

Environmental impacts of oil and gas production

Sharon Buccino
Natural Resources Defense Council

Oil and Gas Exploration and Production

- Enormous expansion in recent years
- Industry present in 34 states
- Natural gas wells nationwide went from:
 1989: 262,000
 2007: 463,000

Future: hundreds of thousands of new wells

Environmental Impacts

- Toxic releases into the environment
- Destruction of wildlife habitat and natural values
- Noise, light and other pollution

Air

Hazardous Air Pollutants (HAPs)

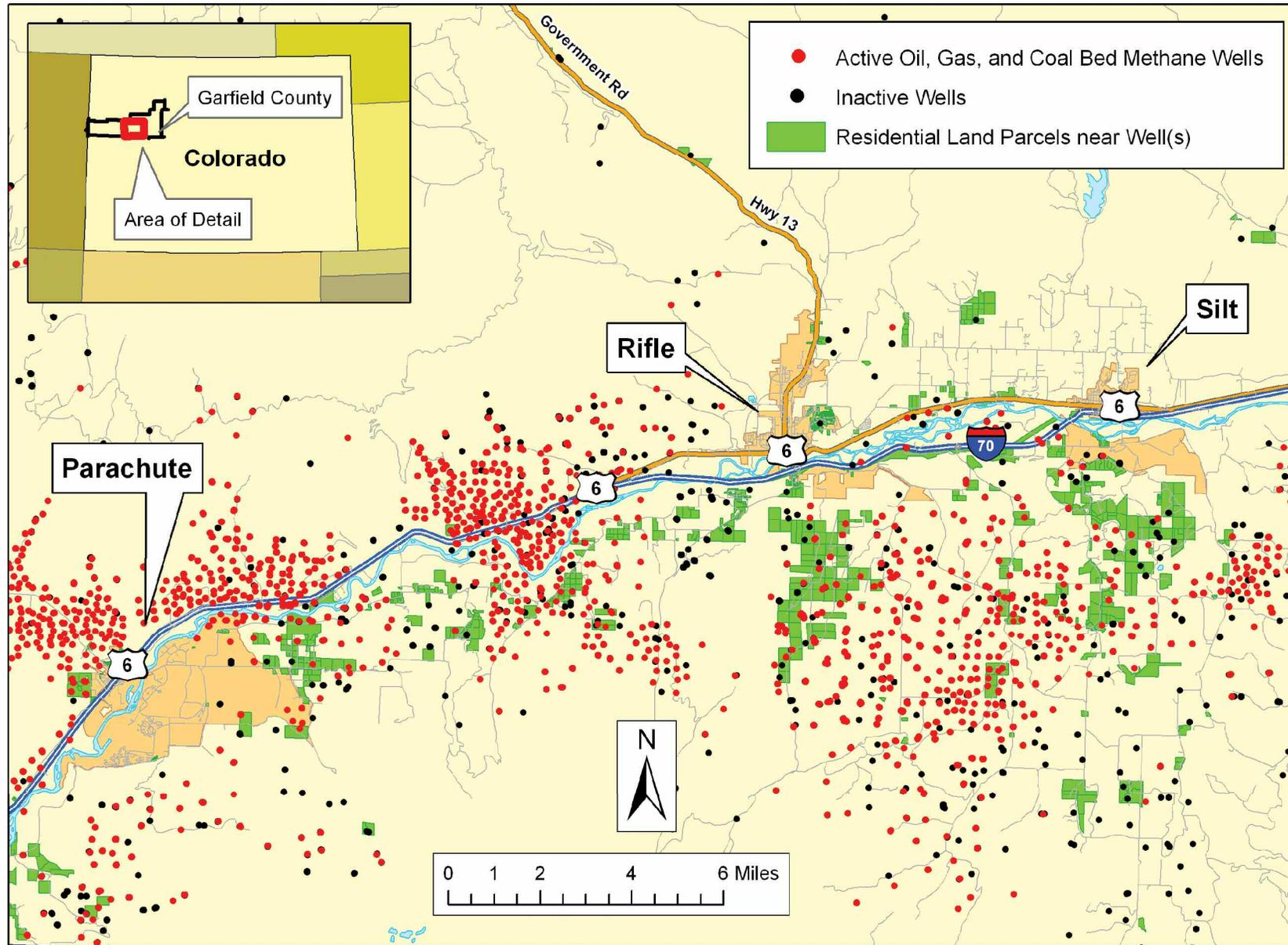
- Benzene, formaldehyde, xylenes from natural, chemical or combustion sources. They may be intentionally vented, leaked, or dumped in open air pits and left to evaporate.

Ozone

- Caused by VOCs, NO_x and sunlight

Particulates

- Dust, soot, chemicals from fuel combustion



Groundwater Contamination

Potential sources of contamination

- Drilling activities
- Hydraulic fracturing
- Naturally occurring substances or chemical additives
- Benzene and other contaminants have been found in water wells in Wyoming, Colorado, Pennsylvania, Arkansas, Alabama, Ohio, Texas, and more.



Wildlife impacts

- Habitat destruction and fragmentation
- Noise and light
- Contamination of air and water
- Erosion and sedimentation
- Poaching
- Traffic

Wildlife Habitat



Wildlife impacts

- Over 25 million acres of big-game habitat in the Rockies has already been leased by the Bureau of Land Management.
- Mule deer numbers declined in one area in the Pinedale anticline by 30 percent overall during a seven-year research project which ran from 2000-2007.
- Sage grouse show reduced breeding populations in breeding areas within 3 miles of active drilling and within 2 miles of existing wells. Eventually they stop using these breeding areas.

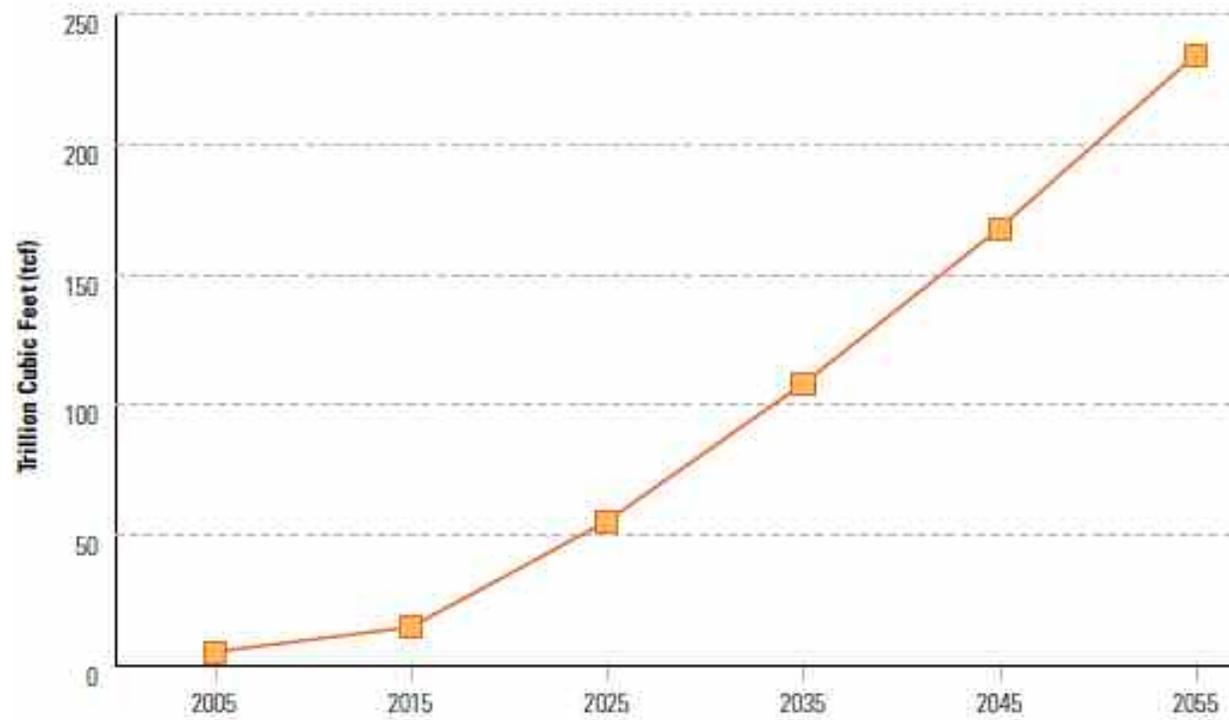
Technical innovation

- Capturing air emissions
- Reducing, recycling, or reusing toxic substances
- Using non-toxic substitutes
- Closed-loop pitless drilling instead of pits
- Preventive maintenance and leak prevention
- Well clustering, centralized operations, remote telemetry, piping systems

Efficiency

An aggressive natural gas efficiency program could cumulatively save more than 234 trillion cubic feet of natural gas over the next 50 years.

Natural Gas Savings from Efficiency Measures



“America does not have to choose between a clean and healthy environment and a healthy, growing economy. We can and must have both.”

-- Williams