A Profile of Mining, Including Oil & Gas

Manti-La Sal NF Counties

Selected Geographies:

Grand County, UT; San Juan County, UT; Emery County, UT; Sanpete County, UT; Juab County, UT; Carbon County, UT; Utah County, UT

Benchmark Geographies:

U.S.

Produced by
Economic Profile System
EPS
August 9, 2016

About the Economic Profile System (EPS)

EPS is a free, easy-to-use software application that produces detailed socioeconomic reports of counties, states, and regions, including custom aggregations.

EPS uses published statistics from federal data sources, including Bureau of Economic Analysis and Bureau of the Census, U.S. Department of Commerce; and Bureau of Labor Statistics, U.S. Department of Labor.

The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of EPS.

See headwaterseconomics.org/EPS for more information about the other tools and capabilities of EPS.

For technical questions, contact Patty Gude at eps@headwaterseconomics.org, or 406-599-7425.

HEADWATERS ECONOMICS

headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Our mission is to improve community development and land management decisions in the West.

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

www.blm.gov

The Bureau of Land Management, an agency within the U.S. Department of the Interior, administers 249.8 million acres of America's public lands, located primarily in 12 Western States. It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

www.fs.fed.us

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres. The Forest Service's mission is to achieve quality land management under the "sustainable multiple-use management concept" to meet the diverse needs of people while protecting the resource. Significant intellectual, conceptual, and content contributions were provided by the following individuals: Dr. Pat Reed, Dr. Jessica Montag, Doug Smith, M.S., Fred Clark, M.S., Dr. Susan A. Winter, and Dr. Ashley Goldhor-Wilcock.

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Note to Users:

This is one of fourteen reports that can be created and downloaded from EPS Web. You may want to run another EPS report for either a different geography or topic. Topics include land use, demographics, specific industry sectors, the role of non-labor income, the wildland-urban interface, the role of amenities in economic development, and payments to county governments from federal lands. Throughout the reports, references to online resources are indicated in parentheses. These resources are provided as hyperlinks on each report's final page. The EPS reports are downloadable as Excel, PDF, and Word documents. For further information and to download reports, go to:

headwaterseconomics.org/eps

What industries comprise mining sectors?

This page describes the number of jobs (full and part-time) and the share of total jobs in the mining industry, broken out into four major sub-sectors: oil and gas extraction, coal mining, metal ore mining, and nonmetallic minerals mining.

Employment in Mining, 2014

	Grand County, UT	San Juan County, UT	Emery County, UT	Sanpete County, UT	Juab County, UT	Carbon County, UT	Utah County, UT	Manti-La Sal NF Counties	U.S.
Total Private Employment	3,814	2,556	2,355	4,672	2,097	6,530	178,352	200,376	121,079,879
Mining	~160	87	~252	~7	~27	~728	~67	~1,328	758,971
Oil & Gas Extraction	~78	~58	~1	~2	0	~54	~17	~210	548,350
Oil & Gas Extraction	7	~17	0	~1	0	~50	~1	~76	137,839
Drilling Oil & Gas Wells	~40	~1	0	~1	0	0	~1	~43	102,734
Support for Oil & Gas Operations	~31	40	~1	0	0	~4	~15	~91	307,777
Coal Mining	0	0	~260	0	0	~749	0	~1,009	82,946
Coal Mining	0	0	~260	0	0	~742	0	~1,002	76,572
Support Activities for Coal Mining	0	0	0	0	0	~7	0	~7	6,374
Metal Ore Mining	~4	~27	0	0	~21	~2	~3	~57	45,716
Metal Ore Mining	~2	~27	0	0	~14	~2	0	~45	41,926
Support Activities for Metal Mining	~2	0	0	0	~7	0	~3	~12	3,790
Nonmetallic Minerals Mining	~63	0	~28	~6	~6	0	~49	~152	81,959
Nonmetallic Minerals Mining	~63	0	~14	~6	~6	0	~47	~136	79,375
Support for Nonmetal Minerals	0	0	~14	0	0	0	~2	~16	2,584
Mining Related	0	~48	0	0	0	~161	~14	~223	~226,754
Oil & Gas Pipeline & Related Const.	0	~34	0	0	0	~161	~14	~209	167,748
Pipeline Transportation	0	~14	0	0	0	0	0	~14	~59,006
Non-Mining	~3,654	2,469	~2,103	~4,665	~2,070	~5,802	~178,285	~199,048	120,320,908

Percent of Total

Mining	~4.2%	3.4%	~10.7%	~0.1%	~1.3%	~11.1%	~0.0%	~0.7%	0.6%
Oil & Gas Extraction	~2.0%	~2.3%	~0.0%	~0.0%	0.0%	~0.8%	~0.0%	~0.1%	0.5%
Oil & Gas Extraction	0.2%	~0.7%	0.0%	~0.0%	0.0%	~0.8%	~0.0%	~0.0%	0.1%
Drilling Oil & Gas Wells	~1.0%	~0.0%	0.0%	~0.0%	0.0%	0.0%	~0.0%	~0.0%	0.1%
Support for Oil & Gas Operations	~0.8%	1.6%	~0.0%	0.0%	0.0%	~0.1%	~0.0%	~0.0%	0.3%
Coal Mining	0.0%	0.0%	~11.0%	0.0%	0.0%	~11.5%	0.0%	~0.5%	0.1%
Coal Mining	0.0%	0.0%	~11.0%	0.0%	0.0%	~11.4%	0.0%	~0.5%	0.1%
Support Activities for Coal Mining	0.0%	0.0%	0.0%	0.0%	0.0%	~0.1%	0.0%	~0.0%	0.0%
Metal Ore Mining	~0.1%	~1.1%	0.0%	0.0%	~1.0%	~0.0%	~0.0%	~0.0%	0.0%
Metal Ore Mining	~0.1%	~1.1%	0.0%	0.0%	~0.7%	~0.0%	0.0%	~0.0%	0.0%
Support Activities for Metal Mining	~0.1%	0.0%	0.0%	0.0%	~0.3%	0.0%	~0.0%	~0.0%	0.0%
Nonmetallic Minerals Mining	~1.7%	0.0%	~1.2%	~0.1%	~0.3%	0.0%	~0.0%	~0.1%	0.1%
Nonmetallic Minerals Mining	~1.7%	0.0%	~0.6%	~0.1%	~0.3%	0.0%	~0.0%	~0.1%	0.1%
Support for Nonmetal Minerals	0.0%	0.0%	~0.6%	0.0%	0.0%	0.0%	~0.0%	~0.0%	0.0%
Mining Related	0.0%	~1.9%	0.0%	0.0%	0.0%	~2.5%	~0.0%	~0.1%	~0.2%
Oil & Gas Pipeline & Related Const.	0.0%	~1.3%	0.0%	0.0%	0.0%	~2.5%	~0.0%	~0.1%	0.1%
Pipeline Transportation	0.0%	~0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	~0.0%	~0.0%
Non-Mining	~95.8%	96.6%	~89.3%	~99.9%	~98.7%	~88.9%	~100.0%	~99.3%	99.4%

This table does not include employment data for government, agriculture, railroads, or the self-employed because these are not reported by County Business Patterns. Estimates for data that were not disclosed are indicated with tildes (~).

