

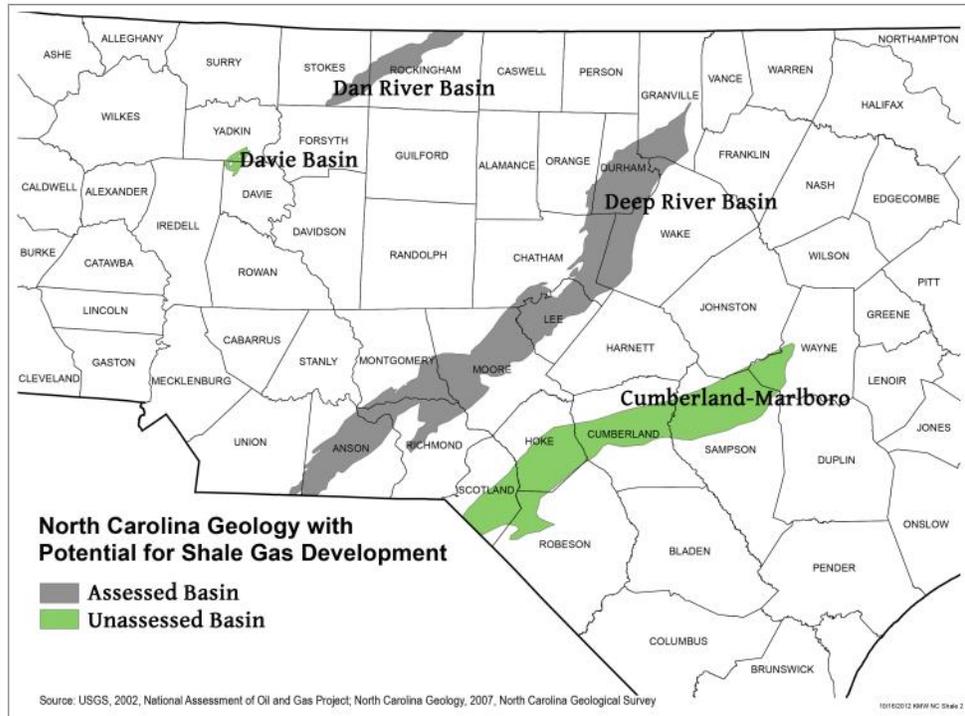
Potential Gas in NC: 'Unassessed' Shale Basins

What is assessment?

Assessment is a geologic analysis to determine the amount and extractability of a potential mineral resource. Geologists examine rock types, temperature and pressure conditions, chemical changes, and various other factors.

Assessed Basins

Two shale basins in NC have been assessed by the NC Geological Service: the **Deep River Basin** and **Dan River Basin**. In 2012, the USGS estimated the average natural gas resources in the Deep River Basin to be 1,660 billion cubic feet of gas (though USGS says it's more likely to be around 779). Based on the 2010 natural gas consumption in North Carolina, this could meet the state's natural gas demand for **at most 5.6 years**, if it all stayed within the state. This estimate assumes drillers can access 100% of the reserves—a far lower percentage is more likely. The Dan River Basin is estimated to contain 49 billion cubic feet of gas. This could meet NC's demands for 60 days at most.

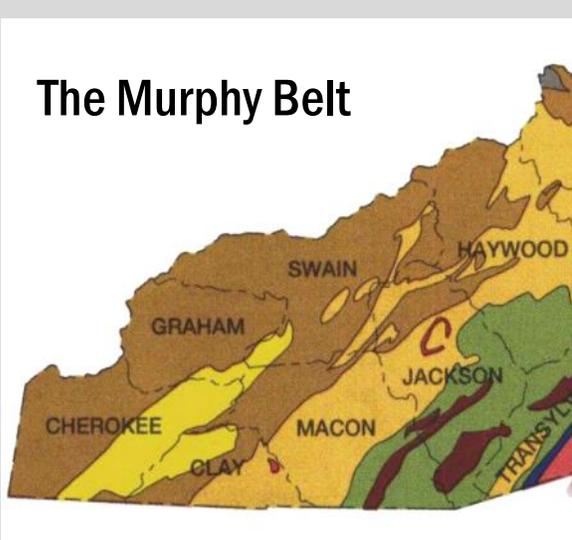


Unassessed Basins:

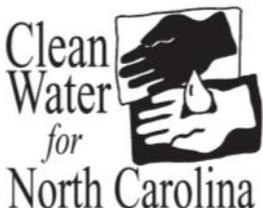
East of the Deep River basin, the **Cumberland-Marlboro Basin** covers parts of Scotland, Robeson, Hoke, Cumberland, Sampson, Wayne, and Johnston Counties. This shale basin has not received a quantitative assessment. The **Davie Basin**, in Davie and Yadkin county, has not had a quantitative assessment, but is not expected to have a significant amount of gas.

The **Murphy Belt** is made up of deformed rocks in NC's westernmost counties: Cherokee, Clay, Graham, Haywood, Jackson, Macon and Swain. The USGS still needs to do comprehensive sampling to determine the total organic carbon in the rocks, and the amount of heat and pressure rocks have undergone, before it can be determined to contain natural gas. The USGS has gathered considerably less information here than in the Dan River and Deep River basins, so it's unclear whether there is any gas, and what formations it would be found in.

Murphy Belt in the News: *In November 2013, Mitch Gillespie, NC Department of Environment and Natural Resources (NCDENR) Assistant Secretary for the Environment and fracking proponent, was quoted saying that NCDENR will spend \$11,725 studying a site in Western North Carolina that seems to coincide with the Murphy Belt. But he stressed that millions of dollars of testing would need to be conducted before any site was judged suitable for fracking. Other sources assure us that no money for a study has been appropriated and no study plan developed.*



The areas marked in dark brown on this geological map of Western North Carolina contain the type of rocks that make them a potential source of natural gas, though chances of there being significant gas deposits there are said to be slim. Image from N.C Geological Survey



For More Information:
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Sources

Assessment of Undiscovered Oil and Gas Resources of the East Coast Mesozoic Basins of the Piedmont, Blue Ridge Thrust Belt, Atlantic Coastal Plain, and New England Provinces. 2011. USGS.
Statement of Release of U.S. Geological Survey Assessment of North Carolina Oil and Gas Resources. June 6, 2012. NC Department of Environment and Natural Resources.