

North Slope Borough, Alaska | Case Studies

The U.S. has experienced rapid change in domestic oil production since 2008, when crude oil production reached a low of 3.98 million bbl/day.ⁱ Just five years later, the U.S. had nearly doubled its daily production output, with Texas and North Dakota driving much of the growth.^{ii iii} Alaska did not experience the same production boom, with crude oil output steadily declining over the past decade.^{iv} In spite of that downward trend, Alaska remained the fourth largest state producer of crude oil in 2014, and the nation's largest oil-producing county is Alaska's North Slope Borough.^v

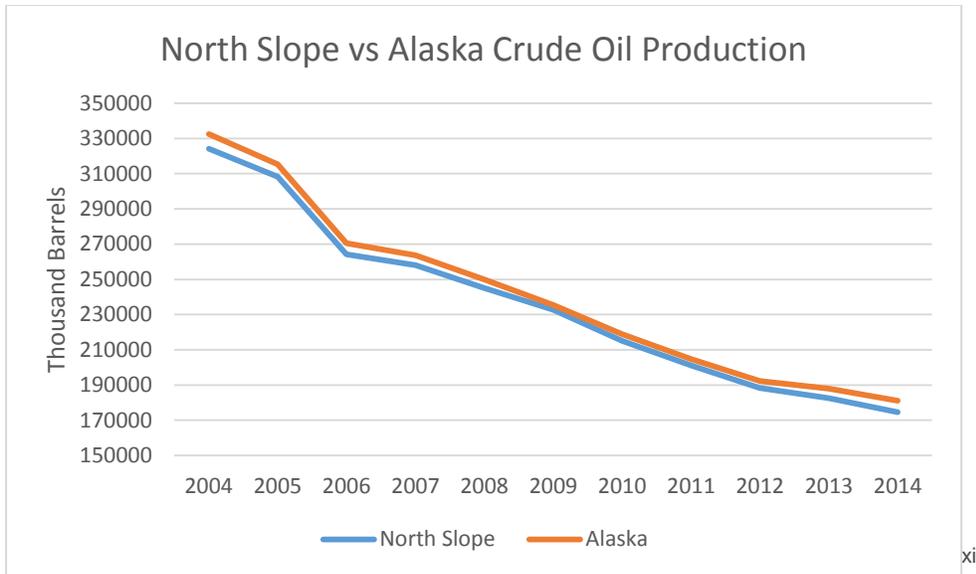
Geology and history

The North Slope Borough is the country's largest organized local jurisdiction, spanning more than 94,000 miles north of the Arctic Circle. Its 9,703 residents, most of whom are Inupiat Alaskan Natives, are spread across eight separate communities.^{vi} The northern coast of Alaska was documented as a potential oil-producing region as early as 1900. However, the borough's government was not formally incorporated until 1972, soon after the discovery of oil at Prudhoe Bay, the largest single oil field in North America.^{vii viii}

Oil production increased dramatically in 1977 with the opening of the Alaska Pipeline, which provided an economically viable way to transport large amounts of crude oil from the North Slope to market. In 1994, ARCO identified another significant deposit at the Alpine Field, located on state land east of the Colville River and extending into the federally administered National Petroleum Reserve of Alaska. The North Slope's Prudhoe Bay, Alpine Field, and Kuparuk River constitute the majority of the state of Alaska's oil production. Today, the borough's oil reserve base is extensive, with approximately six billion barrels of proved oil.

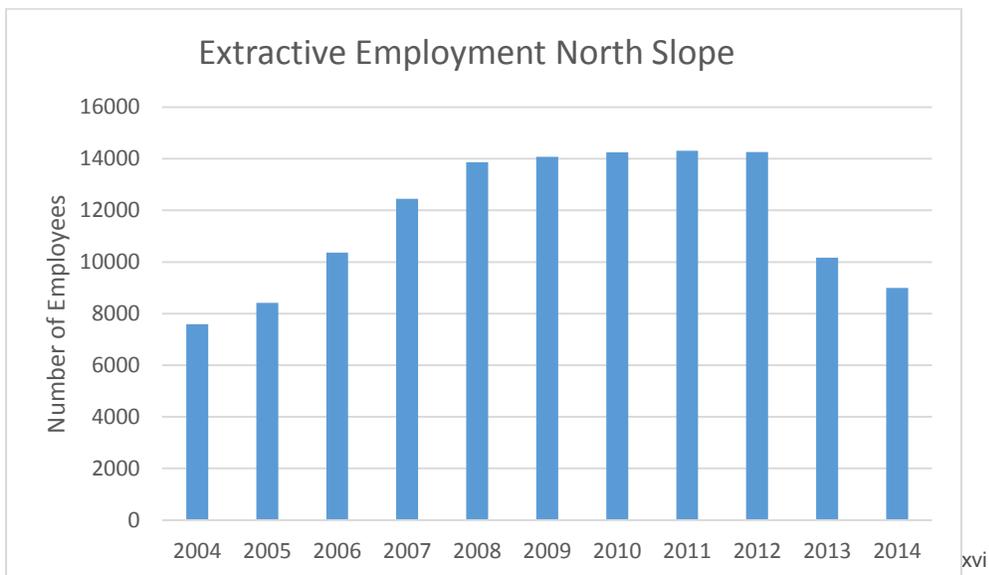
Production

In 2014, the North Slope Borough produced 174.5 million bbl of oil on both state-owned and federal land.^{ix} Since production at Prudhoe Bay commenced, all of the North Slope's extraction has taken place in the northern portion of the Colville-Canning province, administered by either the Alaska Department of Natural Resources or the Bureau of Land Management. While three major companies account for most production, North Slope exploration and extraction has diversified, with 63 current lease holders from seven countries.^x Annual oil production in the borough peaked in 1988 (at 722 million bbl) and has steadily declined since.^{xi}



Employment

The oil industry is a key driver of jobs throughout the borough. In 2014, mining, quarrying, and oil and gas extraction provided 9,003 jobs on the North Slope, accounting for 65% of total employment (13,686).^{xiii xiv} The North Slope Borough's population is less than 10,000, so many private jobs are filled by nonresidents. The North Slope Borough government itself remains the largest employer of local residents, along with the Arctic Slope Regional Corporation, school district, and local Native corporations.^{xv}



Revenues

Given the North Slope's relative geographic isolation, oil revenue is critical for supporting local schools, health centers, fire stations, water and sanitation facilities, and infrastructure. In FY 2014, the North Slope government received \$528.6 million in revenue.^{xvii} Of that revenue, the borough received \$347 million from local property taxes.^{xviii} The vast majority of property tax revenue comes from oil and gas properties—98% of property taxes came from oil- and gas-related properties.^{xix}

At the state level, including areas outside of the North Slope Borough, the Alaska government collects oil-related revenue for the benefit of the public through four mechanisms:^{xx}

- A 35% oil- and gas-production tax is placed on the net value of extracted oil and gas, offset with credits tied to production and the price of oil. Revenue is deposited in the state's General Fund, with payments received after a tax settlement is deposited in the Constitutional Budget Reserve Fund. Oil and gas production tax revenue has been falling steadily since 2012. The state received \$524 million in oil and gas production tax, down 81% from 2014 (\$2.7 billion).^{xxi} Because the state charges tax based on net value of the oil and gas rather than volume, it has been particularly hard hit. According to the Energy Information Administration, after operating and capital expenses, net income in Alaska's oil and gas industry was near zero, resulting in the sharp decline in tax revenues.^{xxii}
- Oil and gas property taxes are placed on the value of taxable exploration, production, and pipeline transportation property set at 20 mills or 2% of the assessed value. This revenue is also deposited in the state's General Fund, with payments received after a tax settlement is deposited in the Constitutional Budget Reserve Fund. In 2014, oil and gas property tax accounted for \$128 million (3.5%) of Alaska's tax revenue.^{xxiii}
- Royalties are assessed on state-owned land leased for oil production. In FY 2014, \$1.6 billion was paid to the General Fund, \$786 million was deposited in the Alaska Permanent Fund and School Fund, and an additional \$141 million went to the Constitutional Budget Reserve Fund from royalty settlements.^{xxiv}
- Oil and gas corporate net income tax is set at a maximum of 9.4% on Alaskan income more than \$90,000. In 2014, \$336 million was collected in oil and gas corporate tax, down from \$571 million in 2012.^{xxv}



Alaskan residents also receive annual dividend payments from the state’s Permanent Fund, based on a five-year average of the fund’s performance. The state established the Permanent Fund in 1976, as construction of the Alaska Pipeline concluded. Twenty-five percent of revenue from mineral leases on state-owned lands and from federal mineral revenue-sharing payments go into the Permanent Fund for investment. In 2014 each Alaskan resident received \$1,884 as a result of this payout, up from \$900 in 2013.^{xxvi}

Costs

Oil extraction also incurs certain fiscal costs. Oil exploration and development on the North Slope require infrastructure, including airports, docks, pads and roads, ports, production-related facilities, pipelines, and gravel islands.^{xxvii} The North Slope Borough is responsible for maintaining approximately 100 miles of roads, as well as boat ramps, boat landings, port facilities, nine public airports, and thousands of miles of winter trails and roads.^{xxviii}

In terms of transportation infrastructure in the borough, Dalton Highway is the only permanent road connecting the North Slope Borough to the main Alaska Marine Highway system. Dalton Highway was originally financed and constructed by the oil and gas industry, and is still mainly used as an industrial road. However, the Alaska Department of Transportation reported spending approximately \$15,260 per mile annually on maintenance for Dalton Highway at the time of the last comprehensive borough transportation plan. Oil companies are required to maintain seasonal ice routes used for industry traffic in the winter, but these routes cost the borough approximately \$100,000 per mile to initially construct in the Prudhoe Bay region.^{xxix}

Unlike many Alaska municipalities, the North Slope Borough is responsible for its own airports, which serve the local population as well as a range of commercial and

recreational visitors.^{xxx} Annual costs for airport maintenance across the North Slope are about \$1.4 million per year, including spending on airports and landing strips that are labeled as “unrestricted,” or permissible for oil and gas industry use.^{xxxi} It is unclear what percentage of the annual airport maintenance budget is spent specifically on support activities for the oil and gas industry.

Due to increased demand for services and the overall growth of oil and gas development in Prudhoe Bay, the Borough committed to building new water and waste water treatment facilities. The plant was completed in 2015. All required project work for the plant is expected to be completed by fall of 2015, when it is expected to be placed into service. The FY2014 budget estimated the overall investment of this infrastructure is to be approximately \$75 million.^{xxxii}

The Alaska state government also invests a significant amount of tax dollars to prevent and respond to oil and hazardous substance emergencies in the state, including on **reclamation** services, such as managing contaminated drilling sites. The Oil and Hazardous Substance Release Prevention and Response Fund imposes a 4 cent surcharge per barrel of oil for prevention, and a 1 cent surcharge per barrel of oil for response.^{xxxiii} The Division of Spill Prevention and Response (SPAR) had a total operating budget of \$25.9 million in FY 2014.^{xxxiv} \$8.3 million went to the Contaminated Sites Program in FY 2014.^{xxxv}

Furthermore the North Slope Borough often responds to, and pays for, emergency services on oilfield roads, such as Kuparuk Oilfield roads.^{xxxvi} No detailed data exists to attribute the proportion of cost of such services to oil and gas.

Data availability

The table below highlights the data sources used to compile this narrative, as well as any gaps in publicly available data.

Measure	Data availability	Data gaps
Production	The U.S. Energy Information Agency publishes Alaska North Slope Crude Oil Production on a monthly and annual basis.	
Employment	The Bureau of Labor Statistics (BLS) publishes the Alaska North Slope Borough annual average employment for mining, quarrying, and oil and gas extraction (NAICS Code 21).	Neither BLS nor the U.S. Census Bureau has ten-year employment-trend data for the oil and gas industry at the North Slope Borough level for 2005–2014. There are several years and subindustries without data, including NAICS Code 211 for Oil and Gas

Measure	Data availability	Data gaps
		Extraction.
Revenue	The Alaska Department of Revenue and Alaska Permanent Fund Corporation publish annual financial reports with revenue information for the state and borough level.	Data on how sales taxes relate to extractive activities in the borough was not found.
Costs	The North Slope Department of Planning & Community Services, Alaska Office of Management and Budget, and Alaska Department of Environmental Conservation publish cost information related to public spending attributable to extractive industries.	Data on connections between borough water and sewer infrastructure investments and extractive industries was not found.

Notes

ⁱ Barrels are noted as “bbl” when used as a unit of measure

ⁱⁱ Department of Energy, [U.S. Domestic Oil Production Exceeds Imports for First Time in 18 Years](#), 2013

ⁱⁱⁱ U.S. Energy Information Administration, [Crude Oil Production](#), 2015

^{iv} *Ibid.*

^v In Alaska, county-level governments are called boroughs.

^{vi} U.S. Census Bureau, [North Slope Borough, Alaska](#), 2014

^{vii} U.S. Geological Survey, [The National Petroleum Reserve—Alaska \(NPRA\) Data Archive \(PDF\)](#), 2001

^{viii} [Oil and Gas Technical Report: Planning for Oil and Gas Activities in the National Petroleum Reserve – Alaska \(PDF\)](#), 2013

^{ix} U.S. Energy Information Administration, [Alaska North Slope Crude Oil Production](#), 2015

^x [Oil and Gas Technical Report: Planning for Oil and Gas Activities in the National Petroleum Reserve – Alaska \(PDF\)](#), 2013

^{xi} U.S. Energy Information Administration, [Alaska North Slope Crude Oil Production](#), 2015

^{xii} *Ibid.*

^{xiii} Bureau of Labor Statistics, [Alaska North Slope Borough annual average employment for Oil and Gas Extraction](#), 2014

^{xiv} Bureau of Labor Statistics (BLS) county employment data is not linked to county residency.

^{xv} [North Slope Regional Energy Plan \(PDF\)](#), 2015

^{xvi} Bureau of Labor Statistics, [Alaska North Slope Borough annual average employment for Oil and Gas Extraction](#), 2014

^{xvii} [Comprehensive Annual Financial Report of the North Slope Borough, Alaska \(PDF\)](#) 2015

^{xviii} *Ibid.*

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- ^{xix} North Slope Borough Department of Planning & Community Services, [Oil and Gas Technical Report: Planning for Oil and Gas Activities in the National Petroleum Reserve \(PDF\)](#), 2014
- ^{xx} Alaska Department of Revenue, [2013 Annual Report](#)
- ^{xxi} [Comprehensive Annual Financial Report of the North Slope Borough, Alaska \(PDF\)](#), 2013
- ^{xxii} Energy Information Agency, [State severance tax revenues decline as fossil fuel prices drop](#), January 12, 2016
- ^{xxiii} Alaska Department of Revenue, [2014 Annual Report](#)
- ^{xxiv} Alaska Department of Revenue, [Revenue Source Book](#) , 2014 Fall
- ^{xxv} Alaska Department of Revenue, [2014 Annual Report](#)
- ^{xxvi} Alaska Permanent Fund Corporation, [Annual Dividend Payouts](#), 2015
- ^{xxvii} North Slope Borough Department of Planning & Community Services, [Oil and Gas Technical Report: Planning for Oil and Gas Activities in the National Petroleum Reserve \(PDF\)](#), 2014
- ^{xxviii} [North Slope Borough, Comprehensive Transportation Plan \(PDF\)](#), 2005
- ^{xxix} [North Slope Borough, Comprehensive Transportation Plan \(PDF\)](#), 2005, p. 14, 45, and 87
- ^{xxx} [Oil and Gas Technical Report: Planning for Oil and Gas Activities in the National Petroleum Reserve – Alaska \(PDF\)](#), 2013
- ^{xxxi} [North Slope Borough, Comprehensive Transportation Plan \(PDF\)](#), 2005
- ^{xxxii} [Comprehensive Annual Financial Report of the North Slope Borough, Alaska \(PDF\)](#) 2015
- ^{xxxiii} Alaska Department of Environmental Conservation, [Response Fund Administration: History of the Fund](#)
- ^{xxxiv} Alaska Department of Environmental Conservation, [Oil & Hazardous Substances Release and Prevention Fund Biennial Report \(PDF\)](#) , 2012–2014
- ^{xxxv} Alaska Department of Environmental Conservation, [Contaminated Sites Program, Division of Spill Prevention and Response, Annual Report \(PDF\)](#), 2014
- ^{xxxvi} North Slope Borough, [Comprehensive Transportation Plan \(PDF\)](#), 2005