Data Sources: U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

Study Guide and Supplemental Information

What industries comprise mining sectors?

What do we measure on this page?

This page describes the number of jobs (full and part-time) and the share of total jobs in the mining industry, broken out into four major sub-sectors: oil and gas extraction, coal mining, metal ore mining, and nonmetallic minerals mining.

Why is this Important?

To understand the potential impact of proposed land management practices, it is important to grasp the relative size of the mining industry and its components, how these have changed over time, and how local trends compare to trends in other geographies. Some important issues to consider are whether a proposed management action would stimulate growth or decline in the industry, how proposed actions relate to on-going trends shown in the data, whether some geographies would be affected more than others, and given the relative size of the industry if changes to it will affect the broader economy.

Methods

According to the North American Industrial Classification system (NAICS), Mining (NAICS code 21) consists of Oil and Gas Extraction (NAICS 211), Mining Except Oil and Gas (NAICS 212) and Support Activities for Mining (NAICS 213). In addition, we add the category "Mining Related" which captures oil and gas pipeline industries and employment. Details on Mining are shown below (NAICS in parentheses):

Oil and Gas Extraction:
Oil and Gas Extraction (2111)
Support Activities: Drilling Oil and Gas Wells (213111; includes directional drilling, redrilling, spudding, tailing, water intake wells), and Support for Oil and Gas Operations (213112; includes exploration, chemical treatment, cleaning, pumping, swabbing, surveying)

Coal Mining:
Coal Mining (2121)
Support Activities for Coal Mining (213113; includes drilling, blasting, shaft sinking, tunneling, exploration)

Metals Mining:
Metal Ore Mining (2122; includes gold, silver, zinc and others)
Support Activities for Metal Mining (213114; includes blasting services, exploration, tunneling, pumping)

Nonmetallic Minerals Mining:
Nonmetallic Minerals and Quarrying (2123; includes stone, volcanic rock, granite, cement, gravel and others)
Support Activities for Nonmetallic Minerals and Quarrying (213115; includes blasting services, test drilling, mine shaft development).

Mining Related:
Pipeline Transportation (486; Industries in the Pipeline Transportation subsector use transmission pipelines to transport products, such as crude oil, natural gas, refined petroleum products, and slurry)
Oil and Gas Pipeline and Related Structures Construction (237120)

Data on this page were obtained from County Business Patterns. We use this source because, compared to other sources, it has fewer data gaps (instances when the federal government will not release information to protect the confidentiality of individual businesses). It also includes both full and part-time employment. The disadvantage of County Business Patterns data is that they do not include employment in government, agriculture, railroads, or the self-employed and as a result under-count the size of industry sectors. Also, County Business Patterns data are based on mid-March employment and do not take into account seasonal fluctuations. For these reasons, the data are most useful for showing long-term trends, displaying differences between geographies, and showing the relationship between sectors over time.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters

Additional Resources

For an online listing of all NAICS codes, see: naics.com/search.htm *(1)*.

For additional online manuals and definitions of industry codes, see: bls.gov/bls/NAICS.htm *(2)* and census.gov/eos/www/naics *(3)*.

Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps *(4)*.

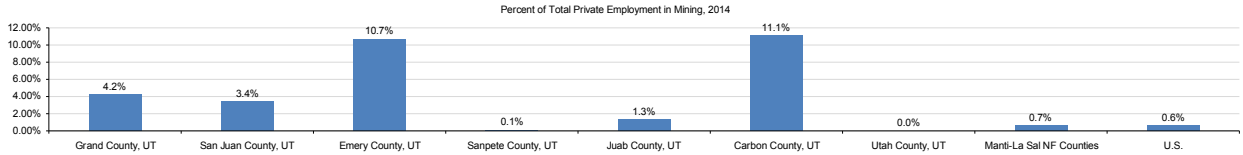
Data Sources

U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

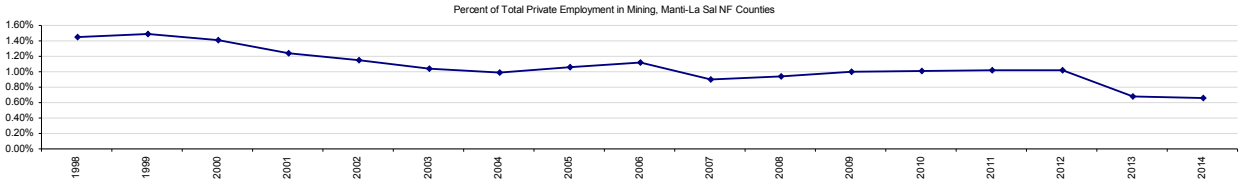
How has mining changed over time?

This page describes long-term trends in mining employment as a percent of all jobs and compares mining to non-mining employment over time for the region.

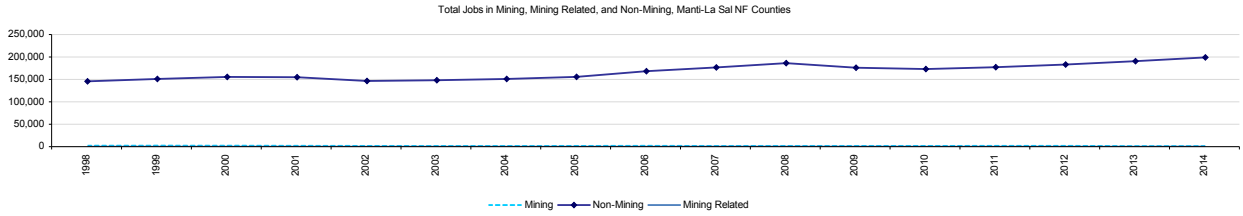
- In 2014, Carbon County, UT had the largest percent of total mining employment (11.1%), and Utah County, UT had the smallest (0%).



- In 1998, mining represented 1.45 percent of total employment. By 2014, mining represented 0.66 percent of total employment.



- From 1998 to 2014, mining employment shrank from 2,189 to 1,328 jobs, a 39.3 percent decrease.
- From 1998 to 2014, non-mining employment grew from 145,745 to 199,048 jobs, a 36.6 percent increase.
- From 1998 to 2014, mining dependent employment grew from 32 to 223 jobs, a 596.9 percent increase.



Data Sources: U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

Study Guide and Supplemental Information

How has mining changed over time?

What do we measure on this page?

This page describes long-term trends in mining employment as a percent of all jobs and compares mining to non-mining employment over time for the region.

Why is it important?

In some geographies the mining industry can be a significant driver in the economy. If it is, other sectors of the economy, as well as total employment and total personal income, will likely follow trends in the mining industry. It is important to know whether this is the case because if employment in other sectors fluctuates with the mining industry, then management actions on public lands may affect more than the mining industry itself. If, on the other hand, jobs in the rest of the economy are growing independent of trends in the mining industry, then management actions that potentially affect the mining industry may have impacts that are limited to that industry.

Methods

Data on this page were obtained from County Business Patterns. We use this source because, compared to other sources, it has fewer data gaps (instances when the federal government will not release information to protect the confidentiality of individual businesses). It also includes both full and part-time employment. The disadvantage of County Business Patterns data is that they do not include employment in government, agriculture, railroads, or the self-employed and as a result under-count the size of industry sectors. Also, County Business Patterns data are based on mid-March employment and do not take into account seasonal fluctuations. For these reasons, the data are most useful for showing long-term trends, displaying differences between geographies, and showing the relationship between sectors over time.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses data from the U.S. Department of Commerce to estimate these data gaps.

Additional Resources

A number of online resources are available for more information on components of the mining industry.

For detailed information on oil, gas, and coal see the U.S. Energy Information Administration: eia.doe.gov *(5)*.

BP p.l.c. offers a widely-used and comprehensive overview on global trends in energy called the BP Statistical Review of World Energy: bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481 *(6)*.

The Bureau of Labor Statistics provides an overview and outlook for the mining industry: bls.gov/oco/cg/cgs004.htm *(7)*. This site also contains other useful links to organizations such as the American Geological Institute and the National Mining Association.

Headwaters Economics has completed a number of studies on fossil fuel development and its impact on the U.S. West. See: headwaterseconomics.org/energy *(8)*.

Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps *(4)*.

Data Sources

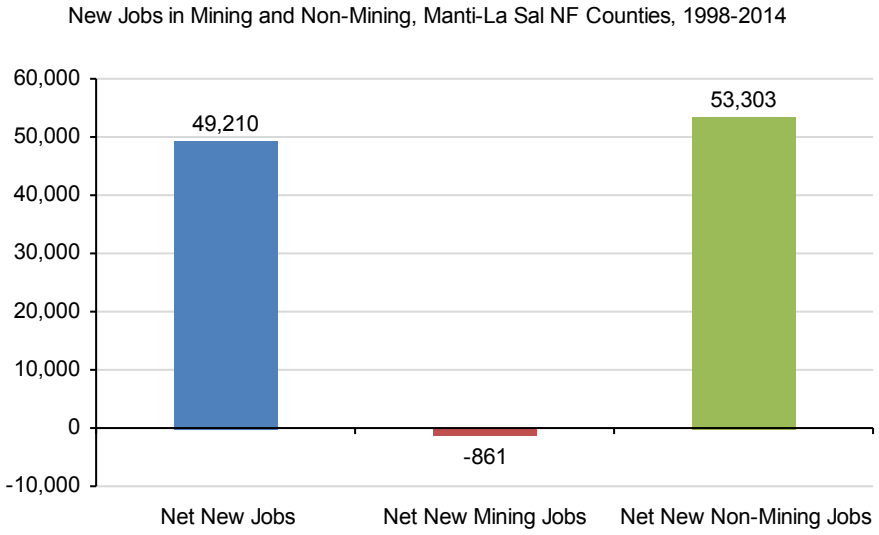
U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

Mining Employment

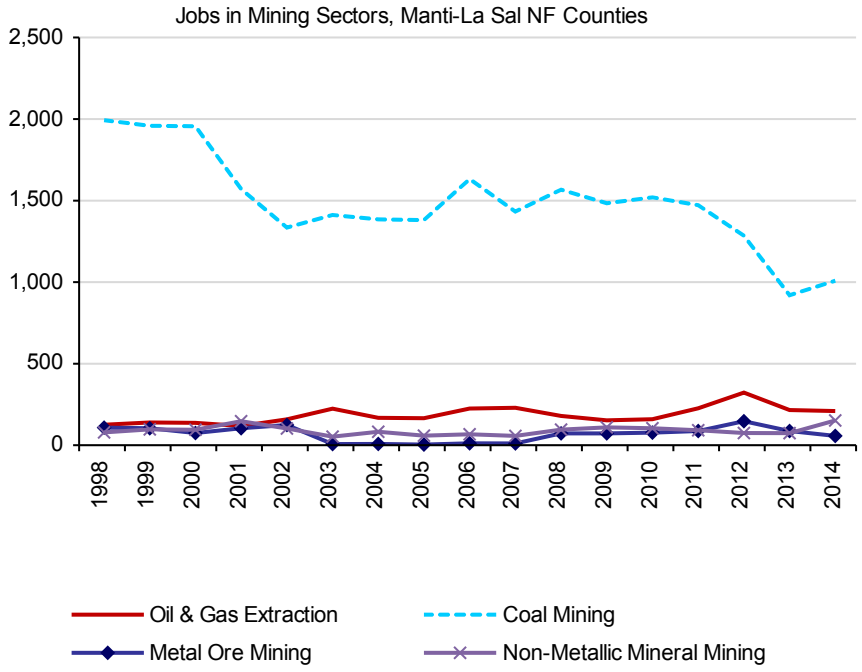
Which mining sectors are changing the fastest?

This page describes the change in mining jobs compared to the change in non-mining jobs and compares how employment in various mining sectors has changed over time for the region.

- From 1998 to 2014, mining employment shrank by 861 jobs.
- From 1998 to 2014, non-mining employment grew by 53,303 jobs.



- From 1998 to 2014, oil & gas extraction grew from 126 to 210 jobs, a 67% increase.
- From 1998 to 2014, coal mining shrank from 1993 to 1009 jobs, a 49% decrease.
- From 1998 to 2014, metal ore mining shrank from 108 to 57 jobs, a 47% decrease.
- From 1998 to 2014, non-metallic mineral mining grew from 79 to 152 jobs, a 92% increase.



Data Sources: U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

Which mining sectors are changing the fastest?

What do we measure on this page?

This page describes the change in mining jobs compared to the change in non-mining jobs and compares how employment in various mining sectors has changed over time for the region.

Why is it important?

To understand the importance of mining in the local economy it is useful to grasp the source of new jobs and the relative contribution of the mining industry to net new jobs. Components of the mining industry may create or lose jobs at a different rate.

Some geographies are more dependent on mining-related employment than others. This is important to understand because activities on public lands that impact the mining industry may affect other sectors of the economy.

Geographies with economies that focus narrowly on resource extraction, particularly on fossil fuel development, can be subject to boom-and-bust cycles as well as other economic challenges, such as slower long-term economic growth. These difficulties are sometimes called the "resource curse" in reference to the apparent paradox that areas rich in natural resources often underperform economically.

Methods

The bottom figure on this page starts in 1998 because that is the year the Census Bureau (and County Business Patterns) shifted to using the new North American Industrial Classification System (NAICS).

Data on this page were obtained from County Business Patterns. We use this source because, compared to other sources, it has fewer data gaps (instances when the federal government will not release information to protect confidentiality of individual businesses). It also includes both full and part-time employment.

The disadvantage of County Business Patterns data is that they do not include employment in government, agriculture, railroads, or the self-employed and as a result under-count the size of industry sectors. Also, County Business Patterns data are based on mid-March employment and do not take into account seasonal fluctuations. For these reasons, the data are most useful for showing long-term trends, displaying differences between geographies, and showing the relationship between sectors over time.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses data from the U.S. Department of Commerce to estimate these data gaps.

