County Level Drilling Activity, 2001-2011

Rig Data by Year in Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming Counties

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Summary Findings

National drilling rig counts are an important measure of trends in domestic fossil fuel energy development activity. Because a majority of oil and gas industry jobs are associated with the drilling phase, drilling activity (as measured by rig counts) serves as a good proxy for employment trends.

State-level information can obscure the intensity of oil and gas development activities in specific locations. For that reason, this report focuses on county-level details of drilling rig activity for the period 2001 to 2011 in the six Rocky Mountain oil and gas states of Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming. The unit of measure is rig weeks—the presence of one drilling rig for at least one week in the county.

This analysis and accompanying web-based interactive illustrate the amount of drilling activity at the county level both by year and the extent of changes from year to year: http://headwaterseconomics.org/interactive/rig-weeks-activity .

We also analyze three important dynamics in the boom-bust cycle that energy-focusing counties experience; identifying the 10 busiest counties, the 10 counties with the fastest build ups (booms), and the 10 counties with the steepest declines (busts). These county-level trends provide an opportunity to compare trends and the relative impacts of different boom-bust cycles in different geological areas.

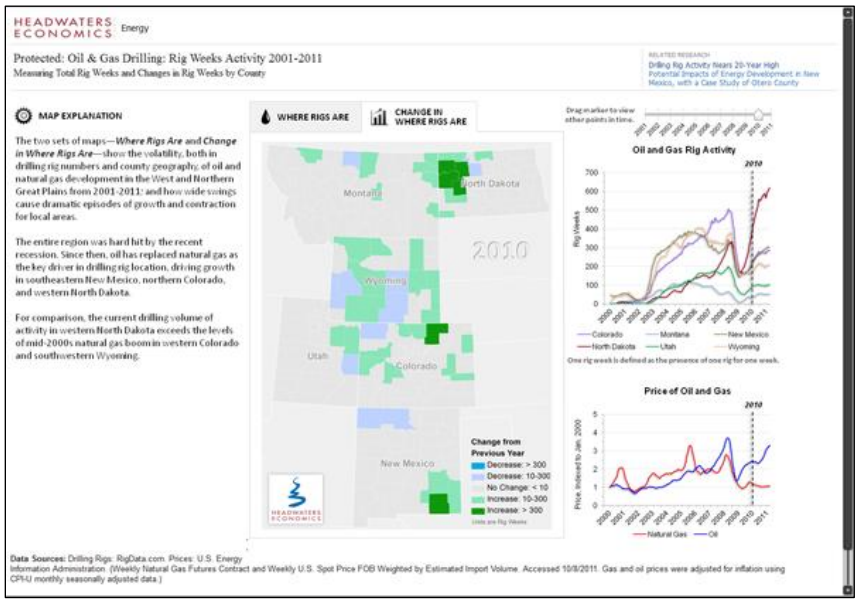
Key findings include:

- The pace and scale with which the industry moves often has significant impacts at the local level, with the majority of boom and bust activity confined to a handful of dramatically affected counties.
- Price is the most important driver of industry investment decisions. The strength of oil prices and low prices for natural gas explain why oil drilling has helped lead a recovery of drilling activity.
- Development occurs when and where resources are prime, a factor primarily determined by technological change.
- In 2011, rig activity in the Rocky Mountain states and western North Dakota, exceeded the heights reached during the natural gas boom of the 2000s.

Note: In June 2011, Headwaters Economics released a graphical analysis of oil and gas drilling activity that focused on trends at the state and national levels: http://headwaterseconomics.org/energy/western/rig-activity/ .

Rig Activity Trends

The oil and gas industry can respond to market signals with tremendous agility, in part because of ongoing investment in exploring new resource areas. The key message conveyed by the maps and data shown here is that the dramatic pace and scale with which the industry moves register at a very local level, with the majority of boom and bust activity confined to a handful of dramatically affected counties.



Visit our website for an interactive display of changing rig activity from 2001 to 2011.

http://headwaterseconomics.org/interactive/rig-weeks-activity

Busiest Counties:

As measured by total rig weeks in a single county over the course of a calendar year, Garfield County, Colorado and Sublette County, Wyoming hit all time highs as the busiest drilling areas in the West in the years 2008 and 2006, respectively. The next busiest counties were Eddy County, New Mexico in 2006, and McKenzie and Mountrail counties, North Dakota in 2011.

10 Busiest Counties—Most Rig Activity in a Single Year in the Past Decade

	County, State	Basin	Rig Weeks in a Single Year	Year
1	Garfield County, CO	Uinta-Piceance	3181	2008
2	Sublette County, WY	Green River	2257	2006
3	Eddy County, NM	Permian	2041	2006
4	McKenzie County, ND	Williston	1882	2011
5	Mountrail County, ND	Williston	1633	2010
6	Weld County, CO	Denver	1602	2011
7	Lea County, NM	Permian	1564	2005
8	Uintah County, UT	Uinta-Piceance	1458	2008
9	Williams County, ND	Williston	1352	2011
10	Dunn County, ND	Williston	1169	2011

Fastest Build-Ups:
We often pay attention when a boom is underway, but are less cognizant of the period of build up and bust. Focusing on the boom makes sense because local impacts may be most visible. But the speed and scope of change that occurs during the build up to a boom make these periods equally dramatic—often leading to the most difficult periods for local economies and governments that are challenged to react to rapid swings in revenue, population, and business activity.

For the period 2001 to 2011, the largest year-to-year increase in rig activity in a single county took place between 2002 to 2003 in Eddy County, New Mexico. The second largest boom in year-to-year activity occurred in Mountrail County, North Dakota between 2007 and 2008.

10 Fastest Build-ups in Oil and Gas Drilling Activity in the Past Decade

	County	Basin	Total Increase in Rig Week Activity	Period
1	Eddy County, NM	Permian	1154	2002 - 2003
2	Mountrail County, ND	Williston	858	2007 - 2008
3	Lea County, NM	Permian	834	2002 - 2003
4	Williams County, ND	Williston	815	2009 - 2010
5	Garfield County, CO	Uinta-Piceance	808	2002 - 2003
6	McKenzie County, ND	Williston	763	2009 - 2010
7	Sublette County, WY	Green River	725	2002 - 2003
8	Weld County, CO	Denver	622	2010 - 2011
9	Uintah County, UT	Uinta-Piceance	495	2003 - 2004
10	Dunn County, ND	Williston	413	2009 - 2010

Steepest Declines:
The recession led to declines in drilling activity throughout the region, but some areas experienced especially steep losses. The 2008-2009 bust was led by Garfield County, Colorado which lost more than twice the volume of rig activity—2100 rig weeks—than the runner-up "loser," Uinta County, Utah, also in 2008-2009.

10 Steepest Falls in Oil and Gas Drilling Activity in the Past Decade

	County	Basin	Total Change in Rig Week Activity	Period
1	Garfield County, CO	Uinta-Piceance	-2100	2008 - 2009
2	Uintah County, UT	Uinta-Piceance	-1007	2008 - 2009
3	Sublette County, WY	Green River	-915	2008 - 2009
4	Eddy County, NM	Permian	-663	2008 - 2009
5	Lea County, NM	Permian	-588	2008 - 2009
6	Mesa County, CO	Uinta-Piceance	-449	2008 - 2009
7	Weld County, CO	Denver	-390	2008 - 2009
8	Sweetwater County, WY	Green River	-368	2008 - 2009

9	Richland County, ND	Williston	-355	2008 - 2009
10	Rio Blanco County, CO	Uinta-Piceance	-234	2008 - 2009

Rig Activity by Basin:
The activity levels described in the tables above also provide an opportunity to compare county-level impacts of boom-bust cycles in different basins: Uinta-Piceance, Permian, and Bakken.

For example, counties in the Uinta-Piceance Basin led the rankings for busiest year of drilling activity in 2008 (during the period 2001 to 2011) with 5,263 total rig weeks taking place in three counties in the Uinta-Piceance Basin: Garfield County, Colorado (3,181), Rio Blanco County, Colorado (624); and Uintah County, Utah (1,458).

Despite the scale of the natural gas activity in Utah and Colorado in 2008, the pace of the build up (over a single year) in the Permian Basin in Southeastern New Mexico in 2002-2003 was actually greater.

In 2011, drilling in North Dakota exceeded the most recent previous surge (reached in the Utah-Colorado natural gas boom). County activity levels for 2011 were as follows: McKenzie (1,882); Mountrail (1,427); Williams (1,352); Dunn (1169); and Divide (366)—totaling 6,196 rig weeks for these five counties.

Conclusion:
Oil and gas extractive activities track market activity closely. Development occurs when and where resources are prime, which is a function of both technology and price. These variables can lead to rapid changes in the pace, scale, and location of development. Counties experience these rapid changes as booms and busts that bring swift accelerations and decelerations in population growth, employment, and revenue.

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For additional information, please see: http://headwaterseconomics.org/energy

Data is from RigData: www.rigdata.com

About Headwaters Economics
Headwaters Economics is an independent, nonprofit research group that assists the public and elected officials in making informed choices about land management and community development decisions in the West, http://headwaterseconomics.org/.