AGS Meeting TUESDAY (Jan 12): Assessing Impacts of Water Management Related to Oil and Gas Development on Water Resources

Tuesday, January 12, 2021

7:00 PM – 8:00 PM

Google Calendar (http://www.google.com/calendar/event?action=TEMPLATE&text=AGS%20Meeting%20TUESDAY%20%28Jan%2012%29%3A%20Assessing%20Impacts%20of%20Water%20Management%20Related%20to%20Oil%20and%20Gas%20Development%20on%20Water%20Resources&dates=20210113T010000Z/20210113T020000Z) · ICS (/new-events/2021/1/11/ags-meeting-jan-11-assessing-impacts-of-water-management-related-to-oil-and-gas-development-on-water-resources?format=ical)

Assessing Impacts of Water Management Related to Oil and Gas Development on Water Resources

Dr. Bridget R. Scanlon, Senior Research Scientist, Bureau of Economic Geology

RSVP to January, 2021 AGS meeting HERE (https://forms.gle/WvChFFoMj7KVwgs36)

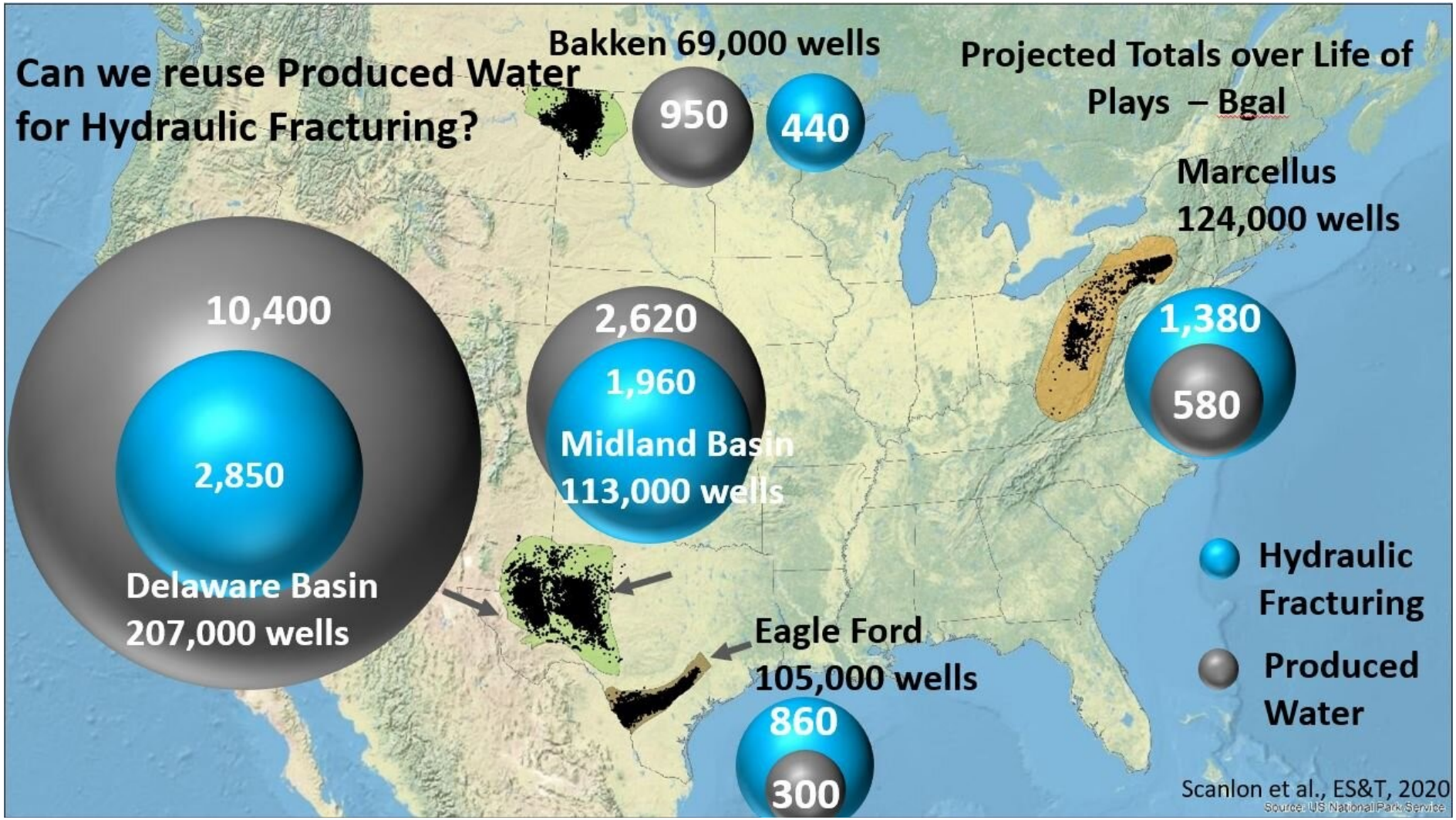
Bio

Bridget Scanlon is a Senior Research Scientist at the Bureau of Economic Geology, Jackson School of Geosciences, University of Texas at Austin. She has worked at the Univ. of Texas since 1987. Her current research emphasizes the interdependence of water and energy, focusing on water quantity aspects. Her group has evaluated water issues related to unconventional oil and gas production in the U.S., including historical and projected water volumes related to water scarcity in semiarid regions, induced seismicity, and disposal capacity. Dr. Scanlon is a Fellow of the American Geophysical Union and of the Geological Society of America and a member of the National Academy of Engineering. http://www.beg.utexas.edu/people/bridget-scanlon

Key Points of talk

Water management is an integral part of oil and gas development that can adversely impact water resources through water use for hydraulic fracturing and produced water management. We evaluated water demand for hydraulic fracturing and produced water management in all of the major unconventional oil and gas plays in the U.S. with particular emphasis on plays in Texas. Results show that during the past decade an aggregated total lateral length of ~440×106 ft (134,000 km; ~73,000 wells) was drilled in eight major plays in the U.S., equal to ~3× the Earth's circumference. Total water withdrawal showed a marked increase in water use for hydraulic fracturing, depleting groundwater (GW) in some semiarid regions (e.g., head declines ≤58 ft [18 m]/yr in Eagle Ford play). Water scarcity is projected in some regions within the Eagle Ford and Permian plays, where projected HF water demand exceeds planned GW depletion. Oil plays generated much more produced water than gas plays, with the Permian producing ~50× more water than the Marcellus in 2018. The projected PW volume in the Permian Delaware Basin over the life of the play is equal to ~2× water use in Texas in 2017.

Water issues related to both hydraulic fracturing water demand and produced water supplies may be partially mitigated by closing the loop through reusing produced water for hydraulic fracturing of new wells. However, projected produced water volumes exceed hydraulic fracturing water demand in some plays, particularly the Permian Delaware Basin (3.7×), with the Delaware accounting for ~50 percent of projected U.S. oil production. There is also considerable interest in beneficially using produced water outside of the oil and gas sector, such as irrigation, aquifer recharge, and discharge to surface water. Produced water quality and reliability and economics of treatment are critical factors. The results of these analyses have important implications for future water management in the oil and gas sector to minimize adverse environmental impacts.



Earlier Event: December 7

AGS meeting (Dec 7): Aquifer Storage and Recovery and Managed Aquifer Recharge throughout Texas: Planning for the Future (/new-events/2020/12/7/ags-meeting-dec-7-tbd)

Later Event: February 1

Seawater Desalination – A Drought-Proof Water Supply for Texas (/new-events/2021/2/1/ags-february-technical-talk)