

Alaska's Experience with Arctic Oil and Gas Development: History, Policy Issues, and Lessons

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January 25, 2012

World-leading “energy” products of Norway and Alaska . . .

Marit Bjoergen



Kikkan Randall



Important Questions

- How can society develop Arctic non-renewable resources in ways that:
 - Protect the environment
 - Protect and benefit local and indigenous residents—who are most affected by and most at risk from development
 - Maximize economic and social benefits to society
 - Provide long-term sustainable benefits for future generations

Alaska's experience with Arctic oil and gas development
provides insights into these questions

Outline

- Brief overview of:
 - Alaska
 - Alaska oil and gas development
- Brief discussion of selected topics and issues
 - Alaska Permanent Fund
 - Alaska Permanent Fund Dividend Program
 - Alaska Oil Revenues and Expenditures
 - Oil Tax Policy Debate
 - Alaska's North Slope Borough
- Ten lessons from Alaska's experience

This is only a very brief introduction to a complex topic!

A brief overview of Alaska . . .

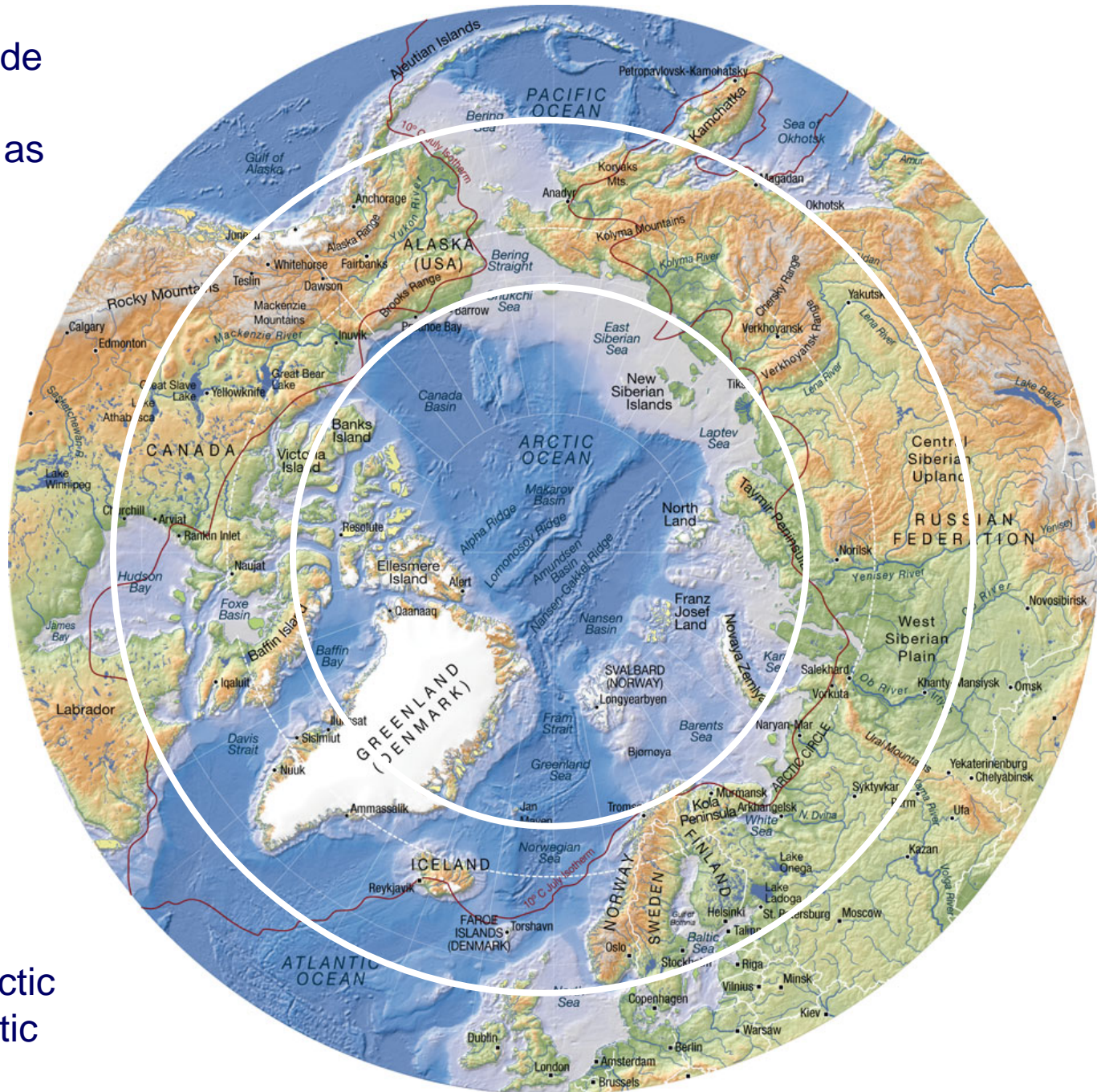
Alaska and Norway are both sparsely settled northern regions
--but Alaska is much less settled and developed than Norway.



The range of latitude for most of Alaska is about the same as for Norway

Arctic energy developments in Alaska and Norway occur at about the same latitude

The climate and ocean and ice conditions are much colder and more difficult in Arctic Alaska than in Arctic Norway



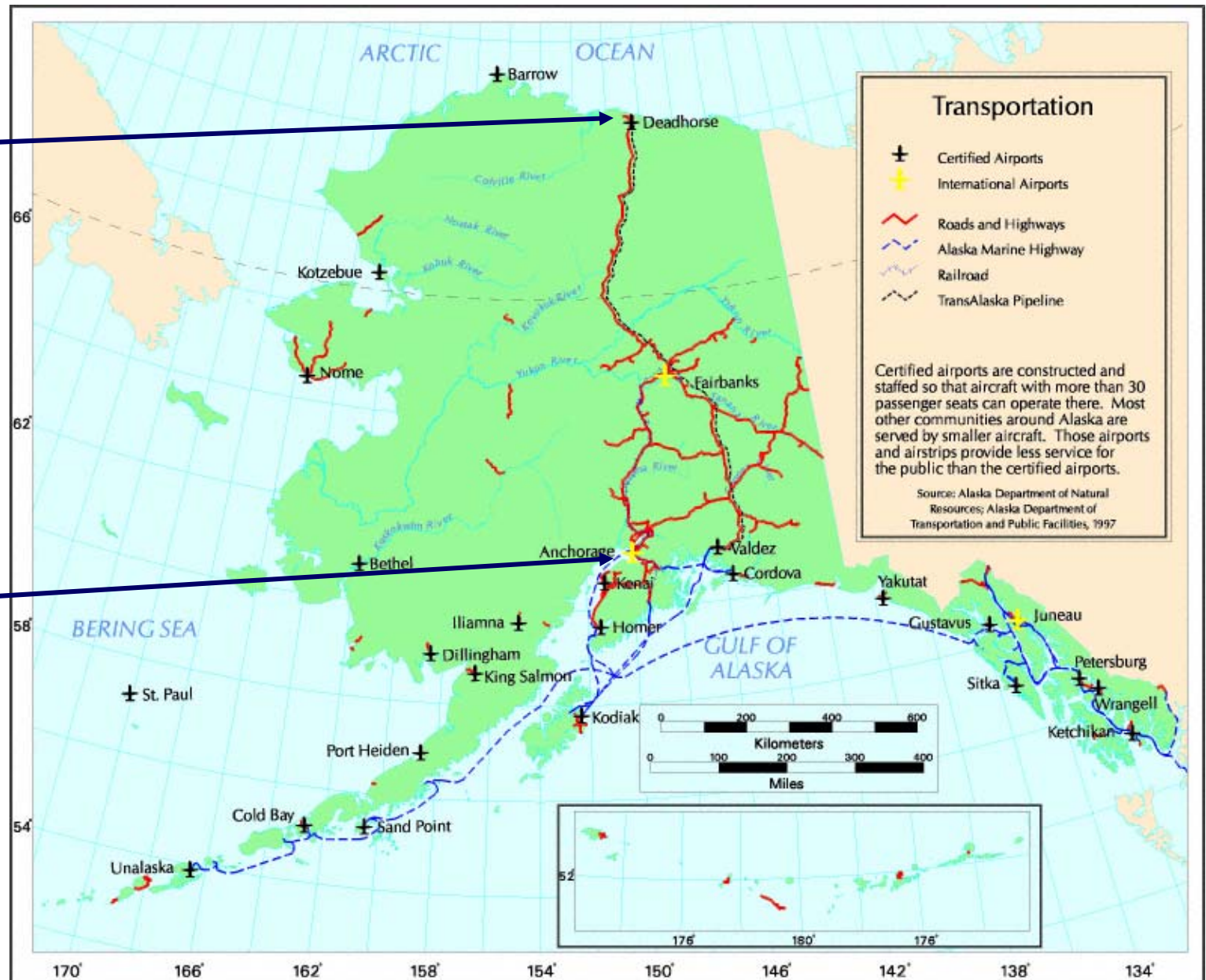
Land Area and Population: Alaska and Norway

	Alaska	Norway	Ratio: Norway- Alaska
Area (sq. km)	1,717,854	323,802	0.19
Population (2011)	722,190	4,920,305	6.8
Population per square kilometer	0.42	15.2	36.1

The red lines show the only roads in Alaska.

North
Slope
oil fields

60% of
Alaska's
population
lives in or
near
Anchorage



Most Alaskans lead comfortable urban lifestyles



Life is very different in the small remote villages of rural Alaska



Alaska Natives represent less than 20% Alaska's population—but more than 80% of the population in many rural areas, including the Arctic. Many Alaska Natives lead traditional subsistence lifestyles.



Besides oil, Alaska's economy is based on natural resources and also significant federal government spending

Military



Mining



Tourism



Seafood

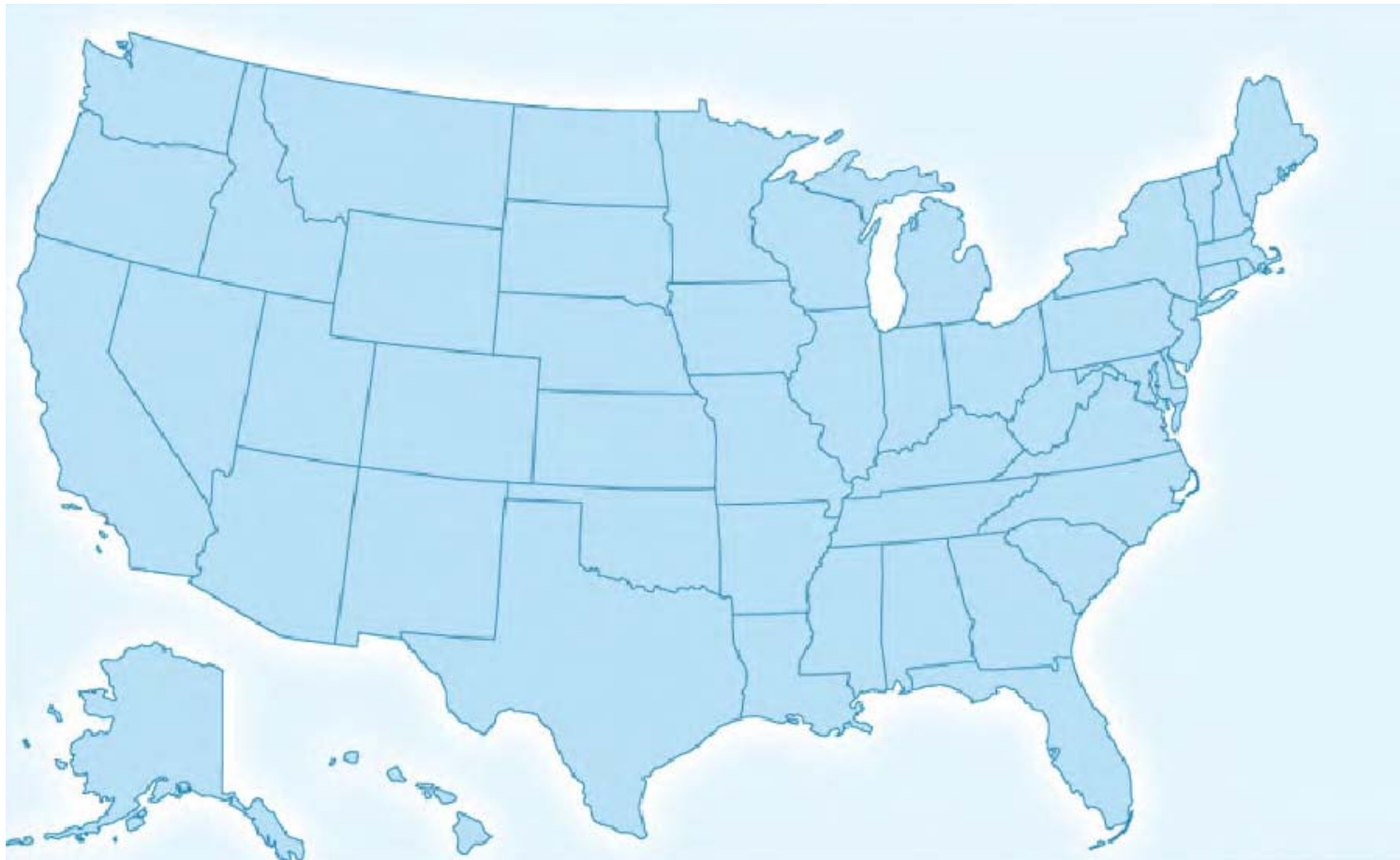


Alaska is a state, not a country!

Alaskans have only limited control over Alaska resource development.

Many of the decisions are made in Washington DC

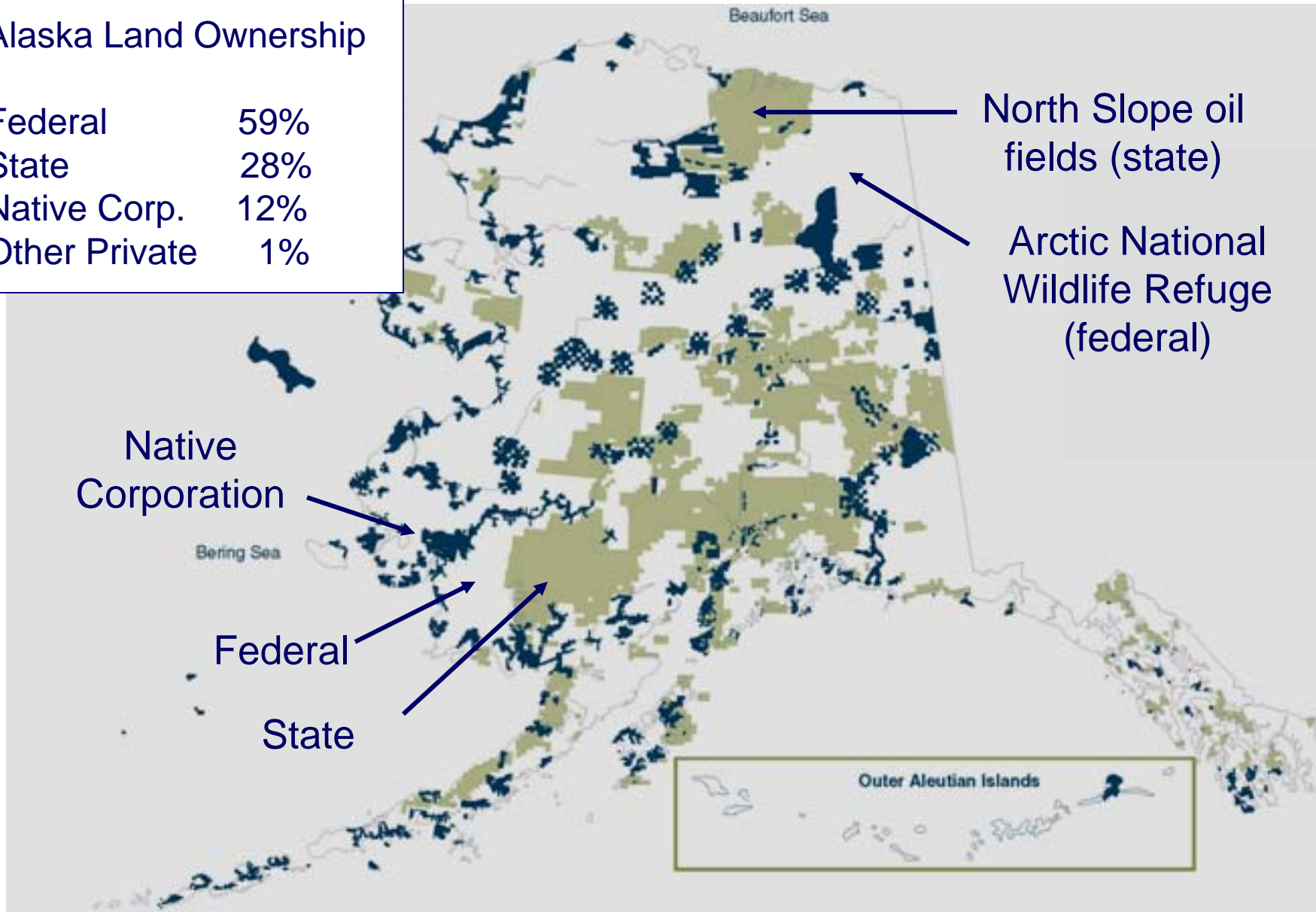
Many of the policies reflect the opinions and politics of the broader American public—which are very different from those of most Alaskans.



Land ownership is key to where and how oil and gas development occurs, how it is regulated, and who benefits.

Alaska Land Ownership

Federal	59%
State	28%
Native Corp.	12%
Other Private	1%



Most Alaskans strongly support both onshore and offshore oil and gas development.

- They believe Alaska's economic future depends on it
- They believe it can be done safely
- They perceive it as having minor effects on a vast wilderness
- They believe the federal government has unnecessarily and unfairly delayed Arctic oil development, harming Alaska
- Some Alaskans disagree—but they are a minority and have relatively little influence on State policies
 - Some Native groups
 - Environmentalists

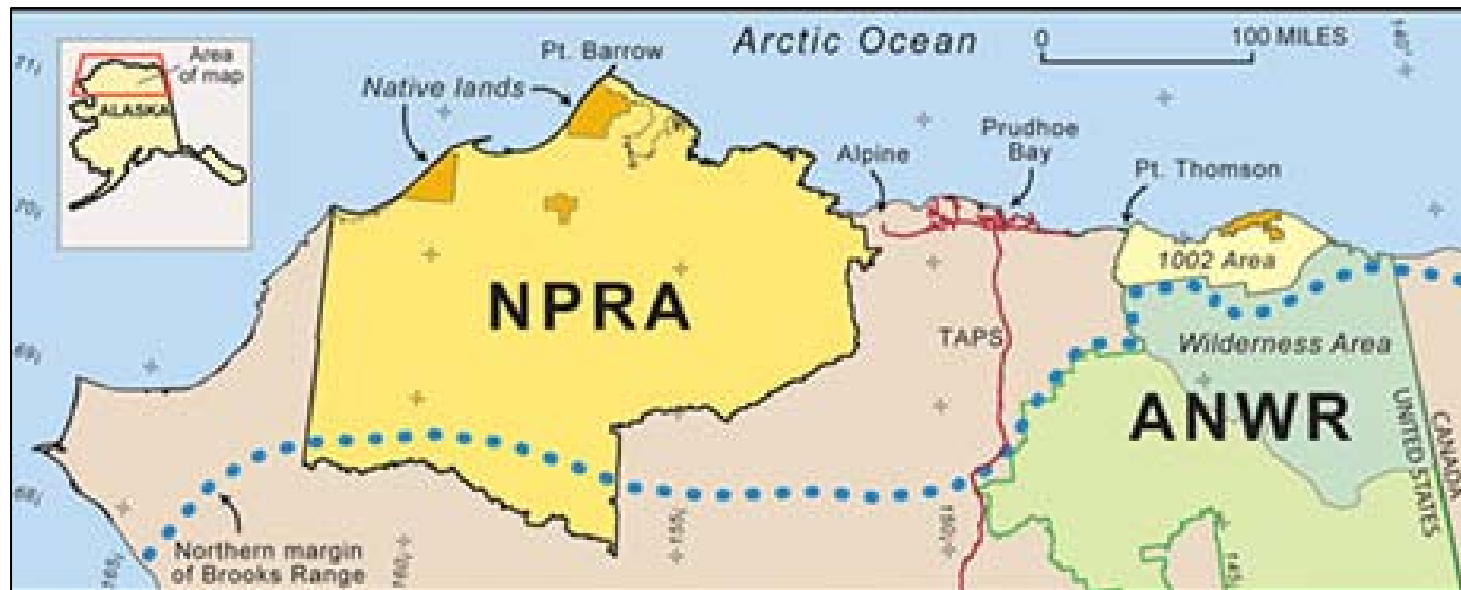
All significant oil development in Alaska has occurred on state lands.

Americans are relatively more ambivalent about Arctic oil and gas development.

- Compared with Alaskans, residents of other states are:
 - Less likely to think America's economic future depends on Arctic oil and gas development
 - More skeptical about safety assurances
 - More likely to perceive of the Arctic as wilderness to be protected

National opposition has stopped or slowed significant potential energy development on federal lands in Alaska onshore and offshore.

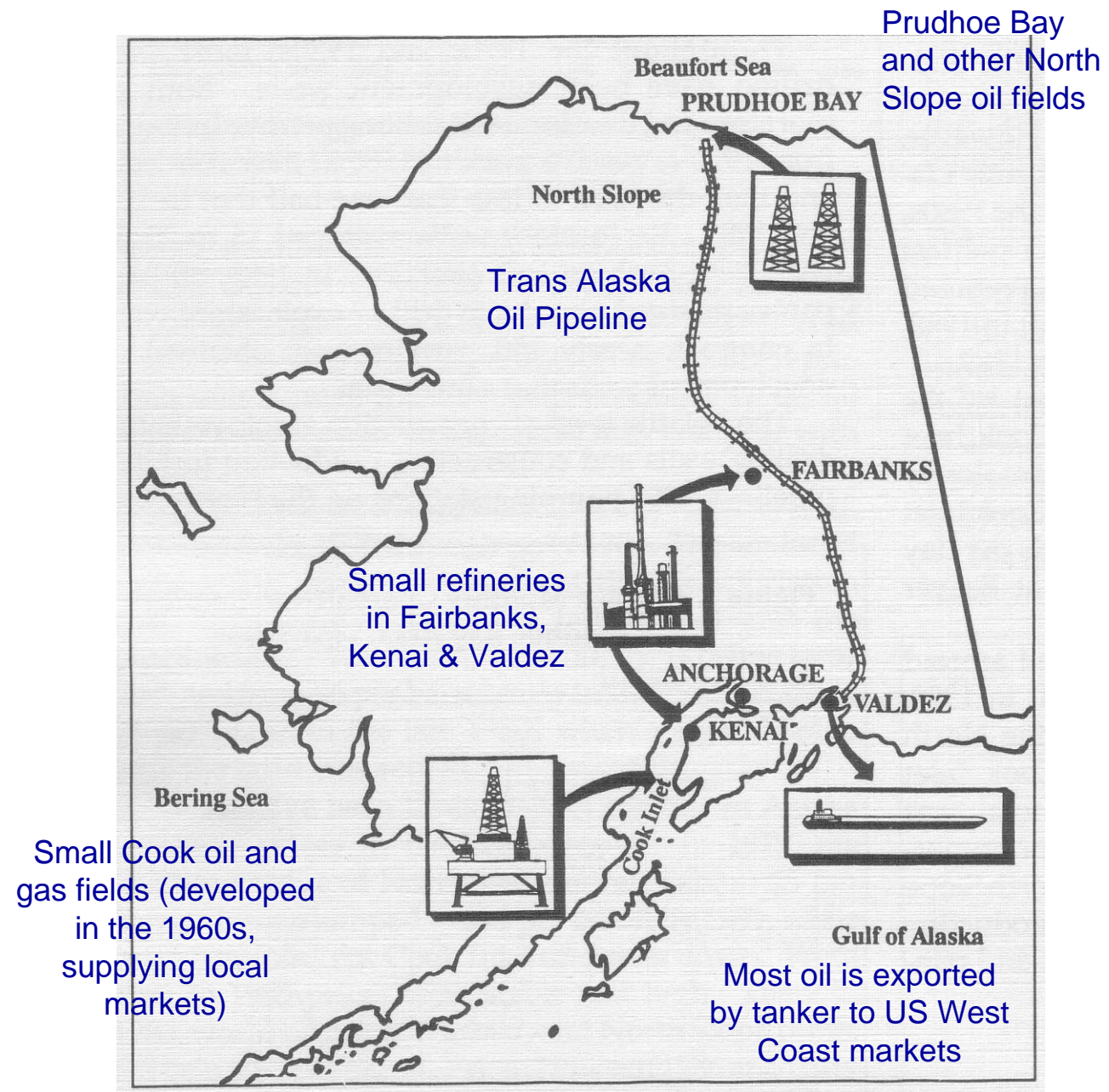
- No significant oil or gas development has yet occurred on federal lands in Alaska
- The Arctic National Wildlife Refuge (ANWR)has significant oil potential but the US Congress has refused to allow oil development
- The federal government has held lease sales in the Chukchi Sea but there have been repeated permitting delays



American energy politics are shifting,
with uncertain implications for future Arctic oil development

- Favoring arctic energy development
 - Oil price rise
 - Concerns about domestic energy security
 - Concerns about unemployment and the need for jobs
- Not favoring arctic energy development
 - Global climate change concerns
 - Deepwater Horizon incident and distrust of industry
 - Declining national political influence of Alaska









Alaska oil industry

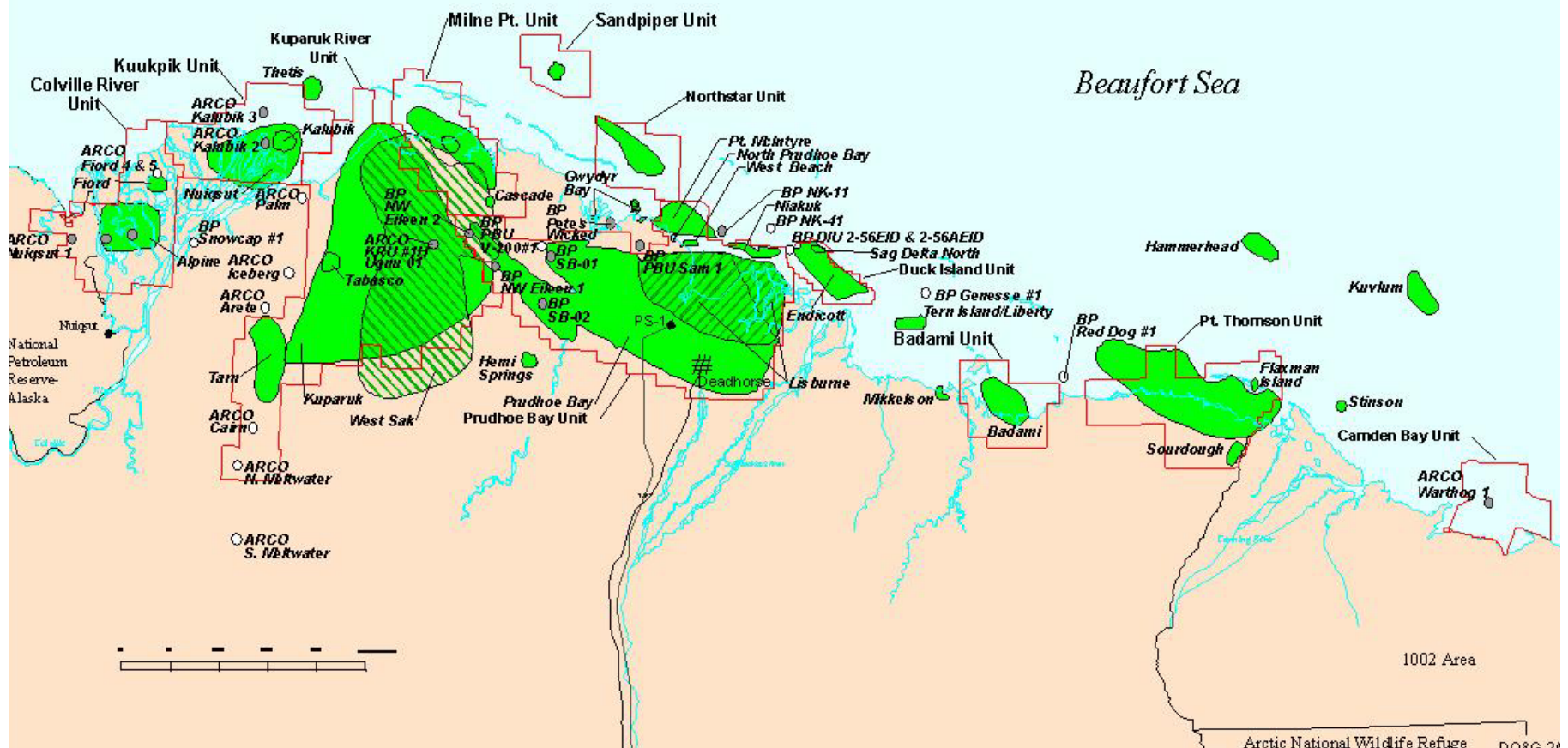


Alaska Arctic Oil Development Timeline






1959	Alaska statehood
1960's	State selection of North Slope lands of high oil potential
1960's	North Slope exploration
1968	Discovery of enormous Prudhoe Bay oil field
1974-77	Construction of Trans Alaska Pipeline System (TAPS) from Prudhoe Bay to Valdez
1978	Start of significant North Slope oil production
1980s-present	Continued exploration and development of new but smaller oil fields
1988	Peak North Slope oil production (2 million barrels/day)
1989	Exxon-Valdez oil spill
2011	North Slope oil production declines to 600 thousand barrels/day

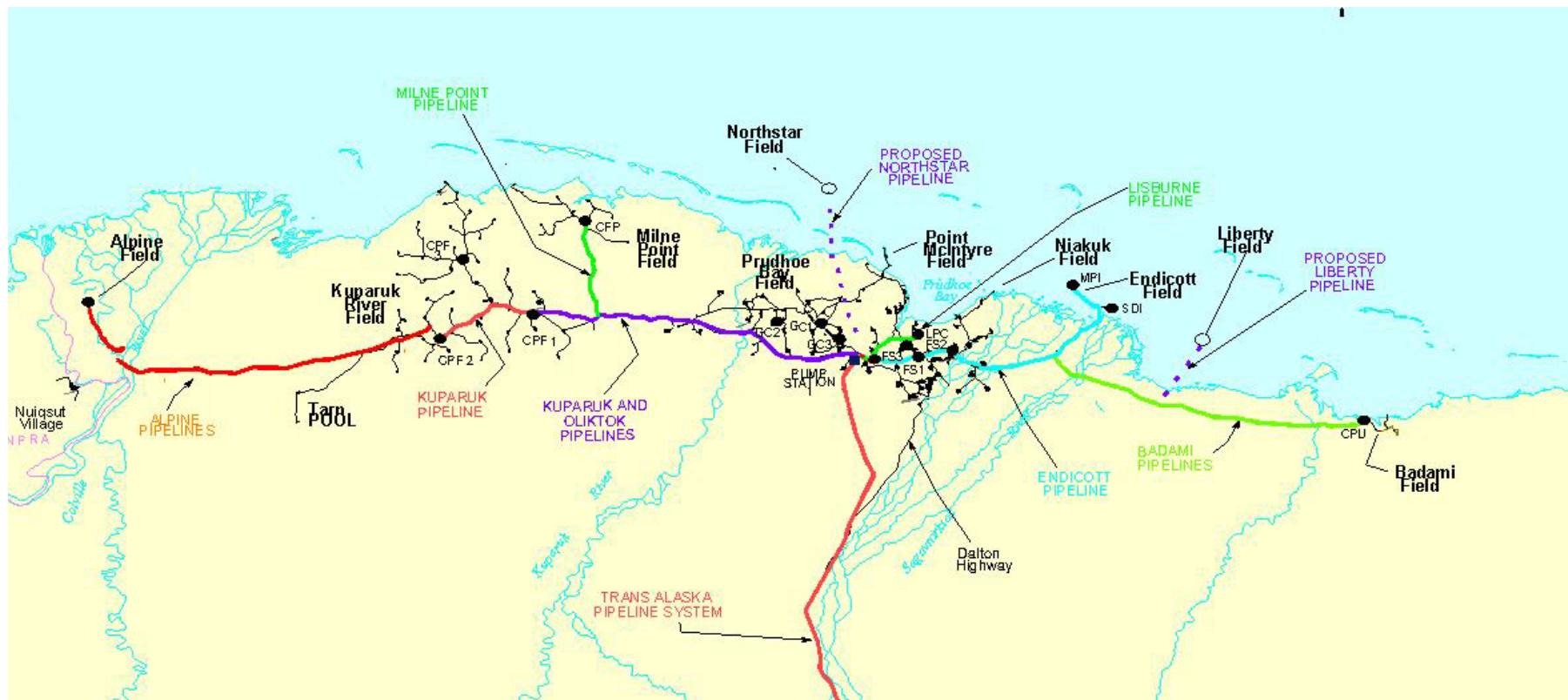
The Prudhoe Bay area and other North Slope oil fields and associated collection and processing facilities have become a huge industrial complex.

-  Unit Boundary
-  Oil Field / Accumulation
-  Gas Field / Accumulation
-  Selected Wells
-  Proposed / Active Wells
-  Platform
-  Pipelines
-  Production Facility



Pipelines connecting the North Slope oil fields . . .

-  Common carrier pipelines
-  Production facilities
-  Undeveloped fields
-  Roads and drillsites
-  Pump station



A huge industrial complex . . .



A huge industrial complex . . .



A huge industrial complex . . .



The Trans Alaska Pipeline System (TAPS) was constructed between 1974 and 1977 to bring North Slope oil to market. TAPS is operated by Alyeska, a company owned by the major North Slope oil companies. At the time, the pipeline was the largest private-sector construction project in history.



At the pipeline oil terminal in Valdez, the oil is loaded onto tankers for shipment to markets, mostly on the U.S. west coast.



Almost no one lives at the North Slope oil fields.
The thousands of oil field workers all commute from other parts of
Alaska and other states for shifts of 1-3 weeks.



Workers arriving for a shift at Prudhoe Bay

State of Alaska oil and gas leasing and regulation

- Most leases auctioned to highest bidder with 12.5 % fixed royalty based on wellhead value
- State also levies significant other taxes
 - Severance taxes based on wellhead value
 - Property taxes
 - Corporate income taxes
- Federal government also collects:
 - Corporate income taxes
 - Oil windfall profits taxes
- State and federal tax structures have changed over time
- Field unitization mandated and regulated by Alaska Oil and Gas Conservation Commission

Most of the Alaska North Slope oil and gas leases and facilities are owned and operated by three major international oil companies:
BP, Conoco-Phillips and ExxonMobil

ConocoPhillips operates the Kuparuk-area oil fields.

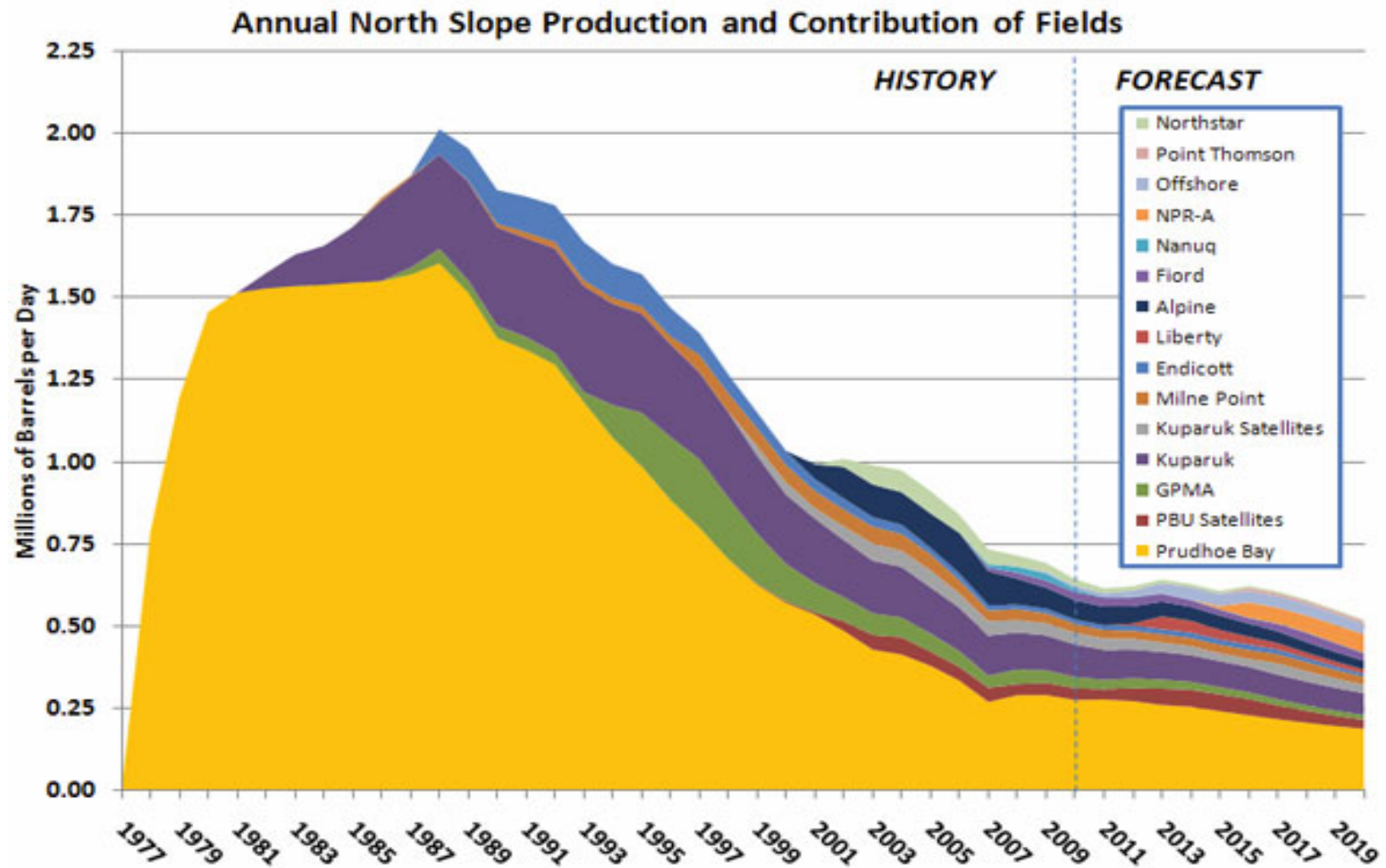


BP operates the Greater Prudhoe-area oil fields.

ExxonMobil owns a significant share of the Prudhoe Bay oil and gas resources--but doesn't operate any fields.

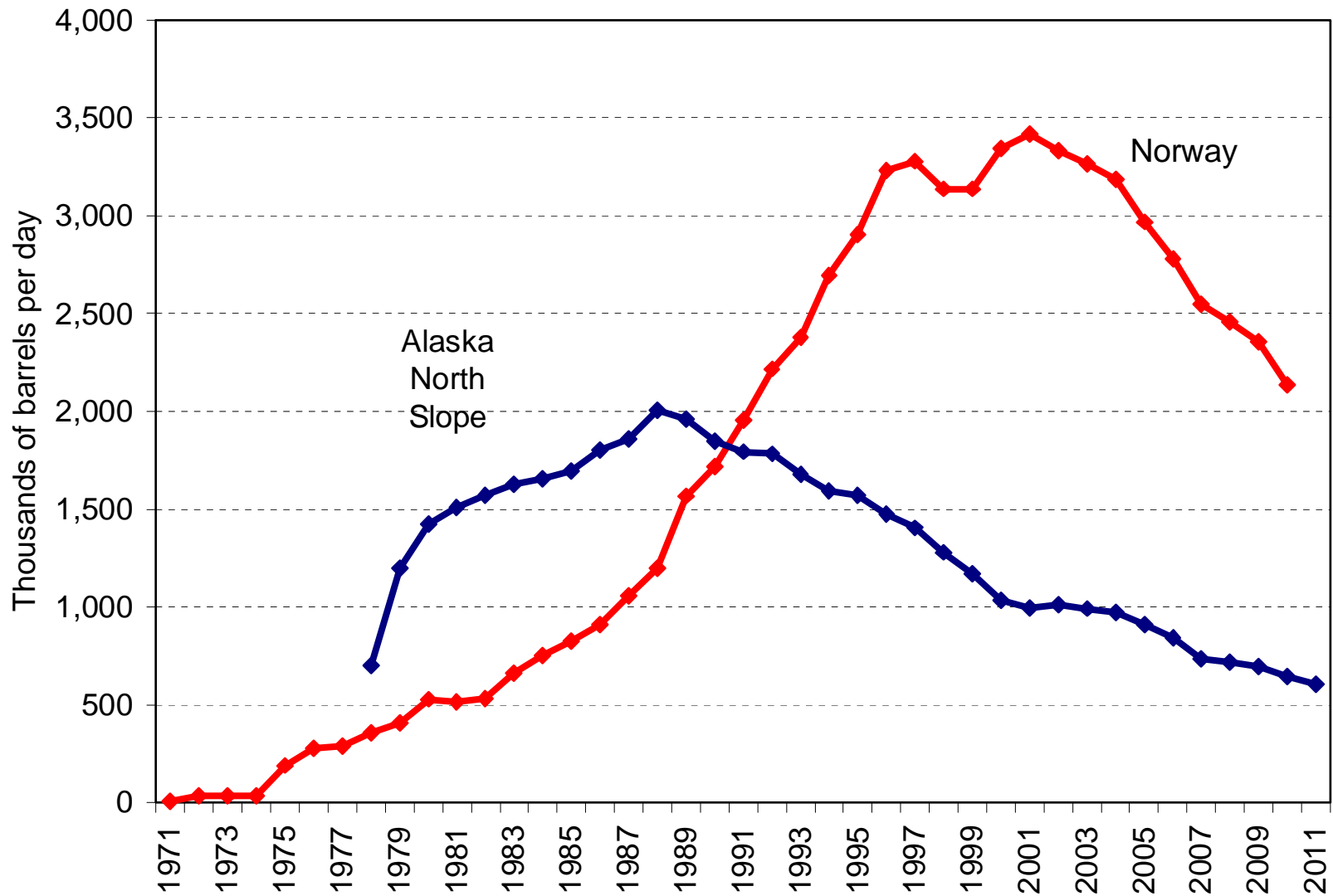
Oil is a non-renewable resource!

Since peaking in 1988, oil production from the huge Prudhoe Bay oil field has dramatically declined. Development of new smaller fields has slowed but not stopped the decline of total North Slope oil production.



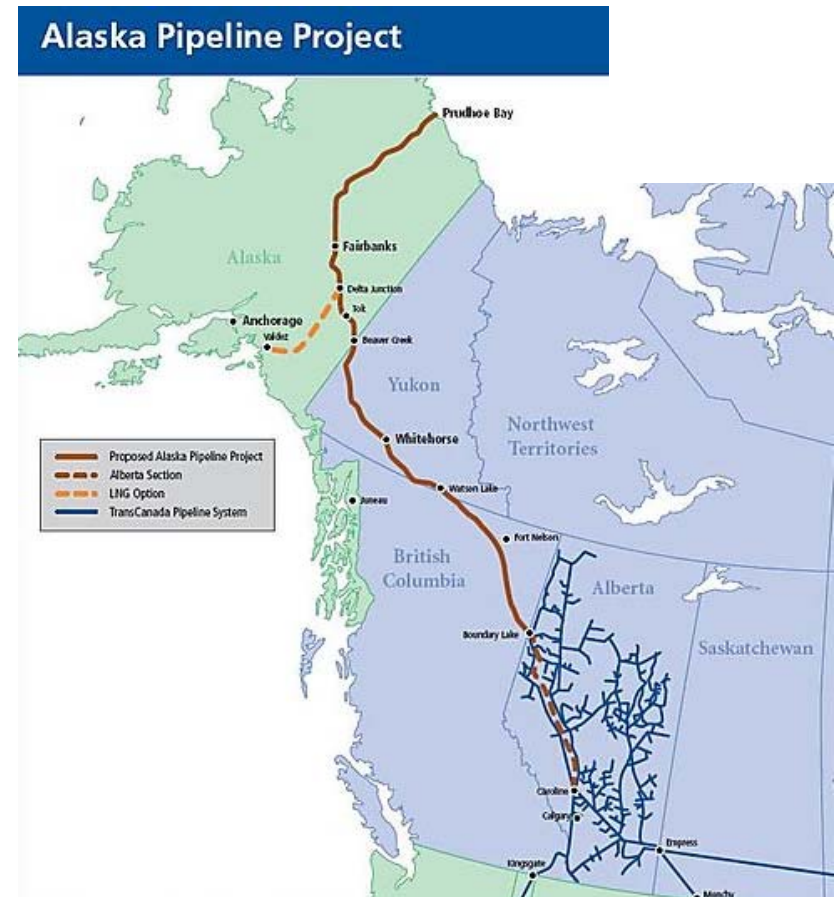
Oil Production: Alaska and Norway

Annual Oil Production, Alaska North Slope and Norway



Alaska's North Slope has enormous natural gas resources —but no way to get these resources to market

- Gas production is re-injected into oil fields to keep up reservoir pressure
- Thirty years of debate and proposals for gas pipelines
- Recent high expectations for construction of gas pipeline through Canada to US midwest
 - Midwest gas pipeline now unlikely due to low prices
- New hopes for pipeline to Valdez for LNG export to Asian markets
- Uncertainty if there is *any* way North Slope natural gas can be economically competitive in world markets



From Sarah Palin's speech to the Republican National Convention,
August 2008:

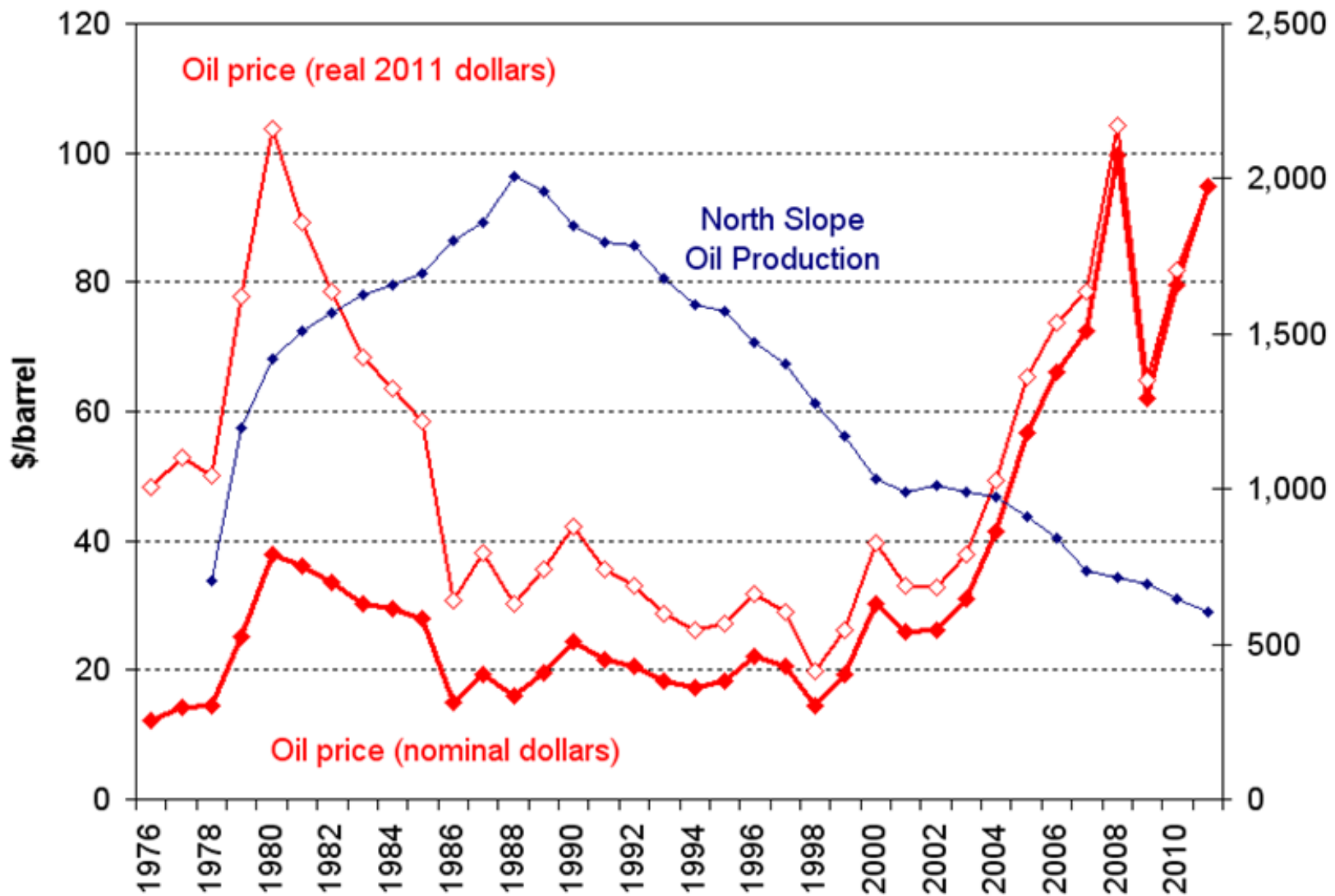
"I fought to bring about the largest private-sector infrastructure project in North American history. And when that deal was struck, we began a nearly \$40 billion natural gas pipeline to help lead America to energy independence."



But the \$40 billion pipeline had not actually begun—and it now seems unlikely.

Alaska has been extremely lucky in oil price trends since the start of North Slope oil production.

Average Crude Oil Price (West Texas Intermediate)



THE GOOD NEWS: DOES ZERO to SIXTY IN NOTHING FLAT

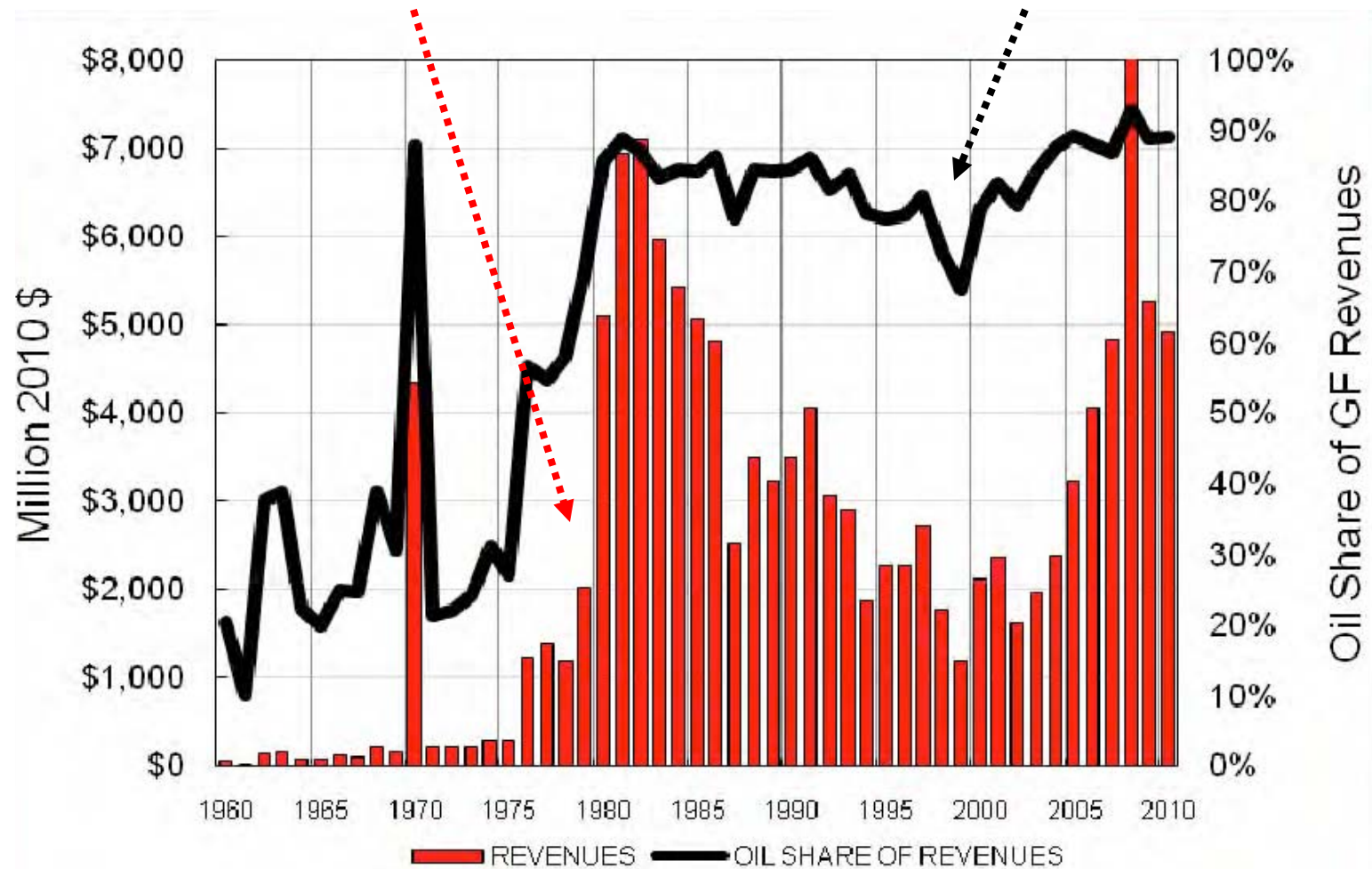


**THE BAD NEWS: SUPRISE! JUST as SPEEDY WHEN
IT UNEXPECTEDLY SHIFTS INTO REVERSE.**

Source: Political cartoon by longtime Alaska political cartoonist Peter Dunlap-Shohl, <http://frozengrin.blogspot.com/>.

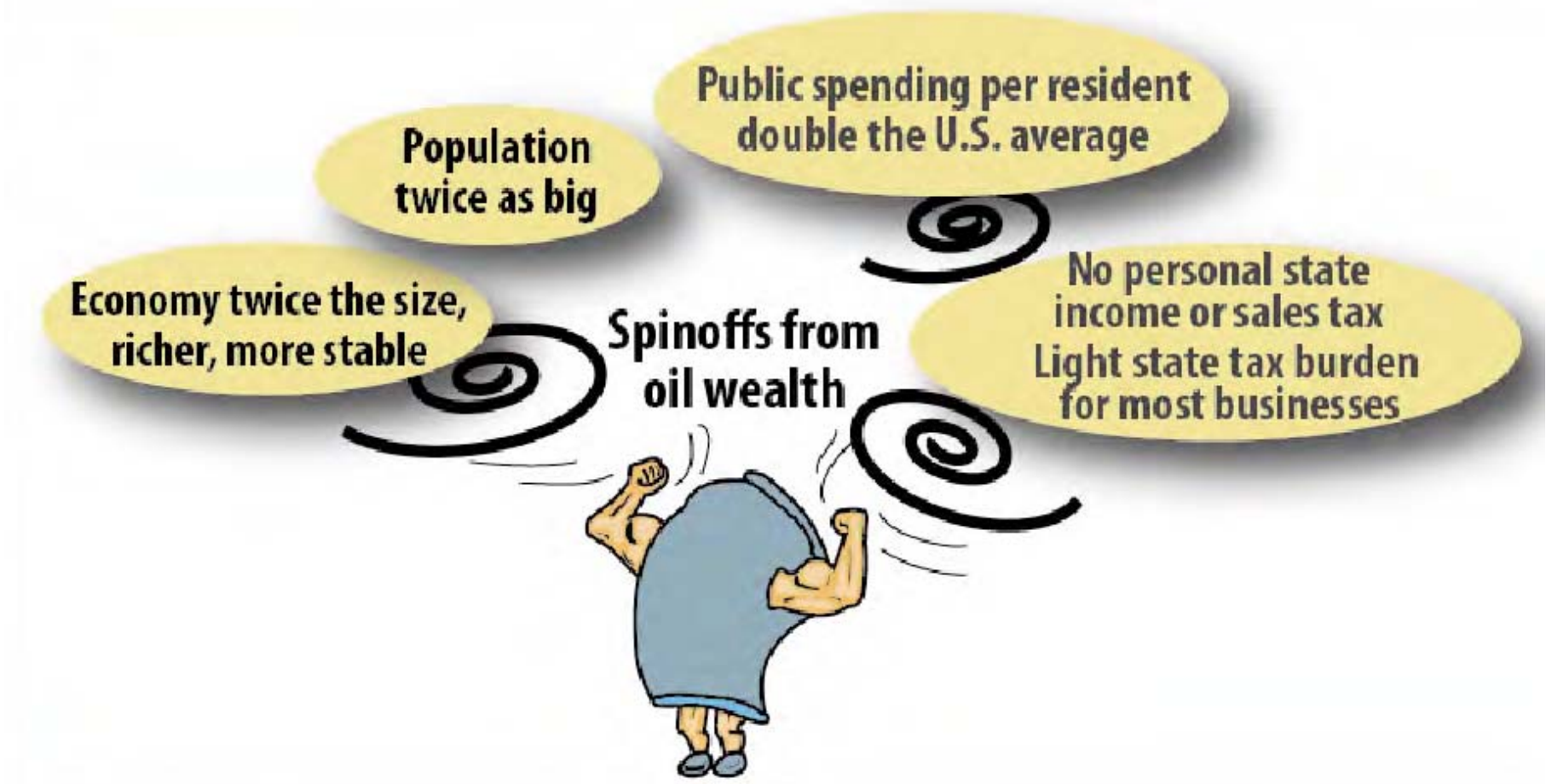
The State of Alaska has earned very high revenues from the oil industry and has become highly dependent on oil revenues as the source of more than 85% of Alaska state revenues.

Alaska **oil revenues** and oil revenues share of total revenues



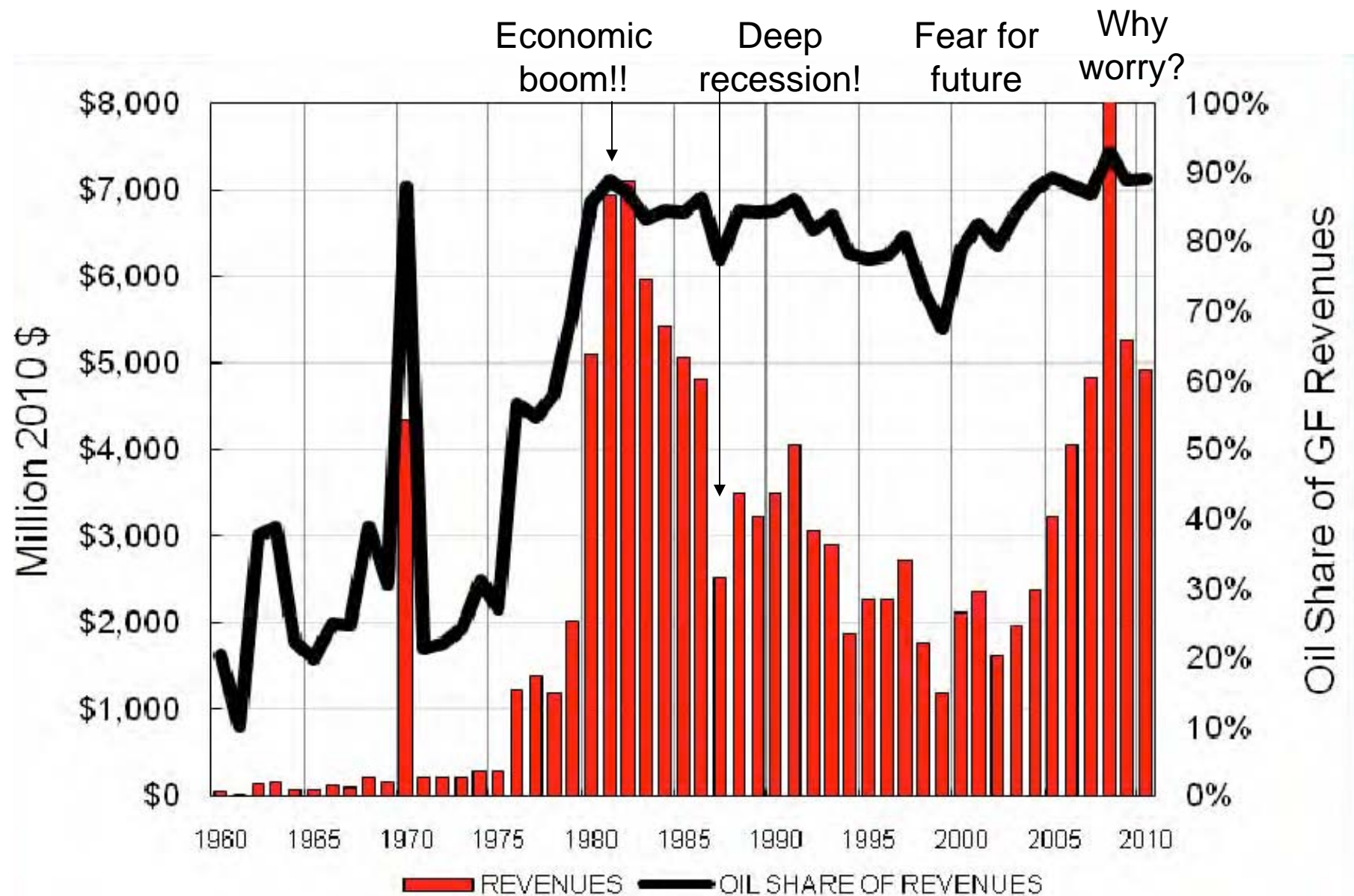
Source: Scott Goldsmith, "Alaska's Petroleum Industry: Transformative, But Is It Sustainable?" April, 2011 (Anchorage, Institute of Social and Economic Research, University of Alaska Anchorage).

Estimated effects of oil wealth on Alaska's economy



Source: Scott Goldsmith, "Alaska's Petroleum Industry: Transformative, But Is It Sustainable?" April, 2011 (Anchorage, Institute of Social and Economic Research, University of Alaska Anchorage).

Alaska's economy has become highly dependent on state oil revenues and state spending



The Alaska Permanent Fund

- Established in 1976 by an amendment to the Alaska Constitution
- "At least 25 percent of all mineral lease rentals, royalties, royalty sales proceeds, federal mineral revenue-sharing payments and bonuses received by the state be placed in a permanent fund, the principal of which may only be used for income-producing investments."
- Managed by an independent board
- Funds invested in a diversified portfolio of public and private assets. Not invested in projects that are primarily focused on economic or social development.
- The Legislature may spend only realized earnings of the Fund. The principle may not be spent.

How the Permanent Fund is invested

fund market value

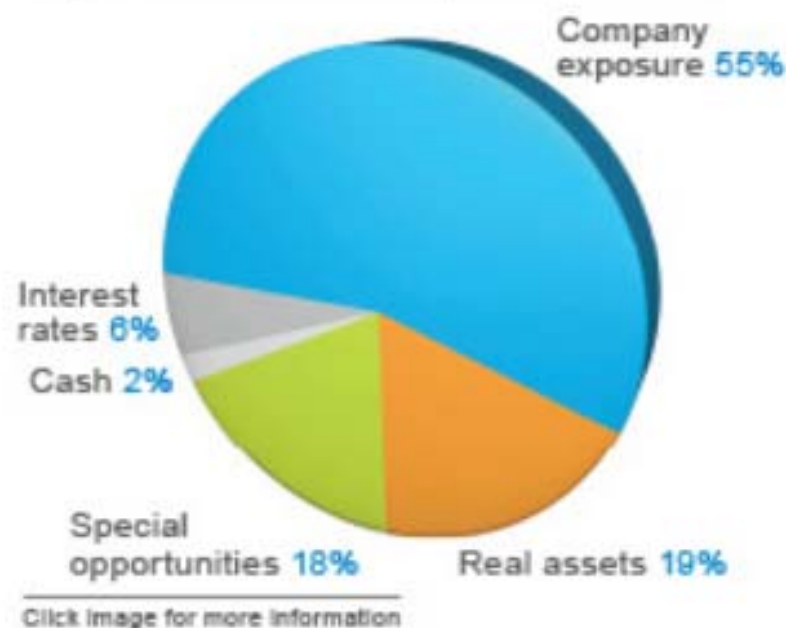
unaudited, as of Jan 20, 2012

US Bonds	\$6,085,300,000
US Stocks	\$6,327,300,000
Non US Stocks	\$7,403,100,000
Global Stocks	\$4,737,500,000
Non US Bonds	\$1,370,900,000
Real Estate	\$4,163,600,000
Cash	\$855,400,000
Alternatives	\$5,892,500,000
Real Return/External CIO	\$2,835,500,000

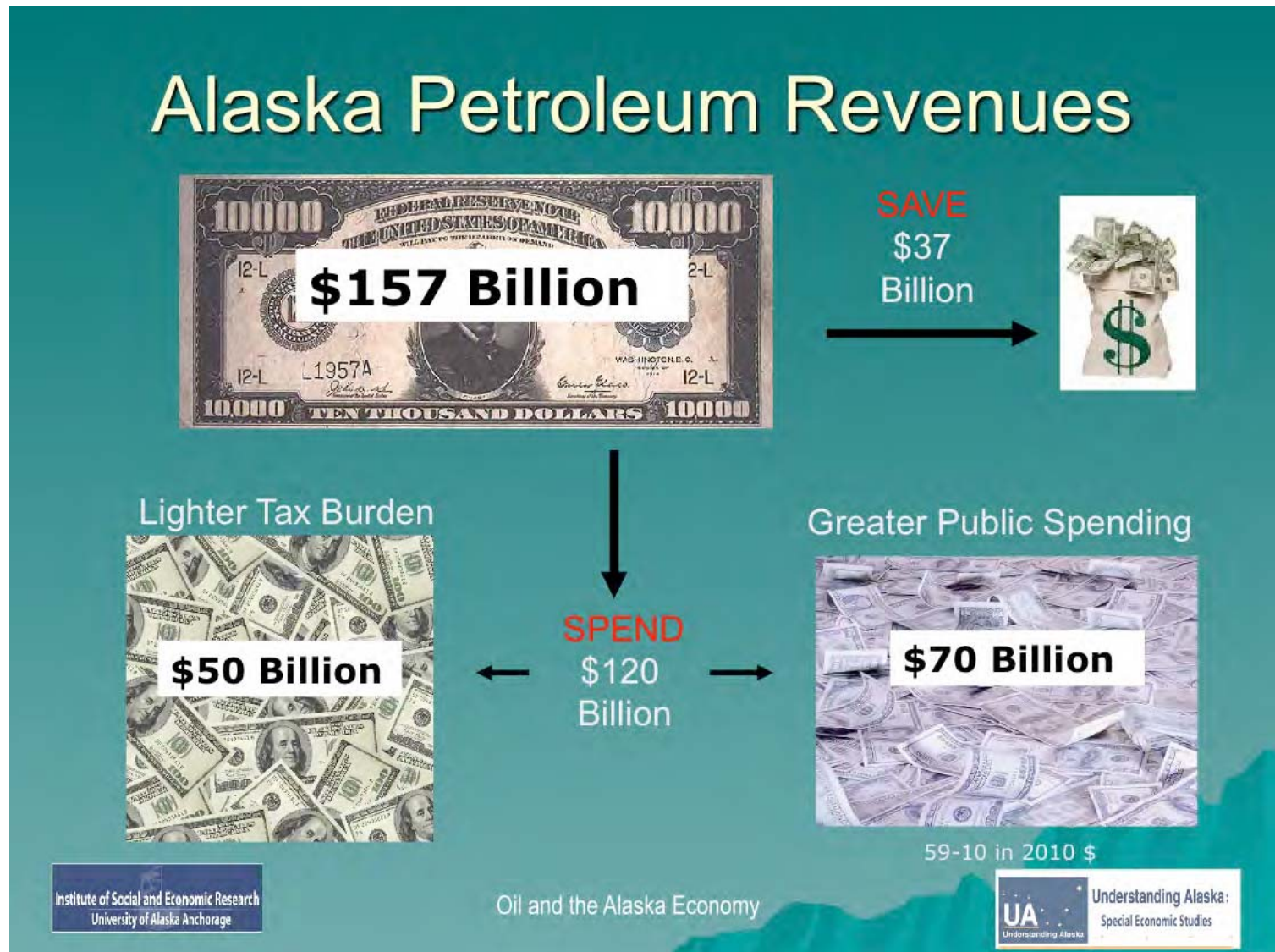
TOTAL	\$39,671,100,000
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target asset allocation

by economic condition, 2011



How Alaska has used its oil revenues



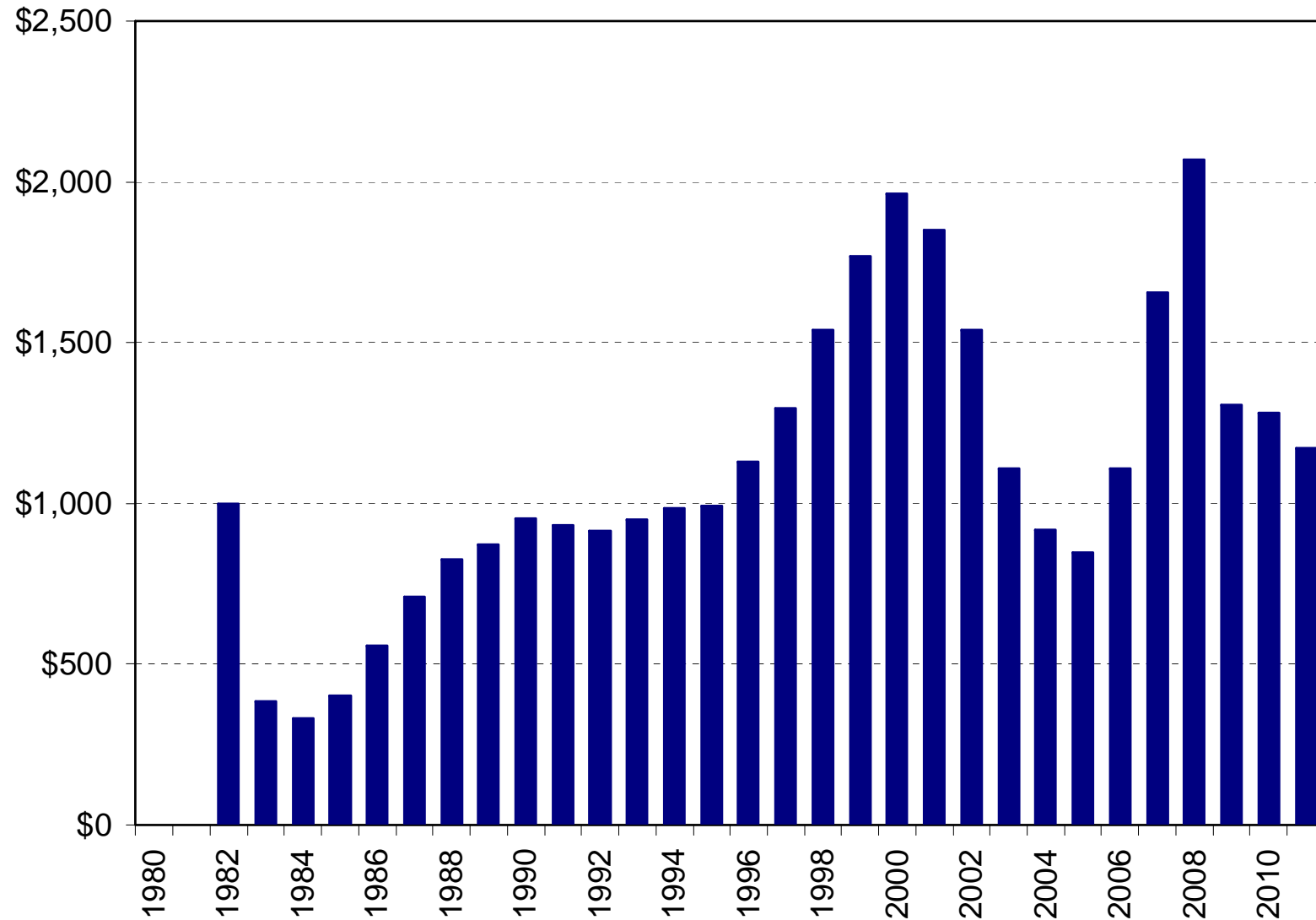
Source: Scott Goldsmith, "Alaska's Petroleum Industry: Transformative, But Is It Sustainable?" April, 2011 (Anchorage, Institute of Social and Economic Research, University of Alaska Anchorage).

Alaska Permanent Fund Dividend Program

- Since 1981, each year one-half of the interest earnings of the Alaska Permanent Fund are distributed equally among all Alaskans as “permanent fund dividends”
 - The remaining earnings are reinvested in the fund as “inflation-proofing”
- The dividend program is extremely popular
- To date, dividends represent the only use of the Alaska Permanent Fund

The size of the dividends reflects the size of the Permanent Fund, investment returns, and the growth of the Alaska population

Alaska Permanent Fund Dividend Annual Payments





Alaska Department of Revenue Permanent Fund Dividend Division

☒ PFD ☐ STATE OF ALASKA

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[State of Alaska](#) > [Department of Revenue](#) > [Permanent Fund Dividend Division](#)

2012 PFD Application Period ends 11:59 pm, Saturday, *March 31st*!

Apply Online today!!

258,250

Alaskans already did!

To apply online
[Click Here](#)

[myPFDInfo](#)

[Check status\(current and prior years\), review payments, garnishments, deductions and print 1099's](#)

Payment Schedule

- 2011 (and prior years) dividend applications that are in "Eligible-Not Paid" status on January 13th will be distributed January 19th.
- 2011 (and prior years) dividend applications that are in "Eligible-Not Paid" status on February 10th will be distributed February 16th.
- 2012 (current year) dividend applications that are in eligible status on September 21st will be distributed October 4, 2012.

Electronic 1099's are available

An electronic version of the 2011 1099-MISC income tax statement is now available for print or storage.

[\(Instruction on viewing your 1099-MISC\)](#)

Update - Garnishment Processing

- [Friday, December 23rd Update](#)

October 6 Stop Pay Information

[Find a paper application distribution site](#)

Access your 2012 electronic application to...

- [Attach an E-Signature](#)
- [Reprint a submitted application](#)
- [Reprint a Signature Page](#)
- [Add or change Charitable Pledges](#)

Programs

Pick.Click.Give.



The Alaska Permanent Fund Dividend Program Arguments For and Against

- For
 - It's fair—*everyone* shares equally
 - People get to spend the money on their needs
 - “Children get new shoes”
 - The money belongs to the people
 - Huge annual economic stimulus
 - Gives people a direct stake in resource development
- Against
 - Reduces funding for needed public activities
 - Gives away money to rich people
 - Attracts large poor families to Alaska
 - More economic stimulus from equivalent government spending

The North Slope Borough

- Prior to oil development, the eight isolated Inupiaq Eskimo villages of Alaska's North Slope were among the poorest communities of Alaska and America
- These communities were almost entirely dependent on traditional marine mammal subsistence activities
- Local residents worried that oil development might threaten their traditional way of life, and that they would derive little benefit
- They were able to derive significant benefits from oil development by forming a "Borough"—a form of local government which has authority to levy property taxes.



North Slope Borough Villages



The North Slope Borough is the “world’s largest municipality”



The Borough has collected very large property taxes from the North Slope oil industry.

- Revenues used to:
 - To build large-scale public works capital projects
 - To provide wide-spread public services
 - Create near full employment for Borough residents (in Borough government and construction projects)
 - To support and strengthen traditional Native activities
 - To support science on issues of concern to Borough residents (e.g. whale populations)
- The state challenged Borough tax collections in court, but failed
- The Borough has *created a local economy highly dependent on oil revenues*
 - Not an economy which is sustainable after oil
- Most Borough residents support onshore oil development but oppose offshore development which might threaten whaling
- Few Borough residents work in the oil industry

Anaktuvuk Pass, North Slope Borough, 1983





Anaktuvuk Pass, North
Slope Borough, 1983



Barrow High School, 1983

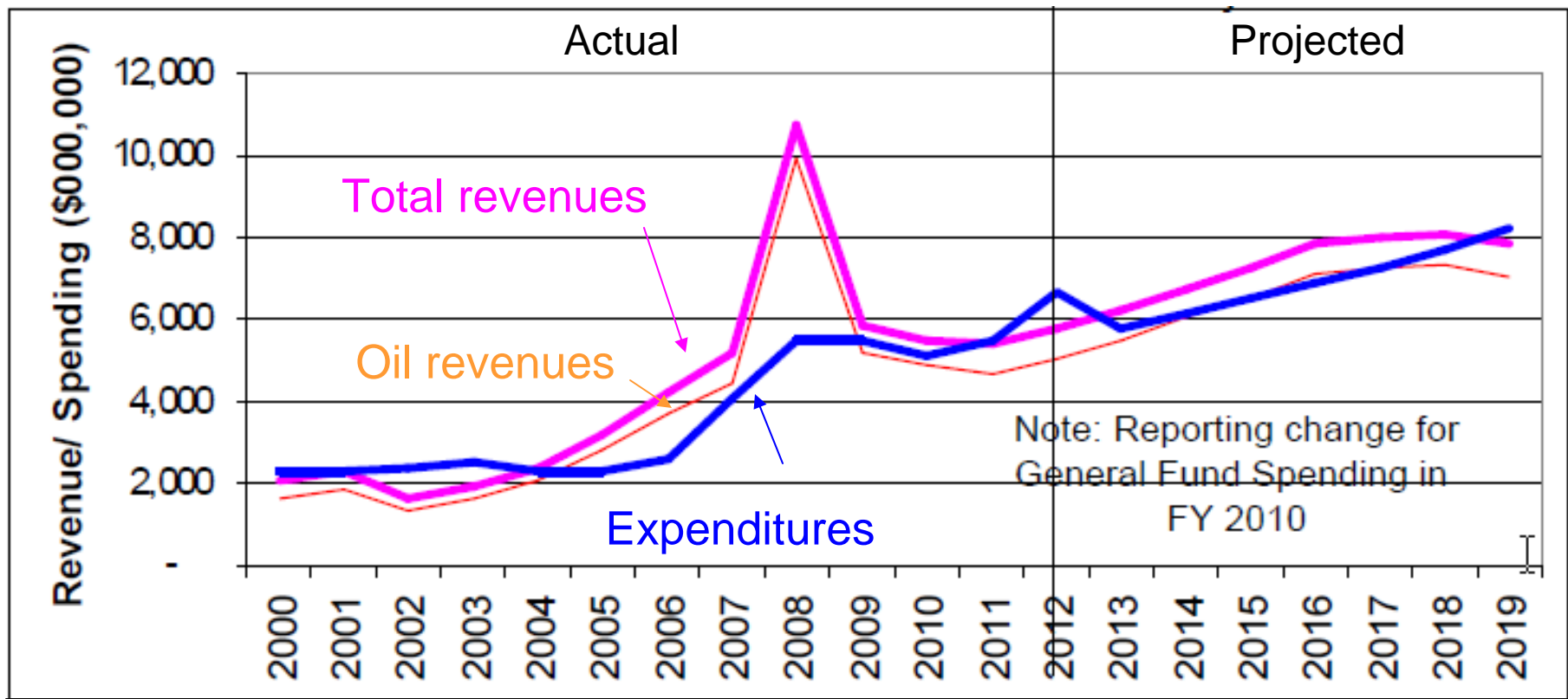


Barrow, North Slope Borough, 1983



As oil prices and revenues have increased since 2002,
state spending has also increased.

Alaska General Fund Revenues and Expenditures



Source, Dan Dickinson, CPA, "ACES High or Low? Numbers behind the Current Production Tax Debate,"
Presentation to the Anchorage Chapter, International Association of Energy Economists, April 11, 2011,
<http://www.anchorageiaee.org/pastpresentations.htm>.

With declining oil production and rising expenditures,
what is Alaska's fiscal plan for the future?



THE ALASKA FISCAL PLAN, AS WE KNOW IT.

Source: Political cartoon by longtime Alaska political cartoonist Peter Dunlap-Shohl, <http://frozengrin.blogspot.com/>.

Why
worry?

Forecast: Oil flow will be down but revenues up

ALASKA: Higher prices will bolster the state's coffers, revenue department reports.

By **KRISTEN NELSON**
Petroleum News

The volume of North Slope crude oil production may be going down but prices are going up and that means higher state oil revenues.

We always seem to escape having to think about the question.



Source: Political cartoon by longtime Alaska political cartoonist Peter Dunlap-Shohl, <http://frozengrin.blogspot.com/>.

A long-running debate about oil taxes is intensifying in Alaska.

- Some, including many in the oil industry and the business community, argue that Alaska's highly progressive oil taxes are uncompetitive at high oil prices and must be reduced to attract new exploration and investment to reverse the decline in oil production.
- Others argue that reducing taxes would be a needless giveaway to of billions of dollars to oil companies and would not affect investment.

\$1.50

Final Edition

Anchorage Daily News

Sunday, December 18, 2011 BREAKING NEWS AT ADN.COM Alaska's Newspaper

Oil tax debate sure to dominate 2012 legislative session

GIVEAWAY? Gov. Parnell calls reducing oil levies his leading economic priority.

By SEAN COCKERHAM
scockerham@adn.com

The Alaska Senate is about to enter a bruising debate over whether to slash how much Alaska taxes oil companies, with Senate President Gary Stevens calling the governor's tax cut plan a giveaway that could cost the state billions with little in return.

"We have been asking the administration (of Gov. Sean Parnell) for months to give us some proof this will do Alaska some good," Stevens said last week.

It's a debate likely to dominate the 90-day session of the Alaska Legislature that begins in Juneau on Jan. 17. The state House has already passed the governor's bill so the pressure from the state chamber of commerce and other groups who want to lower the tax is bearing on the members of the Senate who so far have stonewalled Parnell.

Parnell calls his bill to lower oil taxes the top economic priority of his administration and said he will keep pressing.

"We need a game-changer to turn declining production into increasing production," Parnell said in a recent speech. "And not just any old oil tax change will do; the changes have got to be meaningful, tweaks are not enough to make us competitive."

Proponents of cutting the oil tax are touting recent statements of some state senators about changing the system. But changes under discussion in the Senate are much more modest than what Parnell has been talking about.

"Many senators have concerns about the bill. Real and important questions. If it does make it out of the Senate it will only be with changes, major changes I suspect," Stevens said last week to the policy group Commonwealth North.

Stevens spoke of near record employment numbers on the North Slope and a recent presentation to legislators by international oil companies.

See Page A-7. OIL TAX



Stevens

An example of the arguments for reducing oil taxes



Alaska Governor's argument for changing Alaska's oil tax system

Alaska needs policies that result in an increase in oil production and offer competitive advantages to attract investment.

When oil is in the \$60-\$80 per barrel range, our oil tax system is competitive. When oil is \$100 per barrel and above. . . we are an outlier. . . We have the highest tax rates in North America at high prices.

As a result, we are losing investment to North Dakota, Louisiana, Texas, Wyoming, Alberta, and around the world. Companies invest capital where they are likely to produce with the least expense and greatest profit.

Our current system of taxation must be improved – we are missing out on opportunities to attract energy companies to Alaska; they are CHOOSING to go elsewhere.

An example of the arguments against reducing oil taxes

Big Oil Bailout a lesson from history book

"Those who don't know history are destined to repeat it."

— Edmund Burke

In 2006, the FBI raided the offices of legislators. Lawmakers were prosecuted for selling their votes to help pass Gov. Frank Murkowski's Big Oil Bailout, the Petroleum Profits Tax.

The PPT tied 85 percent of state revenue to the efficiencies of the oil producers while simultaneously incentivizing them to be inefficient; the higher their costs, the more they could write off, the lower their taxes, the less money for Alaska. Great deal for the producers at the expense of Alaskans.

And now, just five years later, Gov. Sean Parnell is trying to pass his own Big Oil Bailout, known as HB110. History, it seems, is repeating itself.

Bob Bartlett was prophetic. As Alaska's congressional delegate, he addressed

SHANNYN
MOORE

COMMENT



up fake legislative report cards. A nonpartisan Legislative Research Report showed that lawmakers who received F and D grades voted virtually identically to those who got A's and B's. The difference? Those who supported the governor's bill to give \$2 billion a year to the oil companies with no strings attached got A's, while those who didn't got D's or F's.

This past week, Senate President Gary Stevens — one of the legislators with the au-

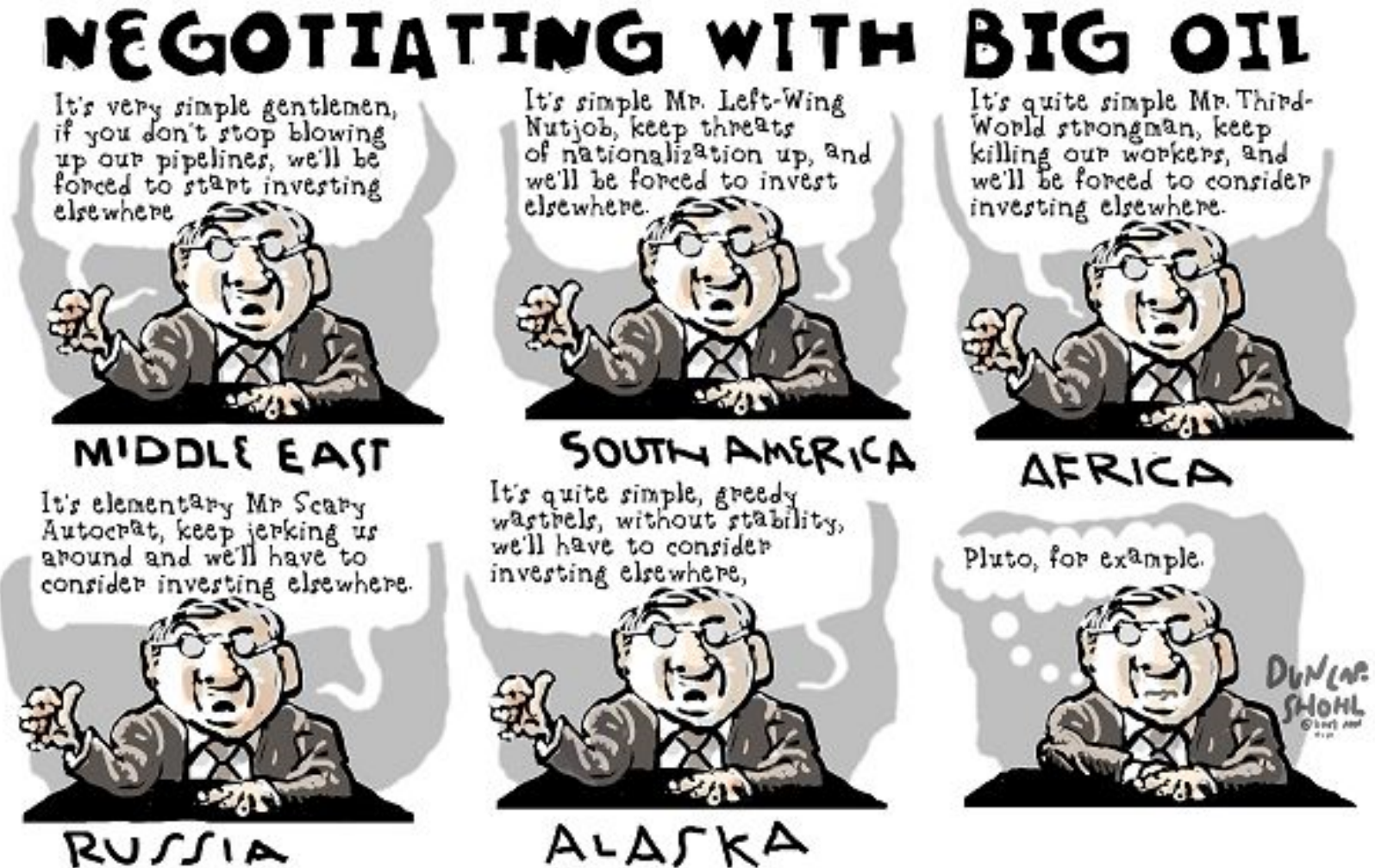
Those who supported the governor's bill to give \$2 billion a year to the oil companies with no strings attached got A's, while those who didn't got D's or F's.

gation.

Stevens brought up Bill Allen and the Veco scandal that led to the former speaker of the House, chair of the House Oil & Gas Committee, Senate Rules chair and others being convicted of corruption for trying to sell out Alaska to the oil companies.

Stevens noted the oil companies have an obligation to make as much money for their shareholders as possible. But the Legislature has a constitutional obligation to maximize

Many Alaskans are highly skeptical of the argument that international oil companies have better options elsewhere and won't invest in Alaska unless taxes are lower.



Source: Political cartoon by longtime Alaska political cartoonist Peter Dunlap-Shohl, <http://frozengrin.blogspot.com/>.

Recently, some Alaskans are pointing to Norway as an example of the policies that Alaska should be following:



Source: Slide presentation by a group of Alaskan business leaders and legislators who visited Norway, Summer 2011, on a trip arranged by the Institute of the North.

The delegation's presentation reflects what they perceived as significant contrasts between the Alaska and Norwegian "Models" and experience with energy development.

SUMMARY:

The Norway Model:

- **SAVE**
- **INVEST**
 - Co-Investment in Oil and Gas for Export
 - Invest in Renewable Energy for Domestic Use
- **PROSPER**

Source: Slide presentation by a group of Alaskan business leaders and legislators who visited Norway, Summer 2011, on a trip arranged by the Institute of the North.

60+ Oil and Gas Companies Invest in Norway



Source: Slide presentation by a group of Alaskan business leaders and legislators who visited Norway, Summer 2011, on a trip arranged by the Institute of the North.

What Private Companies Like: **Investment Incentives:**

- **Reduced Risk** (2D seismic provided by Norway)
- **Reduced Up-Front Costs** (no \$ bids)
- **Shared Risk/CO-INVESTMENT** (SDFI)
- **Alignment** between Norway and industry
- **Tax Stability:** 78%; non-progressive. Rapid deductibility of development costs
- **Predictability:** Quick permitting, consistent environmental and safety rules, limited judicial interference.

Source: Slide presentation by a group of Alaskan business leaders and legislators who visited Norway, Summer 2011, on a trip arranged by the Institute of the North.

Most significant lesson learned

- **Alignment of interests between the State and producers resulting from SDFI (State Direct Financial Interest) creates significant benefits**
 - As an investor, State gains an understanding of investment dynamics
 - As an investor, State has full access to data and better understands field dynamics and development
 - As an investor, State participates directly and has the ability to help drive development decisions
 - Increases State understanding, reduces State suspicion
- **Norway once used bonus and royalty system, but transitioned away from it because they concluded it impaired investment decisions**

Source: Slide presentation by a group of Alaskan business leaders and legislators who visited Norway, Summer 2011, on a trip arranged by the Institute of the North.

Lessons from Alaska's experience

- Some lessons from Alaska's experience may be relevant for other arctic regions.
- But not all lessons apply everywhere: arctic regions differ in important ways:
 - Oil and gas resources
 - Climate & environment
 - Infrastructure
 - Political system
 - Homogeneity of society

1. Under certain conditions, private industry can solve amazing technological challenges

- Economic opportunity and incentive
- Regulatory clarity and certainty
- Technology responds to needs and economic opportunities
- Solutions aren't invented until they are needed and can bring profits.



2. Arctic energy development can be environmentally responsible.

- A political commitment that environmental protection comes first
- Rigorous standards, regulations and enforcement
- People in the industry do care.



3. Just because an environmental disaster hasn't happened yet doesn't mean that it can't or won't

- The biggest challenge is human error
- Success breeds complacency
- When a development is new:
 - Facilities are new
 - Everyone is watching
 - Safety is the highest priority
 - The future depends on it
- Decades later:
 - Facilities are old and require expensive upgrades
 - Not everyone is watching
 - Profits may be low
 - The future may be elsewhere



Beware hubris!

4. Local and indigenous people can have significant influence over and derive significant economic benefits and arctic energy development
- If there is a political will and commitment to allow them to do so
 - If they can exercise political power and legal rights
 - Potential benefits:
 - Industry jobs
 - Local government revenues and public services
 - Infrastructure
 - Energy
 - Support for science
 - Support for traditional activities



North Slope Borough

5. Non-sustainable energy development can provide sustainable benefits.

- By saving oil wealth
- By investing in diversified assets outside the north
- By investing in sustainable northern development
 - (not always easy or possible)

6. Non-sustainable energy development can be easily wasted

- Save!
- Recognize that transfers:
 - Are not investments in economic development
 - May discourage real economic development

7. Citizens can benefit directly from arctic energy development
by direct distribution of oil wealth

- But this raises real questions:
 - Whose wealth is it?
 - Should the wealth go directly to the people or to governments to use for the people?
 - What about the rights of future generations to the wealth?

8. In dealing with the oil industry, be informed!

- Oil companies are among the most powerful and sophisticated companies in the world
- They can be excellent partners
- But their interests are not necessarily the same as those of Arctic regions
- It is critical to understand clearly:
 - How they think
 - What affects their choices
 - Their opportunities and alternatives
- Invest in smart people for public agencies and independent knowledge
- One way to become informed is through partnerships and investment in the industry

9. Understand and beware the resource curse.

- Too often, resource-rich countries are “cursed”
 - Economic distortions
 - Misallocation of investment
 - Non-diversified economies
 - Corruption
- Understand why these problems happen
- Beware the influence of oil money in politics

10. Beware of false illusions oil wealth can create

- You are rich because you deserve to be rich
- You are rich because you are smart
- You'll always be rich
- You're still not rich enough and you deserve more
- *It's easy to confuse being lucky with being smart or deserving*