental regulations on TAPS construction and completion schedules. Also consider advantages of equipment supply priorities established under the Defense Production Act, and review agency and contractor efforts to expedite TAPS completion.

H441-11.1: Mar. 11, 1975. p. 266-272.

Witness: **PRICE, Robert I. (Rear Adm.),** Chief, Office of Marine Environment and Systems, Coast Guard (USCG).

Statement and Discussion: Description of USCG tanker routing system for Valdez, Alaska, terminal and potential environmental hazards of tanker movements.

H441-11.2: Aug. 8, 1975. p. 400-505.

Witnesses: **SCHOLES, Peter,** coord, Alaska Center for the Environment; on behalf of: **ZEMANSKY, Gil M.,** environmental engineer.

Statement and Discussion: Defense of environmental protection standards for TAPS construction and denial of their responsibility for construction delays; charged violations of State and Federal environmental laws by pipeline contractors (notices, p. 459-463); opposition to Bureau of Land Management utility corridor easements across Alaskan native lands.

Insertions: "Control of Water Pollution for Protection of Fish and Wildlife Resources Along the Trans-Alaska Pipeline," spec rpt, Jt State-Fed Fish and Wildlife Advisory Team (p. 436-442).

Alyeska pipeline camp inspection, memo, Lance G. Elphic, Feb. 24, 1975 (p. 444-452).

"Analysis of the Problem of Oil Spills Associated with Construction of the Trans-Alaska Oil Pipeline," Max C. Brewer, Alaska Dept of Environmental Conservation, rpt (p. 498-503).

H441-11.3: Dec. 11, 1975. p. 507-544.

Witness: **CARR, Jessie L.,** sec-treas, Intl Brotherhood of Teamsters, Local 959, Anchorage, Alaska.

Statement and Discussion: Justification for trucking industry shutdown during TAPS construction; charged violations of safety standards by pipeline contractors; need for more stringent Occupational Safety and Health Administration (OSHA) construction site inspections; criticism of time required to settle labor disputes, and outline of union grievance procedures.

H441-11.4: Pipeline Contractors.

Witnesses: **PATTON, E. L.,** pres, Alyeska Pipeline Service Co, p. 3-17, 251-263, 350-359.
FOX, Edward D., vp, Fluor Engrs and Constructors, p. 18-29, 258-263, 369-371.
CARTHER, E. P., project mgr, Chicago Bridge and Iron Co, p. 29-32, 373-374.
LYNCH, Edward C., vp, Peter Kiewit Sons Co, p. 32-36, 374-378.
LEAVER, James M., gen mgr, Bechtel Construction Co, p. 36-45.
BURNS, William C., vp, Morrison-Knudsen Co, p. 45-50, 380-399.
FALLOW, William L., project mgr, Arctic Constructors, p. 50-57, 387-399.
GILFILLIAN, G. W., vp, Morrison-Knudsen Co, p. 371-373.
McCARTHY, Jerry, exec vp, Majestic-Wiley Contractors; project mgr, Perini Arctic Assocs, p. 383-384.
SMITH, Travis, project mgr, Price-Potashnick-Codell and Oman, p. 385-386.
BEARD, T. L., mgr, Associated-Green, p. 386-387.

Statements and Discussion: Status reports on various aspects of TAPS construction including Valdez, Alaska, terminal facilities; need to coordinate planning to avoid construction bottlenecks and maximize available working time; causes of construction delays.

Criticism of Federal and State construction specifications and environmental regulations; responses to charged violations of OSHA worksite safety regulations.

H441-11.5: Agency Witnesses.

Witnesses: **CHAMPION, Charles A.,** state pipeline coord, Alaska, p. 57-68, 365-369.
ROLLINS, A. P., Authorized Officer, Alaska Pipeline Office, Interior Dept, p. 69-250, 359-365.
LYONS, William W., Dep Under Sec, Interior Dept; accompanied by **Lindgren, David E.,** Dep Solicitor; and **Latz, John E.,** Tech Asst, p. 272-285.

Statements and Discussion: Summary of Federal and State involvement in and oversight of TAPS construction; assessment of efforts to ease equipment shortages and expedite completion of auxiliary pipeline facilities; appraisal of Commerce Dept investigation of competitive effects of priority materials allocations to private contractors (Lyons).

Insertion: Interior Dept contract issued to Mechanics Research, Inc. for technical support in reviewing pipeline construction, start-up, and commissioning activities, text (p. 73-238).

H441-11.6: Oil Companies.

Witnesses: **HARNETT, Joseph D.,** exec vp, Standard Oil Co of Ohio; chm, Construction Committee for TAPS, p. 295-322.
UTHLAUT, George E., asst to pres, Exxon Corp, p. 298-322.
HENRIKSEN, Donald A., North Slope coord, Atlantic Richfield Co, p. 300-322.
LUCAS, Dale, mgr of transportation, BP Pipelines Inc, p. 302-322.
SLACK, Howard A., vp, Atlantic Richfield Co, p. 323-342.
WALKER, David, vp, BP Alaska Inc, p. 333-342.
LYBARGER, David, vp, oil and gas, Standard Oil Co of Ohio, p. 338-342.

Statements and Discussion: History of and need for TAPS; pipeline completion forecasts based on construction and drilling equipment availability; evaluation of projected Alaskan oil production rates; analysis of oil company field development programs for Prudhoe Bay, Alaska, and North Slope; overview of petroleum industry financing of Alaskan oil development projects.

H441-12 PAYMENTS IN LIEU OF TAXES.

Oct. 24, Nov. 3, 4, 1975.
94-1. vi+325 p. il. †
CIS/MF/6 •Item 1023.
Y4.In8/14:94-40.
MC 76-1242. LC 76-601174.

Committee Serial No. 94-40. Hearings before the *Subcom on Energy and the Environment* on H.R. 9719 and identical H.R. 10008 (texts, p. 319-320, dept rpts, p. 314-319), authorizing State and local governments to elect to receive a 75 cents per acre payment in lieu of existing formula payments to compensate for the presence of various non-taxable Federal lands within their boundaries. Also considers the alleged inadequacy of existing revenue sharing to make up for the tax loss.

Hearings on Oct. 24 held in Salt Lake City, Utah; and in Reno, Nev.

Contains submitted statements and correspondence (p. 320-325).

H441-12.1: Oct. 24, 1975. p. 114-123.

Witness: **LAWRENCE, Carlton,** representing Henderson, Nev.

Statement and Discussion: Support for transfering certain Federal lands to localities.

H441-12.2: Oct. 24, 1975. p. 157-162.

Witness: **YOUNG, Roy,** chm, Nev State Grazing Bd.

Statement and Discussion: Need for clarification of H.R. 9719 to continue Federal partial refunds of grazing fees to localities.

H441-12.3: Nov. 3, 1975. p. 177-214.

Witness: **EVANS, Frank E.,** (Rep, D-Colo)

Statement and Discussion: Explanation of H.R. 9719; overview of types of Federal in lieu payments (tables, lists, p. 185-201); inequities of existing in lieu payment system; methods of financing H.R. 9719 payments.

H441-12.4: Nov. 3, 1975. p. 214-219.

Witness: **SEIBERLING, John F.,** (Rep, D-Ohio)

Statement and Discussion: Support for short-term funds to communities negatively affected by creation of new Federal facilities.

H441-12.5: Nov. 3, 1975. p. 219-260.

Witness: **McGUIRE, John R.,** Chief, Forest Service.

Statement and Discussion: Opposition to H.R. 9719; overview of Forest Service payments to State and local governments.

Insertion: "National Forest Contributions to State and Local Governments–1962," Forest Service, Jan. 1965, tables (p. 237-255).

H441-12.6: Nov. 4, 1975. p. 282-296.

Witness: **BERKLUND, Curt,** Dir, Bur of Land Mgmt (BLM); accompanied by **Turcott, George L.,** Assoc Dir.

Statement and Discussion: Opposition to H.R. 9719; need for further study of in lieu payment system; BLM payments to local govts (tables, p. 285-286).

H441-12.7: Bill Supporters.

Witnesses: **ABDNOR, James,** (Rep, R-SDak), p. 264-269.
ABOUREZK, James, (Sen, D-SDak), p. 263-264.
BLACK, Calvin, Commr and chm, San Juan Cty, Utah Commission, p. 27-32.
BOIES, Eyer, chm, Elko Cty Bd of Commrs; pres, Nev Cty Commrs Assn, p. 101-104.
BUZIANIS, George, chm, Tooele Cty Commission, Utah, p. 9-27.
CALHOUN, Mrs., member, bd of supvrs, Carson City, Nev, p. 105-107.
CARPENTER, Red, chm, bd of commrs, Pershing Cty, Nev, p. 109-110.
CHRISTENSEN, Jack, exec dir, Utah Assn of Counties, p. 60-62.
CONRAD, H. R., Nev citizen, p. 172.
DeRICCO, Elmo J., dir, Nev Dept of Conservation and Natural Resources; representing office of cty mgr, Douglas Cty, Nev, p. 67-89.
ETCHEMENDE, Henry, city mgr, Carson City, Nev, p. 104-107.
HIRAI, Roy, Malheur Cty judge, Vale, Oreg; representing Assn of Oreg Counties, p. 167-172.
MAHAN, A. G., pres, Western Region Dist, Natl Assn of Counties (NACo), p. 162-167, 300-313.
MARTENEY, Wayne, chm, Esmeralda Cty School Bd, Nev, p. 107-109.
MATHESON, Ivan, commr, Iron Cty, Nev, representing Cty Officials Assn, p. 33-35.
MOCK, H. Byron, counsel, Interstate Assn of Public Land Counties; consultant, NACo, p. 9-27, 40-41.
MONAHAN, George, dir, public works, Clarke Cty, Nev; also on behalf of:
OGLEBY, George, cty administrator, p. 98-101.
NESSETH, Lloyd, administrator, Itasca Cty, Minn, p. 57-59, 302-313.
RAMPTON, Calvin L., Gov, Utah, p. 35-40.
RHODES, Dean, Nev citizen, p. 162.
SHEEHAN, John J., dir, Nev Dept of Taxation, p. 89-97.
SIMON, Paul, (Rep, D-Ill), p. 278-282.
SOWARDS, Dale, commr, Conejos Cty, Colo; pres, Colo Counties, Inc, p. 41-49.

Statements and Discussion: Support for H.R. 9719; overview of property tax rates and Federal land ownership in Nevada (Sheehan); inadequacy of current timber, grazing, and mineral leases in compensation for the tax immunity of public lands (Buziania).

Insertions: "One Third of the Nation's Land," Public Land Law Review Commission, June 1970, rpt to Congress and Pres (p. 12-16).

"Critique of Payments in Lieu of Taxes and Revenue Sharing on Public Lands–Nevada Section," James C. Lien (Nev Tax Commission), tables (p. 72-79).

"Public Lands and Local Government," Nev Tax Commission, tables (p. 79-86).

H441-12.8: Additional Testimony.

Witnesses: **BUCKLER, Clark,** exec dir, Colo Counties, Inc, p. 50-57.
SEEVERS, Don, chm, Bd of Commrs, Mineral Cty, Nev, p. 110-114.
FAIRFIELD, James, representing Mineral Cty, Nev; Bd of Commrs, p. 111-114.
BEST, Robert, exec sec, Nev State School Bds Assn, p. 124-141.
PICOLLO, Marvin, supr, Washoe Cty, Nev, School Dist, p. 125-141.
HAWKINS, Douglas, chm, cty commrs, White Pine Cty, Nev, p. 141-144.
LEE, Kenneth, commr, Lincoln Cty, Nev, p. 145-149.
MacDONALD, Bill, dist atty, Humboldt Cty, Nev, p. 149-157.
JAMELLO, Joe, mayor, Winnemucca, Nev, p. 154-157.
DUFURRENA, Mr., commr, Humboldt Cty, Nev, p. 156-157.
BUCHAN, John, mgr, Chamber of Commerce, Humboldt Cty, Nev, p. 156-157.
BLAKEMORE, Rick, Nev State sen, p. 172-175.
RUNNELS, Harold, (Rep, D-NMex), p. 269-278.
OBERSTAR, James L., (Rep, D-Minn), p. 296-300.

Statements and Discussion: Examples of and suggested solutions for financial burdens imposed on local governments by federally owned lands.

H441-13 NORTHWEST REGIONAL POWER ISSUES.

Oct. 27, 1975. 94-1.
iv+201 p. il. † CIS/MF/5
•Item 1023.
Y4.In8/14:94-43.
MC 76-3756; 76-5877.
LC 76-601965.

Committee Serial No. 94-43. Hearing held in Eugene, Oreg., before the *Subcom on Energy and the Environment* to explore national and regional implications of the development of new sources of energy and the role of the Federal Government in energy production; and to consider H.R. 3111, to create a National Energy and Conservation Corp. (AMPOWER) to develop and market energy resources.

Full Committee Member Rep. Allan T. Howe (D-Utah) participates in hearing discussion.

Includes submitted statements (p. 4-6, 73-78).

H441-13.1: Oct. 27, 1975. p. 31-48.

Witness: **REYNOLDS, John S.,** assoc prof of architecture, Univ of Oreg.

Statement and Discussion: Description of solar energy R&D in Oregon; costs of solar energy conversion projects.

Insertion: "The Atypical Mathew Solar House at Coos Bay, Oregon," Center for Environmental Research, Univ of Oreg (p. 33-43).

mothers or women of child-bearing age, Mr 4,16:4; CIBA-Geigy, Swiss drug concern, says containers in which drug imipramine is distributed carry specific warning that it is not to be prescribed for pregnant women and that drs who did so must bear responsibility, Mr 4,16:5; CIBA-Geigy Ltd, mfr of drug imipramine, antidepressant used in tranquilizing preparations, denies existence of any hard evidence that its product causes deformities in unborn children but pledges to study questions raised about it; says drs should continue to prescribe drug as they have in past; concern says it warned drs that prescribing imipramine is inadvisable during 1st 3 most of pregnancy; Australian Health Dept urges women of child-bearing age refrain from using drug until McBride's findings are evaluated, Mr 8,7:1; Repr Halpern introduces legis to ban sale of antidepressant drug Tofranil until it can be determined whether drug causes birth deformities, Ap 9, 43:7

Sen Finance Com plan to cover certain drugs under Medicare for elderly persons will not include tranquilizing drugs and antacids, used by elderly mostly for short-term disorders, Je 9,8:5

TRANS Alaska Pipeline System (TAPS). See also Gas—US—Pipelines, Je 10. Gas—US—Rates, Ag 8. Oil—United States, Jl 5,12. Oil—US, Ja 2,23, F 11,24, Mr 5,21,26 in Mr 21 par, Ap 4 in Ap 4 par, Ap 21,26, My 10,12,14 in My 10 par, Je 2,10,15 in Je 2 par, Je 24,27 in Je 17 par, Jl 8,25,31, Ag 5,7,8,9,10,14,19, S 16,27, O 25, D 7

TRANS-Amazon Highway. See also Roads—Brazil, Mr 5, S 28

TRANSAMERICA Corp. See also Motion Pictures—Personnel, F 8 in 2d F 8 par. Office Bldgs—Calif, Mr 30. Stocks—US—Stock Prices, N 5. TV—Programs—Music, S 27

Pres J R Beckett assures investment analysts that co is back to its usual earnings trend after small setback in '69 and sharp slide in '70; is optimistic about co prospects. Ja 16,III,2:2; annual rept; co made strong comeback in '71, with earnings more than double those of '70 and a 637.9% increase for 4th qr; other data, F 19,41:1; co repts, July 17, that revenues and earning were at record high in qr and Jan-June period; net income for June qr put at $23,378,000; net income for Jan-June period at $45,410,000, Jl 18,52:4; co repts consolidated net income for 3d qr totaled $21.4-million or 32c per share, up from $16.7-million or 25c in '71 period; profits for 9-mo period reach record levels, O 18,61:6

TRANS-American Trailer Transport Inc. See also Ports—NY Port, Ag 15. Ships—Internatl Services—Amer Nations, F 25, Mr 10, Je 16. Ships—US—Labor, D 13

TRANS Atlantic Youth Forum. See also Airlines—Internatl Services—Trans-Atlantic, Ag 13

TRANS-Canada Pipelines Ltd. See also Gas—Canada, Mr 1, S 6. Gas—US—Pipelines, Mr 1

Trans-Canada Pipelines Ltd issues $125-million in stock; plans to sell 2.5-million $2.65 cumulative redeemable second prefered shares to pay its short-term debt, Mr 2, 57:1; G W Woods apptd Trans-Canada Pipelines group vp, succeeding V L Horte, who resigns, Ag 5,30:7

TRANS Caribbean Airways Inc. See also Airlines, D 15

TRANSCENDENTALISM

Prof D Noble article describes excursion to Walden Pond, Mass, with univ group to study transcendentalism and H D Thoreau's life in most appropriate setting, Ag 13,IV,7:1

TRANS-Coast Investment Co

Calif Financial Corp says it has agreed in principle to acquire Trans-Coast Investment Co, S 19,93:3; Calif Financial Corp says it has signed definitive agreement to acquire Trans-Coast Investment Co, N 21,67:1

TRANS Com Productions Inc. See also Ad—US—Motion Pictures, F 4. Airlines, F 4

TRANS-Community Broadcasting Corp. See also TV—Personnel, D 25. TV—Stations, D 25

TRANS-Continental Casualty Insurance Co Ltd. See also Credit—US, Ja 26 par

TRANSCONTINENTAL Gas Pipe Line Corp. See also Gas—US, Mr 12, Jl 14 par, O 8. Jersey Meadows, Ag 20. Subsidiary names, eg, Trans-Gulf Transmission Corp

Repts 3d qr income of $11.6-million in '72, compared to $10.9-million in 3d qr of '71, O 24,63:6; repts 3d qr operating revenues of $117.9-million in '72 against $107.5-million in '71, O 27,56:3

TRANSCONTINENTAL Investing Corp. See also Omega-Alpha Inc, F 24, Mr 8

TRANSCONTINENTAL Motor Inns. See also United Inns Inc, O 11, N 14

TRANSCOT (Co). See also Sales etc, S 2

TRANSFER Factor (Immunologic Substance). See also Biology, Ap 19. Leprosy, N 26

TRANSGLOBAL Growth Funds. See also Investors Overseas Services Ltd, N 28, D 1,2,8

TRANS-Gulf Transmission Corp. See also Gas—Canada, Je 14

TRANS International Airlines. See also Airlines—Internatl Services, O 20. Airlines—Internatl Services—Trans-Atlantic, Ap 23. Airlines—Internatl Services—Trans-Pacific, My 21. Airlines—US, Ap 16, My 10

TRANSISTORS. See also Electronics, F 14,19, Ag 2. Headache, Ag 22

TRANSIT, Committe for Better. See also NYC Transit—Subways, S 2

TRANSIT, Institute for Rapid. See also Transit Systems—US, Mr 11, N 20

TRANSIT Advertising Assn

Transit Ad Assn names E C Stevens chmn, Mr 20,57:6

TRANSIT Assn, American. See also Transit Systems—NYC Met Area, O 1. Transit Systems—US, F 2, Ap 12, O 1

Amer Transit Assn conv; pres C Cochran s, Ap 12,90:5

TRANSIT Authority, Chicago. See also Transit Systems—US—Chicago (Ill), F 20

TRANSIT Authority, Hartford. See also Transit Systems—US, O 14

TRANSIT Authority, Massachusetts Bay. See also Transit Systems—US, S 22

TRANSIT Authority, Metropolitan Atlanta Rapid. See also Transit Systems—US—Atlanta (Ga), Mr 5, Ap 2 21, Ap 3, S 10,17, O 13, D 5,25,31. NYC Transit—Concessions (Sales and Services), Mr 7. NYC Transit—Crime, My 15, Je 12, Ag 19, S 6, D 19. NYC Transit—Fares, Ja 1,2,4,7,18,29, Mr 11,14,15, Ag 17, O 1. NYC Transit—Labor, Ja 1,2,3,7,8,9,11,14, F 9,13, Ag 18,23,24, S 7, O 14,23,24,30, D 1,8,13,16,24,31. NYC Transit—Police, Ap 16, S 7. NYC Transit—Subways, Ja 7,9, F 11,19,28, Mr 6,7, Ap 4,8,16,21, My 6,30, Je 4, Ag 8,11,29, S 2,6,7,11, 14, O 18,19,21, N 25,26, D 2,5,31. Ocelots, My 13. Recordings, My 30. Transit Systems—US—San Francisco (Calif), S 14

Bklyn Assemblyman Sharoff charges NYCTA cutbacks in bus service in Bklyn are particularly distressing because NYCTA is in process of creating 10 'no-show political jobs' as supts, at salaries of $25,000 each; says NYC Civil Service Comm approved removal of jobs from competitive lists earlier in Feb and that Civil Service Merit Council Watchdog Com has protested action; NYCTA spokesman L Collins says jobs pay between $22,000 and $23,000 and are being filled by men who already make these salaries from within NYCTA, F 19,62:7; MTA bd is reptd to have increased salaries of most execs of its subsidiary, NYCTA, by 5 1/2% last May, June 26 announcement; pay of sr exec officer D T Scannell increased from $50,000 to $52,750, Je 27,45:1; FBI arrests F P Boutelle on charges of threatening to bomb Transit Auth bldg in Bklyn and Park Ave bldg in Manhattan, Jl 3,21:3; NYS Controller Levitt invokes his rarely used subpoena powers on Sept 21 and orders MTA chmn Dr W J Ronan to bring to his office next wk records he said NYCTA withheld from state auditors; Levitt has been conducting regular audit of MTA and says he is unable to continue because his auditors were denied access to various records and officials of NYCTA; Dr Ronan says Audit and Controls Dept 'endeavor to go beyond bounds of financial auditing' into NYCTA's operations poses difficulties and certain legal questions; Levitt also subpoenas NYCTA sr exec officer D T Scannell; says he has ordered Ronan and Scannell to produce records dating back 5 yrs including consultants' repts, purchasing procedures, productivity records, train on-time records and financial data; says there must be public accountability for all of NYCTA's actions and operations as it spends millions in public funds, S 22,24:2; NYS Controller Levitt on Dec 3 repts that 34 public authorities have $8.9-billion in debts outstanding; NYCTA's net deficit totaled $320-million for 5 yrs ended June 30,'71, with '70-71 net loss reaching $117,829,000; salaries and fringe benefits alone were $73,338,000 more than '70-71 revenue of $515,499,000, D 4,44:4

TRANSIT Operating Authority, Manhattan and Bronx (MABSTOA). See also NYC Transit—Buses, S 10. NYC Transit—Fares, Ja 5. NYC Transit—Labor, Ja 2,4

TRANSIT System, Bay Area Rapid (BART). Use Bay Area Rapid Transit System (BART)

TRANSIT Systems. Note: All material on short-haul passenger (commuter) transport (bus, st car, subway etc) and on the inclusion of private auto traffic and rrs in transit planning is carried here except New York City System, carried under New York City Transit System, and commuter railroads, carried under Railroads

See also Taxation—Fed Taxes—Income Tax, Ja 20

Dunlop Ltd announces development of a new way of moving people around cities on belts traveling 10 mph through tubes with controlled environment; says system, refinement of moving sidewalks already in use at air and bus terminals, is noise- and pollution-free and easy to build and maintain; repts belts are capable of moving 30,000 people an hr across Manhattan and could show profit with 5c fare; says system, called Speedway, takes passengers aboard at 2 mph and accelerates them until they are moving 10 mph; repts it has presented system to officials in London, Liverpool, Paris and NY; illus, Mr 9,16:4

Chile

Santiago bus drivers on strike for higher pay, Jl 5,7:1; private buses disappear from Santiago, Chile, sts on Oct 20 as their owners join mounting wave of strikes backed by opposition to Chilean Pres Allende, O 21,2:4

Connecticut

Penn Central announces that bus service will be substituted for train service during noncommuting hrs at stations on New Canaan branch of New Haven div for about 3 wks beginning Ap 10 in order to facilitate platform work, Ap 9,70:3

France

14 sculptors exhibit 50 pieces of figurative and abstract sculpture in St-Augustin subway station, Paris; if show is success, others will be staged; illus, Mr 10,4:4; illus comparing subway stations in London, NYC, Paris and Moscow, Ap 9,X,p33

W A Krauss article describing virtues of Metro system in Paris; list of his 10 best Metro stations; illus, N 5,X,p1; W A Krauss offers itinerary using Metro system in Paris that lets tourist see city in single day at total transportation cost of about $1.50; map of system, N 5,X,p23; improvements on Paris rapid transit system, part of 1 of most imaginative transport plans for any major city in world, noted; some riders see system as 'distant and cold' as well as too mechanical and automated; illus of ticket-dispensing machines, which confuse many passengers, and station, D 3,V,13:1; Epstein, N Reynolds and J Childs lrs on W A Krauss Nov 5 article on his visit to Paris and his experiences on Paris Metro, D 3,X,p44

Great Britain

Fare increase on London's subways and buses brings angry response from riders; increases, announced in Oct, averaged only 8% but some short-distance riders paid double normal fare because of changes in basic fare structure; officials estimate new fare structure will result in additional $28-million yrly to meet steadily rising costs, primarily wages, Ja 4,66:6; 2d fare increase in 17 mos on London transit system noted; increases avg about 8% but some riders, especially those going short distances, have to pay 100% more; in central area of city minimum underground fare of 13c now pays for up to 1 1/2 mi of travel instead of 2 mi of travel, Ja 16,X,p4; food, fuel and transit advantage of lengthy service delay to make a friend an that seated riders exch places with riders who were standing, which they did; illus, Ap 1,23:1; illus compari subway stations in London, NYC, Paris and Moscow, X,p33; I Dolin lr says new edition of Eur on $5 and $ Day fails to include Victoria Line, section of London Underground opened in '69, My 21,X,p45; London Transport spokesman says on Nov 10 that plans to con all bus operations in London to 1-man service over nex to 7 yrs have been postponed for time being; double-de buses which carry conductors who collect fares will be continued on busiest routes of central London for foreseeable future, N 12,49:1

Italy

Officials in Rome rept they are encouraged with resu city's 9-day suspension of fares on public transportatio Govt is considering another test suspension of 8c fare munic buses and streetcars in effort to discourage use autos in city; also weighs permanent abolishment of fa and ban on use of private autos in most or all of histor center of city, Ja 4,5:1; officials in Rome rept auto traf heavy as usual as motorists shun free public transporta experiment; illus, Ja 5,74:1; Rome's 9-day experiment public transportation ends, Ja 9,8:1; analysis of Rome's day experiment in free public transportation and city's continuing traffic problem notes that 60% more riders buses during experiment; officials in Rome are now evaluating experiment, which reptdly cost almost $1-million; question remains whether traffic jams were eas during test period, Ja 9,IV,3:6; T Wicker discusses curr experiments in fare reductions on mass transit systems, cites recent experiments in Rome, Italy, and Atlanta, Ja 11,37:1; Rome's 9-day no-fare transit experiment becomes pol issue in Italy; Communist party, at special meeting of Rome's traffic comm and other experts, cha some munic depts were unenthusiastic about experimen announces it will organize plan for free public transportation; contends no-fare system must be couple with permanent ban on all private autos in Rome's cen Communist party paper expresses suspicion that Rome police comr 'sabotaged' plan because it had support of organized labor; Rome's Traffic Comr B Cazora and pr 2 munic transit systems rept that temporary suspension bus and streetcar fares brought increase in rides of alm 50% during test period; say rolling stock was better uti but concede that buses and streetcars traveled no faste than before experiment; Bologna, Italy, recently annou it will start permanent no-fare transit service combined ban on private cars in its historic center during rush hr next spring; Milan transit official opposes trying no-far system in Milan, Ja 17,9:1; Rome Traffic Comr Cazora proposes bus and streetcar fares be abolished permaner during morning and evening rush hrs beginning March also backs expansion of downtown areas from which a private motor vehicles are banned; promoters of plan, including heads of 2 munic transit systems, assert plan only way to relieve chronic congestion in center of cit to lower air pollution; city's parliament is expected, however, to give priority to establishing new munic go officials rept 50% increase in number of riders during free transit experiment, even though many of riders we joyriding youngsters; poll conducted during experimen shows 11% of riders would give up driving cars in city efficient bus service were available; local leaders of ma trade unions and left-wing parties have been campaign for some time for ban on all private motor traffic in ce of Rome and reorgn of munic transit network to insur quick, punctual and inexpensive or free transportation; map, Ja 27,6:1; proposal to permanently institute free and subway transit in Rome noted; illus, Ja 30,IV,4:4; Rome's City Hall announces plan to permanently abol bus and streetcar fares during rush hrs and to submit proposal to city's parliament calling for gradual bannin all private motor traffic from historic center of city; ai proposals is to relieve congestion in downtown Rome luring and forcing motorists back to public transit syst permanent free-ride program begins Apr 15 between 6 9:30 AM every weekday; later, daily free-fare period i afternoon will be fixed; financing of program has yet t resolved, Mr 31,1:1

Rome on May 1 begins 2d experiment in 6 mos in fi transit on buses and streetcars during morning and eve rush hrs; if plan lures enough motorists into buses to r in a significant reduction of traffic, it will become permanent, regardless of its cost; officials says 6-wk experiment will cost city $2.4-million in uncollected fa city originally planned to adopt no-fare system perma in Apr, but tech and pol disputes led to several postponements and eventual compromise on another t period, My 3,7:1; Rome, Italy, announces, June 13, th fare experiment on munic buses and streetcars which on May 2 will continue until end of June instead of e on June 15th, in effort to gather additional data; exper is being conducted in attempt to pursuade motorists t public transit, Je 14,94:1; Rome, Italy, ends on July 1 ride experiment on its bus and streetcar network; it is unlikely that no-fare system will be revived in near fu but city is introducing low-cost monthly commuter tic another effort to lure people out of private cars and o public transportation; it is generally realized, though n officially acknowledged for pol reasons, that glaring inadequacies of present transit system were major reas for experiment's failure; 2-mo test is estimated to hav over $2.5-million in uncollected fares; new commuter described, Jl 1,2:5

Japan

Unusual display of militance by 1.6-million Japanese transportation workers virtually paralyzes nation's trai and subways and disrupts airline and taxi service; coordinated strike action came as climax to spring wa offensive; Govt officials estimate that 20 million peop were inconvenienced in Tokyo, Ap 28,2:7

Michigan. See also subhead US, My 21

New Jersey

Newark, NJ, Planning Dept begins study to explore

TRANQUADA, Robert E (Dr). See also Med—US—Educ, S 28

TRANQUILIZING Drugs. See also Mental Health—US, N 29. Monkeys and Apes, Ag 4

Bergen County (NJ) Prosecutor's office is considering possible indictment of Jerry Schwam, who is charged with carrying prescription tranquilizers in unmarked container; Wood-ridge Boro Magistrate Mark Aurigemma turns down appeal by Schwam atty Theodore Maloof that '70 Controlled Dangerous Substance Act is aimed solely at major drug peddlers and not med patients; Assemblyman John A Spizziri offers new amendment permitting person with legitimate need for controlled drug to carry 2-day supply of med in any container; Schwam por (M), My 28,23:2; Bergen County, NJ, Prosecutor Roger W Breslin Jr drops charges (S), Je 8,II,3:1

FDA acts to require mfrs to include warning brochures with some tranquilizers; Comr Donald Kennedy orders Drugs Bur to draft patient leaflet on so-called minor tranquilizers such as Valium, Librium and Miltown (S), O 27,18:1

TRANS Alaska Pipeline System (TAPS). See also Oil—US, Ja 18,23, Mr 11,22,23,26, Ap 17,20,21, My 6,14, Je 1,2,3,5, 15,17,19,20,21,22,25,26,28,29,30, Jl 3,6,7,8,9,10,11,12,13,15, 16,18,19,20,21,24,25,27,29,30,31, Ag 1,2,8,11,18,21,22,23,26, 30, S 1,5,11,21,24, O 21,28, N 15,30, D 3,30, Petrochem, Mr 19

TRANSAMERICA Corp. See also Motion Pictures—US, Mr 27. Office Bldgs—Calif, Mr 2

4th qr earnings rose 16.3% to $26.4-million (S), Ja 19,IV, 9:6

TRANSAMERICA Financial Corp

Arthur E Van Leuven elected pres, succeeding H J Schmidt, who becomes vice chmn and continues as chief exec officer (S), My 6,IV,10:2

TRANSAMERICAN Roosevelt Industries Inc. See also Mopeds, Ag 24

TRANS Arabian Pipeline Co (Tapline). See also Oil—Intl Trade, Ag 10

TRANSATLANTIC Reinsurance Co

Amer Internatl Group repts it and 7 others will join with its Amer Home Assurance subsidiary in forming co, capitalized at $100-million (S), D 16,IV,11:5

TRANS Canada Pipelines Ltd. See also Gas—Canada, D 20. Gas—Canada— US-Canada Trade, F 16,23. Gas—US— Pipelines, S 10

TRANSCENDENTAL Meditation. See also Educ—NJ, F 25, O 21,22, O 23,31, N 6,9. Educ—US, F 6. Labor—US—Indus Hazards, N 20. Mystics and Mysticism, D 4

TRANSCO Companies Inc. See also Gas—Intl Trade, N 9. Gas—US, Ja 21,25, Mr 9, Ag 5, N 7. Oil—US—Offshore, N 8

TRANSCOM Airways. See also Airlines—US—Air Taxi Services, My 18

TRANSCONTINENTAL Gas Pipe Line Corp. See also Gas—Intl Trade, Ja 22, Ag 5, D 17,23,24,30. Gas—US, Ja 14,15,16,19,20,21,22,29,31, F 4,9,11,22, Mr 7, Je 23,29, Jl 22,23, S 22,26, O 8, N 19. Gas—US—Accidents etc, Ja 19,22. Gas—US—Rates, Ja 15,16, Mr 7, N 19

TRANSCONTINENTAL Oil Corp. See also Oil—US, Je 8

TRANSFAIR '77. See also Airplanes—Concorde Airplane, Ag 3

TRANS-Intermountain Gas & Energy Resources. See also Gas—US—Pipelines, O 25

TRANS International Airlines. See also Airlines—Intl Services—Far East, Ag 23. Airlines—Intl Services—Trans-Atlantic, Ag 2,18,23, N 19,20. Airlines—US—Labor, S 11,29

TRANSIT, Action for Rational (Orgn). See also Roads—NYC—Express, West Side Hwy, Ja 1

TRANSIT, Committee for Better. See also NYC Transit—Subways, Mr 11. Transit Systems—US—NYC Met Area, Ap 3

TRANSIT Assn, American Public. See also Transit Systems—US, F 6,26, Je 19, S 15,23, O 9,11,13. Transit Systems—US—Los Angeles (Calif), Je 19. Transportation—US, Ap 28

TRANSIT Authority, Atlanta Metropolitan Area Rapid. See also Transit Systems—US, S 13

TRANSIT Authority, Chicago. See also Transit Systems—US—Chicago (Ill), F 5,6,7,13,16, Mr 17,18,19,21

TRANSIT Authority, Massachusetts Bay. See also Transit Systems—US—Boston (Mass), O 1

TRANSIT Authority, New York City (NYCTA). See also NYC Transit

Public Affairs dir Jacques Nevard says it is 'possible' that he listed as his guests newsmen who were not actually present and thus may have made false statements on expense account statements (M), N 5,46:1; Nevard plunges to death from TA bldg, Bklyn; biog; was newsman with NY Times until '67 (M), N 6,44:3

TRANSIT Authority, Southeast Michigan. See also Transit Systems—US—Detroit (Mich), Ag 16,17,18

TRANSIT Authority, Washington Metropolitan Area. See also Transit Systems—US—Washington (DC), Mr 2

TRANSIT District, Southern California Rapid. See also Transit Systems—US—Los Angeles (Calif), Je 19

TRANSIT Districts, Assn of. See also Transit Systems—US, Je 19

TRANSIT System, Municipality of Metropolitan Seattle. See also Transit Systems—US—Seattle (Washington), (Washington), Mr 30

TRANSIT Systems. Note: All material on short-haul passenger (commuter) transport (bus, st car, subway etc) and on the inclusion of private auto traffic and rrs in transit planning is carried here except New York City System, carried under New York City Transit System, and commuter railroads, carried under Railroads

Comparison of declining faith in subways in US and subway expansion abroad revd (S), D 18,IV,7:1

Article on exhibit in NYC IND subway station, sponsored by grants from Urban Mass Transportation Adm and Natl Endowment for the Arts, on worldwide subway systems; some NYC straphangers comment (M), D 23,II,3:1

maintenance workers causes traffic jams (S), N 24,13:1; effects described (S), D 7,7:1

France

Paris Metropolitan subway system puts on 4-day event, Metro Allegro; musicians hired to play in 20 Metro stations; event is 'overture' to granting previously illegal underground performers 3-mo permits to play below ground; performing group illus; sampling of NYC subway riders shows no great enthusiasm for underground music (M), Mr 29,33:3

Hundreds of thousands of Parisians jam city's express subway trains, trying out new lines and visiting huge new main station at Les Halles; rides are free and Paris Transport Auth provides concerts and art shows underground; station was formally opened by Pres Valery Giscard d'Estaing; station and new express system described; illus (M), D 12,1:5

Great Britain

Group of Brit scientists and workers contend London subway system is dangerously dusty and needs cleaning; London Transport, which operates system, denies allegations and says system is cleaned regularly (S), N 29, 6:1

Queen Elizabeth opens 3.5-mile $55-million direct subway link between London's central business district and Heathrow airport; extension has been under discussion for 31 yrs and under construction for 7; London Transport chmn Kenneth Robinson estimates ridership of 12-million annually; illus (M), D 17,27:4

Ireland, Northern

Bus drivers refuse to work in protest of killing of driver in Belfast (M), My 12,3:1

Israel, State of

Finance Min Simcha Ehrlich says Govt will gradually cut public transportation subsidies (S), O 24,4:4

Italy

Student extremists bomb Milan subway, halting service; no injuries reptd (S), My 20,4:3

Mexico

Mex Govt plans to extend subway system (S), D 26,6:1

Netherlands

Amsterdam police arrest man for attempting to throw paint at Crown Princess Beatrix, husband Prince Claus and Transport Min Tjerk Westerterp after subway system opening ceremonies; paint-thrower was 1 of several persons demonstrating against demolition of homes (S), O 15,21:1

Spain

Madrid police wound 2 urban guerrillas and block attempt to bomb 6 subway stations (S), S 25,5:1

Union of Soviet Socialist Republics

Moscow subway explosion kills at least 4 passengers and maims several others; journalist Viktor Louis says explosion was caused by bomb; police and subway officials refuse to comment (S), Ja 11,5:1; USSR dissident Andrei D Sakharov suspects secret police set off subway blast to discredit dissidents; has no proof but asks world pub opinion demand probe; 4-7 people reptd killed (S), Ja 15,7:6; USSR security police continue to investigate explosion in Moscow subway in wake of 2 to 5 more explosions around city (S), Ja 22, 4:4; Sakharov is summoned by legal authorities and warned about statement he made on Moscow subway explosion; might have been provocation by 'repressive organs,' allusion to state security police; statement responding to London Evening News article by Soviet journalist Viktor Louis disavowed dissident responsiblity for blast; Tass rept on Sakharov noted; ind sources say bombing was 1 of 3 explosions in city on Jan 8; other recent bombings recalled (M), Ja 26,7:2; Sakharov, in lr to Pres Carter urging support of persecuted pol and religious activists in USSR and E Eur, repeats assertion that Moscow subway explosion was used as 'provocation' by Soviet security police in maneuver to blame dissidents; US State Dept officials say other Moscow dissidents do not share Sakharov's view on blast (M), Ja 29,2:5

John R Woods lr on effective use of mass transit in Kalinin, D 19,30:4

United States

Environmental reprs, meeting with NJ Gov Byrne, suggest that state put more emphasis on mass transit rather than on investing more money in superhwys; Byrne says he is not convinced NJ residents will use mass transit because they seem to prefer autos (M), Ja 7,II,15:3; Byrne calls for creation of new public transit agency within Transportation Dept to centralize regulatory functions now performed by commuter operating agency and PUC, state of State of State new agency would be able to exercise firmer control over how bus and rail subsidies are spent (M), Ja 12,II,21:6

Transportation Sec-designate Brock Adams says he favors giving communities broad latitude in deciding whether to spend allotted Fed hwy money for roads or for other transportation purposes such as mass transit, Jan 7 Sen Commerce Com confirmation hearing; promises to discuss question with Northeastern govs; illus (M), Ja 8,6:4

Sen Harrison A Williams Jr to introduce legis providing $11.4-billion in additional funds for mass transportation over next 5 yrs; $3.8-billion in capital-grant money remaining in existing Fed program has been committed to well-advanced projects still awaiting grants; new bill, to be called Natl Mass Transportation Assistance Act of '77, would authorize capital grants ranging upward from $1.9-billion in fiscal '78 to $2.8-billion in fiscal '82 (M), Ja 12, 19:2; article on Sen Daniel P Moynihan's 1st few days in office notes he plans to urge establishment of special mass transit fund simular to hwy trust fund; por (M), Ja 23,19:1

NJ Transportation Dept is considering plan to promote more efficient bus service and increased ridership; Comr Alan Sagner says key element of plan will center on how state distributes commuter subsidies to financially troubled bus lines (S), Ja 24,51:2

Article on increasing popularity of trolley cars in Boston, Mass, and other urban areas; revival has brought updated fiberglass version of trolley, now known as light rail vehicles, to Boston; other cities that plan experiments with new vehicles and others that still use older-type trolleys noted; Boston residents comment; illus (M), F 4,8:1; revitalization of trolley car system in cities and towns around US, including Boston (Mass), revd (S), F 6,IV,7:4

Transportation Sec Brock Adams says Hwy Trust Fund should be opened to let localities use it for mass transit and ones; cites lack of standardization that
illus (M), F 6,III,1:1

Article on subway car production ind
Transit Assn official Deane Aboudara s
has never been profitable; suggests maj
is environmental impact statements, alt
and other planning input required at va
says only Boeing-Vertol and Pullman-S
building subway cars; notes failure of B
Industries to remain in mkt; illus (M),

Dr William M Beute lr asks what eve
proposed rapid-transit monorail service
Pky in light of decreased efficiency of
transit systems, F 6,XI,27:6

Article on failure of experimental free
Westchester cities; says White Plains su
Transportation Dept indicates populatio
advantage of service, which aims provid
shopping dists and lessening auto traffic
pollution; Mayors, White Plains Regiona
Harold E Vogt and Westchester Transp
Raleigh D'Adamo comment (M), F 13,

Article on Conn's 10-yr master transp
switches emphasis from hwy constructio
solutions; major projects revd; transporta
F 13,XXIII,1:3

Pres Carter, in his proposed revision o
recommends additional $50-million in fis
transit and increase in amount of overall
available to meet operating costs (M), F
Transportation Sec Brock Adams says er
available for nation's mass transit fundin
recommends against any new major proj
testimony, Sen Housing and Urban Affai
to submit to Cong by May '78 details of
plan for '80 and beyond; abandons Ford
which Transportation Dept sets aside ent
transit projects as they are approved; say
available only as different stages of proje
construction; says he would implement C
giving larger subsidies to cities with high
officials express concern over status of o
Sen Harrison Williams comments; MTA
Harold L Fisher urges continuation of $2
annual subsidies to continue on-going co
says Auth desires 'full funding' of $1.5-bi
construction program; large NY-NJ trans
of financial commitments noted (M), F 2

Article on switch many local officials ar
Fed funds committed to build roads to m
projects; Washington (DC) Transportation
James Clark and Natl League of Cities st
Debbi Duffy comment; existing transfer p
summarized (M), Mr 1,14:4