Additional Resources

The Bureau of Labor Statistics provides an overview and outlook for the mining industry: bls.gov/oco/cg/cgs004.htm *(7)*. This site also contains other useful links to organizations such as the American Geological Institute and the National Mining Association.

Headwaters Economics has completed a number of studies on fossil fuel development and its impact on the U.S. West. See: headwaterseconomics.org/energy *(8)*.

A useful summary of the "resource curse" can be found in: Humphreys, Macartan, Jeffrey D. Sachs, and Joseph E. Stiglitz, Eds. Escaping the Resource Curse. 2007. New York: Columbia University Press.

Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps *(4)*.

Data Sources

U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

What role do the self-employed play in the mining industry?

This page describes the number of nonemployer businesses (in most cases self-employed individuals) in mining by sector and geography. It offers an additional source to supplement data used in previous pages of this report that do not include the self-employed.

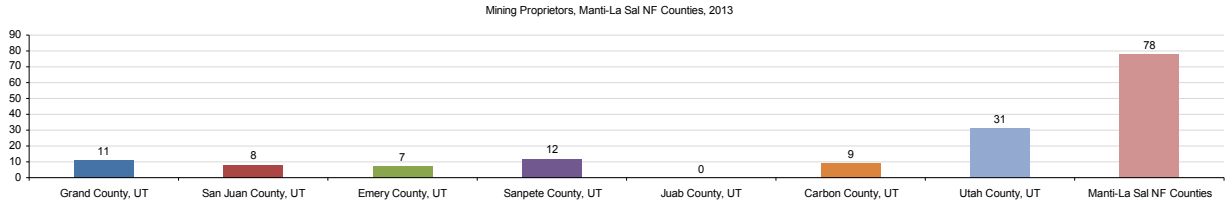
Proprietors in Mining, 2013

	Grand County, UT	San Juan County, UT	Emery County, UT	Sanpete County, UT	Juab County, UT	Carbon County, UT	Utah County, UT	Manti-La Sal NF Counties	U.S.
Total Proprietors	1,022	748	582	1,685	712	1,047	40,259	46,055	23,005,620
Mining	11	8	7	12	0	9	31	78	106,610
Oil & Gas Extraction	5	4	4	7	0	0	0	20	83,844
Mining (Except Oil & Gas)	4	0	0	0	0	0	17	21	5,573
Support Activities for Mining	0	3	0	3	0	7	14	27	17,193
Non-Mining	1,011	740	575	1,673	712	1,038	40,228	45,977	22,899,010

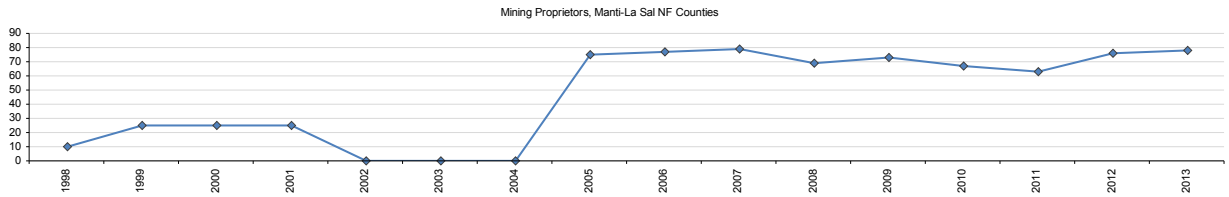
Percent of Total

Mining	1.1%	1.1%	1.2%	0.7%	0.0%	0.9%	0.1%	0.2%	0.5%
Oil & Gas Extraction	0.5%	0.5%	0.7%	0.4%	0.0%	0.0%	0.0%	0.0%	0.4%
Mining (Except Oil & Gas)	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Support Activities for Mining	0.0%	0.4%	0.0%	0.2%	0.0%	0.7%	0.0%	0.1%	0.1%
Non-Mining	98.9%	98.9%	98.8%	99.3%	100.0%	99.1%	99.9%	99.8%	99.5%

- In 2013, Manti-La Sal NF Counties had the largest number of mining proprietors (78), and Juab County, UT had the smallest (0).



- From 1998 to 2013, mining proprietors in Manti-La Sal NF Counties grew from 10 to 78, a 680% increase.



Data Sources: U.S. Department of Commerce. 2015. Census Bureau, Nonemployer Statistics, Washington, D.C.

What role do the self-employed play in the mining industry?

What do we measure on this page?

This page describes the number of nonemployer businesses (in most cases self-employed individuals) in mining by sector and geography. It offers an additional source to supplement data used in previous pages of this report that do not include the self-employed.

Nonemployer Business: A business with no paid employees, with annual business receipts of $1,000 or more, and subject to federal income taxes. Nonemployer businesses can be individual proprietorships, partnerships, or corporations. Most nonemployers are self-employed individuals operating very small unincorporated businesses, which may or may not be the owner's principal source of income.

Why is it important?

Significant portions of the mining industry, especially support activities that include things such as excavation, trucking, servicing, etc., may be conducted by nonemployer businesses. These nonemployer businesses are not reported by County Business Patterns but are reported by Nonemployer Statistics. It is important to use these two data sources in tandem when evaluating the size and trends in mining employment.

Methods

Nonemployer Statistics provides the only source of detailed and comprehensive data on the scope, nature, and activities of U.S. businesses with no paid employment and payroll.

According to the Census Bureau, "Most nonemployers are self-employed individuals operating very small unincorporated businesses, which may or may not be the owner's principal source of income. These firms are excluded from most other business statistics."

Note that the three mining sub-categories in the table Proprietors in Mining are 3-digit NAICS categories (from Nonemployer Statistics). They are different than the four summary categories (from County Business Patterns) shown on previous pages.

The three mining sub-categories in the table Proprietors in Mining are 3-digit NAICS categories (from Nonemployer Statistics). They are different than the four summary categories (from County Business Patterns) shown on previous pages.

The category Mining is the sum of the following NAICS codes shown on this page: Oil and Gas Extraction (211), Mining [except Oil and Gas] (212), and Support Activities for Mining (213).

Depending on the geographies selected, some data may not be available due to disclosure restrictions.

Additional Resources

Nonemployer Statistics data can be found at: census.gov/econ/nonemployer/index.html *(9)*.

Nonemployer business definitions can be found at: census.gov/econ/nonemployer/definitions.htm *(10)*.

Data Sources

U.S. Department of Commerce. 2015. Census Bureau, Nonemployer Statistics, Washington, D.C.

How do mining industry wages compare to wages in other sectors?

This page describes wages (in real terms) from employment in the mining industry, including sub-sectors, compared to wages from employment in all non-mining sectors combined across geographies. It also describes the percent of jobs in each category. These are shown together to illustrate the relative wage levels in mining, including sub-sectors, and how many people are employed in each sub-sector across geographies.

Average Annual Wages, 2014 (2015 $s)

	Grand County, UT	San Juan County, UT	Emery County, UT	Sanpete County, UT	Juab County, UT	Carbon County, UT	Utah County, UT	Manti-La Sal NF Counties	U.S.
All Sectors	$29,976	$33,287	$47,477	$28,877	$32,998	$39,710	$40,133	$39,436	$51,413
Private	$28,249	$31,843	$53,630	$27,533	$34,689	$41,425	$41,034	$40,417	$51,346
Mining	na	$55,594	na	$73,903	$49,664	na	$77,170	$60,414	$102,208
Oil & Gas Extraction	$82,226	na	na	na	$0	na	na	$82,226	$161,728
Mining (Except Oil & Gas)	na	$57,840	$87,218	$29,098	na	$98,850	na	$87,238	$74,341
Support Activities for Mining	$57,526	na	$37,317	na	na	$53,866	$94,388	$69,873	$88,616
Non-Mining	~$26,928	$30,693	~$35,252	$27,093	$38,039	~$35,029	$41,010	$40,079	$50,973
Government	$37,423	$35,723	$30,000	$31,395	$27,200	$33,747	$34,582	$34,182	$51,778

This table shows wage data from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on previous pages of this report.

Percent of Total Employment, 2014

	Grand County, UT	San Juan County, UT	Emery County, UT	Sanpete County, UT	Juab County, UT	Carbon County, UT	Utah County, UT	Manti-La Sal NF Counties	U.S.
Private	81.3%	62.5%	73.9%	65.2%	77.4%	77.7%	86.0%	84.3%	84.6%
Mining	na	8.4%	na	0.4%	1.8%	na	0.1%	0.2%	0.6%
Oil & Gas Extraction	0.3%	na	na	na	0.0%	na	na	0.0%	0.1%
Mining (Except Oil & Gas)	na	5.0%	9.9%	0.2%	na	7.0%	na	0.5%	0.2%
Support Activities for Mining	0.8%	na	0.7%	na	na	0.5%	0.0%	0.1%	0.3%
Non-Mining	~76.4%	39.9%	~43.3%	63.6%	47.9%	~56.2%	86.0%	82.0%	84.0%
Government	18.8%	37.4%	26.1%	34.8%	22.6%	22.3%	14.0%	15.7%	15.4%

This table uses employment data from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on previous pages of this report.

Data Sources: U.S. Department of Labor. 2015. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

How do mining industry wages compare to wages in other sectors?

What do we measure on this page?

This page describes wages (in real terms) from employment in the mining industry, including sub-sectors, compared to wages from employment in all non-mining sectors combined across geographies. It also describes the percent of jobs in each category. These are shown together to illustrate the relative wage levels in mining, including sub-sectors, and how many people are employed in each sub-sector across geographies.

The primary purpose of this page is to compare the average annual wages between sectors, and to investigate the relative number of people employed in high and low-wage sectors.

Why is it important?

The mining industry has the potential to provide high-wage jobs, but this may differ by mining sub-sector and by geography. Some important issues to consider are how mining industry wages compare to wages in other sectors, whether some components of the mining industry pay higher wages than others, and if there are significant wage differences between geographies.

Methods

The wage and employment data on this page are from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on the initial pages of this report.

The three mining sub-sectors in the tables are 3-digit NAICS categories (from Quarterly Census of Employment and Wages) and are different than the four summary categories (from County Business Patterns) shown on the initial pages of this report.

The category Mining is the sum of the following NAICS codes shown on this page: Oil and Gas Extraction (211), Mining [except Oil and Gas] (212), and Support Activities for Mining (213).

Depending on the geographies selected, some data may not be available due to disclosure restrictions.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses custom data aggregations calculated from various NAICS codes. Occasionally, one or more data values underlying these aggregations are non-disclosed. These values are indicated with tildes (~).

Additional Resources

For an overview of how the Bureau of Labor Statistics treats employment, see: bls.gov/bls/employment.htm *(11)*.

For an overview of how the Bureau of Labor Statistics treats pay and benefits, see: bls.gov/bls/wages.htm *(12)*.

Employment and wage estimates are also available from the Bureau of Labor Statistics for over 800 occupations. Looking at mining by occupation, rather than by sector or industry, is helpful since wages can vary dramatically across occupations. For more information, see: bls.gov/oes *(13)*.

For more information on wages in non-mining industries run the EPS-HDT Socioeconomic Measures report.

