

# **The Writing on the Wall:**

**How environmentalists and an energy company  
found common ground in Carbon County, Utah**

**By Mitch Tobin**

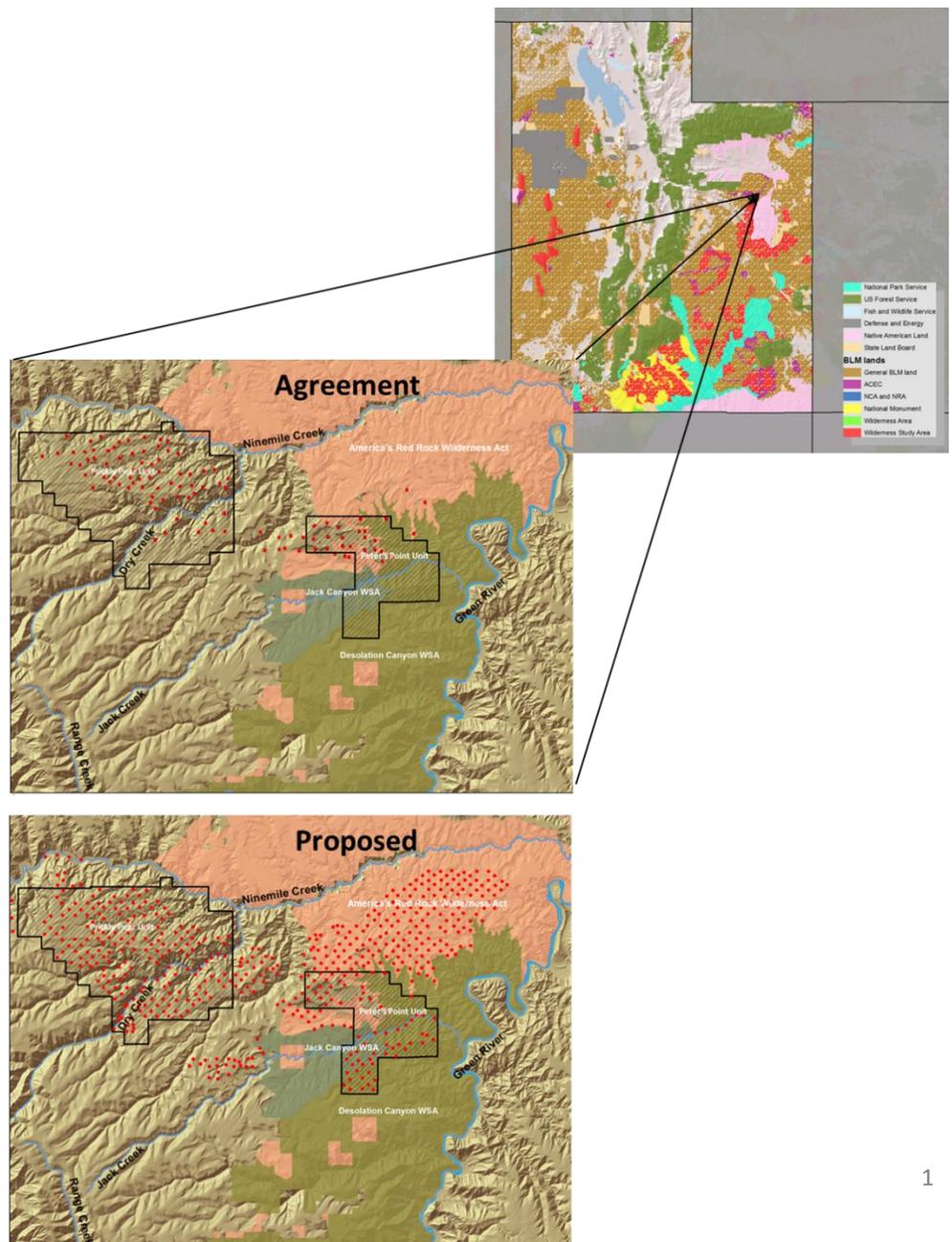
**California Environmental Associates**

**September 2011**

## Summary

The David and Lucile Packard Foundation asked California Environmental Associates to examine a deal between the Southern Utah Wilderness Alliance and the Bill Barrett Corporation that shrank the footprint of a major natural gas development near Utah's Desolation Canyon. BBC agreed not to drill in Wilderness Study Areas that the Bureau of Land Management is supposed to manage as wilderness until Congress decides their fate and it committed to a variety of mitigation measures designed to safeguard one of the greatest concentrations of Native American rock art on the continent. The Packard Foundation, which helps fund SUWA's advocacy work, wanted to know more about the circumstances leading up to the agreement and whether it holds promise as a tool for resolving similar disputes over natural resources in the West.

California Environmental Associates has also created a video slideshow to accompany this written evaluation. The movie includes additional photos of the area, animated maps, and graphics explaining the wilderness versus energy debate in Utah. The video is at <http://youtu.be/icOdBmBzo8o>



## Introduction

The Southern Utah Wilderness Alliance (SUWA) focuses on just one state, but it has built a national reputation for its aggressive public lands advocacy in Utah's red rock country. To many energy developers, off-road riders, and county commissioners in its home state, SUWA has become a four-letter word. By pressuring the U.S. Bureau of Land Management (BLM) and other agencies into protecting big chunks of Utah's backcountry, SUWA and its allies have kept oil and gas drilling, off-roading, and other mechanized activities out of some of the most rugged and remote parts of the lower 48. Known for taking a hard line, the group's rather audacious proposal to designate 9 million acres in Utah as wilderness has alienated many rural residents and Republican politicians while also earning SUWA plenty of detractors in the BLM.

*"As an organization, it was difficult. This really isn't the way we've done things in the past. I think at the end of the day it was head over heart."*

—SUWA attorney Steve Bloch

So it came as something of a surprise in the summer of 2010 when SUWA announced that it had reached a deal with a major energy firm, the Bill Barrett Corporation (BBC), that would allow the company to drill a half-dozen natural gas wells on lands that SUWA had been seeking to protect through its America's Red Rock Wilderness Act. BBC, no wallflower when it came to advocating for its rights to extract energy from public lands, would also be allowed to clear about five-dozen new well pads near the fabled canyon that explorer John Wesley Powell named "Desolation." The deal would usher in new roads, pipelines, and a steady stream of big rig trucks driving down the dirt road in Nine Mile Canyon, home to one of the greatest concentrations of Native American rock art on the continent.

A handful of SUWA's members voiced displeasure with the deal, as did a few supporters of another party to the agreement. "How can you possibly suggest that allowing the drilling is a victory," read one comment on The Wilderness Society's blog. "Your role is to PROTECT the environment not make compromising deals that will just open the door to more drilling."

What struck some as selling out was actually smart strategy. Negotiating from a position of strength that was attained through successful litigation and advocacy, SUWA and its allies were able to extract major concessions from BBC, reduce the project's surface disturbance by two-thirds, and secure additional protections for Nine Mile Canyon's petroglyphs and pictographs. Striking a bargain with an energy company could also dispel the notion that environmentalists were only about saying "no" and possibly help break the logjam over Utah wilderness that has endured for decades.

SUWA and BBC are unlikely partners, but given the incentives and motivations on each side, the deal made perfect sense. For BBC, the agreement offered a chance to avoid costly, time-consuming litigation and other challenges without sacrificing too much of the project's value. "We'll definitely leave resources in the ground," said Duane Zavadil, BBC's vice president for government and regulatory affairs. "But that happens in a lot of places, and we're not leaving more than 10 percent of the project value on the table."



Petroglyphs and truck traffic in Nine Mile Canyon, Utah

Even before the November 2008 election that sent Barack Obama to the White House, energy companies like BBC were finding it harder to secure approval to drill on public lands as environmentalists challenged an increasing number of leases and other federal actions. One of Interior Secretary Ken Salazar's first high-profile moves in office was to invalidate 77 contested leases in Utah, including nine owned by BBC totaling 9,121 acres. "There was a sense that they've already won, our model is broken, and I need to salvage some value here," said Zavadil, who led the negotiations for BBC. "If we didn't develop certain areas, we could enjoy—call it the support or the lack of a challenge—by SUWA and the environmental groups."

For SUWA, drilling in proposed wilderness is anathema to its mission. Yet on a practical level, the group knew that BBC had an ace in the hole: some of the leases it held had been issued in the Truman administration and remained legally valid, six decades later, even though the leases were within areas that the BLM had designated as Wilderness Study Areas (WSAs). Those WSAs were supposed to be managed as de facto wilderness until Congress decided whether to convert them into full-fledged wilderness areas. But the law was clear: the BLM's previous approval of energy leases trumped the mandate to manage WSAs for wilderness. However hard environmentalists fought in a court of law or the court of public opinion, BBC would still have the upper hand.

Faced with the grandfathered leases in the WSAs, SUWA decided it was time to make a deal. If BBC would be willing to keep its development out of the WSAs entirely and contract its footprint elsewhere, SUWA could swallow the siting of a half-dozen wells in other lands that it was seeking to protect through the America's Red Rock Wilderness Act, which has been stalled in Congress. Previously, SUWA had drawn a line in the sandstone desert and said no to development within the more than 9 million acres covered by the legislation. In this case, it opted to sacrifice a small piece of its proposal to save a much bigger chunk. "As an organization, it was difficult. This really isn't the way we've done things in the past," said SUWA attorney Steve Bloch, who led the negotiations for the group. "I think at the end of the day it was head over heart."

Many factors enabled and facilitated the agreement, which will protect about 65,000 acres of wilderness quality lands from drilling. First, the transition from the Bush to Obama administration meant energy companies would have a harder time getting projects approved and a stronger incentive to work out a deal. "I worked on this all through the Bush administration and we never even started these conversations then," said Sharon Buccino, director of the land program at the Natural Resources Defense Council (NRDC), another party to the deal. "The companies felt they were getting everything they wanted without having to sit down and talk about it."

Second, the advent of directional drilling allowed BBC to tap into underground gas deposits from many fewer well pads and shrink its aboveground damage. "Technology bailed us out to some extent," Zavadil said. "We're able to do more with less."

Third, Nine Mile Canyon's treasure trove of archaeological resources played a role by forcing the federal government to create a forum for addressing threats to the rock art. That process put Bloch and Zavadil in the same room on a regular basis.

Fourth, the BLM was looking to demonstrate that it could both protect the environment and produce energy on federal lands. The agency was on the sidelines during the negotiations and essentially came in at the end to bless the agreement. But its



Peter's Point, part of BBC's West Tavaputs project

willingness to accept the compromise was by no means guaranteed, given its fraught relationship with SUWA and its mandate to encourage energy development on federal lands.

The macro forces of presidential politics, technological innovations, government regulations, and economic incentives were essential in explaining the deal, but at the end of the day, the determination of two individuals—Bloch and Zavadil—may have proved decisive. Zavadil said his interaction with SUWA and field visits with its staff have led him to “better appreciate the value of the resource they’re protecting out there.” Bloch said SUWA now has a “good working relationship” with BBC that has provided the group with “a lot of insight into the industry.”

Fights over natural gas development on public lands aren’t going away anytime soon. Energy analysts are heralding the onset of a golden age for the fossil fuel. Climate change concerns and new regulations are making coal a less attractive option in many countries and driving interest in alternatives. The recent disaster at Japan’s Fukushima plant has dampened enthusiasm for nuclear power, while renewable energy sources have been slow to achieve utility scale.

The fact that one of the most uncompromising environmental groups could reach common ground with a hard-nosed energy company in one of the most conservative states in the union suggests that disputes over drilling and other public lands issues, such as the siting of solar and wind farms, could be resolved in a similarly constructive fashion. In fact, SUWA and other environmental groups have reached some analogous agreements recently with other energy companies in Utah, Wyoming, and Colorado. In the Price River region of Utah, for instance, energy companies have relinquished energy leases on some 80,000 acres. Environmental groups are also sitting down with solar energy developers and federal land managers to try to rationalize the deployment of solar energy facilities and transmission lines in the Southern California desert.

But it took a special set of circumstances to make the SUWA-BBC deal fly and those incentives may well be missing in other realms, such as management of off-road vehicle (ORV) use, where SUWA and other environmentalists will find it difficult to identify and engage with any single entity that represents the entire community’s interests. Moreover, Utah’s county commissioners, who wield tremendous influence over the management of federal lands within their jurisdiction, have different motivations than gas company executives. The former are looking to score points with their constituents and can benefit by taking an ideological stand against any new wilderness; the latter, answerable to shareholders, tend to be pragmatists guided by the bottom line. Even though BBC estimates the project will lead to \$6 billion in investment and associated economic development in the region, many of Carbon County’s commissioners have been critical of the deal. With SUWA continuing to push hard for wilderness protections in Utah and energy companies still determined to develop public lands, the recent deals may be more of a détente than an end to the cold war. For philanthropy and the conservation community, the lesson of the West Tavaputs deal is not that environmentalists should simply be more compromising. Rather, the message is that powerful, patient advocacy is essential for leveling the playing field and motivating the other side to come to the table and work out a deal that doesn’t shortchange the environment.



**The Uintah Basin in Northeast Utah**

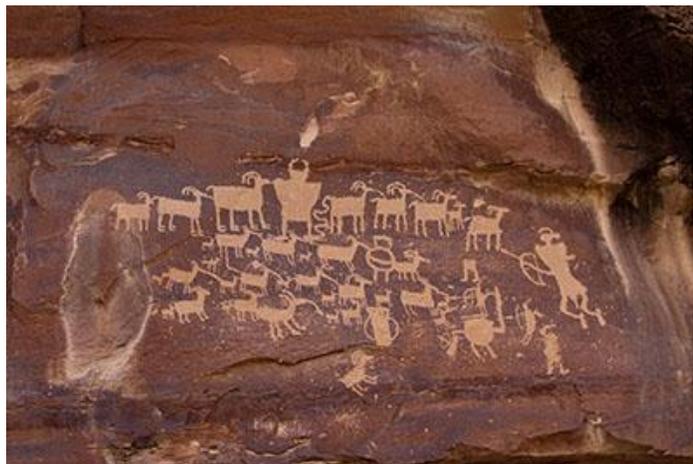
## **“World’s longest outdoor art gallery”**

They weren’t kidding when they named it Carbon County. Tucked in a remote part of Northeast Utah, the county sits atop a bonanza of fossil fuels. Coal. Oil. Tar sands. Natural gas. All of them are found beneath the West Tavaputs Plateau that makes up the bulk of the nearly one-million-acre county.

Tens of millions of years ago, this part of the world was under water. As organic matter fell to the sandy bottoms of the ancient sea and then Lake Uinta, it was buried and subjected to tremendous heat and pressure, eventually turning into fossil fuels. As the surrounding mountains rose up and the Uintah Basin subsided, rivers incised deep canyons in the relatively soft sandstone. The erosion exposed flat, tan-to-black panels of rock that would later provide the perfect canvas for the area’s indigenous people. “Few, if any, locations in the Western Hemisphere offer visitors such an abundant array of rock art sites—many of them elaborate panels with hundreds of figures—in such a confined location,” archaeologist Jerry Spangler and journalist Donna Spangler write in their guide to the area. “The number of Nine Mile Canyon rock art sites is conservatively estimated at about 1,000, the number of images at more than 10,000.” The prevalence of rock art has earned the area a nickname: the world’s longest outdoor art gallery.

When I travelled to Nine Mile Canyon in late May, the rock art in the canyon was so prevalent that you could see it while driving down the dirt road that runs along the canyon bottom. The canyon itself is scenic, but hardly pristine. The road through Nine Mile Canyon was first constructed in 1886 by African-American Buffalo Soldiers of the U.S. Army to provide horse-drawn freighters with a route from Price to Fort Duchesne. Over the years, scores of travellers used the axle grease from the freighters to sign their names on the canyon walls and the artefacts are old enough that they, too, receive some government protection. For decades, there have been farms and cows in the canyon, even some oil wells developed as far back as the 1950s, and now there is the infrastructure associated with the gas drilling. Virtually all of the traffic on the road looked to be associated with the drilling on the surrounding plateaus, and nearly all of those vehicles were big trucks. In the environmental impact statement (EIS) for the West Tavaputs project, the BLM noted that empirical observations by the Nine Mile Canyon Coalition and frequent visitors showed that recreational use of the area had declined steadily along with the increasing oil and gas development that began in the area in 2004. Those observations were supported by local tourism officials, the BLM said.

Little is known about the people who created the petroglyphs, which are etched, carved, or pecked into the rock, and the pictographs, which are painted on the stone. The presence of spear points and atlatl darts suggests that Nine Mile Canyon—a well-watered and logical travel route in an otherwise forbidding landscape—was used thousands of years ago by Archaic hunters and gatherers. Small farming communities probably took root about 300 AD and by around 900 there was a small but thriving community of residents who grew crops in the canyon and hunted for game on the surrounding uplands. The trapezoidal body shapes in their rock art and other archaeological evidence has led some to conclude that the indigenous people who lived in



**The Great Hunt panel in Nine Mile Canyon**

Nine Mile Canyon were part of the Fremont culture that occupied much of Utah from 700 to 1300, but others note characteristics of the Anasazi culture that lived farther south, around the Four Corners region.

Either way, by around 1300, the people who created Nine Mile Canyon's pictographs and petroglyphs were gone, part of a tectonic shift

in the indigenous peoples of the Great Basin and Colorado Plateau that many scholars attribute to severe droughts that struck the region. "This was a period of considerable social and economic unrest throughout the Southwest," the Spanglers write. "Not only were Numic hunter-gatherers—ancestors of the modern Utes—moving into the northern Colorado Plateau at this time, but massive population growth among Anasazi farmers to the south resulted in northward migration into areas that had only been sparsely populated before." As is the case today, various groups were competing for finite natural resources and the conflicts are thought to have inspired the early residents of Nine Mile Canyon to construct defensive structures on the surrounding mesas, benches, and rock outcroppings. Although the area's rock art gets all the attention, the canyon and environs boast a wealth of other cultural resources, including ceramics, granaries, and pit houses. Archaeologists believe a great many artefacts were lost over the decades to farming, vandalism, and relic-hunters.

The name Carbon County is apropos, but Nine Mile Canyon is a misnomer. Nine Mile Creek, a ribbon of green in a semi-arid land, snakes for about 50 miles through the northern edge of West Tavaputs Plateau to its confluence with the Green River. Most of the rock art is concentrated in the central 20 miles of the canyon. As for the nine miles in the name, no one is quite sure of the meaning, but the canyon has been called that since at least 1871, when the name appeared on a map created by Captain Francis Mario Bishop, a cartographer on Powell's second exploration of the Green and Colorado rivers.

### Into the unknown

Powell had first passed by Nine Mile Canyon two years earlier, during his maiden voyage down the Green, a major tributary of the Colorado River. Powell's 1869 expedition into the depths of the Colorado Plateau started in Green River, Wyoming, and a few weeks into the journey, on June 27, the dories reached the broad Uintah Valley, the most substantial break in the canyons they had experienced thus far. There were already traces of Anglo civilization in the valley—trappers arrived starting in the 1820s—and it made for a good resting spot. Powell was as much an anthropologist and ethnologist as he was a geologist and naturalist, but he apparently never ventured into nearby Nine Mile Canyon and observed its archaeological riches. He did, however, record his impressions of the Tavaputs Plateau as his party set off again on July 6. "By evening, almost imperceptibly, the valley closed in, the walls began to rise, the barren rock poked through, and they were in another canyon," Wallace Stegner wrote in *Beyond the*

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—Wallace Stegner, *Beyond the Hundredth Meridian*



The Green River approaching the Tavaputs Plateau

*Hundredth Meridian*, his biography of Powell. “Looking upon the unknown, they found reasons for it being so. On both sides of the river an increasingly barren and broken land closed in, topped with fantastic towers. On July 7 they were deep in an entrenched, meandering canyon, swinging in great bends and amphitheatres. By evening they had come again to bad water, the walls much broken by side canyons, sometimes so close together that holes had eroded out between them leaving natural bridges. On the high rims they could see pine forests, but down on the river there was little but baking broken rock.”

Powell, who had lost his right arm in the Civil War Battle of Shiloh, scaled the precipitous cliffs rising from the Green, desperate to get a look at the terra incognita that surrounded him. During one exploration, he managed to trap himself on a precarious perch above a 100-foot drop. One of his crew dangled his underwear to Powell in order to save him. “That day, and for successive days, Powell scanned from the rims a country even more wild and desolate than the canyon through which the boats felt their careful way,” Stegner wrote. “A great plateau was cut completely in two by the river. From a tower which he climbed he looked across the high pine forest clothing the summits, and across dozens of canyons heading in mid-plateau and deepening toward their confluence with the Green or with the White and Uinta to the north. But he could see little that told him what lay to the south, only the widening gray and brown lips of canyons cutting down toward unknown junctions.”

## **A wild river**

Today, more than 150 years after Powell’s expedition, boaters who float the Green River through Desolation Canyon can still experience the same isolation and raw, rugged beauty that Powell recorded. Upstream, the Green River has been plugged by a massive dam in Flaming Gorge, which Powell also named, but the stretch through Desolation Canyon is considered by many to be the least disturbed section of the river and the closest approximation to the world that Powell explored a century and a half ago. “Deso,” as the river rats like to call it, has become a world-renowned rafting and kayaking destination, offering a weeklong, 84-mile wilderness trip through Utah’s deepest canyon. More than a mile above the river corridor, much of which is designated as a National Historic Landmark, the canyon is surrounded by an uninhabited wilderness of more than 1 million acres. Eighteen commercial outfitters market their trips across the nation and around world. As a measure of the area’s allure, the BLM receives more than 6,000 applications every year for the 450 available trip permits issued to self-outfitted users.

Ray Bloxham, SUWA’s field inventory specialist, has taken that trip numerous times and describes it as “probably the wildest river in the lower 48.” “You can really disappear inside this system and you can be gone for seven days,” he said. On other rivers, there are notices telling rafters where to camp and other signs of civilization, but in Desolation Canyon, “you can really have a primitive recreation experience,” he said.

Bloxham was telling me about the river as we watched it meander a few thousand feet below us. To the east, we could see some boaters preparing to put in at Sand Wash, and to the south we could see Nine Mile Canyon winding its way toward the Green. We took a seat on the rocks and Bloxham offered his binoculars so I could see one of the ancient fortifications on the other side of the canyon,



**SUWA’s Ray Bloxham looks out on Nine Mile Canyon**

within the Desolation Canyon WSA. Some archaeologists believe Nine Mile Canyon's early residents retreated to these fortifications so they would have an advantage over intruders. "BBC's stuff could have been on this whole mesa," Bloxham said. "We could have had wells along this whole bench. They could have gotten in and drilled in the WSA because it's a valid, existing right."

I told Bloxham about my visit the day before to Nine Mile Canyon and Peter's Point, where a rig was already at work on one of the BBC leases. The muddy drilling site was certainly no wilderness, though a few mule deer were hanging around the tower. But it wasn't until that evening, after I'd pitched my tent on a ridge about 10 miles away, that I could grasp how big of a footprint such operations can have, even if they only disturb a few acres on the ground. At night, the drilling tower was bathed in bright lights and I could also see another BBC rig a few miles away. Other than those illuminated towers, which will only be drilling for a couple more years, no lights were visible across thousands of acres.

Bloxham apologized for the towers. He knows they're part of a development that is leaving an indelible mark on the West Tavaputs Plateau and that it can take ages for the semi-arid landscape to heal. "Some of these routes are over 50 years old and you can still see them," he said. But, on balance, the SUWA-BBC deal secured protections for a vast and vulnerable area. "We're hoping it has a domino effect," he said.

The wilderness fight in Utah had become so nasty that SUWA once caught county officials stealing maps out of their cars, Bloxham said. In the BBC deal, however, the opposing sides built up trust during the negotiations and by making visits to the contested landscape together. "There wasn't any backstabbing," Bloxham said. "In some of the other oil and gas companies, there's not a Duane there, and it shows."

The next morning, we headed to the tiny municipal airport in Vernal, population 8,000. Just by driving down the main drag, you can tell that many of the businesses in town are connected to the oil and gas industry. At Covers & Camo Custom Seat Covers, there's a big "I ♥ Drilling" sign out front. Until the start of 2009, the area's economy was booming. In the previous five years, employment shot up nearly 55 percent in Uintah County and 70 percent in neighboring Duchesne County, the *Deseret News* reported in a long Sunday piece about the ensuing bust. "The way many of the displaced and worried workers in the basin see it," reporters Lois Collins and Elaine Jarvik wrote, "it was Salazar's decision to retract 77 oil and gas leases in February that did the basin in," the paper wrote. In fact, the reporters noted, rig activity in the area peaked before the 2008 election, and other factors, such as the global financial crisis and lower prices for natural gas, were also to blame for the industry's decline.

It was an overcast day for our flight, not ideal for photography, but the oil and gas development in the Uintah Basin was still cast in high relief. Human intrusion sticks out in land where there is not enough vegetation to hide the scars. The BBC development is unmistakable, but where we really saw the impact of America's demand for fossil fuels was on the adjoining lands of the Uintah and Ouray Indian Reservation. On tribal lands, regulation is considerably less stringent and there were several areas where the lattice of well pads seemed to stretch out to the horizon. Our pilot, Bruce Gordon, said it reminded him of the



**Oil and gas fields on tribal land in Northeast Utah**

massive gas fields near Pinedale, Wyoming. “And the industry says we’ve shut them all down, huh?” Bloxham said through the headsets.

On our way back to the airport, we passed by the Bonanza Power Plant, a coal-fired generating station that draws its fuel from mines in Colorado. Environmentalists have targeted that plant for its CO<sub>2</sub> emissions and contributions to air pollution in the region, thereby increasing pressure to develop natural gas in places like the West Tavaputs Plateau. I had seen the toll that coal takes during my last flight in a Cessna, over the mountaintop removal mines of Appalachia. The environmental damage caused by that energy source was hard to beat. I figured a sea of solar panels or wind turbines would have its own problems. In fact, using today’s technologies, it would take far more acreage to produce as much energy as the oil and gas fields below me. Not far away, along the Green River, there was also talk of building a nuclear power plant, but that would carry its own consequences. When it comes to making and moving energy, the tradeoffs are uncomfortable.

### **Let’s make a deal**

SUWA’s work around Nine Mile Canyon started in the late 1990s with some skirmishes with BBC’s predecessor. After BBC came on the scene in 2002, the conflict heated up as the company submitted proposals to the BLM to turn what was once a backwater for hydrocarbon development into a major new energy source. “BBC, for whatever reason, had a good hunch there was a lot at stake in terms of natural gas resources, so they were fairly persistent,” Bloch said. “We were able to slow down, but not stop their plans. Overall, we weren’t having substantial success in the litigation and appeals arena. It was more from raising the profile of the issue and making life challenging for BBC to move ahead.”

In 2005, the BLM kicked off its EIS to examine BBC’s proposal to site 807 wells, including more than 200 of them in WSAs or on lands included in America’s Red Rock Wilderness Act. The 138,000-acre West Tavaputs project included about eight percent of the 290,845-acre Desolation Canyon WSA (Utah’s largest WSA) and all but 20 acres of the 7,500-acre Jack Canyon WSA. The two WSAs combined accounted for nearly a quarter of the project area and were home to 15 leases held by BBC, all of them issued in 1951 and 1952.

The February 2008 draft EIS evaluated BBC’s proposal to develop 20 drilling sites within the WSAs and 200 well pads in areas with wilderness characteristics. When the draft EIS came out, SUWA and its partners were able to generate more than 50,000 comments from supporters and ensure that the Environmental Protection Agency (EPA) was scrutinizing the project’s air quality impacts. After the comment period for the EIS closed in the middle of 2008, “we were concerned that one of the last moves by the Bush administration would be to approve it,” Bloch said. To SUWA’s relief, the BLM did not approve the West Tavaputs project in the waning days of the Bush administration, but it did set up an auction for 77 energy leases in Utah, including nine in the Nine Mile Canyon area that BBC was interested in.

Green groups described the lease offering as a parting gift to the energy industry that lacked appropriate environmental reviews. They filed suit to block the auction but agreed to a process whereby the BLM could auction and sell but not issue the leases sold at the sale for 30 days. So on



**Natural gas wells near the White River**

December 19, 2008, the BLM opened bidding on the leases at a Salt Lake City meeting. As protesters demonstrated outside, one of the activists decided to take a more direct approach. Tim DeChristopher, an undergraduate economics student at the University of Utah, walked into the auction, bid on several leases, drove up the prices, and won 10 parcels worth nearly \$1.8 million. DeChristopher would eventually be found guilty of two federal felonies—making a false statement and violating laws on oil and gas leasing—but his act of civil disobedience drew national media attention and helped shine a spotlight on the controversial leases in Utah. It also cost DeChristopher a two-year prison sentence and a \$10,000 fine.