Article on Fairfield County, Conn, plans
scale bus systems as alternative to private
result of availability of millions of dollars
transit funds; Southwestern Regional Plan
official Michael J Breen, Greenwich Trans
Richards Ford 3d, Greater Bridgeport Tra
Michael Gratt, Norwalk Transit Dist com
and city planner James E Ross comment;
XXIII,1:3

Transportation Comr Alan Sagner denies
NJ's $45-million bus-subsidy program fund
squandered or mismanaged, statement, Joi
Com hearing (M), Mr 9,II,19:2

Public Utilities Comm hearing examiner
rules Hudson County (NJ) Independent Bu
cannot eliminate free rides for some childr
to charge fares for children must be includ
increase request (S), Mr 13,17:1

Article on work of Northport, NY, HS s
teachers to bring trolley travel back to tow
incorporated into Northport Trolley Corp
worked out details whereby horse-drawn t
through town on weekends starting in '77
(M), Mr 13,XXI,3:1

Tom Wicker on need for 'low-floor bus'
accommodate handicapped and aged; critic
Patricelli, Urban Mass Transportation Adm
approving design that handicapped reprs sa
Mr 15,37:5

Transportation Dept and Sens developing
transit legis agree on most aspects of Sen c
about $11-billion available for transit capita
aid over next 5 yrs; plan proposed by Sen
Williams Jr would make $8.65-billion availa
projects, $2.88-billion for operating assistna
million for operating assistance available un
based on ridership rather than population;
compromise has been reached with Carter
Mr 18,II,4:1; Transportation Dept and Sen
agree on stretching mass-transit assistance
'82 with additional $5.7-billion in funding a
Williams; illus (M), Mr 19,49:4

Lrs by John Dowlin, Helene S Berg, Bern
Robert B Welner and Herman Herst Jr on
decline in popularity of subways across US;
Mr 20,III,16:3

Ed urges Pres Carter and Transportation S
Adams to adopt strong urban transit policy,

Seymour N Weinstein lr on Fairfield Cour
introduction of new fleet of buses; illus (M)
17:6

Patricelli lr disputes T Wicker's Mar 15 ar
bus design that seemingly ignores elderly an
Ap 12,32:3; Transportation Sec Brock Adam
should be earmarked to improve public tran
order to overcome resistance to gas tax incr
no benefit for rural population (M), Ap 13,1

Former Transportation Sec William T Col
Apr 1 ed on Pres Ford's and Pres Carter's a
transit, Ap 18,30:4; Carter Adm reptdly has
energy conservation program with policy to
transportation; recent NY Times' int with T
Sec Brock Adams, in which he suggested tha
taxes aimed at reducing energy consumption
public in form of more flexible subsidized pu
system, recalled (M), Ap 20,18:1

troopers investigated
Nov, compared with 5,423 in Nov
its as factor for 16% drop in
pts that there were 48 traffic
55 in Nov '72; says fewer cars on
is probably contributed to
contends that one major benefit
isis is dramatic reduction in hwy
many states have experienced as
speed limits; holds that lower
iversally applied and strictly

randt announces on Nov 16 that
g will be imposed on Nov 25 and
e imposed on oil consumption as
, news conf, Bonn; says W Ger
npose rationing system, but urges
ary restraints, such as limiting
mph, N 17,10:4; German Min H
s Sunday driving for next 4
nits to about 62 mph on 4- and 6-
lesser rds beginning Nov 26; cites
Arab imports and expectation of
tion moves, N 20,63:2; W
chs in Nov 19 bans all private
and cuts speed limit to 62 miles
es per hr on town roads in effort
oil, N 20,63:2; Sunday driving
f Arab oil embargo on Eur; illus,
are empty on Sunday, Nov 25,
g with traffic as result of Sunday
Ger because of oil shortage; E
se most of its oil comes from
unday driving ban by dancing,
g on car-free sts, N 26,2:4; West
s on Dec 12 discloses that Govt
imposed over last 3 wks during
oliday period, D 13,5:5

ured on Aug 11 when bus skids
vy and plunges into Moraca

See also Traffic—NYC, Je 7,
Ja 21
vilian). See also Traffic—
13, D 12
of. See also Traffic—US, F 11
Armament—Reserves—

also China, Nationalist,
ons—China, People's Republic

—US, Jl 3
also Sciences, Natl Acad of,

ee also RC Ch, F 27
-US, Jl 3. Banks—US, My 8.
Co (NYC), N 27

l sr vp, Ja 30,60:6
o Housing—NYC—

Rs—US—Freight, My 26
Camps. Note: Includes all
rted trucks, residential, boat

N 25. Fires—Ohio, O 10. Fish
ng, Sport, Jl 17. Housing—
r 2. Housing—NJ, F 4 in 2d F
ng—NYC—Public Housing,
using—NYS—Rents, D 9.
13, Ag 18. Housing—US—
Housing—NYC Met Area,
ixon—Finances, Jl 7.
C—Garment District, My 17.
US—Accidents etc, Missouri,
s etc, New Jersey, Jl 29.
4, Ap 30, Jl 22, S 2, O 17,
ensing, O 21. Zoning—NJ,

emley, who is circumventing
by LIRR strike by living in
an office; Lemley comments;
Ja 14,106:3
nounces it will enter
ring with 11 1/2-ft slide-in
ad, news conf, Tucson,

Family Camping Fed con-
t, which claims to be 2d
eational vehicles in US,

Vacation and Travel Show
minating affair is array of
bile homes; growing trend
rs for fun described; other
v noted, Mr 13,44:5
on vehicles in US
new campers described;

K Hanson on Apr 30
brought by Life-Time
70 has been settled for $4-
sly rendered against co;
ing himself, will pay
gate $800,000 judgment
ed as part of settlement;
stributor of Winnebago
roducer of recreation
ndustries chmn J K
d off plans for $20-
keno, Nev; cites cost of
t and moving, and other
stimates, My 25,49:5;
door recreational vehicles;
,200 employes will be laid
s and plummeting sales,

Article discusses decline in popularity of motor homes in US; recreational vehicle indus repts that sales are down 21% from '72; says some important reasons for decreasing sales are repts of gasoline shortage, sluggishness of stock mkt, decline in value of dollar in foreign-exchange trading and uneasiness over Watergate scandal; Winnebago Industries, which had 36% drop in earnings for its fiscal 1st qr ended May 31, is hardest-hit co; GM, which started mfg motor homes on pilot basis in Jan and began regular production in Feb, repts that sales are 'beyond all initial expectations'; Open Road Indus pres A M Robin and other indus spokesmen comment; illus, Jl 15,III,1:3

P J C Friedlander comments on recent 2-wk vacation in which he drove around US in motorhome; says not having to eat in roadside restaurants is main benefit of traveling in motorhome, S 9,X,p27

Comment on NYS Thruway Auth experiment in which owners of recreational vehicles are permitted to park overnight without charge on grounds of Newburgh Charter Bus Stop; experiment will end on Oct 31, S 23,X,p4

P J C Friedlander incorporates his wife's reply to B Miller lr contending that Mrs Friedlander probably did not enjoy 2-wk vacation in which she prepared meals in their recreational vehicle; Mrs Friedlander says all chores in motorhome were shared; Friedlander also quotes lr of R C Elwell, O 7,X,p29

Article discusses declining popularity of recreational vehicles in US; illus, O 21,XI,22:1

Article offers advice to potential buyers of recreational vehicles; drawing, O 21,XI,22:5

Holiday Inns Inc announces plans to construct series of mini-parks for recreational vehicles adjacent to some of its motels; each park will be able to accommodate 30 to 50 camping vehicles, with 3 to 5 acres of land available; parkers will have access to each inn's swimming pool, restaurants and other services, O 28,X,p4

Ford Motor Co on Oct 30 announces that it will go into motor home business in early '75, O 31,62:4

Interior Dept's Land Mgt Bur has recently imposed restrictions on public use of large part of great southern Calif desert in effort to curb its accelerating despoilation by motorized recreationists and vandals; action is 1st undertaking of this sort by bur, which has responsibility for more than 1/2 of 750-million acres of Fed land in US; bur's action fails to satisfy conservationists and displeases motorists; bur's Calif dir J R Penny holds that resources in area are being lost daily at 'very significant rate'; agency's plan, published in Sept, deems 16 desert areas to have exceptional ecological or historical value and therefore are closed to pleasure vehicles; restrictions detailed; Calif Assn of Four Wheels Drive Clubs, major desert-user orgn, asks US Dist Ct in San Diego to enjoin permanently pursuance of regulatory program on ground that adequate public hearings have not been held; reprs of 5 deserts recreation orgns have displayed petitions to Cong bearing 42,000 signatures and asking for 'fact-finding mission' to inquire into alleged discrimination against their interests in desert planning; southern Calif Sierra Club repr L Moss calls bur's plan 'lackluster,' one that basically circumvents Natl Environmental Policy Act; group of 14 zoologists at Calif Univ has protested that program is too liberal and that off-road vehicles should be confined to those areas of desert already damaged beyond recovery, N 4,41:1

Chamonix Chalets Properties Inc, which wants to put trailer camp on slopes of Spruce Mountain near Plainfield, Vt, has been thwarted by local opposition; after plans for development were announced, Friends of Spruce Mountain was formed to preserve wilderness; R Hoffman, organizer of Friends of Spruce Mountain, says group has approached Nature Conservancy, private orgn that buys up endangered land, in hopes that it would purchase land; state has also expressed interest in applying for matching grant from US Bur of Outdoor Recreation; map; illus, N 5,64:4

Many Penna residents are opposing state's decision to permit 14-ft-wide mobile homes on hwys; poll by affiliates of Penna AAA is running 10-to-1 against extra-wide vehicles; survey by Scranton Times shows that 90% of its readers are against wider mobile homes; Penna Transportation Sec J Kassab, who will make final decision on issue on Nov 20, says his mail has also turned against them, N 7,93:8

Winnebago Industries, maker of motor homes and related travel equipment, announces on Nov 30 that it has laid off more than 500 employes, effective Nov 30; notes move is taken to reflect sales decline caused by fuel shortage; employed 3,500 persons during peak production 2 yrs ago; now has about 1,600 employes, D 1,49:7; fuel shortage is cutting sales of recreational vehicles; publicity for Internatl Camper and Trailer Show, NYC, stresses advantages of using recreational vehicles in place; examples, D 2,III,13:1; recreation vehicle indus spokesmen contend that high prices of vehicles combined with uncertainty surrounding availability of gas because of energy crisis are reasons why recreation vehicle sales have nosedived in recent mos after decade of specatacular sales that topped 500,000 a yr mark; there are 5 million recreational vehicles now on rd; motor homes get only 4 or 5 miles to gallon of gasoline, and travel trailer pulled by car or camper mounted on pickup truck may drag mileage of those vehicles down to 7 or 8 miles a gallon on hwy; illus, D 22,33:1; Winnebago Industries chmn J K Hanson repts that co sales were down 43.3% in 3d qr and 28.7% for 9 mo period; says co, nation's largest producer of motor homes, posted 98.1% decline in earnings for 9 mo period; says sales were lower because of consumer uncertainty about availability of gasoline; Skyline Corp, nation's largest producer of mobile homes, repts that its earnings declined 36.3% for 2d fiscal qr ended Nov 30 and 41% for 6 mo period; repts that sales were down 9 and 3.8% in respective periods, D 22,39:1

Fire in Lennon, Michigan, kills 8 people on Dec 24 in mobile home, D 25,19:5; family of five dies on Dec 25 in John Day, Oregon, as fire sweeps through trailer home; 4 persons die near Lakeland, Fla, as fire destroys mobile home in trailer park, D 26,21:1; Genesee County (Mich) Prosecutor R F Leonard on Dec 28 orders grand jury investigation into state mobile home indus; asserts that Mich's 800,000 mobile home occupants are flirting with 'imminent disaster'; 8 persons died on Dec 24 in mobile home fire near Flint; authorities say that victims had no

Traffic—NYS—Accidents etc, Ja 4. Traffic—US—Accidents etc, New Jersey, O 25. Transit Systems—US, D 10

TRAIN, Russell E (Chmn). See also Air Pollution—US, Je 14, Ag 7, S 7,13,14,20, O 16,17,27, N 7,9,12,13,18, D 4,5, 6,10,19. Animals, F 11, Mr 3,4. Area Planning, S 13. Area Planning and Renewal, F 7. Atomic Energy—US—Elec Light, D 12. Autos—US, My 2. Coal—US, F 15,16, Mr 14. Delaware River, Je 25. Elec Light—NYC Met Area, D 5, 14,18. Energy and Power, My 2, Je 14, O 28, N 9,12, D 19. Oil—US, S 11,13,14,20, N 9,12,13,18, D 4,5,6,18. Oil—US—Offshore Exploration and Installations, S 6. US—Econ Conditions, S 13. US—Environment, S 13, D 23. US—Environmental Quality, Council on, Ja 12,13. US—Environmental Protection Agency (EPA), Jl 22,27, Ag 2,7, S 15. US—Environmental Quality, Council on, Jl 27. Water Pollution, Je 6, Ag 7, S 11,13, N 3. Water Pollution—Sewage etc, S 27, O 13

R E Train, pres Nixon's chief environmental adviser, is soon expected to become EPA Admr; career sketch, Jl 22, 38:3; Train named to head Environmental Protection Agency, Jl 27,32:4

TRAIN Dispatchers Assn, American. See also RRs—US—Labor, Mr 13,17,18
TRAINA, Albert S. See also Bartell Media Corp, D 21
TRAININ, Isaac N (Rabbi). See also Mental Health, Ag 8
TRAINS. See NYC Transit. Railroads. Transit Systems
TRAMMEL, George W 3d (Judge). See also Bridges, D 18
TRAMP Shipping. See Ships
TRAMPS. Use Vagrancy
TRAMUNTI, Carmine. See also Crime—NYC, My 18,31, Ag 7,20. Drug Addiction—NYC, O 5. Murders—NYC, Toutoian, George, D 25. Prisons—NYS, S 27. Stocks—US—Violations, Imperial Investment Corp, O 26. Taxation—US—Tax Evasion, O 26
TRAN Ba Di (Brig Gen). See also Cambodia, Ap 19
TRAN Kim Phuong (Amb). See also Vietnam, Ja 21
TRAN Nam Trung. See also Vietnam, F 6
TRAN Ngoc Chau. See also Vietnam, Ap 30, My 1,6,10. Vietnam—POWs, Jl 23,24,26. Vietnam—South Vietnam—Pol, Mr 12,27, Jl 28

TRAN Ngoc Hien. See also Vietnam, Ap 30. Vietnam—POWs, Jl 23

TRAN Nguon Phieu (Min). See also Vietnam, F 8. Vietnam—Refugees, Mr 8

TRAN Qui Than. See also Housing—South Vietnam, O 1

TRAN Quoc Buu. See also Vietnam, Ja 12

TRAN Quoc Lich (Brig Gen). See also Vietnam, N 10

TRAN Thi Ngo. See also Laos, S 13

TRAN Thien Khiem (Premier). See also Stocks—Vietnam, F 22. Vietnam, Ja 31, Jl 24. Vietnam—South Vietnam—Pol, Jl 13

TRAN Thip Phuong (Mrs). See also Typhoons, N 18

TRAN Van Cam (Brig Gen). See also Vietnam, N 22

TRAN Van Dinh. See also Indochina, S 9. Vietnam, F 6, O 5

TRAN Van Do. See also Vietnam, Ja 5,8,17,19. Vietnam—South Vietnam, Ag 26

TRAN Van Huong (Vice Pres). See also France—Foreign Service, Jl 18. Vietnam, Ja 31, Jl 18

South Vietnamese Govt sources rept, Oct 16, Vice Pres Tran Van Huong has been hospitalized in serious condition, O 17,10:8

TRAN Van Khoi. See also Oil—Far East—South Vietnam, Jl 10

TRAN Van Lam (Min). See also Cambodia, Ja 20. Johnson, L B, Ap 8. Laos, Ja 20. Vietnam, Ja 18,19,20,22, 23,24,26,27,28,31, F 3,21,24,25, Mr 1, My 5,15,25, Je 8,14, 19. Vietnam—South Vietnam—Pol, Ap 26, Jl 13, Ag 28. Vietnam—Truce, Mr 16

TRAN Van Tra (Lt Gen). See also Vietnam, F 2,5,6,10,15, 21, Mr 3,10,11,16,18, Ap 1. Vietnam—Truce, F 4, My 15

TRAN Van Tuyen (Deputy). See also Vietnam, Ja 8, Mr 31. Vietnam—South Vietnam—Pol, S 15

TRANE Co. See also Air Conditioning, Ja 24

Trane Co elects V R Simpson pres succeeding T Hancock, who is named chmn and continues as chief exec, Je 27, 101:2; Trane Co names G R Horton marketing vp for commercial air conditioning div, Jl 2,42:6

TRANPOSCH, Jack. See also Wood-Carving, Ja 7

TRANQUILIZING Drugs. See also Drug Addiction—NYC, My 10. Drug Addiction—US, Ag 16. Horse Shows, S 16. Surgery and Surgeons, N 28

Common Mkt comm confirms probe of Common Mkt pricing policies of Hoffman-La Roche & Co for its tranquilizers Librium and Valium; probe reptdly is in preliminary stages; prices for products reptdly are higher in Common Mkt countries than in GB, Ag 10,41:2

TRANS Alaska Pipeline System (TAPS). See also Oil—US, Ja 27 in Ja 18 par, F 10,11,13 in F 10 par, F 16,28, Mr 1,4, 6,11,13,14,15, Mr 16,20,28,31, Ap 3,5,6,13,19, My 22,26, Je 6,11,14,21,23,29, Jl 2,9,10,11,12,14,15,16,18,19,21,22,23, 24,28,29, Ag 2,3,5,11 in Ag 2 par, Ag 19,26 in Ag 19 par, S 1,3,6,9,10,11,13,14,26, O 12,14,17,18,19,21,22,23, N 8,9, 13,14,16,17,18,19,24,27,29, D 1,2,5,9,17,23. Oil—US—Pipelines, D 23

TRANS America Computer Corp. See also Data Processing, D 15

1973

Consolidated net incc
$21.2-million, Mr 2,
Beckett reports 1st q
including capital gair
rose to $495.3-millio
TRANSAMERICAN Tr
Internatl Services—A
Services—Maiden Vo
TRANSAMERICAN Tr
P A Holzer named
Ap 4,62:7
TRANS Arabian Pipel
East—Israeli-Arab Co
Middle East—Lebano
TRANSASIATIC Oil Co
TRANS Caribbean Air
TRANSCENDENTALISM
Massachusetts, Ag 12
TRANSCO Companies
TRANSCONTINENTAL
Communications, Jl 1
Ja 9, Ap 29, My 20,
Ag 21, N 13
Corporate profile of
details recent co activ
execs comment, S 29,
TRANS Delta Corp. Se
Inc, Jl 10
TRANSFER RNA (tRNA
(Transfer) (tRNA)
TRANS Florida Televis
TRANSGLOBAL Growt
Violations, IOS Ltd, J
TRANS International A
My 12. Airlines—US—
Ap 24. Melia Internat
TRANSIT Advertising
A C Alexander is ele
Assn, Mr 19,56:6
TRANSIT Authority, Cl
Transit Systems—US—
TRANSIT Authority, De
Systems—US—Denve
TRANSIT Authority, M
Systems—US—Boston
TRANSIT Authority, M
Transit Systems—US—
TRANSIT Authority, Ne
Culture—US, Ag 29.
MTA appts E Babb
TRANSIT Authority, St
Fares, D 7
TRANSIT Authority, W
also Transit Systems—
TRANSIT Homes Inc. Se
TRANSIT Patrolmen's B
Benevolent Assn, Tran
TRANSIT Systems. Not
passenger (commuter)
and on the inclusion o
planning is carried her
carried under New Yo
commuter railroads, ca
Gen Signal Corp rep
contracts with combine
production of automati
systems and other com
projects; largest contra
signaling and braking e
Jerome Av subway; oth
Vertol Co and GE, Jl
Canada. See also sub
Toronto Transit Com
public pressure has infl
decision to phase out s
electrically driven and
pollutants, D 30,X,p8
China, People's Repu
Peking's 4-yr-old sub
line is clean, free of cri
most underutilized mas
apparently functioning
utility; officials say ma
daily, relatively low vo
speculate that passenge
demonstration rides, de
open; illus of subway ri
France
Group of councilmen,
record 50 hold-ups and
occurred in subway cor
morning rush-hr strike
workers protest death o
by a passenger, Ap 10,
construction of subway
system will have 12 sta
lauds Paris subway fare
traveled; suggests NYC
lr takes issue with J Elf
subways; holds that at
passengers according to
Great Britain. See also
Brit civil servants pro
series of strikes; 24-hr s
will also affect London'
system's motormen belo
28 one-day strike by Gl
London hardest because
involved, Mr 1,4:3; Lon
says London bus service
are too many cars on st
banned; repts 144,000 r
3,500 buses during mor
traveled in 97,000 cars;
of buses were cancelled,
quit in frustration, Ap 2
announces free bus tran
1.2-million pensioners w
Sept during off rush hrs
will be issued free passe

TRAGER, David G (US Atty). See also Airlines – Intl Services – Trans-Atlantic, Ap 28, Jl 28. Chemical Bank (NYC), Ag 11. Crime – NYC, Jl 29. Crime – US, Jl 4, Ag 1, D 20. Day Care Centers, Jl 2. Drug Addiction – US, F 19, D 10. Elections (US) – Finances, Ag 11. Food – US, Jl 24, Ag 27. Hotels etc – NYC, Jl 22. Housing – US, Jl 30. Juries – US, O 20. Labor – US, O 20. Meat – US, Ap 5. Nassau County (NY), F 1, Mr 6,17, Ap 29. NYC – Econ Conditions – Antipoverty, Jl 2. NYC – Pol – Ethics, Jl 2,3. Numismatics, Ag 1. Trucks – US – Crime, F 6. US – Pol, Jl 4, Ag 1. Water Pollution – Sewage etc, Ap 17,22, My 3. Yugoslavia – Pol, S 15,22, O 24, D 25

TRAGER, William (Prof). See also Malaria, Je 1

TRAIL Conference, New York-New Jersey. See also Waste Materials – NYS, Ap 23

TRAIL of Self-Determination (Orgn). See also Indians, Jl 8

TRAILERS (Auto) and Trailer Camps. Note: Includes all types of mobile homes, converted trucks, residential, boat and small cargo trailers, etc

See also Fires – NYS, N 7. Housing – Alabama – Discrimination, Jl 27. Housing – NJ, F 14. Housing – NYS, Ja 11. Housing – US, Jl 4,20, S 9, O 16. Prisons – US, S 5. Recreation Vehicles. Roads – NYC, F 3. Tornadoes, S 27

GM recalls 3,575 autos and motor homes in separate campaigns to correct problems involving auto transmission and motor homes' steering systems (S), F 11,7:1

5 persons die in mobile home fire on March 7 in Belvidere, NJ; victims tentatively identified; map (M), Mr 8,56:8

B F Goodrich introduces air disc brake system for trucks and trailers that will cost about 25% to 30% more than drum brakes; says unit will go into production at Troy, Ohio, plant in June (S), My 7,IV,3:8

Head-on collision between camper carrying family of seven and small foreign car with two passengers kills 8 and injures 1 when car apparently crosses center line, La Cygne, Kan (S), Jl 4,10:4

Roy Bongartz article on experiences traveling across US in motor home; illus (L), N 21,X,p1

TRAILERS (Truck). Use Trucks

TRAILSIDE Country School (Vt). See also Educ – US, N 14

TRAILSIDE Museum (Westfield, NJ). See also Zoos – Westfield (NJ), Ja 27

TRAIN, Harry D (Vice Adm). See also NATO – Mil Personnel, My 7, Ag 6. US Armament – Mil Personnel, My 7. US Armament – Navy (US), Ag 6

TRAIN, John. See also Fires – Fire Prevention, D 21

TRAIN, John P C. See also Harvard University, Mr 9

TRAIN, Russell E (Admr). See also Air Pollution, O 17. Air Pollution – NJ, Jl 30. Air Pollution – US, Ja 25, Je 6, Ag 23, S 3,25, D 11,19. Air Pollution – Washington (DC), Ap 19. Airplanes, Ap 6. Airplanes – Concorde Airplane, Ap 6. Autos – US – Engines, Ja 25. Chem, F 27, D 19 in D 19 par. Coal – US, My 12, My 19. Environment, N 20. Fish – Fishing, Commercial, Ag 18. Heating, Jl 8. Labor – US – Unemployment, S 3. Oil – US, S 3. Oil – US – Offshore, Ja 26, F 19, Mr 2, D 27,31. Pesticides, F 19, Ap 10. US – Environment, F 19, Jl 8, D 19. US – Environmental Protection Agency (EPA), Ja 12, D 19. Waste Materials – NYC Met Area, S 26. Water Pollution – Metals, Mr 28. Water Pollution – Oil, Mr 2, D 21,22,27,29,31. Water Pollution – Sewage etc, Ag 18,21, O 9, D 14

TRAINING and Development Corp. See also Nursing Homes, Ap 14, Ag 25

TRAINS. See NYC Transit. Railroads. Transit Systems

TRAKAS, George. See also Parks – NYS, Ap 11

TRAMPS. Use Vagrancy

TRAMWAYS. Use Cable Cars

See also NYC Transit – Accidents etc, Jl 11

TRAN Ngoc Chua. See also Vietnam, S 17

TRAN Quoc Hoan (Min). See also Vietnam, Jl 4, D 21

TRAN Van Tra (Gen). See also South Vietnam, Ja 22, F 8, Ap 25

TRAN Van Tuyen. See also Vietnam, S 17

TRANCA, Dumitru (Min). See also Rumania, Jl 12

TRANE Co. See also Air Conditioning, Jl 13,14, D 7. Heating, Jl 13, Ag 3, D 7

TRANQUILIZING Drugs. See also Mental Health – US – NYS, N 21. Watergate Affair, S 21

Article discusses controversy surrounding prescription of valium by physicians to relieve anxiety; examines charges that valium is 1st choice of drug abusers, causes birth defects and impotence as well as confusion and excitement among its takers; notes Amer spend $500-million annually on valium, and that physicians wrote 59.3-million prescriptions for drug in '74; drawing (L), F 1,VI,p34

Judge Constance Baker Motley bars Goshen Center for delinquent boys, Goshen, NY, from using thorazine, or other tranquilizing drugs, as punitive device (M), F 15,31:1

Ltrs from Dr Richard J Brzustowicz, Marilyn Rice and John Pekkanen on Gilbert Cant's Feb 1 article on valium, F 29,VI,p34; Dr Jordan Scher says growing number of drug deaths are linked to tranquilizer Valium, which he says some drs prescribe as casually as aspirin, paper presented at Natl Conf on Drug Abuse Sunday; cites statistics; spokesman for Hoffmann-La Roche Inc, which mfrs drug Librium under name Valium, says Scher's statistics conflict with all other scientific publications about Valium (S), Mr 30,18:5

Hoffmann-La Roche & Co says in Basel, Switzerland, that authorities have granted its Brit co price increase of 45% for Valium; price had already doubled recently (S), Ap 7, 1:6

Rev of documentary Hurry Tomorrow at Whitney Museum, about use of tranquilizing drugs in treatment of disturbed patients in men's ward of Met State Hosp, Norwalk, Calif (M), My 5,49:1

Dr Daniel Manfredi, Park Av surgeon whose patients include many prominent athletes, is acquitted of prescribing sleeping pills and dispensing tranquilizers in violation of NYS Health Code; $2-million defamation suit filed by Manfredi as result of indictment to begin trial May 24; suit is filed against Frank Rogers, former special citywide narcotics prosecutor, his asst Lynette Rich and NYC; various charges against Manfredi noted (S), My 12,81:1

FDA warns drs that tranquilizers Valium, Librium, Serax and others may cause cleft lip and other birth defects if taken in early pregnancy

TRANS Alaska Pipeline System (TAPS). See also Air Pollution – Calif, S 26. Oil – US, Ja 8,11, F 13,29, Mr 13, Ap 3, My 16,22,23,28, Je 2,13,17,27, Jl 2,6,7,8,9,14,16,20,22, 23,25,31, Ag 6,7,13,29, S 4,5,9,10,11,28, O 3,5,15,17,29, N 9, 14,23,28,30, D 1,2,5,6, D 12,15, D 16,18,24,26. Oil – US – Pipelines, Ag 5

TRANS-Amazon Highway. See also Roads – Brazil, S 7

TRANSAMERICA Corp. See also Saturn Airways, Ag 28. Div and subsidiary names, eg, Trans International Airways

Repts consol net income for '75 was $73.8-million, 117% above '74 income of $34-million; repts 4th qr net income was $22-million compared with loss of $1.2-million in 4th qr of '74; chmn and pres John R Beckett comments (S), Ja 16, 37:3; correction on Jan 16 story on Transamerica Corp earnings rept; percentage of contributions of major subsidiaries to earnings incorrectly given as subsidiaries' percentage gains in earnings in 4th qr, Ja 21,39:7

TRANSCANADA Pipelines Ltd. See also Gas – Canada, S 3,4

TRANSCENDENTAL Meditation. See Meditation

Article on Maharishi Internatl Univ, Fairfield, Iowa, which is operated by transcendental meditation movement and named in honor of movement's leader, Maharishi Mahesh Yogi; illus (M), My 18,16:1

TRANSCO Companies Inc. See also Gas – US – Offshore, Ag 7. Gas – US – Rates, Ja 1

TRANSCONTINENTAL Gas Pipe Line Corp. See also Gas – US, Ja 20, Je 26, Jl 31, N 7,8

TRANSFORMATOREN-Union AG. See also Elec Appliances, Jl 10

TRANS International Airlines. See also Saturn Airways, Ag 28

TRANS International Forwarders. See also Middle East – Israeli-Arab Conflict, O 19,20

TRANSISTORS. See also Electronics, O 31

TRANSIT, Committee for Better. See also NYC Transit, N 26. NYC Transit – Labor, Mr 22

TRANSIT Assn, American Public. See also Transit Systems – US, Mr 21

TRANSIT Authority, Chicago. See also Transit Systems – US – Chicago (Ill), Ja 10

TRANSIT Authority, New York City (NYCTA). See also NYC Transit

NYCTA dismisses Jack D Belsky, $46,000-a-yr chief of auth's surface operations, for misconduct; accepts recommendations for dismissal made by auth hearing referee Eric J Schmertz; Belsky is accused of having transit employees build furniture for his Fla home and of falsifying entries in expense records; loses all his pension benefits (S), F 7,17:3; NYC Personnel Dir Alphonse D'Ambrose named general counsel, succeeding John S Riedel, who retired (S), S 25,23:5; Alphonse E D'Ambrose to succeed J Stuart Reidel as NYCTA gen counsel (S), O 26,43:1

TRANSIT Authority, Washington Metropolitan Area. See also Transit Systems – Washington (DC), Ja 9,10, Mr 15

TRANSIT Authority Police Captains Endowment Assn. See also NYC Transit – Transit Police, N 9

TRANSIT Inc, Committee for Better. See also NYC Transit – Subways, Ag 14

TRANSIT Operating Authority, Manhattan and Bronx (MABSTOA). See also NYC Transit – Labor, Ap 3

TRANSIT Systems. Note: All material on short-haul passenger (commuter) transport (bus, st car, subway etc) and on the inclusion of private auto traffic and rrs in transit planning is carried here except New York City System, carried under New York City Transit System, and commuter railroads, carried under Railroads

Friends of Central Pk study indicates that NYC subway system, while lagging behind many others in design and esthetic innovations, still does best overall job of serving vast urban population; over 300 members of group meet in World Trade Center to view slides of world's major subway systems and hear them evaluated by experts; Robert Makla says Moscow and Tokyo subways carried more passengers in '74 than NYC system; chart compares world's major subway systems; illus (M), Mr 18,45:8; rev of Friends of Central Pk study; chart compares major subway systems (M), Mr 21,IV,6:3

Australia

24-hr natl strike in Australia halts all public transportation (S), Jl 13,11:1

Austria

37 persons injured when cable cars collide at Mt Kitzsteinhorn, Austria (S), Ag 7,2:2

Brazil

Otis Elevator receives orders totaling over $23-million for escalators and elevators to be installed in subway systems being built in Hong Kong, Rio de Janeiro and Melbourne (S), Jl 30,IV,2:7

Article compares NYC subway system with subways in Sao Paulo (Brazil) and other foreign cities; illus (M), Ag 7, 23:1

Canada

Record number of passengers use Montreal subway system during Olympic Games (S), Ag 3,23:4

Canadair Ltd awarded $36-million contract to continue work on advanced-technology urban transit system being developed by Ontario's Urban Transportation Development Corp (S), N 6,29:1

Connecticut

Conn Transportation Dept will seek $29.5-million from Fed Govt to buy and modernize Conn Bus Co (S), Ja 23,29:5; Fed Urban Mass Transit Adm gives Conn 1st $8.5-million of $28.4-million grant to purchase co (S), My 21,II,3:7

Amalgamated Transit Union Local 425 official Frank Partridge says Hartford, Conn, bus drivers and mechanics have authorized strike against state-run commuter lines (S), Je 21,33:1

Urban Mass Transportation Admr Robert E Patricelli says MTA has reed $5.7-million for improving New Haven community line (S), Jl 22,62:2

Conn Labor Comr Frank Santaguida says tentative pact has been reached between mgt and union reprs for bus drivers who had threatened to strike in New Haven, Hartford and Stamford

TRANSIT Systems – Ecuador – Cont

Quito and Guayaquil (S), Ja 6,5:1; Ecuador's Cabinet resigns in midst of transport strike (S), Ja 8,9:1

Egypt, Arab Republic of

Egyptian police fire over heads of striking bus drivers to prevent them from attacking Cairo's main bus terminal (S), S 20,10:5; Prime Min Mamdouh Salem says Cairo's illegal 2-day bus strike has ended in violence and sabotage; says some persons were injured when police and soldiers charged suburban station as Pres Sadat was thanking nation for having re-elected him; says 11 Communists were arrested for inciting bus drivers to strike (S), S 22,16:3

France

Paris subway is nearly paralyzed by workers staging 24-hr strike for pay increases and better working conditions (S), Mr 16,11:5

Lisa Lansing article on using public buses to tour Paris; map; illus (L), My 30,X,p1

Subway station workers stage 24-hr strike, Paris, to protest rising violence and vandalism; trains stop for 15 mins (S), Je 2,7:5; passengers who were recently robbed by gang of youths on Paris, France, subway train failed to rept crime to police and engineer took 4 days to rept it to union (S), Jl 18,11:7; increase in crime on Paris, France, subway system stirs controversy between Gen Workers Fed and Paris police, who say situation is exaggerated; recent incident in which 3 youths robbed about 20 passengers noted (M), Jl 21,5:1; article compares NYC subway system with subways in Paris and other foreign cities illus (M), Ag 7,23:1

Plainclothes subway agent and policman die in gun fight in subway near Eiffel Tower (S), Ag 9,12:8

Great Britain

Elec generator explodes at London subway station, trapping 4 trainloads of rush-hr passengers in smoke-filled tunnels for 2 1/2 hrs; at least 21 persons are treated at hosps but none are seriously injured (S), F 7,7:2

Attache case containing 20 pounds of explosives is removed from entrance to Oxford Circus subway station during evening rush hr (S), F 14,2:4; **unidentified man sets off explosive device in London subway train, wounding 8 people; shoots engineer of train to death and wounds another man before shooting himself;** is in critical condition and police are waiting to question him; incident linked to Irish Repub Army; illus (M), Mr 16,3:1; Scotland Yard, seeking to thwart Irish Repub Army terrorism on London's trains, assigns 1,000 policemen to city's subway system (M), Mr 19,4:4

Thousands of London taxicab drivers bring traffic to standstill when they converge on Parliament to protest plans for new bus service (S), My 26,6:4

Rush-hr bomb blast at London subway station causes no injuries and very minor damage; Pinnico station is closed to passengers (S), Je 2,8:5

Stranded commuters faint and smash windows on London subway train during heat wave in northwest Eur (M), Je 26,25:8

Hong Kong

Hong Kong begins construction of controversial $1.2-billion subway line, which is biggest capital investment and largest single engineering project that it has undertaken (S), F 1,14:5; Otis Elevator receives orders totaling over $23-million for escalators and elevators to be installed in subway systems being built in Hong Kong, Rio de Janeiro and Melbourne (S), Jl 30,IV,2:7

Hungary

Lr describes man carrying falcon in Budapest subway, S 19,X,p5; lr, O 3,X,p21

Iran

Rept by group of Govt planners on staff of Teheran Development Council questions plans to build 39-mi, $1.3-billion subway system for city; urges weighing bldg modest, elevated-rail system instead; rapid growth of city's population has made public transportation urgent concern (S), Je 6,19:1

Japan. See also Transit Systems, Mr 18

New Jersey

Byrne adm plan to reduce state spending by $450-million includes further service cuts and fare increases on state-subsidized bus lines (S), Ja 3,45:7

Sen Clifford P Case says Fed rejection of funds for extension of PATH rapid-transit line in NJ could open way for new era in coordinated transit planning, lr to Fed Urban Mass Transportation Admr Robert E Patricelli; has opposed plan, which calls for extending PATH Manhattan-Jersey transit line 17 miles from its present terminus in Newark to Plainfield (M), Ja 4,34:3

NJ Assembly will convene on Jan 5 in final effort to approve $37-million supplemental budget appropriation that would head off scheduled cutbacks in state's commuter rail and bus-subsidiary programs (S), Ja 5,61:1; **last-minute supplemental budget appropriation to forestall cutbacks in NJ bus and rail subsidy programs is decisively defeated in Assembly** (S), Ja 6,65:5; Byrne and legis leaders will not attempt to restore $6-million in bus and rail subsidies that was part of $37-million package that failed to win Assembly approval on Jan 5 (S), Ja 7,79:1

Transport of NJ asks State Superior Ct for permission to increase student bus fares (S), Ja 7,79:7; Byrne signs bill to extend program of half-fare bus rides for elderly to rides on trains and interstate buses; bill also gives benefits of program to handicapped persons; (S), Ja 9,67:3; 3-judge panel of Appellate Div of NJ Superior Ct rules that Transport of NJ could increase student fares in line with adult fares, which were raised on Dec 15; students will now pay 2/3 of each full fare (S), Ja 10,56:2

Formation of South Jersey transportation auth is proposed at meeting of planning bd directors of 7 counties called by Repr William J Hughes (S), Ja 13,71:1

NJ Transportation Dept will ask Fed Govt to approve comprehensive rail commuter plan for northern NJ that is designed to salvage controversial PATH extension; under plan, extension of PATH line from Newark to Plainfield would be financed by NJ, Port Auth and Fed hwy money currently tagged for state rd-construction projects (S), Ja 15,71:7; Citizens Com to Stop PATH

Finance

ning it or aren't they? il Forbes 5 '77
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wage levels cluster in petroleum . Barsky. bibl il M Labor R 100:

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udas; excerpts from interview. ed chmidt. Mohammed Reza Pahlevi. week 89:47-8 Ja 24 '77

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-Pemex' Mexican pipeline plan. and W. J. Cook. il map News Ag 1 '77

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PETROLEUM Industry—*Continued*

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is not so much a daring, e-entrance by the private he planning and financing ded city housing as it is hypocritical evasion by ector of its responsibility city.

alls for massive building on platforms above the ff lower Manhattan. But is, why is it necessary, n the Lower East Side of incur the sky-high costs form construction when area consists of acres vacant lots and aban- gs immediately available ry-land construction?

oing it because even ts more now it's a safer more profitable invest- ailable land is in "bad" and, after all, who live in a beautiful new tment building surround- se unhappy poor people by the violence that in- mpanies desperate pov-

ple stacked like sardines?

If lower Manhattan is to be revitalized, then why not start by eliminating cars from its streets, replacing the asphalt with cobblestones, lining the resulting malls with trees, flower beds and benches—and then turning these attractive malls over to pedestrians, bicycles and mass transit?

The air would be cleaner. The noise would be gone. The people would be happier. And the whole enterprise would probably cost much less than the proposed 113 acres of large buildings.

If 113 additional acres of land are to be added to lower Manhattan, then why not make the entire 113-acre site a park of grass, trees and flowers? A museum or two could be included and perhaps an outdoor theater like the one in Central Park. If a parking garage has to be built on this site, why not build a garage for parking bicycles?

The way to revitalize lower Manhattan is to make it more livable, not less.

WILLIAM R. STIMSON
New York, April 13, 1972

South Street's piers; where will Pioneer berth? What will happen to the planned working shipyard, which has stirred up so much excitement?

The proposal says that restaurants, theaters, shops and offices are to be housed in new buildings for the Seaport. It has been South Street Seaport's plan to have such sources of entertainment in restored buildings, standing proud and beautiful.

South Street Seaport, supported not by tax dollars but by historic-minded organizations and individuals, including its 17,000 members, wants to preserve and restore not only old ships and the buildings of the area but the pride of New Yorkers in their past. South Street was once known as "the Street of Ships." Let it be known as that again.

Much has been accomplished with contributions of money, talent and time. Now that it is a "going thing," it should not be taken from the people who created it. It should not be diminished and degraded.

MARIE LORE
Brooklyn, April 21, 1972

ıable Merit of 'Thou Shalt Not Hit'

interest and amusement s is now, *mirabile dictu*, on child rearing. I am ost readers, the under- d, oppose the routine od" by teachers. It is natter to infer, however, pankings teach "rule by belief that force tri- rial April 5.]

esent data that indicate Corps drill instructors often spanked in child- tors of The Times, I ıg to change my opin- rd to accept the notion or parent surrogate, re sorrow than anger, l's bottom occasionally poral punishment.

many forms of punish- y practiced by First ented parents, are, in ar more cruel, however ivilized." Nothing can gment of an emotional-

ly stable parent in this matter, and "thou shalt not hit" is neither more nor less viable than "the old virtues."

MATTHEW MENKEN, M.D.
New Brunswick, N.J., April 6, 1972

Sympathy for Jews

To the Editor:

I read Joseph Kutay's April 11 letter, "J.D.L. Antics," excoriating the Jewish Defense League. True they seem to be rather foolish, but "fools rush in where angels fear to tread," and the J.D.L. does seem to have been the only group making a real fuss about Soviet Jews for many months, while wiser people did nothing or proceeded cautiously.

Concerning Mr. Kutay's worry about dissipating the outside world's sympathy, I've never noticed the outside world feeling particularly sympathetic toward Jews, although maybe we bring some of our troubles on our own heads.

S. KRIZER
Jersey City, April 12, 1972

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Alaska Pipeline Alternative: Tankers Are No Solution

To the Editor:

Walter Kohn's April 14 letter suggests the use of an alternative to the trans-Alaska pipeline for the transportation of oil from Prudhoe Bay to refineries within the United States. Unfortunately, his suggestion that the oil be shipped by tanker directly from the North Slope during the summer poses severe environmental hazards of its own.

There are various ways in which spills could result from transporting the oil by tanker. Many Arctic veterans believe that the ever-present oceanic ice flows could cripple a 250,000-ton tanker at any time of the year. The Arctic Ocean, off the North Slope, is extremely shallow. Thirty miles is probably the closest any tanker terminal could be built to shore. Loading the tankers at sea will lead to spills, which would have disastrous effects on wildlife, such as the bowhead whale, the polar bear and oceanic plankton. Chemical breakdown of the oil on the ocean or shore would be virtually nonexistent because of the frigid temperatures. Thus, spilled oil could remain in an area for decades or even centuries.

The dangers of direct tanker shipping of Alaskan oil from Prudhoe Bay are evident. The recently issued environmental impact statement concerning the removal of oil from the North Slope must be studied intensively before any action is decided upon. The possibility of not removing the oil until a greater need arises must be considered. The interests of mankind must be served before the demands of business.

PETER FORSHAY
Environmental Studies Program
Princeton University
Princeton, N. J., April 4, 1972

R

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6

and Western Europe.

"American policy predictable. . . . Does turn from superpower a traditional rank-and with wide but limite . . . We are probably der the effect of the in Vietnam, the rec and the defeat in th over Taiwan. . . .

"Unless the Unite and revises its hig commercial policy tow [Soviet bloc] countries it will come into conf active *Ostpolitik* of Market] businessmen evitable that in the clear confrontation would be different early post-war years States was practically Soviet attack.

Wh

By ELIZABETH

In 1890 Frederick La designer of Central Pa friend, "In the last th not think that there h period of two years i has not been a strong movement to destroy s park in order to estab for some other form than that for which it w . . . If half of these sch successful, the park wo have entirely lost its character."

If Olmsted were to Central Park today he w fied: With the exceptio remnants like the Ram is certainly not what h be—rural scenery in an

NYT 4/26/72 44:5

death. They were President John Adams, defeated by Jefferson in 1800, and Secretary of State John Marshall, who also became his Chief Justice and Chief Justice in Jefferson's Administration. Jefferson was Marshall's bitter personal and political enemy.

How were judges made? Adams, after his defeat, appointed 58 political "jurisdiction."

Who shall be our law-makers?

To dishonor traditions of yesterday means stealing from today the hopes of tomorrow.

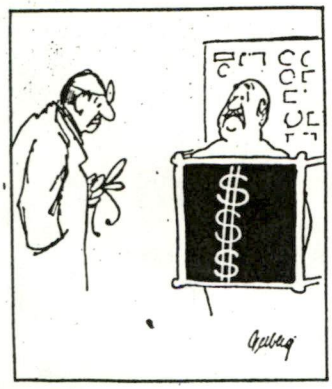
FRED G. MORITT
Acting Justice
New York State Supreme Court
Brooklyn, March 21, 1973

NYT 3/31/73 34:5

In Defense of Prosperity

To the Editor:

Several years ago an article published in the St. John's University Review of Business raised the question: "What is so bad about prosperity?" The question, and the suggested approach to the problem, is timely today.



The viewpoint of the massive brains in the economists' fraternity is summed up in what all the economists always tell each other: "The booming economy is considered inflationary since it creates a situation where more money is chasing comparatively fewer goods, thus bidding up prices." This implies the need for the classic remedy: Reduce the supply of available money —always creating a depression.

If that is a correct statement of the equation: "More money than goods equals inflation," why not try to increase the supply of goods, rather than decrease the supply of money?

Of course, it is much simpler and easier to restrict credit and reduce the supply of money, and, besides, that is the way it has always been done. But if the old way always leads to depression, why not try the opposite course? The result could not be any worse, and the new way just might be better.

An economist is a man (or woman, today) who can draw a mathematically exact line from an unwarranted assumption to a foregone conclusion Clemenceau said, "War is too serious a matter to be left to the generals." The direction of the economy of our country is too serious a matter to be left to the economists.

PAUL D. SEGHERS
New York, March 16, 1973

Advances in Bolivia

To the Editor:

Your Op-Ed page recently carried an article under the headline "Government by Colonel," signed by Jaime Calderon and James Petras, who, it is stated, are members of the United States Committee for Justice to Latin American Political Prisoners. After giving this matter careful consideration, we have concluded that, as an institution that represents substantial effort for the better understanding between the peoples of Bolivia and the United States, it is incumbent upon us to try to rectify the distorted image of Bolivia presented by this unfortunate article.

Though we do not question the right of these individuals to express their personal opinions, we are surprised that a publication as serious as yours can give such favored treatment to opinions which create a distorted and incomplete image of the situation in Bolivia, as your own reporters can easily verify. We find it difficult to understand why The Times should elevate what amounts to no more than a heavily biased letter to the editor to the level of a major column accompanied by a large headline and a grotesque cartoon.

The destructive bias of the article is indicated by the writers' assertion that Bolivia "has become a terrifying place for those concerned with social justice and political freedom" and that there are those "who daily meet death in the streets." We do not intend to mention all the distortions that appear in the article or enter into a political discussion as that lies beyond the scope of the Bolivian-North American Business Council. We do not hesitate, however, to voice what appears to be obvious to us in order to correct the pernicious exaggerations contained in the glorified letter of Messrs. Calderon and Petras.

We believe it is clear for all the world to see that Bolivia has become a far less terrifying place than it was a few years ago, and that those opposed to the present Bolivian Government do not "daily meet death in the streets." On the contrary, it now appears that Bolivia enjoys the greater prospects for broad economic and social advances than at any time in the recent past.

JORGE LONSDALE
CARLOS A. CONTRERAS
La Paz, Bolivia, March 14, 1973

The writers are, respectively, president and secretary of the Bolivian-North American Business Council.

been started in Malaysia and Sri Lanka. Population programs are being supported in India, Pakistan, the Philippines and elsewhere in the developing world.

The fund has now been given the task of making preparations for World Population Year (1974), which it regards as a vital beginning of an ongoing worldwide program of public education and information to intensify public awareness of the need for countries to adopt policies and measures to deal with the situation in the varied ways in which it manifests itself in different areas of the world. It is hoped that by next year it might be possible for governments to reach a workable international consensus on population leading to a world plan of action. The World Population Year secretariat hopes to enlist the active support of governments, professional associations, business houses, labor unions, women's organizations, religious bodies, youth groups and the media everywhere to help in generating the information and creating the awareness through which practical solutions might be found.

TARZIE VITTACHI
Executive Secretary
World Population Year
United Nations, N. Y., March 22, 1973

Pipeline and Nature

To the Editor:

Harvey Holman's March 4 letter ("Why the Alaska Pipeline Should Be Built—Now") states that "the proposed pipeline . . . can be built and operated without significant ecological harm."

What does Mr. Holman consider "significant ecological harm"? Any heated pipeline crossing the streams in Alaska is bound to raise the temperature of the water, resulting in trouble for temperature-specific fish and killing sensitive nearby lichens and other plants which have managed to survive in this relatively unspoiled territory.

Is the large-scale alteration of flora and fauna without consideration of the delicate balance of nature really the "service to humanity" Mr. Holman calls it? The solution to the fuel crisis is not to exhaust the finite oil supply left in the world but to wind down the technology that creates a market for this fuel and a "need" for the destruction of natural wilderness.

ELIZABETH SAENGER
New York, March 8, 1973

To Protect Teachers and Students

To the Editor:

Under the title of ". . . Muzzled Teachers," your editorial of Feb. 24 characterized, without describing, the recent guidelines adopted by the Community School Board of School District 16 concerning employes' statements as "dictatorial." We think the editorial fails to deal with the complex problems which prompted the guidelines, whose premise goes to the protection of the rights of our community's teachers and students alike.

The guidelines grew out of a situation in which a teacher in the school district gave an interview to a reporter who later published an article containing the teacher's characterization of the school district as a "functional disaster area" and otherwise presented an unbalanced and distorted version of the educational conditions and efforts of the district.

Notwithstanding strong and articulated community reaction, the Community School Board decided to press no charges and take no action against the teacher because of the absence of guidelines defining his responsibilities in the circumstances.

The guidelines' reference to statements by employes begins with the premise that "every employe of the district is free and encouraged to discuss privately and publicly district and school matters of public interest and concern consistent with his obligations and responsibility as such employe."

The guidelines then invoke the appropriate statutory power to discipline only where the school district can sustain the burden of proving that a statement either "demonstrates a lack of capacity" on the part of a teacher to teach or is both a falsity and interference with the "effective and proper operation of the district or any of its schools."

This is a heavy burden which the school board has assumed to deal with this problem so that its weight bears down in favor of freedom of speech to the maximum extent in consideration of the duties and responsibilities a teacher, like any employe, voluntary assumes in his accountability to his employer.

Community school boards are employers and are as entitled to deal with the competency of their employes as other employers. The guidelines of School District 16 were drafted with specific reference to the policy statement of the American

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has insisted that they could not
the five-year interim agreement

Letters to the Editor

Pipeline for Alaska's Oil

To the Editor:

Your recent editorial ("Oil in Canadian Waters") covers two subjects lightly and fumbles around with another, namely the Alaska oil pipeline.

First, out of one side of your mouth you are echoing and reinforcing the fact that Canadians should be concerned about "foreign" domination, saying "that Canada is rapidly losing control of its own resources, economy, environment, and culture through decisions made south of the border."

Then, out of the other side of your mouth you advocate that an oil pipeline from Alaska's oil-rich Arctic be built through Canada and probably by Canadian labor. The Alaska pipeline project is the costliest construction ever undertaken by private industry. And you want to give that economic boost to Canada?

You are advocating more south-of-the-border decision-making for Canada.

Your point about the western Canadian concern over a recent 12,000 gallon oil spill in Washington state by a Liberian tanker is not arguable. It happened. The Canadians are concerned. Washingtonians are concerned. As an Alaskan, I am concerned.

Your editorial leaves the wrong impression that if an oil pipeline is built through Alaska and oil is transported south by sea that hundreds of miles of beautiful British Columbia coastline may be fouled by a massive batch of black goo.

Tankers being built to carry Alaska crude oil to U.S. ports are the best-designed, safest, best-engineered and best-outfitted in the world. They are equipped with the most sophisticated navigational instruments.

The "rusty bottoms" that now deliver oil to scores of U.S. and Canadian ports cannot be compared to the vessels that the Alaska pipeline project will be using.

Contemplate this: When the Alaska pipeline is in operation and modern, safe, American-built, American-operated tankers are hauling Alaska crude oil to West Coast refineries, the same old foreign-registered "rusty bottoms" will still be in operation. And they probably will still be slopping a little oil around some of the ports. They are the problems—not the Alaska pipeline.

KATHLEEN DALTON
Middlebury, Vt., July 18, 1972

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To the Editor:

The final environmental impact statement on the proposed trans-Alaska pipeline is a documented report on how systematically to abuse nature and destroy a wilderness. Only in a society such as ours that is shockproof to violence — whether against nature or man — could such a report be tolerated.

Only in a society such as ours, where the tangibles like affluence, gross national product, economic growth and a high standard of living are more important than the intangibles of life, is it welcomed. Only in a nation such as ours, which is becoming devoid of ethics, principles, conscience and responsibility, and where its people are consumers instead of citizens, would it be accepted.

The construction of the trans-Alaska pipeline may be the *coup de grâce* that will finally convince the rest of the world that we are no longer a civilized nation.

KENNETH QUADE
Pembine, Wis., July 24, 1972

Storm King Project Opposed

To the Editor:

I noted with more than usual interest the July 27 letter by Norman Macbeth.

Since Mr. Luce, the chairman of Con Edison, has departed from the path of fact—blaming the recent power failures on forces opposed to the pumped-storage plant at Storm King Mountain—I suppose it should not be surprising that Mr. Macbeth has chosen the wrong path, too.

Mr. Macbeth seems to feel the opposition to the Storm King project is provincial, selfish and centered in a pocket on the east side of the Hudson River. Nonsense. Those supporting the Scenic Hudson Preservation Conference include national associations with impeccable credentials, the City of New York and individuals from Maine to Hawaii.

Mr. Macbeth feels the pumped-storage plant "provides the least pollution of any energy-creating facility." Wrong again. Con Edison plants in New York City, now a serious air-pollution factor, would have to run all night to provide pumping power for Storm King. Three kilowatts of power would be consumed for every two returned from the mountain.

Mr. Macbeth says the Storm King plant would cost us "some fish" and that "a few fish is a small price to pay for the reserve power the plant would provide." A "few" fish? Noted biologists have predicted that a significant number of the 35 species in the river would be endangered, with possible ultimate massive decimation, which would be a fatal blow to commercial and sports fishing.

Mr. Luce's statement is a misrepresentation. The cause of the recent power failures has nothing to do with the Storm King plant or generating capacity. On the contrary, the failures were due to the inadequacy of Con Ed's distribution within the city. And no one has ever objected to the utility properly maintaining its distribution system.

ALEXANDER SAUNDERS
Chairman, Scenic Hudson
Preservation Conference
New York, Aug. 1, 1972

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To the Editor:

The July 27 letter of Norman Macbeth on the Storm King power project is misleading, to say the least. The letter says there is no air pollution from the project. Unfortunately, this is not so.

The water must first be pumped uphill. This requires three kilowatts of energy for every two produced. The energy will have to be generated by operating fossil fuel power plants in the heart of New York City during low-power-demand periods of the day (i.e. night and early morning).

Air pollution will actually be increased by 50 per cent through the use of Storm King and the pollutants will be released at a period of the day when ventilation of the city is at its worst.

ROBERT N. RICKLES
New York, July 28, 19[illegible]

Starving Public TV

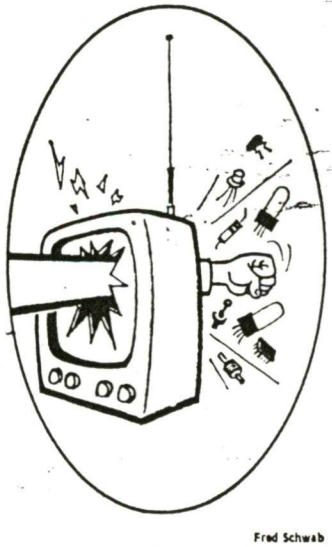
To the Editor:

In his "debate" with Douglas Cater regarding public television (Op-Ed, July 21), Jeffrey St. John rather glibly consigns public TV to starvation. At one point he condemns it for serving not the public but an "élitist audience of students, academics, intellectuals, professionals and politicians." Then he concludes that public broadcasting should get no Government money and should "go elsewhere for its funds."

The "élite audience" argument, of course, could be used equally against public libraries, museums, and public colleges and universities. Must those who want something more tasteful or stimulating than lowest-common-denominator TV entertainment be a permanent, deprived minority?

As for "going elsewhere," one must ask, "Where?" Non-Government funding was tried thoroughly and proved totally inadequate. Even with the present modest Federal funding, public television is on a starvation diet—with one-fifth the per capita funds of England's noncommercial B.B.C.-TV, one-quarter of Japan's noncommercial television, and one-twentieth or less of United States commercial TV.

To develop creative programing



Fred Schwab

ing committed in advance. But public broadcasting in the United States is a long way from unleashing a great outpouring of creativity. Most program schedules are planned and funded in a state of chaotic uncertainty.

The New York Times/William E. Sauro; United Press International

Audio-visual aids in the battle over New York State's liberal abortion law in the legislature last week. For repeal: a photograph of a 21-week-old fetus. Against repeal: a coat hanger, said to be the kind of instrument many women used to self-abort before the 1970 law was passed.

abortion statute in force.

And so Gov. Thomas J. Meskill called the General Assembly into special session this Tuesday to write a new abortion law, one he himself hopes will be as strong as the one the courts have struck down. For Governor Meskill is a vehement opponent of liberalized abortion. He considers abortion to be murder, whether performed by a surgeon in a hospital or by "an old woman with a hatpin in a dirty alley."

—WILLIAM E. FARRELL

Pipeline:

'Friends Of the Earth' vs. Secretary Morton

At 3 P.M. last Thursday, the Interior Department workers filling the lobby in Washington were informed that Secretary Rogers C. B. Morton would not be there in person to kick off the annual campaign to buy savings bonds. He had "another meeting upstairs."

And it was quite a meeting. Upstairs, Mr. Morton was announcing the most important environmental decision yet made by the Nixon Administration —the decision to approve construction of the controversial trans-Alaska oil pipeline.

The timing of the announcement was a surprise, since many had expected it would not come until the November Presidential election was safely past. But the response to the decision, with its implications for the nation's ecological and energy policies, was rapid. Environmental leaders said they would contest the issue, in the courts and on the political battlefield.

"It's an indication of the attitude of the entire Administration," said Robert Rauch of Friends of the Earth, one of four environmental groups—the Sierra Club, the Environmental Defense Fund and the Wilderness Society are the others—that have pledged to challenge the pipeline all the way to the Supreme Court. "Nixon came in with great pronouncements in 1970 that he would save the environment. But since then the Administration has consistently backed off on that. We intend to use it as an opening wedge against Nixon's entire environmental policy in this year's Presidential campaign."

The Alaska pipeline concept dates back nearly a half decade. The nation's major petroleum companies were considering the best methods of milking the tremendous reservoir of oil they had discovered under the frozen wastes of the Alaskan North Slope around Prudhoe Bay. A giant, ice-breaking tanker had been sent through the Northwest Passage across the top of Canada but the tremendous difficulty encountered on that trip forced the petroleum companies to look to other means of transport.

Their solution: a pipeline to an ice-free port or directly to the consumer market. The alternative routes: directly south nearly 800 miles across Alaska, or southeasterly across the entire breadth of Canada to the American Midwest.

In the interim, however, spurred on by the growing environmental lobby, the Nixon Administration had passed the National Environmental Policy Act —providing that each branch of government had to take into account, as a central criterion for its review of any major project, that project's total effect on the environment.

The Alaskan pipeline was slated as the first major test of that act. And six weeks ago, the Department of the Interior published a nine-volume Environmental Impact Statement on the project. "The most comprehensive environmental impact statement ever prepared," Secretary Morton called it last Thursday.

It raised many questions about the damage the pipeline would have on the environment. The heat of the high temperature crude oil would melt the permafrost and destroy the fragile tundra. There might be breaks and oil spills along the route.

But there were other arguments in favor of a pipeline. In his four-page statement announcing Thursday's decision, Mr. Morton outlined some of them. By 1980, he said, the United States will be consuming 20 to 25 million barrels of crude oil a day. Domestic production will be only 9 to 12 million barrels daily. The expected output of the Alaskan field (2 million barrels a day) will help make up part of that energy deficit. Thus, faced with the choice between energy needs and environmental danger, the Administration was opting for the former.

The Alaskan production would also cut into the amount of oil the United States would have to bring in from abroad—a national security consideration. As one Administration official put it, much of the foreign oil could easily be cut off "by any bunch of Arab sheiks that may decide to boycott the United States for blackmail."

To underline the problem, while the Alaska pipeline approval was being announced at Interior, across town at the White House President Nixon was telling reporters that he planned to increase by 15 per cent the amount of oil allowed into this country from the Middle East, Latin America and Canada. Another import quota increase had been announced just last December.

Meanwhile, environmental groups were preparing for the long court test ahead. Friends of the Earth was searching in Alaska for a group of individuals directly affected by the trans-Alaskan pipeline route to act as plaintiffs in a suit.

"What we're more concerned about than anything else is that once an Administration makes a major decision like this it will be taken as an indication of their attitude," Mr. Rauch said. "The oil lobby and the industrialists in all areas will be thinking to themselves, 'Well, now the Administration will be an easy pushover on all this stuff.'"

—DAVID A. ANDELMAN

was more essential.

The petroleum industry has undergone significant changes in recent years. We are moving away from an era when oil was a relatively low-priced commodity with ample supplies available into a period of tight supplies and rapidly rising costs. The major industrial nations have become increasingly dependent on oil from the Middle East. Recognizing their increased bargaining power, the oil-producing nations have set up the Organization of Petroleum Exporting Countries, which has welded them into an alliance of interest.

Because demand continues to rise and because world oil resources are finite, we can expect further increases in the cost of crude oil. The cost of new discoveries elsewhere also will be high. Complicating the problem are the many new environmental regulations which govern both the production and consumption of oil. What is the best response to these new problems?

I think the best way to answer that question is to identify energy objectives on which oil-exporting and oil-consuming countries can agree, and would suggest as possible goals: The recognition that both have an interest in maintaining a wide range of options. It is equally important for producers to have a number of markets and for consumers to have a number of suppliers; reasonable prices, based on competitive and commercial factors and a firm adherence to contracts; efforts to reduce the potential for environmental damage in all phases of oil operations; more efficient use of petroleum, and an effort to help developing countries meet energy needs. Rising costs could prevent them from meeting minimum energy demands, much less supporting economic development. Such a failure could affect their political stability.

I am hopeful these objectives can be achieved, but it will not be done easily. Some people feel the consuming nations should form a bargaining group to offset the organization. Such a confrontation could rule out rational compromise in future negotiations. There is also the possibility of destructive competition among individual consuming nations seeking privileged access to energy supplies.

I suggest an alternative course based on cooperation and mutual accommodation. Producing countries, consuming countries and oil companies are parts of an interdependent system. We must all cooperate if we are to attain our energy goals.

Some of the issues that need to be addressed are Government policies on development of new energy sources, conservation of energy, and development of effective, coherent energy policies by consuming nations.

One area where greater international cooperation is required is in the Organization for Economic Cooperation and Development. I would hope that the United States, as the largest consumer of oil, would take a more active role in the deliberations of this organization. The group's oil committee is the only intergovernmental group where oil issues are under continuing review.

I am convinced that the international oil companies can make a vital contribution toward the objectives listed. Petroleum is essentially a business of international management, and the existing companies have demonstrated their ability to organize the financial and human resources needed to search for new reserves, develop technology and expand the distribution system to meet increasing demand.

J. K. Jamieson is chairman of the board of Exxon Corporation. This article is adapted from a speech in Tokyo.

companies have run a series of newspaper advertisements which propound this message: We have an energy crisis; cheap energy is essential; environmentalists are hostile to growth and are preventing us from supplying everyone's energy needs.

The ads quietly promote offshore drilling in the Atlantic to ease the energy crisis and loudly propose energy conservation primarily through appropriate tuning of automobile engines. Although we recognize the right of any company to advertise its product, the companies have used advertising space to address directly issues of public concern. And the message has been one-sided—a matter of some significance since many of the suggestions made in the ads have found their way into the President's energy messages.

In the ads, as in the President's message, projections of energy use are presented as facts: "By 1985 Americans will be consuming twice as much energy as they do today." Or, "The U.S. will consume twice as much oil in the next thirty years as it has in the entire history of the country's oil industry." These projections assume that the price of energy will remain

environmental costs of production and transportation of their products, and the costs were passed on to consumers, consumers would adjust their quantity demanded accordingly. The spectre of growing demand disregards the possibility of influencing the demand for energy with prices.

The explanation most often given for growing demand is "More people, plus rising living standards." Yet the declining birth rate is also read as a mandate "that new oil and gas reserves will have to be discovered at a higher rate than ever before." It is clear that oil companies cannot envision any circumstances which would not require discovery at a higher rate than ever before.

Because environmentalists have noted the risks in increasing energy production, they are accused of being hostile to growth and indifferent to the needs of ordinary people. Business, on the other hand, is described in several ads as adaptive, responsive, clever, the most effective instrument of change (even "revolutionary") and especially efficient in serving the needs of the poor. In fact, "the poor" are used to legitimize increasing energy production: "There will be millions more of us in the years ahead and each of us—especially the poor—will require more energy to improve our living standards." But this concern for the poor does not ring true. The poor, clustered in cities, have suffered most from the pollution of automobiles. (Automobiles consume 55 per cent of transportation energy, more than half of which is consumed within urban areas.) Nor do pricing policies reflect a concern for the poor.

Consumer education is necessary but the individual consumer cannot solve the energy problem. Energy price structures as well as the level of prices need to be corrected. Intracity and intercity mass transit will have to be improved. The favored treatment of primary production, through taxes and subsidies, will have to be eliminated.

Advertising has played its part in the energy problem by encouraging consumption and oversimplifying or ignoring the complicated issues. The energy question demands more discussion and debate than advertising allows. And more is demanded than exhortation from the media. Until the oil companies come out from behind the smokescreen they have created there can be little hope of an intelligent dialogue concerning the necessary actions.

Dr. Robert K. Davis is an economist. He is on the staff of the national Audubon Society and a faculty member of the Johns Hopkins University. Carole Grossman works with Dr. Davis on environmental policy issues.

Alaska Pipe Dream

By Lawrence Ferlinghetti

MONTREAL—One fine day like the day after tomorrow while the Canadian Energy Minister was minding his own business by saying the Alaska oil pipeline was really an "internal matter" in the U.S.A. and not for Canadians to jump into, one fine day in the not too distant future while the Energy Minister was talking he suddenly noticed that one leg of his trousers was wet, and hoping it was not what he thought it was, he reached down and determined that in fact it was not an internal matter at all but an external matter of oil, and yet not pure oil for when he inspected his hand he found it not only oily but bloody, and when he rushed to the lab to find out why blood was mixed with oil and whether or not it was his blood mixed with their oil or their blood mixed with his oil or whatever, he was informed by the laboratory hired by the oil company that there was really nothing to worry about at all, since the blood would not stop the oil from working perfectly in American war machines and automobiles, not to mention the Mayor of Montreal's automobile, and in any case the blood was not the Canadian ministry's blood and it was not the American people's blood, it was simply the blood of one billion waterfowl who had been unable to feed in the tundra which had been disrupted by the perfectly innocent pipeline, and it was simply the blood of one billion fish in Canadian waterways and one billion fish in Canadian seaways who were no longer able to eat the plankton now flavored with salted oil, and it was simply the blood of one billion deer in the Northern Territory and one billion other wild animals in other frozen territories in the Siberia of Canada which had gradually become unfrozen for the first time in recorded time due to the world's largest oil spill which had resulted from earthquake pipeline rupturings which caused a great wash of hot underground oil to pour eastward from Alaska all over the geologic underground strataface of Canada, so that the St. Lawrence dripped both oil and animal blood into the water supply of Montreal, but this was strictly an Internal American Matter, and we were not concerned at all, at all . . . .

Lawrence Ferlinghetti is a poet who lives in San Francisco where there is no tundra.

Look Back in Sentiment

By Roger Rosenblatt

WASHINGTON—It's a boom all right. We can tell because nostalgia record companies and movie houses are raking in dollars like they're going out of style. If dollars do go out of style, they will become objects of nostalgia themselves. The only qualification for the feeling is that it be directed toward something remote and irrecoverable, thereby making everything in our experience available to it.

The word is a gift from the Greeks (nostos = return home; algos = pain), who connected it with nostology, assuming nostalgia to be the practice of the old. Lately even that connection has worn away. In our time nostalgia seems to be most heatedly felt by college students and teen-agers who are too young to remember anything.

What has happened, evidently, is that people have begun to sentimentalize experiences at such a rapid rate that the sentimentalization has become at least as interesting and memorable as the experiences themselves. One does not need to have

Exactly what kind of a way is hard to tell. Like art, nostalgia deals with snows of yesteryear, emotion recollected in tranquillity, the affectionate and painful remembrance of things past. Unlike art, it does not deal with these things seriously. There is, in the reclamation of the past, the claiming of a kind of eternity, in a sense, the achievement of an afterworld in the shape of the world already gone. We find this sense in Joyce, Proust and Wordsworth, but nothing nearly so important in nostalgia. In a stream of consciousness one seeks both innocence and an understanding of experience. In nostalgia one seeks only innocence, though there is artfulness within that seeking and probably more than we care to admit.

In an old movie called "Sullivan's Travels," Joel McCrea played a great Hollywood director whose fame had been built on turning out a number of successful sophisticated comedies. But the director regarded these former successes as frivolous and sought to make a movie about tramp life in America instead. In order to do it right, he ran away from his girl (Veronica Lake) and cohorts

that was the point; it was that the desire for innocence on the part of the hero was not sincere. The skeptics of the story were right from the start, and were proved right. Joel McCrea craving to participate in tramp life represented the wish to participate in a traditional American freedom dream and simultaneously to observe and rearrange (direct) the dream. In other words, it was pure nostalgia, as we know and practice it. It was the wish to retrieve a condition of freedom and carelessness apart from any cognizance of responsibility, and at the same time to be able to delimit, or give order to that freedom solely in personal terms.

This is child's play, of course, which is exactly what nostalgia encourages. It is the sincere expression of what is at base an insincere desire. Yes, certainly, we want to relive those thrilling days of yesteryear, but only because we are absolutely assured that those days are out of reach. We believe in yesterday, as the song says, just as long as we can exercise control over the objects of faith. In short, nostalgia does for us what history cannot. It

soup lines. We know this is true, just as we also know that only from the comfort and safety of marriages and families, do we pine for that scarred gym floor, streamers dangling from both baskets, blue cellophane taped to the spot lights, and Flora in our arms.

It seems reasonable, then, that if nostalgia is a consequence of affluence, it may also be a product of the kind of progressivism attached to it. Our affluence is, after all, an emblem of our faith in progress, in an onward-and-upward mobility whose principal, and national, caveat has been "Don't look back." When, however, we have gone as on or as up as we can or care to, we do look back, partly because we are secure enough to know that we won't actually fall back by doing so, and partly because we may be feeling more than a little guilty about the ruthlessness and thrust of our forward motion. Nostalgia, so used, becomes a form of absolution, an ideal form because the pain it causes is merely charming.

These varieties of regeneration and absolution account more than any other element, I think, for the nostal-

H441-22.4: Apr. 19, 1973. p. 245-362.

Witness: **EGAN, William A.,** Gov, Alaska; accompanied by **Havelock, John,** atty gen.

Statement and Discussion: Economic advantages of Alaska pipeline; importance of foreign crude oil prices in determination of U.S. refinery prices; comparative costs of Alaskan and Canadian pipelines, and denial of cost savings from Canada route.

Insertions: "Moving Alaska Oil, Trans-Canada or Trans-Alaska? A Study of the Merits" by Alaska Pipeline Coordinating Committee, May 1973 (p. 252-272).

"Energy in California, Its Supply/Demand Problem" by Calif Dept of Conservation, Jan. 1973 (p. 272-310).

"Trans-Alaska Pipeline System Preliminary Feasibility Study" by Tippetts-Abbett-McCarthy-Stratton, Mar. 1972 (p. 311-327).

"An Environmental Analysis of the Mackenzie Valley Pipeline Research Limited Report Entitled 'Arctic Oil Pipeline Feasibility Study of 1972'" by Max C. Brewer (p. 343-348).

H441-22.5: Apr. 19, 1973. p. 371-390.

Witness: **ASPIN, Les,** (Rep, D-Wis)

Statement and Discussion: Explanation of H.R. 4707; environmental advantages of Canadian pipeline, and its effect on Midwest oil supply and price; alleged willingness of Canadian government to negotiate.

Insertion: Comparative supply and demand data for Alaska and Canada pipelines, by region, 1980 (p. 379-381).

H441-22.6: Apr. 30, 1973. p. 401-432.

Witness: **SIMON, William E.,** Dep Sec, Treas Dept; accompanied by **Essley, Phil,** Spec Asst on Energy.

Statement and Discussion: Urgent need for Alaska's North Slope oil reserves; claimed economic benefits from Alaska pipeline, and its effect on balance of payments, national security, and employment opportunities; possibility of Canadian gas pipeline construction; comparative costs (tables, p. 427-429) of North Slope and foreign oil.

H441-22.7: Apr. 30, 1973. p. 432-495.

Witness: **WHITAKER, John C.,** Under Sec of Interior.

Statement and Discussion: Adequacy of Interior Dept's environmental impact statement on Alaskan pipeline; objection to delays caused by considering an alternative Canadian route; predicted supply and demand (tables, p. 467-471) for petroleum to 1985.

Insertions: "Stipulations for Proposed Trans-Alaska Pipeline," rpt prepared by Interior Dept and Fed Task Force on Alaskan Oil Dev, Feb 1972 (p. 444-461).

"An Analysis of Alaskan Oil: Alternative Routes and Markets" by Dept of Interior Office of Economic Analysis, May 1, 1973 (p. 471-483).

"Trans-Alaska Versus Trans-Canada Routes for North Slope Oil, Some Economic Considerations" by Dept of Interior Office of Economic Analysis, Apr. 30, 1973 (p. 483-495).

H441-22.8: May 1, 1973. p. 522-544, 572-577.

Witness: **PATTON, E. L.,** pres, Alyeska Pipeline Service Co; accompanied by **Knodell, John D.,** gen counsel and sec.

Statement and Discussion: Objection to delays in Alaska pipeline construction and to legislation requiring further study of project; legal responsibility of seven companies forming Alyeska; rights-of-way required to construct Alaska pipeline (charts, p. 576-577).

H441-22.9: May 2, 1973. p. 549-571.

Witness: **SPAHR, Charles E.,** chm, Standard Oil Co, Cleveland, Ohio; accompanied by **Madar, William,** mgr of crude oil.

Statement and Discussion: Adverse effect of delays in Alaska pipeline construction; economic advantages of Alaska pipeline to both West Coast and Midwest; extent of U.S. oil and natural gas exports to Japan; effect on petroleum supply of environmental restrictions on refinery site and construction.

H441-22.10: Brief Testimony.

Witnesses: **CAMP, John N.,** (Rep, R-Okla), p. 128-130.
CRANSTON, Earl, pres, Oil Resources Inc, Billings, Mont, p. 515-522.
DINGELL, John D., (Rep, D-Mich), p. 362-371.
HOSMER, Craig, (Rep, R-Calif), p. 507-515.
McGUIRE, John R., Chief, Forest Service, USDA, p. 390-395.
MEEDS, Lloyd, (Rep, D-Wash), p. 111-119.
RUPPE, Philip E., (Rep, R-Mich), p. 106-111.
TANKERSLEY, G. J., pres, East Ohio Gas Co; representing Amer Gas Assn, p. 497-506.
UDALL, Morris K., (Rep, D-Ariz), p. 70-82.
YOUNG, Don, (Rep, R-Alaska), p. 119-128.

Brief Items of Testimony: Views on Alaska pipeline construction and on legislation to change rights-of-way limitations on public lands for oil and gas pipelines.

H441-23 OIL AND NATURAL GAS PIPELINE RIGHTS-OF-WAY, Part 2.

May 17, 21, 22, 29, June 7, 1973. 93-1.
$3.45 S/N 5270-01932.
•Item 1023.
vii+579-1180 p. il.
Y4.In8/14:93-12/pt.2.
31026(73). 73-602599.

Committee Serial No. 93-12. Continuation of hearings before the *Subcom on Public Lands* on legislation relating to trans-Alaska and trans-Canada pipeline construction and to rights-of-way in general for unconstructed petroleum and natural gas pipelines (for complete list and summaries of bills, see H441-22). This volume considers the following:

H.R. 6756, the Trans-Alaska Pipeline Authorization Act of 1973.

H.R. 5524, the Federal Lands Rights-of-Way Act of 1973.

H.R. 5447, the National Resource Lands Management Act of 1973.

Also considers the following additional bill:

H.R. 7851 (text, p. 579-582), the Arctic Oil and Natural Gas Act of 1973, to provide for a study of an available trans-Canada pipeline route to transmit petroleum from the Alaska North Slope to continental U.S.

H.R. 9130, appearing on cover of hearing, is not considered in this volume.

Submitted material (p. 982-1179 and throughout) includes:

a. Joint energy policy statement by Amer Gas Assn, Amer Petroleum Inst, Atomic Industrial Forum, Edison Electric Inst, and Natl Coal Assn (p. 584-588).

b. Letter from subcom requesting assurance from members of Alyeska that Alaska pipeline oil will remain in the U.S.; and companies' responses (p. 590-596).

c. Canadian government position on negotiations with U.S. on proposed trans-Canada pipeline, correspondence and articles (p. 916-932).

d. Plaintiffs' brief in National Environmental Policy Act issues before U.S. District Court for D.C. in *Wilderness Society et al v. Rogers C. B. Morton* (p. 996-1125).

e. Environmental impact statements evaluation for plaintiffs, by Center for Law and Social Policy (p. 1126-1179).

(For summary of brief items of testimony, see H441-23.9.)

H441-23.1: May 17, 1973. p. 609-729.

Witnesses: **DIENELT, John F.,** staff counsel, representing Wilderness Soc, Environmental Def Fund, and Friends of the Earth.
CURRY, Robert R., assoc prof, environmental geology, Univ of Mont.
CICCHETTI, Charles J., visiting assoc prof of economics and environmental studies, Univ of Wis.
FREEMAN, A. Myrick, III, visiting prof of economics, Univ of Wis.
STOEL, Thomas B., Jr., atty, Natl Resources Def Council.

Statements: Claimed superiority of trans-Canada pipeline alternative and request for congressional action to insure its conformity with National Environmental Protection Act objectives; geographic and environmental advantages of Canada route; benefit-cost comparisons of trans-Canada and trans-Alaska pipelines. (p. 609-658)

Criticism of trans-Alaska impact statement's inadequate consideration of alternatives; economic advantages from Canadian route; denial of balance of payments benefits from Alaska pipeline; security advantage in delivering oil to area with greatest need. (p. 658-706)

Discussion: Problem of delays from Canada's need to negotiate for settlement of native claims; possible oversupply of oil on West Coast resulting from Alaska pipeline; concern over inadequate research on effect of permafrost on oil lines. (p. 706-729)

Insertions: "The Trans-Alaska Pipeline: A Benefit Cost Analysis of Alternatives" by C. J. Cicchetti, research study including graphs, tables, and formulas for estimating costs (p. 631-652).

"An Evaluation of the Final Environmental Impact Statement on the Proposed Trans-Alaska Pipeline and An Analysis of the Economic and Security Aspects of the Trans-Alaska Pipeline" by A. M. Freeman, III, research study, including tables and formulas for estimating costs (p. 665-694).

H441-23.2: May 21, 1973. p. 741-756.

Witness: **ROSAN, Richard A.,** sr vp and gen counsel, Columbia Gas System Service Corp, Wilmington, Del.

Statement and Discussion: Support for H.R. 6756; importance of natural gas to economy and need for development of reserves; comparison (table, p. 746-747) of gas line construction bills.

H441-23.3: May 22, 1973. p. 784-795.

Witness: **NYMAN, Alexander,** consulting professional engr, Dover, Mass.

Statement and Discussion: Concern over oil spillage and earthquake risk from Alaskan and Canadian pipelines; recommendation for ARCTRAN system using conveyor-type sealed airocabs to transport gas and oil.

H441-23.4: May 22, 1973. p. 805-822.

Witnesses: **UBAN, Charles J.,** Waterloo, Iowa.

HAGLUND, Gordon, both representing Natl Oil Jobbers Assn.

Statements and Discussion: Importance of trans-Canada pipeline to correct Midwest petroleum shortage; support for H.R. 7851; criticism of Interior Dept study comparing Alaskan and Canadian pipelines.

H441-23.5: May 29, 1973. p. 847-863.

Witness: **EVANS, Brock,** Wash rep, Sierra Club.

Statement and Discussion: Charged potential environmental damage from proposed Alaska pipeline; support for Canadian route and H.R. 7851; objection to various bills' granting Secretary of Interior authority over rights-of-way.

H441-23.6: May 29, 1973. p. 863-869.

Witness: **HALL, John F.,** vp for forestry aff, Natl Forest Products Assn.

Statement and Discussion: Support for H.R. 5524 and H.R. 5441 and a comprehensive Federal lands right-of-way policy.

H441-23.7: May 29, 1973. p. 869-905.

Witness: **SEATER, Stephen R.,** staff biologist, Defenders of Wildlife, Wash, DC.

Statement and Discussion: Advantages of Canadian over Alaskan pipeline; objection to granting executive branch the right-of-way authority over public lands; request for further study and negotiations on Canadian pipeline.

Insertion: Statements from Canadian officials and excerpts from Canadian TV broadcasts describing Canadian attitude toward proposed pipeline (p. 888-905).

H441-23.8: June 7, 1973. p. 933-973.

Witness: **BRANDBORG, Stewart M.,** exec dir, Wilderness Soc; accompanied by **Deane, James G.,** exec editor.

Statement and Discussion: Economic and environmental advantages of Canadian pipeline for both U.S. and Canada; objections to Administration's seeming unwillingness to consider alternatives to Alaska route; objection to relaxing restrictions on public lands rights-of-way; possible political implications of Canadian route.

Insertion: Information relating to negotiations with Canadian govt, including statements by Sen Ted Stevens (R-Alaska) (p. 958-968).

H441-23.9: Brief Testimony.

Witnesses: **ALDERSON, George,** legis dir, Friends of the Earth, p. 772-780.

EICH, William, chm, Wis Public Service Commission, p. 796-805.

FROME, Michael, conservation editor, Field and Stream, p. 973-982.

HILLYER, Saunders C., Wash rep, Cordova Dist Fisheries Union; also on behalf of United Fishermen of Alaska and Natl Fedn of Fishermen, p. 905-915.

LANDSTROM, Karl S., atty, Arlington, Va, p. 781-784.

MOORE, Terris, pres emeritus, Univ of Alaska, p. 600-608.

PHILLIPS, Glenn M., student, Evergreen State Coll, Olympia, Wash, p. 822-826.

QUADE, Kenneth, Pembine, Wis, p. 756-759.

SMITH, Anthony W., pres and gen counsel, Natl Parks and Conservation Assn; chm, Environmental Coalition for North Amer, p. 760-773.

TOMLINSON, Alexander C., gen partner, Morgan Stanley & Co, NYC; pres, Morgan Stanley Canada, Ltd, p. 731-741.

VIGORITO, Joseph P., (Rep, D-Pa), p. 597-599.

Brief Items of Testimony: Advantages and disadvantages of Alaskan and Canadian pipelines; environmentalists' interest in ecological effect of pipelines and their impact on wildlife.

H441-24 OIL AND NATURAL GAS PIPELINE RIGHTS-OF-WAY, Part 3.

June 15, 18, 1973. 93-1.
$5.95 S/N 5270-01933.
•Item 1023.
vii + 1181-1740 p. il. 28 maps.
Y4.In8/14:93-12/pt.3.
31026(73). 73-602599.

Committee Serial No. 93-12. Continuation of hearings before the *Subcom on Public Lands* on legislation relating to trans-Alaska and trans-Canada pipeline construction and to rights-of-way for unconstructed petroleum and natural gas pipelines.

This volume focuses on the 9-volume environmental impact statement on the proposed Trans-Alaska Pipeline System (TAPS), released by the Interior Dept, Mar. 1972, and on State Dept discussions with Canadian officials regarding the possible construction of an oil pipeline from Northern Alaska through Canada. Also considers pipeline safety and engineering features of TAPS.

Includes text (p. 1182) of H.R. 8523, to amend the Mineral Lands Leasing Act of 1920 by removing limitations on the Secretary of Interior to grant rights-of-way for pipeline construction. H.R. 9130, appearing on cover of hearing, is not considered in this volume.

Also includes: submitted statements, and extensive supplemental material throughout, submitted by witnesses and subcom members; set of 28 maps, with legends, of the proposed pipeline construction areas (in back cover pocket); and correspondence, articles, memoranda, and comments (p. 1702-1740), including:

a. Patton, E. L. (pres Alyeska Pipeline Service Co.), letter to subcom chairman, commenting on criticism of TAPS pipe material, June 22, 1973 (p. 1702-1704).

b. Marsden, S. S. (prof of petroleum engineering, Stanford Univ) "Arctic Pipeline Transportation of Petroleum As A Cold Dispersion In Brine" paper from Logistics and Transportation Review (p. 1705-1710).

c. Brandborg, Stewart M. (exec dir, Wilderness Society); Cameron, Roderick A. (exec dir, Environmental Defense Fund); and Alderson, George (legis dir, Friends of the Earth) letter to subcom chairman, July 9, 1973, memo, and two comments regarding Canadian government attitude toward oil and gas pipeline development (p. 1710-1740).

H441-24.1: June 15, 18, 1973. p. 1183-1702

Witness: **MORTON, Rogers C. B.,** Sec of Interior; accompanied by **Carter, Jared G.,** Dep Under Sec; **Silcock, Burton W.,** Dir, Bur of Land Mgmt; **Gryc, George,** Chief, Alaska Geology Br; **Lindren, David E.,** Dep Solicitor; **Vogely, William A.,** Dir, Office of Economic Analysis; **Turner, Jack,** Bur of Land Mgmt Alaska Br; **Latz, John,** Chm, Technical Advisory Bd, TAPS; **Dubois, Jean M.,** Chief, Div of Appraisal, Bur of Land Mgmt; **Caldwell, Joseph C.,** Office of Pipeline Safety, DOT; **Caldwell, Joseph M.,** Army Corps of Engrs; and **Keith, Virgil (Cmdr.),** Coast Guard.

Statement and Discussion: Chronology of events from Feb. 1968 leading to environmental impact statement for TAPS; objections to further delays in TAPS construction; comparison of Canadian with proposed Alaskan routes; difficulties in oil shipments by railroad (p. 1183-1329)

Analysis of environmental effects of a joint oil-gas delivery system through Canada; examination of Canada's attitude toward gas pipeline through Canada; adequacy of existing environmental studies; economic impact of TAPS on socioeconomic development of Alaska. (p. 1330-1539)

Explanation of TAPS safety features and engineering; evaluation of potential disastrous consequences of earthquakes and oilspills; responses to critical 1972 engineering report (text, p. 1568-1593) regarding material proposed for TAPS. (p. 1543-1651)

Clarification of Coast Guard role in regard to ocean movement of oil from pipeline southern terminus at Valdez (p. 1652-1702).

Insertions: "U.S. Department of the Interior Geological Survey, Existing Environment of Natural Corridors From Prudhoe Bay to Edmonton, Canada" rpt by D. B. Krinsley et al (p. 1188-1222).

"An Alternative to the Trans Alaska Pipeline" political, intl, economic, energy, and environmental considerations, Interior Dept summary (p. 1222-1244).

Canada map showing four pipeline systems crossing Canadian/U.S. border (p. 1225).

Comparative costs of North Slope oil delivery, estimated Alyeska costs, begin 1973, tabl (p. 1226-1227).

Comments on TAPS Environmental Impact Statement received by Interior Dept, including summaries of four-volume submission by the Wilderness Society, the Environmental Defense Fund and the Friends of the Earth (p. 1229-1275).

Text of R. C. B. Morton's statement, May 11, 1972, granting TAP right-of-way (p. 1275-1292).

"Trans-Alaska versus Trans-Canada Routes For North Slope Oil: Some Economic Considerations" Interior Dept Office of Economic Analysis, Apr. 30, 1973 (p. 1292-1302).

"An Analysis of Alaskan Oil Alternative Routes and Markets" Office of Economic Analysis evaluation of Dr. Charles Cicchetti's "Alaskan Oil," May 1, 1973 (p. 1303-1315)

"U.S. Energy Fact Sheets" energy and population statistics by States and regions; third in a series of studies on the overall energy picture, Interior Dept, Feb. 1973 (p. 1355-1495).

"Mineral Industry Surveys," petroleum and petroleum products statistics, Bur of Mines, Dec. 1972 (p. 1496-1535).

THE WHITE HOUSE

WASHINGTON

March 21, 1991

MEMORANDUM FOR PEGGY DOOLEY

FROM: ANDREW SIEG

SUBJECT: Alaska Pipeline Quotations

Attached are some quotations concerning the Alaska Pipeline debate. Please let me know if you would like to see any of the source materials, which I have in my office.

I hope these are helpful to you.

Attachment

ALASKA PIPELINE QUOTATIONS

"The route proposed and the methods proposed for the pipeline across Alaska are obviously environmentally disastrous from all standpoints."
-- Brock Adams, President, the Sierra Club, Testimony before House Interior Committee, March 27, 1973.

"If only one-hundredth of 1 percent of the oil carried were spilled, some 30 tons a day would be deposited in both Puget Sound and Valdez Harbor by 1980."
-- Edward Wenk, former White House Science Advisor, quoted in Newsweek, March 1, 1971.

"This proposal by the Department of the Interior simply aids and abets the greed of the oil industry in its efforts to use the Alaska pipeline and the energy crisis as the excuse for acquiring authority to devastate the forests and public lands of our nation."
-- Representative Dingell, August 2, 1973 Congressional debate.

"Being above ground, the pipe will be easy prey to vandals. 'You could shoot a hole in this pipe with certain big-game rifles,' says engineer Frank Therrell."
-- "Help From the North," Newsweek, January 14, 1974.

Referring to accidents in Prince William Sound: "...spills will occur, and we will not be able to clean them up."
-- Representative Vanik, August 2, 1973 Congressional debate.

Quoting a UCAL Davis study: "The pipe has been so under-designed that we already know that it will wrinkle.:
-- Representative Vanik, August 2, 1973 Congressional debate.

"The steel pipe itself... has no special design or properties to allow it to withstand the rigors of bringing oil through some of the most difficult terrain and weather conditions in the world."
-- Representative Vanik, August 2, 1973 Congressional debate.

"The profit which would accrue to the few corporations seems to take precedence over every environmental danger."
-- Representative Vanik, August 2, 1973 Congressional debate.

"Because of the nature of the terrain, the land and aquatic systems along the pipeline route will be subjected to unusual hazards of oil spills resulting from earthquakes, landslides, floods, erosion, and slippage not encountered in the rest of the United States."
-- "Showdown Nears for Alaska Pipeline," U.S. News and World Report, September 13, 1971, quoting environmentalists' arguments against pipeline construction.

"The approval of this bill will wreak irreparable damage upon both the environment and the legal system which I sincerely cherish."
-- Representative Abzug, August 2, 1973 Congressional debate.

"...we are playing out the scenario that has reduced so much of the nation to an environmental theater of the absurd."
-- Richard Pollak, "Are We About to Plunder Alaska?," Current, May 1971.

"No matter how many points the industry accrues for neatness, the hard fact remains that in pumping out two million barrels of oil a day industry will irrevocably hash up the North Slope with a maze of roads, feeder pipes, and drill sites. And whatever safeguards, an 800-mile pipeline is certain to burst periodically once the daily dose of hot petroleum starts squirting down to Valdez."
-- Richard Pollak, "Are We About to Plunder Alaska?," Current, May 1971.

"That [spilled] oil would turn the [Prince William] Sound into another Lake Erie and seal a slick lid over the Gulf of Alaska's multimillion-dollar fishing industry for years to come."
-- Richard Pollak, "Are We About to Plunder Alaska?," Current, May 1971.

"Once widespread, oil pollution from the fleet of tankers and from the North Slope field as well could seriously alter arctic heat patterns, upsetting fundamental weather balances thousands of miles away."
-- Richard Pollak, "Are We About to Plunder Alaska?," Current, May 1971.

"It took two centuries to desecrate the forty-eight states. Given the impact of modern technology, the population boom, and the ever-shrinking supply of open space elsewhere, it should only take a decade or two to foul Alaska."
-- Richard Pollak, "Are We About to Plunder Alaska?," Current, May 1971.

"The pipeline can probably be build safely, but maybe not...A comparison would be to say that it is about as safe as driving your car."
-- James W. Kross, environmental geologist, Alaska Environmental Institute, quoted in Science News, March 25, 1972

"Permafrost would undoubtedly thaw locally causing settlement of the gravel berm and if settlement were severe, unless prompt maintenance could be done, the pipe could be damaged."
-- James W. Kross, environmental geologist, Alaska Environmental Institute, in Science News, March 25, 1972

On the problems of building embankments for the pipeline: "Gravel would sometimes have to be taken from river bottoms, with possible damage to aquatic ecosystems, and then hauled to the construction site in vehicles that would gouge tracks in the tundra."
-- "The Big Pipeline: Focus on Impact," Science News, March 25, 1972.

"Alaskan studies indicate that such a buried pipe, almost regardless of insulation, would radiate heat into the permafrost. This could create a massive cylinder of mud and slush the length of the buried pipe. This in turn could open a river of mud all along the line, if it didn't wash the support out from under the pipe, causing a fracture and a river of oil instead, with deadly results."
-- "Concern for the Arctic Environment," Science News, May 16, 1970.

"Any route [through Canada or Alaska], they argue, will cause irreversible damage to an ecosystem so fragile that building the pipeline would scar the North a millennium in the future."
-- Summarizing environmentalists' concerns, "Known Problems and Unknown Effects," The Nation, October 2, 1972.

"If the tundra is destroyed and the muddy ice that underlies it melts and flows away, the surface in many areas will be below sea level. It would then not be long before Alaskan territory would be correspondingly reduced."
-- "Our Last Great Wilderness," American Heritage, August 1970.

"As soon as 20 tankers a week start docking at Valdez, oil spills will become a fact of life. Even small, but regular spills might alter the harbor's ecosystem, says Dr. Robert B. Weeden, professor of wildlife management at the University of Alaska."
-- "Alaska: Closer to cashing oil's riches," Business Week, March 25, 1972.

"The elevated sections might block caribou, moose, and sheep migrations, pipeline construction would destroy or modify at least 60 sq. mi. of bird habitat, and ground and air traffic would drive large mammals from part of their habitat. Fish, too, might be affected by excessive siltation of rivers."
-- "Alaska: Closer to cashing oil's riches," Business Week, March 25, 1972.

Various Anticipated Problems

1. Disruption of Caribou migration
2. Destroyed fish habitats through gravel removal and oil spills
3. Noise from the compressors and pumps adversely affecting waterfowl and other birds
4. Disruption of bear habitats
5. Melting of large sections of tundra caused by the heat from the pipeline, eventually leading to mud slides and rupturing of the pipe.
6. Earthquake damage to pipeline causing major spill
7. Tanker accidents in Prince William Sound spilling oil
8. Changing heat flows in the arctic region causing global climate change
9. Inability to clean-up oil spills that occur
10. Vandalism to the elevated sections of the pipeline

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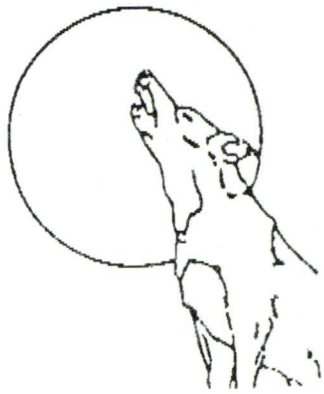

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Comments: Here is one other article that we published on the Pipeline. It deals with something called "The Smart Pig." I've mailed a copy of that newsletter as well. Hope all is well.

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ENERGY

Daniel J. Sullivan

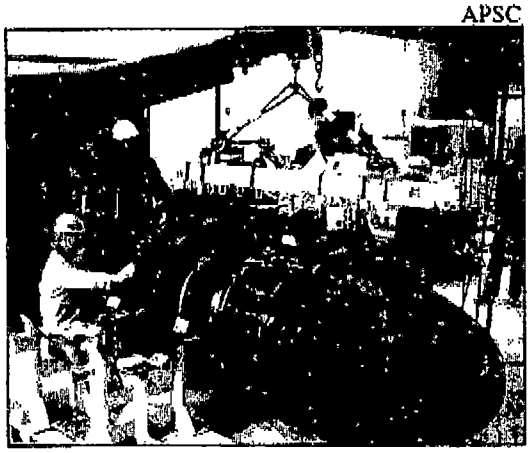
"Smart Pig": A Different Kind of Wildlife

In pipeliner's parlance, a pig is not a large, roundish animal destined for the dinner table; a pig is a large roundish machine that snuffles along the inside of a pipeline, propelled by whatever it is the pipeline is carrying, and a "smart pig" is a machine that inspects the interior walls of the pipeline as it goes.

The idea is to avoid ruptures and spills through early detection of threats to the structural integrity of the pipeline. The Alyeska Pipeline Service Company maintains and operates the 800-mile-long Trans-Alaskan Pipeline, which has been carrying Alaskan crude oil from Prudhoe Bay to the port of Valdez since its completion in 1977. Ever since the pipeline was first proposed, during its construction and in the years since, people have been seriously concerned about possible damage to Alaska's environment from a pipeline rupture. Alyeska's record has done a lot to allay those fears. It has not had one leak due to corrosion in its 13 years of existence, in large part due to its leading role in the development and use of smart pigs.

"Our record of zero leaks for 800 miles is very unusual for a pipeline, says Anchorage-based Bill Howitt, manager of Alyeska's engineering department. "Our goal is 'no leaks,' ever. That's not a goal we can guarantee, but with the help of advances in pig technology, it's a goal we can attain."

APSC



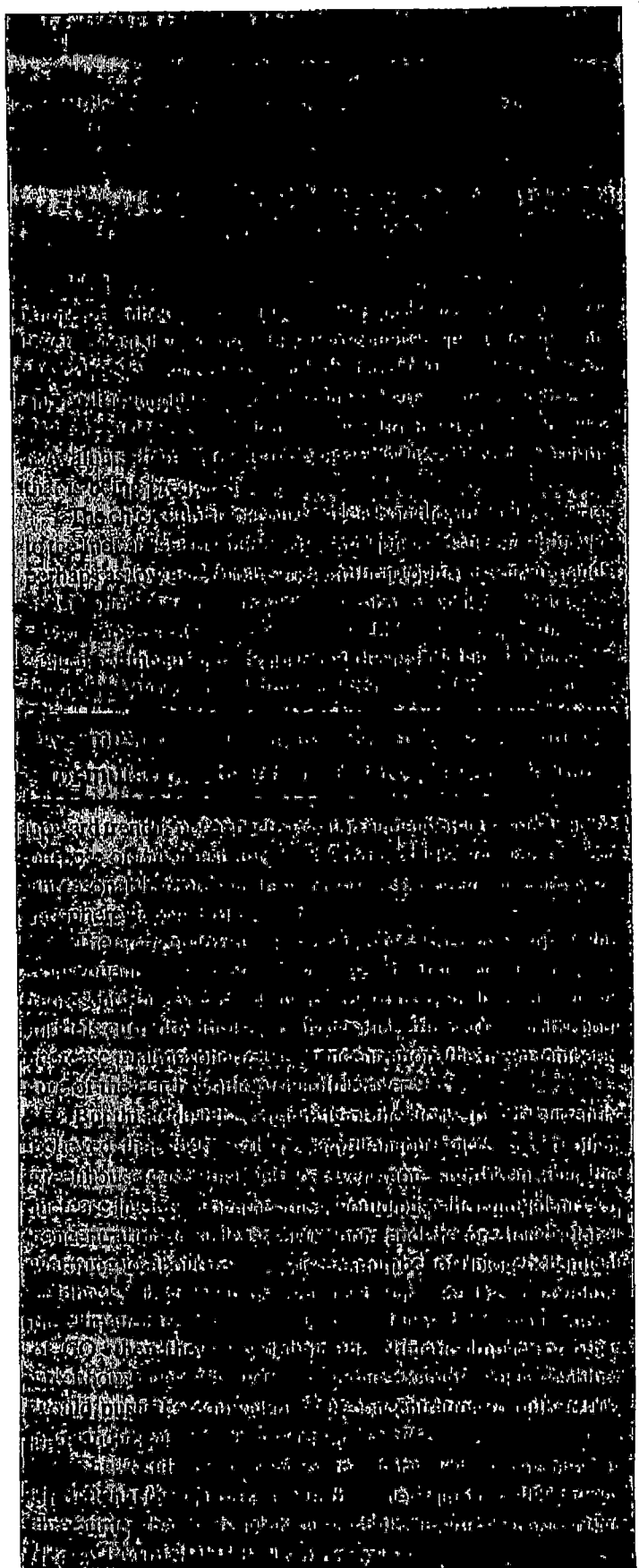
Alyeska's Smart Pig

A new and advanced smart pig using ultrasound technology was introduced last year, and it is a big reason for Howitt's confident tone. "Early smart pigs used something called magnetic flux technology to detect metal loss in the pipe walls. It was primitive technology compared to ultrasound; the minimum metal loss had to be 50% before the pig could detect it."

That, Alyeska decided, was not good enough. "In 1984, we initiated a worldwide search for new technology to apply to pigs," Howitt says. "We found an advanced magnetic flux technique that lowered the threshold from 50 to 30%, which helped, but then we hit on ultrasound, which could reduce the threshold to 10%."

Ultrasound is the technology familiar to most people from its use as a medical diagnostic tool. Alyeska and the Japanese industrial giant NKK adapted ultrasound to pipeline needs and jointly developed a system that could measure variations of five one-thousandths of an inch in a one-half inch thick pipe wall; then

see ENERGY, *next page*



Dr. Sherwood B. Idso is a Research Physicist with the USDA's Agricultural Research Service and an Adjunct Professor in the Departments of Botany and Geography at Arizona State University. His book, Carbon Dioxide and Global Change: Earth in Transition, is available for $21.95 per copy. Make checks payable to and order from: Institute for Biospheric Research, 631 E. Laguna Dr., Tempe, AZ 85282.

ENERGY

from page 3

they figured out a way to package the system to survive an 800-mile ride in hot oil down a 48" pipeline at a speed of six feet per second, reading the pipe walls square inch by square inch and storing all the data for retrieval at three stations along the way.

"The pig is not perfect," Howitt warns, "but the error rate is very low and it errs on the conservative side. It gives us a slightly more pessimistic picture of conditions than we find actually exist when we go out and inspect the pipe. For example, the pig reported 116 possible high-priority anomalies on its first run in 1989. We investigated every one and found that only 30 actually required repairs." (The pipeline runs above ground for half its length and below ground for the remainder. Corrosion problems requiring repair have been found almost exclusively on pipe exteriors in the below ground sections, due to the failure of an anti-corrosion coating applied when the line was first installed.)

Advanced technology costs money, of course. It costs $2 million to send the ultrasonic smart pig on its annual pipeline ride. And it costs roughly $50 million to carry out the annual schedule of inspections and repairs to potential and real problems that smart pig roots out.

"The money is well spent," said Howitt. "It substantially reduces the risk of damage to the environment."

ATMOSPHERE

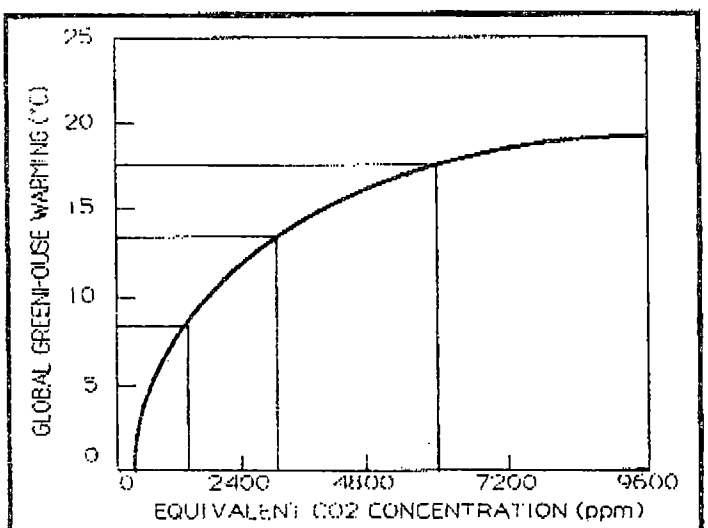
from page 3

regions would be predicted to warm by 34°to 51° C.

To provide some perspective on these predictions, it is useful to note that:

[1] the total greenhouse warming provided by earth's current entire atmosphere, which captures 90% of the Earth's heat (thermal radiative efficiency), is itself only 34° C; and [2] a 300 to 6,000 ppm increase in the equivalent CO_2 content of the air represents a change of less than one percent (0.57%) in the total composition of the atmosphere.

Clearly, there is no way that this small increase in the equivalent CO_2 concentration can have a global warming impact that



Climate model predictions of mean global warming to an initial atmospheric CO_2 concentration of 300 ppm as a function of the equivalent CO_2 content of the air.

rivals that of the entire real-world atmosphere. Something must be drastically wrong with today's state-of-the-art climate models; and we must not rush head-long into energy policy formulations based on so faulty a foundation. As seen in this light, the current global warming scare amounts to little more than a tempest in a (computerized) teapot.

Wildlife Management

Tim T. Taylor, Ph.D.

Beyond Conservation's Adolescence

When Aldo Leopold, father of modern wildlife management, wrote about the ethical treatment of our American landscape, he regarded the conservation movement in his day as the embryo of moral attitudes towards our land. If the conservation movement was embryonic in the late 1940's and early 1950's, when Leopold penned his thoughts, then the conservation movement must have been born shortly thereafter and passed through various stages of childlike development through the 60's and 70's. Possibly, we can mark the first Earth Day in 1970 as a point of early adolescence, where growing pains and peer pressure begin to play a role in the conservation movement's development. Land ethic, as Leopold called it, began to grow beyond its roots. Emotions grew faster than reason; questions arose without answers and land ethics became polarized between preservation, conservation, and resource utilization. Just as our children must deal with the frustrations of adolescence, the conservation has had its growing pains.

When Leopold talked about land ethic, he was voicing concern over the attitudes of people towards their land. He pointed out that man was over-using his rightful privileges to his land without

We can only hope that the conservation movement has matured beyond adolescence, and will now begin to collectively sink its roots into America's heartland and bear its own fruit.

carrying out the obligations that must come with it. It is true that most of America's top-soil has been pushed towards the Gulf of Mexico and most of its timber is holding up or sitting in our American homes. However, the conservation movement has seen significant progress in forcing obligations to the land through legislative landmarks requiring protection and consideration of America's remaining natural resources. Yet the land ethic that Leopold was talking about cannot be written in Congress. It must come from within the American people. Most importantly it must come from among those that control most of the remaining natural resources in this great Nation, the landowners and tenants of private land.

The good news is that private landowners are slowly developing this long needed land ethic along avenues that even Aldo Leopold would have never dreamed. Leopold blamed over-use of our natural resources on economic considerations rather than ecological considerations. In his day he may have been absolutely correct. However, across the U.S. we are seeing a new land management philosophy under the influence of a competitive market in land values and partitioning of scarce resources. In many areas, the once useless marsh or thicket has become inherently valuable to its owner; no longer in the way, but needed in order to

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a voice of reason on the environment

March 21, 1991

Dear Ms. Dooley:

Enclosed is the information on ANWR that you requested along with the latest issue of our newsletter, NWI "Resource."

Please see Volume I, Issue 4 of the "Resource" for an article on page 2 concerning exploration of ANWR.

I hope this helps you. Do not hesitate to call on us should you require more information.

Sincerely,

Terrell T. Baker III

P.S. Also consider:

Alaska Oil & Gas Association
(907) 272-1481

AND

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Volume II, Issue 1
February/March, 1991

NWI RESOURCE

a publication of
the National Wilderness Institute

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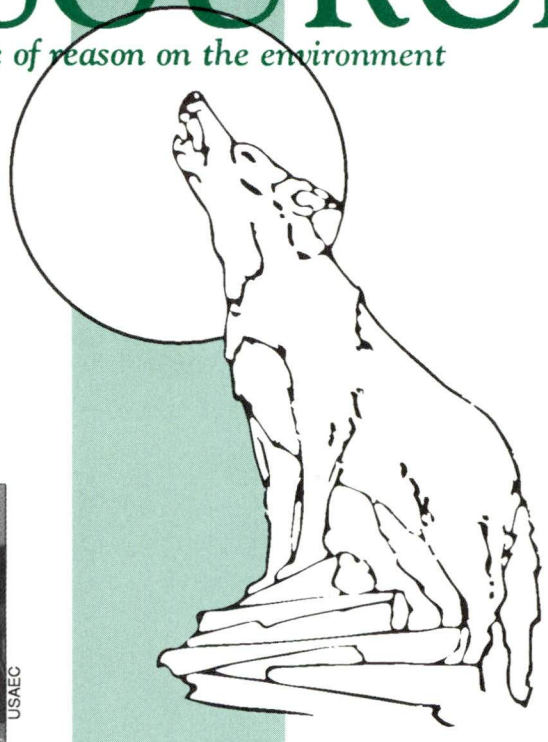

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USAEC

The Honorable Dixy Lee Ray, Ph.D., Joins NWI Advisory Board

The Institute has the dual honor of welcoming Dr. Dixy Lee Ray, biologist, fmr. governer, and author of *Trashing the Planet* as the newest member of its National Advisory Board and interviewing her for this issue's NWI Perspective.

For more on Dr. Ray and NWI's exclusive interview, please turn to page 7.

by Robert E. Gordon, Jr.

One of these two owls is considered threatened by the Federal Government. Can you tell which one?

Chris West

J. Verner

Without knowing where the pictures were taken it would be pretty tough. The one on the left is a threatened Spotted owl of the Northwest. The one on the right is a Spotted owl from California and not threatened. They are nearly identical in appearance and genetic structure. The primary difference may be that they live in different places.

The Northwest Spotted owl is now part of an exclusive club. According to the 1991 Budget Justification for the Fish and Wildlife Service, there were some 1,070 endangered and threatened plants and animals listed as of 1989. The Service states that "the ultimate goal of threatened and endangered species conservation is to recover populations to levels where protection under the Act is no longer required." While that may sound pretty straightforward, a closer look at the Endangered Species Act, the listed plants and animals, and their record of recovery tells quite a different story.

see ENDANGERED, *page 9*

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From the Editor

Benjamin W. Patton

Throwing Science Out the Window

Imagine a world where science no longer played a role in formulating environmental policy, a world in which hype and rhetoric meant everything and science nothing. Watching a recent edition of *60 Minutes* on acid rain made me realize just how frighteningly real this prospect is.

The story focussed on the National Acid Precipitation Assessment Program (NAPAP), without a doubt the most comprehensive study ever done on acid rain or any environmental issue for that matter. One of the most astounding aspects of the study was its conclusion that acid rain is significantly less of an ecological crisis than has been portrayed by much of the environmental community. But in spite of the considerable data, I was amazed at how little the scientific evidence seems to affect the views of many in the environmental lobby.

Referring to NAPAP's findings, David Hawkins, a lobbyist for the National Resources Defense Council, told *60 Minutes*: "[Scientists] are saying that because we spent a few years backpacking around these forests with a lot of instruments and we can't find anything, we should assume there is nothing."

First of all, it was disheartening to see a supposedly informed "environmentalist" equate the EPA's ten year program involving over 3,000 top scientists and costing $570 million, to a couple of guys wandering in the woods. His statement implies that during a full decade of research virtually nothing was found. On the contrary, a great deal was learned from NAPAP (see page 3). Could it be that it just wasn't what Hawkins wanted to hear? After all, justifying the costly legislation ($4-7 billion) for which he lobbied is more difficult in light of NAPAP's findings. Furthermore, people are more likely to fund Hawkins and others like him if they are convinced of impending disaster.

Hawkins himself admits that "the environmental community has spent almost no effort attempting to monitor the progress of this program because we felt [it] was essentially a misdirection of resources." He goes on to say that "we should control pollution now rather than wait for additional years of research." Apparently, such opinions weigh heavily on Capitol Hill. The half-billion dollar NAPAP study received a mere one hour of debate in a U.S. Senate subcommittee and was never even formally presented on the House floor.

"Environmental policy should be based on what we do know, not on fear of the unknown."

In short, Hawkins' statement is a slap to the face of science, dismissing the important maxim that environmental policy should be based on what we do know, not on fear of the unknown. What is most disturbing, however, is that not only does Hawkins believe this, but he and others like him have a powerful effect. What would Galileo, Newton and Einstein think?

Readers are encouraged to submit comments to:
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NWI's Mission

The National Wilderness Institute is dedicated to the wise management of natural resources, unique and special wildlife habitat, and wetlands. NWI embraces the perspective that renewable resources such as air, water, soil, wildlife, fish, forest and range are dynamic, resilient and respond positively to wise management.

The Institute stresses the need for a private sector stewardship which enhances the resource base without unnecessarily inhibiting economic growth. NWI encourages environmentally sound, site and situation specific practices which harness the dynamic and creative forces of the private sector, including the extending of the protection of private property rights, and which reduce the regulatory burden of the Federal Government.

NWI realizes its mission through programs which network ideas among individuals, officials, organizations and corporations.

NWI Resource

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Guest Column

Edward C. Krug, Ph.D.

Acid Rain: The Rest of the Story

Edward C. Krug has served as a soil scientist specializing in watershed and lake acidification with the Illinois State Water Survey. He has performed assessments and impact studies for the U.S. Dept. of Energy, EPA, and Forest Service. Dr. Krug's work has been published in journals and magazines across the country including *Science*, *Nature*, and *Policy Review*. Most recently, he appeared on CBS' *60 Minutes* to provide expert testimony on acid rain.

For more than a dozen years, conventional wisdom has blamed acid rain for the depletion of sports fisheries in the northeastern United States. Thousands of lakes were believed to have been acidified by acid rain, with thousands more soon to follow. There has also been much concern about acid rain damaging our forests. The perception of mounting environmental devastation created an overwhelming sense of urgency. The feeling was, "For heaven's sake stop talking about it and do something before we kill everything!" There was, however, no sound data concerning the overall effect of acid rain in the Northeast.

Accordingly, in 1980 President Carter recommended the creation of a 10-year National Acid Precipitation Assessment Program (NAPAP) to research what was being called one of the two most serious environmental problems of the century.

NWI

Dr. Ed Krug in the Adirondacks

Such an inception guaranteed that NAPAP's life would be a difficult one. NAPAP has been incessantly criticized for its perceived soft-selling of acid rain - why wait to research when we know that it is such a horrendous problem? Conversely, scientists complained that scientific objectivity was seriously handicapped by NAPAP's self-interest in proving acid rain to be a serious problem whether it is one or not.

Yet, NAPAP performed much better than could have been expected. It confirmed that acid rain comes from combustion of fossil biomass such as coal. Often when burned nitrogen and sulfur are converted to gases and then combine with water to form nitric and sulfuric acids. These acids, however, are also naturally produced by biogeochemical cycling of nitrogen, sulfur, and other acid-forming substances. Natural processes acidify rain in forested areas to about pH 5.0. Few species of fish would be able to survive in lakes and streams if this naturally acidic rain was not neutralized by alkaline substances like lime in watersheds.

Ironically, the unnaturally acidic rain we know today is a consequence of actions taken in the 1950's and 1960's to improve human health and reduce materials damage. It increased as new particle precipitators and cleaner-burning fuels removed the emissions that blackened our lungs and buildings. But the soot we removed also contained alkaline substances which previously neutralized much of the acid.

Subsequent action (the 1970 Clean Air Act) effectively decreased emissions of acids. For example, emissions of the main ingredient of acid rain - sulfur - are only half of what they would be without the 1970 Act. Nevertheless, the public and political perception that the Act was not working and that immediate action is required to prevent ecological catastrophe to our forests and lakes led to new 1990 legislation.

Acid rain falls on 300 million acres of forest in the eastern United States. NAPAP found that virtually all of the nitric acid in acid rain goes to fertilize nitrogen-starved forests. Similarly, the world's leading acid rain research watershed, the Hubbard Brook Experimental Forest, shows that the watershed supplies only 40 percent of the sulfur being taken up by the growing forest and organic forest floor. The remaining 60 percent comes from the sky. In 0.1 percent of Eastern US forests fertilization may cause damage. Fertilization of high altitude spruce-fir forests may cause these forests to grow too long and make them more prone to severe winters or frosts.

However, amounts of atmospherically-deposited sulfur typically exceed a forest's sulfur nutrient requirements, so some deposited sulfur is carried in runoff to lakes and streams. There is also some excess nitric acid which washes away in runoff. As a result, the principal ecological effects of acid rain appear to occur in lakes, not forests.

Yet NAPAP found only 35,000 acres of the 200 million acres of eastern lakes, 0.02 percent, to be critically acidic (pH of 5 or less). And, the amount of acid water is not perceptibly changing at this time. Furthermore, elimination of acid rain will do little to bring sport fisheries back. The acidity of lakes is the result of the absence of alkaline substances to neutralize acid. Most fish cannot survive in runoff from unpolluted pH 5.0 rain coupled with acidity from peaty soils and vegetation through which water feeding acid lakes and streams runs.

NAPAP research indicates that liming lakes or their surrounding watersheds is a surefire way of deacidifying water, after which fish could be introduced. Acidic Northeast lakes can be deacidified by liming at about $500,000 a year.

Inadvertent "liming" occurred for over 99.9 percent of the Northeast and subsequently fish could be stocked.. Slash-and-burn forestry and agriculture practices removed the acid soil and vegetation, leaving behind alkaline ash and residues which imparted alkalinity to water. For many lakes, this was the first and only time that they were able to support fish. The discontinuation of such land-use practices resulted in formation of acid soils and vegetation, and concomitant widespread reacidification of water and loss of stocked fisheries, all of which was blamed on acid rain.

"The facts demonstrate that acid rain is not an impending catastrophe. What problems it does cause are certainly manageable in a cost effective manner."

Many ecologists, however, do not want a return to the days when acidic lakes and streams were made into artificial bass and trout ponds. For example, the New Jersey Pine Barrens Commission forbids land-use practices that will deacidify waters to less acidic than pH 5.0 for the same reason that the U.S. National Park Service forbids the liming of acid lakes - it will destroy the sparse but unique aquatic fauna and flora naturally inhabiting highly acidic waters.

The facts demonstrate that acid rain is not an impending catastrophe. What problems it does cause are certainly manageable in a cost effective manner. It is unfortunate that the valuable and expensive information gathered by many scientists has been obscured by cries for drastic action by an irresponsible few.

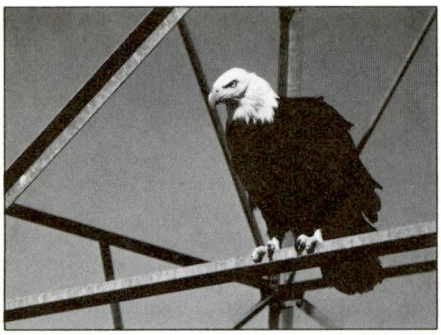
Energy

Daniel J. Sullivan

Bird on a Wire

Out West, where small animals scurry through the sand and scrub-brush of a semi-arid landscape, the shadow of an eagle gliding over the land can be the only proof to an observer that there is any life.

Eagles, hawks, falcons and owls are called by the menacingly evocative name "raptor." In the West, they often make



Echo Films, Inc.

A bald eagle perches on a utility tower in Idaho

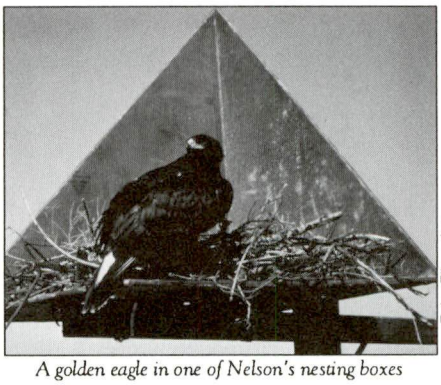
their living off the rabbits and rodents that eke out an existence in a lonely landscape occasionally bisected by curious and useful human constructions—power lines. Birds of prey need high perches, as observation posts from which to sweep the ground for prey and as nesting places safe from predators. In the American West, a region where natural perches are at a premium, the power line pole came as a boon to the preying birds—with some drawbacks.

Shooting a bird off a power line pole is not difficult. In addition to this idiocy, there was another, unintended danger—electrocution. If a bird, particularly a bird with a large wingspan such as an eagle, touches two wires simultaneously, while landing or taking off, it completes a circuit, with predictable results.

Enter Morlan Nelson, naturalist and trainer of birds of prey since he was first captivated by the sight of a falcon hurtling down onto a teal duck when he was 12 years old. "When the bald eagle was put on the endangered species list, one result was that power companies became liable for a $10,000 fine for each eagle electrocuted on their lines. The Idaho Power Company came to me and said, 'Find out if we have a problem, and if we do, see if you can find a solution to it.'"

Nelson, now 74 years old and a director of the World Center for Birds of Prey near Boise, began a long and painstaking research program. He and his associates trained a young golden eagle to fly to mock-ups of common power line pole types. The flights were filmed and examined, frame-by-frame, to find economical ways to protect the birds from electrocution. Nelson found several solutions: extensions to the poles and higher perches above the power lines, obstacles that prevent birds from spreading their wings and touching two wires, and insulation on some wires. But putting one or more of these contrivances on every power pole would have been fabulously expensive; fortunately, more research revealed that birds of prey are very careful that their poles of choice meet certain specifications, namely, having good views and strong updrafts. Only two percent of power poles exhibit one or both of these characteristics, so the problem was reduced to a manageable size.

Nelson also designed an inexpensive nesting box that proved to be a smash with prospective tenants. "When we put up the first nesting platforms, eagles moved into them before the power company had strung the lines," Nelson remembers. "There are now three times as many ferruginous hawks living in our nests as there are in other locations." The popularity of the nests raised yet another concern: Does proximity to power lines cause genetic damage to birds over time? Measurements of magnetic fields and observation and testing of birds over a 15 year period showed no ill effects, even from lines carrying the highest voltages.



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A golden eagle in one of Nelson's nesting boxes

With that concern allayed, Nelson's nests are a common sight today in Washington, Idaho and Montana, and they're going up in neighboring states. But the story doesn't end here.

Richard Thorsell, another lifelong admirer of birds of prey, is Environmental Programs Manager for the Edison Electric Institute. "Environmentalists came to us (Edison Electric) back when bird electrocutions were first identified as a problem," Thorsell recalls. "We went right to the government with the problem, as well as to non-profit groups and got cooperation all around." Thorsell and Nelson soon crossed paths. The most visible result of the coming together of environmentalists and private commercial interests was "Silver Wires, Golden Wings." Produced by the Edison Electric Institute with the support of half a dozen Western public power companies, the phenomenally successful 1980 documentary poetically captured Nelson's research. Since its debut, it has been seen by tens of millions of people around the world.

The goal of all the people connected with the 20-year-long effort to protect birds of prey is to "make it possible for the creatures of the wild to live in harmony with modern society's works," Nelson says. Here is one heartening example among many of a signal success.

Environmental Law

Joel R. Burcat, Esq.

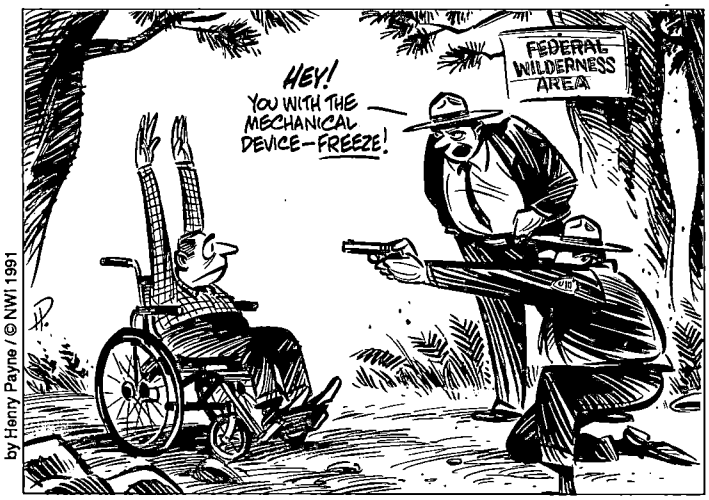
Wilderness Apartheid

There is a nation that excludes a sizable, identified portion of its population from public property. This form of apartheid is supported by a small, but influential, portion of the population. Those who have been excluded have done nothing wrong and are just like you and me in virtually every respect. Those who exclude are the privileged elite. The excluded people include mobility-impaired persons, the blind, senior citizens, and others who cannot meet vigorous physical requirements. The excluded areas are the "Wilderness Areas" owned and operated by the United States Government. Those who seek to exclude some from our public lands might as well install signs that say, "No Handicapped Allowed—Backpackers Only." This shameful form of "wilderness apartheid," based solely upon physique, age and mobility, has not been abolished by the recent enactment of the Americans with Disabilities Act of 1990 (ADA).

Likewise, this same privileged elite has prohibited the federal government from managing these publicly-owned areas in any kind of a sensible manner. Roads—be they for fire breaks, maintenance or access by mobility-impaired persons—are either completely excluded or limited in these areas. Generations of professional

foresters have taught the benefits of such practices as preemptive fires. Yet these techniques are generally excluded from Federal wilderness.

The Wilderness Act of 1964 was enacted in response to the concern that "wilderness areas were disappearing in the face of continued development. Congress had hoped that a statutory mandate preserving large areas of federal land in a primeval condition would result in an "enduring resource of wilderness." Initial controversies under the Wilderness Act related to the designation of wilderness areas. Often the current dispute centers over the management techniques used by the federal government.



Congress has set guidelines in the Wilderness Act for the management of wilderness areas by the Departments of Interior and Agriculture. Section 4(b) of the Act requires federal agencies to preserve wilderness character. The Act specifically states that, "wilderness is further defined to mean... an area of undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation, which is protected and managed so as to preserve its natural condition..." Section 4(c) of the Wilderness Act lists types of objects and activities banned from wilderness areas, including permanent roads, motorized vehicles and equipment, permanent structures, and commercial enterprises. Exceptions to the restrictions contained in Section 4(c) allow for activities such as, mining, grazing and aircraft landings or motorboat use (where such activities existed prior to the area's being designated as wilderness). Limited permission is granted to control fire, insects and diseases. Needless to say, the language of the Wilderness Act has been dissected by both friend and foe of wilderness. The current interpretation of activities allowable in wilderness areas is to allow only the "minimum tools" necessary to accomplish any particular task.

The federal agencies that interpret the language of the Wilderness Act are the Department of Agriculture (U.S. Forest Service) and the Department of the Interior (National Park Service, Bureau of Land Management, and Fish and Wildlife Service). The regulations promulgated by these agencies permit them not only to manage wilderness areas but to *restore* wilderness character. These agencies view the Wilderness Act as mandating that managers of wilderness take an active role in restoring disturbed areas to their natural state. In addition, the agencies interpret the Act as permitting restrictions on human use of wilderness areas when restrictions are necessary to maintain the wilderness character of such areas.

In practice, the agencies have prohibited the construction of permanent roads in Wilderness Areas and removed existing roads. In addition, wheeled and mechanical devices, such as bicycles and paddleboats, are prohibited from wilderness areas. Obviously, the management of wilderness areas has also been limited. Significant battles have taken place over the years regarding the ability of federal agencies to control agricultural and forest diseases or forest fires in wilderness areas. The policies regarding wilderness areas essentially require Americans who wish to use such areas to walk in and walk out. Because of these requirements, mobility-impaired persons, the elderly, and other "disabled" individuals are prohibited from using wilderness areas because they cannot gain access.

After years of public debate, Congress enacted the Americans with Disabilities Act of 1990 (ADA). The ADA is the most significant civil rights legislation to have been enacted by Congress for many years. Major provisions of the Act prohibit state and local governments and private entities from discriminating against persons with physical or mental impairments that substantially limit one or more major life activities.

Section 507 of the ADA responds to the recent practice by some governmental managers of prohibiting wheelchairs in wilderness areas. The thinking of such managers was that wheelchairs were not consistent with the purposes of the Wilderness Act or regulations. In a significant slap to the face of such managers, Congress specifically stated that the Wilderness Act should not be construed as prohibiting the use of wheelchairs. (Wheelchairs with motors, however, are still prohibited from wilderness trails by the U.S. Forest Service.) Presumably, this means that a mobility-impaired person may drive to the gates of a wilderness area and enter without fear of arrest. Ironically, however, the government is under no obligation to see to it that paths or roads are constructed that would enable this person to actually move about in the wilderness area. Even if a handicapped person can legally enter a wilderness area, he cannot move about in a wheelchair. So for all practical purposes he is being denied its use. This is akin to allowing a child to stand at the door of an educational institution, but prohibiting him from going inside and benefitting from learning.

Section 504 of the Rehabilitation Act of 1973 specifically prohibits discrimination by the federal government against disabled individuals. The Rehabilitation Act has not been specifically applied in a dispute involving an interpretation of the Wilderness Act; however, the law appears to apply to almost all federal facilities, including wilderness areas. Provisions such as those found in the ADA and the Rehabilitation Act may operate to reduce the discrimination currently practiced by the federal government regarding the use of wilderness areas by disabled individuals.

"It is time for the federal government to re-evaluate the management of wilderness..."

There can be little doubt that individuals with disabilities and wilderness preservationists are on a collision course. Preservationists would exclude wheelchairs, improved trails, and other aids to disabled and elderly individuals. For the millions of Americans with disabilities and the elderly, the only way they can have access to wilderness areas is through improved management of such areas. It is time for the federal government to re-evaluate the management of wilderness areas and to do away with "Wilderness Apartheid" so that all Americans may appreciate and use our public lands.

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Literary Editor, National Review

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Fmr. Deputy Administrator, NASA
Fmr. Dean of Engineering, MIT
Fmr. Secretary of the Air Force

$SD(P) = \sqrt{\frac{\pi(1-\pi)}{n}}$

$PV = nRT$ $C_6H_{12}O_6$

KNOWLEDGE = THE POWER TO CHANGE

$E = MC^2$ $a^2 + b^2 = c^2$ $\pi = 3.14159265\ldots$

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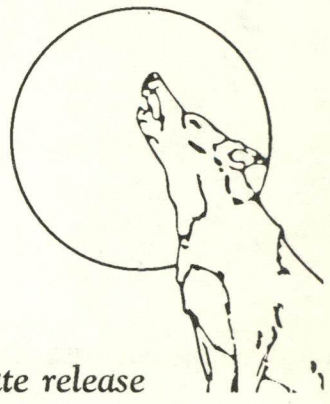

NWI NEWS

for immediate release

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Deputy Director

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Fmr. Asst. Secretary of Interior

Honorable George S. Dunlop
Fmr. Asst. Secretary of Agriculture

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Honorable Donald P. Hodel
Fmr. Secretary of Interior

Honorable Dixy Lee Ray, Ph.D.
Fmr. Governor, Washington
Fmr. Chmn.,
U.S. Atomic Energy Commission

Honorable Steven D. Symms
United States Senator

In a recent issue of ***Policy Review***, an article authored by NWI Director Robert Gordon and NWI Advisor George Dunlop, *Creature Comfort: The Revitalization of American Wildlife*, demonstrates that contrary to popular perception, all of our Nation's wildlife is *not* decreasing in number and health.

With 14 different animals, the authors show that by employing site and situation specific practices instead of natural regulation, positive results can be achieved. Through examples ranging from alligators to wild turkeys to elk, Gordon and Dunlop demonstrate the positive role the private sector can play in stewarding our wildlife and the resilient and dynamic characteristics of nature.

NWI's *Creature Comfort* has garnered sufficient attention to be reprinted or editorialized in newspapers across the country including:

NEWSPAPER	ARTICLE
Birmingham Post-Herald, AL	*Saving the Endangered*
Santa Maria Times, CA	*Endangered Species*
Marietta Daily Journal, GA	***Man as Part of Nature***
Evansville Courier, IN	***Consider Human Too***
Cleveland Plain Dealer, OH	*And Plenty of Alligators:* ***Man, Nature Bring Back Some Species***
Vindicator, Youngstown, OH	*The Other Side of the Survival Coin*
Pittsburgh Press, PA	*Saving Endangered Species*
The Eagle, Reading, PA	***Reconsidering the Endangered Species Act***
Times Herald, Norristown, PA	***U.S. Wildlife Management Works***
Chattanooga News-Free Press, TN	*Leaving the List*
Chattanooga News-Free Press, TN	*Animals Making a Comeback*
Denton Record Chronicle, TX	*The Remarkable Comeback of Wildlife*
Seattle Times, WA	*The Remarkable Comeback of Wildlife*
Bremerton Sun, WA	***Spotted Owl Debate Must Not Forget the Human Species***
Vancouver Columbian, WA	*The Remarkable Comeback of Wildlife*
Northwestern, Oshkosh, WI	*Endangered Species Can Come Back*

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"Human beings are natural creatures, too."

— Pittsburgh Press

"The contributions of...economic growth...should be weighed heavily when lawmakers reconsider the Endangered Species Act."

— Evansville Courier

"In fact, human activity is sometimes indispensable to the survival of endangered species."

— The Eagle

"You may recall the little fish called the snail darter. It was virtually "invented" to stop construction of TVA's Tellico Dam... It is important to use common sense in protecting animals that need protection without going to any ridiculous extremes."

— Chattanooga News-Free Press

Man as part of nature

In Washington they appoint commissions the way hypochondriacs consult doctors: Keep looking until you find one who tells you what you want to hear.

This spring a panel of scientists told President Bush that saving the endangered spotted owl would result in the loss of 28,000 timber jobs in the Pacific Northwest; the resulting loss in revenue was estimated as high as $2 billion.

Faced with such unpalatable conclusions, President Bush appointed a task force to reexamine the issue, with an eye toward minimizing the economic impact of the decision. That panel is reportedly split over a debate on the merits of the Endangered Species Act, which requires the federal government to flex considerable muscle, if necessary, to save endangered species and subspecies.

Critics argue that the 1973 act is too inflexible, allowing sometimes dubious environmental calculations to override the human costs — such as lost jobs and stifled economic development. Indeed, the act favors a "letting nature take its course" philosophy, the premise being that man's impact on nature is invariably destructive.

But as environmentalists Robert Gordon and George Dunlop demonstrate in a recent issue of Policy Review, that assumption is flawed. In fact, human activity is sometimes indispensable to the survival of endangered species.

For instance: There were fewer than 150 javelina, a wild pig indigenous to New Mexico's Gila National Forest, in 1950; the number has increased almost ten-fold since then. Why? Wildlife workers pumped water into areas favored by the javelina and set controlled fires to encourage plant life it uses for food.

Controlled fires have also helped boost the size of the bighorn sheep herd in Wyoming. Similarly, there are 4,000 moose in New Hampshire today, up from 50 in 1950. Black bears are thriving in Pennsylvania, and mountain lions are making a comeback in California — all thanks to prudent human involvement.

The contributions of outdoorsmen and wildlife managers should be weighed heavily when lawmakers reconsider the Endangered Species Act. So should the benefits of economic growth. Human beings, after all, are natural creatures, too.

Editorials

Spotted owl debate must not forget the human species

EDITORIAL

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"Prudent legislation, conservation officials, farmers, hunters and fishermen have all played important roles in what is aptly described as the 'revival of the species'."

— Youngstown Vindicator

"These are encouraging animal success stories that give promise for the revitalization of many more species."

— Chattanooga News-Free Press

U.S. wildlife management works

GUEST COLUMN BY ROBERT E. GORDON JR. and GEORGE S. DUNLOP

While public attention focuses on the 259 animal species and subspecies classified as endangered by the U.S. Fish and Wildlife Service, one of America's great untold stories is the remarkable comeback of many species of wildlife.

One of the most dramatic recovery stories involves our national symbol, the bald eagle. A decade ago, the bald eagle was on the verge of extinction. Thanks to substitutes for the pesticide DDT (which was damaging eagle eggs) and harsh penalties for poaching, the bird's population has tripled in 15 years, and it may soon be taken off the endangered species list.

Temporary restrictions on hunting have similarly led to an explosion of the American alligator population. Although this reptile was on the first federal endangered species list when the Endangered Species Act passed in 1973, there are now as many as one million alligators in the state of Florida alone.

Some species have recovered because their habitats have improved as the unintended consequence of human activity. The population of white-tailed deer, for instance, has risen nearly thirtyfold, from 500,000 in the 1920s to 14 million today, partially because of reforestation in the northeast. Indeed, because industry and farming have moved westward, there are now 26 million more acres of forest in Maine, New Hampshire, Vermont and New York than there were at the turn of the century.

But many of the most remarkable recoveries have occurred as the result of deliberate human efforts. For example, specially designed birdhouses have helped the Eastern bluebird make a comeback. Sixty years ago it faced extinction as a result of competition from the European starling.

In the Whiskey Mountain area of Wyoming, the size of the bighorn sheep herd has grown steadily from about 150 in 1930 to about 1,000 today, making it the largest wintering herd for the species in North America. Although the bighorn had dwindled in number primarily because of competition for grazing lands from cattle and horses, a joint effort by the Wyoming Game and Fish Department, the U.S. Forest Service and the Bureau of Land Management helped the biggest population thrive.

Using an aggressive approach to managing the herd and its habitat, the three agencies deliberately started controlled fires in the grazing land to increase the spread of Idaho fescue and blue bunch wheat grass, favorite foods of the bighorn. When matty vegetation began to take over the grasslands, the problem was solved by aerial spraying of an herbicide.

Wyoming wildlife officials also helped to spread bighorn herds to areas both in and out of the state where herds had been absent for as long as 100 years. Using a 5,265-square-foot net dropped from a helicopter, wildlife officials capture and transport sheep to new habitats in Utah, New Mexico, Nevada, Idaho and South Dakota; as well as various Wyoming mountain ranges and the Wind River Indian Reservation.

Many other animals also have experienced population explosions thanks to wildlife officials. The number of moose in New Hampshire has grown from only about 50 in 1950 to approximately 4,000 today. By encouraging selective deforestation and prescribed burning, New Hampshire's Fish and Game Department allows hardwood and softwood saplings — important elements of the moose diet — to flourish.

In California, density levels of three to four mountain lions per 100 square miles used to be cause for excitement. Now five to nine is the standard. Because mountain lions can only prosper where there are many smaller animals to prey on, their presence is a good indication of positive wildlife trends. Similarly, the black bear population has grown steadily to more than 7,500 in Pennsylvania alone. Wildlife managers have been improving bear habitat by planting apple and crab apple trees and pruning old apple trees to provide a healthy food source.

Hunters, fishermen, and farmers also have played an important role in the revival of many species. Although giant Canada geese were believed to be extinct in the 1950s, it was discovered that farmers and hunters in Minnesota had kept some of them alive. By collecting eggs and rearing goslings in captivity for food and for farm or decoy flocks, these farmers and hunters greatly benefited subsequent restoration programs. Current estimates of the giant Canada goose population run as high as 150,000.

There are several lessons from these stories. One is that humans can care for and expand wildlife populations not just through negative means, such as bans on pesticides or restrictions on hunting but through sound management techniques such as prescribed fires, improvement of food and water sources, and other enhancements of habitat.

A second lesson is that farmers, outdoor sportsmen and others from the private sector play an important role in effective wildlife policies, sometimes on their own, sometimes in association with government. Sportsmen naturally have an incentive to care for an expand the species they like to hunt and fish.

One of the glories of nature is how strong and renewable it is. While many species have been devastated by natural forces and human action, such as encroachments on habitat and over-hunting, many of our threatened species can regain their numbers.

Robert E. Gordon is director of the National Wilderness Institute in Washington, D.C. George S. Dunlop was formerly assistant secretary of agriculture for natural resources and environment. This article is excerpted from Policy Review, the quarterly publication of the Heritage Foundation.

"The contributions of outdoorsmen and wildlife managers should be weighed heavily when lawmakers reconsider the Endangered Species Act."

— Birmingham Post-Herald

"Human beings, after all, are natural creatures, too."

— Santa Maria Times

CREATURE COMFORT

The Revitalization of American Wildlife

ROBERT E. GORDON JR. AND GEORGE S. DUNLOP

One of America's great untold stories is the remarkable comeback of many species of wildlife. Public attention focuses on the 259 species and subspecies of animals classified as endangered by the U.S. Fish and Wildlife Service. It is less often observed that hundreds of species—from moose in New Hampshire to black bear in Pennsylvania to mountain lions in California—are increasing in population, demonstrating the resiliency and dynamism of nature.

One of the most dramatic stories of recovery involves our national symbol, the bald eagle. A decade ago, it was on the verge of extinction. Thanks to substitutes for the pesticide DDT (which was damaging eagle eggs) and harsh penalties for poaching, the bird's population has tripled in 15 years, and it may soon be taken off the endangered species list. In northern California 16 adults and one juvenile eagle were recently counted in a single tree. In Montana the number of observed nesting pairs has risen from 12 to 96.

Temporary restrictions on hunting have similarly led to an explosion of the American alligator population. This reptile was on the first federal endangered species list when the Endangered Species Act passed in 1973, although it probably wouldn't have been included by current standards. Dennis David of the Florida Game and Fresh Water Commission estimates that there are now as many as one million alligators in his state alone, and alligators are not limited to Florida. The range of the species extends in an arc from North Carolina to Oklahoma. The creature has been downgraded from the endangered to the threatened species list, which allows a certain leeway in harvesting. The fees collected from egg collectors, hunters, and others virtually offset Florida's management costs.

Some species have recovered because their habitats have improved as the unintended consequence of human activity. The population of white-tailed deer, for instance, has risen nearly 30-fold from 500,000 in the 1920s to 14 million today, partially because of reforestation in the Northeast. (Because industry and farming have moved westward, there are now 26 million more acres of forest in Maine, New Hampshire, Vermont, and New York than there were at the turn of the century.)

Similarly, the chestnut-sided warbler was sighted only once by Audubon in all his peregrinations across America. It is now a more common songbird because its habitats of forest edges, slashings, and brushy pastures have expanded in the past century—though there has recently been a slight decline.

But many of the most remarkable recoveries have occurred as the result of deliberate human efforts. Specially designed birdhouses have helped the Eastern bluebird make a comeback since it faced extinction in 1930 as a result of competition from the European starling. Setting aside land for state and national parks and forests, as well as private wildlife sanctuaries, has preserved valuable natural habitat for hundreds of species.

Sheepshape

Simply setting land aside for nature, however, is not always enough for species recovery; many of the comebacks in the animal world have required careful management of the habitat. It has become fashionable in much of the environmental movement to support a let-nature-take-its-course approach to the regulation of park and wilderness lands, a philosophy that led to the great Yellowstone fire of 1988. However, many of the success stories in wildlife recovery result from a contrary view, in which government agencies or private organizations take an active, managerial role in support of species that people care a great deal about.

A good example comes from the Whiskey Mountain area of Wyoming, where the size of the bighorn sheep herd has grown steadily from about 150 in 1930 to about 1,000 today, making it the largest wintering herd for the species in North America.

The majestic bighorn, easily recognized by its massive coiling horns, had dwindled in number in the Whiskey Mountain region primarily because of competition for grazing lands from cattle and horses. But in the 1950s,

ROBERT E. GORDON JR. *is director of the National Wilderness Institute in Washington, D.C.* GEORGE S. DUNLOP, *formerly assistant secretary of agriculture for natural resources and environment, is a member of NWI's national advisory board.*

Saving endangered species

Leaving The List EDITORIAL

Much attention is given to wildlife species that have unfortunately made

Specially designed birdhouses have helped the bluebird make a comeback

The other side of the survival coin

One of the glories of nature is how strong and resilient it is. The "comebacks" of many of the 259 animal species classified as endangered are the result of deliberate efforts to reverse unin-

Animals Making A Comeback

We hear lots of claims that certain species of animals are about the be-

the Tennessee River's lakes. Alligators, once listed as

Endangered species EDITORIAL

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The remarkable comeback of wildlife

Robert E. Gordon Jr. and George S. Dunlop

Heritage Foundation

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Saving the endangered

Consider human too

And plenty of alligators

Man, nature bring some species back

By ROBERT E. GORDON JR. and GEORGE S. DUNLOP

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Reconsidering the Endangered Species Act

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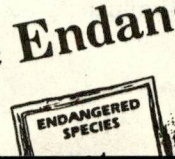


PERSPECTIVE

An Exclusive Interview with The Honorable Dixy Lee Ray, Ph.D.

Dr. Dixy Lee Ray is certainly one of the most outspoken and highly regarded advocates of sound environmental thought. Having served as, among other things, governor of Washington, chairman of the U.S. Atomic Energy Commission, Assistant Secretary of State in the U.S. Bureau of Oceans, and esteemed faculty member of the University of Washington's Zoology Department, her credentials speak for themselves.

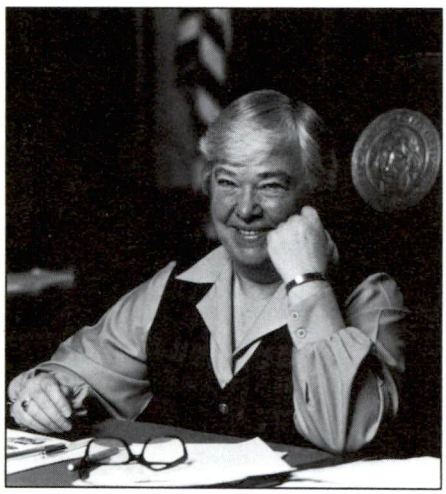
Most recently, Dr. Ray published *Trashing the Planet*. In *The Wall Street Journal*'s rave review of *Trashing the Planet*, former EPA staffer Barbara Bankoff applauds Dr. Ray for doing "an effective job investigating some of the alarm-laden topics of the day." Ms. Bankoff goes on to say that, "more scientific inquiry and debate, more scientists speaking out on environmental issues, more measured discussion rather than rabble-rousing would be a welcome change from the current and descending level of debate."

Dr. Ray is the recipient of numerous awards and honors including the United Nations Peace Prize. In 1977, *Harper*'s named her one of the ten most influential women in America, and she was voted Woman of the Year by *Ladies' Home Journal* in 1973. Dr. Ray now lives on her farm in Washington state.

Q. What was the impetus for your book *Trashing the Planet*?

A. Well, I have for the last several years been doing a fair amount of speaking at various types of meetings, generally professional groups or business groups of various kinds. Most of them are keenly interested in the environmental issues that have gotten so much publicity lately; but I found that, by and large, they had no place to get additional information beyond what they had learned from television or newspapers or magazines. And, since there is much misinformation, some of it deliberate some of it not, and such a lack of information on the scientific basis for many of these accusations, I decided that it was important to provide some kind of reference that was more informative and more reliable than the popular press.

Q. Do you see a general disregard for scientific evidence and the scientific method among many environmental organizations?



The Honorable Dixy Lee Ray, Ph.D.

A. No, I didn't mean to imply that. But I do think that many of the more activist-type of environmental organizations do have an agenda where they select their information and support just those data which support their positions, ignoring scientific evidence that is on the opposite side.

Q. Do you believe that modelling studies used to determine the threat posed by substances such as Alar and PCBs are used by many to terrify rather than develop sound policies?

A. Yes. There is a place for modelling studies but they at best can tell you what trends there may be — they can't give you definitive answers. And I think the models are being misused to a considerable extent.

Q. Are individuals who predict impending environmental doom, like Carl Sagan and Paul Erlich, representative of the scientific community?

A. By no means. They certainly do not represent the mainstream thinking nor what the majority of the scientists of the academic or industrial or technical worlds know about and believe. They have their own prejudices which they promote.

Q. Do you believe that many environmental organizations are pushing for zero risk criteria for new technologies and, if so, how the alternatives they propose rate?

A. The interesting thing is that, of course, there is no such thing as zero risk. Zero risk is simply doing without. And that in itself poses other kinds of risks. But the interesting thing, as I started to say, is that most of these environmental organizations that push for zero risk don't have any alternatives except in the case of many substances and energy and so on; they push conservation. But they never say exactly how that conservation is supposed to be achieved, or why doing with less is going to make enough for everybody.

Q. You state that it is ironic that it is often considered more feminine for women to be anti-technology. Could you briefly describe why?

"...it's very clearly demonstrated that many, many species of wildlife are more abundant today...than in decades past."

A. I don't know why this should be so because technology has done so much to improve the condition of women. Women today can handle almost any kind of a job because even heavy lifting can now be done with machines and electric motors and so on. And the drudgery that used to be associated with housework, for example, has been made infinitely easier by technology providing all manner of household devices that make life easier and more pleasant.

Q. Would you argue that nuclear power holds many benefits in environmental terms, and if so, what are they?

A. There's no question but that there is great advantage to using nuclear power to generate electricity. It does not produce any emissions to the atmosphere. Therefore it does not contribute to air pollution. It doesn't contribute to any sort of degradation of the environment whatsoever. It uses a resource, namely Uranium, that really hasn't got any other good application. And so in every respect, it's efficient, it's safe and it's economic; it's by far, I believe, the preferred way to manufacture electricity.

"Every individual that differs even in a most insignificant way...can be described as a separate species."

Q. The general condition of American wildlife is often portrayed as bad and getting worse. Is this accurate?

A. No. No, I think it's very clearly demonstrated that many, many species of wildlife are more abundant today and living in healthier condition than in decades past — whether that's the grizzly bear, the mountain goat, the buffalo, various species of deer, foxes or whatever. We have come to understand a great deal more about the environmental needs of wildlife, and through a whole system of local parks, national parks, wildlife refuges and botanical gardens have been proving that. Moreover, through the use of carefully controlled conditions in zoos, aquariums and so on, we have learned a good deal more about wildlife species and how they can be bred and returned to their natural environment.

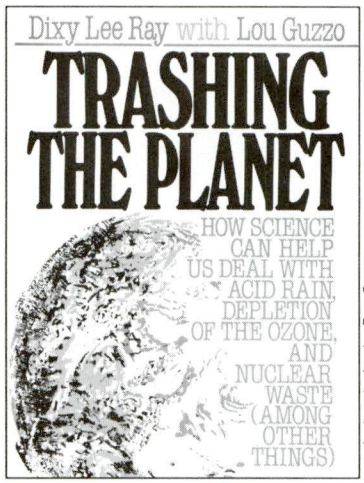
Q. There are a seemingly huge number of creatures on the endangered species list. In an earlier discussion you stated that there was a need for a stricter definition of species. Why and what would you propose?

A. Well, in the first place, many of the creatures named on the endangered species list are not really full species, they are subspecies. There is always a considerable doubt as to how definitive and unique a subspecies really is. Moreover, species, and what constitutes a species, while that appears to be perfectly clear among higher plants and higher animals, when you get into the lower plants and into what we call the lower animals — insects, worms, bugs of various kinds and so on, it's extremely difficult to determine what constitutes a species. Hence, every individual that differs even in a most insignificant way, in terms of bumps and whiskers or whatever kind of physical appearance, can be described as a separate species. So I would just recognize this and realize that many of the so-called species that have been described would not stand up to careful scrutiny.

Q. What would you propose as a good working definition of species?

A. Well, I think that the species concept has its place in science but I think we should be talking about groups of organisms, similar organisms and so on, when we're talking about ecological systems and the sort of practical issues that involve taking steps to ensure the healthy continuation of different forms of life. We shouldn't be trying to segregate them all out into individual species because, as I say, the concept comes down to where it really has no applicability.

Q. You argue in your book that, managed under the philosophy of natural regulation, national parks, wilderness areas and other similar areas often have a negative environmental impact. Why?



Jacket design by Ben Santora

A. What I was referring to specifically in that instance were the wilderness areas and national forests where the use of any kind of control measure is forbidden. For that reason, especially in national forests, there are insect pests that develop, infect the trees, and if those are not brought under control, then those pests escape from the national forest boundary itself and infect other stands of timber, private property, public property alike. There has to be some kind of management.

Q. Would that also include such practices as prescribed burning...?

A. Yes that's right. We learned at Yellowstone that the idea of letting fires just burn out of control certainly has its limits. There are times when human beings have to step in and intervene. The same thing is true of various types of natural pests.

Q. Would you argue that technology has in fact managed to successfully meet the needs of a growing population and make available more wildlife habitat?

A. I think that's been proven over and over again. In all of the developed countries and in many of the undeveloped countries as they adopt more technology, not only has the quality of life improved, but the length of life; people live longer and healthier lives where they live in a technology-based society and also there is a greater appreciation and preservation of natural environments as well.

Q. You quote David Brower of Friends of the Earth:

"Childbearing should be a punishable crime against society unless the parents hold a government license. All potential parents should be required to use contraceptive chemicals, the government issuing antidotes to citizens chosen for childbearing."

Do you believe such statements are representative of Friends of the Earth's claimed 40,000 members?

A. Whether members of the organization Friends of the Earth would agree with Mr. Brower, I really do not know. But I feel quite confident that the majority of U.S. citizens would not. Incidentally, Mr. Brower has four children. So it's only other people that should be prevented from having families.

Q. Could you explain your statement that 60 to 100 million die each year as a result of anti-pesticide campaigns?

A. I was referring there specifically to the removal of DDT—the banning of DDT. When DDT was introduced, it was used extensively in African and tropical countries to control malaria. The annual deaths from malaria dropped from about 50 million a year to almost nothing. But when DDT was banned, malaria made a comeback, and now there are people dying from malaria and other related insect-born diseases because the use of insecticides and substances like DDT is no longer approved.

Q. How would you briefly characterize the environmental organizations that you mention in *Trashing the Planet*?

A. I think we have to be careful to distinguish the old line nature groups from the ones I mention, the ones that I would call radical, extremely left-wing, anti-development, anti-science, anti-technology and so on; these I would consider to be essentially promoting anarchy.

• *Text edited for brevity and clarity* •

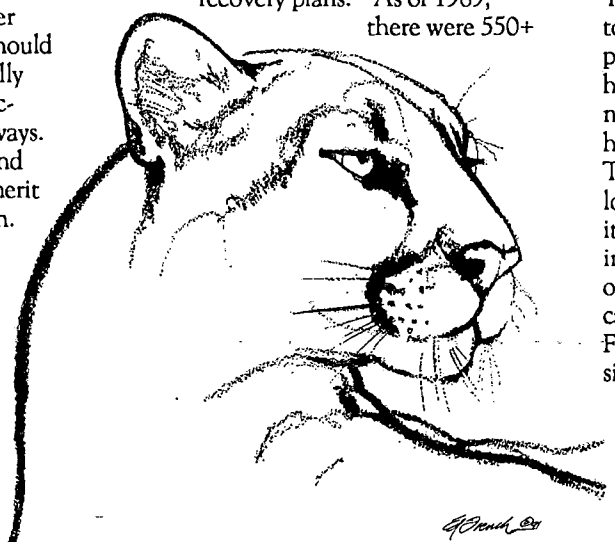
ENDANGERED, *from page 1*

The Service assesses different animals and plants for listing primarily on the "degree and immediacy of threat and taxonomic uniqueness." What is and isn't taxonomically unique has become extraordinarily hazy in recent years. The species is the basic category for taxonomical classification of living things — it is a kind of animal. A fairly common definition, as stated in one of the National Wildlife Federation-sponsored Peterson Field Guides, is that, "two animals are considered to be of the same species, or kind, if they are fundamentally similar in structure and interbreed to produce offspring but do not ordinarily interbreed with other groups." Harvard biologist E. O. Wilson would contend that "under naturally occurring circumstances" should be added. What is and isn't a naturally occurring circumstance can be subjectively interpreted in any number of ways. Consequently, many of the species and subspecies currently listed may not merit such distinct taxonomic classification.

The degree to which truly taxonomic uniqueness is an important prerequisite for listing is questionable. About 30% of the animals listed as endangered or threatened in the U.S. are subspecies, something many scientists consider an unreliable unit of classification. For example, some antelope in Arizona are called *Antilocapra americana sonoriensis* and listed as endangered, while antelope at the species level, *Antilocapra americana*—which is not listed, and includes all the antelope in Arizona—is increasing in number in much of its range. In other cases, the listing at the species level is debatable. In addition to species and subspecies, Fish & Wildlife lists populations—a group of a kind of animals living somewhere. Some argue that (what *they* consider) distinct populations may eventually evolve into entirely different creatures and therefore merit listing. Smaller groups of creatures with smaller odds for a beneficial random mutation in genetic structure is certainly a debatable basis for listing.

Undaunted, Fish & Wildlife projects an increase for listed species from 1,070 in 1989 to 1,170 in 1991. According to the '91 Budget Justification, "the Service has set an expanded goal of 55 species proposed for listing in '91." This is only a minute fraction of what could be considered since "nearly 4,000 species are formally recognized as potential candidates for listing." This figure undoubtedly includes many subspecies and populations. But listing is supposed to be only the first step, with recovery as the "ultimate goal".

The first tactical step in recovering an endangered species is preparing a recovery plan. The Service admits a "backlog" and states that "recovery efforts shifted towards... increasing multi-species recovery plans." As of 1989, there were 550+ U.S. listees of which 291 are covered by plans. More than 40 plants and animals are covered by the multi-species plans. The Ash Meadows plan, for example, includes four fish, one insect and seven plants. *Peromyscus polionotus*, a mouse which inhabits beaches, has five subspecies listed. It might be on sounder taxonomic grounds to have only one listing and do as well with one plan. But if the total population of each of the variants listed were combined, one must wonder whether the mouse would merit listing at all?



Florida Panther,
Felis concolor coryi
One of 550+ listed U.S. animals

It's been said that failing to plan is planning to fail; that certainly holds true for Fish and Wildlife's record of achieving its "ultimate goal" in endangered species conservation—"recovery". Through 1989, a total of 27 species had been downlisted and 17 delisted since the Act was passed nearly 20 years ago. Not too good when you consider there were over 100 U.S. animals already listed prior to the Act's passage in 1973. It is even worse when you look at what 'delisted' means. Four of the 17 were removed because of original data error. Six of the 17 were removed because they are now considered extinct. In five of those cases the creature was a subspecies, and in at least four of them introgression, or breeding, (recall the confusion over the definition of species) with other subspecies was considered a contributing factor to "extinction." Seven of the 17 are considered recovered. Three of the seven recovered species are found on a Pacific Trust Territory, Palau Island. According to one Fish & Wildlife official, early population counts of these animals may have been inaccurate. Additionally, their numbers improved following *natural* habitat recovery since the end of WWII. The Palau owl recovered in part because locals eradicated a coconut beetle which it ate , causing it to die of internal wounds inflicted by a spine on the beetle. Another "recovered" animal is the American alligator which Dennis David of the Florida Game and Fresh Water Commission surmises would not even have been put on the '73 list by today's standards. He ought to know, considering there may be as many as a million alligators in Florida.

The Service states it "has increased emphasis on...implementation of highest priority recovery actions..." Such actions included $580,000 worth of programs for the Bruneau Hot Springs snail in 1990. The Service also states "that for many species, particularly those that are habitat-limited, maintenance of remaining populations to prevent extinction may be a more realistic objective."

Many of the listed species have severely restricted natural ranges such as islands: there are at least 44 in Hawaii, 27 in Puerto Rico and 17 inhabiting other Trust Territories. Additionally, some are naturally rare in the U.S. like the ocelot that wanders up from Mexico to the extreme northern part of its range in Texas, Arizona and New Mexico. Furthermore, many of the listed populations or subspecies may be losing the battle for survival of the fittest. There are, for example, at least 11 animals on the list limited to a cave or cave system, and one salamander known only from algae mats in a system of spring-fed pools in Texas. The natural rarity of another listee, the New Mexican ridge-nosed

Artwork courtesy of noted wildlife artist Ed French and Elk Prints Studios. Mr. French has been a wildlife artist for over 35 years and is a senior artist with Walt Disney World. Those interested in learning more of Mr. French's work may contact the Institute.

rattlesnake, *Crotalus willardi obscurus* (read: obscure), is revealed by its name. As Greg Easterbrook states in *The New Republic*: "More than 99% of the creatures to have ever come into existence have been rendered extinct...Nature discards creatures with a pitilessness that makes humanity seem saintly."

These examples are not uncharacteristic of this issue. There are undoubtedly many valid cases that deserve our attention, including some in the above statistics. However, there are clearly many problems with the current approach that detract from the ability of the talented biologists and others at Fish & Wildlife to achieve their ultimate endangered species conservation goal—recovery. Sticking things on the list seems to be a priority—something for which we in the environmental community must bear some responsibility. Additionally, it appears evident that serious taxonomic ground rules are needed. And finally, it would seem logical that the Service be required to succeed in recovering at least a few more listees before it considers increasing the rate at which it lists things. One bright point in the '91 budget justification is the statement that the service intends to "encourage greater public participation in the recovery planning process." Hopefully this is true because the current record of performance would not be tolerated in the private sector.

Wildlife Management

Tim T. Taylor, Ph.D.

Conservation in Perspective

Early European explorers in America saw an expanse of changing horizons as they went from east to west. Within each of these horizons lived associated wildlife, suited for life within or between these habitat types. Natural disturbances created a dynamic and bountiful mosaic of natural resources.

A new kind of disturbance shaped wildlife habitat when Europeans came to settle in America. Today, as we look from east to west, areas once thick in timber are now scattered fields; unbroken treeless prairies are now divided by trees along roads and cities. Large expanses of habitat types are now broken-up into smaller units, creating a patchwork of various habitat types across America. With each disturbance, an increased opportunity for a diversity of wildlife associated within the new mosaic of habitats occurs. There have been heartbreaking losses of buffalo, heath hens, and passenger pigeons as a result of these disturbances. However, tremendous benefits to wildlife population have also occurred as a result of man's disturbance to many areas. There are two ways to look at our wildlife resources—the cup can be half empty or half full. It often depends on your perspective on conservation issues.

Many of us look back and long to preserve the past. We want to clutch on to what we have and prevent change. However, preserving a memory is one thing, and holding back the inevitable clock of Mother Nature is another. Man attempts to harness Mother Nature in the name of protecting and preserving her on public lands. We have found, however, that she often tries to free herself with uncontrolled fury as in the Yellowstone fires of 1988.

"Most existing wildlife populations can be attributed to conservation-minded Americans who own private property."

Recently, I watched the Texas Hill Country unfold in front of my car between Austin and Fredericksburg, Texas. I thought of the recent concern of the threat to endangered species in this part of the country and about the notes of the Spanish explorers who first described this territory. Several years ago, I read the accounts of some of the explorers who first crossed the Balcones Escarpment (Texas Hill Country); they described a sea of prairie grasses as far as the eye can see, herds of buffalo and antelope, but few deer. It was hard to imagine that this same country now has the highest deer density in the U.S.

Historically in the Hill Country, trees were only along the rivers and streams. The Ashe juniper, so common to the Hill Country today, could only survive on rocky cliffs where the frequent fires could not reach them. These fires maintained the prairie and provided fodder for the buffalo and antelope. I thought of where the endangered golden-cheeked warbler might have been back then. (This warbler depends on mature stands of juniper for nesting habitat.) Mature juniper stands back then would make up only a fraction of the current stands of this vegetation type. Based on historical vegetative descriptions, it's likely that there is more habitat now for the warbler than there was then.

The buffalo's prairie is now a shrub-infested habitat, suitable for deer and golden-cheeked warblers. Is that good or bad? It's good for deer and warblers, but it would be bad for buffalo.

Do we really want everything like it was? If the prairie could return to the Hill Country, the buffalo and antelope could not come back because our fences and cities would not allow for their grazing patterns. Habitat loss to the golden-cheeked warbler and the black-capped vireo (another Hill Country endangered species) would be greater than today. Deer would also drastically decline. Deer and vireos live on edges of habitat that would be too far apart in a prairie. The warblers live in mature juniper stands which are now more common. This would also undermine the economic incentives for local landowners to maintain diverse habitats suitable for more wildlife which thrive on such disturbances.

Diversity provides long-term stability. As we gaze upon the patchwork of private lands across this Nation, we can observe a diversity of habitat types. We cannot deny that much of America's wildlife habitat has suffered in the wake of the march of progress. However, there remain ample opportunities for conservation of our Nation's wildlife resources. The greatest number of opportunities are not within our preserved parks and refuges, but in America's backyard—its private lands.

From bluebirds to brown pelicans to peregrine falcons, we can see that American wildlife resources can coexist with economic development on private lands and sea shores. The fragile cup that represents our natural resources is more than half full of America's wildlife, not half empty. The cup can fill once again. Remember that populations of ospreys, eagles, geese, turkeys, songbirds, deer, elk and freshwater fish to name a few have rebounded in this past century from disastrously low numbers. Most existing wildlife populations can be attributed to conservation-minded Americans who own private property and want to leave their land better than they found it.

Climate Change in the Entertainment & Media Environment

Recent news segments and entertainment programs are clear indicators that the message of sound environmentalism is getting out. A November '90 edition of ABC's 20/20 news program included a

major segment which took an in-depth look at the bottled water industry. The piece, "Is Bottled Better?" revealed some surprising facts.

One of the selling points of bottled water is often the notion that it comes directly from natural springs and is free of chlorine, which is added to tap water to kill bacteria. In fact, ABC reports, despite a label that suggests a mountain spring or a glacier source, pricey bottled water is more likely to have come from local rivers or even tap water itself. Furthermore, tests revealed that due to the absence or removal of chlorine, bottled water contains comparatively large amounts of bacteria, in one case up to 300,000 colonies per milliliter. To be fair, ABC's John Stossel stated, "A high bacteria count doesn't automatically make you sick... What the tests show, however, is that just because it comes in a sealed bottle, that doesn't necessarily make it cleaner than tap."

In taste tests, 50 randomly selected individuals who normally purchase bottled water tested 12 different waters ranging from some of the best-selling waters to New York tap. New York tap came in second.

On CBS, *60 Minutes* broadcast an excellent segment on acid rain. The report centered on the recent ten year, $570 million study which involved over 3,000 scientists and concluded that lake acidification may not be the pressing crisis many believe it to be. One of those scientists is the guest columnist in this issue of the Resource; so for the facts, turn to page 3. Also, aspects of the same *60 Minutes* piece are addressed in the "From the Editor" column on page 2.

Another recent episode of *60 Minutes*, addressed possible environmental consequences of the current Gulf crisis. Specifically, it discussed astronomer and eco-Malthusian Carl Sagan's contention that, were Saddam Hussein to purposely explode all of Kuwait's oil wells, the resulting smoke would rise into the upper atmosphere, blackening skies and blocking out sunlight across "some tens of percent

CBS Inc.

The 1989 episode of Murphy Brown, "Whose Garbage Is It, Anyway?"

of the Northern Hemisphere" and result in "massive agricultural failures in the U.S."

Fortunately, this frightening rhetoric was countered by considerable scientific data presented by another guest on the same program, Dr. Richard Small. Small, a thermal science expert with the Pacific Sierra Research Corporation, recently completed a high level study on the impact of just such an event. He stated that Dr. Sagan had "badly overestimated the effects." Dr. Small concluded, based on widely accepted supercomputer simulations using actual Kuwaiti crude production figures and absolute worst case scenarios that, "there is simply not enough smoke, nor is it injected high enough, to influence climate." According Dr. S. Fred Singer, Director of Science and Environmental Policy at the Washington Institute, "Where there's smoke, there's Carl Sagan."

In entertainment broadcasting, the CBS sit-com *Murphy Brown* has made an effort to present some important issues such as recycling and wetlands from a common sense perspective. The wetlands episode perhaps surprised many viewers when, at one point, Murphy Brown herself was kidnapped for *not* supporting extreme activists' demands.

Finally, questioning of overzealous environmentalists has been popping up even in the most unexpected places. Brown University's *Politically Correct Person*, by student cartoonist Jeff Shesol, appears regularly in the *Brown Daily Herald* and recently in *The Wall Street Journal* (below).

Reprinted by Permission/© Jeff Shesol

NWI Programs & Activities

Last Fall, NWI initiated its first habitat enhancement project as part of the REAL Program (Revitalization and Enhancement of America's Lands). Initial research including aerial surveys, soil sampling and preliminary analysis of existing wildlife resources has proven very promising. NWI will keep you abreast of this project as it develops. (See photos below.)

In other news, "Creature Comfort: The Revitalization of American Wildlife", by Robert Gordon and George Dunlop, has generated considerable interest at the national level. (See press release in center section.)

NWI

Biologist Tim Taylor and Rob Gordon extract a soil sample

For some reason, NWI's ideas appear to aggravate the organization *Friends of the Earth* to no end. The inaugural issue of FOE's

NWI

Ben Patton back from conducting aerial surveys

magazine derided NWI as "a propaganda front group for radical free market" ideas. As to what that means, we are still uncertain. The piece went on to indict NWI for claiming that "progress and technological development hold some of the keys to an enhanced and healthy environment." While it may seem strange to FOE, we stand by this statement and apparently so do others. The FOE article has already generated many new NWI members.

Also, NWI recently produced a press release on the important positive relationship between sound environmental stewardship and private property. Senator Symms' office distributed the release to the entire Senate prior to the introduction of the Private Property Rights Act of 1991.

Additionally, NWI provided substantial background information for a recent publication of the Washington-based Capital Research Center. The piece, by Robert Pambianco, which appeared in CRC's *Organizational Trends* publication, focussed on environmental groups and workplace fund-raising; it was distributed to over 4,000 individuals in the public and private sector.

Finally, NWI continues to be successful in its energetic outreach and networking efforts. In particular, the Institute would like to welcome the establishment of Citizens for the Environment in Wash., D.C. and the Responsible Environmentalism Foundation in Portland, Oregon.

Notes

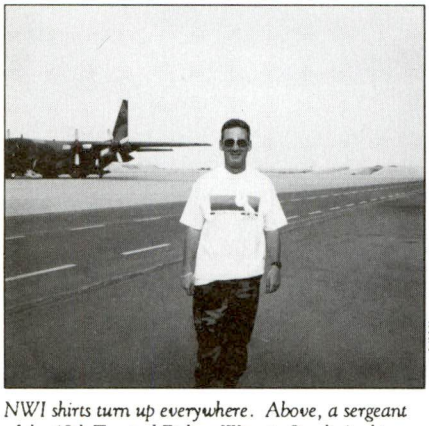
History-making Alaska Sea Otter Pup Doing Well at Sea World

Sea World

Last summer, biologists at San Diego's Sea World announced the birth of the first pup born to sea otters rescued from the Prince William Sound oil spill. Since being treated for hypothermia this fall, the pup, pictured at right with keeper, is reported to be in healthy condition.

Sea World was instrumental in capturing, cleaning and releasing many otters affected by the spill. However, several otters, including this pup's parents, were chronically ill and taken to the San Diego facility for treatment and study. According to Sea World spokesman Fred Jacobs, many of the animals had consumed large amounts of crude oil which remained in their digestive systems. With the input of scientists from around the country, Sea World's veterinary staff quickly developed a substance which would bind chemically with the oil, allowing it to pass harmlessly out of the animals.

Jacobs feels that the newborn pup is convincing proof of the program's success. "In zoological terms, breeding is a good measure of an animal's satisfaction with its environment."


NWI

NWI shirts turn up everywhere. Above, a sergeant of the 48th Tactical Fighter Wing in Saudi Arabia. NWI salutes all of our troops proudly serving in Operation Desert Storm.

NWI

Little members during Christmas past, Gregory and Robby Menna of Sterling, VA, sport their NWI t-shirts in front of the family tree.

NWI T-shirts

NWI Associates are encouraged to submit photos suitable for publication depicting their own adventures in NWI shirts. Order yours today:

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NWI Resource

PERSPECTIVE

Exclusive Interview with Dr. Tom J. Cade Founder of The Peregrine Fund

A publication of the National Wilderness Institute
25766 Georgetown Station Washington, D.C. 20007 (703) 836-7404

Q. Could you describe for us the peregrine falcon and its typical habitat?

A. The peregrine falcon is the most widely distributed bird in the world, occurring on all the continents (except Antarctica) and on many islands. It's a medium-sized predator that feeds almost exclusively on other birds ranging from the smallest sparrows up to large ducks. Its favorite food is probably pigeons. In North America, it most frequently nests on cliffs or bluffs on small rivers, occasionally in old thick nests of other birds, and even right on the ground in arctic situations. A number of our reintroduced birds nest on man-made structures, particularly buildings, bridges and old grain elevators.

Q. Could you provide an overview of the decline of the peregrine falcon in the United States?

A. Nearly everyone agrees that the main culprit was the chemical pesticide DDT or its environmental breakdown product DDE. It affected the bird because they're at the top of the so-called food chain. This material gets concentrated up the chain. It caused the eggs to have abnormally thin shells and other structural problems that frequently resulted in the eggs breaking or in embryo mortality because of improper gas exchanges with the environment. Too few young were being produced to replace losses in the adult population, and this resulted in a population decline in the eastern part of the country following World War II. By the early 1950's many of the birds had already disappeared from their historical nesting locations. By the mid-60's there were no nesting peregrines left anywhere in the U.S. east of the Mississippi. In the West, in the mid-1970's there were probably no more than 20 to 30 percent of their original numbers left. Now there's a very big population. The largest segment of the continental population nest in Canada and Alaska and that's a long-distance migratory population that goes clear down into Argentina to spend the winter. We think that they may have been picking up most of their pesticides there. Those birds bounced back spectacularly in the late 70's and 80's. In many places in the Arctic there are more peregrines nesting at the present than were known before DDT came into use, such as on the Cold Bill River in Arctic Alaska and the Yukon River. I knew these rivers quite well in the 50's and they now have 2 or 3 times as many peregrines. Natural recovery in the more southern latitudes has been much more uneven. There has been some natural recovery in northern California and adjacent parts of southern Oregon. But beyond that, most everything else that's happened in the coterminus U.S. has been the result of this big release program since about 1975.

Jerry Soesbe

Dr. Tom Cade with a falcon

Q. How did you first begin working to reestablish the falcons?

A. We started at Cornell actually in 1970, and the first problem was to learn how to breed the birds in captivity on some kind of a significant scale. A few falconers had succeeded on a hit-or-miss basis with a few birds but no one had ever tried to build up a large colony and establishment where you could raise dozens or hundreds of birds per year. It took us about three years to iron out all the problems. We raised our first peregrines at Cornell in 1973. We produced about twenty that year from about four pairs. By 1975, we were raising enough young so that we could begin some experiments to learn how to release the birds in the wild. About that time, the Fish and Wildlife Service came into the act and began to help us and became a big partner and supporter of the program, albeit somewhat reluctantly. The Endangered Species program people never gave the peregrine as high a priority as we thought it deserved. It was always a matter of pushing them along to keep their interest up. Anyway, by the late 1970's we were releasing something on the order of 100 birds per year and continued that right up until the last couple of years. We have released something like 1600 in the East from Maine to South Carolina. We got our first birds breeding naturally in 1980 in New Jersey. I don't have complete figures yet for this year but it should be right around 100 pairs in the East, and that was starting from scratch.

Q. Where did you get your original stock and where did you begin to release them?

A. Quite a few were provided by falconers, and then we also got permits to obtain some birds from the wild. They came from places like Arctic Alaska, British Columbia, a few from the West, and some exotic ones from Spain and Scotland.

We started with natural, historically-known nesting sites, but we had trouble with predation from great horned owls, which had taken over since the peregrines were gone. That was such a discouraging experience for us that we began to think about some alternatives -- cities, for example. There would be no natural predators, a pretty significant food supply in terms of feral pigeons and starlings, and you could mimic a cliff site with a building. That worked effectively. Now there are probably over 20 cities in the U.S. and Canada that have nesting peregrines. New York City has 10 pairs. We did go into some natural areas like coastal salt marshes. We built special releasing towers in the hope that they would get a fixation on these towers and come back to them for nesting sites. That worked. We've got something like 18 or 20 towers along the Atlantic coast and all but one or two are occupied. The salt marshes are a pretty rich environment for prey species and have wide open habitat which falcons need for their style of hunting. These features fit the need of the peregrine well, but there were no suitable nesting sights. As soon as we put these towers in we had all the right features to make superior peregrine habitat. It's worked exceptionally well--the birds nesting on those towers are by and large are the most productive pairs.

- continued on back

Q. Could you explain how you worked with different populations or sub-species of peregrines for reintroduction?

A. Since we didn't have the original stock, we didn't know what peregrines would be most suitable for release. So we thought that maybe the best thing to do would be to mix many different varieties of peregrine stock together in the hopes that some of the combinations would work. There was also the practical matter that we simply could not accumulate enough breeders from any one stock to make a practical program. We have some of all of the breeds. We don't have really enough information yet analyzed to know whether some stocks have worked better than others. My impression is that it hasn't made much difference; they're all doing about equally well. It turns out that for peregrines a lot of behavior is environmentally induced rather than being determined by the genotype.

Q. Were there objections to your mixing birds from different populations?

A. Oh, yes. There was quite a big to-do. There was some objection within the Fish and Wildlife Service's Office of Endangered Species. According to some interpretations of the Endangered Species Act, using an exotic, non-endangered bird would not be appropriate for support under the Endangered Species Act. The question was first raised with regard to proposals for reintroduction of grey wolves into national forests. The wolves would have to be brought in from some distance away. The then Chief of the Forest Service questioned whether use of wolves from a non-endangered population could be justified under the Endangered Species Act. I think that Fish and Wildlife Service and others eventually said, 'No, it couldn't.'

This happened about the second year into our release program and naturally impacted on us. If it were true for the wolf then it would be true for the peregrine. I had to get as many of my scientific colleagues as I could from the U.S. and abroad to support our position which was that the main concern was to restore the species not necessarily the local population that had once existed there. The Service finally made a special exception for the peregrine, and as far as I know, it's still the only exception they've made. The other objections were more from naturalists and conservationists who objected to it on a philosophical or aesthetic grounds that these were unnatural creatures that shouldn't be allowed to contaminate the natural ecosystem. The other point that conservationists and some biologists have raised is that you might be creating a wolf in sheep's clothing by putting an exotic organism into an environmental situation where it had not existed. Other people were concerned that they would compete with other birds of prey like Marsh Hawks. I think that a lot of it was more or less philosophical. I guess you would say, philosophical and maybe aesthetic. There was some emotionalism involved even among biologists because when you deal with a predator it raises certain images and feelings. Some people, even some biologists basically did not understand how limited the effect of predation by a few widely-scattered peregrines is.

Q. How is the peregrine now doing?

A. Well, it's come back spectacularly. It's come back as a result of natural processes, since DDT was essentially eliminated in 1972, in our arctic and southwest regions. Quite a few peregrines have returned as a result of those birds that were released. We have 80 to 100 pairs in the East, close to 40 pairs in Colorado, and I've got 25 pairs in the greater Yellowstone area where there were none a few years ago. There are about 100 pairs in California and half or more of those are released birds. They're slowly building up in places like the northern plains area of Montana, in Oregon, Washington and Idaho. So we continue to make progress. For example, the Arizona bird should be delisted in my opinion--they've got more now than they ever had. The same is probably true for parts of California, the interior of California, but not the California coast. The birds in Colorado could at least be downlisted to threatened if not taken off the list entirely. Again, there are more there now than we knew about in the old days. The arctic birds should be delisted completely, I mean they're almost supernumerous by falcon standards. Eastern birds might soon be candidates for downlisting but not delisted for a while. Things are actually looking pretty good.

Q. I would assume that you would consider yourself a proponent of actively managing the environment as opposed to natural regulation?

Peregrine Fund

Feeding newborn peregrines

A. Basically, the answer is yes. I believe very firmly that we have to manage things. We need to be intelligent about it, and careful about it. But I think that we, as human beings, have screwed the world up so badly now that expecting it take care of itself without some intelligent intervention is not very realistic. I am a proponent of preserving wilderness where it can be preserved and having some large tracts of natural lands set aside that we can sort of enjoy as big museum pieces. But even those require some management. None of them are really big enough to say, "Well, it can manage itself. Leave it alone and it can just take care of itself."

The Peregrine Fund has gotten a lot of support from corporations and from people because we are management-oriented, because we can show that there should be a way in which we can use the world and not abuse it. A lot of companies have liked that and helped us. But on the other hand, some of them like to use it as an excuse to go ahead and be exploitative, which I like to guard against as much as possible. This current thing with the spotted owl is a perfect example of this whole issue. There's absolutely no reason at all why there can't be intelligent sustainable yield harvesting practices carried on in an environment where you can also have spotted owls. But you can't convince some of the hard-line protectionists about that and you can't convince the foresters and the timber companies to change their practices in ways that would be reasonable in terms of the interest of wildlife preservation. We feel that this particular issue could easily be solved with some intelligent management and would like to get into it, but so far haven't been able to get any support. The protectionists don't want to see any big trees cut at all. They're afraid that if you can manage a secondary forest and make it suitable habitat for the owl, then you can go ahead and cut down the rest of the big trees. Well, I wouldn't want to see that happen. The timber industry, on the other hand, doesn't want to admit to a problem with the spotted owl.

Q. Do you have any closing words of wisdom for us?

A. Well, I think you just have to be vigilant. Just hang in there and do the best you can and try to keep open discussion going with all of the various interests that are involved in these issues and you'll eventually get somewhere.

**** Text edited for brevity and clarity ****

N W I

RESOURCE

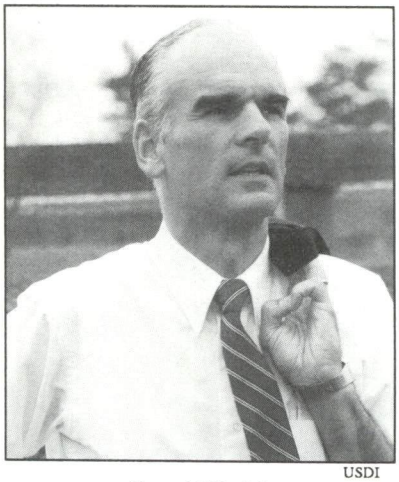
A PUBLICATION OF THE NATIONAL WILDERNESS INSTITUTE

"A Voice of Reason on the Environment"

Volume I, Issue 4 October/November, 1990

THE HONORABLE DON HODEL JOINS NWI'S ADVISORY BOARD

The Institute is honored to welcome the Honorable Donald Paul Hodel as the newest member of NWI's National Advisory Board. Mr. Hodel served under President Reagan as Secretary of the Interior from 1985 to 1989. As Secretary, Mr. Hodel reported directly to the President on all Departmental activities and operations. He supervised all agencies within the Department including the Fish and Wildlife Service and National Park Service. He also served as Reagan's Energy Secretary from 1982 to 1985.



USDI

Donald Hodel

Throughout his career Mr. Hodel has been a driving force in the promotion of sound, market-oriented environmental strategies. Prior to joining the Reagan Administration, he served as President of Hodel Associates, Inc., an energy consulting firm. In addition, Mr. Hodel served on the Board of Directors of the Electric Power Research Institute and the National Committee of the World Energy Conference, and was a delegate to four of the last five World Energy Conferences. In 1974, he received the Department of Interior's Outstanding Service Award for energy conservation.

Mr. Hodel received his bachelor's degree from Harvard University and his Juris Doctorate from the Oregon School of Law and is a member of the Oregon State Bar Association.

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PEREGRINE FUND'S TOM CADE DISCUSSES FALCON RECOVERY EFFORTS WITH NWI

In this issue's PERSPECTIVE (see insert), NWI conducts an exclusive interview with Dr. Tom J. Cade, founder and chairman of The Peregrine Fund. Dr. Cade launched the Idaho-based nonprofit in 1970, thus beginning a dramatic effort to recover the Peregrine Falcon from near extinction. Through its programs, the Fund has played a leading role in reestablishing the falcon in the wild.

Dr. Cade earned his Ph.D. from UCLA in 1958 and went on to become a professor of ornithology at Cornell University where he served as Director of Raptor Research, Curator of the Bird Collection, and Acting Chairman of the Section of Ecology and Systematics. Currently, Dr. Cade is a professor of Biology at Boise State University and Director of the Raptor Research Center. He has published over 150 scientific articles and papers and three books, and received numerous conservation honors.

Dr. Cade is an outspoken proponent of management-oriented approaches to environmental stewardship. Of private sector involvement, Cade says: "I think the more the private sector can get involved the better. My basic feeling is that whoever knows how to manage a species best ought to be in charge. That often isn't the case, because you get these little fifedoms developed in government and they want to keep it all to themselves. We got into the peregrine work before the government and kind of aced them out. But I'm glad to see that other programs have developed since, like the black-footed ferret program, which partakes of agencies and private organizations. They're starting to de-emphasize the federal involvement with the whooping crane, turning it over to experts. I think that bodes well for the species. I like to see private initiative involved, but I think the government needs to hang in there. Basically the real experts ought to be the ones doing the work."

Bill Burnham

A peregrine falcon at its eyrie with young

From the Editor

by

Benjamin W. Patton

Saddam Hussein and Alaska's Oil

When it was announced last year that the United States had become more than 50% dependent on foreign oil, the American public scarcely raised an eyebrow. Now that Saddam Hussein is beginning to make us feel the effects of that dependency it is a different story. The price of a barrel of oil has sky-rocketed, the White House Budget Office has increased FY 1991 budget deficit estimates by $1 billion, and our economic forecast looks ever bleaker. Actions like Hussein's coupled with our own shortsightedness could eventually take their toll on the environment.

In 1987, NWI National Advisor, Secretary Hodel recommended to the Congress that the Department of Interior be allowed to begin tapping the oil reserves of the Alaska National Wildlife Refuge (ANWR). He warned that "in the event of a future energy crisis, there would be strong pressure to develop rapidly, promising areas like the 1002 area [in ANWR], without regard for environmental factors." Now there is a great debate

Hopefully, the environmental lobby will recognize the importance of encouraging responsible resource development rather than rushed development under the gun...

as to whether or not exploration of ANWR should go forth.

Congress has set the stage for rushed and environmentally irresponsible development in the future by forbidding any and all exploration in ANWR. Furthermore, most of the half billion dollar environmental lobby continues to fight against any exploratory activity there. Instead, many are pushing for measures like increased Corporate Average Fuel Economy standards as solutions despite a Brookings Institution study which revealed that CAFE standards have reduced average auto weight by 500 pounds and resulted in a 14 to 27 percent increase in auto fatalities. An increase of 2,200 to 3,900 car fatalities annually, the impact of foreign oil dependency, and the prospect that rushed development in the future would be environmentally reckless are strong reasons to discuss tapping ANWR's resources in a responsible manner. In this case, responsible development means providing ourselves the time needed (10 to 15 years) to recover the oil in a manner which will have a minimal negative impact on wildlife.

Located in the northeastern corner of the state, ANWR is roughly the size of Maine. It was established in 1960 as a refuge for wildlife such as musk oxen, caribou and polar bear. In addition to having abundant wildlife, seismic exploration indicates the refuge may also have between 5 and 29 billion barrels

see **ANWR,** *page 4*

Readers are encouraged to submit comments to:
NWI Resource
25766 Georgetown Station
Washington, D.C. 20007

NWI's Mission

The National Wilderness Institute is dedicated to the wise management of natural resources, unique and special wildlife habitat, and wetlands. NWI embraces the perspective that renewable resources such as air, water, soil, wildlife, fish, forest and range are dynamic, resilient and respond positively to wise management.

The Institute stresses the need for a private sector stewardship which enhances the resource base without unnecessarily inhibiting economic growth. NWI encourages environmentally sound, site and situation specific practices which harness the dynamic and creative forces of the private sector, including the extending of the protection of private property rights, and which reduce the regulatory burden of the Federal Government. The National Wilderness Institute realizes its mission through programs which network ideas among individuals, organizations and corporations.

NWI Resource

Benjamin W. Patton, Editor

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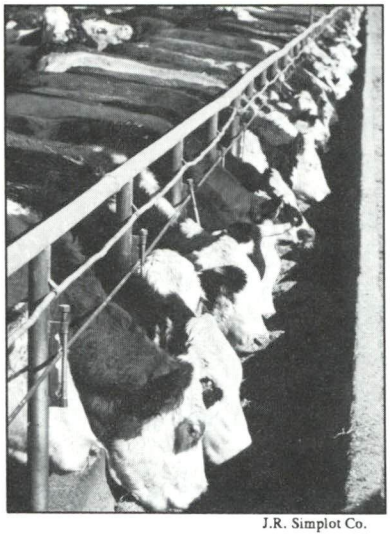
Environmental Engineering

Steven T. Ragiel

Full Circle French Fries

There has long been a controversy over the relationship between economic growth and environmental quality. Many believe that increased productivity means sacrificing environmental quality and vice versa. But the efforts of Jack Simplot prove that this need not be the case. His food-processing company, J.R. Simplot Company, which has its roots in the last great era of U.S. recycling during World War II, has significantly raised the agricultural productivity of the land that it manages while producing very few "wastes" from its operations. And such efficiency has its reward. The company is now an employer of over 9,000, with annual sales approaching $1.5 billion.



J.R. Simplot Co.

Potato wastes make up a significant portion of the feed ration at Simplot's feedlots.

Simplot operates under a strict environmental philosophy which focuses on maximizing the efficiency of its operation by recycling or reworking all of its operational by-products (not called "waste" in this part of the world) into gainful enterprises. This full circle philosophy is exemplified by Simplot's production of ethanol (a transportation additive), biogas (a supplement to natural gas with 65% of its energy content) and fertilizer for the growth of animal feed grasses. Currently, the company is researching ways to use potato products for the raising of tilapia fish.

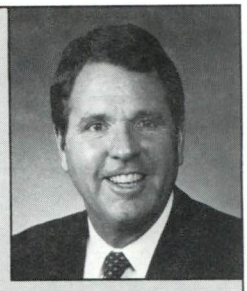
Environmental technology can be creatively applied to promote both resource conservation and economic growth.

Mr. Simplot started the business in the 1940's producing dehydrated potatoes and onions as rations for the arsenal of democracy. After the war, the company adapted its freeze-drying equipment to the production of civilian food products such as frozen french fries. The current production of frozen french fries produces initial by-products such as potato peels and shavings as well as rinse water and starch residue.

The potato peel by-product has been utilized over the years in three different ways. One method is to provide it directly to cattle as feed. A second method is the anaerobic digestion (forced decay/decomposition without oxygen) to produce biogas and a land-spreadable compost (a soil enhancer). The third method is distillation to produce ethanol and a high protein residue - distiller's grain. Biogas is presently used on site at the plant as a supplementary boiler fuel for the production of electricity and steam which is

see **SIMPLOT,** ***next page***

Guest Column



Private Property as an Environmental Safeguard

by

Senator Steve Symms

Many Americans understand "environmental safeguards" to be the volumes of regulations issued by federal and state agencies, telling individuals and businesses how to manage their property. This perception has led to the unfortunate conflicting of private property rights against "environmental protections." This view, however, is relatively unique to the United States. On an increasing basis, other nations around the world are viewing private property rights very differently, as a solution to rather than cause of their environmental woes.

A good case in point is the Central American country of Costa Rica with its diverse tropical forest, mountain-side cloud forest, and dry coastal forest. Each of these forests, the dry coastal forest in particular, has suffered from the encroachment of development. This development most often took the form of individual settlers who, leaving the depressed economies of the developed rural areas, would move onto undeveloped and natively forested lands.

The U.S. cannot afford to be pedalling backward on something as intrinsic to American society...as the institution of private property.

Two aspects of Costa Rican law, however, encouraged the destruction of these forested lands. First, settlers were by law given the right to "take" property away from larger land owners merely by squatting on it. This fact alone made it very difficult for larger land owners to maintain their ownership of extensive tracts of undeveloped land. Secondly, the deeding of property (both from the government and "squatted" from other owners) was contingent on the settler demonstrating "economic use" of the property -- defined to mean "cutting down of the trees." This requirement virtually assured that the hacking down and burning of tropical forest was the first activity of nearly every Costa Rican settler.

Led by Environmental Minister Alvaro Amanha, Costa Rica recently reformed its laws to strengthen private property protections. These reforms include redefining "economic use" to allow settlers to acquire deeds to property without cutting down the trees on it. The integrity of that property right is also better protected, and squatting is now generally discouraged.

The United States is lucky to have developed in an atmosphere where private property was considered inviolable, ranking together with life and liberty. Because of this, America has

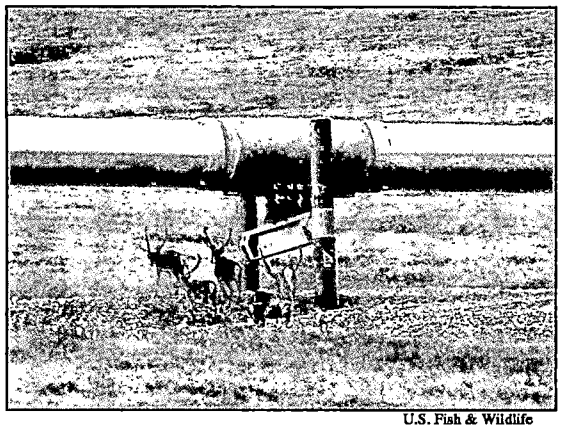
see **SYMMS,** ***next page***

The Honorable Steven D. Symms (R-ID) is a member of the National Advisory Board of NWI. Currently serving his second term in the U.S. Senate, Senator Symms is on the Environment and Public Works Committee, as well as on the Budget, Finance and Joint Economic Committees.

ANWR, *from page 2*

of oil and around 31 trillion cubic feet of natural gas, making it North America's most promising new source of onshore fossil fuel. The reserves are believed to lie below the Coastal Plain which represents less than 8% of ANWR's 19 million acres. Based on similar operations in Alaska's Prudhoe Bay area, only 23 square miles of the Plain (less than one-tenth of one percent of ANWR) would be affected by oil operations.

Unfortunately, the environmental lobby has managed to falsely portray Prudhoe Bay as an environmental mess and promote the idea that tapping the reserves of ANWR would cause similar problems. Yet, in contrast to oil imported by tanker, according to Bill Howitt of Alyeska, the Alaskan Pipeline has had zero leaks since its construction in 1977. Furthermore, much of the pipeline is underground and thus allows free roaming of animals. The Central Arctic caribou herd, which migrates through the region, grew spectacularly from 3,000 in 1970 to over 18,000 in 1988. Finally, as ANWR's Coastal Plain lies just 65 miles east of Prudhoe, a pipeline connecting the two areas would be considerably shorter than the already leak-free Trans-Alaska Pipeline which runs 800 miles.



U.S. Fish & Wildlife

Caribou pass beneath a raised segment of Trans-Alaska Pipeline near Prudhoe Bay

With currently active domestic oil reserves on the decline, it seems inevitable that the energy reserves of ANWR will be tapped someday. Hopefully, the environmental lobby will recognize the importance of encouraging responsible resource development rather than rushed development under the gun of another Saddam Hussein.

SIMPLOT, *from page 3*

then used to operate the plant. The ethanol produced is sold to gasoline distributors as a fuel additive.

The waste water produced from Simplot's food processing plants is utilized in a number of valuable processes. The most notable is the land application process in which the waste water is applied to fields planted with prairie grass which is used as cattle feed. Neighboring grass fields that do not benefit from the nutrients found in the Simplot waste water can usually be harvested three times per year; the Simplot fields have consistently produced four or five harvests per year.

The J.R. Simplot Company has provided a pragmatic example of how existing environmental technology can be creatively applied to promote both resource conservation and economic growth. As Simplot expands into new business areas, the environmental programs which undoubtedly arise from its creative philosophy will hopefully serve as a model for sound resource management.

SYMMS, *from page 3*

been able to avoid the type of widescale environmental destruction that the West recently became privy to in Eastern Europe. Throughout the industrialization of the United States, it was mostly private property owners, seeking to protect their property values from the pollution and waste of neighboring plants and factories, that raised the nation's consciousness about the need for protecting our environment. In countries where this kind of individual stewardship of the land and its resources is lacking, the surrounding environment has all too often become the communal cesspool, into which everyone disposes of their wastes.

As America's environmental agenda becomes more aggressive, it is essential that private property rights be defended just as aggressively. In a world where Soviet politicians advocate the sale of buildings to private interests, where Eastern European farmers demand ownership of their land, where Brazilian naturalists propose privately-owned biodiversity preserves financed by chemical and pharmaceutical companies, the United States cannot afford to be pedalling backward on something as intrinsic to American society, and as critical a safeguard to protecting our environment,

ENERGY

Daniel J. Sullivan

Air Pollution Reduction Made Easy

Reprinted by permission

Illustration by David Clark

Southern California, and particularly the Los Angeles basin, are legendary for "smog," the visible shroud that proves to the most hardened skeptic the reality of air pollution. Southern California has the most serious air quality problem in the country; the idea that this land of sunshine and outdoor pleasures can be threatened by pollution has led to proposals for some radical remedies. The Southern California Air Quality Management District recently unveiled a sweeping plan for pollution reduction that included everything from mandating the use of questionable alternative vehicle fuels and non-existent technologies to banning home barbecues.

Sixty percent of the air pollution in the region comes from cars, trucks and buses. That simple fact led to the oil company Unocal, which does a good part of its business in California, to pick up on a well-known but politically sensitive datum: old cars emit a much

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ENERGY, *from page 4*

greater volume of pollutants than new cars; get the older cars off the road and you remove a disproportionate amount of pollutants.

The problem is that many people who drive old cars do so because they cannot afford new ones. Some sort of government edict banning, say, pre-1971 cars from the roads would work a real hardship on low-income people.

Unocal decided to overcome that problem by making a startling offer. It would buy 7,000 pre-1971 cars for $700 apiece, a good price for many pre-'71 autos, and scrap them, removing them forever from the region's highways. Under the name SCRAP (South Coast Recycled Auto Program), Unocal began buying and crushing cars June 1.

Unocal Corp.

Unocal's SCRAP Program Kickoff, June 1, 1990

"This is a pilot project," says Frank Blum, project manager for SCRAP. "Our motivation was to try something new and different and to get the Air Quality Management District to look at alternatives. We've found through our tests that these old cars produce something like 30 times the pollutants of newer cars. If you do the arithmetic, the SCRAP program works out to the equivalent of 210,000 new cars removed from the road."

This experiment in simplicity could be the solution...to pollution problems in cities across the country.

More, in fact. SCRAP generated so many expressions of interest that Unocal started a fund to match contributions from the public for the purchase of old cars. Then the First Interstate Bank of California announced a special financing program to help people who scrapped their cars to buy new ones. Then Ford Motor Company chipped in with an offer to buy 1,000 more cars through the SCRAP program, and local Ford dealers anted up for another 100.

But the most gratifying response came from the Southern California Air Quality Management District itself, which has contributed $100,000 to the program, enough to end the polluting lives of almost 150 cars. "SCRAP has excited the air quality purist," Blum says.

How important is the SCRAP program? First, it will provide hard data on emissions. "We've contracted with an independent group to exhaustively test 30 cars that come through SCRAP, and the California Air Resources Board is doing its own tests on our cars," Blum says. "Once we've got the data from those tests, we'll be able to make responsible claims about the effect removal of these cars has on air quality."

If the numbers hold up -- and, if anything, the test results will probably prove the polluting ratio to be worse than the current 30-to-one data -- then the 400,000 pre-1971 cars registered in Southern California (and who knows how many unregistered) could become targets of a public-private partnership for their removal. Do the arithmetic: 400,000 cars times 30 or more equals the equivalent of at least 12,000,000 new cars removed from the road.

It is just possible that Southern California will be able to bring its air quality to acceptable levels without radical interference in the lives of its residents. And if Unocal and its supporters are right, this experiment in simplicity could be the solution, or a large part of the solution, to pollution problems in cities across the country.

Why, in the end, did Unocal elect to spend upwards of $5 million on SCRAP? "It's a long-term investment," Blum says. "If we're right and this is as important as we think it is, then society as a whole benefits -- and that's a very good bottom line result."

ENVIRONMENTAL LAW

Joel R. Burcat, Esq.

Conflicting Claims and Legal Guidelines for National Forest Management

A great deal has been said lately regarding the purposes to which our National Forests should be put. Should National Forest habitat be preserved for spotted owls or should timber be harvested? When should natural resource utilization give way to recreational uses? How much National Forest land should be designated as wilderness? None of these questions may be resolved easily. In spite of the conflicting claims that organizations, companies or bureaucracies may make on National Forest lands, these lands were established by federal law and are managed under the authority of and guidelines set by federal law.

Much of the recent debate has surrounded the "Multiple-Use Sustained-Yield Act of 1960." Interest groups of all kinds have offered varying interpretations of that law. The following analysis is offered as a common-sense means of interpreting the law.

On June 4, 1897, Congress enacted a law which established the purposes for which National Forests were to be established and administered:

No National Forest shall be established, except to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of the citizens of the U.S....

Sixty-three years later, Congress enacted the Multiple-Use Sustained-Yield Act ("MUSY"). This new law declared that "it is the policy of the Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and fish and wildlife purposes." At the same time, Congress declared that the purposes enunciated in MUSY "are declared to be supplemental to, but not in derogation of" the purposes established by the law of June 4, 1897.

Section 2 of MUSY gave direction to the Secretary of Agriculture and established a balancing test for the competing uses of National Forests:

The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of National For-

ests for multiple use and sustained yield for the several products and services obtained therefrom. In the administration of the National Forests due consideration shall be given to the relative values of the various resources in particular areas.

Congress established a balancing test through its definitions of "multiple use" and "sustained yield."

"Multiple use" means: *the management of all the various renewable surface resources of the National Forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.*

"Sustained yield of the several products and services" means: *the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the National Forests without impairment of productivity of the land.*

A simplification of these laws will assist in understanding them and the existing legal guidelines for administration of our National Forests. In 1897, our Congress established the purpose of our National Forests, which was to protect and improve the forests, secure water, and to furnish a continuous supply of timber. In 1960, Congress supplemented this policy to include "outdoor recreation, range and wildlife and fish purposes." In 1960, Congress clearly enunciated that the additional provisions would "be supplemental to, but not in derogation of" the original purpose for which the National Forests were established. The common meaning of "derogate" is to take away or detract. Thus, the additional uses of National Forests were intended only to add to the uses of National Forests as established in 1987, while not detracting from the pre-existing uses.

By examining the directions to the Secretary of Agriculture and the definitions, it is clear that Congress never really changed the overall concept of multiple use and sustained yield. Rather, Congress added to the uses to which our National Forests could be put.

The purposes established in the Act of 1897 are still viable today. Congress has never rescinded this law. In fact, when it enacted the Multiple-Use Sustained-Yield Act, Congress reiterated the vitality of the old law. The simplest reading of all of the foregoing legalese, is that the primary purpose for which National Forests were established is to maintain a continious supply of natural resources such as timber and water. Other uses to which National Forests may be put include recreation, range and wildlife and fish purposes. These newer uses are "supplemental to, but not in derogation of" the original uses. At times, the newer uses may prevail over the original purposes for our National Forests, even though the greatest dollar return or the greatest unit output may not be achieved.

There may be times when other laws (e.g. the National Environmental Policy Act, Clean Water Act, National Forest Management Act, Wild and Scenic Rivers Act and Wilderness Act) should be considered in determining the use of a particular National Forest or segment of a National Forest. Nevertheless, less than one hundred years ago Congress directed that our National Forests would be sources of natural resources. Sixty years later, Congress added supplemental uses for our National Forests that were not to take away from their original purpose. Rhetoric and argument aside, the original purpose of our National Forests remains today, until Congress decides to overrule itself.

NUCLEAR ENERGY

William L. McDowell, Ph.D.

When Reason Meets Bureaucracy: The Savannah River Debacle

"I've got a beautiful piece of swampland in Florida for sale" used to be a joke. Nowadays, wetlands are recognized as often providing valuable and diverse biological habitat and are the subject of new laws and even national attention. Some, however, may still be going for more than they are worth - about $6.7 million per acre.

Although not in Florida, the Department of Energy's Savannah River Site in Georgia has some of if not the most expensive swampland in the world. The reactors at the Savannah River Site are the only remaining source of tritium in the United States. They also provide isotopes for the space program, research, and nuclear medicine. For years the plant's low temperature reactors dispelled secondary cooling water into a 12 acre man-made cooling pond so that it would return to ambient temperature prior to the return of this water to the Savannah River watershed. Environmental regulations enacted since the original construction of the reactors now require the construction of two cooling towers to protect the pond from the impact of heated water. Cooling heated water so it won't hurt a cooling pond does not make much sense. Not only does it seem illogical but it costs $80 million to boot. What's worse is that it is a short term fix to a debatable problem. These cooling towers will have an expected lifetime of approximately eight years. They will be rendered useless by the projected start-up of the New Production reactor. And, based on observations made during previous shut-downs, the wetlands -- read man-made cooling pond -- will quickly return to their normal state after the final shut-down of the three existing reactors.

Apparently, some organizations have no concern over how much their projects cost. It isn't their money anyway.

One way economists measure the value of something is by seeing what it costs in terms of lost opportunities (i.e., opportunity costs). Though the twelve acre cooling pond will now be protected from any possible thermal damage, the money spent on saving these twelve acres could have been used to purchase a far larger parcel of land which could have been added to existing wetland reserves. A report by the General Accounting Office has determined that the $80 million being used to build the two cooling

towers could have been used to purchase 90,000 acres of the Ashepoo, Combahee and Edisto drainage basin. This land would include 20 thousand acres of wetlands near the South Carolina coast. These wetlands are far more unique than the man-made cooling pond and annually contribute approximately $2.73 million to the South Carolina commercial fishing industry.

The reaction to this report, prepared at the request of U.S. Representative John Spratt (D-SC) and Senator James Exon (D-NE), has been mixed. Many environmental groups which have been pushing for the protection of the previously mentioned basin lands were encouraged. Two environmental groups, however, had opinions that were strangely divergent from the majority. Brian Costner, director of the Energy Research Foundation, found the report "counterproductive". Tom Clements, the Southeast nuclear campaigner for Greenpeace, stated he hoped that the GAO "is not trying to blame environmental groups for not proceeding on other environmental projects."

In spite of the GAO report and the efforts of other environmental groups, the EPA and South Carolina Department of Health and Environmental Control (DEHEC) decided to require the construction of cooling towers. A compromise solution offered by Representative Butler Derrick (D-SC) which would have waved construction of the cooling towers in favor of using roughly half of the authorized funds on clean-up efforts on the site was fruitless. The Westinghouse Savannah River Company promptly complied with regulations and at this time construction is well underway in anticipation of a projected start-up of the K-reactor in late 1991 and possible later start-ups for the P- and L- reactors.

Apparently, some organizations have no concern over how much their projects cost. It isn't their money anyway. It seems obvious that if one wanted to spend his own $80 million to benefit wetlands, 90,000 acres including 20,000 acres of coastal lands would come much higher on the list than a 12 acre man-made pond. It is difficult to understand how organizations and individuals who proclaim themselves to be environmentalists can favor wasting so much money, human energy and opportunity. The saddest part is that they not only promote these ideas but are successful at making everyone else pay for them. Apparently, the input of single issue groups such as the Energy Research Foundation were given far more value by the decisionmaking bureaucracies than the opinion of on-site groups such as Westinghouse Savannah River Company and others truly interested in the environment of the area.

NWI PROGRAMS & ACTIVITIES *UPDATE*

It has been a busy Fall here at the Institute. Among other things, "Creature Comfort", co-authored by Director Robert Gordon and NWI Advisor George Dunlop appeared in Policy Review's Summer issue. Edited versions of the article were distributeted to and have appeared in major newspapers around the nation such as The Cleveland Plain Dealer and The Chattanooga Free Press. Whereas much of what one reads on the subject of American wildlife today is negative and rather discouraging, Gordon and Dunlop correctly point out many encouraging trends resulting from sound management. Citing various case examples such as elk, black bear, bighorn sheep and giant canada geese, the authors emphasize the idea that through wise, active management techniques, we can not only "save what's left" of American wildlife but enhance and improve it. For a copy of the article, please contact the Institute.

NWI has also contributed a chapter for an upcoming university textbook on business ethics. The piece, written by Robert Gordon, focuses on the importance of promoting a market-oriented environmental ethic.

Finally, the Institute is assisting on a study by the Institute for Molecular Biology and Biochemistry of the Free University of Berlin. Researchers there are studying the DNA in the blood of softshell turtles from around the world. This is a high level study which could add to our knowledge of such things as biogeography and continental drift, as well as chemical relationships among softshell turtles. The research will employ restriction analysis using enzymes to isolate DNA in blood samples taken without harming any turtles. NWI will assist in the capturing and transporting of specimens from around the country. Upon completion of the study, the turtles will be returned to their natural habitat.

NWI

A softshell turtle photographed during a recent NWI field study in Georgia

New Primate Species Discovered In Brazil!

One of Nature's most exclusive clubs with only about 200 species, the primates, has a new member: Leontopithecus caicaras.

Named caicaras after the coastal fisherman of Brazil, this previously unknown species of lion tamarin monkey has been found on Superaqui Island in Southern Brazil. The animal is golden in color, with a black face, tail and forearms. Scientists here were particularly surprised that the monkey was discovered along the country's heavily populated East Coast region.

In a recent interview with The New York Times, Dr. Russell A. Mittermeier, President of Conservation International, termed it, "one of the most amazing primatological discoveries of this century." According to Dr. Mittermeier, "To find a new species of such importance in a highly developed part of Brazil like the Atlantic forest is little short of phenomenal and shows how little we still know of the rich biological diversity of the tropics. It's almost like finding a major new species in a suberb of Los Angeles."

Prior to this discovery, experts say, there were but three species of lion tamarin monkeys: the golden lion tamarin, the golden-headed lion tamarin and the black lion tamarin, all of which are found in Brazil.

At right, Emmanuel de Villiers and Mother Scholastica do their part to clean up following the Abbey of Regina Laudis' annual fair in Bethlehem, Connecticut.

NWI Associates are encouraged to submit photos suitable for publication of themselves wearing NWI shirts while on their own outdoor adventures. Please include name, address and place where photo was taken.

H. Patton

Welcome to NWI

New members (through September, 1990)

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NOTES:

In their own words...

"Six million people died in concentration camps, but six billion chickens will die this year in slaughterhouses."
-- Ingrid Newkirk, Director
People for the Ethical Treatment of Animals

"I suspect that eradicating smallpox was wrong. It played an important part in balancing ecosystems."
-- John Davis, Editor
Earth First Journal

"It ["the Environmental Revolution"] will be socially disruptive, potentially violent -- but will receive massive support."
-- Jay D. Hair, President
National Wildlife Federation

"Someone has to remind corporate America that it should run business as a service to the public and not as something to buy and sell for personal profit."
-- Rep. Pat Schroeder

What's Next in the NWI Resource?

Health: why more science means less fear....Cost-effective solutions to acid rain....NWI researches possible REAL project in Georgia.... and much more...

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IMPORTANT LEGISLATIVE AND OTHER DATES IN THE HISTORY OF THE ARCTIC NATIONAL WILDLIFE REFUGE (ANWR)

ALASKA STATEHOOD ACT OF 1958 (16 U.S.C. 21)

ALASKA NATIVE CLAIMS SETTLEMENT ACT (ANCSA) (43 U.S.C. 1601)

ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT (ANILCA) (16 U.S.C. 410)

RECOMMENDATION OF THE SECRETARY OF THE INTERIOR
TO
THE CONGRESS OF THE UNITED STATES
APRIL 1987

I recommend the Congress direct the Secretary of the Interior to conduct an orderly oil and gas leasing program for the entire 1.5 million-acre 1002 area at such pace and in such circumstances as he determines will avoid unnecessary adverse effects on the environment.

- The Secretary should be given authority to establish requirements for oil and gas operations that allow them to proceed in an economically reasonable manner but avoid unnecessary adverse effects on the 1002 area's wildlife, habitat, and environment.

- Competitive leasing authority should be granted to the Secretary to delegate as he believes proper, and should be similar to that used to lease the National Petroleum Reserve in Alaska. The Secretary should also have authority to decide such issues as unitization, drainage, diligence, and lease terms and management.

- The Secretary should be granted authority to suspend or terminate any leases in the 1002 area at any time, in the same manner prescribed by the Outer Continental Shelf Lands Act as amended. If leases are terminated for reasons beyond the control of the operators/lessees, operators/lessees should be compensated in a manner similar to that prescribed by the Outer Continental Shelf Lands Act as amended.

- The Secretary should have the authority to require lessees to restore the leased tract to protect environmental values to the extent reasonably possible and desirable.

- The Secretary should be granted authority, which supersedes ANILCA Title XI, to grant rights-of-way and easements across 1002 area lands for oil and gas-related activities and facilities. This authority must allow the Secretary to require siting and modifications of proposed facilities to avoid unnecessary duplication of roads and pipelines.

- All geological and geophysical data acquired with respect to the 1002 area should be shared, upon request, with the Secretary who should ensure its confidentiality.

In light of the extensive environmental analysis done to prepare the final report/LEIS, I recommend that it be adopted statutorily as the programmatic EIS for a leasing program for the 1002 area.

Because Section 1002(i) of ANILCA withdrew the 1002 area from operation of the mineral leasing laws, and Section 1003 prohibited "leasing or other development leading to the production of oil and gas" in the area "until authorized by an Act of Congress," specific legislation must be enacted to implement my recommendations.

In recommending that Congress enact legislation to open the 1002 area for oil and gas leasing, I also recommend that Congress enact legislation to open the Kaktovik Inupiat Corporation (KIC)/Arctic Slope Regional Corporation (ASRC) lands within the Arctic Refuge to similar activities.

The ASRC's right to develop and produce any oil and gas which may underlie the KIC/ASRC lands within the Arctic Refuge is, by virtue of the 1983 Chandler Lake Exchange Agreement, expressly contingent upon Congressional authorization of oil and gas leasing or development and production within the 1002 area, or on the KIC/ASRC lands specifically.

Selection of Preferred Alternative
(Alternative A)

I have selected Alternative A, Full Leasing, as my preferred alternative for management of the 1002 area, after evaluating carefully the five alternatives in Chapter V of the final report/LEIS, pursuant to the requirements of the National Environmental Policy Act. I believe that Alternative A best meets the Nation's goals and responsibilities.

Before selecting this alternative, I considered the information presented in the final report/LEIS, the draft recommendation of the Assistant Secretary for Fish and Wildlife and Parks, comments and information received during the public comment period, and consultations with the Government of Canada.

I have considered the 1002 area's unique opportunity to provide potentially enormous quantities of domestic oil, in light of America's increasing dependence on imported. Oil production from the 1002 could begin at a time when America's largest producing field, Prudhoe Bay, will be diminishing. I also have considered the potential $79 billion to $325 billion contribution to the Nation's economy from development of the 1002 area's estimated oil resources, as well as the favorable effects on our balance of trade and national security.

In addition, I evaluated the potential effects of developing these potential hydrocarbon resources on the wilderness, wildlife, and subsistence values of the coastal plain. Many commenters indicated the need and desire to conserve the significant environmental values of the 1002 area. Public comment also overwhelmingly supported opening the area for oil and gas development. My recommendation reflects my firm belief, based on demonstrated success at Prudhoe Bay and elsewhere, that oil and gas activities can be conducted in the 1002 area in a manner consistent with the need and desire to conserve the area's significant environmental values.

Our ability to conduct oil exploration, development, and production in a careful and environmentally sound manner is a factor leading me to designate Alternative A as the environmentally preferred alternative. This conclusion is based on the environmental impacts of substitute sources of energy. The Department of the Interior's analysis of these impacts, described in Chapter VI of the final report/LEIS, concludes that each of the available substitute possibilities involves a large measure of environmental harm. Also, in the event of a future energy crisis, there would be strong pressure to develop rapidly, promising areas like the 1002 area, without regard for environmental factors.

ANWR COASTAL PLAIN FACT SHEET

- The 19 million-acre Arctic National Wildlife Refuge (ANWR) lies in the northeast corner of Alaska. It is bordered on the north by the Beaufort Sea, on the east by the U.S.-Canadian border, and on the northwest by the Canning River. The entire refuge lies north of the Arctic Circle.

- The Coastal Plain -- considered the nation's most promising onshore area for significant discoveries of crude oil and natural gas -- comprises the northernmost section of ANWR. The Coastal Plain comprises 1.5 million acres, which is less than eight percent of the total refuge. Less than one percent of the Coastal Plain would be affected by oil activities.

- At its widest points, the Coastal Plain (the area in which the petroleum industry is interested) is about 100 miles across and about 30 miles deep and covers an area slightly larger than the state of Delaware.

- Along the coastal area, the plain is an almost featureless expanse -- barren and dotted with thousands of unconnected small ponds; the area to the south becomes gently rolling, treeless hills which merge into foothills and then into the northern edges of the Brooks Range.

- There is a Native population of about 200 residents at Kaktovik -- a village on Native-owned lands at Barter Island, adjacent to the Coastal Plain and within the boundaries of ANWR.

- The 75.4 million acres of National Wildlife Refuges in Alaska would comprise the fourth largest state in the U.S. Comparatively:

Arizona	72.9 million acres
New Mexico	77.8 million acres

- If ANWR was a state, it would be larger than 10 other states:

1.	ANWR	19.0
2.	West Virginia	15.5
3.	Maryland	6.6
4.	Vermont	6.1
5.	New Hampshire	5.9
6.	Massachusetts	5.3
7.	New Jersey	4.9
8.	Hawaii	4.1
9.	Connecticut	3.2
10.	Delaware	1.3
11.	Rhode Island	.7

- Although little oil and natur. gas exploration has taken place, the Coastal Plain is believed to have economical. recoverable oil resources. Some seismic surveys have been made and an exploratory well was drilled on Native Alaskan land southeast of Barter Island. The Coastal Plain lies between two known major discovery areas. About 65 miles west of ANWR, the Prudhoe Bay, Lisburne, Endicott, Milne Point, and Kuparuk oil fields are currently in production. Approximately two million barrels of oil a day are produced from these fields. Several other discoveries have been made along the Beaufort Sea at Niakuk, Point Thomson and Seal Island. To the east of ANWR, major discoveries have been made in Canada, near the Mackenzie River Delta and in the Beaufort Sea.

- According to the 1980 U.S. Geological Survey Open-File Report 80-916:

  > All of the potential petroleum of . . . (ANWR) . . . is thought to be in the Coastal Plain portion. This Coastal Plain area lies on the intersection of several major geological trends and has characteristics of both the Prudhoe Bay and Mackenzie Delta petroleum provinces.

- The U.S. Department of the Interior (DOI), in its April, 1987 report on the oil and gas potential of the 1.5 million-acre ANWR Coastal Plain, estimates that there are billions of barrels of oil to be discovered on the Coastal Plain. DOI estimates that, under different geological and economic assumptions, "recoverable resources" range from 600 million to 9.2 billion barrels of oil. The "in-place resources" range from 4.8 billion to 29.4 billion barrels. Recoverable resources are those which can be produced economically using today's technology. In-place resources is the total amount of oil thought to be in the reservoir -- some of which will not be economically recoverable.

- The ANWR Coastal Plain provides one of the best opportunities this nation has in the next 10 to 15 years to replace the decline in Alaskan production -- oil supplies which would otherwise have to be replaced from foreign sources to fuel this country's economy.

- It is essential that lands having high petroleum potential -- such as those within the ANWR Coastal Plain -- be made available for environmentally sound exploration and production operations.

- If the ANWR Coastal Plain were opened to exploration and development, and significant commercial discoveries of crude oil were made, production could begin around the year 2000. This newly-found oil could make a significant contribution toward offsetting the decline in existing fields -- both on the North Slope and in the Lower 48 states.

- That new oil could help lessen America's future dependent on imports and reduce the effects of any future cutoff in the flow of imported oil during political and military disturbances. The crude oil and natural gas resources of the ANWR Coastal Plain could provide an "insurance policy" against future disruptions, such as those accompanying the 1973-74 Arab oil embargo and the 1978 Iranian revolution.

AMERICA NEEDS ALASKA OIL

ANWR Fact Sheet

- The 1989 U.S. trade deficit was over $108 billion. Imported oil accounted for almost $50 billion or 45 percent of the total.

- Current trends indicate U.S. oil imports could cost $150 billion by 1995. This is $15 billion more than the total 1986 trade deficit.

- In January, 1990, oil imports reached 8.6 million barrels per day or 54 percent of consumption. In July, 1988, imports were only 7.3 million barrels a day or 43 percent of consumption.

- Without Alaska production, the U.S. would be importing well over 60 percent of its oil needs.

- The U.S. Department of Energy estimates future oil imports will reach 60 percent of consumption by 1995, and as much as 65 percent by the year 2000.

- U.S. oil production is declining. In January, 1990, domestic oil production was 7.4 million barrels a day. The 1989 average for domestic crude production was 7.8 million barrels a day, a 5.5 percent decrease.

- U.S. oil consumption is increasing. Since 1986, it has climbed more than eight percent (8%).

- Currently, Alaska provides almost 25 percent of all U.S. oil production.

- Prudhoe Bay, this nation's largest oil field, provides about 1.5 million barrels of oil each day. However, oil production at Prudhoe Bay is declining, and in 10 years is expected to be less than 40 percent of what it is today.

- The 1.5 million-acre Coastal Plain of the Arctic National Wildlife Refuge (ANWR) represents only eight percent (8%) of the refuge's 19 million acres.

- The U.S. Department of the Interior estimates that the Coastal Plain could contain as much as 9.2 billion barrels of recoverable oil. The mean estimate is 3.2 billion barrels.

- The Office of Technology Assessment predicts that the surface area, or the footprint of oil development on the Coastal Plain, would be only 5,000 to 7,000 acres of the 1.5 million-acre Coastal Plain.

- Oil exploration and development in the Arctic is a lengthy process, and can take anywhere from 10 to 15 years before an oil field is actually producing. If Congress authorized exploration tomorrow on the Coastal Plain, it would be between the year 2000 and 2005 before oil production could take place.

- Alaska already has 57 million acres of designated wilderness. This represents 62 percent of all federal wilderness in the U.S. Alaska's wilderness would rank as the 11th largest state.

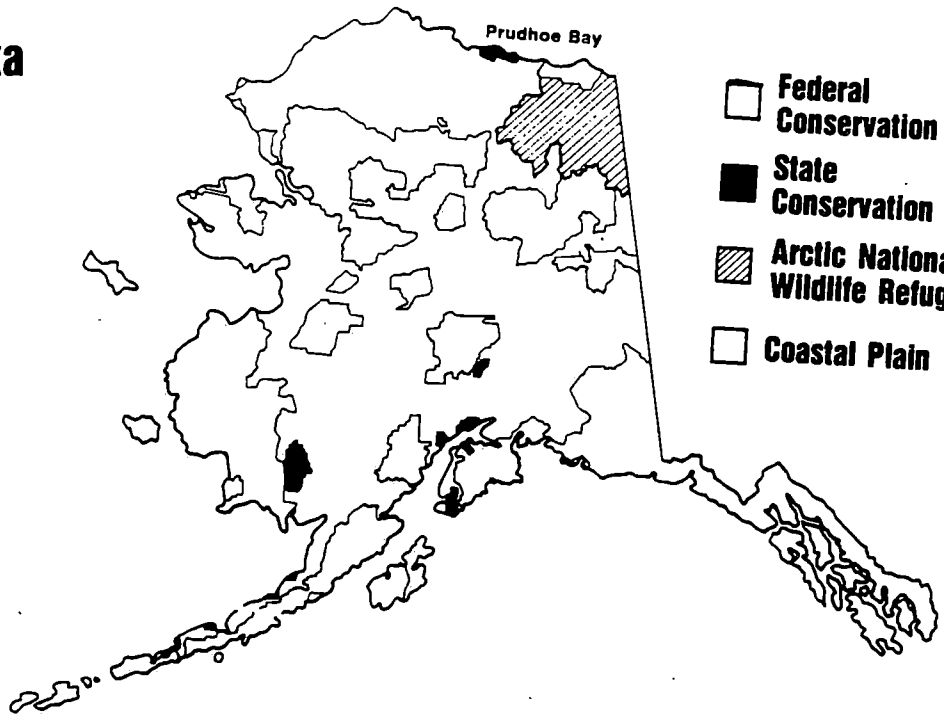
- Investment and development of Alaska's North Slope oil fields exceeded $36 billion between 1974 and 1986. Every state in the union has contributed goods and services in building and operating the North Slope oil fields.

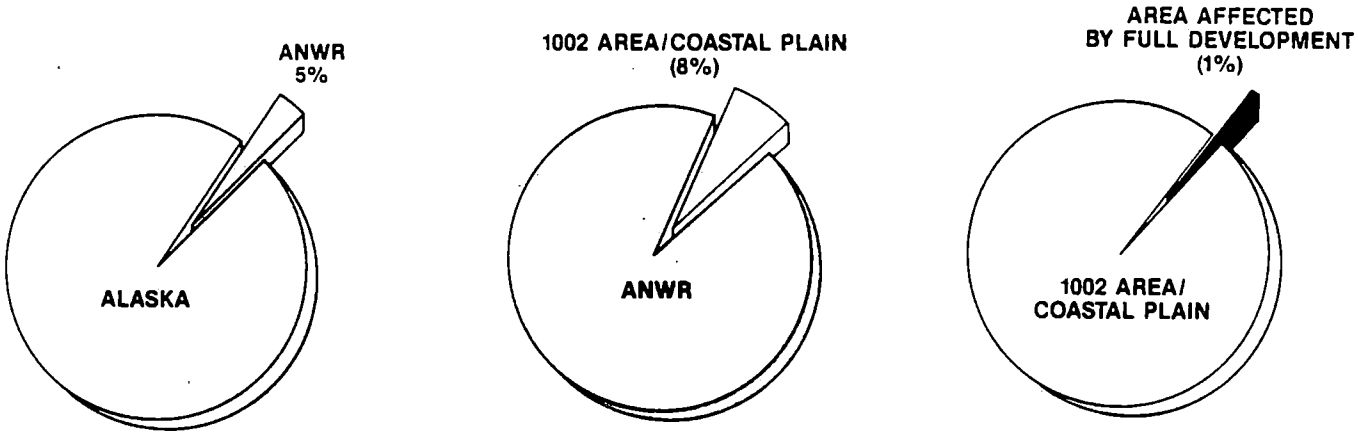
- Oil development on the Coastal Plain will not be unique. Many millions of barrels of oil have been produced safely in wildlife refuges across the country.

- The Aransas National Wildlife Refuge in south Texas has coexisted with oil operations since 1947. The Delta Wildlife Refuge, southeast of New Orleans, houses an oil production field and terminal station. The National Audubon Society's Paul J. Rainey Sanctuary in southern Louisiana, which has hosted petroleum operations for over 25 years, is used by thousands of migratory birds.

- The Central Arctic Caribou herd calve on the North Slope oil fields. The herd has grown from 3,000 animals in 1970 to more than 18,000 today.

State of Alaska



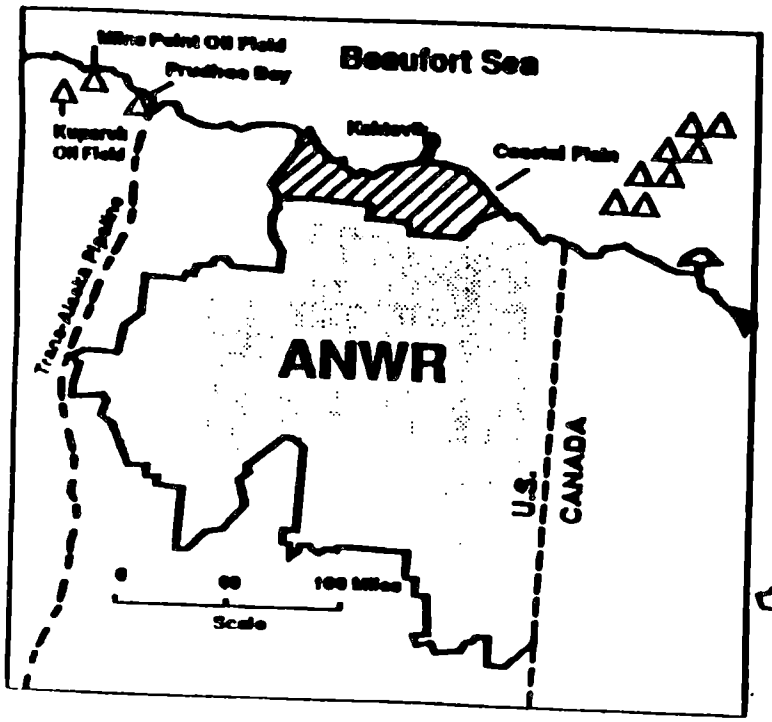


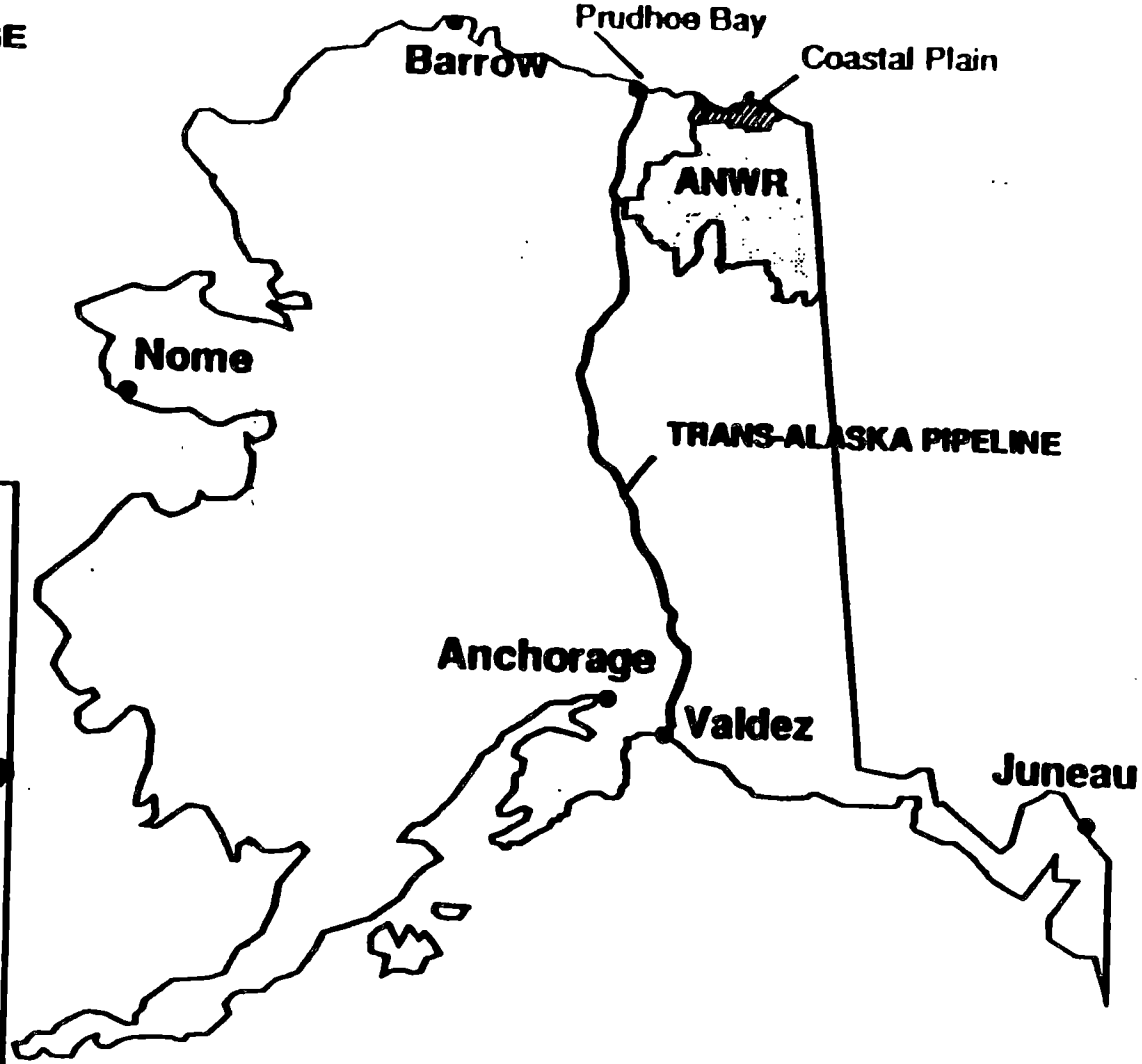
ANWR represents five percent (5%) of Alaska. The Coastal Plain represents eight percent (8%) of ANWR. Development of the Coastal Plain would take up less than one percent (1%) of the entire Coastal Plain.

ARCTIC NATIONAL WILDLIFE REFUGE (ANWR) - 19 Million Acres

ANWR COASTAL PLAIN SECTION 1002 STUDY AREA- 1.5 Million Acres

OIL AND GAS FIELDS





ECONOMIC IMPACT OF ALASKA OIL DEVELOPMENT ON THE UNITED STATES

Development of the Coastal Plain of the Arctic National Wildlife Refuge (ANWR) could yield a net national economic benefit or more than $150 billion. New jobs, lower balance of trade deficits, and increased tax revenues at every government level are just some of the benefits that would reach all 50 states.

- **Increased direct and indirect employment**. Based on an Interior Department peak production estimate of 659,000 barrels daily (assuming recoverable resources of 3.2 billion barrels), cumulative employment gains from Coastal Plain development could amount to 254,085 jobs. Using the same base projection of production, the gross national product could increase about 0.25 percent above exiting levels.

- **Greater revenues for federal government**. Using the same base projection, the gross national product (GNP) would increase by from 0.14 percent to 1.01 percent.

- **Greater economic security through reduced dependence on foreign oil**. According to the National Petroleum Council, with a continuing decline in domestic exploration and production, the potential U.S. dependency on oil imports could rise to nearly one-half of total demand by 1990 and to more than two-thirds of U.S. oil needs by 2000; and,

- **Improvement in the national trade deficit**. Currently, we are spending about $40 billion every year for imported oil. The expenditure is due, in part, to the increase in domestic consumption and the decline in production of domestic oil fields. Experts predict that if the current trend continues, by 1995 the U.S. could be importing $150 billion worth of oil. This would be $15 billion more annually than the entire U.S. trade deficit in 1986.

Since 1977 when production began at Prudhoe Bay -- America's largest oil field -- America has saved $140 billion. But that savings will soon be lost because production at Prudhoe Bay has begun to decline. Unless Congress considers the dangerous trend of increased oil imports, America's trade deficit will continue to grow.

It is estimated that the cost of developing the Prudhoe, Kuparuk, Milne Point, Lisburne and Endicott oil fields -- including some $8 billion spent on the Trans-Alaska Pipeline -- exceeded $44 billion between 1974 and 1986.

Between 1980 and 1986, the major oil companies operating on the North Slope nt more than $10.5 billion in the United States developing those oil fields. Every state . . :he union participated in supplying goods and services.

If a large field were discovered on the Coastal Plain and substantial production resulted, large royalty payments would be generated. The distribution of the potential revenues among the federal, state, and local governments depends on how the area will be leased, which has not yet been determined. However, the federal share of the bonus money, rents, and royalties could help offset declining federal revenues from other fields which have passed peak production.

The present downturn in petroleum exploration and production in the United States, which began in the early 1980's and accelerated rapidly following the sharp decline in crude oil prices in 1986, could seriously impair the nation's goal of greater economic stability the growth. The impact of the downturn continues to be felt throughout the country. Virtually every state in the union has been affected to some degree by the sharp drop in oil field operations -- some states and institutions far more seriously than others.

Certainly discoveries of large deposits of petroleum on the ANWR Coastal Plain would not bring an "instant" end to the problems caused by the present downturn. Nor would it mean that America would no longer need to import oil. But it would go a long way towards securing economic benefits for the United States and securing our energy future.

Oil imports have been one of the largest contributors to the U.S. trade deficit. The cost of U.S. oil imports rose from less than $5 billion per year in the early 1970's to around $25 billion in 1975 and a peak of more than $75 billion in 1980. (For a time in the early 1980's, payments of oil imports declined because both imports and prices fell.)

In 1986 and 1987, after prices collapsed, oil imports increased 31 percent, reaching 6.5 million barrels a day. In 1987, oil imports cost the United States an estimated $42 billion, accounting for more than 10 percent of the cost of all U.S. imports. This amount was equivalent to almost 25 percent of the trade deficit. Americans spent twice as much on foreign crude oil as on new Japanese cars and four times as much as on imported iron and steel.

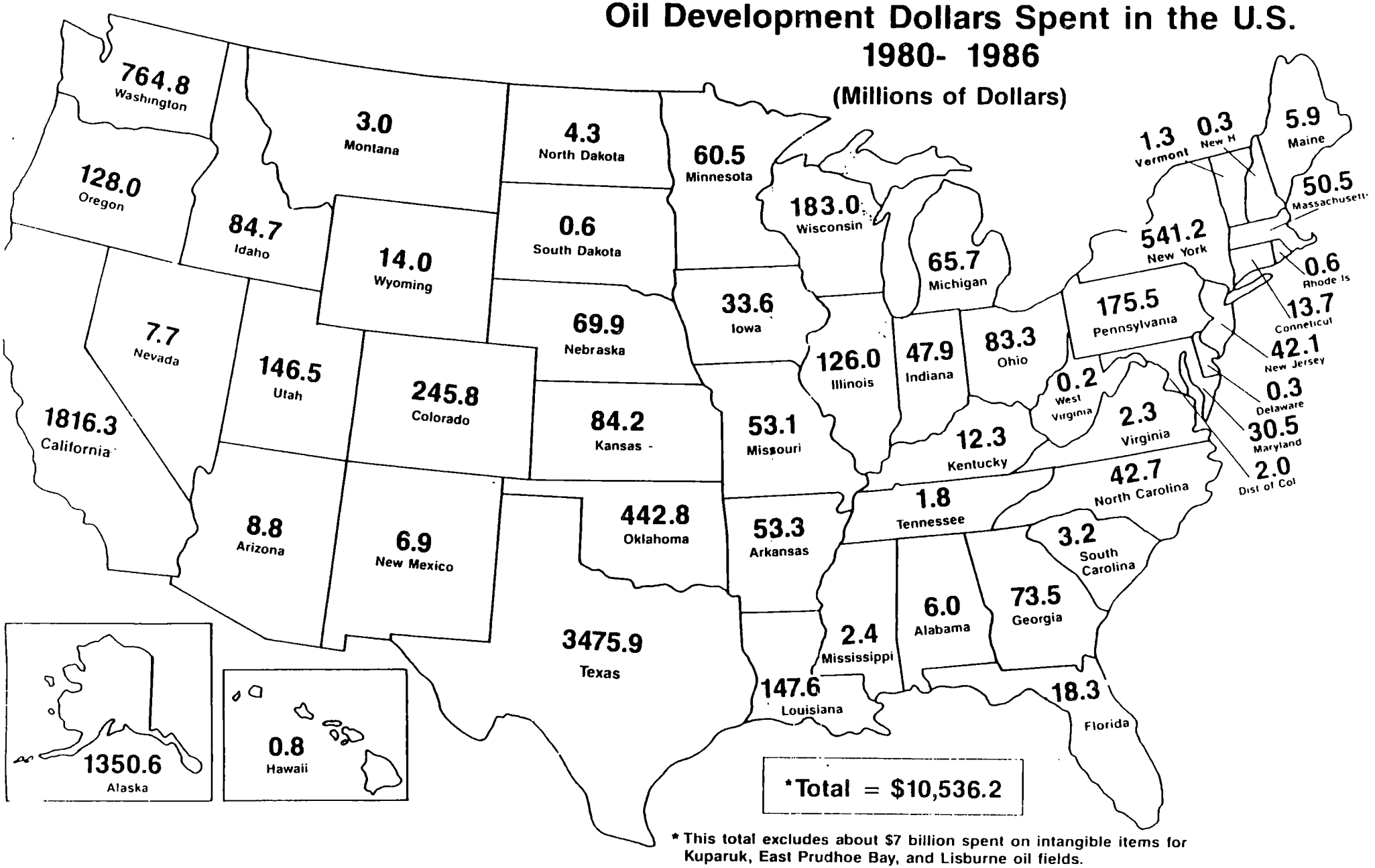
Last year, this nation's trade deficit totaled more than $171 billion. Of that amount, we spent almost $45 billion on imported oil.

If the current trend continues, the U.S. could be importing $150 billion worth of oil by 1995. This would be $15 billion more than the entire trade deficit in 1986.

U.S. oil imports are higher than they need to be because of government policies that prevent development of considerable amounts of oil and natural gas that could be produced economically even at current world oil prices.

If that production were available, current oil imports would be lower. Prudent action by the 101st Congress and the Bush Administration can help realize this potential in the 1990's.

North Slope Alaska
Oil Development Dollars Spent in the U.S.
1980- 1986
(Millions of Dollars)



***Total = $10,536.2**

* This total excludes about $7 billion spent on intangible items for Kuparuk, East Prudhoe Bay, and Lisburne oil fields.

NORTH SLOPE ALASKA OIL DEVELOPMENT COSTS IN THE U.S. - 1980 - 1986
(Millions $)

	STANDARD	ARCO	CONOCO	TOTAL
Alaska	$1,271.3	$ 79.3	n/a	$1,051.3
Alabama	5.4	0.6	-	6.0
Arizona	8.4	0.4-	-	8.8
Arkansas	1.9	51.4	-	53.3
California	1,723.0	69.5	23.8	1,816.3
Colorado	146.3	99.5	-	245.8
Connecticut	1.1	12.5	0.1	13.7
Delaware	0.1	0.2	- - - -	0.3
District of Columbia	2.0	-	-	2.0
Florida	2.8	15.4	0.1	18.3
Georgia	57.2	16.2	0.1	73.5
Hawaii	0.8	-	-	0.8
Idaho	79.4	0.3	5.0	84.7
Illinois	79.4	46.2	0.4	126.0
Indiana	1.8	45.1	1.0	47.9
Iowa	1.6	30.7	1.3	33.6
Kansas	9.0	75.2	-	84.2
Kentucky	2.4	9.4	0.5	12.3
Louisiana	118.0	28.7	0.9	147.6
Maine	5.6	0.2	0.1	5.9
Maryland	28.0	2.4	0.1	30.5
Massachusetts	15.1	35.2	0.2	50.5
Michigan	8.0	57.3	0.4	65.7
Minnesota	43.5	16.9	0.1	60.5
Mississippi	1.8	0.6	-	2.4
Missouri	23.0	30.0	0.1	53.1
Montana	2.4	0.6	-	3.0
Nebraska	68.9	1.0	-	69.9
Nevada	2.3	5.4	-	7.7
New Hampshire	0.2	0.1	-	0.3
New Jersey	9.5	32.6	-	42.1
New Mexico	6.3	0.6	-	6.9
New York	122.3	415.0	3.9	541.2
North Carolina	1.9	40.3	0.5	42.7
North Dakota	1.8	2.5	-	4.3
Ohio	15.4	67.3	0.6	83.3
Oklahoma	246.7	192.6	3.5	442.8
Oregon	18.9	99.1	10.0	128.0
Pensylvania	25.2	150.0	0.3	175.5
Rhode Island	0.3	0.15	0.2	0.6
South Carolina	2.9	0.1	0.2	3.2
South Dakota	0.1	0.5	-	0.6
Tennessee	0.6	1.25	-	1.8
Texas	2,339.8	1,114.8	21.3	3,475.9
Utah	6.4	139.1	1.0	146.5
Vermont	1.0	0.3	-	1.3
Virginia	1.6	0.6	0.1	2.3
Washington	211.8	506.3	47.5	764.8
West Virginia	0.1	0.15	-	0.21
Wisconsin	8.9	173.6	0.5	183.0
Wyoming	12.5	1.5	-	14.0
TOTAL COSTS	$6,745.0	$3,669.6	124.1	$10,536.2

STANDARD: Total accounts paid to vendors in 1981 - 1986 for West side Prudhoe Bay field $7.003 billion

: Accounts paid to vendors in 1985 - 1986 for Endicott field development $627 million.

: Payments paid to identified U.S. vendors traceable to a ZIP code $6.745 billion.

ARCO : Total payments for tangible items for East side of Prudhoe Bay, Kuparuk and Lisburne 1980 - 1985 $3.669 billion

CONOCO : Payments for goods and services to develop Milne Pt. oilfield, 1983--86 - $124 million.

It is estimated that the cost of developing the Prudhoe, Kuparuk, Milne Pt., Lisburne and Endicott oil fields on the North Slope of Alaska has exceeded $36 billion since 1974. This amount includes the cost of the trans-Alaska pipeline (approximately $8 billion). The fields currently supply 20% of U.S. domestic oil production.

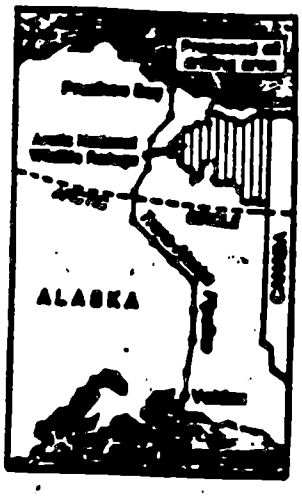
THE NEW YORK TIMES, Wednesday, February 17, 1988, Page A22

Is This Icy Strip Worth $32 Billion?

The frozen Arctic coastal plain of northeast Alaska may hide the largest untapped oilfield in America. Should Congress let the oil companies search for it?

Interior Secretary Donald Hodel believes that energy from the Arctic National Wildlife Refuge offers a last hope for "preventing ... OPEC from regaining its stranglehold over the American economy." Environmentalist opponents argue that exploration will mutilate a wilderness that shelters caribou, polar bears and other Arctic animals.

Both sides are indulging in hyperbole. Arctic oil probably won't spell the difference between energy independence and long lines at the gas pumps. Nor is drilling a sure ticket to ecological disaster, as environmentalists assert. There is, however, a good case for a middle way — careful exploitation of what could be a multibillion dollar resource.



Pinned between the contradictory demands, Congress in 1980 passed the buck. It ordered the Interior Department to weigh the merits of drilling on the Arctic coastal plain. Last spring the department reported that between 600 million and 9.2 billion barrels of oil probably could be recovered from a strip of land some 180 miles long and 20 miles wide.

Environmentalists think the most likely figure is about 3.2 billion barrels, 200 days' national supply, and to them that's not nearly enough to justify scarring the tundra or disrupting the caribou calving grounds. The far better course, they say, is to reduce oil consumption an equivalent amount by conservation. They are pressing to defeat drilling legislation pending this week in the Senate Energy Committee.

To judge from a decade's experience on the adjacent North Slope, oil production can coexist comfortably with Arctic wildlife. But environmentalists are right that building roads and other infrastructure on this frozen desert would inevitably have some lasting effects.

The environmentalists are also right on another point: there are ways to conserve 3.2 billion barrels of oil without great disruption. If conservation is cheaper than buying fuel, though, it is worth accomplishing with or without oil from the wildlife refuge.

How, then, should Congress weigh the potential environmental costs against the economic benefits? The principal answer is that the decision can be made in stages.

Little is risked by the exploratory drilling. If there isn't much oil to be found, the project would be abandoned and the refuge would be secure. Suppose, though, the refuge does contain a vast reserve of, say, 3.3 billion barrels. Suppose, further, that the average cost of getting each barrel to market is, conservatively, just $10 less than the cost of oil purchased on the world market. The total savings would be $10 times 3.2 billion.

Is it worth $32 billion to avoid modest ecological damage to this small strip of tundra? That is 100 times the amount Washington spent in 1986 to acquire land for national parks; it is 10 times the annual budget for the national forests and parks combined. If Congress were to hand $32 billion to environmental groups to invest as they wished, they would have many higher priorities before protection for a sliver of the Arctic National Wildlife Refuge.

Drilling there can't solve America's energy problems, but it might well save the country tens of billions that could be better invested elsewhere. Congressional failure to explore, and only then to exploit the resource, would irresponsibly distort national priorities.

Oil and the caribou

ENVIRONMENTALISTS ARE raising alarms about the recommendation of Interior Secretary Donald Hodel that a northern coastal stretch of the Arctic National Wildlife Refuge be made available for oil drilling. The proposal should not be rejected automatically as a deadly threat to Alaskan caribou and musk oxen. Congress instead should weigh the plan thoughtfully as a potential contribution to the nation's energy requirements, and consider ways of minimizing the environmental effects.

Exploration of the 1.5 million acres is seen as having only a one-fifth chance of turning up major oil fields. But if this does happen, the find could rival Prudhoe Bay, 100 miles away on Alaska's North Slope, which already accounts for 20 percent of domestic production. Looking toward the day when foreign oil again will be expensive and subject to interruption in periods of international turmoil, the United States cannot afford to ignore such a possible boon to the cause of energy independence.

The fears being expressed for the unique wildlife in that part of the far north are, in many cases, greatly exaggerated, and the effects of oil-drilling can be largely mitigated. Hodel contends the consequences would be "negligible" for grizzly and polar bears, snow geese, wolves and moose. Oil operations do not seem to damage the herds of musk oxen.

The coastal plain is used for calving by the migratory Porcupine caribou herd, and this activity might be displaced. But fears for the caribou in the past have proved to be mistaken. They thrive around Prudhoe Bay, and concern that migration would be blocked by the Trans-Alaska Pipeline turned out to be unfounded.

One advantage of the proposed drilling tract is that the pipeline from Prudhoe Bay to the Gulf of Alaska already is there. No need to replay the long fuss over placing the pipe on the fragile tundra.

Wildlife can and should be protected in the 18.9 million-acre refuge while oil is sought in the coastal sector, and protective measures must be extended if important amounts of oil are found. This could be the useful focus of congressional scrutiny.

SACRAMENTO (CA) BEE, Sunday, May 3, 1987

Oil And Caribou Do Mix

The Department of the Interior is asking for a free hand to open 1.5 million acres on the coastal plain of the Arctic National Wildlife Refuge for oil exploration. Given the administration's environmental record, there's no reason for Congress to go that far. But if the legislators can define sufficient constraints to ensure that this fragile wilderness area will be treated with as much care as possible, Interior's basic proposal to permit pumping in the region deserves support.

Environmentalists are opposed to any development in what they describe as the only undisturbed arctic ecosystem left in North America. They argue that we ought to do more for energy conservation before we begin developing additional sources of supply. Of course they're right that the president's opposition to energy conservation has been short-sighted and self-defeating. But America doesn't face a simple choice between development and conservation: the two go hand in hand.

Interior argues that any oil found on the arctic plain won't be used to supply additional demand anyway. Since the oil companies estimate that it will take 10 to 15 years to tap into this area, oil from the coastal plain will only come on line at about the time that the Prudhoe Bay fields begin to run out. So, the proposal's supporters contend, this development will just replace supplies we're already consuming.

Opponents of the plan have focused on the administration's admission that there's only one chance in five that any recoverable oil will be found here. But that means there's an 80 percent likelihood that the effort will result in no major development of the area. And the U.S. Geological Survey says the probability of finding oil in the coastal plain is greater than in any other potential onshore field in the United States. That's why Congress specifically set this area aside for study of its petroleum potential when it created the 19 million-acre wildlife refuge in 1980.

Within the refuge, environmentalists are specifically concerned with the potential impact of development on the places where the caribou historically come to breed. But the caribou population in the central plain has tripled in size since the Trans Alaska Pipeline was built there a decade ago. And while there are significant differences in the size and migratory habits of those herds and the one along the arctic coast, there's at least some evidence to suggest that the oil companies have learned how to cohabit with the caribou. In any event, if the debate over Interior's proposal devolves into a choice between protecting the caribou and increasing domestic oil production as a hedge against continued dependence on foreign petroleum suppliers, there's not much doubt that the environmentalists would lose.

California's congressional delegation has generally opposed Interior's efforts to expand pumping along the state's coastline, arguing that the risks to public health and the economy of the coastal zone are too great. None of those conditions exist in the case of the arctic coastal plain, where not only the state of Alaska but the Indians who live in the area actively support development. If we don't want pumping in our patch, then we ought to be able to suggest an alternative. And if not 200 miles above the arctic circle, then where else?

Drill with care in Alaska

INTERIOR Secretary Donald Hodel has recommended that Congress allow oil exploration in the fragile, wildlife-rich coastal plain that forms part of Alaska's Arctic National Wildlife Refuge. Twenty years ago, such a proposal would have been justifiably spurned because of the risk of environmental damage. But today's more ecologically sensitive search and recovery techniques should encourage Congress to allow the exploration — under strict controls.

Tracks left by 1960s-era exploration crews still scar the tender Arctic tundra. But today's quest for oil is carried out from wide-track vehicles that leave barely a trace. And our experience in building the 800-mile Alaska oil pipeline, which many feared would become a man-made disaster, shows that oil facilities can be built with minimal damage to the land and wildlife.

Many environmental groups still argue that the 34-mile by 100-mile shoreline is so valuable to caribou and other wildlife that it should be preserved in pristine form. But years of seismic study have established that this same strip, sandwiched between Canada's oil provinces and the rich Prudhoe Bay field, also is the richest onshore oil and gas prospect in the United States. It could yield billions of barrels of oil.

And we need that oil. See-saw-ing prices and falling domestic production have hammered at the U.S. oil industry. Denver and Houston, both key energy centers, share 30 percent vacancy rates in office buildings and have lost thousands of oil jobs. Imports, once at 30 percent, have soared to 40 percent and still are climbing.

If the U.S. continues becoming more dependent upon foreign oil, we will once again become prey to OPEC. And it is certain that OPEC's present low prices would begin rising with a vengeance in such a seller's market, threatening both our national economy and our national security.

Thus, it's obvious that the Arctic Refuge will be opened to drilling and exploration sooner or later. It would be better to do it now — under careful controls — than to wait until a new 1973-style energy shortage sent the rigs rushing madly into Alaska amid a national frenzy that would override all environmental sensitivity.

Of course, there is much more to a sound national energy policy than just probing Alaska's riches. We should keep on promoting energy conservation, through enforced automobile engine standards and other energy-saving devices, better construction materials and cogeneration of electricity. We also must keep up research into solar energy, synthetic fuels and other alternative sources of energy.

But as the Prudhoe Bay experience proves, we've learned a great deal about how to explore responsibly in the Arctic. And it is clearly better for America to develop a balanced and prudent exploration plan now than to lock up the Arctic shore and risk provoking a new energy crisis that would unlock it in the worst of all circumstances in a few years time.

Oil Exploration Justified If Environment Protected

Twenty years of drilling for oil in Alaska without any appreciable environmental problems should be enough to show that oil development can exist in harmony with the environment. Congress should keep that in mind as it debates whether to open a small part of the Alaska National Wildlife Refuge for oil exploration.

Federal law prohibits oil and gas development unless the environment is protected. Oil exploration in Alaska's Prudhoe Bay, about 65 miles from the wildlife refuge, has shown that such work can even benefit the environment and wildlife.

Since Prudhoe Bay was opened to oil work, the caribou herd in the area has grown from about 3,000 animals to more than 15,000 animals — a faster rate of growth than some areas without oil development have experienced. The number of muskoxen, birds and fish has remained constant or increased, Interior Department officials report. The increases were accomplished by keeping construction out of sensitive habitat areas, designing pipelines to avoid migration routes and doing most of the construction work during the winter, when some animals hibernate or migrate.

The same kind of precautions could be taken at the wildlife refuge, where less than one-half of 1 percent of the refuge's acres would be affected by the oil work.

A dependable supply of domestic oil is needed to help the United States avoid becoming the target of foreign oil suppliers' attempts to increase the price by restricting supplies. The wildlife refuge has been identified as the outstanding oil and gas frontier remaining in the United States.

Sierra Club officials and other environmental groups have opposed a bill that would allow the development work. Their concern for the preservation of the area is understandable. The refuge is a national treasure that needs to be protected.

But oil exploration doesn't pose the automatic danger that some environmentalists and members of Congress say it does. An environmentally sound oil development plan that would help safeguard the nation's energy future should be supported.

THE FLORIDA TIMES-UNION (JACKSONVILLE, FL) MAY 4, 1988

Arctic oil is needed to disrupt cartel's plans to regain hold

Attempts by the oil cartel to regain its stranglehold on the world are a signal that the United States needs to get more serious about domestic oil, including a potentially huge supply in Alaska.

The U.S. Department of the Interior says the coastal plain of the Arctic National Wildlife Refuge is the best prospect in North America for finding substantial new supplies of oil and natural gas. It could provide 1 million barrels of oil a day from 2000 to 2030.

By that time, the oil find at Prudhoe Bay will be either exhausted or nearly so and a new source will be desperately needed.

Even as oil consumption is rising, domestic production is falling. The result is an increase in oil imports. Only three years ago oil imports amounted to less than one-third of the oil supply. Today they are nearing 40 percent.

The Senate Energy and Natural Resources Committee has approved a bill to open 1.5 million acres of the 19 million acre refuge for oil exploration. The House Merchant Marine and Fisheries Committee, of which U.S. Rep. Charles Bennett of Jacksonville is a member, was marking up the bill yesterday.

Barring a technological leap, the United States and other oil-consuming nations are going to have to pay the piper some day. Two-thirds of the known oil reserves are in the Mideast.

But it would be foolish to get into that position before it is necessary. Increasing domestic oil production is one of the best ways to buy time at this point. Conservation can still be a factor but much of that has been used up in previous squeezes in 1973-74 and in 1979.

One of the warning signs on the horizon is the reported offer of six independent producers to cut oil exports by 5 percent for two months if the Organization of Petroleum Exporting Countries did likewise.

The offer from the non-OPEC producers — Mexico, Egypt, China, Oman, Malaysia and Angola — amounts to about 200,000 barrels a day.

Another new factor was the presence at an OPEC meeting of Kent Hance, a smooth-talking, former U.S. congressman who is a member of the Texas Railroad Commission, which regulates that state's large petroleum industry.

Hance saw his mission as "opening a dialogue" with the cartel, which he called a friendly group that's "glad to have someone from the United States to have a dialogue with."

"We're not in love with OPEC, but we need to have input" into decisions by an organization that controls about 35 percent of the world's oil supplies, he said.

He says OPEC will become increasingly important to the United States in the next decade. He predicted that 65 percent of American oil supplies would be imported by 1992.

OPEC failed to get cooperation with the nonproducing nations but has not given up hope. It will resume efforts at a meeting in Vienna next month.

The best hope is that any agreement might not hold any better than the previous agreements. Cartel members have been unable to avoid cheating each other, which has been of great benefit to consuming nations.

The elements that have subordinated greed will not hold sway forever.

Right now the Saudis are so adamantly opposed to Iran that they are willing to keep the price of their own oil low so that Iran's oil will not bring it enough revenue to escalate its war against Iraq.

On Iran's side the utter irrationality shown in response to the American attack cannot be expected to persist indefinitely. In retaliation for the attack, Iran destroyed an oil-producing facility of the United Arab Emirates. The irrational part of that attack was that Iran had been receiving 50 percent of the revenues of the facility it destroyed.

Oil experts now predict that by about 1990, OPEC will be back in the driver's seat. And we all know what can happen to both prices and availability of oil when that takes place.

America's best energy course is to find, develop and use its own oil for as long as possible.

The most potentially productive oil producing area in the United States is the Alaskan area being considered by Congress.

BIRMINGHAM (AL) POST HERALD, July 12, 1989

Oil vs. caribou?

"The caribou love it (the Trans-Alaska Pipeline). They rub up against it and they have babies."
— Vice President George Bush

"We view the (proposal to allow oil exploration in Alaska's Arctic National Wildlife Refuge) as a no-win situation for both the Porcupine Caribou Herd and the people who depend on it."
— Canadian Porcupine Caribou Management Board

Somewhere between these extremes lies the truth about the effect oil drilling in Alaska has on caribou, other wildlife and wilderness values. After letting it lie for several months, Congress has again taken up the task of sorting truth from hyperbole as it considers opening 1.5 million acres of Alaska's Arctic National Wildlife Refuge to oil exploration.

Simultaneously, the House Interior Committee is reviewing a bill that would designate the same coastal plain a wilderness area and thus forever close the option of oil drilling.

The option should be kept open; in fact, oil exploration should proceed. The chances of a major oil find are too good (estimated at one in five, high by industry averages) and the size of the potential strike too great (up to 3.2 billion barrels) to throw away.

America will need that oil, if not now when prices are low and squabbling OPEC nations are overproducing, then someday. Even if drilling began immediately, it would be roughly a decade before oil would flow in significant quantities. Wasn't it only 10 years ago that we were all waiting in gas lines?

Concerns about damage to wildlife and environment are valid. They are also substantially addressed both in the bill before Congress and in the drilling techniques proposed by the oil companies. Experience in Alaska's Prudhoe Bay oil field 65 miles to the west has led to significant improvements in technology and techniques. For instance, drill pads in the refuge will be able to hold twice the number of wells on half the acreage of the drill pads at Prudhoe.

Experience with Prudhoe Bay and the Trans-Alaska Pipeline also should convince reasonable persons that oil development can be especially compatible with caribou. If Bush went comically overboard in his assessment, predictions of caribou doom have proved even more laughable. The Central Arctic Caribou Herd has instead thrived in the oil pipeline's presence.

Yet environmental groups have incredibly trotted out the same myopic prediction of caribou devastation to oppose oil drilling in the refuge.

BOSTON(MA) HERALD, JULY 19, 1987

A balancing act on oil exploration

WE ALL know that energy-conservation efforts in the United States are lagging. We have only to look at the resurgence in popularity of bigger cars and the long lines of traffic to the Cape on a summer weekend to know that.

Each day this nation, its people and its industries consume 17.5-million barrels of oil, far too much of it imported. Interior Secretary Donald Hodel estimates that, within three to five years, we will be importing more than 50 percent of our oil, thus exposing the country to national-security risks and unanticipated shortages.

Clearly, something must be done to assure our energy future, and despite conservation efforts, oil will need to be a part of the mix for a long time to come.

On all of this, we find common ground with the petroleum industry, which stands ready and eager to drill wherever and whenever the political power structure allows. But it is also there that we part company, for the oil industry is just a little over-eager, not making the careful and considered choices that need to be made by our policy-makers.

"We have to win the public-relations battle on Georges Bank to win on Alaska," said Frank Tivnan, associate director of the Massachusetts Petroleum Council. "Clearly, we need to go both to Georges Bank and Alaska, and to California, too."

Well, lots of luck, Mr. Tivnan. Because as long as the industry fails to distinguish between the enormous energy potential of the Arctic National Wildlife Refuge in Alaska with the fairly nominal potential of Georges Bank, and as long as the industry refuses to do the kind of risk/benefit analysis policy-makers are looking for, how can it expect Congress to make such distinctions?

The Interior Department estimates that should the 19-million-acre Alaskan tract be open to oil exploration and development, the nation stands to gain some 10-billion barrels of oil. Other estimates are nearly triple that figure. The environmental risks are minimal, and if the exploration of Prudhoe Bay is any example, the caribou, about which environmentalists are concerned, are in little danger (in nearby Prudhoe Bay the caribou herd has quadrupled since exploration and drilling began there some 20 years ago).

But off our own shores on Georges Bank, estimates as to the oil potential run only as high as 1-billion barrels, and oil-industry officials say it is likely to be only half that. Keep in mind that of the eight wells drilled in tracts leased in 1981, eight came up dry. Here the risks to the fishing and tourism industry from an offshore spill, however remote that possibility, are enormous.

Congress is holding hearings on the Alaska development and Georges Bank. Interior has scheduled another lease sale for Georges Bank for February 1989, unless Congress votes to extend a moratorium on such arrangements.

At the risk of sounding like those folks who say, to one issue or another, OK, "but not in our backyard," we indeed must say yes to oil exploration — certainly in Alaska, but no, indeed, not in our backyard.

THE SUN (Baltimore, MD), Saturday, April 25, 1987

Oil in Alaska

Environmentalists are caught up in a sky-is-falling frenzy over the prospect of oil drilling on a tiny strip of land in northern Alaska.

The area, a 20-by-100-mile strip, is part of a 19-million acre wildlife reserve in the fragile tundra. In 1960, Congress protected most of the territory by establishing the Arctic National Wildlife Refuge. Eight million acres were set aside as wilderness — forever untouchable by human technology. At the same time, Congress directed the Interior Department to conduct a five-year study of the area's oil-producing potential.

Now comes Interior Secretary Donald Hodel reporting a 20 percent chance that the tiny strip on the Arctic Ocean could be sitting on 600 million to 9.2 billion barrels of oil. He wants Congress to lease drilling rights to find out.

But environmental zealots, long on doctrine and short on cost-benefit considerations, claim the exploration and drilling would tarnish the environment and disturb caribou and musk oxen native to the tundra. Their concerns are overblown.

Interior Department geologists estimate only 15,000 acres of the 1.5-million acre coastal plain would experience surface disturbance. Caribou in that area — plus an area around the facilities the animals deem a safe distance for calving — will be displaced. But there are millions of untouched adjacent acres, and the displacement will not significantly affect the size of the caribou herds. Some scarring of the land is inevitable. But the affected area is minuscule and remote. Environmental regulations and restoration technology can minimize the impact.

These effects must be balanced against the potential economic benefits of exploration. Currently, the United States imports 40 percent of its oil, and low prices have discouraged the development of new sources worldwide. In a few years, production around Alaska's Prudhoe Bay will drop to between 250,000 and 500,000 barrels — from the current 1.8 million per day. By that time foreign production may have slowed further, and sloppiness about conservation could boost demand. Some estimates are that by the early 1990s, OPEC again will be able to dictate prices.

The U.S. needs to make certain that in a pinch it can take care of more of its own energy needs. Drilling on the Alaskan coastal plain is not going to meet the need entirely. But it is a key part of a prudent, forward-looking energy policy. The U.S. has the technology, the regulations and reviews to ensure an efficient, safe and environmentally sound effort. Congress must forge ahead.

THE COLUMBUS (OH) DISPATCH, Sunday, May 24, 1987

Arctic oil potential

Environmentalists and petroleum interests, bolstered by the Reagan administration, are squaring off in a battle over a new — and one of the last — oil frontiers in the United States.

The Arctic National Wildlife Refuge along the northern coast of Alaska is closed to oil exploration under the terms of a 1980 law pushed through by the Alaska Coalition, a dozen or so environmental organizations.

Oil interests, including Standard Oil Co., have joined forces with the U.S. Department of Interior to open the coastal plain to drilling. They project that up to 9.2 billion barrels of oil could be pumped.

The administration, through the Interior Department, says this will reduce dependence on foreign oil, particularly that acquired from the volatile Middle East; produce royalties for the treasury and realize a net economic benefit for the nation as high as $325 billion.

Environmentalists are adamant. They want oil rigs kept out of the 19-million-acre refuge, which they see as one of the nation's finest. They fear drilling will upset and threaten reproductive activity among the region's 180,000-head Porcupine caribou herd, which migrates between Alaska and Canada, but uses the coastal plain for calving.

To this concern, the oil companies point to the Prudhoe Bay area, west of the wildlife refuge, where drilling has gone on for the past 10 years. During that time, the size of its once-5,000-head caribou herd has tripled.

Spokesmen for the Standard Oil Co. say constraints on drilling would prevent all but minimal damage to the coastal plain area, only a small small portion of which would actually contain drilling rigs.

Successful drilling to the west and by Canadian interests to the north and east suggest a high probability that the coastal plain would be productive.

Balancing environmental interests with the nation's legitimate energy needs often leads to conflict. The issues are seldom as black and white as the proponents and opponents imply.

In northern Alaska, oil interests have a track record. The dire predictions that preceded the Prudhoe Bay drilling failed to materialize. The caribou herd actually thrived while other environmental damage was kept to a minimum.

Oil production in the contiguous 48 states has declined in recent years increasing reliance on foreign sources and setting the stage for a new crisis, should an interruption in that supply and the predictable increase in demand occur.

While an oversupply of oil now exists, decreased exploration and increased demand could tighten supplies dramatically in just a few years. In the best interests of the nation, carefully monitored exploration and production within the Arctic National Wildlife Refuge should be pursued.

The Prudhoe Bay experience suggests that this can be accomplished with minimal damage to the environment. The alternative is a nation increasingly held hostage to a foreign oil supply. Because the process from lease to exploration to discovery to actual production can take 10 to 15 years, prolonged opposition will only compound the nation's error of giving too little regard to its energy self-sufficiency.

THE PITTSBURGH PRESS, SATURDAY, JULY 16, 1988

Oil vs. caribou?

"The caribou love it (the Trans-Alaska Pipeline). They rub up against it and they have babies."

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"We view the (proposal to allow oil exploration in Alaska's Arctic National Wildlife Refuge) as a no-win situation for both the Porcupine Caribou Herd and the people who depend on it."

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Simultaneously, the House Interior Committee is reviewing a bill that would designate the same coastal plain a wilderness area and thus forever close the option of oil drilling.

The option should be kept open. The chances of a major oil find are too good and the size of the potential strike too great to throw away.

America will need that oil, if not now when prices are low and squabbling OPEC nations are overproducing, then someday.

Even if drilling began immediately, it would be roughly a decade before oil would flow in significant quantities. Wasn't it only 10 years ago that we were all waiting in gas lines?

Concerns about damage to wildlife and environment are valid. They are also substantially addressed both in the bill before Congress and in the drilling techniques proposed by the oil companies. Experience in Alaska's Prudhoe Bay oil field 65 miles to the west has led to significant improvements in technology.

Experience with Prudhoe Bay and the Trans-Alaska Pipeline also should convince reasonable persons that oil development can be especially compatible with caribou.

If Mr. Bush went comically overboard in his assessment, predictions of caribou doom have also gone unfounded. The Central Arctic Caribou Herd has instead thrived in the oil pipeline's presence.

PARTIAL LIST OF COMPANIES/ORGANIZATIONS SUPPORTING OIL & GAS EXPLORATION AND DEVELOPMENT OF THE COASTAL PLAIN OF THE ARCTIC NATIONAL WILDLIFE REFUGE

Air Transport Association of America
Alaska Association of Realtors
Alaska Business Strategies
Alaska Farm Bureau Federation
Alaska Oil and Gas Association
Alaska State Chamber of Commerce
Alaska Support Industry Alliance
Amerada Hess Corporation
American Association of Blacks in Energy
American Association of Petroleum Landmen
American Institute of Merchant Shipping
American Mining Congress
American Petroleum Institute
American Sheep Industries Association
American Trucking Association
Americans For A Rational Energy Policy
Amoco Production Company
Anchorage Chamber of Commerce
Anchorage Sand & Gravel
ARCO Alaska, Inc.
Arctic Slope Regional Corporation
The Associated Builders and Contractors
The Associated General Contractors of America
Association of Oil Pipelines
BP Exploration
BP North America
Brown & Root, Inc.
Caterpillar, Inc.
Chevron U.S.A., Inc.
Columbia Helicopter, Inc.
Conoco, Inc.
Cooper Industries, Inc.
Crowley Maritime
Dresser Industries, Inc.
Exxon Company, U.S.A.
Fluor Corporation
Free Committee
HEHR International, Inc.
Highway Users Federation
Independent Petroleum Association of America

International Association of Drilling Contractors
International Association of Geophysical Contractors
Interstate Natural Gas Association of America
Joint Maritime Congress
Marathon Oil Company
Marriott Corporation
Mobil Oil Corporation
NAACP-Anchorage Branch
National Association of Home Builders
National Association of Manufacturers
National Association of Realtors
National Cattlemen's Association
National Coal Association
National Council of Farmer Cooperatives
National Federation of Business and Professional Women, Alaska Chapter
The National Grange
National Inholders Association
National Marine Engineers Beneficial Association
National Marine Manufacturers Association
National Ocean Industries Association
National Tour Association, Inc.
Natural Gas Supply Association
NL Industries, Inc.
Petroleum Equipment Suppliers Association
Public Lands Council
Recreation Vehicle Industry Association
Resource Development Council
Retired Officers Association
Rocky Mountain Oil and Gas Association
Shell Western E & P, Inc.
Texaco, Inc.
The Transportation Institute
U.S. Chamber of Commerce
U.S. Hispanic Chamber of Commerce
Western States Petroleum Association

ANWR: GLOSSARY OF KEY TERMS

1. **Alaska National Interests Lands Conservation Act (ANILCA):** Passed in 1980, the law nearly doubled the size of the existing refuge (formally called the Arctic National Wildlife Range), giving it a total of more than 19 million acres. The law also required the Department of Interior to study the ANWR Coastal Plain area to determine whether oil and gas exploration should be allowed. Section 1002 of ANILCA specifically required the Secretary of Interior to report to Congress within five years. The report was released in April, 1987 and recommended oil and gas exploration and development in the Coastal Plain.

2. **Arctic National Wildlife Refuge (ANWR):** Sits in the northeast corner of Alaska and is comprised of 19.3 million acres or 30,000 square miles. The terrain varies substantially over the entire range, including coastal plains, foothills, and mountains.

3. **ANWR Coastal Plain:** The ANWR Coastal Plain, which has not yet been fully explored, is 1.5 million acres and has been identified as offering the greatest potential for onshore oil in the U.S. The Coastal Plain is a remote, flat, treeless expanse which is frozen nine months of the year.

4. **Arctic Slope Regional Corporation:** An Inupiat Eskimo-owned corporation, ASRC has major cultural, subsistence, and economic interests in ANWR and was established pursuant to the Alaska Native Claims Settlement Act of 1971. The village of Kaktovik, which is adjacent to the Coastal Plain, is part of ASRC.

5. **Kaktovik:** The village is located on Barter Island, just north of the ANWR Coastal Plain. It is the only village within the refuge and has approximately 210 residents, most of whom are Inupiat Eskimos. The Inupiat traditionally have had a subsistence economy. Today their subsistence economy has been partially integrated with a cash system.

6. **Prudhoe Bay, Kuparuk, Lisburne, Milne Point:** Prudhoe Bay was discovered in 1968 by oil companies conducting exploration operations primarily on state lands east of the Colville River. It is the largest oil field in North America, with recoverable reserves of 10 billion barrels.

   Kuparuk, Lisburne, and Milne Point are the three other producing fields of the North Slope. Together with Prudhoe Bay, these fields account for about 25 percent of all U.S. oil production.

7. **Caribou:** Man's activities in the Arctic have given rise to concerns for potential effects on the caribou herds that migrate across the North Slope for about three months out of each year. ANWR is within the range of the Porcupine Caribou Herd (approximately 180,000 animals) and the Central Arctic Caribou Herd (about 18,000 animals) that migrate through Prudhoe Bay and other North Slope oil-producing fields.

8. **Musk Oxen:** Musk oxen, which had previously become extinct in the ANWR area, were reintroduced in the early 1970's. The herd is still small, numbering a little over 400 animals. The musk oxen spend most of their time in areas adjacent to rivers in the Coastal Plain where oil and gas operations would be restricted.

9. **Permafrost:** The entire Coastal Plain area is underlain by up to 1,500 feet of permafrost, which is permanently frozen water, rock, sand, and loose soil. The thin layer above the permafrost is tundra.

10. **Tundra:** Tundra is comprised of silt, rocks, and vegetation which varies in thickness from a few inches to about three feet. Annually, this layer freezes and thaws to a depth of several feet. The permafrost is susceptible to long-term damage unless care is taken to minimize the effects of man's activities. In the tundra area, off-road traffic movement is limited to that time when the surface is frozen and covered with ice or snow. Special vehicles with large tires that exert little pressure on the surface are used to protect the surface layer.

ANWR QUESTIONS AND ANSWERS

1. **What is the status of legislation to open the Coastal Plain of the Arctic National Wildlife Refuse (ANWR) to oil and gas exploration and development?**

Although ANWR Coastal Plain legislation was put on hold after the oil spill in Prince William Sound, significant progress was made prior to March 24, 1989.

In 1989, the Senate Energy and Natural Resources Committee reported a bill in support of opening the Coastal Plain to oil operations. The House Merchant Marine and Fisheries Committee was working on ANWR legislation at the time of the oil spill.

In 1988, both the Senate Energy and Natural Resources Committee and the House Merchant Marine and Fisheries Committee reported bills to open the Coastal Plain to oil and gas development. However, Congress adjourned without taking further action on the measures.

During 1987-88, a total of 35 hearings or mark-up sessions ^I15(^U(R Coastal Plain legislation were held by the Senate Committee on Energy and Natural Resources, the Senate Committee on Environment and Public Works, and the House Committee on Interior and Insular Affairs. Legislation favoring opening the ANWR Coastal Plain was approved by the Senate Energy and Natural Resources Committee (S. 2214) and the House Merchant Marine and Fisheries Committee (H.R. 2601). Neither bill received floor action. The Subcommittee on Water and Power Resources of the House Interior and Insular Affairs Committee, which also considered ANWR legislation, did not conclude action on either H.R. 3601 or other ANWR legislation.

2. **The U.S. Interior Department estimates that the chances of finding oil in the ANWR Coastal Plain is about one-in-five, and only a one-in-twenty chance of finding a field the size of Prudhoe Bay. Given these long odds, is this area really worth developing?**

The odds are always long in the search for domestic energy supplies. But if the U.S. oil industry does not take the calculated risks necessary to replace the nation's declining reserves, America will be even more dependent on oil imports. The U.S. is currently importing over 50 percent of its oil needs.

New-field wildcat wells in the United States -- wells that are drilled in previously unexplored areas -- find new major discoveries only two percent of the time.

In an industry that has grown accustomed to finding major oil fields only two percent of the time with its wildcat drilling programs, a 19 percent chance of finding economically recoverable oil on the ANWR Coastal Plain -- especially a chance of finding what may be billions of barrels of oil -- is viewed as an excellent opportunity.

The Interior Department estimates that up to 9.2 billion barrels in economically recoverable oil may be found beneath the Coastal Plain area and that the mean amount of expected oil would be 3.2 billion barrels. If the Department's high estimate of 9.2 billion barrels were to be realized, this would place the Coastal Plain close in size to Prudhoe Bay, the largest U.S. discovery to date. The mean estimate of 3.2 billion barrels would also be a significant addition to U.S. oil supplies, and would represent the third largest oil find in U.S. history.

3. The Department of the Interior did not drill a single well in its study of the oil potential on the Coastal Plain. Granted, the surface geology looks good, but is that enough to be sure that there is any petroleum, let alone producible quantities?

The Department of the Interior did not drill an exploratory well within the Coastal Plain because Congress, in writing the law establishing the Arctic National Wildlife Refuge (ANWR), specifically prohibited any drilling.

Although one cannot be sure whether petroleum will be found without actually drilling, a reasonable estimate of the potential for the existence of petroleum resources was made. The Department of the Interior makes such estimates prior to virtually every offshore federal lease sale and seldom bases them on data obtained by actually drilling within the prospective lease sale area.

Rather, the Interior Department collected a substantial amount of geological data on which to estimate the petroleum resource potential of the Coastal Plain. For example, the department considered:

- More than 1,300 line miles of seismic data;
- approximately 1,300 gravity readings;
- field observations and surface measurements conducted by exploration crews, including studies of the known natural surface seeps of oil, such as those at the Katakturuk and Jago rivers;
- carefully researched maps of the geology of the area; and
- outcrop rock samples collected and analyzed for age and geochemistry (hydrocarbon-generation potential) and porosity and permeability (potential reservoir characteristics).

The Department of the Interior's report concludes that data from nearby wells in the Prudhoe Bay area and in the Canadian Beaufort Sea and Mackenzie Delta, combined with the promising seismic data gathered on the Coastal Plain, indicate extensions of producing trends and other geologic conditions extremely favorable for discovery of one or more giant

(reserves exceeding 100 million barrels) or supergiant (reserves exceeding 500 million barrels) oil fields on the Coastal Plain.

4. **Doesn't it make sense to significantly increase the U.S. strategic petroleum reserve with currently cheap and plentiful foreign oil, rather then draining America of its frontier oil reserves?**

Yes, it does make sense to buy oil for the Strategic Petroleum Reserve (SPR). That does not preclude the necessity for leasing the Coastal Plain area. It is not an either/or issue; both are essential to America's energy security, although the objectives are different.

The purpose of the government's SPR is to provide a limited supply of crude oil should a cutoff in oil imports occur. The reserve cannot provide a long-term supply of oil to meet normal demand. Moreover, creating the storage facilities to hold that emergency oil is an expensive and time-consuming process, which adds significantly to the total cost of acquiring and storing the emergency oil supply.

There are currently 550 million barrels of crude oil stored in the SPR -- less than a three-month supply of imported oil at current import rates. It could not provide more than a temporary replacement for foreign oil and could not replace the sharp decline in domestic oil production that is occurring as older U.S. oil fields are depleted of their reserves.

Replacement of those domestic reserves can be accomplished only through new domestic discoveries or increased imports.

In recent months, U.S. oil imports have exceeded 50 percent of demand. According to industry and government estimates, that percentage could rise dramatically, if low prices and over-production on the world market continue for long. By the year 2000, just 10 years from now, oil imports could account for some two-thirds of total U.S. demand, unless significant domestic oil discoveries are made.

5. **Why is it necessary to open all of the Coastal Plain to oil and gas operations?**

Geological surveys and seismic studies indicate that the Coastal Plain has vast potential for discovery of significant oil and gas reserves. However, only a very small portion of the area would actually be disturbed during exploration and production activities. Based on the experience at Prudhoe Bay, less than 23 square miles would be affected by drilling and production pads, roads, and other facilities. That is less than one-tenth of one percent of the total area of ANWR (30,000 square miles).

If economically significant oil and gas discoveries are made, activities in the area would last only as long as the reserves are producible -- usually on the order of 20 to 30 years. Once exploration and production operations come to an end, the land would be restored.

6. What would be the environmental effects of oil and gas development on the Coastal Plain?

The area would see minimal environmental impact. The oil industry's 23-year track record on Alaska's North Slope shows that oil exploration and development can and do coexist in harmony with the environment. The amount of land which would be affected by development is less than one-tenth of one percent of the total Arctic National Wildlife Refuge area.

When oil operations cease in the area, all facilities would be removed and the land rehabilitated. If exploratory drilling did not reveal promising oil reserves, operations would cease and no further development would occur.

If a significant petroleum find resulted, the industry would employ the same protective measures in developing the area that it has used successfully to safeguard the environment in other North Slope oil fields.

For example, the Transalaska Pipeline has been specially constructed to provide caribou the access they need to roam freely throughout their range. The pipeline is fully insulated to avoid melting and damaging the permafrost which supports it.

Other environmentally-sensitive techniques that would be used in ANWR include:

- Selecting exploration and production sites where they will cause the least adverse environmental impact;
- minimizing the surface area used during exploration and production by consolidating facilities (and using directional drilling technology);
- designing water crossings to minimize disturbance of river or stream beds, and to prevent obstruction of the water flow; and
- using vehicles that exert low pressures per square inch on the ground to minimize disturbance of the insulating active layer of tundra.

7. **Environmentalists charge that opening the Coastal Plain to petroleum operations could have a devastating effect on the migration of the Procupine Caribou Herd. Industry claims that the smaller Central Arctic Caribou Herd is thriving amid petroleum operations at Prudhoe Bay. Who's right?**

The arguments made by the environmentalists concerning the effects on caribou are virtually the same as those they presented prior to the first Prudhoe Bay area lease sale in 1964. Events have proven they were wrong then, and there is no reason to suppose that their arguments today are correct concerning the herds in the neighboring Coastal Plain area.

The Central Arctic caribou herd, which occupies the Prudhoe Bay area throughout the year, has adapted well to petroleum operations on the North Slope. For the most part, the animals roam freely throughout the area, although some females apparently do avoid the immediate area of the pipeline and other major facilities during calving and post-calving periods.

According to the U.S. Department of the Interior, the Central Arctic herd has grown in size since 1970. That year, the herd numbered about 3,000; in 1978, 6,000; in 1981, 9,000; in 1985, 15,000; and in 1988, 18,000 animals.

To minimize the impact of petroleum operations on the 180,000 Porcupine caribou, the following actions will be taken:

- Burying pipelines where possible;
- where burial is not practical, placing ramps over structures in areas of natural crossings or where development tends to funnel caribou, or elevating the pipelines to allow free passage in areas without ramps;
- reducing vehicle disturbance by limiting the use of the area to essential industry and agency personnel;
- separating roads and pipeline as necessary to make caribou passage easier;
- restricting the seasons when surface activities can take place to minimize disturbance in areas of calving or concentrated use;
- monitoring the size, productivity, movement, and general health of the herd and the effect of oil development on caribou, so that other mitigating actions can be taken, if needed;
- allowing free movement of caribou to and in insect-relief areas; and

- locating facilities away from watercourses and keeping transportation crossing facilities to a minimum.

8. **How do the Eskimos, who are dependent on the fish and wildlife in the Coastal Plain area for their subsistence economy, feel about opening the area to petroleum operations?**

Many Eskimos, including community and business leaders, have expressed strong support for efforts to open the Coastal Plain to development in an environmentally-responsible manner, citing both economic and energy security reasons.

For example, George Ahmaogak, Sr., an Inupiat Eskimo and Mayor of the North Slope Borough, points out that tax revenues from Prudhoe Bay and other oil fields, during the past 10 years, have been the primary source of funds for building schools, roads, housing, and other facilities throughout the borough. Oil revenues have also made it possible for the borough to provide medical care and many other types of services in all of its villages.

Another Eskimo leader, Jacob Adams, who is president of the Native-owned Arctic Slope Regional Corporation, agrees, stating that "our land near the 1002 area represents the Eskimo people's best chance to participate directly in the economic benefits that North Slope oil development has brought to Alaska."

9. **There are only a few streams deep enough to sustain fish in the Coastal Plain area. What assurance is there that oil operations would not pollute or damage these waterways?**

The Interior Department has identified eight streams within the Coastal Plain that support fish populations. The technology developed and experience gained at Prudhoe Bay and nearby oil fields and in the construction of the 800-mile Transalaska Pipeline, are applicable to future petroleum operations within region.

The following mitigating actions will be taken:

- Avoiding construction near fish-inhabited streams as much as possible during spawning seasons;
- properly designing and locating roads and pipelines;
- restricting gravel removal and other stream alterations;
- minimizing the number of stream crossings;

- using appropriate containment procedures to prevent any spilled oil or contaminants from reaching the streams and to protect invertebrate and aquatic food plant resources; and

- constructing road culverts to reduce the potential for trapping fish lacking overwintering habitats.

COMPATIBILITY OF PETROLEUM OPERATIONS WITH THE ARCTIC ENVIRONMENT

Opponents to oil and natural gas leasing of the Coastal Plain of the Arctic National Wildlife Refuge (ANWR) have alleged that petroleum operations at Prudhoe Bay, some 65 miles to the west, have adversely affected the arctic environment. They charge that Prudhoe Bay operations caused major environmental problems. The allegations, however, are at odds with the facts.

The petroleum industry's 20 years of experience with operations on the North Slope of Alaska provide overwhelming evidence that oil and natural gas exploration, development, and production are environmentally acceptable and would pose no threat to the ecology or wildlife of the ANWR Coastal Plain. Stringent federal, state, and local regulations are major safeguards that would protect the ANWR Coastal Plain if oil operations were permitted there.

The oil and gas fields discovered in the Prudhoe Bay area are currently providing one-fourth of all the oil produced in the United States. Based on the Prudhoe Bay experience, less than one-tenth of one percent of ANWR -- or under 23 square miles of the 29,688 square-mile refuge -- would be affected by oil operations. Disruptions of this small area would be temporary, with the affected areas rehabilitated when operations are completed.

Air Emissions

Prudhoe Bay air quality consistently meets federal and state standards and is not comparable to that of large cities.

For example, the Average Annual National Ambient Air Quality Standard for nitrogen dioxide is 100 micrograms per cubic meter (ug/m3). The monthly average concentrations downwind of Prudhoe Bay are consistently below 15 ug/m3. In contrast, levels in New York City average 68 ug/m3 -- four times greater than on the North Slope. And Washington, D.C., an area virtually devoid of heavy industry, annually averages 74 ug/m3 -- almost five times greater than at Prudhoe Bay.

- Research shows that emissions from Prudhoe Bay facilities resulting from the flaring of natural gas make no significant contribution to air pollution, nor are production operations the cause of "arctic haze," as some charge.

- The plant life (primarily lichens and mosses) eaten by caribou has not been damaged by air pollution from production operations on the North Slope.

Drilling wastes/muds

Stringent government regulations and tested industry procedures have ensured that drilling wastes and muds do not pose pollution hazards to the Prudhoe Bay environment. Drilling operations result in three types of wastes: drilling muds, produced water, and associated wastes.

Drilling operations produce used drilling muds (natural minerals -- along with small nontoxic concentrations of additives -- that are used to cool and lubricate the drill bit, maintain well pressure and carry cuttings to the surface for disposal) and cuttings (rock fragments removed by the drill bit). After one freeze-thaw cycle, the salts and solids settle out and the water quality of the pit fluids significantly improves. Melting snow contributes additional fresh water which further dilutes these fluids.

Current practice for handling of fluids accumulated in reserve pits involves disposal through injection into deep zones beneath the permafrost. Research is being conducted into other reserve pit designs and alternative disposal methods for muds and cuttings.

Numerous federal, state and local permits must be obtained in order to construct and operate a reserve pit on the North Slope. Required permits include a Clean Water Act permit issued by the U.S. Army Corps of Engineers and a solid waste disposal permit issued by the Alaska Department of Environmental Conservation. The lessons learned at Prudhoe Bay have led the state of Alaska to recently revise its solid waste disposal regulations to impose additional requirements for the design and operation of reserve pits, incorporating provisions for environmental monitoring and specific closure procedures.

Produced water

Most produced water, which represents the highest volume by-product from oil production, is recycled through injection back into the reservoir to assist in pressure maintenance. Produced water unsuitable for recycling is disposed of through deep well injection that is regulated under the federal Safe Drinking Water Act and by the State of Alaska. Deep well injection is an environmentally sound method of disposal.

On the North Slope, fluids are injected below the zone of continuously frozen ground (permafrost), which extends to as much as 2,000 feet below the surface. Above this zone, only 18 to 36 inches of soil thaw in the short summer period. Fluid migration through the permafrost does not occur and water aquifers beneath the zone have been exempted as drinking water sources by the U.S. Environmental Protection Agency because of their high salt content.

Protecting the environment on the North Slope

The experience gained and technology applied at North Slope oil fields have clearly demonstrated that such operations are compatible with environmental protection. Moreover, this knowledge and technology are transferable to operations within the Coastal Plain of the Arctic National Wildlife Refuge (ANWR).

In developing the North Slope oil fields, many steps have been taken to protect the environment. These include:

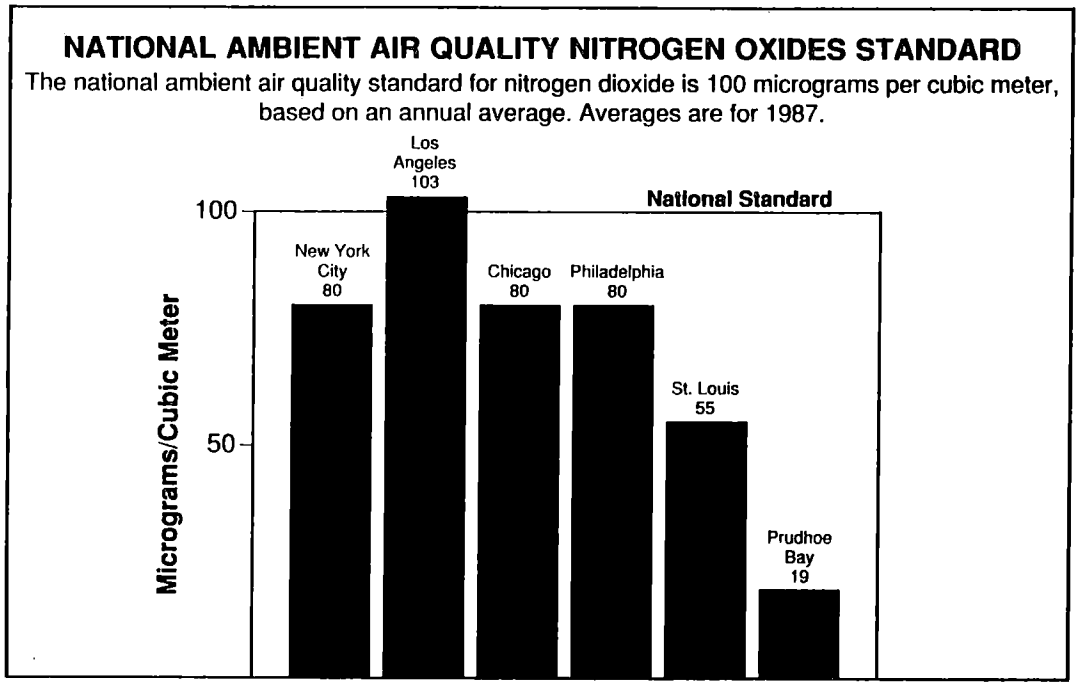
- Federal and state regulations that limit many of the off-road transportation activities in the tundra area to that time when the surface is completely frozen and snow-covered;
- using vehicles that exert low pressures per square inch on the ground to minimize disturbance of the insulating active layer of tundra;
- limiting most seismic and construction work to the winter months, when the ground is frozen and the snow cover is sufficient to prevent surface damage;
- completing the drilling and testing of exploratory wells during one winter season, where possible;
- minimizing the number of roads and elevating roadways by using gravel pads up to five feet thick;
- placing heated buildings on pillars over gravel pads to allow the air to flow between the buildings and the pads providing insulation from the tundra;
- selecting exploration and production sites where they will cause the least adverse environmental impact;
- minimizing the surface area used during exploration and production by consolidating facilities (for example, by using directional drilling technology many production wellheads may be located on one pad);
- designing water crossings to minimize disturbance of river or stream beds and to prevent obstruction of the water flow;
- maintaining stringent quality controls over-sewage discharges, including secondary treatments;
- constructing primary and secondary containment facilities around oil storage areas and other potential sources of pollution; and

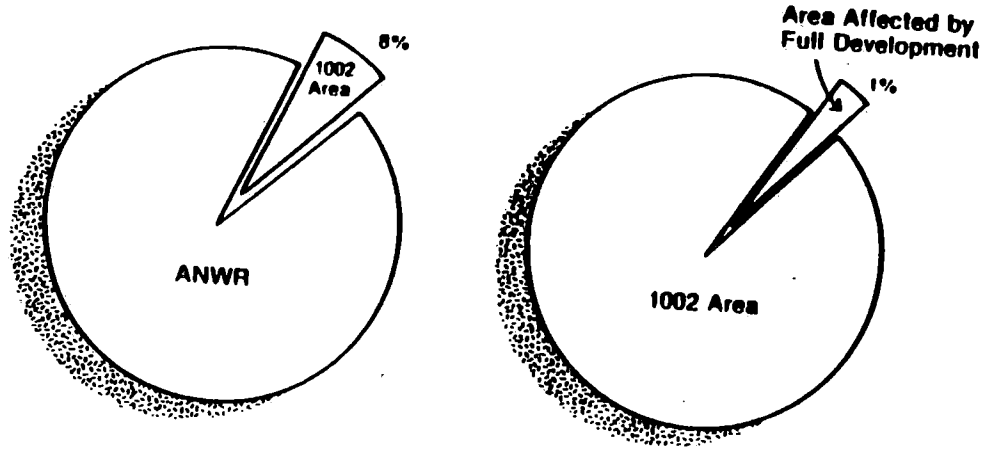
- building above or below ground sections for pipelines to allow passage by caribou and other mammals.

Even before exploration and production begins, there will be extensive surveys made of wildlife, vegetation, archeological sites and Native populations. These surveys are important in avoiding nesting sites of threatened or endangered species, in understanding migration patterns of mammals, fish and waterfowl, and in preserving cultural artifacts of earlier generations of Native Alaskans.

NATIONAL AMBIENT AIR QUALITY NITROGEN OXIDES STANDARD

The national ambient air quality standard for nitrogen dioxide is 100 micrograms per cubic meter, based on an annual average. Averages are for 1987.

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TECHNOLOGICAL ADVANCES IN NORTH SLOPE DRILLING OPERATIONS

Oil was discovered at Prudhoe Bay on Alaska's North Slope in 1968. The first oil was produced from the Prudhoe Bay field in 1977. Since then, oil has been flowing 800 miles through the Trans-Alaska Pipeline to Valdez. At this time, the Prudhoe Bay, Kuparuk, Lisburne, Milne Point, and Endicott oil fields account for 25 percent of domestic oil production.

Over the years, important strides have been made in drilling and production technology that have reduced the amount of land needed for oil field facilities. This evolution in technology minimizes the "footprint" of oil activities and is important as we look to the future and consider development on the Coastal Plain of Alaska's Arctic National Wildlife Refuge (ANWR).

The oil fields on Alaska's North Slope stand as a model of careful development and as an example of evolving arctic technology. Because of these technological advances, the "footprint" of future development in the arctic will be even smaller than the Prudhoe Bay region.

I. Drilling and Waste Handling Technology.

Wells and facilities in the Arctic are placed on gravel pads which insulate the permafrost from thawing. The size of new well pads will be dramatically reduced as a result of improved drilling technology. For example, through the use of directional drilling, many wells can be drilled at high angles from a single pad.

Hundreds of wells reaching out to all corners of the oil reservoir can be drilled from just a small number of pads. With experience, drilling technology continues to be refined and wells are drilled at ever greater angles. As a result, the number of wells that can be drilled from a single pad continues to increase and the pads have become dramatically smaller.

Other major advances in technology include new drilling rigs which decrease the distance between wells on the surface. The space required for drilling operations is now one-third to one-half what it was a decade ago.

When Prudhoe Bay was first developed, well spacings of 120 feet or more were common. When the neighboring Kuparuk field was built, wells were initially drilled 60 feet apart. Now, with directional drilling, high angle wells, and newly designed rigs, wells can be drilled 25 feet apart. In special cases, wells have been drilled as little as 10 feet apart.

Previously, drill pads included reserve pits large enough to hold drilling mud, cuttings, and fluids from all the wells drilled on that pad. Alternative methods for handling fluids have been implemented. Reserve pits are now designed to contain only the solid cuttings

removed from the well. Fluids are either placed back in the well from which they are produced, or collected and placed in another well. Advances in drilling and waste handling technology have reduced the footprint of a well pad by more than one-half.

II. Production Technology.

As with drilling technology, a decade of experience has led to the development of new production equipment and the refinement of facility design. Production facilities separate the oil from the natural gas and water. Recently, efforts to redesign the production facilities at Prudhoe Bay showed the same facilities could be rebuilt today using approximately one-half the surface space.

III. Oil Field Support Services.

On the North Slope, many contractors provide equipment and special support services to the oil companies operating the fields. At Prudhoe Bay, the State of Alaska leases the land to these businesses in an area known as Deadhorse. The facilities at Deadhorse cover about 1,050 acres.

A new satellite service center in the Kuparuk oil field occupies only 55 acres. The Kuparuk Industrial Center (KIC) has consolidated many of the support service companies at a single facility which minimizes the duplication of common facilities required by contractors. In ANWR, operators will maintain control and restrict the footprint as was done at the Kuparuk Industrial Center.

IV. ANWR Coastal Plain.

The Coastal Plain of ANWR is covered with snow nearly three-quarters of the year. During the brief arctic summer, the tundra comes alive with vegetation and wildlife. The advances in technology ensure that all facilities are designed to minimize surface disturbance and to protect the environment. Visual impact of oil development on the ANWR Coastal Plain will be extremely small.

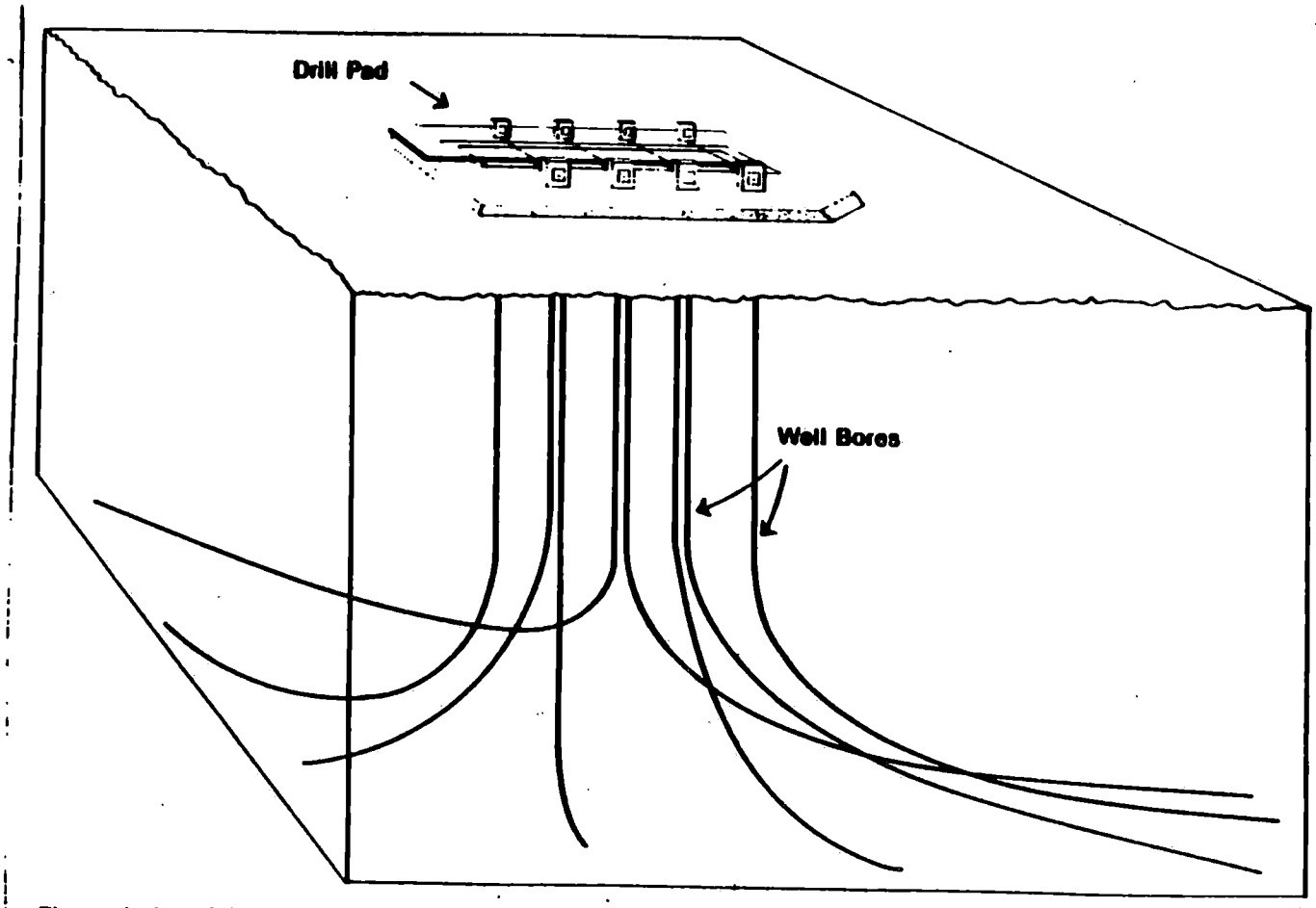
The area required for well pads, production facilities, and service centers will be dramatically less than for the Prudhoe Bay oil field. The surface area will be reduced by at least 50 percent by drilling more wells from smaller pads, consolidating support service contractors, and using the latest production equipment.

V. Summary.

During the last 30 years, the oil industry has been exploring and operating on Alaska's North Slope. In that time, the industry has conducted responsible, environmentally sound operations -- from oil exploration to field development and production. Knowledge gained from past and existing operations and activities has been incorporated into the planning of future projects.

Numerous studies have enhanced our understanding of the Arctic, and show no evidence of significant impacts. The industry is regulated and committed to continued research and monitoring of its activities in the Arctic.

Advances in technology go hand-in-hand with operating experience. This evolution of arctic oil field technology has ensured that alteration of the land is minimal and that disturbances to wildlife are avoided. Therefore, oil development in the Coastal Plain of the Arctic National Wildlife Refuge has the advantage of three decades of technological advances in the art of oil field development.



The evolution of directional drilling technology has helped to minimize the land needed for drilling operations. Wells are drilled at angles away from the pad to reach various locations in the oil reservoir.