

**Save Roan Plateau**

**Impacts of Oil and Gas Drilling**

Colorado is currently in the midst of an oil and gas drilling frenzy. The state has more than 25,000 active wells including approximately 1700 in Garfield county<sup>1</sup>.

It is widely recognized that some drilling is going to occur on public lands, but that need not, and should not be extended to unique and scenic landscapes like those atop Roan Plateau. A balance must exist in the larger area between protection of natural areas and gas production. In the Roan Plateau Planning Area, that balanced approach means no drilling on the top or cliffs of the plateau and responsible drilling at the base.

Colorado is on a pace to break records by approving 2,700 new drilling permits this year, 650 of which are estimated to be in Garfield County<sup>2</sup>, where industry predicts up to 10,000 new wells over the next decade. Add that to 40,000 plugged and abandoned wells around the state<sup>3</sup>. While this may mean boom times for energy corporations, it also means serious environmental and social impacts to the land and local communities. In helping to decide how energy development will proceed, citizens need to understand the impacts of gas development on water quality, scenic quality and recreational opportunities, and wildlife habitat.

**Water Quality**

- **Contamination**-Water contamination is one of the greatest impacts posed by energy development. Undeveloped public lands often include and protect watersheds, both for irrigation and drinking water. In addition to the direct impacts of drilling, intensive energy development threatens these important community resources. An April 2004 gas seep that polluted West Divide Creek in Garfield County clearly shows this.



- **“Fracing”**-A common drilling procedure, called hydraulic fracturing or “fracing”, can pollute surface and ground water. Fracing is used to fracture underground rock and soil formations to force production of oil and gas. A single fracing job can involve the injection of a ton of sand mixed with significant amounts of hazardous and toxic materials<sup>4</sup>. These hazardous materials can pollute underground aquifers, contaminate sources of drinking water and pollute waterways important to aquatic wildlife.

- **Wastewater**-Drilling often produces wastewater (with amounts varying depending on the drilling method and rock formation) that is stored in open wastewater pits. These pits contain a soup of hazardous chemicals that can be dangerous if for thirsty wildlife and cattle. (see picture above)

<b>Common Impacts From Oil and Gas Development</b>
• Water pollution
• Air pollution
• Soil pollution
• Noise and light pollution
• Habitat fragmentation
• Wildlife mortality
• Loss of scenic landscapes, healthy plant life and forest cover
• Invasion of noxious weeds and non-native plants
• Loss of recreation opportunities
• Increased traffic

**Scenic Values and Recreation Opportunities**

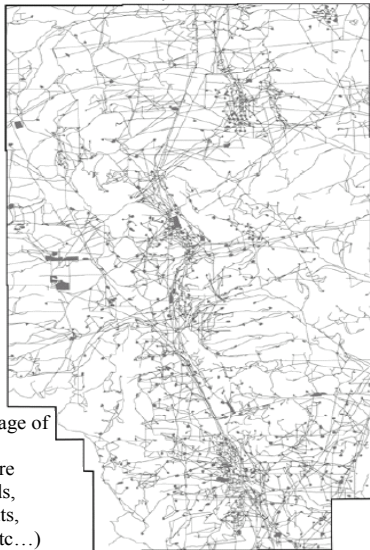
- **Open Spaces**-Public lands contain many of the last large tracts of undeveloped landscapes in Colorado, and offer some of the wildest and most unique landscapes in the United States. These lands contain scenic vistas and recreational opportunities enjoyed by millions of Americans, residents and visitors alike. These remaining undeveloped public lands deserve careful consideration and should be protected for our own sake and for future generations. Oil and gas infrastructure and activity displaces these other activities and impairs these landscapes, causing visual scarring and other resource damage that lasts for decades at best and in some cases permanently. Once an oil or gas parcel is developed, its scenic qualities and recreational opportunities diminish, hurting local businesses reliant upon tourism and recreation.

- **Rocky Mountain States are Providing the Nation with Energy-** According to a report by the Department of the Interior; over 88 percent of federal natural gas resources on public lands in the Rocky Mountain states are available for leasing to energy corporations<sup>5</sup>. Furthermore, in the Rockies alone, industry has leased more than 34 million acres of BLM public land. Of that, 68 percent is not in production<sup>6</sup>. Despite these facts, energy



**Big Piney-LaBarge oil & gas field  
Upper Green River Basin-Wyoming**

Size of area -106,240 acres



Land coverage of oil & gas infrastructure (wells, roads, drill rigs, pits, pipelines, etc...)

corporations continue their push to lease and drill the last of our wild and undeveloped public lands.

**Air Quality**

- **Air Pollution-**Production emissions from drilling and extraction include nitrogen oxides, sulfur oxides, particulate and hazardous substances, such as benzene. Constant flare-offs that regulate gas pressure release heavy metals and other toxic substances into the air. Round the clock use of dirt roads increases the amount of particulate matter and dust present in the air of surrounding areas.

**Wildlife Habitat**

- **Fragmentation-**Oil and gas fields fragment undeveloped landscapes and present an imposing threat to wildlife. These fields block natural migration patterns and encroach on wildlife habitat, habitat that

can be especially important as wintering ground.

- **Habitat-**The results from one study on elk-habitat effectiveness found that when road densities are two miles per square mile, elk are displaced from up to 50% of their habitat. When road densities exceed five to six miles per square mile, elk are unable to use more than 75% of the habitat and may not use any of the potentially available habitat<sup>7</sup>. Another study concluded that more than 640 acres of elk habitat can be affected by one mile of road<sup>8</sup>.

- **Economic Impact-**Development of oil and gas resources can also have negative impacts on communities where revenues from hunters, anglers, and wildlife watchers are a significant part of the economy. According to the US Fish and Wildlife Service over \$2 billion was spent in Colorado during 2001 on equipment and trip related expenses for wildlife related recreation activities<sup>9</sup>. If fragmentation of habitat from oil and gas projects results in declining big game populations and the declining populations result in a lower quality hunting experience, fewer hunters, and a drop in related spending, the overall negative economic effect for rural businesses and communities could be substantial.

**Oil and gas development leaves behind a large footprint, a footprint that extends well beyond the several-acre drilling sites.**

**Exploration:** Large thumper trucks with seismic surveying equipment crisscross the landscape in leaving behind a crude system of routes.

**Drilling:** Drilling operations then require more large trucks with drill rigs using a network of new and existing roads to access drill sites.

**Production:** If the well and field are producers, the well is cased with pipe and cement and the rig replaced by a wellhead. Hundreds or even thousands of wells can follow in a full-field scenario. The typical well lasts 20-50 years, stretching the impacts over many decades.

**Transport:** Loud and disruptive electric or gas-powered motors are used to power pumps that collect the gas at each well and to power the series of 24-hour compressor stations that pressurize gas for pipeline transport.

**Wastewater:** Many drill sites also involve the construction of large waste ponds to collect water and drilling fluids brought to the surface.

1. Colorado Oil and Gas Conservation Commission  
 2. Colorado Oil and Gas Conservation Commission  
 3. Colorado Oil and Gas Conservation Commission  
 4. Glenwood Springs Bureau of Land Management's Oil and Gas Draft Supplemental Environmental Impact Statement (L-5).  
 5. Department of the Interior Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and Reserves... January 2003  
 6. The Wilderness Society, Drilling in the Rocky Mountains, Not so Fast!. April 2004  
 7. Lyon, L.J. 1983. Road density models describing habitat effectiveness for elk. Journal of Forestry 81: 592-596  
 8. Perry, C., and R. Overly. 1976. Impact of roads on big game distribution in portions of the Blue Mountains of Washington. Pages 62-68  
 9. US Fish and Wildlife Service 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation