

## RECENT CONFLICTS IN WILDERNESS AREAS: ALASKA

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A WILDERNESS AREA is an uncultivated and uninhabited region. Alaska, the 49th state to join the USA, in 1959, covers an area of 1,522,596 km<sup>2</sup>, which is about six times larger than the UK. It has some of the world's large great wilderness areas in its National Wildlife Refuges and National Park Preserves (see Figure 1). It also includes rich natural resources of minerals, forests, animals, fish and aquatic organisms and spectacular volcanic and glaciated scenery. Figure 2 shows Alaska's history.

### Recent conflicts

#### Oil extraction and the terrestrial environment

The USA's high demand for oil and its wish not to be dependent on foreign imports has driven the exploitation of reserves in Alaska.

Initially there was opposition by environmentalists to the extraction of petroleum from the North Slope of Alaska, fearing that the fragile tundra ecosystem would be harmed (see Figure 3).

- Only the top few centimetres of ground, the active layer, lying above the permafrost, or permanently frozen ground, thaws in the summer so productivity is low and few plants grow, such as Arctic cotton grass and blueberries.
- South of the Arctic Circle, where summers are longer and warmer, the tundra gives way to the taiga or boreal forest consisting of black and white spruce, aspen, willows and birch trees.
- Supported by the tundra and taiga vegetation are insects, such as mosquitoes; herbivores such as the

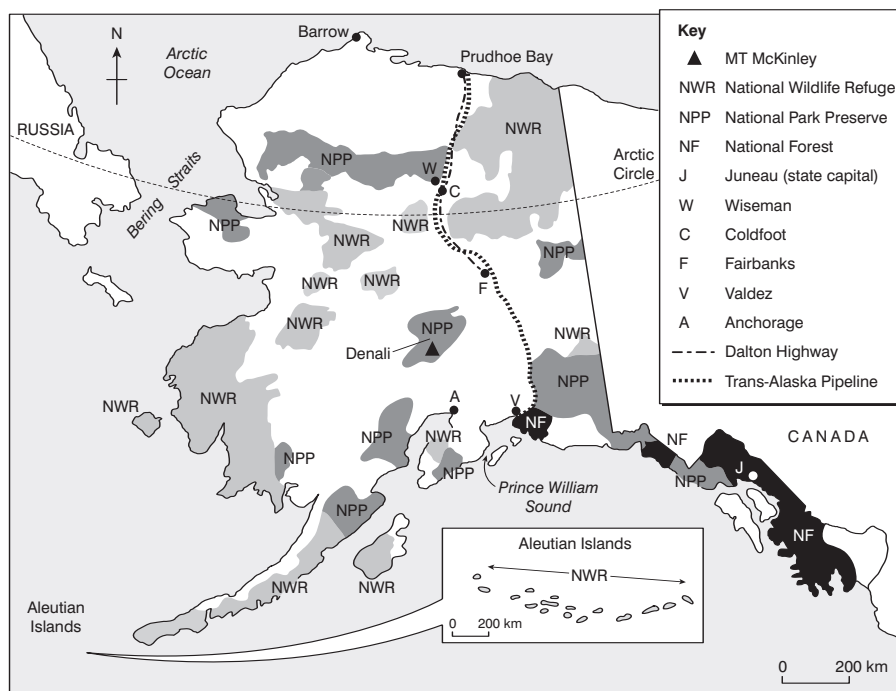


Figure 1: Alaska's wilderness areas

- 'Alaska' is derived from an Aleut word meaning 'great land'. The Aleuts are one group of native people who crossed from Siberia about 25,000 years ago when there was a land route across what is now the Bering Straits.
- **1741:** Vitus Bering, a Danish explorer working for Russia, discovered Alaska. For the next 126 years the Russians exploited Alaska for furs from the sea otter, black and brown bears and wolves.
- **1867:** The USA bought Alaska from Russia for \$7.2 million (about 2 cents a hectare).
- By **1878** fish canneries were preserving salmon caught in Alaskan rivers and coastal waters.
- **1897–98:** During the Gold Rush men moved inland along rivers such as the Koyukuk near Wiseman and Coldfoot, panning for gold and sometimes finding it.
- By the end of the 19th century Alaska was administered by various US government departments.
- In **1912** Alaska became a US territory.
- In **1942**, during the Second World War, Alaska became strategically important being close to Asia, so a military supply road and bases were built there.
- **3 January 1959:** Alaska formally became the 49th state of the USA.
- **27 March 1964:** A massive earthquake, subsequently assessed as magnitude 9.2 on the Richter scale, struck Alaska. It generated a tsunami.
- **1964:** The US Wilderness Act defined wilderness as 'an area where the earth and its community of life are untrammelled by man; where man himself is seen as a visitor who does not remain'.
- **1968:** The largest reserves of oil in North America were discovered near Prudhoe Bay, north Alaska.

Figure 2: Alaska's historical background

ground squirrel, moose and caribou; omnivores like black and brown bears; and top carnivores like wolves and wolverines. Birds like the bald and golden eagles, geese, ptarmigan and cliff swallows are found there in summer.

The US Government's National Environmental Policy Act of 1969 ensured that companies involved with the extraction and transportation of oil had to heed the environmental concerns and recognise the rights of native people.

- Consequently, to prevent the permafrost thawing, the oil installations at well-heads have been built on raised mattsresses.
- The Dalton Highway, only open to public use since 1994, provides a supply route from the south to Prudhoe Bay, the site of the oil wells. It is built up about 2 metres above the permafrost and made of sand and gravel taken from Alaskan rivers.
- Workers at the oil field, who do two-week shifts throughout the year, are flown in by Air Alaska from Anchorage and live at Deadhorse in heated cabins raised above the permafrost.
- The Trans-Alaska Pipeline System (TAPS), carrying oil 1,300 km south from Prudhoe Bay to the ice-free port of Valdez, was begun in 1974 and completed in 1977 at a cost of about \$8 billion. It has five pumping stations along its length to control oil flow. It is insulated and for most of its length is raised above ground for easy access and to safeguard the permafrost, and so that animals may pass beneath it. In 2002 the State of Alaska renewed the Trans-Alaska Pipeline System rights of way for another 30 years.
- BP became the sole operator at Prudhoe Bay in 2000 but had to close part of its field in March 2006 after 900,000 litres of oil leaked from corroded pipes.
- In 1978 the Government increased the areas of conservation in Alaska by 23 million hectares and by another 42 million hectares in 1980.

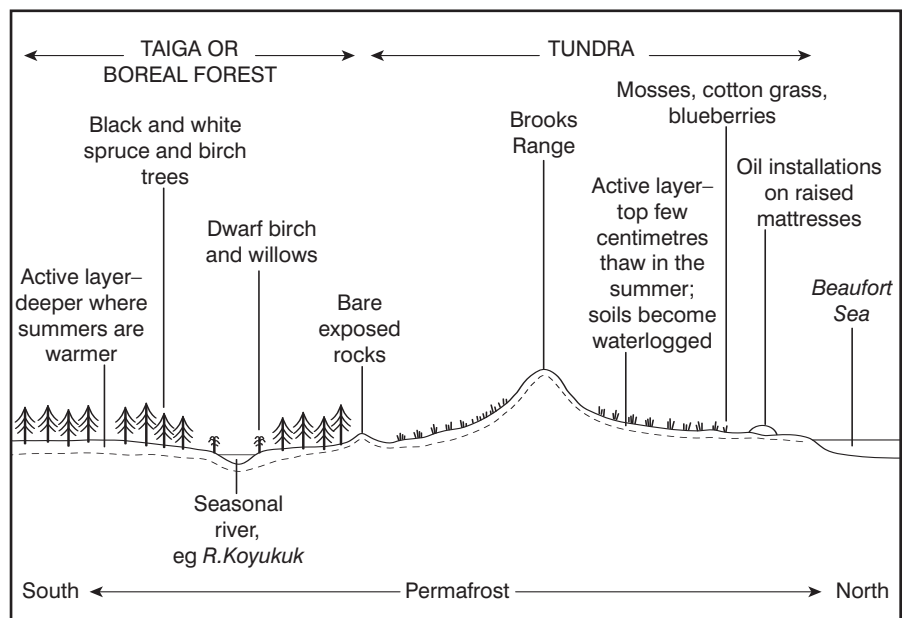


Figure 3: The Alaskan tundra and taiga



Figure 4: Destruction of the environment caused by the Exxon Valdez oil spill

### Oil transportation and the marine environment

Large, heavily laden oil tankers carrying crude oil travel from the TAPS terminus at Valdez to refineries elsewhere in the USA. The Valdez area is also dependent on commercial fishing for salmon and halibut.

- On 24 March 1989 the Exxon Valdez tanker struck a reef in Prince William Sound causing the largest oil spill in US history. Nearly 42 million litres of crude oil spilled into the fiord, polluting the coastline and fishing waters, harming and destroying wildlife (Figure 4).

- Because of a lack of immediate response the pollution hazard spread over a wide area. The Exxon Company was heavily fined for its negligence.
- By 1992 the clean-up was completed at a cost of more than \$2 billion, most of the money coming from the oil company.
- In 1998 the Alaskan SeaLife Centre opened in Seward, the construction funded mainly from the Exxon Valdez fine. As well as a visitors' centre it performs cold-water research on fish, seabirds and marine mammals such as harbour seals and sea lions. It also rehabilitates injured marine wildlife.

- Since 2006 some new double-hull oil tankers, offering greater environmental protection, have been operating in Alaskan waters.

Another potential hazard, especially in the Valdez area, is the threat of earthquakes and tsunamis, as the region is on a destructive plate boundary. On 27 March 1964 a severe earthquake occurred measuring 9.2 on the Richter scale, with its epicentre about 112 km east of Anchorage, resulting in the land beside Prince William Sound sinking by more than 2 metres. A massive tsunami over 30 metres in height hit Valdez. Since then Valdez has been relocated to a higher and more sheltered site.

**Tourism: an economic benefit or a cost?**

Tourism, which has increased in recent years, is mainly concentrated in June, July and August and in coastal areas in the south. As hotels, lodges and campsites are few, many visitors arrive in large cruise ships or recreational vehicles.

- Tourists may be bussed for the day into National Parks such as Denali, to admire the wildlife and the mountains like Mt McKinley, the USA's highest mountain at 6,194 metres, but they are restricted in their access to all areas.
- Many anglers from around the world visit centres like Valdez or Seward in order to fish for salmon, halibut, trout and other fish. Although licences to fish are required, the amount of fish being caught is increasing with a growing industry of freezing the catch for dispatch to anglers' homes.
- Most of the ferries and tourist boats carry US Rangers who not only identify wildlife and glacial features but also try to recruit and educate children as Young Rangers with conservation in mind.

**Forestry and fires: necessary for regeneration or destroyers of habitats?**

Forests occupy 32% of Alaska. The forests are conserved in the Chugach National Forest and the

Tongass National Forest, the main species being the sitka and white and black spruce. There are 4.8 million hectares of commercial forest, mainly in the South East Panhandle, with log processing plants.

- Fire is seen as both a threat and a necessity. In 2004, 272 fires were caused by lightning and 424 by people. One adjacent to the Dalton Highway destroyed 195,576 hectares of forest.
- However, it is believed that ash from fires releases nitrogen and minerals such as phosphorus and sulphur into the soil and that fire opens the forest canopy, exposing the forest floor to sunlight and so stimulating new growth.

**The people**

In 2000 there were 626,932 residents in Alaska. They are immigrants or the descendants of immigrants. Some of the native people such as the Eskimos, or Inuits, and Aleuts have been there longest.

- In order to safeguard the subsistence economy of fishing and trapping wildlife for meat and furs of rural Alaskans, a government act in 1980 gave them priority in hunting and fishing on federal lands. Subsequently disputes continue between rural and urban Alaskans, with the latter claiming they are discriminated against. Considering the extent of Alaska it is difficult for Wardens to enforce regulations on hunting and fishing.
- Alaskan residents have benefited from oil revenues. In 1976 the Alaska Permanent Fund was established. At least 25% of all money earned by mineral development goes into this fund. By 1980 high oil revenues enabled Alaska to abolish income taxes and since 1982 every resident of six months or more has received dividend payments.

**Political tensions: Russia and other Arctic states**

The Arctic may have 25% of the world's undiscovered oil and gas reserves. In the summer of 2007 Russia staked a claim to energy rights by planting a flag beneath the North Pole in the Arctic

Ocean. This has caused tension with Canada, Norway, Denmark and the USA, which under international law control zones within 320 km of their continental shelves.

## Conclusion

In Alaska the US authorities are trying both to exploit their resources and conserve the environment. It remains to be seen whether both aims can be achieved.

# Activities

- 1 Make a large copy of Figure 1. On it:
- Label where oil is extracted by BP.
  - Mark in the Trans-Alaska Pipeline between Prudhoe Bay and Valdez.
  - Add a label explaining why Valdez had to be relocated after 1964.
  - Label Prince William Sound where the *Exxon Valdez* oil tanker caused severe oil pollution in 1989.
  - Shade the National Wildlife Refuges in one colour, the National Parks and Preserves in another colour, and the National Forests in a third colour. Make sure your map has a title, a scale, a north point and a key.

2 Draw a timeline from 25,000 years ago until 2007 (you will probably need to 'concertina' the line between 25,000 years before the present and 1741). Referring to Figure 2 and the text, add the major events that have occurred in Alaska during that time.

- 3 Make a large copy of Figure 3. Write a few sentences explaining:
- permafrost
  - why the tundra and taiga (or boreal forest) are fragile environments
  - why animals and birds need a large area to support them
  - why visitors to National Parks and Preserves have only restricted access.

- 4 (a) Create two diagrams to show average high and low temperatures throughout the year at Anchorage and Barrow. Use the information in Figure 5.
- Suggest reasons why tourists, especially anglers, visit southern Alaska mainly in June, July and August.
  - What are some of the problems of working in the north of Alaska?

5 Make a large poster illustrating Alaska's resources.

	Anchorage		Barrow	
	High	Low	High	Low
J	-7	-14	-23	-30
F	-3	-12	-24	-31
M	1	-9	-22	-30
A	7	-3	-14	-22
M	13	2	-4	-11
J	17	7	4	-2
J	18	9	8	1
A	18	8	7	1
S	13	4	1	-3
O	6	-2	-6	-11
N	-2	-9	-14	-21
D	-7	-14	-20	-27

Figure 5: Temperatures in Anchorage and Barrow (°C)

- 6 (a) Find the following words in Figure 6.

Alaska	oil
gold	BP
tundra	USA
spruce	gas
caribou	salmon
Inuit	permafrost
eagle	bear
taiga	pipeline

T	U	N	D	R	A	Z	G	T	B
C	S	S	U	M	K	A	V	E	O
H	J	O	Y	U	S	F	A	D	E
M	I	N	R	X	A	R	K	Q	N
L	E	S	P	F	L	T	E	E	I
U	O	B	I	R	A	C	C	L	L
T	I	U	N	I	D	M	U	G	E
C	D	S	G	N	L	O	R	A	P
O	S	A	L	M	O	N	P	E	I
H	W	U	A	K	G	T	S	N	P

Figure 6: A word search

(b) Using the worldwide web, research the following, found in the word search:

- two minerals
- two animals
- permafrost
- BP oil company.

7 In groups, discuss:

- Is oil exploitation in Alaska inconsistent with the aim of conserving wilderness areas?
- Should the USA exploit new, large reserves of oil and gas in northern Alaska?