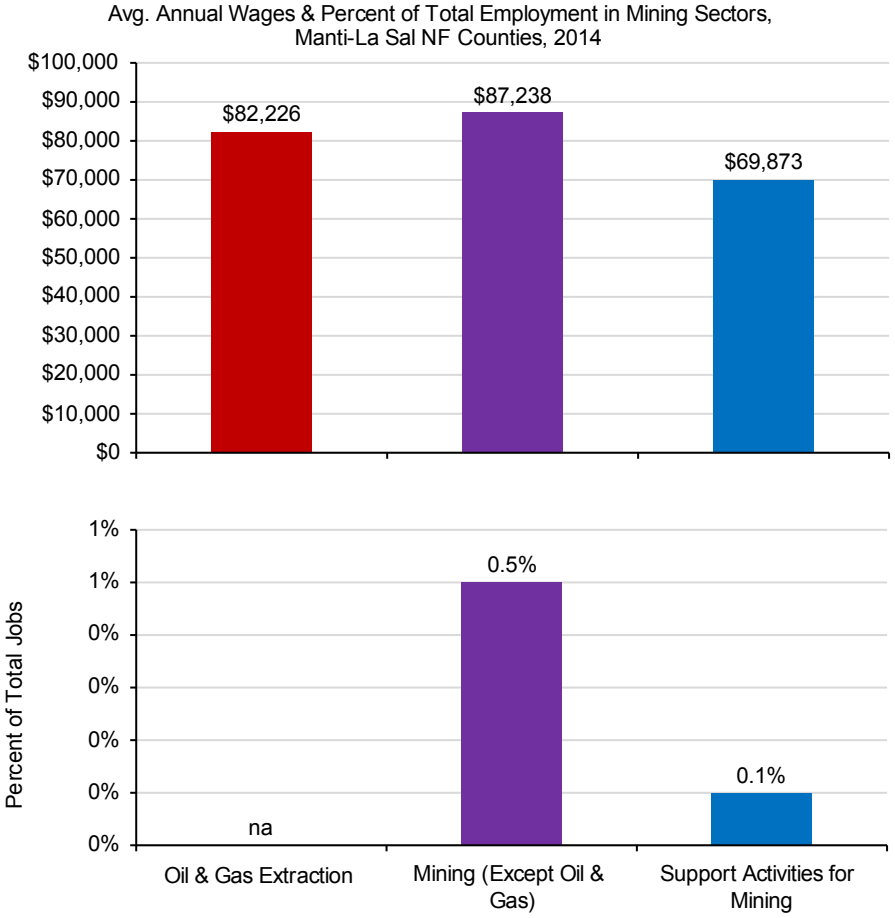
Data Sources

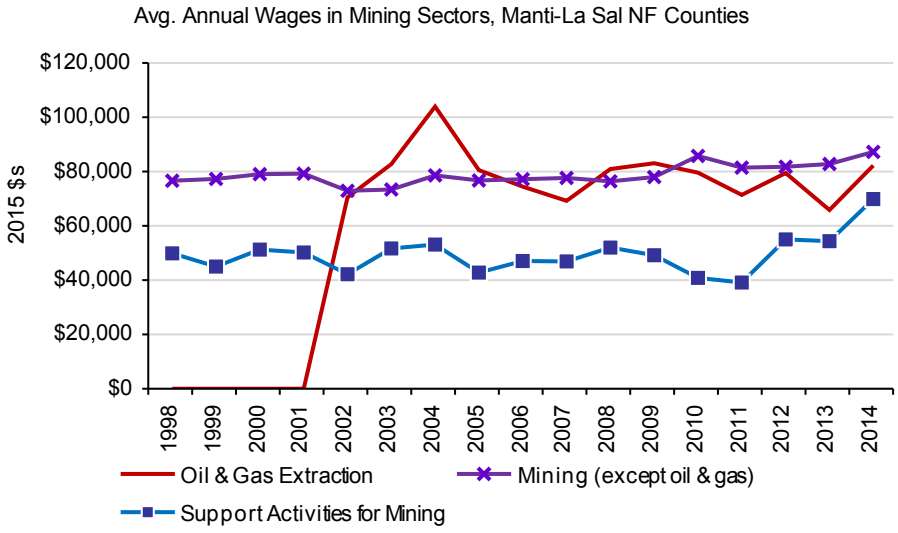
U.S. Department of Labor. 2015. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

Mining Wages

How do mining jobs and wages compare?

This page describes average wages (in real terms) and employment levels in different mining sectors for the region. It also shows average wage trends (in real terms) for mining sectors for the region.





- From 1998 to 2014, average wages in mining (except oil & gas) grew (in real terms) from $76,619 to $87,238 a 14% increase.
- From 1998 to 2014, average wages in support activities for mining grew (in real terms) from $49,869 to $69,873 a 40% increase.

Data Sources: U.S. Department of Labor. 2015. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

How do mining jobs and wages compare?

What do we measure on this page?

This page describes average wages (in real terms) and employment levels in different mining sectors for the region. It also shows average wage trends (in real terms) for mining sectors for the region.

The figure Avg. Annual Wages and Percent of Total Employment in Mining Sectors is useful for describing how many people are working in relatively high and low-wage mining sectors. The figure Avg. Annual Wages in Mining Sectors is useful for comparing wage trends by mining sector.

Why is it important?

While the mining industry has the potential to offer high wages, not all components of the mining industry pay the same wages or employ the same number of people. A significant increase in mining jobs that pay above the average for all industries will increase overall average earnings per job. On the other hand, a significant increase in mining jobs that pay below the average for all industries will decrease overall average earnings per job. A modest change in mining employment, especially when this industry is a small share of total employment, will not likely affect average earnings in a local area.

Methods

The wage and employment data on this page are from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on the initial pages of this report.

The three mining sub-sectors in the figures are 3-digit NAICS categories (from Quarterly Census of Employment and Wages) and are different than the three summary categories (from County Business Patterns) shown on the initial pages of this report.

What we show as mining in the figures on this page is the sum of the following NAICS codes: Forestry and Logging (113), Woods Product Manufacturing (321), and Paper Manufacturing (322).

The figure Avg. Annual Wages in Mining Sectors starts in 1998 to be consistent with the start date of figures on earlier pages of this report.

Depending on the geographies selected, some data may not be available due to disclosure restrictions.

Additional Resources

For an overview of how the Bureau of Labor Statistics treats employment, see: bls.gov/bls/employment.htm *(11)*.

For an overview of how the Bureau of Labor Statistics treats pay and benefits, see: bls.gov/bls/wages.htm *(12)*.

If there are significant undisclosed data on this page, other sources for mining wage data include:

The Bureau of Labor Statistics' Quarterly Census of Employment and Wages, which has data for industries at the state level, is available at: bls.gov/cew/ *(14)*.

The Bureau of Labor Statistics' Occupational Outlook Handbook, 2010-2011 Edition, which has detailed industry earnings and wages data at the national level, is available at: bls.gov/oco *(15)*.

The County Business Patterns database, which reports industry-level employment and payroll and can be used to estimate earnings, is available at: census.gov/econ/cbp/index.html *(16)*.

Data Sources

U.S. Department of Labor. 2015. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

How does regional mining employment compare to the U.S.?

This page describes how the region is specialized (or under-specialized) in mining employment. The figure illustrates the difference between the region and the U.S. by comparing mining jobs as a share of total employment and with location quotients.

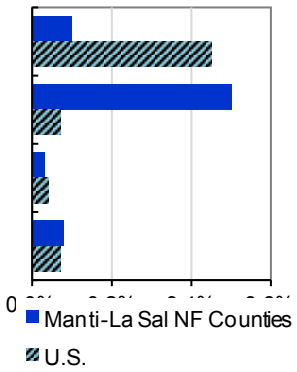
Location quotient: A ratio that compares an industry's share of total employment in a region to the national share. More precisely, it is the percent of local employment in a sector divided by the percent employment in the same sector in the U.S. In other words, it is a ratio that measures specialization, using the U.S. as a benchmark. A location quotient of more than 1.0 means the local area is more specialized in that sector relative to the U.S. A location quotient of less than 1.0 means it is less specialized.

Percent of Total Private Employment in Mining Sectors, Manti-La Sal NF Counties vs. U.S., 2014

	Employment Share		Location Quotient
Mining Sector	Manti-La Sal NF Counties	U.S.	
Oil & Gas Extraction	~0.1%	0.5%	0.2
Coal Mining	~0.5%	0.1%	7.1
Metallic Ore Mining	~0.0%	0.0%	0.8
Nonmetallic Ore Mining	~0.1%	0.1%	1.1

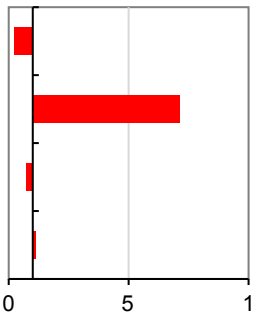
Employment Share

Manti-La Sal NF Counties vs. U.S.



Location Quotient

Manti-La Sal NF Counties vs. U.S.



- In 2014, coal mining had the highest location quotient score (7.1), and oil & gas extraction had the lowest (0.2).

Data Sources: U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

How does regional mining employment compare to the U.S.?

What do we measure on this page?

This page describes how the region is specialized (or under-specialized) in mining employment. The figure illustrates the difference between the region and the U.S. by comparing mining jobs as a share of total employment and with location quotients.

Location quotient: A ratio that compares an industry's share of total employment in a region to the national share. More precisely, it is the percent of local employment in a sector divided by the percent employment in the same sector in the U.S. In other words, it is a ratio that measures specialization, using the U.S. as a benchmark. A location quotient of more than 1.0 means the local area is more specialized in that sector relative to the U.S. A location quotient of less than 1.0 means it is less specialized.

The term "benchmark" in this report should not be construed as having the same meaning as in the National Forest Management Act (NFMA).

Why is it important?

Geographies with economies that focus narrowly on resource extraction, particularly on fossil fuel development, can be subject to boom-and-bust cycles as well as other economic challenges, such as slower long-term economic growth. These difficulties are sometimes called the "resource curse" in reference to the apparent paradox that areas rich in natural resources often underperform economically.

A useful way to think about location quotients is as a measure of whether a place or geography produces enough goods or services from an industry to satisfy local demand for those goods or services. Results above or below the 1.0 standard indicate the degree to which a place or geography may import or export a good or service. Although there is no precise cutoff, location quotients above 2.0 indicate a strong industry concentration (and that an area is likely exporting goods or services) and those less than .5 indicate a weak industry concentration (and that an area is likely importing goods or services).

A large location quotient for a particular sector does not necessarily mean that sector is a significant contributor to the economy. LQs greater than 1.0 only suggest potential export capacity when compared to the U.S. and do not take into account local demand. Local demand may be greater than a national average, and therefore all goods and services may be consumed locally (i.e., not exported). LQs can change from year to year, and can vary when income or wage data are used rather than employment.

Methods

LQ = (ei/e) divided by (Ei/E)
Where: ei = Local employment in industry i, e = Total local employment, Ei = U.S. employment in industry i, E = Total U.S. employment. Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses data from the U.S. Department of Commerce to estimate these data gaps. These values are indicated with tildes (~).

Additional Resources

For a review of literature on economic diversity, see Sterling, Andrew. 1998. "On the Economics and Analysis of Diversity." Electronic Working Papers Series, University of Sussex, available at: sussex.ac.uk/Units/spru/publications/imprint/sewps/sewp28/sewp28.pdf *(17)*; and Malizia, E. E. and K. Shanzai. 2006. "The Influence of Economic Diversity on Unemployment and Stability." Journal of Regional Science. 33(2): 221-235.

A useful summary of the "resource curse" can be found in: Humphreys, Macartan, Jeffrey D. Sachs, and Joseph E. Stiglitz, Eds. Escaping the Resource Curse. 2007. New York: Columbia University Press.

A report by Headwaters Economics - Fossil Fuel Extraction as a County Economic Development Strategy: Are Energy Focusing Counties Benefiting? - looks specifically at the economic performance of energy focused economies in the U.S. West. It is available at: headwaterseconomics.org/energy *(8)*.

A succinct definition of a location quotient is offered by Florida State University's Department of Urban and Regional Planning: mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm *(18)*.

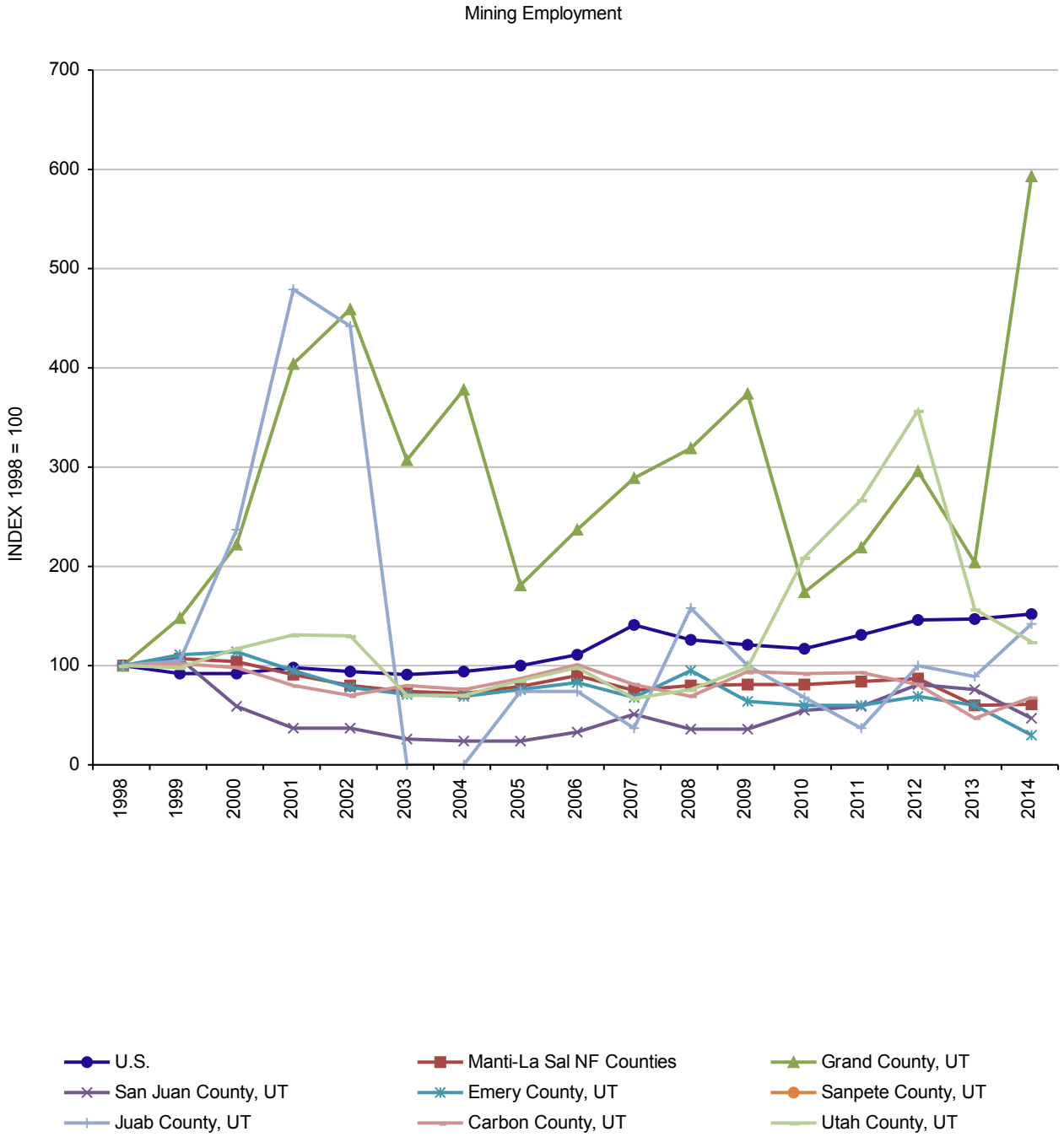
Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps *(4)*.

Data Sources

U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

How does mining employment change compare across geographies?

This page describes the change in mining employment for all selected geographies and the U.S. The information is indexed (1998=100) so that data from geographies with different size economies can be compared and to make it easier to understand the relative rate of growth or decline of mining employment over time.



- From 1998 to 2014, Grand County, UT had the fastest rate of change in mining employment, and Manti-La Sal NF Counties had the slowest.

Data Sources: U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

How does mining employment change compare across geographies?

What do we measure on this page?

This page describes the change in mining employment for all selected geographies and the U.S. The information is indexed (1998=100) so that data from geographies with different size economies can be compared and to make it easier to understand the relative rate of growth or decline of mining employment over time.