About a month after the auction, U.S. District Court Judge Ricardo Urbina granted the green groups' motion for a temporary restraining order that prevented the BLM from leasing 110,000 acres in Utah. A few weeks later, newly appointed Interior Secretary Ken Salazar directed the agency to withdraw the 77 leases. "Barrett saw the writing on the wall from Interior that things wouldn't be the same as they were under the Bush administration," Bloch said. "Salazar really focused his early attention on Utah, and they [BBC] made the decision to see what could happen if they played ball."

### **Rock art council provides forum**

In the early days of the Obama administration, Zavadil and Bloch started seeing one another at meetings convened by BLM under the auspices of the National Historic Preservation Act (NHPA). The goal of those meetings was to help BLM figure out how to avoid and mitigate impacts to the renowned archaeological resources in and around Nine Mile Canyon. Dust kicked up by truck traffic associated with the gas development threatened to erode the crumbly sandstone onto which the rock art is etched and painted. The Advisory Council on Historic Preservation, an independent federal agency created under the NHPA in 1966, does not wield strong regulatory power. But section 106 of its founding legislation requires an analysis of impacts on cultural and archaeological resources when a federal action has the potential to harm something listed on the National Register of Historic Places or eligible for such protection. In 2004, the BLM argued that the project wasn't subject to the NHPA. But after the Hopi nation made a formal request for the advisory council to intervene, the BLM invited a variety of historic preservation NGOs, as well as SUWA, the Nine Mile Canyon Coalition, and the National Trust for Historic Preservation, to take part in the council's meetings as consulting parties. The goal was to reach a so-called programmatic agreement to limit damage to the archaeological resources.

Prior to reaching the deal with SUWA, BBC had been challenged by the group four or five times over seismic exploration, drilling, pipelines, and other issues. "We'd known each other over the years and we'd sniped at each . . . and we'd been at each other's throats," Bloch said. "There was no love lost between us." Zavadil said he had been in courtrooms while SUWA lawyers cross-examined the company. "Barrett has never been a shrinking violet in its advocacy on public lands," Zavadil said. "You can Google me and look back 15 years and see the noise I've been making."

Although the programmatic agreement concerned the area's cultural resources, not the wilderness issue, the process got BBC and SUWA talking. "It forced proximity," Zavadil said. "BBC was in a room, once a month if not



**Petroglyph in Nine Mile Canyon, Utah**

more frequently, with SUWA, members of the National Trust for Historic Preservation and a number of small, primarily archaeologically oriented groups.” Zavadil remembered the start of the negotiations this way: “During the down time, I stepped out in the hall at one point and Steve and I were there. With a little bit of a sense of resignation, I asked him, ‘Is there anything that would cause you not to challenge what’s in fact authorized?’ Now, Steve’s not a lighthearted individual, necessarily, and he took me dead seriously, maybe even more seriously than I was asking him. He scratched his head, and the next time we got together, we moved the ball a little farther, and then got into more negotiations, primarily over the wilderness areas in the eastern part of the project area.”

For the next nine months, SUWA and BBC put together the agreement through negotiations that both men described as businesslike. “In that nine-month negotiation process, we learned to trust each other and we learned what made each other tick,” Bloch said.

Meanwhile, the programmatic agreement, a legally binding document covering the archaeological resources, came to fruition. It called for conducting additional archaeological surveys, preparing more than 100 National Register nominations over the next five years, developing conservation treatments for the rock art panels impacted by dust, replacing corrosive magnesium chloride with another dust suppressant for the road, conducting an ethnographic study with the Hopi nation, and developing interpretative sites in the canyon.

The deal, signed on January 5, 2010 at the State Capitol, received a good deal of positive press. *The Salt Lake Tribune* opined that “we would be cheating our children and grandchildren” if the BLM allowed Nine Mile Canyon’s resources “to be ruined in our rush to take fossil fuels from the ground.”

A signed programmatic agreement was a necessary condition for BBC to begin drilling, but it was just one regulatory hoop the company had to jump through. It still needed approval from the BLM, which had been working for nearly five years on the massive EIS required by the National Environmental Policy Act (NEPA). “Even if the BLM did issue its record of decision, we knew that SUWA and other advocates would continue to challenge the project,” Zavadil said. Environmentalists could appeal the BLM’s decision to the Interior Board of Land Appeals, a panel of administrative judges, and then file civil lawsuits. Even if those efforts did not succeed, they could cost

### **Ozone emerging as key issue for regulators**

Air quality, especially ozone pollution, has emerged as a key leverage point for environmentalists fighting oil and gas development in Utah and other parts of the Intermountain West. In the Uintah Basin, ozone levels have been measured at double the national standard and the EPA has proposed lowering the regulatory level. In January and February 2011, the Uintah Basin exceeded ozone standards 23 days, with five considered “very unhealthy.” “Five years ago, air quality in eastern Utah was sort of an afterthought, but today, air quality is a big deal,” said Juan Palma, the BLM’s Utah state director. “Obviously, the more development that occurs, the more the accumulation of those impacts. Now, our biggest challenge is air quality.”

On June 9, 2011, Interior Secretary Ken Salazar announced that the BLM and EPA had reached an agreement with Anadarko Petroleum Corp. to mitigate the air quality impacts of a 3,675-well project near the White River that could produce more than 6 trillion cubic feet of natural gas over the next decade. The 163,000-acre Greater Natural Buttes Area Gas Development Project had been delayed since 2007 over ozone concerns. The deal requires the energy company to try using natural gas, rather than diesel, to power its drilling rigs and adopt other pollution controls. Most of the new wells will be sited in the vicinity of some 1,000 existing wells in the area. In announcing the deal, Salazar trumpeted the project’s economic impact and pledged “we are going to work to institutionalize this type of collaboration between the BLM and EPA to ensure that future proposals receive prompt and thorough reviews and are not delayed by unnecessary bureaucracy.”

Anadarko, the largest natural gas producer in the state, has invested more than \$600 million in the basin and expects to spend nearly \$12 billion over the life of the project. At its peak, the project will create some 4,300 jobs, with the number plateauing at 540.

BBC dearly in terms of time, money, and uncertainty.

Once SUWA and BBC had come to terms, they still had to figure out how to make their agreement work within the confines of NEPA without having to re-do all of the environmental analysis. If the BLM couldn't incorporate the deal into the existing EIS, "our investors would have simply walked," Zavadil said.

### Seeking the BLM's blessing

Approval from the BLM wasn't a sure thing. The agency had clashed repeatedly with SUWA and actively encourages the development of energy resources on public lands, thanks to laws like the Mineral Leasing Act of 1920 and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. "Some of the political appointees quickly understood the value and benefit of [the deal], but then some more rank and file people in Utah and DC made it slow going," Bloch said. "Left to their own devices, the local officials here in Utah, and some people in the Washington office, easily would have deep-sixed this."

I asked Juan Palma, the BLM state director in Utah, why there was internal resistance to the deal. He said it was "more questions than it was resistance" as the agency tried to determine whether it could fit the agreement within the framework of the existing EIS. "Just because Barrett and SUWA got together, it doesn't necessarily bind me to do what they want to do," he said. "I cannot invent a new proposal that hasn't been vetted through the public process." Palma, who came to Utah after heading the BLM's eastern states operations and serving as executive director of the Tahoe Regional Planning Agency, likened his office's actions on the matter to a duck floating on a pond. "On the surface it's quiet, but down below the legs are moving fast," he said. Ultimately, the agency was willing to accept an agreement that didn't maximize the amount of energy produced from federal lands. "It's OK to leave some of it out there, it's not the end of the world. Every single ounce, quart, gallon, or barrel of oil—we don't have to get it all," he said.

Describing the West Tavaputs deal as a "watershed event that broke the ice and broke the dam," Palma said that the agreement shows how traditional adversaries can sometimes find common interests if the conditions are right. "Once they get past that stage of animosity, they find there's more commonality than they thought," Palma said. "That magical moment in West Tavaputs happened almost by itself. The lesson is that if we want to resolve issues, and that ingredient is not occurring, how is it that agencies, foundations, or other entities can sort of come in and help that point of beginning a conversation?"

### Compromise shrinks footprint

Although none of the alternatives examined in the EIS exactly matched the SUWA-BBC deal, the elements had been analyzed enough to convince the BLM that it did not have to reopen the book on the EIS. After more than six months of additional work by the BLM and the parties, the deal was made public in July 2010. According to the Record of Decision, BBC will:

- Relinquish its leases in the Desolation Canyon and Jack Canyon WSAs



The West Tavaputs Plateau, Northeast Utah

- Develop only six sites on lands with wilderness characteristics and “cellar” those well heads underground to mitigate their impact
- Reduce the total number of wells by a quarter—from 807 to 626—and shrink BBC’s footprint by two-thirds, from 3,653 acres to 1,603 acres
- Create a dust mitigation plan to prevent damage to the rock art panels
- Finance and construct informational kiosks for visitors in Nine Mile Canyon
- Create a \$250,000 grant pool to preserve archaeological resources and offer \$5,000 more for each well it drills, potentially topping out at \$5 million
- Place gates on several remote dirt roads to protect fragile archaeological, wildlife, and wilderness resources
- Commit to additional air quality mitigation and minimize surface disturbance in wilderness-quality lands

### **The role of technology**

It’s questionable whether SUWA and BBC could have come to terms without the advent of directional drilling, which allows an operator to sink a well in one spot but steer it underground so that it can extract gas thousands of feet away from the well head. “In the past, it was one site, one well, which meant there would be a lot of impact on the landscape. There would be more roads, more pipelines, more pads,” Palma said. “Today, with directional drilling, the technology has moved so far ahead that they can do six, seven, eight, nine, ten, eleven, or twelve wells from just one site, so as you can imagine, the impact on the land is much less.” Initially, BBC was seeking to drilling 807 wells from 538 pads, but directional drilling will allow BBC to drill 626 wells from just 120 pads, and only about half of those will be new sites. Palma said the use of directional drilling shows that “sometimes we have arguments that are perhaps older than the technology.” “What we did on West Tavaputs was achieve the interests of the parties, rather than the positions of the parties. BBC wanted to get as much natural gas possible. SUWA was interested in preserving the land with wilderness characteristics for possible future designations,” he said. “This technology allows us to have both.”

## **The backstory on the battle over Utah's backcountry**

A half-century after the Forest Service set aside its first wilderness area, Congress passed a law to ensure that the BLM also protected some of its wildest lands. The 1976 Federal Land Policy and Management Act, "FLIP-ma" in the argot of enviro-wonks, ordered the BLM to inventory all of its roadless areas and assess their wilderness potential. Such WSAs, which weren't yet covered by the Wilderness Act of 1964, would be managed as de facto wilderness until Congress decided their fate, meaning no drilling, no roads, no ORVs, and no development of any kind.

When the BLM completed its initial inventory in Utah in 1980, it only found 2.5 million acres out of its 23 million acres of holdings in the state were worthy of wilderness protection. At that point in its history, the BLM was justifiably lampooned as the "Bureau of Livestock and Mining" for its tendency to kowtow to the interests of extractive users of public lands. The BLM's decision prompted an appeal to the Interior Board of Land Appeals, which sided with conservationists. The BLM increased the size of the WSAs to 3.2 million acres, but environmentalists still felt that many areas had been overlooked. In 1985, 40 groups, including SUWA, formed the Utah Wilderness Coalition and began inventorying the landscape themselves. A few years later, they proposed protecting 5.7 million acres of wilderness quality lands beyond the WSAs.

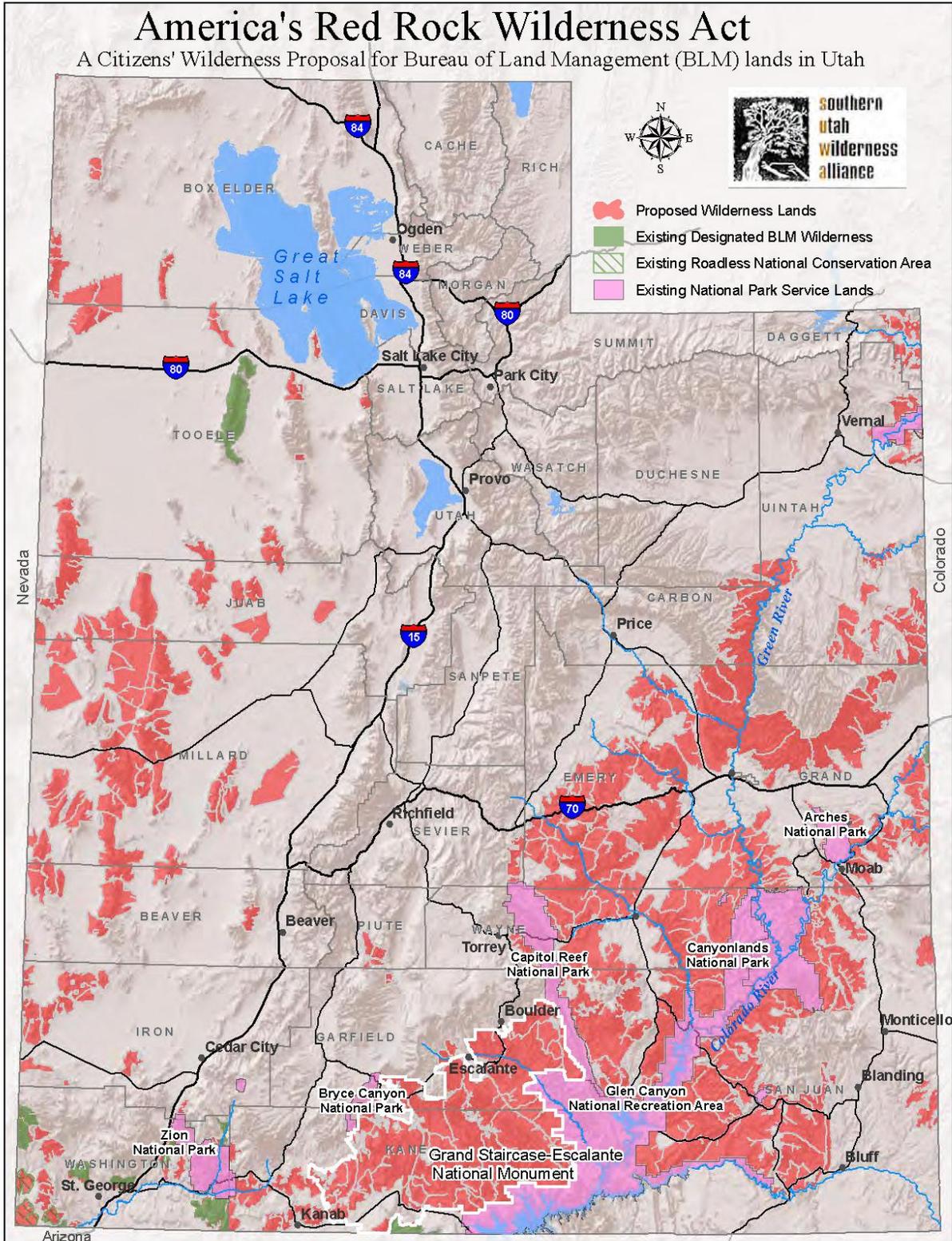
A bill to protect those areas, America's Red Rock Wilderness Act, was spearheaded by SUWA and first introduced in 1989 by former Utah Representative Wayne Owens. The legislation has been repeatedly reintroduced since then. Representative Maurice Hinchey, a New York Democrat, became the House sponsor in 1993 and Senator Richard Durbin, an Illinois Democrat, introduced the Senate version in 1997. During the Clinton administration, Utah's BLM holdings were re-inventoried yet again by the agency and environmentalists updated their proposal to include 3.4 million additional acres. The current version of the bill, which would protect more than 9 million acres of Utah as wilderness (Figure 1) now has 168 House sponsors and 23 Senate co-sponsors. It got its first stand-alone hearing in October 2009, but it has no backing among the Utah congressional delegation.

The Red Rocks bill covers three basic tiers of lands:

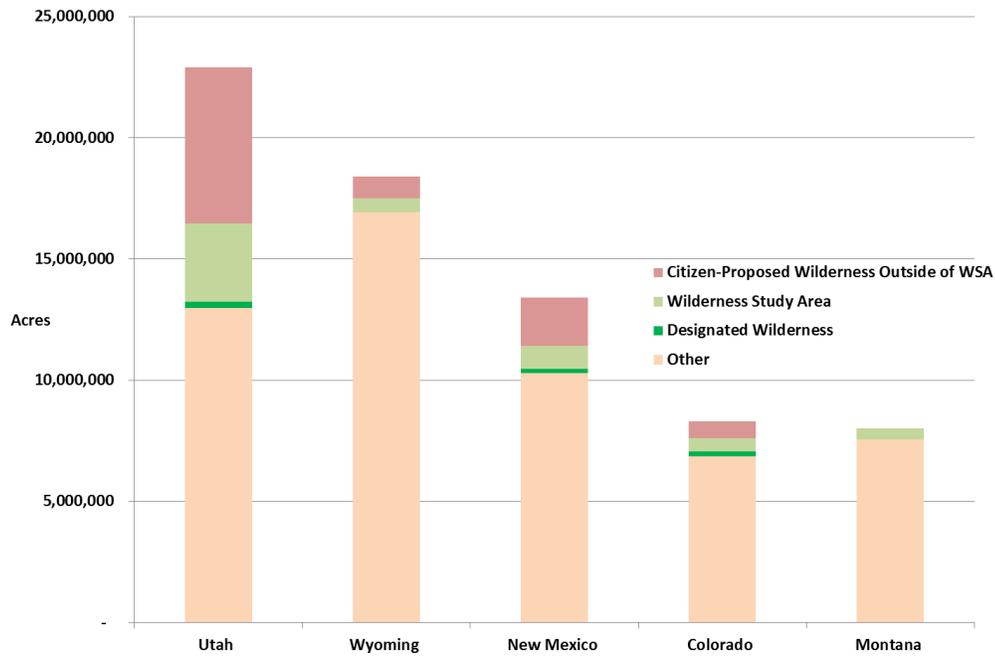
- WSAs, which the BLM has decided are worthy of wilderness protection and are generally managed as such, but which still haven't received permanent protection through legislation (about 3.5 million acres)
- Wilderness Inventory Areas, which were not part of the BLM's initial inventory, but were surveyed by citizens and found to have wilderness characteristics, and then re-inventoried again by the BLM in the 1990s (about 3.7 million acres)
- Wilderness-quality lands that are neither WSAs nor Wilderness Inventory Areas (about 2 million acres)

**For a timeline of the wilderness issue and the SUWA-BBC deal, please see page 32.**

Figure 1: America's Red Rocks Wilderness Act

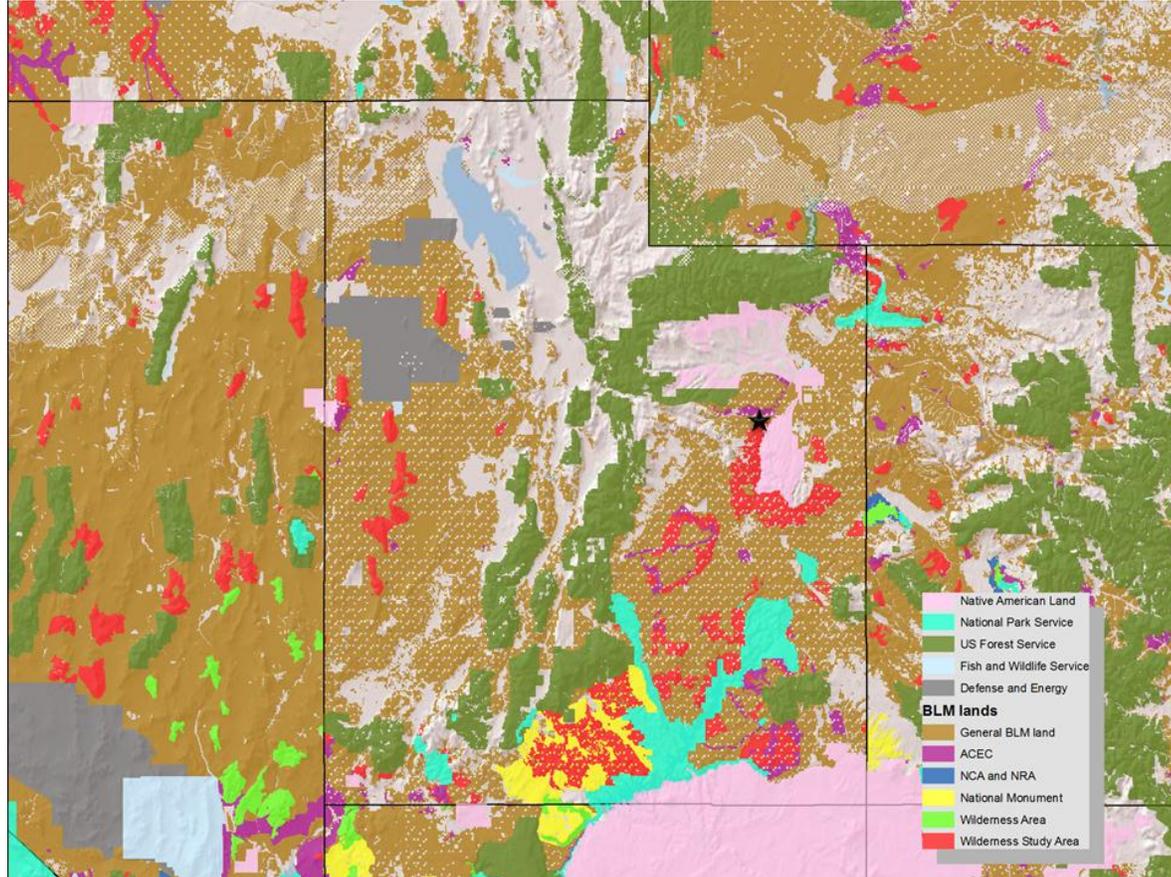


**Figure 2: Wilderness and BLM lands in Western states**



Source: The Wilderness Society

**Figure 3: BLM lands in Utah and adjoining states**



Source: CEA GIS analysis

## Pact praised

In a state where bitter polarization has characterized the wilderness debate for a quarter-century, the SUWA-BBC deal earned rave reviews from Utah's opinion leaders. Republican Governor Gary Herbert said the pact demonstrated that "energy production and environmental stewardship can coexist, and this agreement provides a model under which it can happen." The editorial board of the *Deseret News*, Utah's second biggest newspaper and a subsidiary of The Church of Jesus Christ of Latter-day Saints, argued that, "if factions so long at odds over the future of wilderness areas in Utah can find common ground, just about any problem could be overcome." Noting that the deal had "[put] to rest the long-held notion that compromise was unthinkable in matters concerning delicate parts of the state," the newspaper posited that, "a level of trust has been established that ought to serve as a model for other disputes between environmentalists and extraction companies. Eventually, this may even bring a satisfactory end to decades of arguments over what parts of the state Congress should formally designate as permanently protected wilderness." Interior Secretary Ken Salazar said the deal was "historic in many ways." "It clearly provides for the orderly and balanced development of our nation's energy supply while, at the same time, serving as an outstanding example of the fresh look of how we can better manage our energy resources," he said. "It improves protections for air, land, water, and cultural resources, while reducing potential conflicts that can lead to costly and time-consuming litigation."

Although SUWA's Bloch took the lead in the negotiations, other groups, including The Wilderness Society and NRDC, were also parties to the talks. Nada Culver, Director and Senior Counsel of The Wilderness Society's BLM Action Center, said, "it's made a real difference on the ground, and it's won us some really good will with the agency and department, so it's sort of a double bonus there." "It shows that we care about places," she said, "but we're not just fighting for the sake of fighting." Culver said the fact that the BLM had already issued leases made it an uphill climb for environmentalists. "It's hard, once an area is leased, to stop development, and it's a constant effort. It's very time consuming, very difficult, and the legal bar is high," Culver said. "The hard thing with environmental litigation is that when you win, it's go back and do it again. There's something a wee bit thankless with that."

Leaders of other environmental groups in the region also praised the pact. Dave Livermore, Utah state director of The Nature Conservancy, said "you need points of light to be able to point to where the environmental movement isn't all doom and gloom and there are compromises possible. That's another important byproduct." "It's clearly as good as you could have hoped to get," said Bill Hedden, executive director of the Grand Canyon Trust and a SUWA board member. "In some places, you've got oil, gas, and coal bed methane in one column. That country is pretty likely to be torn apart, so to secure a big wilderness chunk and keep them out of other places—it's a big deal."

But not everyone was happy with the deal. At a June 2010 hearing before the Utah Legislature's Natural Resources, Agriculture, and Environment Interim Committee, Zavdil told lawmakers about the details of deal, prompting State Representative Mike Noel, a Republican from Kanab, to go "on a tirade about doing any negotiating with SUWA," *The Salt Lake Tribune* reported. "Noel, as heard on an audiotape of the hearing, told Zavdil that SUWA was a radical, outside group that was an 'enemy of the state and the people and the children of Utah,' noting the battles he has had with the group over local control of roads on federal land."

## Some pushback from members

Some of the strongest negative reactions to the deal came from environmental groups' members. When The Wilderness Society explained the agreement on its blog, a couple of supporters vented their frustrations in the comments section. One said the group was "nothing but a veneer for big greedy corporations who are not able to keep their dirty hands off of our precious wilderness lands. Wolves in sheepskin equals the Wilderness

Society!” Another visitor to the website wrote that “I pray that the followers of Ed Abbey will make life difficult for Barrett.”

Scott Groene, SUWA’s executive director, told me “we did hear some stuff” from some members reacting negatively to the deal, “but it wasn’t enough to change what we’re doing.” “There are lots of people who think oil and gas companies are evil and you should never talk to them,” he said. Even so, Groene said, many of SUWA’s members have been part of the organization for decades and understand why the deal was advantageous.



**Drilling rig on the West Tavaputs Plateau**

Other environmental groups depend heavily on foundations for support, but SUWA has always been a membership-based organization, so the opinions of its supporters are critical to its financial health. On average, about 80 percent of SUWA’s income derives from individual donors; in 2010, grants only accounted for 10 percent of SUWA’s \$2.8 million in income, which included a \$859,000 bequest from the estate of John Axton that SUWA will use in a media campaign.

SUWA is clearly proud of the deal. “They’ve touted it so much we make fun of Steve: Can you say a sentence without West Tavaputs?” Culver said. But Bloch told me it was difficult to sacrifice some areas. “There are some resources we gave up that I’m not happy about,” he said. “This level of development will change the area known as Nine Mile Canyon. It had seen occasional bursts of intensive energy development, but not what’s going to happen over the next five years . . . People who advocate for cultural resources—they didn’t come out as well as we did at the end of the day.”

SUWA attorney David Garbett summed up the group’s dilemma in an entry on the group’s blog: “To be clear, it is never easy to agree to new development in proposed wilderness, even if that means only a half-dozen new wells from an original proposal of hundreds. We struggled and sweated over this agreement for months and months. We are not in the business of saying ‘yes’ to development in America’s Red Rock Wilderness Act. But, in this case, the outcome for wilderness indicates that it was better to swallow a few wells on the periphery of our proposal than to lose vast chunks of wilderness-quality land to development.”

## Big bet for BBC

The West Tavaputs project was a big bet for BBC, a publicly traded company with a market capitalization of about \$2 billion. As shown in Figure 4, the development now accounts for about half of the company's proved, probable, and possible reserves. BBC plans to invest \$1 billion to develop the area and hopes to extract \$6.5 billion worth of gas over the next few decades, increasing the available domestic supply by about 250 million standard cubic feet per day. The company estimates the project will generate hundreds of millions of dollars in royalties for Carbon County and Utah.

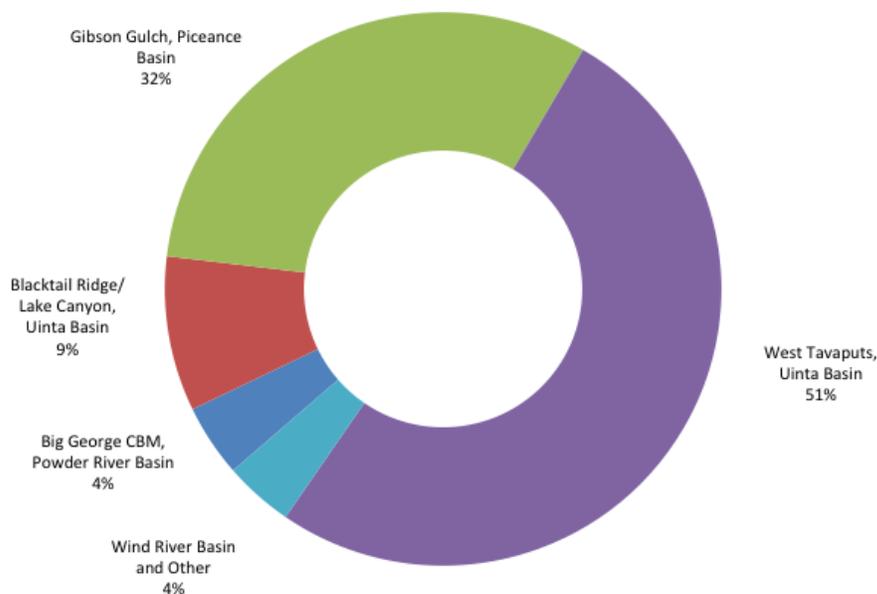
*"Our industry is really missing an opportunity by not seeking direct engagement, at least at some level, with these groups."*

– BBC vice president Duane Zavadil

BBC has only been in existence since March 2002, but most of its management team worked together as executives or advisors with Barrett Resources Corporation, a publicly traded oil and gas company that was founded in 1980 and sold in 2001 in a deal worth \$2.8 billion. Since 2002, BBC has assembled a portfolio of properties in Colorado, Utah, and Wyoming, growing its business by acquiring a sizable number of undeveloped state and federal energy leases, both through government sales and private transactions. BBC now has about 280 full-time employees and nearly 60 percent of whom work at its headquarters in Denver, where the company leases more than 62,000 square feet on the 23<sup>rd</sup> floor of a downtown office building.

"It's a good deal for Bill Barrett, absolutely, and it was very meaningful for our company," Zavadil told me. "West Tavaputs was really the largest single onshore authorization that this administration has done." Zavadil said he has gotten some "pushback from my colleagues who say that you've sold out and these are unreasonable compromises," but he estimates that the deal entails only giving up about 10 percent of the potential mineral resources in exchange for the regulatory certainty and being able to develop the balance. "There are folks who think it's immoral to give up 5 percent, 2 percent, or 1 percent," he said. "Our industry is really missing an opportunity by not seeking direct engagement, at least at some level, with these groups."

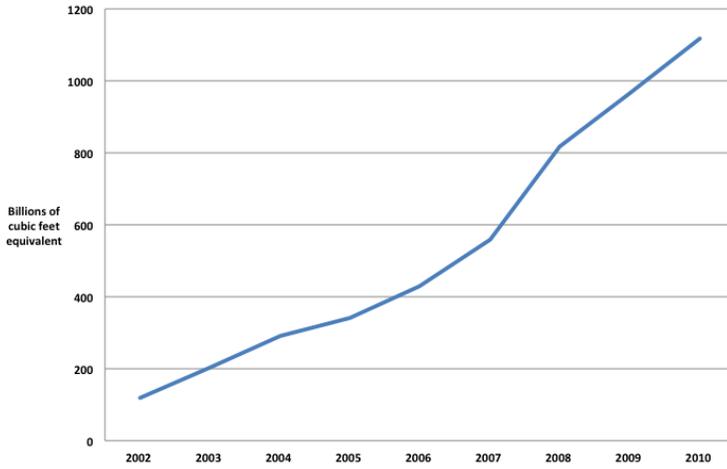
Figure 4: BBC proved, probable, and possible reserves



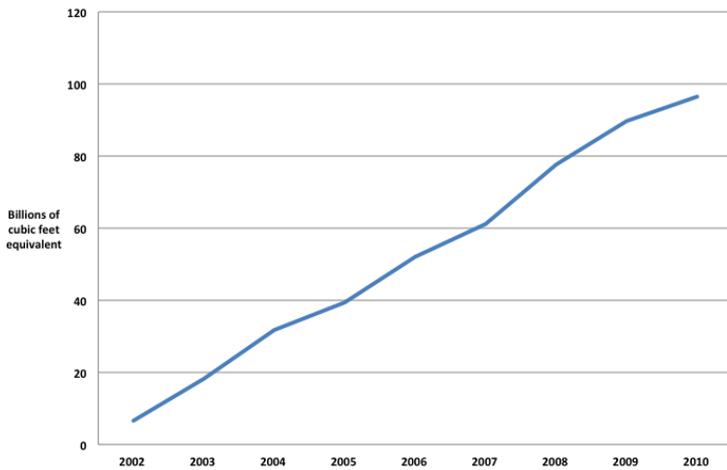
Source: BBC annual report

Figure 5: BBC's growth

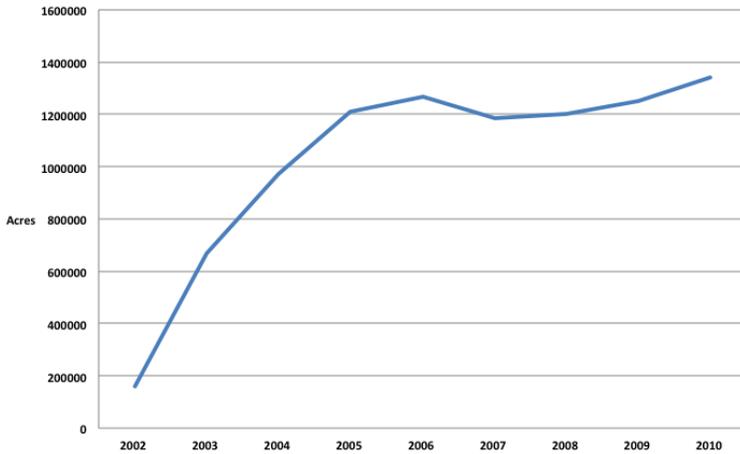
Proved reserves



Production



Net undeveloped acres



Source: BBC annual reports

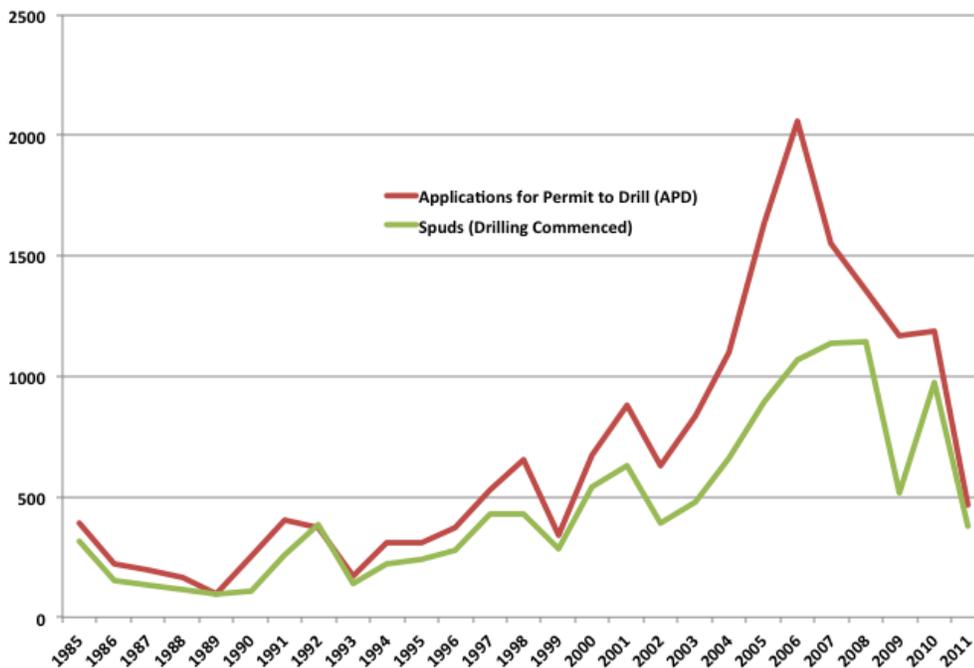
When I asked Zavadil what motivated BBC to negotiate with SUWA, he said that environmental challenges, more restrictive policies by the BLM, and the resulting uncertainty about the project’s fate made it essential to try a new model. “Projects take much longer than you would hope for, or are compatible with business planning processes,” Zavadil said. It costs about \$20,000 a day to run a drilling rig, plus a half-million dollars to move it into position on the West Tavaputs Plateau, and another half-million dollars to take it out. “It’s incredibly anxiety-provoking to not know,” he said.

Zavadil said the old business model on public lands, where a “glimpse in a geologist’s eye” inspired a company to explore prospects and deploy the intellectual and financial capital to bring the product to market, was “absolutely shattered.” “There’s no longer significant major operator interest in taking on new efforts on public lands,” he said. “Look at leasing sales. There’s a tremendous lack of interest in spite of high commodity values.”

One might suspect the tipping point came when Obama moved into the White House in January 2009, but Zavadil said that things actually started to change in 2007. “People say the Bush administration was opening up the West. But for people who worked at my level and who were responsible for getting things done, the reforms were intended to fix things, but all they did was incite riot within the environmental community and really provoke a challenge to essentially every action and authorization,” he said. “We went from a point where maybe 10 percent of leases were challenged to 100 percent of the leases offered being challenged.”

According to the Western Energy Alliance, protests of leases in the Rockies rose from 27 percent of all leases in 2001 to 81 percent in 2007 and 100 percent by 2008. Between 2005 and 2010, the BLM offered 60 percent fewer parcels and 70 percent fewer acres. During the first two years of the Obama administration, DOI approved leases covering 72 percent fewer acres than the first two years of the Clinton administration and 67 percent fewer acres than during the first two years of the Bush administration, according to the group. Figures from the Utah Division of Oil, Gas, and Mining confirm that drilling activity has declined sharply since 2007, though regulatory oversight may be only one reason (Figure 6). Natural gas prices have also been low recently.

**Figure 6: Oil and gas development in Utah**



Source: Utah Division of Oil, Gas, and Mining.

Zavadil said leading indicators of industry activity, such as the level of seismic exploration, are also way down. "It's 10 percent what it was five years ago," he said. "Oil is over \$100 a barrel, so why aren't they drilling? It's not for a lack of resources. It's for a lack of ability to execute on federal land. The writing is kind of on the wall." A number of other companies that have been historically active in the West are pulling out of the region. "They're getting the hell out because there are other places to that don't have this execution risk," he said.

As BBC decides where to invest its resources, it engages in Monte Carlo analysis, a method of using algorithms and probabilities to calculate the risks facing the business. Zavadil drew five boxes on a piece of paper, each of them representing an uncertainty the company must account for as it weighs investment decisions. "There's the geologic risk: are the hydrocarbons there? The engineering risk: can I get it out of the ground? Commodity prices: can I sell it for enough to make a profit? People and services: do I have the personnel and resources? And then there's the fifth: regulatory risk," he said.

Given the uncertainties of drilling a hole thousands of feet into the ground in the middle of nowhere, the geologic and engineering risks might seem the most formidable. But geologists have been probing the Uintah Basin for decades and have drilled so many wells that Zavadil described the area as a "pincushion." "We know where oil and gas has accumulated in the subsurface, so the geologic risk is, to a great extent, gone," he said. Similarly, the advent of technologies like directional drilling have dramatically increased the probability that wells will hit pay dirt. Commodity prices may be beyond BBC's control, but the company employs sophisticated hedging strategies to provide some protection against the vagaries of the market. With the fourth category, people and services, "if you build it, they'll come," Zavadil said. That leaves the fifth box, regulatory risk.

"We had a billion dollars in the ground in West Tavaputs in lease costs, in pipelines we'd already built, wells already drilled, compressor stations and so forth, and we hadn't turned a buck of profit and we were clearly on the bubble as to whether we could develop the balance. That's the way it is on public lands," he said. "At this point, given how absolutely tied in knots you are with NEPA, FLPMA, and the leasing process, if you're going to continue to operate you're going to have to do thing differently. It's kind of like a tipping point has been reached in the expectations of the American public about how these public lands will be managed. It doesn't matter if you have a lease or a permit anymore. You still need a public permission before the BLM will authorize it."

In announcing its 2010 results and providing guidance to investors for 2011, Chairman, CEO, and President Fred Barrett noted the "difficult regulatory environment" as one of BBC's challenges, along with low natural gas prices and increasing costs, with "similar macro headwinds" expected in 2011.

Still, the company is planning to spend more than a half-billion dollars in capital investments, mostly to bring the West Tavaputs project to full field development. Faced with a regulatory environment that it views as hostile, BBC won't be pursuing any more projects on federal lands where it has to start from scratch. "There was no one more dedicated or enthusiastic about making development of public lands a priority. The company was built for it, but we just can't do it anymore," Zavadil said.

"There was direction straight from

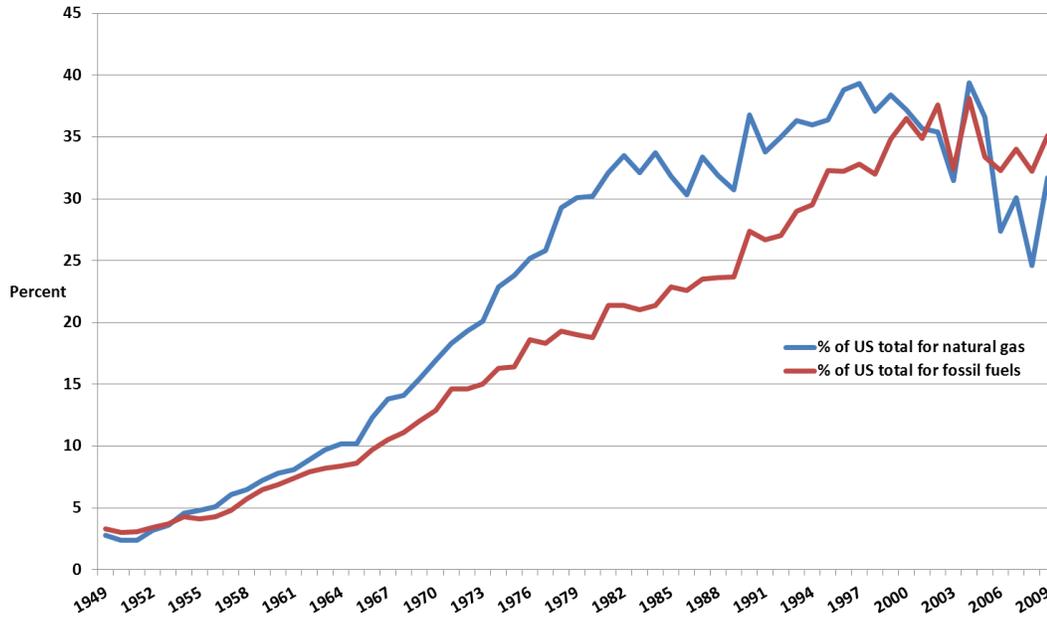


**Pronghorn and a pipeline in the Uintah Basin**

board: thou shall not build greenfield acreage positions of federal land.”

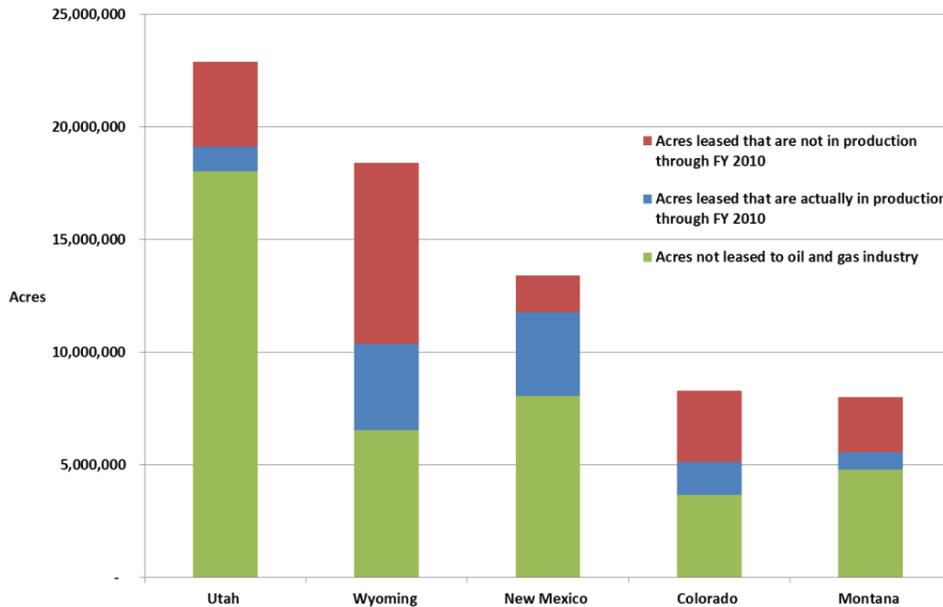
Because of the regulatory juggernaut confronting energy companies seeking to do business on public lands, it could take a project on BLM land a dozen years to turn a profit, Zavadil said. “But if you go to West Texas, Pennsylvania, Arkansas, or Western New York, you can see a positive cash flow on a property in two years,” he said. “Would we do another Tavaputs from scratch? Nope! That’s the message to send back to Packard and Hewlett: hey guys, war won.”

**Figure 7: Fossil fuel production on federal lands**



Source: Energy Information Administration

**Figure 8: Oil and gas leases on BLM lands**



Source: The Wilderness Society

## **Other deals**

The SUWA-BBC deal has received the most attention, but similar agreements have been forged in Utah and elsewhere to resolve disputes over the siting of oil and gas development. In April, SUWA, The Wilderness Society and Natural Resources Defense Council came to terms with Denver-based Enduring Resources to settle litigation over the Rock House Project in the White River area of Uintah County, on the other side of the Green River from the West Tavaputs Plateau. In 2007, Enduring Resources secured approval to develop two dozen well pads in the White River proposed wilderness area, prompting a lawsuit from the environmental groups challenging the BLM's analysis of impacts to air quality and wilderness. Although the court sided with environmentalists and required the BLM to re-do its analysis, SUWA and its partners knew that the victory might be short-lived. Like BBC, Enduring Resources had a number of pre-existing leases on state and federal land that would be hard to challenge. In the end, the two sides crafted an agreement to shrink the surface footprint of the project by cutting the number of well pads to nine, closing some roads, restricting truck traffic near the White River, and adopting best management practices for limiting air pollution. In all, SUWA has been involved in a half-dozen deals in Utah to resolve energy development on wilderness quality lands (some have yet to be finalized). "Now that there are a couple of concrete examples and companies are seeing the benefits," Buccino said, "I think there are more companies that are starting to think about it, that maybe it's worth it to have these discussions and delve down into the details to see where agreement can be had."

## **Roan Plateau divides BBC and greens**

While BBC reached common ground with environmentalists on the West Tavaputs project, the company remains locked in litigation with green groups over its plans to develop the Roan Plateau in Western Colorado. "It's been like two different companies," Culver said. Environmentalists are seeking to overturn the sale of \$144 million in federal leases—a record for the lower 48 states—that the BLM had approved in August 2008. A year after the auction, Barrett invested \$60 million to purchase leases on 35,000 additional acres in the area.

Zavadil said he held out hope that BBC could reach an agreement with environmental groups over the Roan, but he noted that the long struggle has parties deeply entrenched. "What's different about Roan is that we're in the middle of litigation," he said. "It's just going to take a long time to unwind that." Zavadil said BBC was ready to carry out the "the most environmentally protective approach on the planet." By limiting drilling to one pad per 640-acre section, he said, "we can achieve no net impact" on the elk, deer, trout, and other wildlife that inhabit the area north of Grand Junction. "There's a huge opportunity in terms of what we could commit to conservation measures," he said, noting that BBC would be willing to buy conservation easements, improve wildlife habitat, and make outright purchases of land to benefit the environment.

## A golden age for natural gas?

Natural gas is expected to power an increasing share of the global economy. In 2010, the U.S. Energy Information Administration doubled its prediction for volume of technically recoverable shale gas in the United States, with technologies like horizontal drilling and new methods of hydraulic fracturing, or “fracking,” allowing energy companies to dramatically expand their ability to deliver energy to market. According to a June 2011 report from the International Energy Agency (IEA), the world appears to be entering a “golden age” for natural gas. IEA projected that gas use will rise by more than 50 percent from 2010 levels and account for 25 percent of the world’s energy supply by 2035, up from 21 percent today.

“Natural gas is a flexible fuel that is used extensively in power generation and competes increasingly in most end-use sectors,” IEA said. “It offers environmental benefits when compared to other fossil fuels. Gas resources are abundant, well spread across all regions and recent technological advances have supported increased global trade.” IEA argued that many environmental concerns, such as the impact of fracking on local water supplies, are not insurmountable. “Best practice in production, effectively monitored and regulated, can mitigate other potential environmental risks, such as excessive water use, contamination and disposal,” IEA said. But the agency warned that “an increased share of natural gas in the global energy mix is far from enough on its own to put us on a carbon emissions path consistent with an average global temperature rise of no more than 2°C,” the level of warming that many scientists identify as a dangerous threshold. “Natural gas displaces coal and to a lesser extent oil, driving down emissions, but it also displaces some nuclear power, pushing up emissions,” IEA said. Although its scenario assumed that support for renewables would be maintained, the agency “in a scenario in which gas is relatively cheap, there is a risk that governments’ resolve in this respect might waiver, pushing gas demand even higher than projected here.”

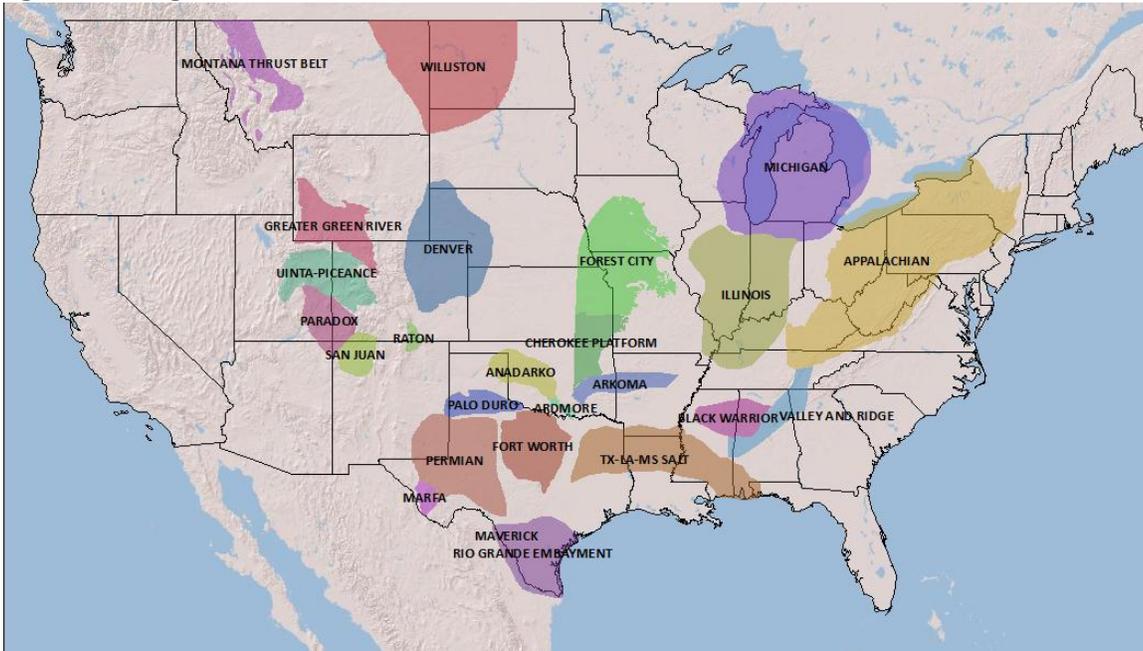
Expanding the use of natural gas, which already heats about half of U.S. households, has earned some qualified support from environmentalists, many of whom describe it as a “bridge fuel” that can help the nation make the transition from coal and other fossil fuels to solar, wind, and other renewable sources. CO<sub>2</sub> emissions from natural gas power plants are about half the level of emitted by coal-fired generating stations, and nearly 90 percent of U.S. demand for natural gas is met with domestic supplies.

In April 2011, a Cornell University professor and natural gas critic, Robert Howarth, released a study arguing that shale gas is actually worse for the environment than coal because significant quantities of methane, a powerful greenhouse gas, are released from wells and distribution lines. IEA, however, concluded that shale gas only produces 3.5 percent greater “well-to-burner” carbon emissions than conventional gas.

In coming decades, much of the growth in natural gas development is expected to come from so-called unconventional sources. In conventional gas deposits, the hydrocarbons have risen toward the surface and pooled in a sort of underground reservoir. In unconventional deposits, such as shale gas (Figure 9), the surrounding material is relatively impermeable and more effort is required to extract the gas. That’s where fracking comes in. A cocktail of water, sand, and chemicals is pumped into wells at high pressure to fracture the rock formations below and unlock the valuable hydrocarbons. Today, unconventional gas production accounts for almost a quarter of the nation’s production; by 2035, it’s expected to reach 45 percent (Figure 10).

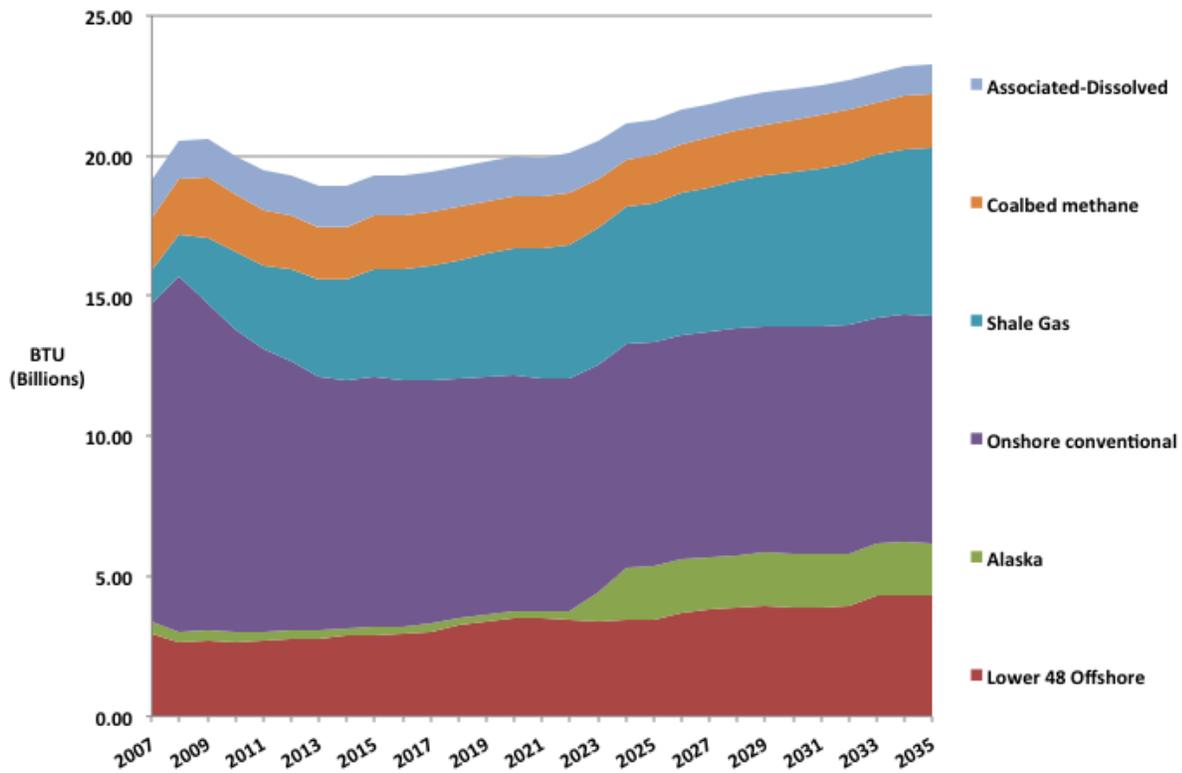
The West currently produces about 27 percent of U.S. natural gas and 14 percent of its oil. In 2009, 42 percent of Western oil and natural gas was produced on federal land. Rocky Mountain states currently account for about one-quarter of natural gas production and that share is expected to remain about the same over the next two decades, according to the EIA (Figure 11).

Figure 9: Shale gas basins



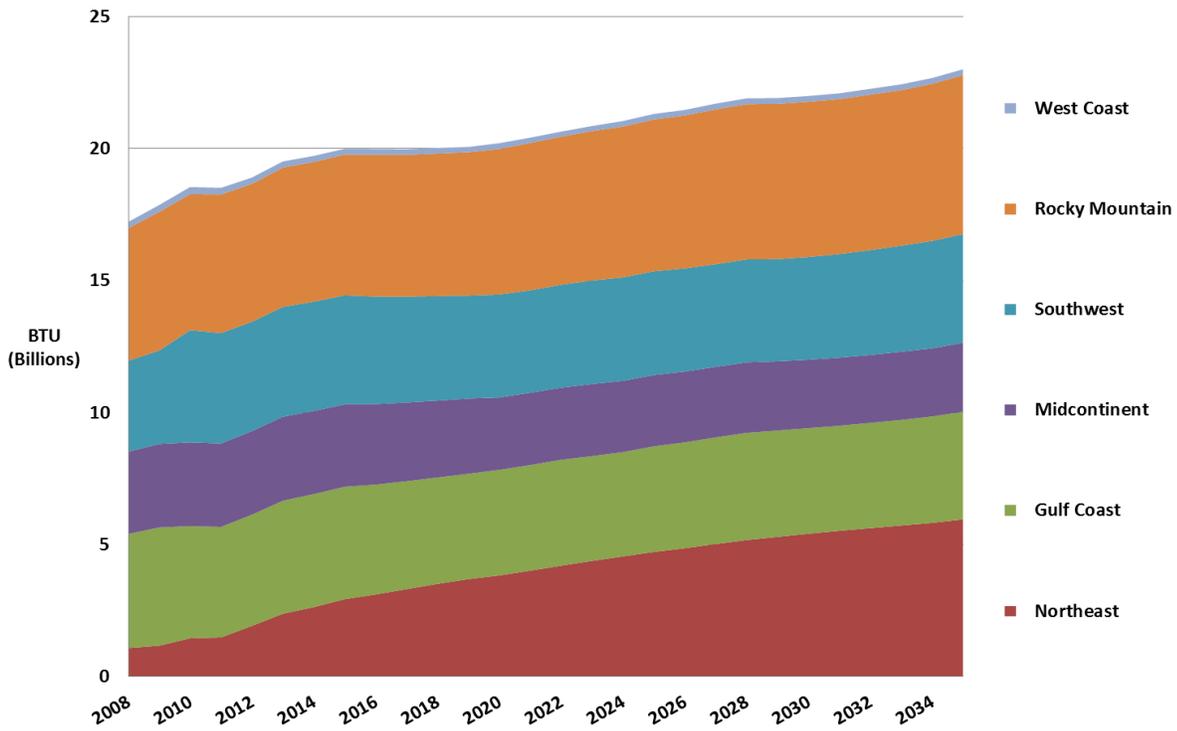
Source: Energy Information Administration

Figure 10: Projected U.S. energy production



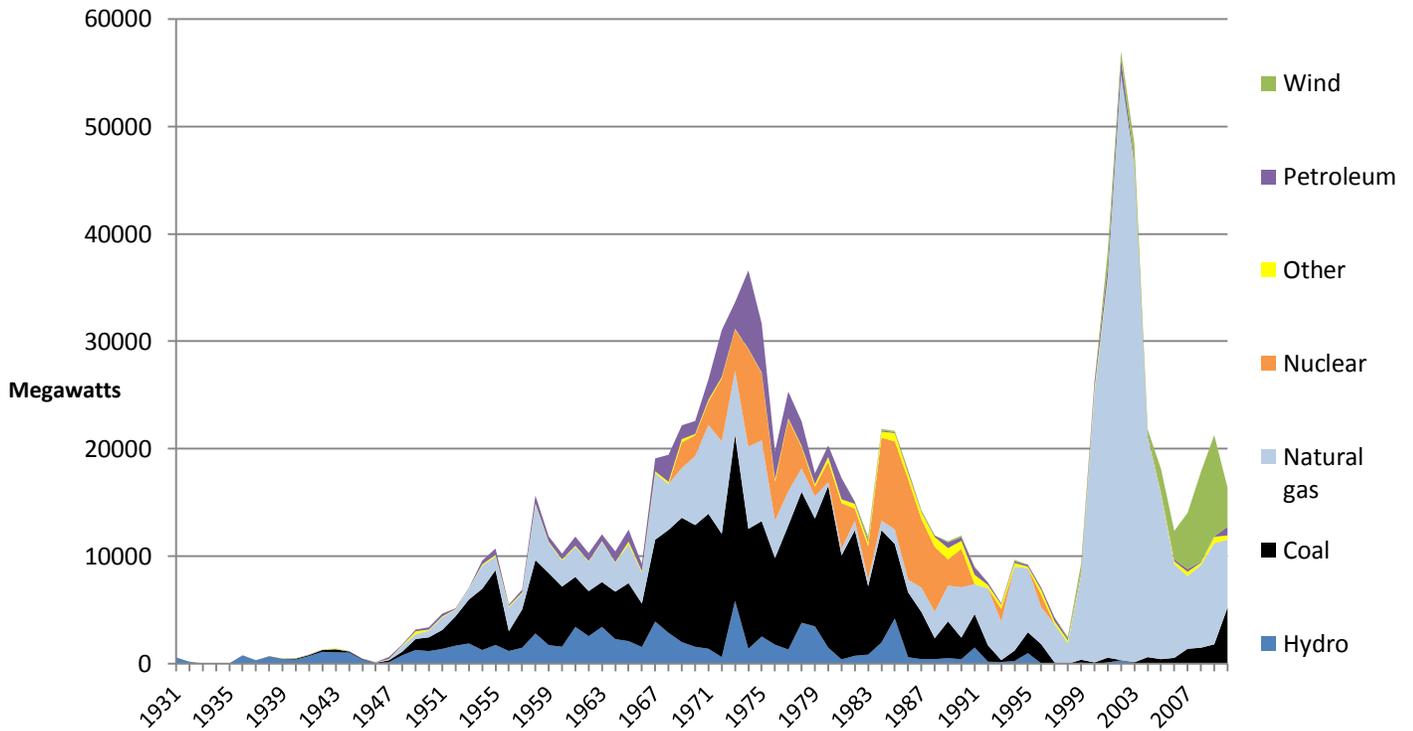
Source: Energy Information Administration

Figure 11: Projected natural gas production



Source: Energy Information Administration

Figure 12: Generating capacity by initial year of operation



Source: Energy Information Administration

## Implications for wilderness debate

It remains to be seen whether deals like the SUWA-BBC agreement can help break the decades-old logjam over wilderness in Utah. "I think that it can only help because it's changing the dynamic by showing there is the possibility of reaching agreement. It can help diffuse the very intense polarization," Buccino said. "But as far as state politics in Utah, I don't see how these couple of agreements dramatically changes the context."

The SUWA-BBC deal more or less resolves the wilderness issue for Carbon County. The main threat to the WSAs in the eastern side of the county has been neutralized, while much of the area proposed as wilderness in the Red Rocks bill is also encompassed by the agreement. "It's the ready-made basis for legislation," Hedden said. As long as it holds, it's as good as doing a wilderness bill for Carbon County although it would be nice to have it made sacrosanct by having wilderness legislation build on that agreement." While Carbon County is relatively small, it is strategically located and could catalyze a much larger wilderness campaign. "Environmental groups are trying to unite around the idea of doing a wilderness proposal for all of Desolation Canyon and the Book Cliffs," Hedden said. "On the one end you have Carbon County, and on the other end you have Grand County. Grand is the politically most progressive, and that county has for a long time endorsed a pretty good wilderness proposal. So on the two ends, you now have proposals on the table. Now we need to get the counties to ratify them and use that to pull along Emery County in the middle. Suddenly you could be talking about a million-acre wilderness bill. The deal in Carbon County has the potential to help leverage something much bigger." But Hedden, a former Grand County commissioner, said he wasn't too optimistic about the chances of any counties approving wilderness proposals anytime soon. For one thing, a pragmatic company driven by the profit motive is much easier to negotiate with than an elected official motivated by ideological concerns. For an oil and gas company, "they just want to make a deal and want to know where they can and cannot go," he said. "As long as they get access to a bunch of hydrocarbons, they're good with it."

Ever since May 2010, when Utah Senator Bob Bennett was defeated at the Republican state convention by Tea Party-endorsed candidate Mike Lee, there has been a void in leadership at the congressional level pushing for wilderness bills. Lee, a former clerk of Supreme Court Justice Samuel Alito, wants to see Utah use the power of eminent domain to take over federal lands and argues that any wilderness legislation needs to be endorsed by the state's legislature, where Republicans outnumber Democrats 21-8. Utah's six-term senator, Orrin Hatch, is being targeted by the Tea Party in 2012 and appears unlikely to insert himself deeply into the process. "Everyone recognizes that in most of these counties, it's just not going anywhere," Hedden said. "The commissioners feel like they're in charge because of the Utah delegation and the histrionics in the House of Representatives, so they're being their worst selves."

Are there other counties where the Carbon County approach could work? "The thing that's become clear is that each county is unique. It's hard to generalize," Hedden said. "In one place, it may be that principal threat is oil and gas development and all the traffic on the roads is for serving the rigs. There, if you could reach a deal with the oil and gas company, like the one in Carbon County, you've dealt with the big threat."



Storm clouds near Moab, Utah

Hedden said he sees potential for the approach to resolve conflicts over parts of the San Rafael Swell, the eastern Book Cliffs in Grand and Uintah counties, and renewable energy development. “Wherever there has been a bit of a trainwreck with oil and gas development, you could do this. Wherever there is stuff the industry really wants to get at, but environmentalists have succeeded in holding them up because of conflicts with other values, such as NEPA violations or the Endangered Species Act,” Hedden said. “The model of hiring some hunters and anglers to be spokespeople, or hiring some oil and gas guys to chat with the industry—I don’t think it’ll work unless you really have held them up and they have a clearly demonstrated, financial reason for coming to the table.”

### **Applicability to other issues**

Aside from energy development on public lands, the booming popularity of ORVs is considered the greatest near-term threat to Utah’s wildlands; in some counties, the ORV community is a highly influential constituency among commissioners. Could SUWA and other environmental groups take a cue from the BBC deal and pursue a similar pact with ORV users? Leaders of the region’s environmental groups were skeptical, noting that the ORV community is far more decentralized than a single energy company.

“It depends on the area, but it’s challenging because it’s so scattered,” Groene said, adding that there are also big differences among people who use dirt bikes, jeeps, all-terrain vehicles (ATVs), and utility terrain vehicles (UTVs), which are relatively new contraptions that look like a cross between an ATV and a pick-up truck. Culver said there is some talk of trying to hammer out a deal on off-roading in the BLM’s Grand Junction field office in Western Colorado. But environmentalists aren’t too rosy about the prospects of brokering a large-scale deal on access in Utah or elsewhere on the Colorado Plateau. “You could go to the Blue Ribbon Coalition or USA-ALL [the Utah Shared Access Alliance],” two groups representing off-roaders, Hedden said. “But they’re not going to cut any deals with anyone. They have this idea that every place that anyone has ever gone or fantasized about going is a road.”

Although Utah doesn’t have the same potential for renewable energy as a place like the Mojave Desert, the collaborative approach does seem to be a logical fit for addressing the siting of solar panels, geothermal facilities, and wind farms. “Those kinds of conversations are happening with renewable energy,” Buccino said, “and they’re probably happening a little bit more because there’s a little bit more of a natural alliance there.” In fact, the same type of approach is being tried in an effort to fast-track the siting of solar power facilities in the Southern California deserts. Environmental groups and solar developers are sitting down together to hash out the issues, mitigate the ecological damage, and monitor the impacts. “It’s not that different from what we did in Utah,” Culver said.

### **Science-based mitigation**

Some environmental groups, such as The Nature Conservancy, are helping energy companies and government regulators by providing the scientific underpinnings for mitigation plans that offset damage in one place with habitat purchases and other conservation measures in nearby areas. In Wyoming’s 60,000-acre Jonah Natural Gas Field, near Pinedale, Encana Oil and Gas and BP America Production Company, agreed to fund a \$24.5 million mitigation fund and The Nature Conservancy has been leading the effort, using sophisticated GIS analysis to overlay the area’s energy potential with the habitat needs for a variety of species, ranging from burrowing owls and white-tailed prairie dogs to sage grouse and Wyoming big sagebrush. “You feed in to the model the different natural communities and species and figure out where the overlap of leasing is. You determine what areas can be avoided simply by moving the well 100 yards over, what areas can be mitigated on site, where you should site your roads,” Livermore explained. “The general approach of this work is something we’ve been doing for 50 years all over the country and internationally. We’ve worked with timber companies on sustainable

harvests, we've worked with paper companies on forest restoration, we've had gifts from oil companies, we have preserves in California where there are oil wells."

The Nature Conservancy's Energy by Design Program, developed by scientist Joe Kiesecker, has also been applied on the Colorado Plateau recently. In June, the Colorado Division of Wildlife and BP America Production Company announced an agreement to mitigate drilling in the San Juan Basin of Southwest Colorado. BP is adding or expanding 68 drilling sites and The Nature Conservancy helped the company determine how best to conserve habitat for 20 species. Over the past two years, the Division of Wildlife has negotiated 11 similar plans in the Piceance Basin of Western Colorado, protecting nearly 355,000 acres of habitat.

## **Philanthropy's role**

Can philanthropy play a role in facilitating agreements like the SUWA-BBC deal and similar efforts to resolve disputes over public lands? Bloch said one of the key lessons was that it is essential for environmentalists to have leverage. "In my mind, the lesson isn't that you just go through a series of meetings, build trust, and then you can have an agreement. One of the drivers was that Barrett knew we were not going away, that we'd had some measure of success in both delaying some of the projects and thwarting others outright, and even in the ones we lost, the company was getting a black eye on the way," Bloch said. "I am concerned that the takeaway from this could be twisted. There are other folks now operating in Utah, outside of SUWA, who are trying to make deals for deals' sake, and not doing so from a position of strength." It would be troubling, Bloch said, if foundations started using a metric of "were you able to strike a deal with the company?" to decide on their grantmaking since not all agreements would necessarily benefit the environment. As Hedden noted, "If the dynamic were different, and you had a really shrewd negotiator for the energy company and a relative weakling for the environmental groups, you could get a deal that wasn't a good one."

In Utah, SUWA's aggressive advocacy has made it a formidable opponent for energy companies, but not every state has an equivalent group pushing for wilderness and other public lands protections. But several interviewees noted that groups focused on endangered species protections, such as the Center for Biological Diversity and WildEarth Guardians, play analogous roles to SUWA by filing petitions and follow-up lawsuits to list and protect plants and animals under the Endangered Species Act. Funding and building a new NGO in places where there isn't a strong voice for conservation is a daunting prospect, but Buccino said that creating leverage doesn't have to take years or involve institution building. "It can be, with strategic investments, just a matter of finding the right people," she said. "There may be people on the ground already who may not have the resources to create a loud voice and that's the difference a foundation can make."

Smart lawyers and persistent litigation can certainly motivate energy companies and others to compromise with environmentalists, but many interviewees argued that foundations should look beyond the courtroom in building capacity among their grantees. "Accurate and complete information" is another prerequisite for success, Buccino said, and in both the BBC and Enduring Resources deals, the mapmaking technology of GIS played a crucial role. "In terms of where to invest, that's definitely a place. Those tools are essential for making those deals work," she said. "You need to be able to map where the important resources are and show those in a visible way." Plenty of environmental NGOs already use GIS, but Buccino said that capacity is often missing. For example, NRDC, one of the nation's largest environmental NGOs, only has one full-time GIS analyst on staff.

Sophisticated maps and geographic analysis can help negotiating parties agree on a common set of facts, but technology cannot do it alone. Images on computer screens must be ground-truthed with real-world observations in the field, and an intimate knowledge of the landscape in question appears essential for achieving a favorable outcome. SUWA, which has led the citizens' effort to map lands with wilderness characteristics,

possesses that deep understanding, and judging by the highlighting in Bloxham's Utah Gazetteer, there aren't too many dirt roads in the state that he hasn't driven.

Philanthropy could also possibly support a forum or venue where environmentalists, energy developers, government officials, and others could gather for facilitated negotiations. Palma said that simply finding a neutral place to meet can be a challenge. "If we're going to change the tone and intensity of the discussions and dialogue, I'd love to see where a university or other entity sponsors a place where we can all come, where we all know it's an unbiased conference room and an unbiased facilitator who is just helping us talk through the issues," Palma said. "Either a university or another institute that's viewed as unbiased as possible could be the catalyst, and if not the catalyst, at least the venue."



**Rainbow along the Colorado River, near Moab, Utah**

A final lesson coming out of the SUWA-BBC deal is that such agreements don't happen overnight. Negotiations can take years, so funders, like their grantees, need to be patient. "We had given every indication that we were in this for the long haul," Bloch said. "To me, that's one of the takeaways. The consistent advocacy, both in our participation in various processes in front of agencies like the BLM and EPA, the litigation and appeals, and our advocacy at the Interior Department. We made it very clear to Bill Barrett that we weren't going to go anywhere. That allowed us to negotiate from more of a position of strength."

# Timeline

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## **1964**

Four decades after Aldo Leopold and other early conservationists convince the Forest Service to establish its first wilderness area in New Mexico, President Lyndon B. Johnson signs the Wilderness Act and creates a category of land that will be afforded the highest of protections and remain undeveloped.

## **1976**

Congress passes the Federal Land Policy Management Act, which requires the BLM to inventory, study, and recommend which of its land should be designated as wilderness. Today, the BLM manages 221 wilderness areas and 545 WSAs covering 8.8 percent of the 245 million acres managed by the BLM.

## **1978**

The BLM begins to inventory 23 million acres in Utah to identify areas that might qualify as wilderness and make recommendations to Congress. Such WSAs are to be managed as wilderness until Congress acts on them.

## **1980**

The BLM completes its inventory and identifies 83 areas covering 3.2 million acres in Utah that meet the criteria for a WSA. Valid existing rights and leases for grazing, mining, and minerals are grandfathered into the WSAs. Environmentalists argue that the agency has overlooked millions of acres of suitable land and they successfully appeal the inventory to the Interior Board of Land Appeals.

## **1985**

SUWA and some 40 other groups form the Utah Wilderness Coalition and begin inventorying BLM land themselves.

## **1989**

America's Red Rock Wilderness Act is first introduced in Congress by Utah Representative Wayne Owens.

## **1996**

Secretary Bruce Babbitt directs the BLM in Utah to re-inventory areas outside of WSAs to determine which areas have wilderness characteristics. President Bill Clinton uses the Antiquities Act to create the 1.7-million-acre Grand Staircase-Escalante National Monument in south-central Utah.

## **1999**

The BLM releases its Utah Wilderness Inventory and finds that 2.6 million of the 3.1 million acres it examined outside of WSAs have wilderness characteristics, defined in part as "naturalness" and possessing "opportunities for solitude and primitive and unconfined recreation."

## **2003**

Interior Secretary Gale Norton settles a lawsuit brought by the state of Utah and its governor, Mike Leavitt. The settlement, called the "No More Wilderness" deal by environmentalists, disavows the BLM's authority to identify and protect lands with wilderness characteristics.

**2004**

BBC proposes drilling about 40 wells and performing seismic tests on 58,000 acres near Nine Mile Canyon, prompting opposition from conservation and historic preservation groups.

**2005**

Public scoping on the EIS for the West Tavaputs project begins.

**2007**

The BLM hires a rock-art expert who concludes that dust kicked up by trucks is causing the panels to flake and erode, but the agency largely ignores the findings.

**February 2008**

Draft EIS released, prompting 55,000 comment letters from agencies and individuals.

**December 2008**

Concerns about impacts to archaeological resources and a request from the Hopi nation leads the BLM to recommend developing a programmatic agreement under the National Historic Preservation Act to address the threat. Sixteen government agencies and NGOs participate.

**December 17, 2008**

SUWA, The Wilderness Society, NRDC, the National Trust for Historic Preservation and seven other conservation groups – represented by attorneys from SUWA, NRDC, The Wilderness Society and Earthjustice, sue to prevent the BLM from issuing 77 leases in Utah, including many near Nine Mile Canyon, Canyonlands National Park, and Arches National Park.

**December 19, 2008**

Tim DeChristopher, an environmental activist and undergraduate economics student at the University of Utah, goes to the BLM auction, bids on the leases, drives up prices, and wins 10 parcels worth nearly \$1.8 million.

**January 17, 2009**

U.S. District Court Judge Ricardo M. Urbina grants a temporary restraining order that prevents the BLM from issuing leases on 110,000 acres in Utah.

**February 6, 2009**

Interior Secretary Ken Salazar directs the BLM to withdraw the 77 leases.

**March 30, 2009**

President Barack Obama signs the Omnibus Public Lands Management Act, a package of 164 bills that includes wilderness protections for more than a quarter-million acres in Washington County, Utah, including two new National Conservation Areas and Utah's first Wild and Scenic River.

**October 9, 2009**

The Department of Interior releases a report calling for a "time out" on oil and gas leasing near Nine Mile Canyon over concern that increased traffic would cause more harmful dust pollution.

**January 5, 2010**

At the State Capitol, the Nine Mile Canyon programmatic agreement is signed.

**July 2010**

BBC, SUWA, and the BLM announce the West Tavaputs deal.

**May 2010**

Utah Republican Senator Bob Bennett, a driving force behind the Washington County lands bill, is defeated at the Republican state convention by Tea Party-endorsed candidate Mike Lee.

**December 23, 2010**

Interior Secretary Ken Salazar issues a secretarial order that directs the BLM to identify lands with “wilderness characteristics” and designate them as “wild lands” to afford administrative protections similar to legislatively designated wilderness.

**March 2, 2011**

After a four-day trial in Salt Lake City, a jury finds DeChristopher guilty of two federal felonies. He is later sentenced to two years in prison and a \$10,000 fine; an appeal is pending.

**April 14, 2011**

With the threat of a government shutdown looming, Congress passes a spending bill that includes a provision that prohibits Interior from carrying out Salazar’s wild lands policy in fiscal year 2011.

**June 1, 2011**

In response to opposition from Western Republicans, Salazar withdraws the wild lands policy and directs his deputy, David Hayes, to work with the BLM and interested parties to determine what areas may warrant legislative wilderness designations.

**June 10, 2011**

Salazar asks members of Congress for their wish lists of the BLM “crown jewels” that should be protected as wilderness and says he will report back by October 15 with proposals.

# Sources

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## Interviews

CEA conducted a series of phone and in-person interviews:

- Steve Bloch, SUWA
- Ray Bloxham, SUWA
- Sharon Buccino, NRDC
- Shane Cross, Trout Unlimited
- Nada Culver, The Wilderness Society
- Scott Groene, SUWA
- Bill Hedden, Grand Canyon Trust
- Dave Livermore, The Nature Conservancy
- Juan Palma, BLM
- Duane Zavadil, BBC

Thanks also to Bruce Gordon of EcoFlight for the aerial tour of Northeast Utah.

## Bibliography

Baca, Jim. "Opinion: Drop the Bush-era 'no more wilderness' settlement." *The Salt Lake Tribune*, November 20, 2010.

Barringer, Felicity. "When the Bush Energy Policy Confronts Ancient Art," *The New York Times*, June 13, 2004.

Burr, Thomas. "Salazar asks Congress to pick wilderness 'crown jewels.'" *The Salt Lake Tribune*. June 10, 2011.

Collins, Lois M. and Elaine Jarvik. "Beneath the surface: Hard times, high hopes meet in Uintah Basin." *Deseret News*, September 6, 2009.

Cortez, Marjorie. "Major natural gas development in Uintah Basin could mean up to 4,000 jobs." *Deseret News*, June 9, 2011.

Davis, Matthew. "Plan Preserves Habitat in Colorado's San Juan Basin." NewWest.net, June 17, 2011.  
[http://www.newwest.net/topic/article/plan\\_preserves\\_habitat\\_in\\_colorados\\_san\\_juan\\_basin/C41/L41/](http://www.newwest.net/topic/article/plan_preserves_habitat_in_colorados_san_juan_basin/C41/L41/)

Fahys, Judy. "Deal clears way for more gas drilling in eastern Utah." *The Salt Lake Tribune*, April 4, 2011.

Henetz, Patty. "Now the hard part: Living up to Nine Mile deal." *The Salt Lake Tribune*, January 5, 2010.

Henetz, Patty. "Landmark deal reached to save Nine Mile's rock art riches." *The Salt Lake Tribune*, January 4, 2010.

Henetz, Patty. "9-Mile deal was long time coming." *The Salt Lake Tribune*, January 4, 2010.

Huntington, Rebecca. "Proving ground." *Nature Conservancy Magazine*. Winter 2008, Volume 58, Number 4.

International Energy Agency. "Are We Entering a Golden Age of Gas?" Special Report of the *World Energy Outlook*. Paris: International Energy Agency. June 6, 2011.

Jaffe, Mark. "Roan Plateau drilling: talks over nature area fruitless." *The Denver Post*, October 22, 2010.

Kloor, Keith. "Dust on the rocks." *High Country News*, August 25, 2008.

Krauss, Clifford. "A 'Golden Age' for Gas? Two Caveats." *The New York Times Green Blog*. June 6, 2011.  
<http://green.blogs.nytimes.com/2011/06/06/a-golden-age-for-gas-2-caveats/>

Loomis, Brandon. "Major natural-gas development poised for eastern Utah." *The Salt Lake Tribune*, June 9, 2011.

Loomis, Brandon. "Poll: Utahns prefer local leadership of wilderness talks." *The Salt Lake Tribune*, May 5, 2011.

Loomis, Brandon. "Ranchers say Nine Mile pipe will hurt them and relics." *The Salt Lake Tribune*, April 26, 2011.

Loomis, Brandon. "Feds approve paved road to Book Cliffs." *The Salt Lake Tribune*, April 13, 2011.

Loomis, Brandon. "SUWA seeks greater 'Greater Canyonlands' protection." *The Salt Lake Tribune*, March 16, 2011.

Loomis, Brandon. "Nine Mile Canyon gets a gift for the ages." *The Salt Lake Tribune*, October 27, 2010.

O'Donoghue, Amy Joi. "Lawmakers briefed on Uintah Basin winter ozone problems." *Deseret News*, June 15, 2011.

O'Donoghue, Amy Joi. "Agreement reached on Uintah County drilling project." *Deseret News*, April 3, 2011.

O'Donoghue, Amy Joi. "New BLM director sees positive future for Utah land issues." *Deseret News*, August 15, 2010.

O'Donoghue, Amy Joi. "BLM issues final approval for huge Utah oil and gas project." *Deseret News*, July 29, 2010.

O'Donoghue, Amy Joi. "Agreement reached on Nine Mile Canyon drilling." *Deseret News*, December 23, 2009.

Ostlind, Emilene. "Game on in the Wyoming Range." *High Country News Goat Blog*, May 18, 2011.  
<http://www.hcn.org/blogs/goat/game-on-in-the-wyoming-range>

Ostlind, Emilene. "Conservation progress in the Wyoming Range." *High Country News Goat Blog*, February 7, 2011. <http://www.hcn.org/hcn/blogs/goat/conservation-progress-in-the-wyoming-range>

Peterson, Jodi. "Kicking and screaming, the BLM makes a deal." *High Country News*, January 19, 2010.  
<http://www.hcn.org/wotr/kicking-and-screaming-the-blm-makes-a-deal>

Peterson, Jodi. "BLM gags an archaeologist to get out the gas." *High Country News*, July 19, 2004.

Rodebaugh, Dale. "EPA prepares ozone rule." *Durango Herald*, June 18, 2011.

Rolly, Paul. "Noel won't compromise with Utah's 'enemy' — SUWA." *Salt Lake Tribune*, August 6, 2010.

Smart, Christopher. "SUWA, energy company reach historic deal on drilling near Nine Mile." *The Salt Lake Tribune*, July 30, 2010.

Spangler, Jerry D. and Donna K. Spangler. *Horned Snakes and Axle Grease: A Roadside Guide to the Archaeology, History and Rock Art of Nine Mile Canyon*. Uinta Publishing: Salt Lake City. 2003.

Stegner, Wallace. *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West*. New York: Penguin, 1992.

Stephenson, Shauna. "Is A Public-Private Wyoming Range Agreement the Future of Conservation Deals?" NewWest.net, February 8, 2011.  
[http://www.newwest.net/topic/article/is\\_a\\_public\\_private\\_wyoming\\_range\\_deal\\_the\\_future\\_of\\_conservation\\_agreement/C618/L618/](http://www.newwest.net/topic/article/is_a_public_private_wyoming_range_deal_the_future_of_conservation_agreement/C618/L618/)

Unsigned editorial. "A great compromise." *Deseret News*, August 6, 2010.

Unsigned editorial. "Nine Mile pact." *The Salt Lake Tribune*, January 4, 2010.

U.S. Energy Information Administration. "Annual Energy Outlook 2011." U.S. Department of Energy, April 2011.  
[www.eia.gov/forecasts/aeo/](http://www.eia.gov/forecasts/aeo/)

Zeller, Tom Jr. "Studies Say Natural Gas Has Its Own Environmental Problems." *The New York Times*, April 11, 2011.

Zhang, Chi-Chi. "Debate stirred over Utah land and 1<sup>st</sup> major U.S. tar sands mine." *Deseret News*, April 12, 2011.

###