Index: Indexed numbers are compared with a base value. In the line chart, employment in 1998 is the base value, and is set to 100. The employment values for subsequent years are expressed as 100 times the ratio to the base value. The indexing used in the line chart enables easier comparisons between geographies over time.

The term "benchmark" in this report should not be construed as having the meaning as in the National Forest Management Act (NFMA). Note: If many geographies are selected, it may be difficult to read the figures on this page.

Why is it important?

Not all geographies have attracted or lost mining industries and employment at the same rate. An index makes it clear where the rate of mining growth or decline has been the fastest. Lines above 100 indicate positive absolute growth while those below 100 show absolute decline. The steeper the curve the faster the rate of change.

It may be helpful to look for large year-to-year rises or dips in figure lines to identify rapid employment changes. If the reasons behind these fluctuations are not evident, it may be helpful to talk with regional experts or locals to learn more about what caused abrupt changes.

Geographies with economies that focus narrowly on resource extraction, particularly on fossil fuel development, can be subject to boom-and-bust cycles as well as other economic challenges, such as slower long-term economic growth. These difficulties are sometimes called the "resource curse" in reference to the apparent paradox that areas rich in natural resources often underperform economically.

Methods

The figure begins in 1998 because that is the year the Census Bureau (and County Business Patterns) shifted to using the new North American Industrial Classification System (NAICS).
Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses data from the U.S. Department of Commerce to estimate these data gaps.

Additional Resources

For detailed information on oil, gas, and coal see the U.S. Energy Information Administration: eia.doe.gov *(5)*.

BP offers a widely-used and comprehensive overview on global trends in energy called the BP Statistical Review of World Energy: bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481 *(6)*.

The Bureau of Labor Statistics provides an overview and outlook of the mining industry: bls.gov/oco/cg/cgs004.htm *(7)*. This site also contains useful links to organizations such as the American Geological Institute and the National Mining Association.

For a review of literature on economic diversity, see Sterling, Andrew. 1998. “On the Economics and Analysis of Diversity.” Electronic Working Papers Series, University of Sussex, available at: sussex.ac.uk/Units/spru/publications/imprint/sewps/sewp28/sewp28.pdf (17); and Malizia, E. E. and K. Shanzai. 2006. “The Influence of Economic Diversity on Unemployment and Stability.” Journal of Regional Science. 33(2): 221-235.

A useful summary of the "resource curse" can be found in: Humphreys, Macartan, Jeffrey D. Sachs, and Joseph E. Stiglitz, Eds. Escaping the Resource Curse. 2007. New York: Columbia University Press.

Headwaters Economics has completed a number of studies on fossil fuel development and its impact on the West, See: headwaterseconomics.org/energy *(8)*.

Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps *(4)*.

Data Sources

U.S. Department of Commerce. 2016. Census Bureau, County Business Patterns, Washington, D.C.

Data Sources

The EPS Services report uses published statistics from government sources that are available to the public and cover the entire country. All data used in EPS can be readily verified by going to the original source. The contact information for databases used in this profile is:

- **County Business Patterns**
  Census Bureau, U.S. Department of Commerce
  http://www.census.gov/epcd/cbp/view/cbpview.html
  Tel. 301-763-2580

- **Nonemployer Statistics**
  Bureau of the Census, U.S. Department of Commerce
  http://www.census.gov/econ/nonemployer/index.html
  Tel. 301-763-2580

- **Quarterly Census of Employment and Wages**
  Bureau of Labor Statistics, U.S. Department of Labor
  http://www.bls.gov/cew
  Tel. 202-691-6567

Methods

EPS core approaches: EPS is designed to focus on long-term trends across a range of important measures. Trend analysis provides a more comprehensive view of changes than spot data for select years. We encourage users to focus on major trends rather than absolute numbers. EPS displays detailed industry-level data to show changes in the composition of the economy over time and the mix of industries at points in time. EPS employs cross-sectional benchmarking, comparing smaller geographies such as counties to larger regions, states, and the nation, to give a sense of relative performance. EPS allows users to aggregate data for multiple geographies, such as multi-county regions, to accommodate a flexible range of user-defined areas of interest and to allow for more sophisticated cross-sectional comparisons.

SIC to NAICS: Starting in the 1930s, the Standard Industrial Classification (SIC) system has served as the structure for the collection, aggregation, presentation, and analysis of the U.S. economy. Under SIC, which employed a four-digit coding structure, an industry consists of a group of establishments primarily engaged in producing or handling the same product or group of products or in rendering the same services. As the U.S. economy shifted from a primary emphasis on manufacturing to a more complex services economy, SIC became less useful as a tool for describing the economy's changing industrial composition.

The North American Industry Classification System (NAICS), developed using a production-oriented conceptual framework, groups establishments into industries based on the activity in which they are primarily engaged. NAICS uses a six-digit hierarchical coding system to classify all economic activity into twenty industry sectors. Five sectors are mainly goods-producing sectors and fifteen are entirely services-producing sectors.

County Business Patterns started organizing their data using NAICS in 1998, Census in 2000, and Bureau of Economic Analysis's Regional Economic Information System in 2001. Because the methods underlying SIC and NAICS are fundamentally different (what was sold vs. how it was produced), NAICS is not backward compatible with SIC. There are a few circumstances where it is acceptable to show uninterrupted trends across the SIC-NAICS discontinuity. Total personal income, total labor income, and non-labor income can all be plotted continuously without a problem. In addition, a few industries can also be plotted without a break, though this is not the case for services.

Adjusting dollar figures for inflation: Because a dollar in the past was worth more than a dollar today, data reported in current dollar terms should be adjusted for inflation. The U.S. Department of Commerce reports personal income figures in terms of current dollars. All income data in EPS-HDT are adjusted to real (or constant) dollars using the Consumer Price Index. Figures are adjusted to the latest date for which the annual Consumer Price Index is available.

Data gaps and estimation: Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses supplemental data from the U.S. Department of Commerce to estimate these data gaps. These are indicated in italics in tables. Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at headwaterseconomics.org/eps.

Links to Additional Resources

For more information about EPS see:

headwaterseconomics.org/EPS

Web pages listed under Additional Resources include:

Throughout this report, references to on-line resources are indicated with italicized numbers in parentheses. These resources are provided as hyperlinks here.

1 www.naics.com/search.htm
2 www.bls.gov/bls/NAICS.htm
3 www.census.gov/eos/www/naics
4 headwaterseconomics.org/eps
5 www.eia.doe.gov
6 www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481
7 www.bls.gov/oco/cg/cgs004.htm
8 headwaterseconomics.org/energy
9 www.census.gov/econ/nonemployer/index.html
10 www.census.gov/econ/nonemployer/definitions.htm
11 www.bls.gov/bls/employment.htm
12 www.bls.gov/bls/wages.htm
13 www.bls.gov/oes
14 www.bls.gov/cew/
15 www.bls.gov/oco
16 www.census.gov/econ/cbp/index.html
17 www.sussex.ac.uk/Units/spru/publications/imprint/sewps/sewp28/sewp28.pdf
18 www.mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm