EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

January 15, 2016

Colorado Roadless Rule
U.S. Forest Service, Rocky Mountain Region
740 Simms Street
Golden, CO 80401
Via Email: kktu@fs.fed.us

Re: Comments of High Country Conservation Advocates *et al.* on Supplemental Draft EIS on Proposal to Reinstate North Fork Coal Mining Area Exception to the Colorado Roadless Rule (Project #46470)

Dear Secretary Vilsack:

Thank you for this opportunity to comment on the U.S. Department of Agriculture's supplemental draft environmental impact statement (SDEIS) on the agency's proposal to reinstate the North Fork Coal Mining Area exception to the Colorado Roadless Rule. This letter is sent on behalf of the following conservation groups and conservationists, all of whom have a longstanding interest in the protection and wise stewardship of roadless national forest lands and our climate.

High Country Conservation Advocates (HCCA) was founded in 1977 as High Country Citizens' Alliance, to keep Mount Emmons molybdenum mine-free. HCCA's work now addresses other issues that affect Gunnison County's clean air, clean water, public lands, and healthy wildlife. HCCA has over 600 members who live, recreate, and enjoy the rural and wild character of Gunnison County and its public lands.

The Sierra Club is America's largest grassroots environmental organization, with more than 2.4 million members and supporters nationwide. In addition to creating opportunities for people of all ages, levels and locations to have meaningful outdoor experiences, the Sierra Club works to safeguard the health of our communities, protect wildlife, and preserve our remaining wild places through grassroots activism, public education, lobbying, and litigation. Sierra Club is dedicated to exploring, enjoying, and protecting the wild places of the Earth; to practicing and promoting the responsible use of the Earth's resources and ecosystems; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives.

WildEarth Guardians is a Santa Fe, New Mexico-based nonprofit organization with offices throughout the western U.S., including in Colorado. WildEarth Guardians is dedicated to protecting and restoring wild places, wildlife, wild rivers, and the health of the American West and has over 100,000 members. As part of its Climate and Energy Program, Guardians works to combat climate change by advancing clean energy and aiding a transition away from fossil fuels, the key source of the greenhouse gases fueling global warming, particularly on our pubic lands. In doing so, Guardians defends the public interest by safeguarding clean air, pure water, vibrant wildlife populations, and protected open spaces.

The Center for Biological Diversity is a non-profit environmental organization with 50,400 member activists, including members who live near and recreate in the areas in the Grand Mesa, Uncompahgre and Gunnison National Forests. The Center uses science, policy and law to advocate for the conservation and recovery of species on the brink of extinction and the habitats they need to survive. The Center has and continues to actively advocate for increased protections for species and habitats in the planning area on lands managed by the Forest Service. The lands and waters that will be affected by the decision include habitat for many listed, rare, and imperiled species that the Center has worked to protect including the Colorado pikeminnow, humpback chub, bonytail, razorback sucker, Colorado cutthroat trout, and Canada lynx.

Founded in 1947 as Defenders of Furbearers, Defenders of Wildlife is a nonprofit organization dedicated to the protection and restoration of wildlife and plants in their natural communities, with 1.2 million members and supporters nationwide. Defenders' distinguished record of leadership on America's conservation efforts includes helping secure final passage of the Endangered Species Act in 1973. Our current priorities include conserving wildlife including the predators that help maintain biodiversity, protecting the Endangered Species Act and other important wildlife conservation laws from political attacks, supporting policies and practices that help wildlife adapt to climate change and advocating for wildlife-friendly renewable energy development.

Friends of the Earth fights to create a more healthy and just world. Its current campaigns focus on promoting clean energy and solutions to climate change, ensuring the food we eat and products we use are safe and sustainable, and protecting marine ecosystems and the people who live and work near them.

Founded in 1967, the mission of Wilderness Workshop's ("WW") mission is to protect and conserve the wilderness and natural resources of the Roaring Fork Watershed, the White River National Forest, and adjacent public lands. WW is a non-profit organization that engages in research, education, legal advocacy and grassroots organizing to protect the ecological integrity of local landscapes and public lands. WW not only defends pristine public lands from new threats, but also helps restore the functional wildness of a landscape fragmented by human activity. WW protects and preserves existing wilderness areas, advocates for expanding wilderness, defends roadless areas from development that would destroy their wilderness character, and safeguards the ecological integrity of all federal public lands in its area of interest. WW has a long history of participation in forest planning on the White River National Forest. WW has approximately 700 members who support its mission and enjoy the lands WW protects and conserves.

Rocky Mountain Wild ("RMW") is a conservation advocacy organization focused on protecting wildlands for wildlife throughout the Southern Rocky Mountain region (Colorado, eastern Utah, southern Wyoming, and northern New Mexico). The organization has around 600 members who are passionate about protecting the biodiversity and ecosystem health throughout the region. RMW advocates for its members' interests through participating in administrative processes, collaboration, education, and when necessary; litigation.

Rocky Mountain Recreation Initiative works to protect Colorado wildlands and roadless areas from high-impact human disturbance so the integrity of these lands remain intact for wildlife

and future generations. RMRI also promotes responsible recreation, working closely with Colorado land management agencies, including the Forest Service and Bureau of Land Management to ensure sustainable trail planning and long-distance motorized trail planning.

Founded in 1986, San Juan Citizens Alliance ("SJCA") advocates for clean air, pure water, and healthy lands – the foundations of resilient communities, ecosystems and economies in the San Juan Basin. SJCA is a membership organization with 650 dues-paying members and over 2,000 supporters that has been active in BLM and National Forest fossil fuel issues in southwest Colorado and northern New Mexico since the early 1990s.

Great Old Broads for Wilderness is a national organization, with 5,200 members nation-wide, including 700 members in Colorado. Great Old Broads for Wilderness engages and ignites the activism of elders to preserve and protect wilderness and wild lands. Broads gives voice to the millions of older Americans who want to protect their public lands as Wilderness for this and future generations. Broads brings experience, commitment, and humor to the movement to protect the last wild places on Earth.

Environment Colorado is a statewide, citizen-based, environmental advocacy organization that works to protect Colorado's clean air, clean water, and open spaces.

350Colorado.org 350 Colorado (350CO) is a Colorado-based nonprofit organization working locally to help build the global grassroots movement to solve the climate crisis and transition to a sustainable future. 350CO has 10 local teams around the state of Colorado and over 10,000 supporters. As an organization that is working to stop catastrophic climate change that is already wreaking havoc on people and ecosystems worldwide, with terrible impacts on forests across the west through the pine beetle epidemic and record-breaking wildfires, 350CO is extremely concerned about the proposal to open more forest land up for mining of 170 million tons of coal on tax-payer owned land.

Wildlands Network is a nonprofit conservation organization with offices and staff across North America, including Durango Colorado, Flagstaff Arizona, Portal Arizona, Salt Lake City Utah and Ogden Utah. We work to halt the 6th Great Extinction. We reconnect wildlife habitats in North America so that animals can live in and move safely through the landscape. Public lands, particularly roadless areas are essential to wildlife, biodiversity and to our mission. Our staff and supporters rely on and use roadless areas for recreation, scientific study and other human uses. We collaborate with partner groups to create wildlife corridors at a large enough scale to meet the needs of wolves, mountain lions, and other native carnivores. And we engage with federal agency staff, and federal and state policymakers to ensure that our public lands are appropriately managed and that our laws and public policies are effectively and correctly implemented and enforced to protect conservation values.

Grand Canyon Wildlands Council is an organization dedicated to Protecting and Restoring Wild Nature in the Grand Canyon Ecoregion.

Rocky Smith is a Colorado resident who uses and enjoys Colorado's national forests and roadless areas, and who has reviewed and responded to plans, projects, laws, regulations, and

policies that affect national forest management for 35 years. He drafted various sets of comments on the Colorado Roadless Rule.

For the reasons set forth below, the undersigned groups and individual request, among other things, urge the Forest Service to:

- adopt the no action alternative, because the proposed action will degrade sensitive roadless lands and worsen climate change, hobble renewable energy generation, and result in billions of dollars of damage to the global environment and economy while likely benefitting only a single corporation: Arch Coal;

- ensure that any subsequently prepared environmental document focuses its analysis of surface impacts on the three roadless areas where the coal mine exception will open the door to road and methane drainage well pad construction, and in doing so, disclose the values of those areas, an analysis entirely missing from the SDEIS and the Colorado Roadless Rule Final EIS;

- disclose the impact of methane pollution on the environment by including the social cost of methane in any social cost and/or present net value analysis;

- use a model for estimating market impacts that accurately represents increased energy consumption that will result from the sale of coal from the North Fork Valley coal mining area;

- use the best available data on the likely rate of methane emissions, including data from ten years of coal mining (rather than only the last three years as in the SDEIS);

- more accurately estimate the volume of coal the coal mining exception will make available, or provide to the public the data on which it based its 50% reduction in estimated coal volume;

- address the coal mine exception's foreseeable impacts on wildlife in any subsequently prepared environmental document;

- consider a range of reasonable alternatives, including:

    - an alternative that protects the Pilot Knob Roadless Area; and

    - alternatives that reduce methane and climate pollution resulting from the decision;

- consider and analyze mitigation measures that reduce or eliminate the impacts of methane and climate pollution, including requiring coal lessees to purchase carbon offsets;

- ensure compliance with the Endangered Species Act; and

- work with the Office of Management and Budget to prepare a Regulatory Impact Analysis because this rulemaking meets the definition of a "significant rule."

I. THE FOREST SERVICE SHOULD ADOPT THE NO ACTION ALTERNATIVE.

In his State of the Union speech this week, President Obama emphasized the need to "transition away from old, dirtier energy sources." The President emphasized that, "[r]ather than subsidize the past, we should invest in the future." Earlier today, the President and Interior Secretary Sally Jewell announced that pending and new federal coal leases on our public lands will be suspended while Interior reviews the entire program -- from greenhouse gas pollution to royalties.

Although the Interior Department announcement earlier today did not call out the proposed North Fork exemption by name, it is clear that the policies that underlie this sea-change mark a drastic shift in how our public lands should be managed with regard to fossil fuels. Consistent with the President's statements in the State of the Union and Secretary Jewell's announced pause on new leasing, the Forest Service should reject the proposed loophole. To be sure, there are clear, fundamental flaws in the Forest Service's analysis. Those are set out in detail below. But even without correcting the flawed analysis, the SDEIS provides all the information the Forest Service needs to reject the proposed exemption. The proposed North Fork mining exemption presents the Obama Administration with clear policy choices: moving forward with the preferred alternative would open up 170 million tons of publicly-owned coal from public lands, cause billions of dollars in climate-related economic damages, keep 40,000 gigawatt hours of clean, renewable energy from entering the marketplace, and degrade thousands of acres of wild forest.

We urge the Forest Service to continue the Obama Administration's strong leadership on climate issues by rejecting the proposed North Fork Valley exemption. Climate change is the critical issue of our time. As we transition to clean, renewable energy economy, the Forest Service has the opportunity to play a key role in determining whether our public lands will, in the President's words, be used to "subsidize the past" or "invest in the future."

A. The Proposed Action Should Be Rejected Because It Is Not In The Public Interest.

The undersigned groups urge the Forest Service to adopt the no action alternative and to reject reinstating the North Fork coal loophole. As explained below, and as the SDEIS makes clear, the proposed action will harm the public by encouraging the release of vast amounts of climate pollution, by wasting millions of cubic feet a day of methane, by saddling the global economy and environment with billions in climate damages, and by degrading high-elevation forests and wildlife habitat. On the other hand, it is likely to benefit only a single company: now-bankrupt Arch Coal. The Forest Service should not undermine the public interest to benefit one of world's largest purveyors of dirty coal.

The Forest Service's own analysis demonstrates the proposal's damaging impacts by at least four counts.

First, the proposal will result in significant *gross* carbon emissions from coal extraction and combustion. The SDEIS estimates that Alternative B, re-instating the coal mine road exception,

would make available for mining 172 million tons of recoverable coal.[1] "[T]he total gross accumulated GHG [greenhouse gas] emissions" from mining and burning that coal "could range from approximately 449 to 486 million metric tons CO2eq, depending up the production scenario,"[2] with about 10% –15% of the total coming from methane emissions during coal production.[3] Assuming average levels of coal production, mining and burning the coal in the North Fork coal mining area would likely result in an additional 28.1 million tons of CO2eq into the atmosphere *every year* for 17 years, the equivalent of:

- 94 times the volume of annual greenhouse gasses attributable to operating the Forest Service;
- More than one-fifth of all human-caused climate pollution in the State of Colorado annually;[4] or
- Three times the volume of annual carbon emissions from Colorado's single largest climate pollution source, the Craig Station coal-fired power plant.[5]

Coal mine methane emissions alone attributable to this decision would be 14 times the annual greenhouse gas footprint from all Forest Service business operations nationwide.[6]

Second, even where the analysis takes into account the shifts in the mixtures of energy used to generate electricity, as well as the production of different types of energy, that would result from the addition of 172 million tons of coal to the market, the proposed action would result in a *net* increase in total CO2 emissions of 131 million tons over a period of years.[7] That's as much as all carbon emissions from all human sources in Colorado for an entire year; and as much as over four centuries of emissions from all Forest Service operations. It is also more than running the Craig Station coal-fired power plant – Colorado's largest individual climate polluter – for an additional fourteen years.[8] The 131 million tons of CO2 does *not* include an *additional net* increase of 1.0 – 2.1 million tons of CO2eq per year from methane wasted during each additional

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[1] SDEIS at 29.

[2] SDEIS at 39.

[3] SDEIS at 37, Table 3-3.

[4] SDEIS at 48.

[5] *See* EPA, Facility Level Information on Greenhouse gasses Tool for Craig Station, available at http://ghgdata.epa.gov/ghgp/main.do (last viewed Dec. 14, 2015) (displaying that Craig power plant reported emissions of 9.3 million tons of GHG in 2014). 3 years X 9.3 mln tons / yr = 27.9 million tons CO2eq.

[6] SDEIS at 48.

[7] SDEIS at 96, Table 3-19.

[8] *See* note 5 *supra*. 14 years X 9.3 mln tons / yr = 130.2 million tons CO2eq.

year of coal mining.[9] Total net GHG emission increases attributable to the proposed action are thus likely closer to 150 million tons of CO2eq.

Further, for every additional year that the mines are operating, the *net* methane emissions from coal mining alone – not counting the carbon emission from coal combustion – would be enough to severely undercut, or nearly wipe out all of, the greenhouse gas reductions of one of the recent signature climate and air quality accomplishments of the State of Colorado: 2014 regulations that limit methane emissions from oil and gas operations. Those regulations are predicted to reduce methane emissions by 65,000 tons per year, the equivalent of 2.34 million tons of CO2eq.[10] Carbon emissions from coal combustion made possible by this rule will undo all of the climate benefits from more than 23 years of implementing methane controls in the Colorado oil and gas rule.[11]

Third, the SDEIS's market analysis shows that the addition of 172 million tons of coal to the market due to the coal mining exception will undercut the market for clean renewable energy. The SDEIS estimates that this coal will displace 40,000 gigawatt hours of renewable energy between 2016 and 2054 that would be purchased by utilities were the coal not put on the market.[12] It will further displace nearly 72,000 gigawatt hours of natural gas, which burns more cleanly than coal.[13] Displacing clean energy with dirty coal will slow the needed transition to a clean energy economy.

Fourth, the SDEIS concludes that the *net* social damage to the global environment and property from carbon emissions (calculated by weighing the social cost of carbon against the net value of the coal) could be as high as $12.4 billion, and is probably in the range of $1.6 billion to $3.4

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[9] SDEIS at 97–98 & Table 3-20.

[10] *See* Colorado Dep't of Public Health and Environment, Fact Sheet, Revisions to Colorado Air Quality Control Commission's Regulation (Mar. 2014) at 1, attached as Ex. 1, available at https://www.colorado.gov/pacific/sites/default/files/003_030614-729AM-R3-6-7-fact-sheet-003_1.pdf (last viewed Jan. 15, 2016). This figure assumes the SDEIS's CO2eq calculations for methane were derived by multiplying the volume of methane by the 100-year global warming potential for methane of 36.

[11] 65,000 tons methane X 86 (global warming potential for methane over 20 years) = 5.59 million tons CO2eq. 5.59 million tons Co2eq/year X 23 years = 128.6 million tons of CO2eq. Using the 100-year global warming potential (36) would increase to 55 years the time required for the methane reductions from the Colorado oil and gas rule to overcome the impacts of the coal combustion emissions attributable to the coal mining exception rule.

[12] SDEIS at 96, Table 3-19; *id.* and 97

[13] *Id*. We do not address whether the extraction of natural gas is cleaner or dirtier than coal mining.

billion.[14] These figures omit the social cost of climate pollution caused by methane emissions, which would likely add hundreds of millions if not billions more in social costs.[15]

That the Forest Service appears poised to ignore the significant climate impacts of unlocking 172 million tons of coal contradicts recent statements by President Obama. In announcing his decision rejecting a permit for the Keystone XL pipeline, the President stated:

> if we're going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we're going to have to keep some fossil fuels in the ground rather than burn them and release more dangerous pollution into the sky.[16]

Beyond climate and energy impacts, opening these roadless lands to road construction for coal mining is also likely to have significant, damaging impacts on the ground across a 30-square-mile landscape of largely undisturbed roadless lands – the Sunset, Flatirons, and Pilot Knob Roadless Areas. These areas provide habitat for lynx and goshawk, black bear and elk, frogs, snakes, and deer; mining here will degrade soils and landscapes upstream of habitat for Colorado River cutthroat trout and endangered Colorado River fish.[17]

The purpose of the proposed action is to pave the way for the construction of an additional 67 miles of road and up to 450 additional methane drainage pads within roadless forest to facilitate coal mining.[18] The landscape above Arch Coal's West Elk Mine is already blanketed by a tight network of roads, as well as pockmarked and degraded by drill pads.[19] Those who tout coal from the North Fork as "clean" can only do so by ignoring the degradation of roadless areas and massive amounts of methane wasted to mine it, and the greenhouse gas pollution caused by burning it.

On the other hand, the alleged benefits of allowing this pollution and habitat destruction will likely accrue only to a single entity: the West Elk mine, owned by Arch Coal. The Forest

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[14] SDEIS at 100 & Table 3-22.

[15] SDEIS at 86 ("The social costs of climate change presented in this supplemental analysis *are associated with changes in carbon dioxide emissions only*…. The air section includes potential emissions of methane and nitrous oxide*, but the social costs of these emissions are not quantified*." (emphasis added)). The SDEIS's failure to account for the social cost of methane is discussed in more detail, *infra* at 53-54.

[16] The White House, Statement by the President on the Keystone XL Pipeline (Nov. 6, 2015), attached as Ex. 2, and available at https://www.whitehouse.gov/the-press-office/2015/11/06/statement-president-keystone-xl-pipeline (last viewed Dec. 14, 2015).

[17] SDEIS at 51-53, 68 (fish impacts).

[18] SDEIS at 20, Table 2-2.

[19] *See* A Photo Report of the Sunset Roadless Area and Threats from Coal Mining at Arch Coal's West Elk Mine (Jan 14, 2016), attached as Ex. 3.

Service should not be effectively subsidizing a company so poorly run that it eliminated 99% of its shareholder's value over the last two years and ran itself into bankruptcy.

Because West Elk still has, by Forest Service estimates, approximately 10 years of coal reserves remaining,[20] the Forest Service has time to help local communities transition to a more stable, cleaner economy in the North Fork Valley while preserving the natural environment and protecting the climate.[21] This is particularly important given the bleak future coal faces across the West Slope.[22] As the dean of the University of Colorado school of business was recently paraphrased, "Western Slope coal lies on death's door" due to a variety of market conditions.[23]

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[20] *See* Forest Service, West Elk Mine (powerpoint) (Dec. 2014) at 13, attached as Ex. 4 ("The West Elk Mine estimates that 55 million tons of coal resources are currently under lease, only a portion of which are permitted for mining. Assuming a 5 million ton year production rate, the current leased coal resources would represent approximately 11 years of production."). West Elk has been mining at a rate of approximately 5.3 million tons per year since Dec. 2014. *See* Colorado Division of Reclamation, Mining and Safety, Monthly Coal Summary Report, Period 1/2015 through 11/2015 (Jan. 11, 2016), available at http://mining.state.co.us/SiteCollectionDocuments/11Summary15.pdf (last viewed Jan. 15, 2016) attached as Ex. 5 (showing 4.87 million tons mined at West Elk in the 11 months between January 1 and November 30, 2015). In March 2015, Forest Service staff again estimated that the West Elk mine's "current leased coal resources … represent approximately 11 years of production." Email of J. Robertson, Forest Service to J. Schaefers, Forest Service *et al.* (Mar. 20, 2015), attached as Ex. 6.

[21] Arch Coal's own documents show that it plans to mine its existing leases in the area apparently without further surface construction in the North Fork coal mining area – and so, without need for the proposed rule amendment – for another eight years. Last year, Arch Coal sought and received approval from state regulators to begin the process of mining the B seam (which is below the E seam for which Arch has been building methane drainage wells) throughout a broad area in two of its current leases: COC-1362 and COC-67232. *See* letter of K. Welt, Mountain Coal Co. to J. Stark, Colorado Division of Reclamation, Mining and Safety (DRMS) (May 8, 2015), attached as Ex. 7. A map Arch provided to state regulators indicates the company intends to mine the B seam between 2015 and 2023. *See* Mountain Coal Co., Map 52, B Seam Projected Operations (May 8, 2015), attached as Ex. 8.

[22] The Forest Service's and Arch Coal's data indicating that the company can mine an 8-10 years supply of coal even without the proposed amendment contradicts the SDEIS's apparent contention that only 1-2 years of coal remain at West Elk absent the amendment. *See* SDEIS at 32 ("Under Alternative A, the mining duration would be approximately 2 years under the low production scenario, 1 year under the average production scenario, and 1 year under the permitted production scenario"). Any subsequently prepared NEPA document must clarify this inconsistency, given that the basis for SDEIS's 1-2 year estimate is not explained.

[23] G. Ruland, Coal dead, but real estate, construction our best hope, Grand Junction Sentinel (Dec. 14, 2015), available at http://www.gjsentinel.com/news/articles/coal-dead-but-real-estate-construction-our-best-ho (last viewed Jan. 15, 2016), and attached as Ex. 9.

B. The Colorado Roadless Rule As Adopted Was Not In The Public Interest.

Although some may support restoring the coal mine exception because it was originally part of a political deal among special interests, that deal was never a good one for Colorado roadless areas. Despite Forest Service assertions to the contrary, the Colorado Roadless Rule with the coal mine exception was less protective of roadless forest than the 2001 national Roadless Rule it supplanted. The proof is in the analysis of road mileage. The 2001 national Roadless Rule was predicted to result in an average of 13.8 miles of road being built annually within or adjacent to roadless forest due to prior existing rights and exceptions.[24] By contrast, the Colorado Roadless Rule with the coal mine exception would permit 19.7 miles of road to be constructed per year within and adjacent to roadless forest, a 43% increase.[25] Much of this increase was due to the fact the national Roadless Rule would have resulted in an average only 0.5 miles of road per year in roadless areas for coal mining, while the Colorado Roadless Rule with the coal mine exception was predicted to result in an average of 3.3 miles per year, *nearly 7 times more road mileage annually*.[26]

In addition, other measures in the Colorado Rule that purport to better protect roadless lands than the national Roadless Rule would actually have had little or no beneficial impact, undercutting the argument that the sacrifice of roadless lands in some areas, including the North Fork area, was justified by better protecting remaining lands elsewhere. For example, the Colorado Rule contains provisions concerning "linear construction zones" for pipelines and similar structures not found in the national Roadless Rule, ostensibly to more strictly limit road construction for such structures. But the Final EIS predicts the same number of road miles per year will be constructed for such zones under either rule, indicating that the Colorado Rule provisions provide no added protection.[27] Further, many of the so called "upper tier" forest lands supposedly receiving heightened protection under the Colorado Roadless Rule were already more protectively managed as "recommended wilderness" under individual Forest Plans.

Finally, even if some interests believed the Colorado Roadless Rule was a "good deal" in 2012, it was based on a flawed premise: that the Rule would have little impact on the climate because if the coal were not mined in the North Fork, it would be mined somewhere. The Forest Service's SDEIS proves that assumption false. Further, new information about the nature and speed of climate change, the damage it will cause, and the need to keep a substantial amount of the nation's coal reserves in the ground have come to light. Facts matter. And the facts are that the Forest Service and the public now understand just how bad a deal this is for the climate. Any new decision should be based on these facts, not outdated erroneous assumptions made in prior deals.

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[24] Forest Service, Final Environmental Impact Statement, Rulemaking for Colorado Roadless Areas Vol. II (May 2012) ("Colorado Roadless Rule Final EIS") at 59.

[25] *Id.*

[26] *Id.*

[27] *Id.* at 61 (4.7 miles of linear construction zones built on average per annum under both Alternative 1 (national Roadless Rule) and Alternative 2 (Colorado Roadless Rule)).

C. The Forest Service Should Adopt The No Action Alternative Because There Is No Immediate Need For The Proposed Action.

The Forest Service should adopt the no action alternative – or defer the rulemaking process for the foreseeable future – because there is no demonstrated, immediate need for a rule promoting road construction on these roadless lands for coal mining.

The SDEIS defines the rulemaking's purpose as follows:

> the specific purpose and need for reinstating the North Fork Coal Mining Area exception is to provide management direction for conserving approximately 4.2 million acres of CRAs while addressing the State's interest in not foreclosing exploration and development of coal resources in the North Fork Coal Mining Area.[28]

But the SDEIS fails to demonstrate why there is a pressing need to "not foreclose[e] exploration and development of the coal resources" where there is no immediate need for those resources.

The SDEIS alleges that the lack of immediate need for the coal resources does not undermine the need for a rule now because "it takes years to develop regulations such as the Colorado Roadless Rule" and "[i]n the case of coal, it takes many additional years after the regulations are developed to lease, explore and permit mining."[29] These arguments both lack merit.

First, the fact that it took "years" to develop the Colorado Roadless Rule is irrelevant; it is developed and in place now. The question is whether the Colorado Rule could be *amended* promptly in the future to address a future need for coal. Clearly it could be, and could be amended in less than two years, given that the Forest Service is on track to publish a final amendment opening roadless areas in the North Fork to mining in as little as 15 months after the agency issued its scoping notice.[30]

Second, the statement that "it takes many additional years *after* the regulations are developed to lease, explore and permit mining" is also incorrect. The Forest Service is moving ahead with consideration of coal lease modifications in the Sunset Roadless Area concurrently with this amendment. Within two months of the Colorado Roadless Rule's adoption in 2012, the Forest Service had approved the Lease Modifications for the Sunset Roadless Area, and within a year BLM had received, approved, and proposed to immediately implement a coal exploration proposal there, with Arch Coal poised to begin construction for exploration. Clearly, federal agencies and coal producers can move quickly when they want to, undermining any claim that this amendment must be adopted now.

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[28] SDEIS at 1.

[29] SDEIS Appendix B at B-1.

[30] *See* 80 Fed. Reg. 18,598 (Apr. 7, 2015) (HCCA notice); Forest Service, "Where Do We Go From Here?" (Ex. 10) (projecting final rule could be complete in June 2016).

Further, if the Forest Service is correct that coal leasing, exploration, and permitting take "years," one would assume that coal producers might have more than one credible exploration, leasing, or development proposal in the planning pipeline for three roadless areas. But there are no such proposals for either the Pilot Knob or Flatirons Roadless Areas, which means that it will be even more "years" before any company intends to mine these areas. This further undercuts any need to modify the Colorado Roadless Rule now to pave the way for potential mining in those areas.

Specifically, there remains no demonstrated need for leaving open the Pilot Knob Roadless Area to potential coal exploration and development. All of the leases adjacent to Pilot Knob are owned by Oxbow's Elk Creek mine.[31] We are aware of no evidence that any other company has expressed any interest in mining coal there, and the Forest Service cites none in the SDEIS. Oxbow has no ability to take advantage of coal reserves in Pilot Knob in the near future because the company has auctioned off most of its movable equipment, demolished much of that mine's infrastructure, has but four miners on staff, has sealed the main mine portals and air vents with cement, and is repurposing its private lands adjacent to the defunct mine works. Oxbow's actions in closing the Elk Creek mine speak far louder than a single letter purporting to express continued interest in mining in the area.[32]

Further, the SDEIS itself admits that "[t]here are no new proposed coal leases within the Flatirons CRA [Colorado Roadless Area]," indicating that any mining there is years off, and thus that there is no need now for a rule opening the door to mining there.[33]

Finally, it remains unclear whether Arch Coal needs to construct roads in the Sunset Roadless Area in the near future, despite the fact that the company re-submitted applications for lease modifications for the area. Arch's staff, under penalty of perjury, repeatedly swore that if the company were unable to explore proposed lease modifications in a portion of the coal mine exception area by 2013 (or 2014), the West Elk mine would likely bypass any coal there.[34] And by bypass, they meant: leave the coal in the lease modifications area under the roadless lands unmined unless and until market conditions improved to justify the cost of returning to the area.

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[31] *See* Earthjustice, Map, North Fork Coal Mine Exception Area (May 21, 2015), attached as Ex. 11.

[32] The Elk Creek mine's decommissioning and supposed continued interest in the Pilot Knob Roadless Area are addressed in detail *infra* at 92-95.

[33] SDEIS Appendix B at B-4.

[34] Declaration of Kathy Welt, Arch Coal (Mar. 14, 2013) at 3 (swearing under penalty of perjury that if the lease modifications within the Sunset Roadless Area could not be explored "in the Summer of 2013, MCC [Mountain Coal Company] will be forced to abandon that mining course" in the lease modifications area and adjacent lands), attached as Ex. 12; Declaration of Weston Norris (May 8, 2014) at 3 (swearing under penalty of perjury that "[b]ypass of the coal [in the lease modifications area] remains a significant risk, and highly likely on the current market environment if exploration cannot be conducted in 2014"), attached as Ex. 13.

Under the current schedule for the rulemaking EIS and other approvals Arch will require, it is unlikely that on-the-ground construction activity for coal exploration or mining could occur until spring of 2017 even if the proposed action is adopted.[35] If Arch's staff were truthful in their statements to the court, West Elk will bypass the coal in the lease modifications area and will have no immediate need to enter the Sunset Roadless Area. According to Forest Service records, West Elk has an estimated 10 year supply of coal under lease, and apparently has a mine plan for the B seam that involves no surface construction until at least 2022.[36]

The SDEIS asserts that the possibility that Arch may bypass coal in the lease modifications area is irrelevant because:

> [t]he proposed lease modifications are a small portion of the Sunset Roadless Area. This rulemaking responds to existing legal and regulatory direction to facilitate access to domestic mineral resources, and responds to the State of Colorado's interest in not foreclosing exploration and development of the coal resources in the North Fork Coal Mining Area. Bypassing some coal does not foreclose the option of mining other coal in the area. In addition, the West Elk mine has slowed production and is considering mining other reserves (coal seams) under existing leases.[37]

While "[b]ypassing some coal does not foreclose the option of mining other coal in the area," it would appear to foreclose, at least for the next decade, Arch Coal mining the 1,700 acres within the Sunset Roadless Area that are the subject of the Lease Modifications. And if Arch Coal does not mine these deposits, BLM has concluded that no company will likely do so.

Lease modifications, including the 1,700 acres Arch applied for in 2009, and reapplied for in 2015, may only be offered exclusively to existing coal lessees where BLM determines that "there is no competitive interest in the lands or deposits[] and … the additional lands or deposits cannot be developed as part of another *potential* or existing independent operation."[38] In short, accepting Arch's application for the lease modifications meant BLM concluded that no other entity could or would develop the coal.[39] Thus if Arch, as its officials swore, bypasses this coal,

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[35] See email of N. Mortenson, Forest Service to L. Broyles, Forest Service et al. (Dec. 8, 2014 12:57:14 PM) (projecting lease modifications not complete until September 2016 or later), attached as Ex. 14; Forest Service, "Where Do We Go From Here?" (Dec. 2015) (projecting final rule will not be complete until June 2016 or later), attached as Ex. 14.

[36] *See supra* at 9 n.20.

[37] SDEIS Appendix B at B-2.

[38] 43 C.F.R. § 3432.2(a) (emphasis added).

[39] BLM specifically concluded that the lease modifications at issue met the regulatory definition of 43 C.F.R. § 3432.2(a):

> Although other coal companies have reviewed data on coal deposits in the area, none of them have deemed the unleased resources either substantial or valuable enough for them to initiate new and separate surface and underground facilities.

"the State of Colorado's interest in not foreclosing exploration and development of the coal resources" in the area cannot be achieved through adoption of the North Fork coal mine exception because no other entity will mine the coal. There is thus no need to include the lease modifications area in the Colorado Roadless Rule if Arch will, as its officials swore, bypass the coal.

II. THE SUPPLEMENTAL EIS MUST FOCUS ITS ANALYSIS OF SURFACE IMPACTS ON THE NORTH FORK VALLEY.

A. NEPA Requires Agencies To Disclose The Environmental Baseline, Even In Programmatic EISs.

For the Forest Service to fulfill its obligation to take a "hard look" at the environmental effects of the coal mine exception, the supplemental EIS must focus its analysis on those areas and resources likely to be impacted by the proposed action. *See* 40 C.F.R. § 1508.25(c); ***Robertson v. Methow Valley Citizens Council***, 490 U.S. 332, 350-51 (1989) (NEPA requires that federal agencies take a 'hard look' at the environmental consequences of their proposed actions).

As part of that hard look, agencies must "succinctly describe the environment of the area(s) to be affected or created by the alternative under consideration." 40 C.F.R. § 1502.15. Further, NEPA requires the action agency to set an appropriate baseline detailing the nature and extent of the resources in the area: "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." *See* Council on Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act* 41 (January 1997). "Without establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA." ***Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci***, 857 F.2d 505, 510 (9th Cir. 1988).

An agency's duty to accurately describe baseline conditions applies equally in the context of a programmatic analysis. CEQ guidance states that "[a] broad (e.g., regional or landscape) description *may* suffice for characterizing the affected environment in programmatic NEPA reviews, *so long as potentially impacted resources are meaningfully identified and evaluated*."[40]

> BLM considers the [Lease Modifications] to be non-competitive. These reserves are of good quality but minimal in quantity and essentially locked in by virtue of limited surface access and being bounded by unmineable coal resources. The coal does not outcrop on the [Lease Modifications], therefore no portals could be located, and there would not be a reasonable shaft location.

D. Dyer, BLM, Combined Geologic And Engineering Report (GER) And Maximum Economic Recovery Report (MER) For Coal Lease Modifications (COC1362 & COC67232) (Dec. 17, 2010) at un-numbered 7th page, attached as Ex. 15.

[40] Council on Environmental Quality, Memorandum for Heads of Federal Departments and Agencies, *Effective Use of Programmatic NEPA Reviews* (Dec. 18, 2014), at 33 (emphasis added), available at

Programmatic NEPA reviews must not be so devoid of detail as to frustrate the NEPA process. Such reviews

> should contain sufficient discussion of the relevant issues and opposing viewpoints to enable the decisionmaker to take a "hard look" at the environmental effects and make a reasoned choice among alternatives. There should be enough detail to enable those who did not have a part in its compilation to understand and meaningfully consider the factors involved.[41]

Id. at 32 (emphasis added).

Without baseline data, the agency is unable to understand the effects of the exemption or to craft and analyze alternatives and mitigation measures to protect these values. As such, the Forest Service must identify the environmental baseline and affected environment, as well as the scope of impacts and where those impacts are most likely to be felt.

B. The SDEIS Fails To Provide Necessary Baseline Data About, Or Evaluate Impacts To, Critical Resources.

The purpose of this rulemaking is to open the door for more coal mining within the 19,700-acre North Fork Coal Mining Exception area. Within that area, the Forest Service prepared "estimated projections" for road and methane drainage well construction based on past experience with the area's geology and mine practices.[42] Under the proposed action, Alternative B, the SDEIS estimates that up to 67 additional miles of road (up to three miles of road per square mile) and 450 well pads (up to 20 per square mile) could be constructed exclusively within the Exception area.[43] This activity, and the impacts that activity would cause, would occur within the limited area of the exception area.

The most acute impacts to surface water from surface disturbance will occur in one watershed – the North Fork of the Gunnison. It is thus appropriate and mandatory that the supplemental EIS focus most of its analysis, and especially its analysis of potential surface impacts, on the North

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https://www.whitehouse.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf (last viewed Jan. 15, 2016).

[41] *Id*. at 32 (emphasis added).

[42] SDEIS at 25-28.

[43] SDEIS at 27-28, Table 3-2 (road miles and methane drainage well numbers); *id.* at 27 ("Based on information from existing operations, between 10 and 20 methane drainage well locations per 640 acre section were estimated"); *id.* at 28 ("the 3 mile per section (or mi/mi^2) estimation carried forward from the 2012 FEIS … represents a conservative, and reasonable estimate"); *id.* at 28 ("The analysis area is the North Fork Coal Mining Area as defined for each alternative.").

Fork Gunnison Valley.[44] The analysis area is the North Fork Coal Mining Area as defined for each alternative.

Therefore, any supplemental NEPA document must disclose the *values* and *resources* present within the three roadless areas that are slated for significant bulldozing, and must make reasonable projections about what those impacts will be. While the Forest Service may not have specific information now about the precise location where roads will be built, and drill-pads scraped, it knows that it will occur within these three roadless areas, what values these roadless areas have, and knows that scraping and flattening habitat, increasing the threat of erosion, and degrading scenery will harm many of those values.

Yet neither the SDEIS, not the Colorado Roadless Rule Final EIS upon which the SDEIS relies, contains any of the necessary baseline information about, or analysis of potential impacts to, the roadless areas.

First, the Colorado Roadless Rule Final EIS's analysis contains none of the necessary information because it analyzed values and impacts across a huge area – over 4 million acres of roadless areas scattered across an entire state – an expanse roughly 200 times larger than the roadless areas covered by the proposed rule. As a result, the Final EIS's analyses of both baseline conditions and potential impacts are extremely general. In fact, there is virtually no site specific information in the Final EIS. No maps display forest type; none display probable locations of any surface disturbing activities; and there is almost no description of the values and resources to be found within individual roadless areas. Whether this type of analysis was sufficient for the 2012 EIS is arguable; however, it is certainly more likely to be appropriate where the scope of the action is so immense. This type of broad, vague analysis is neither appropriate nor sufficient to result in a "hard look" where the area is much smaller (as with the coal mine exception), and where the agency has identified the location and types of potential impacts (up to 67 miles of new road, and up to 450 new methane drainage wells within a 19,700-acre area).[45]

Second, the SDEIS contains virtually no information about the specific values and resources of the three roadless areas, or how those values vary across the areas (a key question for evaluating the relative merits of the alternatives). For example, the SDEIS contains all of four maps, none of which provides any useful data to the viewer about the values of the areas where the proposed rule will open the door to road and drill-pad construction, except general location, wilderness capability, and the presence or absence of roads. The SDEIS contains some information about

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[44] Not all impacts will be limited to the North Fork Valley. For example, climate impacts from coal combustion will occur at a global level.

[45] Further, it would be in error for the Forest Service to attempt to rely on the Final EIS because using data from this large, 4+ million acre-baseline would impermissibly minimize the impacts to local resources, including wildlife, on the 19,700 acres of the coal mine exception area. *See Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1035-37 (9th Cir. 2001) (holding that an agency cannot try to "minimize" the environmental impact of an activity by simply adopting a scale of analysis so broad that it marginalizes the site-level impact of the activity on ecosystem health).

presence or absence of wildlife somewhere across the entire 20,000 acres, but one would search in vain to locate any information about where within that area species could be found, how much habitat is located where, etc.[46]

Impacts to resources from coal mining and road-building are "reasonably foreseeable" impacts of the exemption, and bulldozing will impact specific vegetation types, soil types, sub-watersheds, wildlife areas, and the like. The Forest Service cannot dismiss these impacts as too speculative, given that the purpose of the proposed action is to open up these three specific areas to the construction of roads and drilling pads. "[A]ssessment of all 'reasonably foreseeable' impacts must occur at the earliest practicable point." *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 718 (10th Cir. 2009); *see also* 40 C.F.R. 1501.2 ("Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values."). Conducting this analysis as early as possible in the planning process is critical for NEPA compliance due to "the difficulty of stopping a bureaucratic steam roller, once started." *Sierra Club v. Marsh*, 872 F.2d 497, 504 (1st Cir. 1989). Further, "[r]easonable forecasting and speculation is ... implicit in NEPA" and courts "reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as a 'crystal ball inquiry.'" *Scientists' Inst. for Pub. Info. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973).

Courts have held that "general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." *Neighbors of Cuddy Mountain v. United States Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998) (citations omitted). Here, more definitive information about the lands at risk and the potential impacts to those lands could be provided in the form of maps and narrative describing the wildlife values, vegetation types, soils, water courses and wetlands within the discrete areas likely to face bulldozing.

For example, when an agency is aware of past energy exploration and development, can estimate the quantity of minerals available, the general location of surface disturbance, and the types of activities that would accompany exploration and mining, the agency has enough information to disclose the resources at stake and impacts to them. *See Colo. Envtl. Coal. v. Office of Legacy Mgmt.*, 819 F. Supp. 2d 1193, 1209 (D. Colo. 2011); *see also New Mexico ex rel. Richardson*, 565 F.3d at 718. This is exactly the type of information that the Forest Service already has with respect to potential impacts to the 19,700-acre area the proposed action would open to coal mine road construction.[47]

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[46] SDEIS at 49-69.

[47] Even in cases where the courts have permitted agencies to defer preparation of a site-specific EIS until after a leasing proposal, the agencies provided the public with more information than the Forest Service does here. For example, in *Sierra Club v. Peterson*, the Forest Service prepared an environmental assessment on a leasing proposal over a 247,000-acre area that identified and analyzed stipulations to protect "Highly environmentally sensitive," including lands necessary for the protection of threatened or endangered wildlife species; lands with slope

Despite these facts and law, the Forest Service repeats over and over that the SDEIS need not disclose the values at stake in the three roadless areas nor address the potential for those resources to be damaged because: (1) the (lack of) analysis in the 2012 Colorado Roadless Rule Final EIS of any value or resource within the three roadless areas is "sufficient" at the programmatic level; and (2) potential impacts will be "best addressed at the project level."[48]

The SDEIS fails to provide any citation to the page(s) in the Colorado Roadless Area Final EIS's "general" analysis that discloses the values and impacts *within the North Fork coal mining exception area*. Nor could it, for that document contains virtually no such data. It is arbitrary and capricious for the Forest Service to rely on a NEPA document that does not provide useful information concerning the specific lands that are the subject of this rule amendment.

In addition, the SDEIS reliance on an analysis that "could" occur later is equally erroneous. The SDEIS explicitly declines to provide additional baseline data or analysis of potential impacts to "water quality, aquatic habitat, wildlife habitat, specific species, visual quality, location of wetlands, etc." because "these resources are more appropriately examined when a project level application for exploration or leasing action is received."[49] Thus, rather than provide any useful data to permit the public and decisionmaker to understand the values at stake that foreseeable road construction might impact, or which alternatives might protect more of less of a specific resource, the Forest Service plans to kick the can down the road. This the Forest Service cannot do. The fact that the Forest Service is analyzing the effects of a rule does not give the agency carte blanche to turn a blind eye to the values and resources at stake.

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gradients of more than 40%; lands with regionally unique plant or animal species; and lands with significant cultural resources." 717 F.2d 1409, 1411 n.3 (D.C. Cir. 1983).

[48] *See, e.g.,* SDEIS Appendix B at B-5 ("Impacts to soils are generally best addressed at the project level. The 2012 FEIS sufficiently addressed impacts of soils in a general programmatic fashion."); *id.* ("The 2012 FEIS sufficiently addressed impacts of air quality in a general programmatic fashion. More site-specific analyses of local air impacts would occur if and when new coal actions are considered."); *id.* at B-6 ("The 2012 FEIS sufficiently addressed impacts to general wildlife in a programmatic fashion…. Site-specific impacts could be addressed during project level analyses if and when a proposal is received."); *id.* at B-8 ("The 2012 FEIS sufficiently addressed impacts to scenic quality in a general programmatic fashion. Site-specific analysis of impact to scenic quality could occur if and when a site-specific proposal is brought forth.").

[49] SDEIS at 6. *See also id*. ("Given the absence of a site-specific mining proposal over the majority of the area, it is not reasonable or useful to attempt to speculate or foresee how, when, or whether this coal would be mined."); *id.* at 5 ("Unless or until site-specific applications are received, it is neither reasonable nor efficient to attempt to estimate the *full range* of site-specific environmental impacts that might occur in this area over the long term. This would be akin to estimating project specific timber sale impacts in a forest plan when the plan zones an area for timber production. Rather, when or if specific proposals to lease or explore are received, these proposals will undergo site-specific environmental analysis, tier to this programmatic landscape environmental review, and incorporate any regulatory requirements that result from this rulemaking." (emphasis added)).

The SDEIS also asserts that its analysis for most resources including "soil, water, vegetation, , general wildlife, etc." is appropriately limited to the vaguest of generalizations, namely that:

> impacts will correspond to the extent of the proposal (i.e. Alternative A will have the least impact since only existing leases could be produced; Alternative B could have the most impact since the area for allowing temporary road construction is the largest; and Alternative C could be in between A and B since the acreage allowing temporary road construction is between A and B).[50]

It is hard to imagine a less informative "evaluation" of alternatives, or less of a "hard look." It assumes that the values of the entirety of the landscape are essentially homogenous, and that the a mile of road or a drill pad in any one place across the varied landscape will be roughly the same as it will be any other place within the three roadless areas. This is false. Each of the roadless areas has a unique mix of vegetation, habitats, slopes, watersheds and water bodies. Some types of habitat (grassland) may recover more quickly from road-building than others (mature spruce-fir forests where trees may be hundreds of years old), and those habitat types are not dispersed evenly over the three areas.

Had the SDEIS disclosed and analyzed the values of the three roadless areas, it would have infored the public and decisionmaker, as discussed below, that Alternative C provides outsized benefits compared to the amount of coal that can be mined. In other words, in some cases Alternative C protects the vast majority of a resource, providing nearly as much protection as Alternative A, while still permitting access to more than half of the recoverable coal.[51] Similarly, a legally sufficient analysis would have found that Pilot Knob alone of the three roadless areas provides winter range for deer and bald eagles, and that it alone provides the only severe winter range for elk.[52] It is exactly this kind of balancing and analysis that NEPA requires, and that the disclosure of the roadless areas' values would make possible, but that both the SDEIS and the 2012 Colorado Roadless Rule FEIS lack.

The SDEIS also appears to justify the lack of baseline information about the exception area's values by asserting that any potential impacts to whatever resource values exist will be mitigated at a later stage.[53] But the SDEIS neither identifies nor evaluates any specific mitigation measures. Nor can the SDEIS rely on the Colorado Roadless Rule 2012 FEIS, because it is similarly devoid of substantive mitigation discussion. That FEIS fails to analyze the implementation or effectiveness of many mitigation measures, and fails to contain even a listing of mitigation measures for impacts to terrestrial wildlife and sensitive plant species. Instead, the FEIS states simply that mitigation, describing it only to the extent of its being "appropriate" or

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[50] SDEIS at B-11.

[51] *See infra* at 96.

[52] *See infra* at 96.

[53] *See, e.g.,* SDEIS at 51-52 (declining to estimate effects of coal mining because "Design criteria or mitigation measures would be incorporated into future project planning and implementation").

"site-specific" or "required", will avoid or minimize adverse effects.[54] At other times, the FEIS states simply that projects would be designed to mitigate impacts, with no description of or reference to the applicable design criteria.[55] Nor does the FEIS provide adequate data and analysis that demonstrate why the proposed mitigation measures and/or design features will "constitute an adequate buffer against the negative impacts that may result from the [proposed action]."[56] Because neither the SDEIS nor the Colorado Roadless Rule FEIS identify resource values or mitigation measures, they both utterly lack the detail necessary for the public to understand what values are at stake and what values may be lost. As such, they fail to take the hard look NEPA mandates.

The Forest Service also cannot use the alleged lack of future site-specific activities within the North Fork Coal Mining Area as an excuse to fail to disclose the area's values because the agency has had on hand for years and is currently evaluating such proposals.[57] The agency is preparing to release a supplemental draft EIS on Arch Coal's proposed lease modifications for COC-1362 and COC67232 covering 1,700 acres (nearly a tenth) of the exception area within a few weeks, *even before the agency releases a final EIS on this rulemaking*.[58] The Forest Service's supplemental draft is supposed to correct deficiencies in the 2012 final EIS for the lease modifications, which are entirely within the exception area, and overlap lands in both Alternative B and Alternative C. Yet while it is preparing that draft simultaneously with the EIS on this rulemaking, the agency does not squarely address Arch's proposal, or Arch's exploration plan which proposes specific surface disturbing activity within the exception area. Nor does the SDEIS use, cite to, or rely on the baseline information about the values of the lease modifications area. The Forest Service knows specific resources in specific areas that are proposed to be damaged. The Forest Service's turning a blind eye to these proposals in the SDEIS is the antithesis of the hard look NEPA mandates.

The Forest Service is aware of past coal exploration and development, is in possession of lease application and modification proposals, can estimate the quantity of minerals available, the rate of extraction, the number and size of mines, the location of surface disturbance, and the types of activities that would accompany exploration and mining. In sum, the agency can, as it must by

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[54] Colorado Roadless Rule FEIS at 117.

[55] Colorado Roadless Rule FEIS at H-22.

[56] *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001); *see also Colo. Envtl. Coal.*, 185 F.3d at 1173 (finding EIS's identification of nearly 150 project-specific measures, separately analyzed and evaluated with effectiveness ratings, and narrative discussion of each measure's applicability to each resource to be reasonably complete); *Theodore Roosevelt Conservation P'ship*, 616 F.3d at 516 (approving 13 page list of protective measures in EIS that was accompanied by reasons and explanations for the measures as well as supporting environmental studies); *N. Alaska Envtl. Ctr.*, 457 F.3d at 979 (approving of required, broadly applicable mitigation measures where EIS outlined their purpose and effectiveness with respect to various resources).

[57] *See id.*

[58] E. Zukoski, pers. communication with J. Schaefers, U.S. Forest Service (Dec. 9, 2015).

law, use "high quality" information about the area to engage in a "hard look" at the potential impacts of opening the door to coal mine road construction, but has chosen not to.[59] Any subsequently prepared NEPA document must undertake the required analysis.

Further, the Forest Service's position that it will not disclose the values and resources of the three roadless areas at the programmatic level stands in contrast to the Forest Service's disclosure of such information in other programmatic level decisions. For example, the San Juan National Forest in 2013 revised its Forest Plan. Despite the fact that the Forest Service takes the legal position that its Forest Plans generally make no decisions, and that further NEPA review must occur before surface disturbance can occur, the NEPA documents for the Forest Plan include maps that disclose: major vegetation types; watersheds; areas where wildfire has occurred; rivers; visual resources; and other values. The EIS also contains more than 500 pages that describe the affected environment (including existing conditions and trends) and describe and disclose potential consequences to each of more than two dozen values.[60] If NEPA compelled the Forest Service to undertake such analysis for a 1.9 million-acre national forest, it certainly compels the Forest Service to do so for the proposed rule here, which involves a much smaller (and easier to describe) area, and impacts from a narrow set of damaging activities (road and drill-pad construction).[61]

The Forest Service, for its NEPA analysis of the proposed rule, must provide detailed data and maps of the three roadless areas at stake, including information and maps describing: surface and ground water quality; hydrology; impacts of past mining; wildlife habitat; endangered species habitat; vegetation; and any other appropriate baseline data. It must then analyze and disclose the impacts that drill pad and road construction made foreseeable by the coal mine exception (and any reasonable alternatives) would have to those resources. Failure to undertake this analysis will violate NEPA.

Examples of specific issues the supplemental EIS must address follow.

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[59] 40 C.F.R. § 1501.1(b) (information used in NEPA documents "must be of high quality").

[60] *See* San Juan National Forest, Planning page, Final Environmental Impact Statement Maps (displaying 74 different maps prepared for Forest Plan EIS), attached as Ex. 16, available at http://www.fs.usda.gov/detailfull/sanjuan/landmanagement/planning/?cid=stelprdb5433966&width=full (last viewed Jan. 15, 2016); San Juan National Forest, Final Environmental Impact Statement, Forest Plan Revision, Chapter 3: Affected Environment and Environmental Consequences (2013), attached as Ex. 17, available at (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5435099.pdf (last viewed Jan. 15, 2016).

[61] The SDEIS also justifies its failure to address the impacts of road and drill-pad construction on the grounds that no surface disturbance may ever be approved because the Forest Service "has the discretion to deny consent to coal leasing action." SDEIS at 7. While this is a correct statement of the law, it ignores that fact that, to the best of our knowledge, the Forest Service has *never* withheld its consent for any coal leasing action in the North Fork. If the Forest Service has done so, it should describe that decision in any subsequently-prepared EIS.

1. The SDEIS Fails To Provide Baseline Information About, Or Disclose Potential Impacts To, Water Resources.

Except for a very general description of the potential for impacts to imperiled and sensitive fish species, the SDEIS contains no description of water resources, no map showing their location, and almost no description of the potential impacts that road and drill pad construction could have on creeks, streams, ponds, wet meadows, riparian areas, water quality, and the like.

The SDEIS excuses this dearth of analysis in part by relying on the "general programmatic" analysis in the Colorado Roadless Rule Final EIS, and by alleging that more analysis "would" occur later.[62] Neither of these excuses is supportable.

First, the Colorado Roadless Rule Final EIS demonstrates the lack of necessary analysis in that document and the need for additional analysis in the coal mine exception supplemental EIS if the Forest Service is to comply with NEPA. While the Colorado Roadless Rule Final EIS emphasized that healthy water resources are an important feature of roadless areas that must be protected,[63] and while the need to protect drinking water and fish and wildlife habitats was an important part of the originally-stated "purpose and need" for the Colorado Roadless Rule,[64] the Forest Service provided virtually no information concerning the location of critical watersheds, potentially impacted streams, or important fish habitat, and even less information about such resources in the North Fork Valley. The Final EIS failed to identify the location and number of wetlands, instead reaching the general and unenlightening conclusion that "all alternatives could result in some wetlands impacts," without further discussion.[65] Instead, the Final EIS stated that the scope of the analysis, which included millions of acres of land and multiple proposed actions, was too broad to catalog specific water resources.[66] Instead of addressing potential impacts to

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[62] SDEIS Appendix B at B-5 ("The 2012 FEIS sufficiently addressed impacts to wetland, streams, water resources, and fisheries in a general programmatic fashion…. More site-specific analyses of stream and water resources, outside the scope of the Biological Opinion, would occur if and when new coal actions are considered.").

[63] *See, e.g.*, Colorado Roadless Rule Final FEIS at 4-5 (listing high quality waters, public drinking water sources, aquatic and riparian wildlife habitats, and unique wetland complexes as among the nine roadless area characteristics that must be protected); *id.* at Appendix H, p. 50 ("The conservation of Colorado's water resources for beneficial uses under the Clean Water Act is integral to the purpose and need for this rule.").

[64] *See* Special Areas; Roadless Area Conservation; Applicability to the National Forests in Colorado, 77 Fed. Reg. 39,576-01 (July 3, 2012) ("Colorado Roadless Rule").

[65] Colorado Roadless Rule Final FEIS at 120.

[66] *Id.* at 50-52 (responding to comments seeking expanded and more detailed impacts analysis of impacts to water resources by stating that this analysis is inappropriate at the programmatic stage).

water resources, the Colorado Roadless Rule Final EIS deferred consideration of impacts to water resources to later analysis.[67]

The Forest Service cannot rely on the Colorado Roadless Rule Final EIS's analysis to support the proposed rule here because there is, effectively, no analysis that provides any useful data concerning the three roadless areas in the Exception area.

Second, the Forest cannot defer analysis to a later decision point because it has ample "high quality" information about the values and resources of the relatively small area at stake in the North Fork Coal Mining Area rulemaking, and understands the nature of the damage of the discrete types of activities (road and drill pad construction) that could impact those values. This is the "earliest practicable point" at which the agency can disclose foreseeable impacts. The proposed coal mine exception is narrow in its direct surface impacts: the area where road construction could occur under the proposed action covers less than one-half of 1% of the roadless lands originally addressed in the Colorado Roadless Rule Final EIS. For the coal mine exception, the agency knows the three discrete roadless areas where impacts will foreseeably occur; knows the surface values of those areas; and knows the nature of surface impacts that will result from road and drill pad construction within those areas. The Forest Service understands the type, nature, and scope of these actions and their impacts because the Forest Service has analyzed and consented to impacts on roadless lands directly adjacent, as well as *within*, those areas that will be open to additional mining under the exception. For example, the Forest Service and BLM have before them proposals to add 1,700 acres to existing leases within the Sunset Roadless area and to construct roads and drill pads for exploration within that area. Taken together, all of this information enables the Forest Service to: (1) describe the water resources at risk; (2) evaluate reasonably foreseeable impacts of the coal mine exception to water resources in the area; and (3) identify alternatives and potential mitigation measures and monitoring to reduce the impacts of foreseeable future coal mining.[68]

Because the SDEIS contains virtually no information that allows the public to understand the values of the three roadless areas – such as the locations of streams, wetlands, riparian areas, anf their relative distribution among and across the areas – it is impossible for the decisionmaker or the public to understand the tradeoffs to be made among the three alternatives. For example, while the SDEIS discloses the number of acres across which coal mining roads and drill pads can be constructed pursuant to each alternatives, the SDEIS's lack of information makes it impossible to understand whether Alternative C will protect the most important wetlands, streams or aquatic habitats, and thus whether Alternative C might be nearly as protective of water resources as Alternative A while permitting much more coal to be mined. The lack of any data in the SDEIS makes such comparisons impossible, undermining the core purpose of NEPA.

A rudimentary knowledge of the relative water resource values of the exception area would in fact significantly affect the consideration of alternatives. Those who have visited the Sunset Roadless Area know that the wilderness-capable lands there – those lands closest to the

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[67] Colorado Roadless Rule Final EIS at Appx. H, p. 38.

[68] *See Colo. Envtl. Coal. v. Office of Legacy Mgmt.,* 819 F. Supp. 2d at 1209; *New Mexico ex rel. Richardson*, 565 F.3d at 718.

wilderness boundary and those excluded from road construction by Alternative C – are dotted with beaver pond and wet meadows, much more so than the steeper, drier lands to the west that could still be roaded and mined under Alternative B. Maps prepared by the Forest Service in the agency's project record but not in the SDEIS show 16 identifiable ponds in the Sunset Roadless Area, just 2 of which (13%) are in areas open to road construction under Alternative C, while 16 (100%) are in areas open to road construction under Alternative B.[69] Alternative C is thus much more likely to prevent all potential impacts to wetlands than Alternative B, under which the wettest part of the Sunset Roadless Area could be roaded and scraped for drilling pads, while still allowing access to more than half of the exception area's coal. Regardless of the effectiveness of mitigation measures that may be applied later – and none of which are mandated or even identified, let alone considered, in the SDEIS – Alternative C is far more likely to protect surface water resources than Alternative B because so many more water features are located in areas not open to road construction by Alternative C. The SDEIS's failure to disclose the location of, and foreseeable impacts to, these features violates NEPA by failing to provide the "high quality" baseline information necessary to take the required hard look at these resources, the potential impacts to them, the potential for mitigation measures to avoid harm to such resources, and to evaluate the relative merits of each alternative.

The SDEIS's treatment of potential impacts to a newly discovered population of cutthroat trout is also instructive. The SDEIS discloses that:

> The East Fork of Minnesota Creek and its tributary Hoodoo Creek support a conservation population of Colorado River cutthroat trout. Hoodoo Creek borders the North Fork Coal Mining Area and the East Fork of Minnesota Creek is within the same watershed as the southern end of the North Fork Coal Mining Area. The total length of habitat occupied within and around the North Fork Coal Mining Area by Colorado River cutthroat trout is 2.9 miles. Therefore, erosion occurring in this portion of the North Fork Coal Mining Area could result in habitat degradation in these streams.[70]

The SDEIS fails to contain: any map displaying any of the mentioned place names; any map disclosing the location of the 2.9 miles of occupied cutthroat trout habitat; or any way to tell whether Alternative C would better protect this habitat by avoiding altogether the potential for any impacts from coal exploration or methane venting. In fact, Hoodoo Creek and its watershed would be open to road construction and coal mining under Alternative B, but not under Alternative C. This fact is relevant to a choice among alternatives because Alternative C would protect all of the cutthroat watersheds that Alternative A would, but would provide access to nearly 100 million tons of coal.

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[69] Compare Forest Service, Map, 2015 North Fork Coal Mining Area, Alternative C (July 8, 2015) (showing 16 ponds, only 2 of which would be open to road construction under Alternative C) (obtained through FOIA), attached as Ex. 18 with Forest Service, Map, 2015 North Fork Coal Mining Area, Alternative B (July 9, 2015) (showing 16 ponds, all of which would be open to road construction under Alternative C) (obtained through FOIA), attached as Ex. 19.

[70] SDEIS at 60.

Further, the fact the SDEIS does not disclose the location of the Hoodoo Creek watershed limits the public and the decisionmaker's ability to consider mitigation measures to eliminate the potential disturbance to the cutthroat trout watershed. By our estimation, a mitigation measure that required no surface disturbance in the Hoodoo Creek watershed where it overlaps with lands open to coal mine road construction in Alternative B would limit construction on less than 80 acres of roadless forest, impacting a trifling (if any) volume of recoverable coal.[71] The SDEIS's lack of baseline water resource data makes impossible the consideration of this mitigation measure, violating NEPA's hard look mandate.[72]

2. The SDEIS Failed To Provide Baseline Information About, Or Disclose Potential Impacts To, Wildlife.

Neither the SDEIS nor the 2012 Colorado Roadless Rule FEIS provide baseline data for wildlife, habitat, or vegetation in the North Fork Coal Area or surrounding landscapes of the Upper North Fork Valley, nor do these documents disclose the impacts that permitting road construction to facilitate coal mining is likely to have on these values that vary across the landscape. The SDEIS's failure to disclose baseline information about, and analyze impacts to, wildlife and habitat likely to be impacted by the proposed action thus violates NEPA's "hard look" mandate.[73]

Outstanding wildlife habitat and diverse wildlife species are prevalent throughout the 20,000-acre exception area. The Forest Service has elsewhere described the significant wildlife values of the three Colorado Roadless Areas (Sunset, Flatirons, and Pilot Knob) within the exception area:[74]

> Sunset Roadless Area:
>
> This area provides summer range for elk, mule deer, black bear, and mountain lion. Lynx habitat has been mapped in this CRA [Colorado Roadless Area].[75]
>
> Flatirons Roadless Area:
>
> The CRA is a fall concentration area for black bear due to the abundant oak mast. This area provides calving areas, summer range, and winter range for elk. Mule deer also summer in this area. The forested areas have been mapped as lynx

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[71] Earthjustice, Map, Hoodoo Creek Watershed Area (Jan. 11, 2016), attached as Ex. 20.

[72] We specifically request that the Forest Service consider such a mitigation measure in any subsequently prepared NEPA document.

[73] *See* 40 C.F.R. § 1508.25(c); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-51 (1989) (internal quotation omitted) (NEPA requires that federal agencies take a 'hard look' at the environmental consequences of their proposed actions.).

[74] U.S. Forest Service, *Profiles of Grand Mesa, Uncompahgre and Gunnison National Forests Roadless Areas* (July 23, 2008), attached as Ex. 21.

[75] *Id.* at 44.

> habitat. This CRA provides habitat for sensitive species that key into oak, like Lewis' woodpecker.[76]
>
> Pilot Knob Roadless Area:
>
> This area provides summer range for mule deer, black bear, mountain lion, and elk. It also provides calving areas and winter range for elk. Moose overall habitat also exists in this area. Lynx habitat has been mapped in this area. Bald eagle winter range extends into this area from the North Fork of the Gunnison River drainage. Aspen dependent sensitive species such as the Northern goshawk, purple martin, flammulated owl, and the American marten have suitable habitat within this CRA.[77]

The Colorado Division of Wildlife/Colorado Parks and Wildlife (CPW) have noted the habitat values of the landscape in the Upper North Fork Valley and has repeatedly expressed concerns about cumulative effects from industrial development on wildlife populations associated with various project proposals.[78] Their comments stress the important wildlife habitat of the area and the incremental effect that development is having on its interconnected wildlife populations.

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[76] *Id.* at 23.

[77] *Id.* at 39.

[78] *See* letter of J. Wenum, CPW to T. Stranathan, BLM re: 3160 (CO-S05) (Apr. 24, 2015) at 3 ("CPW recommends that BLM evaluate the proposed locations through a through a Master Development Plan or similar planning tool that provides a means to addresses the cumulative impacts to wildlife from all proposed oil and gas development in the area, including the Bull Mountain, Deadman Gulch, and Iron Point Units. . . . We are becoming increasingly concerned with the level of oil and gas development and potential landscape-scale impacts to wildlife populations and recreational hunting and fishing opportunities in the area.") attached as Ex. 22; letter of J. Wenum, CPW to USDA Forest Service re: Gunnison Energy MDP (June 30, 2010) at 1 ("The cumulative level of oil and gas development in the West Muddy Creek watershed is becoming a significant concern to CDOW. . . . Cumulative impacts to wildlife resources from the existing development patterns should be evaluated in a more comprehensive analysis of oil and gas development in the West Muddy Creek watershed prior to authorizing significantly expanded development."), attached as Ex. 23; letter of J. Wenum, CPW to L. Broyles, Forest Service re: SG Interests (Aug. 10, 2012) at 3-4 ("[CPW is] becoming increasingly concerned with the level of development in the Muddy Creek areas and potential impacts to wildlife. . . . Mitigation to address the impacts to wildlife from additional oil and gas development will only be effective with careful landscape level planning that addresses improving and conserving habitat while limiting additional impacts and habitat fragmentation."), attached as Ex. 24; letter of J. Wenum, CPW to T. Stranathan, BLM re: Bull Mountain Geographic Area Plan (Nov. 6, 2009) at 1 ("CDOW is concerned with the proposed density and extent of development in the Bull Mountain Unit as the area provides high quality habitat for a variety of species, and contains important wintering habitat for big game. As you are aware, the scale of the proposed development is unprecedented for this relatively pristine area. Impacts to wildlife, especially cumulative impacts, may be far reaching."), attached as Ex. 25.

In addition, Rocky Mountain Wild has prepared a screen of wildlife and habitat values in the North Fork Coal Area.[79] The screen, utilizing data sets from CPW, the Forest Service and other entities, identifies the presence and location of wildlife habitat and associated values within the confines of the North Fork Coal Area. That analysis reveals that habitat for Canada lynx, black bear, elk, mule deer, cutthroat trout, Brazilian free-tail bats, moose, turkey and mountain lion exists in the exception area; all of this habitat is at rick from road and drill pad construction and is likely to be impacted by development that the proposed action will unleash. Impacts to these species are not disclosed in the Colorado Roadless Rule FEIS or SDEIS. Failure to disclose reasonably foreseeable impacts to this habitat violates NEPA's "hard look" mandate.

In spite of this, and in spite of public comments requesting that the Forest Service analyze impacts to wildlife in the SDEIS, neither that document, nor the 2012 Colorado Roadless Rule FEIS, nor any other NEPA document that the SDEIS relies upon addresses wildlife values in the context of the potential impacts of the proposed rule at issue here. Neither Colorado Roadless Rule FEIS nor the SDEIS provides required baseline data that would enable the public to understand the exception's impact to wildlife. Examples of these failings are provided below.

a. The Forest Service fails to disclose baseline data about, or analyze potential impacts to, Canada lynx.

Compliance with Endangered Species Act requirements for protecting Canada lynx, a threatened species under the Act, cannot be determined given the level of analysis undertaken in the Colorado Roadless Rule FEIS or SDEIS. Neither document presents any information or maps discussing lynx presence or habitat in the North Fork Coal Area and Upper North Fork Valley. Rocky Mountain Wild's GIS analysis reveals that approximately 10% of the North Fork Coal Area contains lynx denning and winter habitat, and the majority of the Area is potential habitat for the species.[80] A major lynx linkage areas bisects Highway 133 through the Upper North Fork Valley, connecting a large area of central Colorado mountains with the Grand Mesa. The SDEIS discloses none of this information, making it impossible to determine how much lynx habitat may be affected.

There is significant diversity in lynx habitat within the three affected Colorado Roadless Areas.[81] Lynx denning and winter habitat ranges from a high of 18 percent in the Flatirons Roadless Area to approximately one percent in the Pilot Knob Roadless Area. Similarly, 94 percent and 93 percent of the Sunset and Pilot Knob Roadless Areas, respectively, have been mapped as potential lynx habitat by CPW, while only 69 percent of the Flatirons is mapped as potential habitat. On the other hand, lynx linkage areas cover the majority of all three roadless areas, from 100 percent of the Flatirons Roadless Area, to 94 percent of the Sunset Roadless Area, and 93 percent of the Pilot Knob Roadless Area. Given this potential for outstanding, but variable, lynx

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[79] *See* Rocky Mountain Wild, Wildlife Screen for North Fork Coal Mining Area (2015), attached as Ex. 26.

[80] *See* Rocky Mountain Wild, Wildlife Screen (Ex. 26); *see also* Earthjustice, Map, Lynx Potential Habitat (Jan. 11, 2016), attached as Ex. 27.

[81] *See* Rocky Mountain Wild, Wildlife Screen (Ex. 26).

habitat, the two action alternatives will likely have different impacts on the species. The SDEIS should have included analysis of the potentially differing impacts of the two action alternatives on lynx, based on the significant information it has concerning site-specific, reasonably foreseeable proposals and impacts.

The SDEIS does not discuss lynx directly at all. Again, that document relies on the Colorado Roadless Rule FEIS, and future consultation with the Fish and Wildlife Service, stating:

> *The 2012 "may affect" determinations and Section 7 consultation for the species listed in Alternative A were an outcome of considering the entire Colorado Roadless Rule*, network of roadless areas, and management exceptions including the exception for temporary roads in the North Fork Coal Mining Area. As discussed under Alternative A, *the rationales for those determinations did not single out impacts associated with the temporary road exception and related future mining activities for the North Fork Coal Mining Area.* The arguments and determinations continue to apply under Alternative B."[82]

Relying on the Colorado Roadless Rule FEIS might have passed muster if there was any semblance of "hard look" analysis in that document. But the 2012 FEIS contains no analysis of lynx in the North Fork Coal Mining Area, and no analysis of the type and intensity of development associated with coal operations envisioned across this 19,700-acre landscape. The FEIS limits its discussion to the following statements:

> Lynx habitat occurs within most IRAs. *There is at least a low likelihood for some tree cutting activities in many of those IRAs. Tree cutting would be primarily for the purpose of fuels treatments*. Fuels treatments that occur in the spruce-fir habitats used by lynx could reduce available snowshoe hare prey, which would adversely affect lynx. However, those projects would be subject to the management direction under the forest plans as amended by the Southern Rockies Lynx Amendment, including acreage caps for fuels treatments in WUI, which will limit the amount of impact. All forest plans also include management direction to maintain lynx habitat connectivity, which would remain in effect.[83]

> Overall, the level of protection for the 4.19 million acres of CRAs under the Colorado rule is higher than under current forest plan direction, *with a generally low level and low intensity of road construction, tree cutting, oil and gas development, and LCZ development*. The anticipated effects are mostly beneficial, with the potential for some minor, short-term adverse impacts to . . . Canada lynx ….[84]

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[82] SDEIS at 60 (emphasis added).

[83] Colorado Roadless Rule FEIS at 223 (emphasis added).

[84] Colorado Roadless Rule FEIS at 223 (emphasis added).

> In spruce-fir and lodgepole pine forests, *thinning* reduces snowshoe hare populations, at least in the short-term, which in turn negatively affects Canada lynx.[85]

None of these statements have any bearing on the situation in the North Fork Coal Mining Area. General declarations of low-level development, minor thinning, and a net positive benefit across the entire state do not reflect the on-the-ground reality of coal development in this area. Here, tree cutting would not be primarily for fuels treatment, but rather to facilitate the bulldozing and construction of a massive network of roads, well pads and other densely planned mining infrastructure. The SDEIS posited the estimated road mileage, estimated number of MDWs, and projected surface disturbance.[86] The Forest Service should evaluate where and how this level of projected development would impact lynx and other species. Instead, the SDEIS relies on the extremely general analysis in the FEIS to make the determination that lynx may, but are not likely to be affected by the Proposed Action. This does not satisfy NEPA's "hard look" requirement.

The Forest Service itself has acknowledged that all three of the Colorado Roadless Areas in the exception area (Sunset, Flatirons, and Pilot Knob) have mapped lynx habitat.[87] Lynx are likely to be present in the project area, or at least to have used the area. Road construction and related coal mining activity allowed under the Alternatives B and C would destroy and/or fragment habitat for lynx. Denning habitat might be destroyed with removal of spruce-fir forest for construction of roads and methane vents, and clearing of trees would also remove any down dead log piles or other structures used by lynx to den. Such vegetation removal would also destroy seedlings that might constitute winter foraging habitat for lynx.

Because lynx denning habitat must occur near lynx foraging habitat,[88] the SDEIS should have disclosed and analyzed how much denning habitat occurs within, and could be removed as a result of each of the alternatives, how much denning habitat would remain under the alternatives, and whether the remaining denning habitat is near suitable lynx foraging habitat. Because the SDEIS (and the Colorado Roadless Rule FEIS) lack this analysis, the Forest Service has not taken the required hard look at the effect of the project on lynx denning habitat. Because the lynx is listed as threatened pursuant to the Endangered Species Act, and is an endangered species under Colorado state law, the SDEIS must adequately consider the effects of the exception on lynx and its habitat by using the best available science. The SDEIS, however, fails to disclose and analyze the direct, indirect, and cumulative impacts of the exception on lynx, including impacts to its habitat and linkage areas. The SDEIS does not provide the decisionmaker, or the

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[85] Colorado Roadless Rule FEIS at 218 (emphasis added).

[86] SDEIS at 20.

[87] Forest Service, *Profiles of Grand Mesa, Uncompahgre and Gunnison National Forests Roadless Areas* (Ex. 28), at 34, 64, 74.

[88] USDA Forest Service, *et al*., *Canada lynx conservation assessment and strategy*, 3rd edition (2013), at 29 ("Lynx LCAS, Third Ed., 2013"), available at http://www.fs.fed.us/biology/resources/pubs/wildlife/LCAS_revisedAugust2013.pdf (last viewed Jan. 15, 2016).

public, with a full consideration of all impacts to lynx and lynx habitat, nor does it seek to minimize impacts to the lynx.

The SDEIS also contains no analysis of linkage or connectivity habitat that may be within the North Fork Roadless Area. A linkage area provides landscape connectivity between blocks of lynx habitat. Linkage areas occur both within and between geographic areas, where blocks of lynx habitat are separated by intervening areas of non-lynx habitat such as basins, valleys, or agricultural lands, or where lynx habitat naturally narrows between blocks."[89] Rocky Mountain Wild's screen results reveal modeled lynx linkage areas encompassing 94% of Sunset Roadless Area, 84% of Pilot Knob Roadless Area, and the entirety of the Flatirons Roadless Area.[90] The 27,034-acre McClure Pass Lynx Linkage Area links the Huntsman Ridge area with habitats in the Crystal West, Crystal East, and Huntsman Mountain LAU on the White River and GMUG National Forests.[91] The McClure Pass linkage area near the Bull Mountain Unit is bisected by Highway 133, which is the primary route for access to the Unit. The McClure Pass linkage area is vitally significant because it "connects a large area of central Colorado mountains with the Grand Mesa."[92]

Connectivity of lynx habitat has been identified as an important consideration for the Southern Rockies because of the extreme topographic relief juxtaposed with human developments such as highways and residential communities.[93] The Lynx Conservation Assessment and Strategy (LCAS) recommends actions that Federal land management agencies should take at the programmatic planning stage to ensure the viability of lynx, including: "To minimize loss of lynx habitat resulting from minerals and energy development, locate facilities and roads outside of lynx habitat and linkage areas where possible. Minimize the footprint of developments within lynx habitat."[94] The SDEIS does not evaluate, disclose or mitigate these impacts in concert with applicable Forest Service lynx management regulations and policies. Any subsequently-prepared NEPA document must remedy this failure.[95]

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[89] U.S. Forest Service, *Southern Rockies Lynx Management Direction Record of Direction* (October 2008), at 1-12, available at http://coloradoforestry.org/pdfs/southern-lynx-rod.pdf (last viewed Jan. 15, 2016).

[90] *See* Rocky Mountain Wild, Wildlife Screen (Ex. 26).

[91] USDA Forest Service, *Southern Rockies Lynx Management Direction Final Environmental Impact Statement Volume I* (October 2008), at D-5, available in HCCA's files.

[92] *Id.* at C-5.

[93] Lynx LCAS, Third Ed., 2013, at 54.

[94] *Id.* at 95.

[95] Additional information, not addressed by the SDEIS, is contained in our May 2015 scoping letter. *See* letter of E. Zukoski, Earthjustice to Colorado Roadless Rule (May 22, 2015) ("HCCA Scoping Comment Letter") at 52-53.

b. The Forest Service fails to disclose baseline data about, or analyze potential impacts to, big game and other wildlife.

The SDEIS fails to take a hard look at the direct, indirect, and cumulative impacts of the proposed action and alternatives to elk, mule deer, black bear, mountain lion, wild turkey, bald eagle and moose. Big game and wildlife populations in the North Fork Coal Mining Area and Upper North Fork Valley may be significantly impacted by the Proposed Action. But without baseline data it is impossible to make that determination or consider alternatives. The public cannot realistically evaluate and compare alternatives without knowing the value of the lands and wildlife likely to be impacted.

The SDEIS does not mention mountain lion, moose or wild turkey, and there is only one passing reference to black bears. These four game species are prevalent in the North Fork Coal Mining Area and the subjects of public hunting seasons. The SDEIS only mentions bald eagles in reference to the fact that "the proposed action may adversely affect individuals," the same conclusion the agency drew in the 2012 FEIS.[96] The document's entire analysis of big game is limited to the following statement:

> Impacts to general wildlife, predators, big game, connectivity, and biodiversity should be analyzed - The 2012 FEIS sufficiently addressed impacts to general wildlife in a programmatic fashion. Federally listed aquatic and terrestrial wildlife are analyzed in detail in this SDEIS. Site-specific impacts could be addressed during project level analyses if and when a proposal is received.[97]

Discussion of mule deer specifically is limited to the following statement in the SDEIS:

> Mule deer herds are in decline in parts of western Colorado and are the focus of Colorado Parks and Wildlife's West Slope Mule Deer Initiative. Site-specific considerations for mule deer habitat needs could be addressed during project level NEPA if determined to be an issue warranting analyses and are beyond the scope of this programmatic analysis.[98]

The SDEIS also dismisses impacts to big game and other wildlife species by deferring to the non-existent analysis in the 2012 FEIS, and suspending site-specific analysis until a future date:

> The potential negative effects of forest fragmentation on certain wildlife and species were disclosed in the 2012 FEIS. Site-specific effects could be addressed at project level NEPA analysis if and when a proposal is received.[99]

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[96] SDEIS at 65.

[97] SDEIS at B-6.

[98] *Id.*

[99] *Id.*

As it did with respect to many other values, the 2012 Colorado Roadless Rule FEIS nowhere analyzes impacts to big game and other wildlife in the North Fork Coal Mining Area from impacts associated with coal development made possible by the proposed action. While general impacts to terrestrial wildlife associated with the Colorado Roadless Rule are discussed in the FEIS,[100] the discussion of impacts from coal, oil and gas development is limited to the following: "Oil and gas and mining operations can remove or reduce habitat, increase fragmentation, facilitate new introductions or increase the spread of non-native invasive species, increase disturbance, and increase the potential for road-related mortality of wildlife due to vehicle collisions."[101] This extremely general analysis does not amount to a hard look at the potential impacts of opening a discrete 20,000-acre area to coal mine road construction.

In short, there is no documentation in either the SDEIS or the Colorado Roadless Rule FEIS of the baseline wildlife conditions in and around the North Fork Coal Area or the impacts likely to result from the Alternatives. This despite the area's outstanding big game habitat values. The former Colorado Division of Wildlife (CDOW) stated the following about the Sunset Roadless Area: "This area provides calving areas and summer [range] for elk. Provides valuable backcountry hunting experience with necessary harvest on public lands prior to elk moving to lower private lands."[102] CDOW recommended roadless designation for the Sunset area because:

> This recommendation would maintain harvest of elk at present levels. This allows DOW to meet elk population management objectives. This would also avoid adverse sedimentation to area streams due to vehicular use of the area. It would also avoid causing an increase in game damage in the area caused by vehicular use on new roads pushing elk onto the adjoining private lands in the winter season.[103]

As noted above, the Forest Service has recognized many big game values in the affected roadless Areas: the Sunset Roadless Area provides summer range for elk, mule deer, black bear and mountain lion; the Flatirons Roadless Area is a fall concentration area for black bear, mule deer summering area, and provides calving area, summer range, and winter range for elk; and the Pilot Knob Roadless Area provides summer range for mule deer, black bear, mountain lion and elk, provides calving areas and winter range for elk, moose overall habitat, lynx habitat, and bald eagle winter range.[104]

These descriptions, and maps of the area's big game habitat, also demonstrate that the roadless areas are not uniform. Therefore, the addition of roads in differing areas will impact different values, the need for mitigation, and the weighing of alternatives. For example, Pilot Knob alone

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[100] Colorado Roadless Rule FEIS at 214.

[101] Colorado Roadless Rule FEIS at 219.

[102] Colorado Div'n of Wildlife, *Field Recommendations SW Region Area 16 for GMUGNF IRAs* (Feb. 21, 2006), at 86, excerpts attached as Ex. 29.

[103] *Id.* at 86-87.

[104] *See infra* at 96.

includes severe winter range for elk and mule deer winter range, important data in weighing an alternative that would protect that roadless area.[105] Alternative C would protect less than half of the black bear fall concentration areas, which might put a heavier thumb on the scale in favor of Alternative A when comparing the two alternatives.[106] In addition, although state wildlife officials warned that more road construction in these roadless areas would "caus[e] an increase in game damage … by vehicular use on new roads pushing elk onto the adjoining private lands in the winter season," the SDEIS fails to disclose those impacts or where they might occur.

In addition, the SDEIS fails to discuss relevant language in the GMUG Forest Plan or to ensure that the exemption is consistent with the following provisions of the Plan:

- Provide hiding cover within 1000 feet of elk calving and deer fawning areas.[107]

- Maintain habitat for viable populations of all existing vertebrate species. Maintain at least 40 percent of potential habitat capability.[108]

- Maintain deer and elk cover on at least 60 percent of the perimeter of all natural and created openings.[109]

- Maintain a minimum of 40 percent habitat effectiveness for deer and elk in diversity units dominated by forested ecosystems. Minimum size cover areas for deer is 2-5 acres, and for elk, 30-60 acres.[110]

The Forest Service predicts scores of miles of road and hundreds of drill pads, likely resulting in hundreds of acres of surface disturbance, are foreseeable as a result adopting the proposed action. Even if the Forest Service cannot predict the precise location of this damage, it can and must disclose the differing values that exist within each roadless area, and, for each alternative, must analyze potential impacts to the areas likely to be developed and discuss mitigation measures related to the destruction of habitat and other impacts. Because neither the SDEIS nor the Colorado Roadless Rule FEIS upon which the SDEIS relies address these impacts, the Forest Service fails to take the hard look NEPA requires.[111]

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[105] Earthjustice, Map, Elk (Jan. 11, 2016), attached as Ex. 30; Earthjustice, Map, Mule Deer (Jan. 11, 2016), attached as Ex. 31.

[106] Earthjustice, Map, Black Bear (Jan. 11, 2016), attached as Ex. 32.

[107] GMUG Forest Plan (1983) at III-24.

[108] GMUG Forest Plan (1983) at III-26.

[109] GMUG Forest Plan (1983) at III-28.

[110] GMUG Forest Plan (1983) at III-29.

[111] Additional information regarding big game and other wildlife, not addressed by the SDEIS, is contained in our May 2015 scoping letter. *See* HCCA Scoping Comment Letter (May 22, 2015) at 53-57, 58-59.

c. The Forest Service fails to adequately disclose baseline data about, or analyze potential impacts to, cutthroat trout.

Colorado River cutthroat trout (a Region 2 sensitive species) and greenback cutthroat trout (a threatened species) are found in and around the North Fork Coal Mining Area. And while the SDEIS does include some information about the species, its analysis still falls short of the "hard look" NEPA requires.

The SDEIS admits that is has location and other data about Colorado River cutthroat, but fails to include that information in the SDEIS. For example, the Forest Service has maps displaying the overlap of cutthroat trout habitat with the three roadless areas, but it chose to withhold that data from the public and the decisionmaker by failing to include them in the SDEIS.[112] The limits of the narrative description are apparent, given that while the SDEIS describes the length of creek habitat occupied by cutthroat and provides a few place names,[113] it fails to provide the reader with any visual representation to understand whether a selection of Alternative B or C will protect potentially occupied watersheds. The total discussion of cumulative impacts to trout from the proposed exception is one sentence, which does not discuss Colorado River cutthroat trout: "More variable flows and temperatures in streams and rivers will profoundly affect aquatic species such as greenback cutthroat trout."[114]

The above statements do not suffice as a "hard look" analysis under NEPA. When considered in conjunction with the Colorado Roadless Rule FEIS, the NEPA record is almost entirely devoid of baseline data and direct, indirect and cumulative impacts analysis.

The SDEIS also kicks the can down the road when it comes to sufficient environmental review, stating: "proper consideration of the Colorado River cutthroat trout in further site-specific planning of the coal mining-related activities will likely be important in conservation of local individuals and populations."[115] It is unclear why, if further consideration of the mining impacts on cutthroat trout are "important" to conserving local populations of cutthroat trout, the Forest Service does not consider those impacts at this stage, when stipulations or the selection of alternatives could completely avoid such impacts. Failure to address this "important" issue in the SDEIS violates NEPA.[116]

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[112] SDEIS at 51 ("Spatial data describing the location of conservation populations [of cutthroat trout] were overlaid onto a map of the North Fork Coal Mining Area in [] GIS.").

[113] SDEIS at 60.

[114] *Id.* at 62.

[115] SDEIS at 60.

[116] Additional information regarding cutthroat trout, not addressed by the SDEIS, is contained in our May 2015 scoping letter. *See* HCCA Scoping Comment Letter (May 22, 2015) at 57-58.

d. The Forest Service fails to adequately disclose baseline data about, or analyze potential impacts to, sage grouse.

GIS analysis conducted by Rocky Mountain Wild indicates that Gunnison Sage-grouse historical habitat occupies a significant portion of the Pilot Knob Roadless Area.[117] On November 12, 2014, the U.S. Fish and Wildlife Service announced that the Gunnison Sage-grouse requires the protection of the ESA as a threatened species—a decision that postdates the Colorado Roadless Rule FEIS. The Pilot Knob Roadless Area contains historic habitat which may still be suitable for occupancy by Sage-grouse should populations expand. The SDEIS fails to disclose to what extent development in the coal mine exception area may have direct, indirect, and cumulative impacts on the species and their current or historical habitat, and fails to consider the need for management prescriptions to maintain and enhance the potential for Gunnison Sage-grouse restoration. The failure to address impacts to historic habitat violates NEPA.

e. The Forest Service fails to adequately disclose baseline data about, or analyze potential impacts to, spruce-fir forest.

About one-seventh of the North Fork Coal Mining Area is classified as spruce-fir forest.[118] The spruce-fir in the area include trees that are Engelmann spruce that are 2-3 feet in diameter and are likely hundreds of years old. The spruce-fir forest in the Sunset Roadless Area, as visitors can attest, has some of the characteristics of old growth – giant, older trees; numerous downed logs; snags; as well as a cohort of younger trees. The growing season at 9,000 feet elevation is very short, making recovery of forest take longer than more resilient ecosystems at lower elevations. Mature spruce-fir forest, once cut down, takes decades, if not centuries, to return to its current state. Given the long interval between major (stand-replacement) fires, spruce-fir stands are normally in the mature to old growth stage for many years.[119] Regeneration of spruce and fir trees after logging can be difficult because such tree species do not survive in the open in early years. "Engelmann spruce is a long-lived tree, maturing in about 300 years…. Engelmann spruce has the capacity to make good growth at advanced ages."[120]

The forest cover type found in much of the North Fork Coal Area that would be affected by the Proposed Action and Alternative C is the type that lynx prefer: spruce-fir, mixed spruce-fir, and

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[117] *See* Earthjustice, Map, Gunnison sage grouse (Jan. 11, 2016), attached as Ex. 33.

[118] Earthjustice, Map, Spruce-fir (Jan 11, 2016), attached as Ex. 34.

[119] Romme, W. H., J. Clement, J. Hicke, D. Kulakowski, L.H. MacDonald, T.L. Schoennagel, and T.T. Veblen, *Recent Forest Insect Outbreaks and Fire Risk in Colorado Forests: A Brief Synthesis of Relevant Research*, Colorado Forest Restoration Institute (2006), at 7, available at http://www.colorado.edu/geography/class_homepages/geog_5161_ttv_s09/RommeEtAl_Insects&FireRisk_CFRI_06.pdf (last viewed Jan. 15, 2016).

[120] Alexander, Robert R, *Ecology, Silviculture, and Management of the Engelmann Spruce-Subalpine Fir Type in the Central and Southern Rocky Mountains,* USDA Forest Service, Agriculture Handbook 659 (2007), at 4, available at http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1144&context=barkbeetles (last viewed Jan. 15, 2016).

aspen.[121] Importantly, lynx "[p]redicted use was also positively associated with topographic wetness and aspen cover," including moist spruce-fir forests on north-facing slopes at mid-elevations,[122] conditions that are prevalent in the North Fork Roadless Area. Because "mature spruce-fir may be the most valuable stand type for snowshoe hares in the region,"[123] the SDEIS should have taken a hard look at the Proposed Action and alternatives' impacts on spruce-fir forest type, snowshoe hare and Canada lynx.

However, the SDEIS contains no data displaying or even describing the location of spruce-fir forest in the North Fork Coal Mining Area.

Maps prepared using Forest Service data, however, show the location of the forest, and demonstrate that Alternative C would permit the protection of more than half of the spruce-fir forest in the exception area while allowing for access to more than half of the exception area's coal.[124] An eyeballing of a map of the area's spruce-fir also shows that Alternative C would protect larger blocks of contiguous spruce-fir, which would be more likely to protect the habitat of wildlife that rely on spruce-fir habitat.

Because the SDEIS contains no vegetation maps, neither the public nor the decisionmaker can understand the potential impacts each alternative could have on this forest community, nor can an SDEIS reader understand the tradeoffs of choosing one alternative over the other, or the need for, or impact of, a mitigation measure that would require coal producers to avoid spruce-fir forest when constructing roads and drilling pads. Because the SDEIS lacks the above-mentioned data, the Forest Service is unable to take the hard look at impacts to spruce-fir, or evaluate all reasonable alternatives and mitigation measures, in violation of NEPA.

C. Because The SDEIS Fails To Provide Necessary Baseline Data About, Or Evaluate Impacts To, Critical Resources, The Forest Service Fails To Properly Evaluate Alternatives and Mitigation Measures.

An EIS must "rigorously explore and objectively evaluate" all reasonable alternatives to a proposed action in order to compare the environmental impacts of all available courses of action.[125] NEPA's statutory language also implicitly charges agencies with mitigating the

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[121] J . Ivan, Colorado Parks and Wildlife, Wildlife Research Reports, Mammals Program, July 2011 - June 2012, *Monitoring Canada Lynx in Colorado using Occupancy Estimation: Initial Implementation in the Core Lynx Research Area*, at 36. Available at http://cpw.state.co.us/Documents/Research/Mammals/Lynx/Ivan2012AnnualReportLynx.pdf (last viewed Jan. 15, 2016).

[122] *Id*. at 38.

[123] *Id*. at 41.

[124] *Id.* (Alternative C contains 47% of the exception area's spruce fir).

[125] 40 C.F.R. §§ 1502.13, 1502.14(a); *New Mexico ex rel. Richardson v. Bureau of Land Mgmt*., 565 F.3d 683, 703 (10th Cir. 2009).

adverse environmental impacts of their actions.[126] Mitigation measures are required by NEPA's implementing regulations.[127]

As discussed above, the SDEIS's lack of site-specific, baseline information makes it impossible for the Forest Service to disclose and analyze the differing impacts of the alternatives. Neither the agency nor the public can compare alternatives unless and until the Forest Service discloses the values and resources that may be impacted by the different actions. Without such baseline data, neither the Forest Service nor the public are able to understand the effects of the proposal or to craft stipulations to protect wildlife and habitat. What wildlife is found in the North Fork Coal Area? Is there big game? What types of habitat exist? Are hunters dependent on wildlife resources here? What is the topography? None of this can be determined from the applicable NEPA documents.

For example, vegetative cover in the Pilot Knob Roadless Area differs greatly from that of its roadless counterparts south of Highway 133.[128] Mule deer winter range extends into the Pilot Knob Roadless Area, as does elk severe winter range, but both are generally absent from the other two roadless units.[129] Differences in reasonably foreseeable mining road, drill pads, and infrastructure locations associated with the three alternatives would have different impacts on wildlife that vary with much more complexity than simply assuming, as the SDEIS does, that more roads means more impacts.[130] Without this baseline wildlife data alternatives cannot be compared. The damage the proposed action could cause to various habitat types is a key distinguishing factors between the 'no action' and 'action' alternatives, as well as between the two action alternatives. The lack of baseline data makes such comparison of alternatives impossible, thus cutting the heart out of the NEPA process.

Similarly, it is impossible for the public or the decisionmaker to understand what mitigation measures might protect important terrestrial resources from the surface impacts of coal mining made possible by the proposed action without having any baseline data concerning the values that mining might impact. As discussed above, because the SDEIS fails to contain sufficient information about the specific location and extent of cutthroat trout watersheds, neither the public nor the decisionmaker can evaluate the impact or utility of a mitigation measure to put such watersheds off-limits to road or drill-pad construction.

D. The Forest Service May Not Fail To Gather Baseline Data By Relying On Non-Existent Mitigation Measures.

The SDEIS contains no mitigation measures, apparently because the Forest Service asserts that such measures can wait until later stages of analysis. The lack of baseline data in the SDEIS is

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[126] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-52 (1989); *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1522 (10th Cir. 1992).

[127] 40 C.F.R. §§ 1502.14(f), 1502.16(h).

[128] *See* Earthjustice, Map, Vegetation Cover - Type (Jan. 11, 2016), attached as Ex. 35.

[129] *See* Earthjustice, Map, Elk (Ex. 30); Earthjustice, Map, Mule Deer (Ex. 31).

[130] *See* SDEIS Appendix B at B-11.

accompanied by general statements of future mitigation without details as to what that would entail. For example, the SDEIS dismisses site-specific analysis by relying on future mitigation: "Some of the potential impacts described programmatically here would likely be avoided or reduced through site-specific planning and implementation, which could include design criteria and/or mitigation measures aimed at conserving threatened, endangered, and sensitive species;"[131] and "[a]t each stage of analysis or review, there is an opportunity to mitigate focused and site-specific impacts as the proposed activity becomes more certain."[132]

But courts have addressed the duty of federal agencies to gather "baseline data" about wildlife species during the NEPA process, ruling that mitigation measures are not a sufficient substitute or "proxy" for gathering baseline data.[133] In 2011, the U.S. Court of Appeals for the Ninth Circuit in *Northern Plains Resource Council v. Tongue River Railroad* addressed the duty of federal agencies to gather "baseline data" about wildlife species during the NEPA process.[134] The court found that "[r]eliance on data that is too stale to carry the weight assigned to it may be arbitrary and capricious."[135] Like the agency in *Northern Plains*, the Forest Service here cannot rely on old and generalized data in considering the proposed coal mine exception.

The Forest Service has not gathered the requisite baseline data concerning affected resources in the North Fork Coal Area, either in the Colorado Roadless Rule FEIS or the SDEIS. Relying on generic statements of mitigation, without any semblance of site-specific baseline data to support those statements, does not suffice for NEPA analysis.

There is no explanation of how best management practices and industry mitigation would protect species impacts or, in fact, any description of what those measures actually are. The Forest Service's promises of future mitigation measures do not reflect the hard look that NEPA requires. An agency must discuss "[m]eans to mitigate adverse environmental impacts" in its analysis of environmental effects of the proposed action and alternatives.[136] An agency's analysis of mitigation measures "must be 'reasonably complete' in order to 'properly evaluate the severity of the adverse effects' of a proposed project prior to making a final decision."[137] An "EIS must discuss 'mitigation ... in sufficient detail to ensure that environmental consequences have been fairly evaluated.'"[138] Neither the SDEIS nor the Colorado Roadless Rule FEIS which it "supplements" provide the baseline data relevant to the area to be affected by the exception.

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131 SDEIS at 55.

132 SDEIS at 5.

133 *Northern Plains Resource Council v. Tongue River Railroad*, 668 F.3d 1067, 1083-85 (9th Cir. 2011).

134 *Id*.

135 *Id*. at 1086.

136 40 C.F.R. § 1502.16(h). *See also id.* § 1508.20 (defining mitigation).

137 *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1173 (10th Cir. 1999) (quoting *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 352 (1989)).

138 *San Juan Citizens Alliance*, 654 F.3d at 1053 (quoting *Robertson*, 490 U.S. at 353).

III. THE SDEIS FAILS TO ADDRESS ADEQUATELY THE CLIMATE CHANGE IMPACTS OF COAL MINING AND COAL COMBUSTION.

A. NEPA Requires Agencies To Disclose Significant New Information In A Supplemental EIS.

CEQ regulations require an agency to prepare a supplemental EIS in one of two cases: 1) if the agency "makes substantial changes in the proposed action that are relevant to environmental concerns," or 2) if "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9 (emphasis added).

Accordingly, "[a]n agency's NEPA duties do not end when it completes its initial environmental analysis and approves a federal project." *Southern Utah Wilderness Alliance v. Norton*, 457 F. Supp. 2d 1253, 1264 (D. Utah 2006). "It would be incongruous with . . . the Act's manifest concern with preventing uninformed action, for the blinders to adverse environmental effects, once unequivocally removed, to be restored prior to the completion of agency action simply because the relevant proposal has received initial approval." *Marsh v. Oregon National Resources Council*, 490 U.S. 360, 371 (1989) (internal citations omitted).

Agencies must take a "hard look" at any new information or circumstances and assess whether supplementation might be necessary. *Marsh*, at 385 ("[R]egardless of its eventual assessment of the significance of this [new] information, the [agency] had a duty to take a hard look at the proffered evidence.").

Courts have found that a variety of circumstances require the preparation of supplemental EISs. For example, new information and circumstances regarding the cost/benefit analysis of a proposed action have been held to trigger the supplemental EIS requirement. *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987) (new information or circumstances "need not be strictly environmental, however; the test is whether the new information so alters the project's character that a new hard-look at the *environmental consequences* is necessary.") (internal citations omitted) (emphasis in original) (citing *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir. 1984)); *NRDC v. Lujan*, 768 F. Supp. 870 (D.D.C. 1991) (finding that new information regarding an increase in likelihood of finding and amount of oil to be found in Alaska required a supplemental EIS). New information related to wildlife potentially affected by the agency action can also trigger the requirement to supplement NEPA analysis. *See Native Ecosystems Council v. Tidwell*, 599 F.3d 926, 937 (9th Cir. 2010) (requiring NEPA supplementation where based on new information concerning the status of sage grouse in the project area); *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 559 (9th Cir. 2000) (finding Forest Service violated NEPA by failing to adequately consider new information on old growth forests and the listing of seven new sensitive species). New information concerning the roadless values of an area has also necessitated a supplemental EIS. *S. Utah Wilderness Alliance v. Norton*, 457 F. Supp. 2d 1253, 1264-65 (D. Utah 2006) aff'd in part, appeal dismissed in part sub nom. *S. Utah Wilderness Alliance v. Kempthorne*, 525 F.3d 966 (10th Cir. 2008).

Here, the Forest Service properly concluded that it must prepare a supplemental EIS if it is to attempt to revive the coal mine exception to the Colorado Roadless Rule, a conclusion compelled

by the U.S. District Court's ruling in *High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174 (D. Colo. 2014). The *High Country* court held that the Forest Service's analysis of the Colorado Roadless Rule coal mine exception violated NEPA by:

- failing to quantify projected greenhouse gas (GHG) emissions likely to occur from additional coal *mining* as a result of implementing the coal mine exception's goal: prolonging the life of coal mines in the North Fork Valley. *Id.* at 1195-96.

- failing to disclose the GHG emissions resulting from *combustion* of North Fork Valley coal made available as a result of implementing the coal mine exception's goal. *Id.* at 1196-98.

- failing to respond to the expert report of Dr. Thomas Power concerning the GHG emissions likely to occur as a result of both mining and combustion, which critiqued the Forest Service's assumption that there would be no climate pollution from paving the way for the removal of nearly 350 million tons of coal because coal consumers would simply find other coal at the very same price elsewhere (the "perfect substitution" myth). *Id.* at 1198.

Further, the Forest Service has an obligation to address other significant new information that has become available since the Colorado Roadless Rule Final EIS was completed in May 2012.[139] Other significant new information includes, but is not limited to: data about the pace and impacts of climate change and the need to limit fossil fuel combustion; data about the importance of protecting roadless habitat; changed circumstances concerning local, national, and international coal markets; and data concerning wildlife.

B. The Precedent-Setting Analysis In The SDEIS Is A Step Forward That Must Be Improved On Before Being Used In Future Agency Decision-Making.

The SDEIS attempts to respond to the court's order by disclosing the climate impacts of the proposed action in several ways.

First, the SDEIS estimate the gross quantity of carbon emissions annually from coal extraction and combustion, and compares those emissions to useful yardsticks, including total annual statewide emissions and total annual emissions from U.S. Forest Service business operations.[140] The analysis identifies different categories of sources of climate pollution in terms of activities (*e.g.*, combustion, production, and shipping) and gasses (*e.g.*, CO2, methane, N20), and displays those numbers in charts and tables.[141] We found this type of analysis to be useful.

Second, the SDEIS attempts to estimate the *net* quantity of carbon emissions annually from coal extraction and combustion, taking into consideration the shifts in the mixtures of energy used to generate electricity, as well as the production of different types of energy, that would result from

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[139] Colorado Roadless Rule Final EIS (May 2012) at cover page.

[140] SDEIS at 48.

[141] SDEIS at 37-38, Table 3-3, Figure 3-1.

the addition of 172 million tons of coal to the market.[142] The SDEIS discloses not only the net increase in total CO2 emissions, but also what type of fuel the mined coal would displace broken down by type of energy (including natural gas and renewable energy).[143] Again, this type of comparison, done properly, would provide the public and the decisionmaker with helpful information about the actual climate impacts of a proposal to unlock fossil fuel resources. Given that 40% of the nation's coal, 21% of our oil, and 14% of our natural gas come from federal public lands, obtaining an accurate understanding of the net climate change emissions caused by the mining of federal fossil fuels is critical. However, the SDEIS's analysis likely vastly underestimates the climate pollution and market displacement effects of this coal because it fails to account for significant climate emissions (methane), and fails to account for significant market responses that could result in more coal combustion and more displacement of cleaner sources of power. These flaws doom any attempt to take a "hard look" at net climate impacts.

Third, the SDEIS attempts to estimate the net social damage to the global environment and property from carbon emissions, calculated by weighing the social cost of carbon against the net value of the coal, for various coal mining scenarios.[144] Providing the social cost of carbon and weighing it against the value of the coal effectively assists the public and the decision-maker in understanding the scale of climate impacts, and we applaud the Forest Service for using this metric. However, the SDEIS's approach is deeply flawed due to its failure to address the social cost of methane, its failure to properly estimate methane emissions, its invention of a "best case scenario" discount rate, its failure to use a model that addresses consumers' reaction to lower electricity prices, and other flaws discussed below. All of these flaws lead the SDEIS to significantly underestimate the social costs of the proposed action.

Nonetheless, the analysis attempted in the SDEIS is unique and precedent setting. We are aware of no other instance in which a land management agency (Forest Service or Department of the Interior (DOI)) has attempted to provide such an accounting for climate impacts. We strongly believe that DOI and the Forest Service should regularly and systematically disclose these types of effects in each and every agency decision that foster fossil fuel development, but only after correcting the numerous errors made by the Forest Service here.

While we applaud the scope of the impacts addressed, as discussed below, the SDEIS fails to comply with NEPA and properly execute the analysis that takes the required "hard look" in a manner that is not arbitrary and capricious. The Forest Service must improve the SDEIS's analysis before it can pass legal muster.

C. Background: The Social Cost Of Carbon

The social cost of carbon protocol for assessing climate impacts is a method for estimating the damages associated with a small increase in CO2 emissions, conventionally one metric ton, in a given year and represents the value of damages avoided for a small emission reduction (*i.e.*, the

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[142] SDEIS at 96, Table 3-19.

[143] *Id*.

[144] SDEIS at 100 & Table 3-22.

benefit of a CO2 reduction).[145] It is intended to include changes in net agricultural productivity, human health, property damages, and the value of ecosystem services, all of which climate change can degrade.[146] As such, the social cost of carbon includes not only socioeconomic harm but also harm to the environment. The protocol was developed by a working group consisting of a dozen federal agencies, including the U.S. Department of Agriculture, with the primary aim of implementing Executive Order 12866, which requires that the costs and benefits of proposed regulations be taken into account.

The interagency social cost of carbon protocol was developed to assist in agencies understanding the costs and benefits of rulemakings. As the SDEIS recognizes, it is thus appropriate to apply the social cost of carbon in disclosing the impacts of this rulemaking.

The social cost of carbon protocol presents a *conservative* estimate of damages associated with the environmental impacts climate change, a fact the Forest Service admits.[147] Similarly, this administration has emphasized that the impacts of climate change, as reflected by an assessment of social cost of carbon, should be a significant consideration in agency decisionmaking. A White House report, which warned that delaying carbon reductions would yield significant economic costs, states:

> [D]elaying action to limit the effects of climate change is costly. Because CO2 accumulates in the atmosphere, delaying action increases CO2 concentrations. Thus, if a policy delay leads to higher ultimate CO2 concentrations, that delay produces persistent economic damages that arise from higher temperatures and higher CO2 concentrations. Alternatively, if a delayed policy still aims to hit a given climate target, such as limiting CO2 concentration to given level, then that delay means that the policy, when implemented, must be more stringent and thus more costly in subsequent years. In either case, delay is costly.[148]

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[145] U.S. Environmental Protection Agency, "Fact Sheet: Social Cost of Carbon" (Nov. 2013) at 1, attached as Ex. 36, available at http://www.epa.gov/climatechange/Downloads/EPAactivities/scc-fact-sheet.pdf (last viewed Jan. 15, 2016).

[146] Interagency Working Group on Social Cost of Carbon, "Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866" (Feb. 2010), attached as Ex. 37, available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf (last viewed Jan. 15, 2016); *see also* Cass R. Sunstein, The Real World of Cost-Benefit Analysis: Thirty-Six Questions (and Almost as Many Answers), 114 Colum. L. Rev. 167, 171-73 (Jan. 2014) (describing origins of interagency agreement on the social cost of carbon).

[147] SDEIS at 85-86. *See also* HCCA Scoping Comment Letter (May 22, 2015) at 25-27.

[148] Executive Office of the President of the United States, Council of Economic Advisers, "The Cost of Delaying Action to Stem Climate Change" (July 2014) at 1, attached as Ex. 38, available at

The requirement to analyze the social cost of carbon is supported by the general requirements of NEPA, specifically supported in federal case law, and by Executive Order 13514.

For all of these reasons, the Forest Service must include the social cost of carbon in its supplemental EIS as a way of disclosing the scope and nature of climate pollution impacts – including but not limited to the increase in climate pollution from coal combustion – on the human environment.[149]

D. The Supplemental EIS Fails To Accurately Project The Volume Of Coal Made Available By The Action Alternatives

One of the most significant changes between the 2012 FEIS and the SDEIS is the fact that the SDEIS slashed the estimated the volume of coal available under the proposed action by 50%, from 347 million tons to 172 million tons. This estimate has critical implications for the rest of the SDEIS's analysis: the volume of coal that could be combusted; the CO2 impacts from that combustion; how long existing mines would remain mining coal, which impacts the volume of methane emissions due to mining; the social costs of those emissions; etc.

The SDEIS's explains that the estimate of coal volume changed because of new information:

> The estimations [of coal volume] for the SDEIS differ from those present in the 2012 FEIS because of *currently available resource information that was not available during the 2012 FEIS*. Where the 2012 FEIS assumed a 20 foot mining horizon, *additional coal data from exploration and mining to date on leases adjacent to or within the North Fork Coal Mining Area were used by BLM* to refine mining horizon thickness to 10 feet.[150]

The 50% drop in recoverable coal estimated occurred because the 20-foot horizon assumed two seams, each 10 feet thick, from coal could be recovered. The SDEIS drops that amount to one 10-foot seam based on the "additional data."

Yet the only "additional data" of which we are aware concerning leases adjacent to or within the North Fork Coal Mining Area shows precisely the opposite of the SDEIS's contention.

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https://www.whitehouse.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf (last viewed Jan. 15, 2015).

[149] Draft guidance from the Council on Environmental Quality fails to properly address the social cost of carbon. *See* letter of Center for Biological Diversity (Mar. 25, 2015) (Ex. 39) at 4-10. However, even CEQ's draft guidance recognizes that where an agency chooses to disclose the economic and financial benefits of an action – as the Forest Service did in the Colorado Roadless Rule Final EIS at 315-327, the social cost of carbon represents an appropriate tool to disclose the costs of the agency's action, including the social cost of carbon. *See* 79 Fed. Reg. 77,802, 77,827 (Dec. 24, 2014).

[150] SDEIS at 25-26 (emphasis added).

For example, in mid-2015, Arch Coal announced that it planned to move mining operations from the E seam to the lower B seam on an approximately 2,000 acre area that is largely within or directly adjacent to the North Fork Coal Mining Area.[151] In that 2,000-acre area which appears to overlap portions of both the Sunset and Flatirons Roadless Areas, there are two seams of recoverable coal, not one as the SDEIS assumes.

In addition, earlier this year Oxbow applied for a lease application for the B seam on lands underlying the entirety of two leases where it had previously mined the D seam.[152] Both existing leases for the B seam and that for the D seam underlie or are adjacent to the Pilot Knob roadless area.[153] Again, this indicates that Oxbow believes two seams, not one, of recoverable coal can be found under lands near or within the North Fork Coal Mining area.

The potential for BLM to underestimate here is particularly troubling in light of criticism from a U.S. Senator engaged in oversight that the Interior Department "appears to have repeatedly shortchanged taxpayers by underestimating the volume of coal contained in reserves that is sold."[154] Senator Ron Wyden in 2014 wrote Interior Secretary Sally Jewell about such underestimates, and identified 15 leases for which the agency had significantly underestimated the volume of coal reserves; nearly half of those leases (seven) involved Colorado coal leases. Two of those leases involved North Fork coal leased by the Elk Creek mine, including one lease – COC61357 – part of which overlies the North Fork Coal Mining Area at issue in this proposed rule. For that lease, Oxbow removed 80% more coal than BLM predicted was recoverable at the time of the sale.[155]

Thus, at an absolute minimum, any subsequently prepared NEPA document: must not shroud this key issue in mystery by pointing vaguely to "additional coal data;" must explain its conclusions in light both Oxbow and West Elk recently taking action premised on the existence of *two* seams of recoverable coal underlying lands in or adjacent to the North Fork Coal Mining Area; and must not low-ball the recovery estimate by ignoring the fact that at least some of the North Fork Coal Mining Area has two seams, not one, of recoverable coal. Any subsequently

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[151] *See* letter of K. Welt, Mountain Coal Co. (Ex. 7). Arch Coal's map shows it intends to mine a three-square mile area in and adjacent to the North Fork Coal Mining Area in the B seam between 2015 and 2023. *See* Mountain Coal Co., Map 52 (Ex. 8).

[152] *See* letter of M. Ludlow, Oxbow Mining LLC to C. Beecham, BLM (May 18, 2015) at 1, attached as Ex. 40 ("Oxbow Mining, LLC. holds D-Seam coal leases per COC61357 and COC70615. Oxbow had previously used the combined legal descriptions of these two adjacent leases to describe the B-Seam Lease by Application (LBA) for the underlying D-Seam in COC76716").

[153] *See* letter of M. Ludlow, Oxbow Mining LLC (May 18, 2015) (Ex. 40) (noting that a portion of the lease by application for the B seam, which also underlies the leased D seam, "lies within the Pilot Knob Colorado Roadless Area.").

[154] Letter of U.S. Senator R. Wyden to S. Jewell, Secretary of the Interior (Feb. 6, 2014) at 1, attached as Ex. 41.

[155] Letter of U.S. Senator R. Wyden (Feb. 6, 2014) (Ex. 41) at Attachment B.

prepared NEPA document must also disclose the relied-upon "additional coal data" because understanding the volume of coal is at the heart of understanding the climate, air, and social cost impacts of the proposed action.[156]

E. The SDEIS Fails To Disclose Adequately The Quantity Of Projected Greenhouse Gas Emissions From Coal Mining.

The Forest Service must ensure that the supplemental EIS quantifies all GHG emissions from the process of mining, including, but not limited to:

- Pollution from methane drainage well (MDW) venting;
- Pollution from the mine's ventilation system;
- Pollution from all fixed engines or facilities at the mine portal (including coal washing facilities, conveyance systems, etc.);
- Pollution from vehicle engines and heavy equipment used on-site (including for construction and maintenance of methane drainage vents);
- Pollution from vehicles used to commute to the mines;
- Pollution from use of diesel engines (mobile and non-mobile), including for vehicles, loading/unloading equipment, coal washing, etc.; and
- Pollution attributable to electricity needed to run mine operations.

As discussed below, the SDEIS relies on misleading assumptions and unrepresentative data, and omits potentially significant impacts.

1. The SDEIS's Reliance on the "Upstream Dashboard" to Estimate Climate Emissions of Coal Production Is Arbitrary.

The SDEIS explains that to estimate the climate pollution from coal mine production and coal transportation to buyers (utilities), the Forest Service turned to a tool "known as the Upstream Dashboard."[157]

> The upstream processes accounted for by the tool include mining the coal and transporting it by rail within the U.S….. The dashboard tool also includes methane emissions from the mine that occur during mining operations…. The

[156] Earthjustice sought the data upon which BLM claims to have relied for its reduced recoverable coal estimate both informally and through a Freedom of Information Act request to BLM's Colorado State Office. BLM staff declined to provide the information without a FOIA request, and have failed to provide the relevant documents in response to that request or to explain why the agency would not, although the legal deadline for such response has expired.

[157] SDEIS at 34.

> tool accounts for emissions from all phases of the mining operations, to include construction of the mine and associated facilities, operation of the mine itself and various coal handling facilities, coal mine methane emissions, and transport of the coal via train. This tool is appropriate for use in this type of programmatic analysis as it was developed by experts in the field of energy and it accounts for a comprehensive suite of GHG-producing activities associated with coal production from typical gassy underground mines.[158]

The Upstream Dashboard tool, however, is simply a database lookup and unit conversion tool. The portion of the tool that deals with coal emissions has database values for two mines that are assumed to be representative of all other coal mines nationally; one assumedly represents all surface mines, the other assumedly represents subsurface mines. The SDEIS does not explain whether or how the representative subsurface mine is similar to the West Elk mine, the only operating mine poised to take advantage of the coal mine exception, and so the public has no idea how accurate or inaccurate are the Dashboard's numbers. Reliance on this "tool" is arbitrary with respect to calculations concerning the West Elk mine because the Forest Service has, or can readily gain access to, abundant information about the nature of West Elk's activities, yet they the agency does not use such information them in the calculation of the upstream contribution to the GHG emissions. Specifically, the Forest Service can easily determine many details of West Elk's operations (conveyors, coal washing facilities, number of trucks and type of engines and heavy equipment, etc.), the destination of the company's coal, and many other values disclosed in West Elk's current mine plan. In short, the Forest Service could have easily used data specific to the North Fork Valley to estimate upstream emissions. "Upstream Dashboard" may be a convenient short-cut for determining climate emissions, but the public has no way to know whether those estimated emissions bear any resemblance to the actual situation or actual emissions from North Fork Valley mines.

The Forest Service should either abandon "Upstream Dashboard" in favor of data specific to the North Fork, or explain why it should not.

2. The SDEIS Fails to Accurately Quantify Methane Emissions.

As the Forest Service is well aware, the mines in the North Fork Valley are among the most methane-polluting mines in the country. Methane must be removed from underground coal mines in order to make the air safe to breathe. At the West Elk mine, the only mine currently operating in the proposed exemption area, the methane is simply released directly into the atmosphere; no attempt is made to capture or flare this potent greenhouse gas. As a result, the proposed coal mine exemption, if approved, could result in massive amounts of methane emissions that are not typically associated with underground coal mines in other regions. By inappropriately downplaying how much methane will be emitted here, the Forest Service failed to give the public and decisionmakers an accurate assessment of the proposal's climate impacts. This failure is a significant flaw in the SDEIS that skews the analysis in favor the Forest Service's preferred alternative. In relying on a faulty estimate of a significant portion of

[158] SDEIS at 34.

proposal's GHG emissions, the Forest Service has failed to satisfy its obligation under NEPA to take a hard look at the environmental impacts of the proposal.

In the SDEIS, the Forest Service used what it calls the Upstream Dashboard tool estimate total methane emissions from the proposed North Fork exemption. This tool, according to the Forest Service, is a spreadsheet that calculates the estimated emissions from producing and transporting coal.[159] The Upstream Dashboard can quickly estimate upstream emissions associated with the production of a particular fuel. The Forest Service's Upstream Dashboard relied on just three years' worth of data and coal production to establish a ratio that estimates the amount of methane released per ton of coal mined from the area.

The SDEIS states:

> [R]eported methane emissions data from those two mines [West Elk and Elk Creek] were used to reasonable [sic] estimates of possible future methane emissions from mines within the North Fork Coal Mining Area. Available methane release data for the West Elk and Elk Creek mines were downloaded from EPA's facility GHG data web site (EPA, 2015), in tons of CO2eq. The site contained three years' worth of data (2011-2013).[160]

Using only three years of data,[161] the Forest Service concluded that for every ton of coal mined from the North Fork Valley, 463 cubic feet of methane were produced. As explained in the attached expert report prepared by Dr. Tom Power *et al.*, Power Consulting requested a longer data series of methane emissions from the EPA.[162] EPA provided Power Consulting with data that spans the 2002-2013 (12 years instead of just the three-year 2011-2013 period). This data, which is available to the Forest Service, comes from quarterly methane sampling completed each year from the Mine Safety and Health Administration ("MSHA"), part of the Department of Labor, over the twelve year period. The coal production data can be viewed on MSHA's Mine Data Retrieval System.[163]

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[159] SDEIS at 34.

[160] SDEIS at 35.

[161] The 2013 emissions from Elk Creek Mine were excluded from the calculation of the regional average methane emissions. The SDEIS reports that the average emissions for Elk Creek Mine were 898 cubic feet per ton of coal whereas the West Elk mine methane emissions were 327 cubic feet per ton of coal. The SDEIS states that these values come from the EPA website at http://ghgdata.epa.gov/ghgp/service/facilityDetail/2014?id=1010310&ds=E&et=&popup=true. The emission values from this website do not agree with the numbers quoted in Table 3-4 in the SDEIS on page 43; they also do not agree with values provided by request from the EPA.

[162] T. Power, *et al.* Comments on the Rulemaking for the Colorado Roadless Areas Supplemental Draft Environmental Impact Statement (Jan. 14, 2016), attached as Ex. 42. We incorporate Dr. Power *et al.*'s report by reference.

[163] Mine Data Retrieval System. http://www.msha.gov/drs/drshome.htm.

Average production over this period was just over 10 million tons per year (10.0623 million tons). The combined weighed average[164] over the 12-year span was 842 cubic feet of methane per ton of coal mined.[165] That is more than double the Forest Service's three-year average. This ratio is a key figure in calculating how much methane will be generated, as that number will get multiplied by the 172 million tons coal made available by the exemption. By using only a very small sample size and ignoring historical data, the Forest Service has cherry picked data in a way that downplays the significance of the proposal's climate impacts and skews the analysis in favor of the agency's preferred alternative. The Forest Service's choice of such a small data set seems particularly arbitrary given that the SDEIS admits that "methane emissions are variable."[166] Analyzing more years of methane emission data would allow the agency to smooth out more of that variability over time, thus giving the Forest Service a less-skewed value to apply to the coal mine exception analysis.

The Forest Service must give the public and decisionmakers a clear choice among reasoned alternatives. By using a low value for methane emissions based on a narrow data set, the SDEIS masks the true climate impacts of the coal mine exception, and therefore failed to take a hard look at the climate impacts of the proposed.

3. The SDEIS Fails to Quantify or Address Black Carbon Emissions.

The SDEIS must evaluate and disclose emissions from diesel engines (from equipment, heavy machinery, trains, etc.) that may worsen climate change, including black carbon. However, the SDEIS fails to even mention the words "black carbon," "soot," "diesel" or "engine," let alone address black carbon. Any subsequently-prepared NEPA document must address black carbon emissions.[167]

Black carbon, or soot, is made up of particles or aerosols released through the inefficient burning of fossil fuels, biofuels, and biomass.[168] A rapidly growing body of scientific literature identifies black carbon, a component of fine particulate matter ($PM_{2.5}$), as a critical climate forcing agent, and suggests that reducing these emissions may be among the most effective near-term strategies

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[164] The combined weighed average is weighted by the annual production at each mine.

[165] The 12 year weighted average methane emissions from Elk Creek Mine were 778 cu. ft. per ton of coal mined. The weighted average methane emissions from West Elk Mine were 886 cu. ft. per ton of coal mined.

[166] SDEIS at 38.

[167] The SDEIS's failure to address black carbon is puzzling because the Forest Service did address black carbon in its analysis of lease modifications to expand the West Elk mine in 2012. *See* U.S. Forest Service, Final Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2012) at 80-81 ("Lease Mods. FEIS"), excerpts attached as Ex. 43.

[168] T.C. Bond *et al*., "Bounding the role of black carbon in the climate system: A scientific assessment," Journal Of Geophysical Research: Atmospheres, Vol. 118, at 5380, 5384-85 (June 6, 2013), excerpts attached as Ex. 44.

for slowing Arctic warming and the melting of sea ice, the Greenland ice sheet, and glaciers and snow pack around the world.[169] Scientists have described the average global warming potential of black carbon as about 500 times that of carbon dioxide over a 100 year period.[170] Similarly, it has been estimated that the "soot effect on snow albedo may be responsible for a quarter of observed global warming."[171] A recent comprehensive study concluded that the climate-forcing impacts of black carbon may be second only to carbon dioxide.[172] The powerful warming impacts of black carbon are remarkable given that black carbon remains in the atmosphere for only about four to seven days, with a mean residence time of 5.3 days.[173]

While black carbon warms the atmosphere like a greenhouse gas, it is a solid, not a gas. Unlike GHGs, which warm the atmosphere by absorbing longwave infra-red radiation, soot has a warming impact because it absorbs shortwave radiation, or visible light.[174] Soot also contributes to heating when it is deposited on snow because it reduces reflectivity of the white snow and instead tends to absorb radiation. Studies indicate that the direct warming effect of black carbon on snow can be three times as strong as that due to carbon dioxide during springtime in the Arctic.[175] "Soot deposition increases surface melt on ice masses, and the melt water spurs multiple radiative and dynamic feedback processes that accelerate ice disintegration."[176] Melting reveals darker water or ground below; these darker surfaces in turn absorb more incoming sunlight, which causes additional warming.

Additionally, the direct absorption of sunlight by black carbon heats the atmosphere; it is here that the ratio of black to organic carbon, and the net climate forcing effect, is critical to consider.[177] But black carbon also nucleates clouds, increasing cloud droplet concentrations and

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[169] *Id.* at 5380; *see also* Ramanathan and Carmichael, "Global and Regional Climate Changes Due to Black Carbon," Nature Geoscience (April 2008), attached as Ex. 45.

[170] J. Hansen, *et al*., "Climate change and trace gases," The Royal Society (May 18, 2007), attached as Ex. 46; *see also* M.S. Reddy, *et al*., "Climate impact of black carbon emitted from energy consumption in the world's regions," Geophysical Research Letters, Vol. 34 (2007), attached as Ex. 47.

[171] J. Hansen and L. Nazarenko, Soot Climate Forcing Via Snow and Ice Albedos, 101 Proc. of the Nat'l Acad. Of Sci. 423 (2004), attached as Ex. 48.

[172] T.C. Bond *et al*., "Bounding the role of black carbon," (Ex. 44) at 5381.

[173] *See* Reddy *et al*. "Climate impact of black carbon," (Ex. 47).

[174] W. Chameides, "Soot Takes Center Stage," Science Vol. 297 (Sept. 27, 2002), attached as Ex. 49; T.C. Bond *et al*., "Bounding the role of black carbon," (Ex. 44) at 5384.

[175] M. Flanner, *et al*., "Present-day climate forcing and response from black carbon in snow," J. of Geophys. Res. Vol. 112 (2007), attached as Ex. 50.

[176] *See* Hansen & Nazarenko, Soot Climate Forcing (Ex. 48).

[177] T.C. Bond *et al*., "Bounding the role of black carbon," (Ex. 44) at 5385-86; T.C. Bond, *et al*., A technology-based global inventory of black and organic carbon emissions from combustion, J. Geophys. Res.109 (D14203) (2004), attached as Ex. 51.

thickening low-level clouds that trap more of the Earth's radiated heat.[178] Moreover, the radiative forcing of suspended black carbon particles is thought to be amplified at the poles, where there is more light reflected from the Earth's surface, and thus more light available for the black carbon particles to absorb.

Further, black carbon may be transported long distances from the source of emissions. Most black carbon that deposits in the Arctic originates as fuel combustion by-products emitted in northern hemisphere in Eurasia and North America, primarily north of 40º latitude.[179] Each region of the world has a unique mix of natural and pollution aerosol sources that cause complex climate effects. The diesel vehicle and certain industry sectors are particularly important sources in North America and Europe. Black carbon emissions in the Arctic from diesel vehicles and generators, oil and gas flaring and marine transport have a significant impact as well.[180] The top two U.S. sources of net climate forcing black emissions according to the Environmental Protection Agency are non-road diesel and on-road diesel.

By extending the life of the West Elk mine (and potentially other mines), the proposed action will likely cause multiple, significant sources of black carbon/ $PM_{2.5}$ emissions.[181] Many of these sources, including on and off-road diesel vehicles, generators, construction equipment and mining equipment associated with the West Elk mine operation, coal extraction, and transportation of the coal, are all direct sources of particulate matter, and thus black carbon, emissions. Additionally, even where $PM_{2.5}$ emissions are noted, the DEIS fails to assess the significant climate forcing effect of the black carbon fraction of those emissions.

Because black carbon is a significant contributor to global climate change, and, like methane and carbon dioxide, its emissions must be reduced to curb future warming of the earth, any subsequently prepared NEPA document must consider black carbon emissions likely to result from the proposed project and their impacts on global warming and climate change.

F. The SDEIS Fails To Account For The Climate Impacts Of Private Coal Likely To Be Mined As A Result Of The Coal Mine Exception.

The Forest Service must account for the coal that is otherwise inaccessible or unlikely to be mined on *private lands*, but that will be made available for mining if the coal mine exception is adopted. It must do so because private land coal mining is either an indirect impact of the proposed action here, or a foreseeable cumulative effect. For example, the Forest Service stated in the Lease Modifications EIS (Aug. 2012) that 5.6 million tons of private coal would be

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[178] T.C. Bond, *et al*., A technology-based global inventory (Ex. 51); T.C. Bond *et al*., "Bounding the role of black carbon," (Ex. 44) at 5386.

[179] T.C. Bond, *et al*., A technology-based global inventory (Ex. 51); T.C. Bond *et al*., "Bounding the role of black carbon," (Ex. 44) at 5388.

[180] J.R. McConnell, *et al*., 20th-Century Industrial Black Carbon Emissions Altered Arctic Climate Forcing, *Science* 317: 1381-1384 (2007), attached as Ex. 52.

[181] The Forest Service has previously concluded that operation of the West Elk mine causes emissions of PM2.5. Lease Mods. FEIS (Ex. 43) at 71-72, 78.

bypassed but for leasing made possible by the proposed coal mine exception.[182] Other similar areas of private or public coal may exist nearby.

The Forest Service explicitly refuses to address the reasonably foreseeable impacts of making this private coal available on two grounds. First, the SDEIS alleges that "[t]he U.S. Forest Service does not have jurisdiction over private lands with private mineral estate."[183] This is irrelevant to whether the Forest Service must disclose the impacts of private land coal mining. The Forest Service must address the indirect and cumulative effects of its proposed actions, regardless of whether it has jurisdiction over those actions. The very definition of cumulative effects includes those foreseeable actions "regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. This is why the Forest Service disclosed some of the impacts of mining this private coal in its 2012 Lease Modifications FEIS. Even if the Forest Service concludes that the proposed rule has no impact on a decision to mine coal on private lands, the Forest Service must disclose the potential impacts of such mining as a cumulative impact if that action is reasonably foreseeable (as the Forest Service concluded it was in the Lease Modifications EIS).

Second, the SDEIS states that "[a]ccess to private lands and private coal resources is not dependent on the Colorado Roadless Rule, and neither are private coal resources subject to the U.S. Department of the Interior's leasing process."[184] Again, it is irrelevant whether private coal is subject to DOI leasing. Further, the Forest Service has previously concluded that the private land coal near the Lease Modifications is in fact dependent on whether Arch Coal will mine the adjacent lands within the North Fork Coal Mining Area; those private lands are simply not likely to be mined absent the coal mining exception, and are likely to be mined if the exception is adopted.

Finally, if the NEPA documentation for the North Fork Coal Mining Area exception fails to address the impacts of the reasonably foreseeable mining of adjacent private land coal, either as an indirect or cumulative impact, the Forest Service cannot rely on this analysis to disclose the impacts of the social cost of carbon for Arch Coal's proposed lease modifications, because exception area EIS will have omitted that coal from its analysis. The Forest Service will be required to address those impacts in a site-specific NEPA document for the Lease Modifications.

G. The SDEIS Fails To Take The Required Hard Look At The Impacts Of Climate Pollution On The Environment And Economy.

Quantifying the *amount* of additional emissions that result from adopting the coal mine exception does not, by itself, disclose the *impacts* of those emissions on the environment. The

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[182] Lease Mods. FEIS (Ex. 43) at 52 ("it has been indicated, that the leasing and development of the lease modifications also allow for the production of 5.6 million tons of fee coal on adjacent lands").

[183] SDEIS at 26.

[184] SDEIS at 26.

SDEIS does so by using a tool known as the social cost of carbon.[185] However, the Forest Service fails to use high quality data and take the hard look by:

- failing to account for the social cost of methane in its evaluation, in violation of the courts order in *High Country Conservation Alliance*;

- including a discount rate that the Forest Service invented and that contravenes the recommendations of Interagency Working Group that developed the social cost of carbon, which confuses an evaluation of the range of social cost of carbon values;

- failing to include all carbon emissions, since it is based on the estimate of additional carbon emissions derived using the flawed IPM which necessarily underreports such emissions (*see infra*);

- including a "forest level" cost-benefit analysis, which is not appropriate for considering in the context of climate change; even if this were economically justifiable, which is it not, the analysis presented in the DSEIS is internally inconsistent: it includes benefits generated outside the National Forests, while excluding damages that occur outside the national forest level.

These four major flaws are each summarized below, and addressed in detail in the attached expert report prepared by Dr. Tom Power, and attached hereto.[186]

The cost-benefit analysis in the SDEIS contains numerous flaws, relies on false assumptions, omits obvious tools, and misapplies models. As a result, the Forest Service grossly understates the climate impacts of the North Fork exemption. In doing so, the Forest Service fails to take the hard look required by law and prevents both the public and decisionmakers from understanding the true impacts of the proposal.[187]

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[185] *See* SDEIS at 11, 86 ("Updated SCC [social cost of carbon] (IWG, 2015) estimates and the discussion of their limitations currently represents the best available compilation of information about the social benefits of carbon dioxide reductions to inform regulatory impact analysis for actions that directly affect or change cumulative global GHG emissions").

[186] Power *et al*., Comments on the Rulemaking (Jan. 14, 2016) (Ex. 42).

[187] Even with these many flaws, the SDEIS concludes that the net social damage to the global environment and property from carbon emissions (calculated by weighing the social cost of carbon against the net value of the coal) could be as high as $12.4 billion, and is probably in the range of $1.6 billion to $3.4 billion. SDEIS at 100 & Table 3-22. The huge social costs that even the Forest Service admits the coal mine exception would impose at the global level also suggest that the proposed action will violate Executive Order 12,866 which requires "[e]ach agency shall tailor its regulations to impose the least burden on society." Executive Order 12,866 (Sep. 30, 1993), Sec. 1(b)(11).

1. The Forest Service Inappropriately Refuses To Consider The Social Cost Of Methane.

Throughout the SDEIS, the Forest Service fails to take a hard look at the climate impacts of the proposed North Fork mining exemption by inappropriately downplaying the impact of the methane emissions caused by the proposal in key ways.

Most critically, as explained in detail in the attached expert report of Dr. Tom Power, the Forest Service fails to account for the social cost of methane in its cost-benefit analysis of the proposed coal road loophole. The Forest Service should have applied the social cost of methane to the direction emissions of methane that will be released by the North Fork Valley mines if they are allowed to expand as proposed under the exemption. The social cost of methane was developed by the EPA using the same models and methodology as the social cost of carbon, and is designed to be used alongside the social cost of carbon, and EPA used it to disclose climate impacts of a proposal as recently as 2015.

This is a critical error that undermines the Forest Service's analysis. The Forest Service has disregarded available and widely-accepted analytical tools that could help it evaluate the impacts of its proposal, contradicted the federal district court's order in *High Country Conservation Advocates*, and ultimately under-reported the climate impacts of the preferred alternative. In doing so, the Forest Service failed to take the required hard look at the methane impacts of the proposed North Fork exemption.

a. The Forest Service never accounted for methane in analyzing the impact of GHGs caused by the North Fork exemption.

The Forest Service admits that the proposed action will increase methane emissions from mines in the North Fork Valley.[188] Yet, despite acknowledging that methane emissions will increase, the Forest Service never attempted to quantify the climate *impact* of those increased emissions. To provide any fair assessment of the proposal's costs, methane cannot simply be disregarded. It must be included in the primary benefit-cost analysis using the social cost of methane. It should not *only* be considered in a "sensitivity analysis" of a benefit-cost analysis known to be incomplete, and then ignored when calculating costs, which is precisely what the Forest Service did here.

In its cost-benefit analysis, the Forest Service calculated costs based only on the social cost of carbon. To be sure, the social cost of carbon only directly applies to carbon dioxide emissions and not emissions of other GHGs. But the Forest Service cannot rely on this as a justification for assuming the social cost of the methane emissions are zero. In the SDEIS, the Forest Service impermissibly excludes methane from the cost-benefit analysis, implicitly putting a zero on the ledger in place of potentially very high figures. This is misleading because it drastically understates the climate impacts of the coal mining exemption.

[188] *See, e.g.*, SDEIS at 98 , Table 3-20 (disclosing net methane emission increase due to mining in North Fork Coal Mining Area under action alternatives).

NEPA requires agencies to transparently disclose the impacts of the federal projects they approve. As articulated by the Ninth Circuit, NEPA's hard look requires "a reasonably thorough discussion of the significant aspects of the probable environmental consequences" to "foster both informed decision-making and informed public participation."[189] In *Center for Biological Diversity v. NHTSA*, the court invalidated the agency's environmental review of a proposed federal action as arbitrary and capricious because the agency implicitly assigned carbon emissions a zero dollar figure in its analysis.[190] The Ninth Circuit held that "while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero."[191]

In the SDEIS, the Forest Service perpetuates the same mistake the NHTSA made in *Center for Biological Diversity* and that the Forest Service made in adopting the Colorado Roadless Rule in 2012. In its evaluation of the Rule in 2012, the Forest Service prepared an economic analysis of the coal mine exception that failed to disclose the volume of greenhouse gas emissions as well as the impacts of those emissions. The Forest Service implicitly put a value of zero on the major component of the costs side of the equation, even though the actual number should have reflected a much higher range of values set out in the social cost of carbon. The federal district court in Colorado invalidated the Forest Service's decision, because, as the Court explained, when an agency prepares a cost-benefit analysis, "it cannot be misleading."[192] In failing to make any attempt to incorporate the social cost of methane into the cost side of its cost-benefit analysis, the Forest Service has essentially repeated its error overturned by the court in *High Country Conservation Advocates,* which criticized the agency's NEPA review because it omitted key costs: "In effect the agency prepared half of a cost-benefit analysis, incorrectly claimed that it was impossible to quantify the costs, and then relied on the anticipated benefits to approve the project."[193]

Here, the Forest Service again presents misleading economic information on the impact of the proposed North Fork Coal Mining Area exemption, this time by effectively making the social cost of methane zero when in reality it is significantly higher. The agency's analysis has thus failed to meet the hard look required by NEPA.

b. There are at least two defensible ways to consider the social cost of methane in the Forest Service's analysis.

There are at least two defensible ways in which the Forest Service could have disclosed the social cost of methane, although the first method described is far more defensible, peer-reviewed, and has recently been used by EPA in a rulemaking context.

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[189] *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194 (9th Cir. 2008) (quotations and citations omitted).

[190] *Id.* at 1200.

[191] *Id.*

[192] *High Country Conservation Advocates*, 52 F. Supp. 3d at 1182.

[193] *Id.* at 1191.

First, the Forest Service could have used the EPA-developed "social cost of methane" to evaluate the climate impacts of the methane emissions from the North Fork exemption. Like the social cost of carbon, the social cost of methane estimates the global economic cost of adding one additional ton of methane to the atmosphere (the social cost of carbon does the same thing, but for carbon dioxide). In August 2015, EPA used the Marten *et al.* social cost of methane estimate[194] in the Regulatory Impact Analysis for the proposed New Source Performance Standard for methane from oil and gas production.[195] This study estimates that methane emissions in 2015 result in global economic damages that range from $490 to $3,000/ton, depending on the discount rate used.[196] EPA explained why using Marten *et al.* (2014) is a sound, justifiable methodology. Following the Marten protocol, EPA transparently disclosed the social cost estimates under four different discount rates, just as the Interagency Working Group ("IWG") does for the social cost of carbon.[197] This is in stark contrast to what the Forest Service did here, which was the relegate its discussion of the increased methane emissions to a "sensitivity analysis" included not in the main body of the EIS, but instead obscurely alluded to in the final two paragraphs of the final appendix. Moreover, having acknowledged in its sensitivity analysis that including methane would drastically increase the amount of CO2-equivalent that will result from the proposal, the Forest Service never adjusts its costs estimate to reflect these increase CO2-e emissions.

Second, although less accurate, the Forest Service could have converted methane to CO2 and used the social cost of carbon to estimate impacts. This would have entailed a simple 3-step procedure: 1) calculate the amount of methane that will be generated as a result of the proposed coal road exemption; 2) multiply the amount of methane by methane's global warming potential (which is basically a means to covert non-CO2 greenhouse gasses into a CO2-equivalent figure); and then 3) multiply the resulting CO2eq number across the range of social cost of carbon figures. EPA adopted this approach in 2012, when considering New Source Performance Standards for oil and gas facilities (which only directly regulated VOC and other non-methane pollutants, but which EPA explained would deliver significant methane reductions as a co-benefit). EPA explained that although the approach had limitations, this methodology was appropriate and defensible.[198]

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[194] *See* HCCA Comment Letter (May 22, 2015) at 28 (discussing Marten's paper) and Ex. 43 thereto.

[195] U.S. Environmental Protection Agency, Regulatory Impact Analysis of the Proposed Emission Standards for New and Modified Sources in the Oil and Natural Gas Sector, 4-12 to 4-17 (August 2015), attached as Ex. 53, available at http://www3.epa.gov/airquality/oilandgas/pdfs/og_prop_ria_081815.pdf (last viewed Jan. 13, 2016).

[196] *Id.* at 4-14.

[197] *Id.*

[198] U.S. Environmental Protection Agency, Regulatory Impact Analysis: Final New Source Performance Standards and Amendments to the National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Industry, at 4-31 to 4-34 (April 2012), attached as Ex. 54, available at:

c. The Forest Service failed to adequately analyze the climate impact of the methane emissions that will result from the North Fork exception.

Here, instead of taking either approach, the Forest Service assigned no value to the economic impact of the methane emissions, effectively making the number zero. Not only is that approach misleading, it unfairly skews the analysis to make it appear as though the climate impacts of the coal mine exception are far smaller than they actually are, and violates NEPA. Under NEPA regulations, where an agency evaluating reasonably foreseeable effects (such as increased methane emissions), and it believes there is incomplete information available (such as what value to assign methane in a cost-benefit analysis), and such information is essential to a reasoned choice among alternatives, as it is here because the social cost of methane emissions may tip the balance at some scales from positive to neutral, the agency must obtain the information if the cost of doing so is not exorbitant. 40 C.F.R. § 1502.22(a). Clearly, using the social cost of methane analysis will not involve "exorbitant" costs.

Even if the means to obtain the missing data are "unavailable," NEPA regulations require the Forest Service to assess the impact "based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(b)(4). The social cost of methane is such a theoretical approach generally accepted in the scientific community. As explained above, the social cost of methane was created to be used alongside the social cost of carbon, it presents information across four discount rates like the social cost of carbon does, and it has been used recently by EPA to provide the public and decisionmakers better information about the climate impacts of a methane emissions that will result from a federal rulemaking – precisely as it should be used here.[199] Further, the Forest Service must use the social cost of methane analysis developed by EPA because federal agencies must base rulemaking decisions "on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation."[200] The EPA's social cost of methane tool is clearly the best obtainable, technical way to address the climate impacts of methane emissions foreseeable under the coal mine exception.

d. Including methane in the greenhouse gas emissions totals for the North Fork exemption drastically changes the amount of climate pollution at issue.

The Forest Service has long been aware that the North Fork Valley mines are exceptionally gassy. Rather than use accepted social cost of methane protocols, the agency prepared what it

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http://www3.epa.gov/ttn/ecas/regdata/RIAs/oil_natural_gas_final_neshap_nsps_ria.pdf (last viewed Jan. 13, 2016).

[199] *See also* Power *et al*., Comments on the Rulemaking (Jan. 14, 2016) (Ex. 42) at 9-10; Appendix A (describing social cost of methane).

[200] Executive Order 12,866 (Sep. 30, 1993), Sec. 1(b)(7).

calls a "sensitivity analysis"[201] of the impacts of applying the social cost of carbon to the coal mine methane of the North Fork Valley mines. The SDEIS concluded that including methane in the amount of GHGs that are considered as part of the cost-benefit analysis changes the total GHGs dramatically. For the national boundary consideration, total GHGs measured in CO2eq increased by 20% under the Forest Service's analysis. At the Forest Boundary analysis, the shift was far more dramatic: including methane results in a *20 fold increase* in GHG emissions. As the SDEIS explains:

> Inclusion of CO_2eq of methane emissions, can result in an increase in a 20% increase in estimated CO_2eq emissions for combined production and combustion under the national boundary stance.
>
> For the Forest boundary stance, where only those emissions from production (extraction) of coal are considered, CO_2eq emissions can increase by a factor of x20 when including methane emissions in the calculations.[202]

Clearly, when the methane emissions are included in the analysis of the damages, they can have very large impacts on whether or not the values are positive or negative.

The attached report from Dr. Power verifies that adding methane into the cost-benefit equation produces markedly higher net social costs. On a global scale, there is a range in net damages associated with the increase in North Fork Valley mining of $4.1 billion (low production scenario) to $9.6 billion (average production scenario).[203] This is a $2.5 billion and $4.5 billion increase in damages respectively associated with North Fork Valley when compared to the SDEIS benefit-cost results for the same scenarios which omits methane's costs.

Stated another way, incorporating the social cost of methane *approximately doubles* the environmental harms associated with the proposal at the global scale when compared to the estimates disclosed by the Forest Service. The Forest Service's failure to address this huge impact except through a vaguely described "sensitivity analysis" violates NEPA.

2. The Integrated Planning Model The Forest Service Uses Cannot Accurately Represent Energy Production When Demand Increases.

Economic models exist that can assist the Forest Service in calculating the climate pollution implications of decisions that will make more or less coal available on the U.S. market. As we urged in scoping, any such model should, at a minimum, have the following characteristics:

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[201] Sensitivity analyses are carried out to see how sensitive the model result is to different inputs that are used. They give an indication of how sensitive the result is to assumptions that were made. If, for instance, a model result is found to change by 20 fold because of an input assumption, then the model would be very sensitive to whether or not that input is included.

[202] SDEIS page E-24.

[203] Power *et al*., Comments on the Rulemaking (Jan. 14, 2016) (Ex. 42) at 26.

- The ability to estimate greenhouse gas emissions with a high enough precision to differentiate between emissions output from a 'reference scenario' and an adjusted scenario where coal from individual mines are removed or added to the baseline scenario;

- The ability to differentiate between coal with different properties both in supply and end user;

-. The ability to accurately account for changes in delivered coal prices, including changes in mine-mouth prices and transportation costs;

- The ability to accurately account for price elasticity between supply and demand;

- The ability to account for emissions reduction through fuel switching inherent in our current electric economy;

- The ability to accounts for coal mine methane emissions; and

- Be transparent and independently verifiable.

In May 2015, Dr. Thomas M. Power, Donovan S. Power, and Dr. Joel M. Brown submitted a report during scoping describing their evaluation of several models, and, based on these factors, recommended that the Forest Service utilize the National Energy Modeling System (NEMS) developed by the Energy Information Administration.[204] Dr. Power's report specifically recommended *against* the Forest Service utilizing the Integrated Planning Model (IPM) because that model lacks transparency (Dr. Power describes it as "essentially a 'black box'"), and because, as the Forest Service uses it in the SDEIS, it fails to account for elasticity inherent in the energy economy.[205]

The Forest Service ignored this advice and used the IPM in preparing their climate change analysis in the SDEIS.[206] The Forest Service hired ICF to use their proprietary IPM to assist the agency in modeling multiple different coal mining scenarios as well as the GHG implications of those scenarios.

The Forest Service states that the IPM model used by the agency is incapable of accounting for the increased energy use that will result from the added coal made available. The Forest Service readily admits this limitation:

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[204] Dr. T. M. Power *et al*., Assessing the Ability of Contemporary Models to Calculate the GHG Implications of Federal Coal Leasing Decisions and Other Federal Energy Management Decisions (May 2015), attached as Ex. 55 ("May 2015 Power Report").

[205] *Id.* at 46-48.

[206] SDEIS Appendix E at E-3.

> A number of chain reactions may occur related to production and consumption of fuels, related to power generation. Chain reactions may include some degree of responses such as:
> ♦ An increase in total electricity production, reflecting the net effect of increased availability of coal fuel inputs for power generation.[207]

Although the Forest Service admits that there will be an increase in total electricity production, the IPM model it used was incapable of accounting for this increase in electrical generation. Because that IPM model did not account for the increased electrical generation that will be induced by the additional North Fork Valley coal, that model was incapable of accurately predicting the GHG impacts (damages) associated with the proposed North Fork exemption.[208]

As fully explained in the attached report authored by Dr. Power, the SDEIS modeling shows that increasing the supply of coal from the North Fork Valley (which the proposed exemption would do) will reduce coal costs to electric generators. Because fuel costs are an important determinant of the cost of generating electricity, the cost of supplying electricity to Americans would, in response, decline. In fact, the basis of the SDEIS benefits of mining North Fork Valley coal is the reduction in the cost of coal coming from the Uinta Basin and the reduced cost of generating electricity. That modeling shows what one would expect from a market economic perspective: adding a significant amount of lower priced coal to the national coal supply displaces to a certain extent other higher price fuels, including other coal, natural gas, and renewable energy, that otherwise would have been used to provide Americans with electricity.

However, in the SDEIS modeling of the economic impact of this increase in the supply of North Fork Valley coal, the reduced cost of electricity to Americans does not lead to an increase in their overall use of electricity. This is a significant oversight. Just as the lower coal prices were expected to lead to the increased use of coal, the lower electric prices should also increase the use of electricity. That would require the burning of additional fuel, the emission of more GHGs, and higher damage costs from climate change as the market comes back into equilibrium. Because the IPM model the Forest Service used assumes a fixed level of demand for electricity for each year no matter what happens to fuel and other electric generating costs, that model cannot reflect this normal market adjustment to lower energy prices. An adjustment the SDEIS predicts will occur as a result of more coal becoming available. This assures that the SDEIS underestimates the costs associated with the production, transportation, and burning of additional North Fork Valley coal because the Forest Service has not accounted for the increase in energy production and use above what would occur without the proposed exemption.

This flaw is compounded by the fact that there are existing models that could be used to appropriately address this issue. In fact, we directed the Forest Service to one such model (EIA's National Energy Modeling System or "NEMS") in our scoping comments. The SDEIS attempts to dismiss the NEMS model, a tool which can model the impact of the lowered price and

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[207] SDEIS page E-12.

[208] For additional description of the limitations of the IPM model, *see* May 2015 Power Report (Ex. 55).

increase consumption of power, on the grounds that it "does not accurately model smaller changes in supply."[209] As explained by Dr. Power *et al.*, the SDEIS's reasoning is erroneous.[210] The NEMS model *is* sensitive enough to model the economic effects of the millions of tons of coal annually that would be induced to be mined by the North Fork Coal Mining Area exception. And would be better than the IPM model the Forest Service used at modeling all of the economic impacts because NEMS can address the impacts of an increase in electrical consumption, something that IPM, by design, is incapable of doing according to SDEIS.[211] Because it is far superior to the approach the model the SDEIS used, the Forest Service must apply NEMS because it is the "best reasonably obtainable scientific, technical" tool to accurately predict market and climate impacts of adding more coal to the market.[212]

3. The Forest Service Misapplies Social Cost Of Carbon By Creating A New Discount Rate Not Endorsed By The Interagency Working Group Or Any Other Federal Agency.

Social Cost of Carbon values are published by the IWG, of which the Forest Service's parent agency, the U.S. Department of Agriculture, is a member. These values are a statistical representation of the likely future monetary costs of CO_2 emissions produced in a given year.

The Forest Service also misinterpreted and misapplied the Social Cost of Carbon, downscaling parameters, and has even made up new scenarios for which the Social Cost of Carbon was never intended. These errors result in a misapplication of the Social Cost of Carbon and have a very large effect on the value that is applied to the Social Cost of Carbon. In short, these errors lead the Forest Service to understate the social costs of coal mining and combustion that would result from reinstating the proposed exemption.

The Forest Service presents five different discount rate scenarios when considering the Social Cost of Carbon. Those discount rates are 3% 10th, 5%, 3%, 2.5%, and 3% 95th. Use of a 3% 10th value, which was created by the Forest Service for the SDEIS and represents a Social Cost of Carbon value that is far lower than any presented by the IWG, should be abandoned.[213] No other federal agency that we are aware of has ever created its own lower-end discount rate that was not used by the IWG. Cherry-picking data to include figures that represent lower-than-anticipated climate impacts, and presenting it as scientifically accepted is misleading. Under the auspices of

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[209] SDEIS Appendix E at E-3.

[210] T. Power, *et al.*, The National Energy Modeling System's ability to model the impacts of the increase in coal production in the North Fork Valley (Jan. 14, 2016), attached as Ex. 56.

[211] *Id.*

[212] *See* Executive Order 12,866 (Sep. 30, 1993), Sec. 1(b)(7).

[213] Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 Interagency Working Group on Social Cost of Carbon, United States Government, revised July 2015 (2015), attached as Ex. 57, available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf (last visited Jan. 15, 2016).

providing more information, the Forest Service has selectively chosen data in a way that has no support in peer-reviewed science or practical agency application and inappropriately skewed the result in favor of its preferred alternative. Because the use of this discount rate is misleading, its inclusion in the SDEIS violates NEPA. Any subsequently-prepared NEPA document must not include this invented rate.

4. The Forest Service Inappropriately Applied a Forest-Level Cost-Benefit Analysis that Is Inconsistent and Not Endorsed by the IWG or any other Federal Agency.

The other parameter for the Social Cost of Carbon that needs to be addressed is the choice of the geographical boundary of the analysis area: the Forest Boundary, the National Boundary, and the Global Boundary. The SDEIS presents different scenarios for each of these boundary levels. The Forest Boundary scenario is an artificial and self-contradictory construct that is misleading and should not be used. No federal agency that we are aware of has ever presented the social cost on a forest-level boundary, and the IWG — which created the social cost of carbon — does not recommend that it be used in this manner.

As presented in the Forest Service's SDEIS, the Forest Boundary scenarios are meant to capture the impacts (costs and benefits) at the local level. The flaw in the logic of this boundary is that the benefits are presented as the value of the coal on the national market but the costs are only the CO_2 emissions created during the mining of the coal (not including methane which clearly should be included). Without a coal-fired generator within the Forest Boundary, the coal must be sold into the national market for it to have any value. Since it must be sold into the national market, the GHG associated with the use of that coal for electrical generation should also be considered. The Forest Boundary scenario explicitly creates an artificial setting in which the mining of a large amount of additional coal to fuel electric generation has no emissions associated with the combustion of that coal. This is a misleading approach that does not take the "hard look" that the law requires.

In order to comply with the law and the court's order, the Forest Service must reevaluate the costs and benefits of increased North Fork Valley mining by using a national energy model that accounts for both supply and demand. This would give a more accurate estimate of the change in electrical price and consumption due to increased mining in the North Fork Valley. Further, the Forest Service must account for the social cost of methane within the benefit-cost analysis of the changes to the Colorado Roadless Rule proposed in the SDEIS.[214]

[214] Further, the national level boundary is also misleading because coal markets are global, and , more importantly, the impacts of climate change are always global; an additional ton of carbon anywhere worsens climate change everywhere, not only within a particular national boundary. The only transparent, defensible way to address the social cost of carbon and methane pollution is at the global level.

5. The SDEIS Failed To Address The Climate Impacts Of Forest Removal.

The SDEIS predicts that adopting the coal mine exception may result in the removal of an additional 135 acres of habitat for drilling pads.[215] Construction of up to an additional 67 miles of road would result in an additional 280 acres of forest removal.[216] Thus, the Colorado Roadless Rule will result in the elimination of about 420 acres of forest – about 2/3rds of a square mile.

Forest removal has impacts on climate change. Forests can act as carbon sinks. As the Under Secretary of Agriculture for Natural Resources and the Environment Robert Bonnie stated:

> development of forest lands is reducing the amount of carbon we can absorb now and in the future. Carbon pollution is also taking a toll on our forests – heat waves, wildfires, pests and drought are all worsened by climate change, reducing our forests' ability to sequester carbon.[217]

The proposed action will both remove mature aspen forest and worsen climate pollution. The SDEIS, however, apparently failed to qualitatively and quantitatively describe the climate impacts of clearcutting and removing hundreds of acres of aspen and spruce-fir forests, and other vegetation which likely act as carbon sinks.[218]

H. The SDEIS's Sets An Arbitrary Boundary For The Economic Study Area.

In establishing the boundaries of the "study area for economic analysis," the SDEIS includes two counties, Garfield and Rio Blanco, that it admits "are unlikely to be affected by coal operations, but were originally included because of potential effects to oil and gas activity" in the Colorado Roadless Rule 2012 FEIS."[219] The SDEIS adds one county, Gunnison, to the area, because it "contains coal mines potentially affected by this action."[220] The SDEIS adds Gunnison County

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[215] SDEIS at 20.

[216] The Forest Service quantified habitat projected to be eradicated by road construction for the Sunset Trail coal exploration project, concluding that road construction would "disturb 4.24 acres per mile." Bureau of Land Management, Environmental Assessment, Sunset Trail Area Coal Exploration Plan (June 2013) at 4, attached as Ex. 58. 67 miles * 4.24 acres / mile = 284 acres.

[217] R. Bonnie & A. Castle, Our Forests and Climate Change (Sep. 12, 2013), attached as Ex. 59, available at https://www.whitehouse.gov/blog/2013/09/12/our-forests-and-climate-change (last viewed Jan. 15, 2016).

[218] *See, e.g.*, W. Chen *et al.*, Effects of climatic variability on the annual carbon sequestration by a boreal aspen forest, Global Change Biology (1999) (concluding old aspen forests are "strong carbon sink[s]"), attached as Ex. 60, available at http://research.eeescience.utoledo.edu/lees/papers_pdf/Chen_1999_GCB.pdf (last viewed Jan. 15, 2016).

[219] SDEIS at 70.

[220] SDEIS at 69.

even though it admittedly will undermine "comparability of economic analysis between the 2012 FEIS and this supplement."[221]

The SDEIS does not explain why it chose to retain within the boundary two counties unaffected by coal mining, but to ad one that could be. This approach appears arbitrary. It is also unclear what impact on the analysis retaining the two unaffected counties has on the analysis. The Forest Service must address these issues in any subsequently prepared NEPA document.

I. The SDEIS Fails To Address Arch Coal's Bankruptcy.

On January 11,2016, Arch Coal declared Chapter 11 bankruptcy. Arch's precarious financial state has repercussions for its ability to comply with its reclamation duties under law, as well as its willingness to comply with environmental regulations that it perceives to impact its bottom line. The Forest Service therefore must address how Arch's bankruptcy may impact its continued operations in the North Fork Coal Mining Area.

J. The SDEIS Fails To Address The Urgent Need To Address Climate Change.

In September 2015, President Obama called climate change "a challenge that will define the contours of this century more dramatically than any other."[222] The President elaborated in unequivocal terms:

> The science is stark. It is sharpening. It proves that this once-distant threat is now very much in the present. . . . But the point is that climate change is no longer some far-off problem. It is happening here. It is happening now. Climate change is already disrupting our agriculture and ecosystems, our water and food supplies, our energy, our infrastructure, human health, human safety – now. Today. And climate change is a trend that affects all trends – economic trends, security trends. Everything will be impacted. And it becomes more dramatic with each passing year.[223]

This past November, the President recognized that this urgent problem demands strong action that leaves fossil fuels in the ground:

> Because ultimately, if we're going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we're going

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[221] SDEIS at 70.

[222] President Obama, Remarks by the President at the GLACIER Conference -- Anchorage, AK (Sept. 1, 2015), available at https://www.whitehouse.gov/the-press-office/2015/09/01/remarks-president-glacier-conference-anchorage-ak (last visited Jan. 15, 2016).

[223] *Id.*

> to have to keep some fossil fuels in the ground rather than burn them and release more dangerous pollution into the sky.[224]

For too long, the federal coal leasing program has tacitly undermined President Obama's calls for meaningful climate action and his Administration's ground-breaking initiatives to reduce carbon emissions. The Forest Service has an obligation to be honest with the American people about the climate impacts of the federal coal leasing program and the extent to which they undermine the President's climate objectives.

A plethora of recent studies have confirmed and deepened scientific knowledge about the nature and consequences of climate change. Further, recent studies demonstrate that the need to keep the vast majority of the world's known reserves of fossil fuels in the ground if the planet is to avoid warming so severe as to have significant damage consequences for all life, including human life. The significant threat posed by climate change undermines the purpose and need of the proposed action, which is to unlock yet more coal for combustion and to prolong the life of coal mines in the North Fork Valley, which will feed our dependence on fossil fuels and add to climate pollution for decades to come.

First, an increasing body of scientific literature indicates that to avoid the worst consequences of climate change, the vast majority of fossil fuel reserves must stay in the ground. As part of its consideration of a rule that would make hundreds of millions of tons of federally-owned coal available for mining and combustion, the Forest Service must inform the public and decisionmakers of the dramatic reductions in GHGs that are required to avert global catastrophe. Recent scholarship affirms the urgency of keeping fossil fuels in the ground in order to avert the worst harms from climate change. For example, a peer-reviewed article published in the prestigious research journal *Nature* concluded that if we are to keep climate change below dangerous levels – 80 percent of global coal reserves, half of all oil reserves, and a third of oil reserves must stay in the ground through 2050.[225] The United States must leave between 92% and 95% of its coal reserves in the ground.[226] As President Obama affirmed recently, "climate change can no longer be denied – or ignored."[227]

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[224] President Obama, Statement by the President on the Keystone XL Pipeline (Nov. 6, 2015) available at https://www.whitehouse.gov/the-press-office/2015/11/06/statement-president-keystone-xl-pipeline (last visited Jan. 15, 2016).

[225] Christophe McGlade & Paul Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 [deg] C*, NATURE Vol. 517, pp. 187-190 (Jan. 7, 2015), attached as Ex. 61, summary available at http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html (last viewed Jan. 15, 2016).

[226] *Id.* at 189, Table 1.

[227] Barack Obama, President of the United States, Weekly Address (Apr. 18, 2015), attached as Ex. 62, available at https://www.whitehouse.gov/the-press-office/2015/04/17/weekly-address-climate-change-can-no-longer-be-ignored-0 (last viewed Jan. 15, 2016).

Recently, in a historic moment capturing the growing national concern over climate change, 190 nations, including the United States, agreed to attempt to limit global temperatures to 2ºC above preindustrial temperatures, and to further pursue efforts to limit the increase to 1.5ºC above preindustrial levels:

> This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:
> (a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.[228]

To meet this threshold of safety, "deep reductions in global emissions will be required," and "Developed country Parties shall continue taking the lead by undertaking economy-wide absolute emission reduction targets."[229] The Agreement aims for net zero emission by mid-century.[230] The governments further agreed that global emissions need to peak as quickly as possible.[231] Once 55 countries ratify this agreement, it will become binding, and countries must submit their emissions targets every 5 years beginning in 2020.[232]

The Forest Service's proposed action appears to conflict with the Paris Agreement, in which nations agreed to make deep cuts in emissions and to aim for zero net-emissions by mid-Century.

In order to have better than even odds of meeting this target "cumulative CO2 emissions from all anthropogenic sources [must] stay between … 0 and 1000 GtC…. An amount of 531 [446 to 616] GtC, was already emitted by 2011."[233] This means that for the rest of century all nations on the planet can only emit approximately 470 GtC. To meet this limit, "between two-thirds and four-fifths of the planet's reserves of coal, oil, and gas" need to stay in the ground.[234] However,

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[228] United Nations, Framework Convention on Climate Change, Paris Agreement, Article 2 ¶ 1(a) (Dec. 11, 2015), attached as Ex. 63.

[229] Paris Agreement (Ex. 63), Adoption of the Paris Agreement, Proposal by the President, Draft decision-/CP.21, at 1; *id.* at Article 4 ¶ 4.

[230] Paris Agreement (Ex. 63), Article 4 ¶ 1.

[231] *Id.*

[232] *Id.* at Article 21 ¶ 1; Article 4 ¶ 9.

[233] IPCC, Working Group I Contribution to the IPCC Fifth Assessment Report: Climate Change 2013: the Physical Science Basis: Summary for Policy Makers (2013) at 25, attached as Ex. 64.

[234] Bill McKibben, *Global Warming's Terrifying New Math,* Rolling Stone (Aug. 2, 2012), attached as Ex. 65; Bill McKibben, *Obama and Climate Change: The Real Story* (Dec. 17, 2013), attached as Ex. 66.

if unabated, "[b]urning all fossil fuels would produce a different, virtually uninhabitable, planet."[235]

A proposal to unlock 172 million tons of coal must be viewed in this context. Indeed, the purpose and need for this proposal is questionable given the dire consequences of "business as usual" with respect to coal mining and combustion.[236] The SDEIS fails to address in a meaningfully way the fact some fossil fuels must be kept in the ground. Any subsequently prepared NEPA document must do so.

K. The Supplemental EIS Fails To Address Whether The Coal Mine Exception Is Consistent With National Climate Goals.

NEPA regulations require agencies to account for conflicts with existing laws and requirements imposed for the protection of the environment when engaging in environmental analysis.[237] In addition, Executive Order 12,866 also requires that "[e]ach agency shall avoid regulations that are inconsistent [or] incompatible" with the regulations of any other agency.[238]

Any subsequently prepared NEPA document must disclose whether the proposed coal mining area exception would interfere with efforts to meet federal and international greenhouse gas emission reduction targets.[239] As explained by the Council on Environmental Quality in its 2014 Draft Climate Guidance, federal agencies evaluating the climate impacts of their decisions should "incorporate by reference applicable agency emissions targets such as applicable Federal, state, tribal, or local goals for GHG emission reductions to provide a frame of reference and make it clear whether the emissions being discussed are consistent with such goals."[240]

In particular, the Forest Service must address whether the proposed exemption, and the additional coal combustion it facilitates, are in line with the goals of President Obama's Clean

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[235] Hansen, et al., *Climate Sensitivity, Sea Level and Atmospheric Carbon Dioxide*, 371 Phil. Trans. R. Soc'y (2013), attached as Ex. 67; *see also* Global Carbon Project, Global Carbon Budget 2014 (Sept. 14, 2014), attached as Ex. 68.

[236] The SDEIS also fails to acknowledge or incorporate a number of studies describing the increasingly dire consequences of climate change and the need to keep fossil fuels in the ground, including many of those cited in HCCA Scoping Comment Letter (May 22, 2015) at 29-32. Any subsequently prepared NEPA document must address and respond to each of these studies.

[237] *See* 40 C.F.R. § 1506.2(d) (EISs must discuss inconsistencies with state law); 40 C.F.R. § 1508.27(b)(10) (when examining whether actions are "significant" within the meaning of NEPA, agencies must consider whether the action "threatens a violation of Federal, State, or local law or *requirements imposed for the protection of the environment*.").

[238] Executive Order 12,866 (Sep. 30, 1993), Sec. 1(b)(10).

[239] *See* 40 C.F.R. § 1506.2(d); 40 C.F.R. § 1508.27(b)(10).

[240] Council on Environmental Quality, "Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews," 79 Fed. Reg. 77,802, 77,826 (Dec. 24, 2014).

Power Plan. The Clean Power Plan calls for reducing power sector greenhouse gas emissions to 30 percent below 2005 levels by 2030.[241] EPA's Regulatory Impact Analysis for the proposed Clean Power Plan estimates that the plan will reduce coal-fired electricity generation by 16 to 22 percent in 2020 and by 25 to 27 percent in 2030.[242]

Additionally, in November 2014 the President announced a joint U.S.-China agreement aimed at reducing climate pollution that calls for even more aggressively cutting net greenhouse gas emissions to 26-28 percent below 2005 levels by 2025.[243] Further, as discussed above, the Forest Service must address whether the exemption accords with the Paris Agreement, which represents an international agreement to limit global temperatures to 1.5-2°C below pre-industrial levels.

As part of its analysis, the Forest Service should disclose to the public the clearly competing interests at stake: one the one hand, meeting these national and international climate emission reduction targets set by EPA, the President; or agreed upon by over 190 nations, and on the other, the fact that reinstating the proposed coal road exemption will likely benefit only a single coal company.

The SDEIS acknowledges the existence of the Clean Power Plan and claims that the SDEIS's climate analysis "references and considers" the President's 2013 Climate Action Plan, but refuses to acknowledge any conflict between those plans and the rule proposed here.[244] The SDEIS asserts that a decision whose purpose is to make available 170 million tons of coal for combustion in mostly domestic power plants, and is predicted to increase the total level of combustion of coal in such plants and to displace power generation from renewable energy and natural gas combustion, is unrelated to and cannot conflict with a plan to limit pollution from power plants that is predicted to cut coal combustion in the U.S. by nearly a quarter by 2030. The Forest Service's failure to acknowledge this conflict is arbitrary and capricious, in violation of NEPA and Executive Order 12,866. Additionally, any subsequent analysis must address the Paris Agreement.

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[241] EPA, Fact Sheet, Clean Power Plan (2014), attached as Ex. 69.

[242] EPA, Regulatory Impact Analysis for the Proposed Carbon Pollution , Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants, 3-26 to 3-29 (June 2014), attached as Ex. 70, available at http://www2.epa.gov/sites/production/files/2014-06/documents/20140602ria-clean-power-plan.pdf (last viewed Jan. 15, 2016).

[243] White House Fact Sheet, U.S.-China Joint Announcement on Climate Change and Clean Energy Cooperation (November 11, 2014), attached as Ex. 71, available at https://www.whitehouse.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change, (last viewed Jan. 15, 2016).

[244] SDEIS App. B at B-12.

L. The SDEIS Fails To Address Air Pollution Impacts.

1. The SDEIS Fails To Address Air Pollution Impacts Volatile Organic Compound Pollution From Coal Mine Operations.

New data made available since publication of the Colorado Roadless Rule Final EIS indicates that venting from MDWs at each of the three coal mines in the North Fork Valley may release significant amounts of volatile organic compounds (VOCs).

VOC emissions are a significant concern because atmospheric VOCs and nitrogen oxides react in the presence of sunlight to form ozone pollution (smog).[245] Ground-level ozone poses a threat to public health.[246] Under Clean Air Act regulations, VOCs include "any compound of carbon," including propane, pentane, butane, hexane and benzene. 40 C.F.R. § 51.100 (s)(1). We are greatly concerned over the potential for VOC emissions to cause or contribute to future violations of ozone standards.

The Colorado Roadless Rule Final EIS fails to even mention the potential for the coal mine exception to permit the continuation of VOC emissions.[247] In fact, the FEIS does not mention at all the potential for VOC emissions from reasonably foreseeable mining operations.

Although the failure of the FEIS to address VOC emissions is worrisome, since the preparation of the Final EIS, new information has surfaced confirming that VOC emissions are a significant issue and that these emissions at both Oxbow's Elk Creek mine and Arch's West Elk mine are in violation of Colorado air quality regulations.

In June of 2009, an analysis of mine ventilation emissions was prepared for Arch Coal and revealed that the ratio of regulated VOC emissions to methane emissions was around 0.007 (low value of 0.007677 and a high value of 0.007913).[248] Subsequent analysis of ventilation emissions at the Elk Creek mine conducted in February and August of 2014 found the ratio of regulated VOC emissions to methane emissions to average 0.005216 and 0.006048, respectively.[249] Although the ratio of VOC/methane is low, because of the high quantity of methane releases, the total VOC emissions have the potential to be significant.

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[245] *See* Lease Mods. FEIS (Ex. 43) at 57.

[246] *Id.* at 58 ("Ozone in the lower atmosphere is harmful to human health"). *See also* EPA, Final Rule, National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16,436, 16,436 (Mar. 27, 2008) (describing "an array … adverse health effects" from ozone pollution).

[247] Colorado Roadless Rule Final EIS at 129 (mentioning VOCs only as a potential pollutant from coal *combustion*).

[248] *See* West Elk Mine, E Seam Gathering Options (Sep. 2009) at 25 (setting forth gas component analysis for two MDWs), attached as Ex. 72.

[249] *See* Gas Sample Analysis, Oxbow Elk Creek Mine, attached as Ex. 73 (setting forth analysis of gas samples from generator inlets at Elk Creek mine).

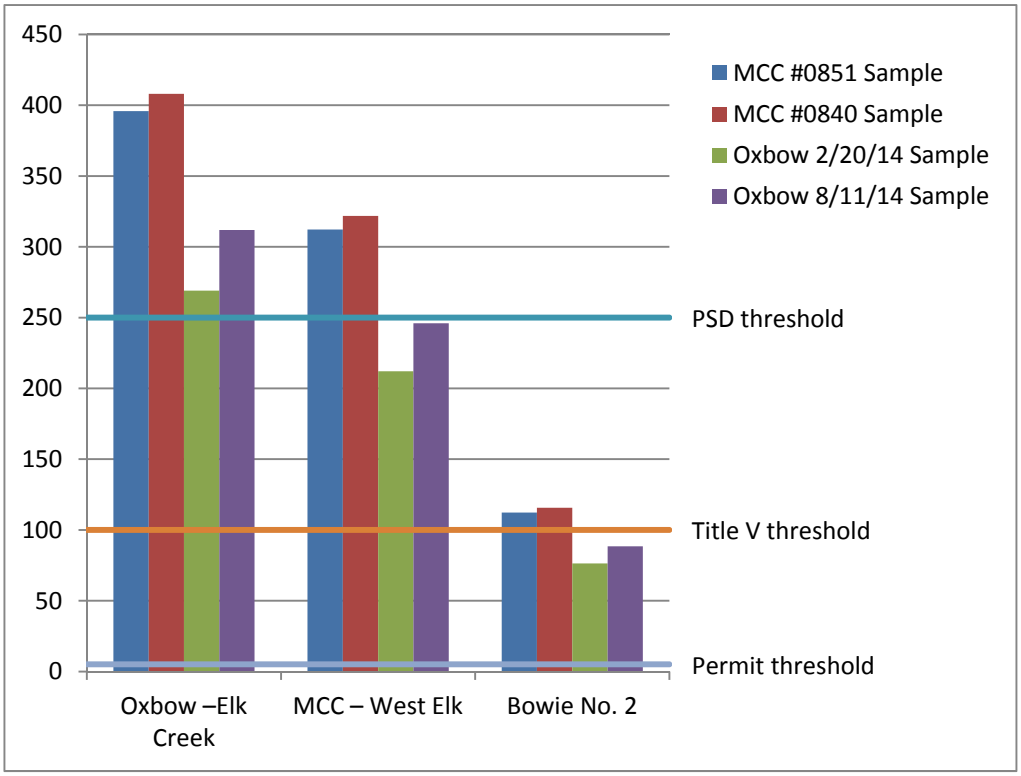
Recognizing this, the Colorado Air Pollution Control Division calculated the likely VOC emissions from several Colorado mines, including West Elk and Elk Creek. Based on total methane emissions reported to the EPA in 2012, the Division estimated that total VOC emissions from West Elk and Elk Creek were as high as 321 and 408 tons/year, respectively, and that emissions exceeded several permitting thresholds, including state construction permitting thresholds (5 tons/year), Clean Air Act Title V Operating Permit thresholds (100 tons/year), and Prevention of Significant Deterioration (PSD) thresholds (250 tons/year).[250] The table and chart below show the Division's analyses of the North Fork coal mines and comparisons with regulatory thresholds.[251]

Estimated VOC emissions using 2012 CH_4 data (in US short tons/year**)**

	2012 Total Methane reported to EPA	**VOC by #0851 ratio (0.007677)**	**VOC by #0840 ratio (0.007913)**	**VOC by 2/20/14 Oxbow Avg ratio (0.005216)**	**VOC by 8/11/14 Oxbow Avg ratio (0.006048)**
Oxbow –Elk Creek	51,574.5	395.9	408.1	269.0	311.9
MCC – West Elk	40,672.4	312.2	321.8	212.1	246.0
Bowie No. 2	14,623.5	112.3	115.7	76.3	88.4

[250] *See* e-mail of B. Cappa, Air Pollution Control Division to P. Carr, Air Pollution Control Division, "Recent Oxbow Gas Analysis and Mine VOC Summary" (Aug. 7, 2014), attached as Ex. 74 (transmitting "Coal Mine VOC Gas Analysis Calculations 8/6/2014" and "MCC and Vessels Gas Analyses Reports"); *see also* "Coal Mine VOC Gas Analysis Calculations 9/2/2014" (presenting updated calculations using August gas analysis data from Elk Creek mine), attached as Ex. 75.

[251] The Division's report was obtained by WildEarth Guardians through a Colorado Open Records Act request.



Even using 2013 methane emissions data reported to the EPA by the coal companies, total VOC emissions from the Elk Creek and West Elk mines continue to exceed regulatory thresholds. At Elk Creek, emissions still are exceeding state permitting thresholds and at West Elk, emissions are still exceeding state permitting thresholds, Title V Operating Permit thresholds, and likely PSD thresholds.

Estimated VOC emissions using 2013 CH_4 data (in US short tons**):**

	2013 Total Methane reported to EPA	**VOC by #0851 ratio (0.007677)**	**VOC by #0840 ratio (0.007913)**	**VOC by 2/20/14 Oxbow Avg ratio (0.005216)**	**VOC by 8/11/14 Oxbow Avg ratio (0.006048)**
Oxbow –Elk Creek	3,779.0	29.0	29.9	19.7	22.9
MCC – West Elk	33,119.1	254.3	262.1	172.7	200.3
Bowie No. 2	12,934.2	99.3	102.3	67.5	78.2

In spite of this, neither Arch nor Oxbow have applied for and obtained state construction permits, or any necessary Title V Operating Permit or PSD permit under the Clean Air Act. Recognizing this, the Colorado Air Pollution Control Division has recommended enforcement actions be undertaken at both the West Elk and Elk Creek mines. For instance, in an Inspection Report for the Elk Creek Mine dated November 26, 2012, the Division noted violations related to the mine ventilation shafts and blower systems, stating:

> [T]he Division is comfortable making the determination that the mine Ventilation Shaft #1 and #2 emit VOCs far above the 2 tpy APEN-reporting threshold. These emissions have not been reported to the Division, and a request for permit modification should have been made, thus violating Condition 12.d, as well as AQCC Regulation 3, Part A, Section II.A. Enforcement action is recommended to address this violation.[252]

Although the state has not undertaken an enforcement action to date, this does not mean that the mines are not releasing VOC emissions, posing potentially significant air quality impacts, or that the West Elk and Elk Creek mines are not violating Colorado air quality rules.

In light of this, it is crucial that the supplemental EIS fully analyze and assess the extent and significance of current VOC emissions from the West Elk and Elk Creek mines and analyze and assess the VOC emissions that would be released as a result of any future mining in the North Fork Coal Area. To this end, the supplemental EIS must also fully analyze and assess to what extent that these coal mine VOC emissions affect air quality in the area, particularly in the context of ozone concentrations.

The need to analyze emissions is critical. A key consideration under NEPA is "[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment." 40 C.F.R. § 1508.27(b)(10). Furthermore, NEPA requires that agencies consider "[t]he degree to which the proposed action affects public health and safety." 40 C.F.R. § 1508.27(b)(2). Here, if the West Elk and Elk Creek Mines are not in compliance with PSD, then their operations are not appropriately preventing significant deterioration of air quality. This means that the Forest Service's approval would fail to "protect public health and welfare from any actual or potential adverse effect...notwithstanding attainment and maintenance of all national ambient air quality standards." 42 U.S.C. § 7470(1).

Further, the supplemental EIS must fully analyze and assess to what extent the West Elk and Elk Creek mines are complying with state air quality rules in order to assure compliance with the Clean Air Act. Under the Clean Air Act, federal agencies must ensure their actions comply with "all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of air pollution[.]" 42 U.S.C. § 7418(a). If approval of additional mining in the North Fork Coal Area would pave the way for mining that would not comply with state air quality rules, then the Forest Service would have to disapprove such mining.

Although the SDEIS asserts that "more site-specific analyses of local air impacts would occur if and when new coal actions are considered,"[253] this prospect of future analysis does not absolve the agency from analyzing and assessing the reasonably foreseeable impacts of future mining activities in the North Fork Coal Area. As it stands, the Forest Service has ample information

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[252] *See* Air Pollution Control Division, "Field Inspection Report, Oxbow Mining-LLC Elk Creek Mine" (Nov. 20, 2012) at 21, attached as Ex. 76; *see also* Air Pollution Control Division, "Field Inspection Report, Mountain Coal Co-LLC West Elk Mine" (April. 4, 2013), attached as Ex. 77.

[253] SDEIS Appendix B at B-5.

regarding future coal leasing in the Area, including a previously prepared FEIS, to analyze and assess the impacts of VOC emissions that would occur if roadless area protections were lifted in the North Fork Coal Area.

2. The SDEIS Failed To Properly Disclose Air Pollution Impacts.

The Forest Service must fully analyze and assess impacts to air quality, including impacts to air quality in the context of all national ambient air quality standards ("NAAQS"), prevention of significant deterioration ("PSD") increments for Class I and II areas, and visibility impacts to Class I areas. We are particularly concerned over the direct, indirect, and reasonably foreseeable impacts of mining to NAAQS for ozone, particulate matter (particularly $PM_{2.5}$), nitrogen dioxide, and sulfur dioxide.

Important NAAQS that the Supplemental EIS Must Address

Pollutant	Date Adopted	Standard	Citation
Ozone	2015	0.070 parts per million over an 8-hour period	80 Fed. Reg. 65292 (Oct. 26, 2015)
$PM_{2.5}$	2006	35 micrograms/cubic meter over a 24-hour period	40 C.F.R. § 50.13
$PM_{2.5}$	2012	12 micrograms/cubic meter annually	40 C.F.R. § 50.18
NO_2	2010	100 parts per billion over a one-hour period	40 C.F.R. § 50.11(b)
SO_2	2010	75 parts per billion over a one-hour period	40 C.F.R. § 50.17

Unfortunately, neither the FEIS nor the SDEIS analyze and assess air quality impacts. This is spite of the fact that it is reasonably foreseeable that future development of coal leases in the North Fork Coal Area, at least related to the West Elk Mine, will occur. This means that the reasonably foreseeable impacts of the Forest Service's approval will include air quality impacts directly from mining activities, including engines, generators, locomotives, trucks and other traffic, drilling rigs, but also emissions from indirect, or reasonably foreseeable activities. This includes the air quality impacts of coal combustion, locomotive operation outside of the North Fork Coal Area (as well as particulate emissions associated with coal dust from train cars), and the air quality impacts of exporting coal overseas.

The Forest Service cannot simply ignore reasonably foreseeable impacts because of its belief that such impacts may be analyze and assessed under NEPA at some later stage of the process. NEPA requires a full analysis and assessment of impacts at the "earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." 40 C.F.R. § 1501.2. Here, there is ample information for the Forest Service to analyze and assess reasonably foreseeable air quality impacts, including the prior EIS prepared for the West Elk Mine coal lease modifications and Arch Coal's clearly stated intentions to pursue new coal leases within the North Fork Coal Area.

Any subsequently prepared NEPA document must fully analyze and assess air quality impacts to both ensure compliance with NEPA and the Clean Air Act.

M. The SDEIS Fails To Take A Hard Look At The Coal Market, Jobs, And Royalties.

Since the Colorado Roadless Rule Final EIS was completed in 2012, there have been significant changes in international, national, and regional coal markets relevant to the purpose and need for the project. The SDEIS fails to address these changes.

1. Demand For Coal Is Declining.

While the purpose and need for the project may be to "address the State's interest in not foreclosing exploration and development of coal resources in the North Fork Coal Mining Area," the Forest Service should take into account the fact that a historic shift is taking place in coal markets, and that that shift is reflected in the reduction in mining in the North Fork Valley. The SDEIS asserts that "[c]ommodity prices fluctuate widely,"[254] implying that coal markets are, at some point, likely to rebound and coal demand will be restored. The SDEIS fails to explain the basis for such an assumption, which flies in the face of market trends. In Colorado, one economist has warned that West Slope coal is effectively "dead."[255] In the U.S., evidence has grown of a historic, structural decline in the coal market as utilities move away from coal and the export market has declined.[256] The recent bankruptcy of Arch Coal, the sole company poised to take advantage of the coal mining exception, only underscores this point.

The failure of the Forest Service to acknowledge or address this information, and the information we provided in scoping, violates NEPA.[257]

2. Production And Employment At North Fork Mines.

Reflecting wider market trends, demand for, and production of, coal in the North Fork Valley has declined since 2012, and so has mine employment. The Forest Service must base its analysis of the potential impacts of reviving the coal mine exception on the current situation. The SDEIS fails to do so. The SDEIS ignores declining employment in the North Fork, basing its employment assumptions in part on historic employment at the Elk Creek mine, which is closed, sealed, and unlikely to reopen.[258] Further, it is unclear whether the employment figures for the 'No Action' alternative account for the fact that the West Elk mine still has about a 10-year

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[254] SDEIS at B-2.

[255] G. Ruland, Coal dead, Grand Junction Sentinel (Ex. 9).

[256] *See, e.g.*, Carbon Tracker Initiative, The U.S. Coal Crash, Evidence for Structural Change (Mar. 2015), attached as Ex. 157. *See also* U.S. Energy Information Administration, Coal production and prices decline in 2015 (Jan 8, 2016) (noting coal production in 2015 hit a 30-year low), attached as Ex. 158.

[257] *See* HCCA Scoping Comment Letter (May 22, 2015) at 36-38.

[258] SDEIS at 93.

supply of coal to mine, even if the coal mine exception is not adopted. The Forest Service must address these issues in any subsequently prepared NEPA document.[259]

Further, the Forest Service's assumption regarding royalties on new leases is arbitrary. The SDEIS assumes an 8% royalty rate for all new leases.[260] For all leases actively being mined in the North Fork, we understand that the lease-holder either has won or is seeking a royalty of 5%. In fact, the BLM recently proposed approving a royalty rate reduction from 8% to 5% for two Oxbow leases overlapping the North Fork Coal Mining Area on the grounds that doing so was necessary "to encourage the maximum economic recovery."[261] This despite the fact that the royalty reduction would be retroactive to December 2012, and will only cover coal *already mined* because Oxbow has expressed no intention of mining more coal there. In short, given that BLM is willing to reduce royalties on completed coal mining to "encourage" coal recovery that has already occurred, it is foreseeable that royalty rates for active coal mining in the North Fork Valley will remain at 5%.[262]

N. The SDEIS Failed To Disclose The Foreseeable Habitat Damage From Road Construction.

Although the SDEIS displays the miles of road likely required to construct MDWs for coal mines, as it should, it failed to quantify the habitat eliminated by road construction. This failure is arbitrary given that: (1) the Forest Service calculated the acreage of habitat disturbance caused by MDW pad clearance; and (2) BLM and the Forest Service quantified habitat projected to be eradicated by road construction for the Sunset Trail coal exploration project in 2013, concluding that road construction would "disturb 4.24 acres per mile."[263] If that projection is accurate, reinstating the coal mine exception could result in over 280 acres of linear clearcuts.[264] Any subsequently-prepared NEPA document must address this new information by quantifying habitat likely to be destroyed for road construction.

Further, the SDEIS fails to address data suggesting that its assumptions concerning the impacts of road construction required for exploration are too low. The SDEIS assumes "that 1.5 miles of … road for each 640-acre section was assumed as a reasonable estimation of … roads for

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[259] The Forest Service must also respond to all issues raised in our scoping letter on this issue. HCCA Scoping Comment Letter (May 22, 2015) at 38-42.

[260] SDEIS at 95.

[261] Letter of R. Welch, BLM to J. Hickenlooper, Gov. (Dec. 4, 2015), at page 2 of draft decision, attached as Ex. 80.

[262] We also request that the Forest Service specifically respond to the arguments concerning royalties in our scoping comment letter. *See* HCCA Scoping Comment Letter (May 22, 2015) at 42-43 (addressing royalties).

[263] SDEIS at 27-28, Table 3-2 (assuming 0.3 acres of disturbance for each drilling pad, and estimating acreage disturbed by well pad number for various alternatives); BLM, Sunset Trail Area Coal Exploration Plan EA (Ex. 58) at 4.

[264] 67 miles X 4.24 acre/mile = 284 acres.

exploration purposes in unexplored areas."[265] However, the Sunset Trail exploration plan in 2013 approved 5.9 miles of road over a 2.7 square mile area, for an average of more than 2.1 miles of road per 640-acre section.[266] This is significantly more than the 1.5 miles per square mile assumed by the Colorado Rule Final EIS. It is arbitrary and capricious for the Forest Service to assume that road mileage for exploration will be 25% less than recent experience demonstrates.

The Forest Service may not dismiss its failure to accurately project the impacts of roads and drilling pads as mere flyspecks. The damage the proposed action will cause to roadless forest is one of the key distinguishing factors between the 'no action' and 'action' alternatives. Further, because the SDEIS appears to have underestimated the total area of habitat likely to be scraped to bare dirt for coal mine exploration and development, any subsequently prepared NEPA document must analyze and disclose the impacts to surface resources – streams, vegetation, wildlife, etc. – of that increased surface disturbance. In doing so, the Forest Service must do more than identify the total acreage likely to be bulldozed. Mere numbers of acres will not reflect the fact that roads and drilling pads will fragment the forest, making it impossible to travel more than a few hundred yards in any direction anywhere in the 19,600 acre area without encountering habitat disturbance. The impacts will be ubiquitous and long-lasting. The Forest Service must address these impacts.

O. The SDEIS Failed To Adequately Consider The Environmental Justice Impacts Of Climate Change.

The Forest Service must address environmental justice implications of its decision to authorize the North Fork mining exemption and thus increase climate carbon dioxide and methane emissions. The SDEIS fails to adequately consider the impact of the proposed action's climate impacts on low income communities and communities of color. The Forest Service must correct this significant omission in order to fully and fairly disclose the true impacts of the proposed North Fork mining exemption. For the same reasons, the Forest Service cannot rely on, and must correct, its Civil Rights Impact Analysis.

Credible authorities on climate change have concluded that minority and low-income communities bear a disproportionate risk of suffering adverse effects of climate disruption. According to EPA, "[C]limate change is an environmental justice issue. Low-income communities and communities of color already overburdened with pollution are likely to be disproportionately affected by, and less resilient to, the impacts of climate change."[267]

EPA cites the Intergovernmental Panel on Climate Change's ("IPCC's") Fifth Assessment Report, which concludes that climate disruption will hit low-income neighborhoods and people

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[265] SDEIS at 27.

[266] BLM, Sunset Trail Area Coal Exploration Plan EA (Ex. 58) at 30 (5.9 miles of road). The Lease Modifications area proposed for exploration was 1,721 acres. Lease Mods. FEIS (Ex. 43) at i.

[267] Clean Power Plan, 80 Fed. Reg. 64,662, 64,914 (Oct. 23, 2015), attached as Ex. 78.

of color the hardest. According to the IPCC, "[m]any key risks constitute particular challenges for the least developed countries and vulnerable communities, given their limited ability to cope."[268] These disproportionate risks relate to economic impacts and effects on human health. In the United States, researchers have found that African-Americans and Latinos are also more likely to reside in areas vulnerable to climate change impacts such as sea-level rise, flood risk, and wildfire risk, and that median household incomes are inversely related to these vulnerability risks.[269]

This is not a recently-reached conclusion. EPA's supporting documents in its 2009 Endangerment Finding summarized major assessment reports by the U.S. Global Change Research Program (USGCRP), the IPCC, and the National Research Council (NRC) of the National Academies, which found that poor communities can be especially vulnerable to climate change impacts.[270]

According to EPA, recent studies reaffirm these conclusions. These studies, cited extensively in supporting documentation for EPA's Clean Power Plan, "find that certain climate change related impacts—including heat waves, degraded air quality, and extreme weather events—have disproportionate effects on low-income populations and some communities of color, raising environmental justice concerns."[271] Additionally, EPA concluded that climate disruption poses particular threats to health, well-being, and ways of life of indigenous peoples in the U.S.

The Forest Service's SDEIS and Civil Rights Impact Analysis both fail to acknowledge the body of well-established research, endorsed by EPA, finding that "low income populations and some communities of color are especially vulnerable to the health and other adverse impacts of climate change."[272] In addition to fully disclosing the climate impacts of its decision, the Forest Service must disclose the likelihood that the impacts of its decision will fall disproportionately on low-income communities and communities of color. Failure to disclose these impacts would violate NEPA's hard look mandate.

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[268] IPCC, Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summary for Policymakers (2014), at 13, attached as Ex. 79.

[269] English *et al.*, Racial and Income Disparities in Relation to a Proposed Climate Change Vulnerability Screening Method for California, The International Journal of Climate Change: Impacts and Responses, Vol. 4, Issue 2 (Apr. 2013) at 1-18, attached as Ex. 81.

[270] Clean Power Plan, 80 Fed. Reg. 64,662, 64,940 (Oct. 23, 2015).

[271] *Id.*

[272] *Id.*

IV. THE SDEIS FAILED TO PROPERLY DISCLOSE THE IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES.

A. The SDEIS Failed To Properly Disclose The Impacts Of The 'No Action' Alternative.

The Forest Service must take a hard look at the impacts of Alternative A, the "no action" alternative. Because the record contains contradictory information about how long the West Elk mine can remove coal absent the North Fork Area coal mine exception, any subsequently prepared NEPA document must address and resolve this contradiction.

As noted above, Forest Service and Arch Coal data indicate that the company can mine about a decade of coal at current production rates even without the proposed amendment.[273] The SDEIS, however states that "Under Alternative A, the mining duration would be approximately 2 years under the low production scenario, 1 year under the average production scenario, and 1 year under the permitted production scenario."[274] The basis for SDEIS's 1-2 year estimate is not explained. It could be that much of West Elk's remaining 55 million tons of coal reserves are under lands not within the North Fork Coal Mining Area. In any event, any subsequently prepared NEPA document should make clear the estimated volume of recoverable coal remaining in (a) leased lands *within* the North Fork Coal Mining Area; and (b) leased lands *outside* that area. This will enable the public to better understand the estimating remaining life of the two impacted mines under Alternative A, as well as under the other alternatives. At present, the SDEIS leaves the reader with the mistaken presumption that absent the coal mining exception, the West Elk mine would run out of recoverable coal within as little as a year. Disclosing the complete picture is critical because the decisionmaker and the public should have accurate information about the time that local communities might have to transition away from coal in the North Fork Valley under Alternative A.

The Forest Service should also make clear, in its analysis of Alternative A, whether and how the Colorado Roadless Rule and existing lease stipulations currently restrict, or do not restrict, road and methane drainage wellpad construction on existing leases. The SDEIS implies that no restrictions are in place, but some Forest Service documents imply otherwise. The SDEIS states that under Alternative A, "[v]alid existing coal leases can operate in accordance with the terms of the leases."[275] The SDEIS further explains that "[b]oth mines construct and use temporary roads and MDWs on existing leases in the North Fork Coal Mining Area as necessary."[276] On the other hand, Forest Service officials have stated that due to the court order that voided the North Fork coal mining area exception, "access to federal coal resources (leased or unleased) is limited."[277] In addition, the SDEIS indicates that coal mines will be able to remove more coal

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[273] *See supra* at 9 n.20.

[274] SDEIS at 32. *See also id*. at 20

[275] SDEIS at 20.

[276] SDEIS at 25.

[277] Email of J. Robertson (Mar. 20, 2015) (Ex. 6).

from a greater area of existing leases under the action alternatives than under Alternative A, though no explanation is provided for the discrepancy.[278] Any subsequently prepared NEPA document must address this discrepancy. In addition, the Forest Service should explain whether and how stipulations on existing leases do or do not limit or prohibit road construction on existing leases.

The SDEIS also fails to disclose the location of lands within the North Fork Coal Mining Area that are already mined and/or roaded under Alternative A, and which remain free of roads, temporary or otherwise. The SDEIS discloses that "[a]s of 2015, there were about 13,300 acres of NFS lands on the GMUG National Forests under lease for coal, about 4,000 acres of which are in CRAs within the North Fork Coal Mining Area."[279] The Forest Service and BLM know where the already-leased lands are with the North Fork Coal Mining Area; where the already-mined and/or roaded lands are within that area, and where the 1,000 or so acres are that are likely to be mined/roaded in the future under Alternative A. Yet no maps display any of these areas, so it is impossible for the public or the decision maker to understand which part of the North Fork Coal Mining Area will remain undisturbed under Alternative A, and compare that to those areas likely to be developed under either of the action alternatives. Any subsequently prepared NEPA document must contain such maps so the public can better understand and weigh the potential for future surface impacts of each of the alternatives.

B. The SDEIS Failed To Properly Disclose The Cumulative Impacts Of The Proposed Action.

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[280] In taking a hard look at direct, indirect, and cumulative impacts, the Forest Service must analyze all impacts that are "reasonably foreseeable."[281] Further, "the purpose of an [EIS] is to evaluate the possibilities in light of current *and contemplated* plans and to produce an informed estimate of the environmental consequences."[282]

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[278] *See* SDEIS at 26, Table 3-1. *See also* SDEIS at 29 (1,000 acres of existing leases have recoverable coal resources remaining under Alternative A); *id.* at (1,100 acres of existing coal leases have recoverable coal resources remaining under Alternative B).

[279] SDEIS at 25.

[280] 40 C.F.R. § 1508.7.

[281] 40 C.F.R. 1508.8.

[282] *See Kern*, 284 F.3d at 1072.

NEPA requires the Forest Service to take a hard look at the cumulative impacts on the *affected geographic area*, not just the immediate planning area.[283] The Forest Service's cumulative impacts analysis "must be more than perfunctory; it must provide a 'useful analysis of the cumulative impacts of past, present, and future projects.'"[284] The agency must, therefore, "give a realistic evaluation of the total impacts [of the action] and cannot isolate the proposed project, viewing it in a vacuum."[285]

Agencies must address cumulative impacts in all NEPA documents, including programmatic EISs.[286] In fact, "[o]ne advantage of preparing a programmatic NEPA review for repetitive agency activities is that the programmatic NEPA review can provide a starting point for analyzing direct, indirect, and cumulative impacts."[287]

Numerous proposed and reasonably foreseeable actions are planned within or directly adjacent to the roadless areas that will be open to road construction for coal mining under the proposed rule. More actions will occur near those roadless lands and impact resources of the North Fork Coal Mining Area. Despite this fact, the SDEIS identifies no specific projects and provides nothing beyond vague generalities concerning the potential for cumulative impacts. The SDEIS further limits its analysis to an overly narrow geographic and temporal scope. As a result, the SDEIS violated NEPA by failing to disclose or analyze cumulative impacts when viewed together with the proposed action.

In response to public comments that the cumulative effects of coal mining and gas development within the Upper North Fork Valley must be considered in the SDEIS, the Forest Service concludes that the 2012 Colorado Roadless Rule FEIS was sufficient to address the cumulative effects of the proposed action here:

> *The cumulative effects of coal mining and gas development across the 4.2 million acres of CRAs were assessed in the 2012 FEIS. Areas outside of roadless areas were generally not part of the study area in 2012* because the logical point to

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[283] *See Grand Canyon Trust v. Federal Aviation Administration*, 290 F.3d 399, 342 (D.C. Cir. 2002); *see also NRDC v. Hodel*, 865 F.2d 288, 297-99 (D.C. Cir. 1988) (holding that agency violated NEPA when it considered only the effects within the planning area, rather than the interregional effect).

[284] *Ocean Advoc. v. U.S. Army Corps of Engrs.*, 402 F.3d 846, 868 (9th Cir. 2005).

[285] *Grand Canyon Trust*, 290 F.3d at 342.

[286] Council on Environmental Quality, Memorandum for Heads of Federal Departments and Agencies, *Effective Use of Programmatic NEPA Reviews* (Dec. 18, 2014), at 22 ("*All* NEPA reviews are concerned with three types of reasonably foreseeable impacts: direct, indirect, and cumulative.") (emphasis added), available at https://www.whitehouse.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf (last viewed Jan. 15, 2016).

[287] *Id*. at 41.

> break off environmental analyses was roadless areas for a roadless rule *because the majority of impacts would be contained to roadless areas*.[288]

Despite this statement, the Forest Service cannot rely on the cumulative effects analysis of the Colorado Roadless Rule to address the cumulative effects of the current proposal for at least three reasons.

First, the scope of the two proposed actions is too different. The proposed action would open three adjacent roadless areas in the North Fork Valley to coal mine road construction. The Colorado Roadless Rule FEIS, on the other hand, construed the broad potential for cumulative effects across more than four million acres. The Colorado Roadless Rule FEIS analysis of cumulative impacts is simply too vague and broad to disclose the potential for additional actions to cumulatively impact the values at stake here: the lands, air, water, and wildlife of the North Fork Valley.

The Colorado Roadless Rule FEIS mentioned no individual projects anywhere, let alone a project or projects that might cumulatively impact wildlife of the Upper North Fork Valley when considered in conjunction with the Colorado Roadless Rule. Instead, FEIS identified broad categories of action likely to have cumulative impacts, including: "Increase in oil and gas operations" and "Increase in coal mining operations."[289] Virtually none of the cumulative effects analysis is tied to specific places. Instead, the FEIS described the potential for impacts in only the most general terms. It states, for example, that "[r]evisions to forest plans or forest-wide leasing availability decisions (reasonably foreseeable future actions) could add to the significant cumulative effect on natural gas development in roadless areas,"[290] without describing the nature or location of the plans or the impacts. In short, the Colorado Roadless Rule FEIS's description of potential cumulative effects is so devoid of detail as to be meaningless. While such an approach might be defensible for an action covering such a huge and dispersed landscape, it is not appropriate, ad provides no meaningful analysis, for the scale of the rule proposal analyzed here. The Forest Service therefore cannot rely on the 2012 FEIS's analysis of cumulative effects.

Second, the Colorado Roadless Rule FEIS concluded that it would not address impacts outside of the four million acres of roadless lands at issue there because, as the SDEIS explains, "the majority of impacts would be contained to [those many dozens of] roadless areas."[291] However, similar logic does not operate here: it is very unlikely that "the majority of impacts would be contained" to the three roadless areas at issue here. Wildlife does not recognize arbitrary boundaries existing on paper. There is no fence around the North Fork Coal Area keeping wildlife in or out. As discussed below, Colorado Parks and Wildlife has stated explicitly that wildlife of the Upper North Fork Valley is being negatively affected by cumulative actions and impacts. Cumulative impacts from the North Fork coal mining exception, in conjunction with

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[288] SDEIS at B-9 (emphasis added).

[289] Colorado Roadless Rule Final EIS at 61-62.

[290] *Id*. at 104

[291] SDEIS at B-9 (emphasis added).

other development proposals, cannot be contained strictly within the confines of the North Fork Coal Area. Similarly, air and water flow across and through these roadless areas; other foreseeable projects in the North Fork Valley outside of the roadless areas impact those same watersheds and airsheds. CEQ guidance mandates this approach, and courts have held that agencies violated NEPA when they restrict consideration of effects to the narrow confines of a proposed action's planning area, rather than a broader area where actions were likely to act synergistically on impacted resources.[292]

Unfortunately, the SDEIS embraces this broad and general analysis despite the narrower scope and the fact that reasonably foreseeable projects are known within and in close proximity to the North Fork Coal Area.

Third, several proposed actions likely to interact cumulatively in the North Fork Valley with the proposed rulemaking post-date the 2012 Colorado Roadless Rule FEIS, and thus were never analyzed in that document. The Forest Service thus must review those potentially cumulative impacts.

Although the Forest Service cannot rely on the Colorado Rule FEIS to address the cumulative effects of the proposed rule, the SDEIS does nothing itself to fill the void. The SDEIS offers only the broadest and vaguest acknowledgement of cumulative impact: "Reasonably foreseeable future trends that could impact fish, wildlife, and plant species include climate change, increasing population growth and development, increasing recreation demand, and increasing energy demand."[293] The SDEIS fails to identify or discuss *any* site-specific, reasonably foreseeable actions related to these "trends." For example, as discussed below, numerous specific natural gas developments are ongoing or proposed throughout the North Fork Valley including, as discussed below, reasonably foreseeable projects within and adjacent to the North Fork Coal Area, including *within the Pilot Knob Roadless Area*. Yet the SDEIS's discussion of

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[292] CEQ offers the following guidance on the issue:

> For a project-specific analysis, it is often sufficient to analyze effects within the immediate area of the proposed action. *When analyzing the contribution of this proposed action to cumulative effects, however, the geographic boundaries of the analysis almost always should be expanded*. These expanded boundaries can be thought of as differences in hierarchy or scale. Project-specific analyses are usually conducted on the scale of counties, forest management units, or installation boundaries, whereas cumulative effects analysis should be conducted on the scale of human communities, landscapes, watersheds, or airsheds.

Council on Environmental Equality, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997), at 12 (emphasis added), available at http://digital.library.unt.edu/ark:/67531/metadc31126/m2/1/high_res_d/CumulativeEffects.pdf (last viewed Jan. 15, 2016). *See also NRDC v. Hodel*, 865 F.2d 288, 297-99 (D.C. Cir. 1988) (holding that the Department of the Interior was required to consider cumulative impacts to migratory whale and fish species resulting from multiple off-shore oil and gas projects in both the Pacific and Alaskan regions).

[293] SDEIS at 62.

cumulative impacts to wildlife from oil and gas development is limited to two sentences, neither of which identify or analyze the impacts of specific projects:

> Pipelines and other distribution systems needed to transport these products may be routed across the national forests. This development results in direct loss of habitat as well as indirect effects of disturbance during construction and operation, which may become permanent for above-ground structures.[294]

The SDEIS's "Analysis of Cumulative Effects" to wildlife (including Threatened, Endangered, Proposed and Sensitive Species) is limited to the following six sentences, none of which acknowledges or addresses impacts from reasonably foreseeable oil and gas development projects:

> The cumulative effect of the increased road density made possible by Alternatives B or C would, with other actions, result in increased habitat degradation or fragmentation. Temporary road construction within the North Fork Coal Mining Area would still be subject to project-specific NEPA review. Design criteria and best management practices could be implemented at the project-specific level to minimize the chance for project-specific negative impacts.[295]
>
> Outside of the North Fork Coal Mining Area, continued implementation of the 2012 Colorado Roadless Rule for CRAs would maintain relatively large blocks of undisturbed aquatic and terrestrial habitat. Therefore, the primary cumulative impact of the *2012 Colorado Roadless Rule* would be beneficial. Future proposals for activity within CRAs would be subject to project-specific NEPA at which time an analysis of how a project could lead to the deterioration of roadless characteristics within the affected CRA.[296]

This does not satisfy NEPA's "hard look" requirement as interpreted by the courts.[297] For example, the agency must identify other reasonably foreseeable projects, where details are

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[294] SDEIS at 64.

[295] SDEIS at 64.

[296] SDEIS at 65 (emphasis added).

[297] *See Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372 (9th Cir. 1998.); *Muckleshoot Indian Tribe v. U.S. Forest Serv*., 177 F.3d 800 (9th Cir. 1999) (finding the cumulative effects analysis to be far too general (at 802-803), and observing that the EIS contained twelve sections on cumulative effects but that "these sections merely provide very broad and general statements devoid of specific, reasoned conclusions" (810-811)); *NRDC v. U.S. Forest Serv.,* 421 F.3d 797, 815-16 (9th Cir. 2005) (finding EIS inadequately analyzed the cumulative effects resulting from logging on nonfederal timberlands because agency must not only identify relevant past, present, and reasonably foreseeable future actions, it must discuss the environmental effects of those actions); *City of Tenakee Springs v. Clough*, 915 F.2d 1308 (9th Cir. 1990).

known with any specificity. The scale of the analysis must be explicitly stated, and the choice of both temporal and geographic scale must be justified. The analysis cannot be postponed to a forthcoming NEPA document, nor can it tier to a programmatic document that does not include analysis specific enough to be relevant for the decision at hand. In addition, the Forest Service here cannot rely on arguably beneficial impacts of the Colorado Rule, which is part of the environmental baseline, and which impacts lands hundreds of miles away, to somehow mitigate the impacts of this proposal and other damaging actions in the North Fork Valley. NEPA requires the Forest Service to take a hard look at the cumulative impacts on the *affected geographic area.*[298] For direct impacts to surface resources from coal mine road construction, that area is the North Fork Valley.

Within the context of the North Fork Coal Area there are site-specific proposals likely to interact cumulatively with the proposed rule. Yet the SDEIS fails to identify or disclose the potential for cumulative and synergistic effects with these site-specific plans. The SDEIS differs radically from other contemporaneous Forest Service NEPA documents in this disregard for inclusion of reasonably foreseeable projects in its cumulative impacts analysis. In September 2015, the Forest Service Paonia Ranger District (the same Ranger District affected by the proposed coal exception) and BLM released a joint Environmental Assessment for development of 25 federal natural gas wells and associated infrastructure, located immediately north of the Pilot Knob component of the North Fork Roadless Area.[299] In that document's cumulative impacts analysis, the agencies concluded that "Reasonably foreseeable future actions are actions that have been committed to or known proposals that would take place within a 50-year planning period."[300] The EA then lists past, present, and reasonably foreseeable future actions that were addressed in the cumulative impacts analysis, all of which are planned in the same watershed, and in some cases *in the same roadless area*, as those at issue in the coal mining exception. These include:

- Petrox 2-APDs in Somerset Unit: Two APDs from Petrox Resources proposed for development in the Federal Somerset Unit, a 6,400-acre project area that *largely overlies the Pilot Knob Roadless Area* north of Somerset. A master development plan (MDP) has also been submitted to the Forest Service.[301] A Forest Service document describes the level of development proposed in the Somerset Unit: "24 Multiple Well Drilling Locations (up to 50 wells); 1 Centralized Processing Facility (compressor, etc); 7.4 miles of proposed roads reconstruction, and 7.8 miles of new road construction; 16.2 miles of (mostly) co-located pipelines; *Majority of proposed activities are within the Pilot Knob*

[298] *See Grand Canyon Trust v. Federal Aviation Administration*, 290 F.3d 339, 342 (D.C. Cir. 2002).

[299] United States Department of the Interior Bureau of Land Management and United Stated Department of Agriculture Forest Service, *Environmental Assessment, Dual Operator Proposal: Development of 25 Federal Natural Gas Wells and Associated Infrastructure on 5 Multi-well Pads* (Sep. 2015), attached as Ex. 82.

[300] *Id*. at 70.

[301] *Id*. at 75.

CR.)"[302] If the MDP and the SDEIS proposed action are both approved, then no part of the Pilot Knob Roadless Area will be untouched by roads and drill pads. The Petrox 2 APD project (as well as the MDP) would have significant on-the-ground impacts in the northern area of the Pilot Knob Roadless Area, widening and grading miles of rough, rutted, and wet jeep tracks there and scraping two well pads while the coal activity would degrade all of the roadless lands within the coal mine exception area.

- Deadman Gulch APD: SG has proposed an APD (12-89-30#1) inside the GE Deadman Gulch Unit adjacent to the Petrox Somerset Federal Unit within the Pilot Knob Roadless Area on lease COC 64169, again scraping well pads inside that area.[303]

- Huntsman Unit Proposal: SG has proposed drilling in the Huntsman Unit (COC 74403X), which includes three SG leases (COC 63886, 63888, and 63889). SG has proposed one APD there for well 10-89-31 #1 inside lease COC 63886.[304] The proposal is located in the watershed of the North Fork of the Gunnison River in the Huntsman Ridge Colorado Roadless Area. The Huntsman Unit is located just west of McClure Pass, approximately 10 miles from the Pilot Knob Roadless Area.[305] This unit includes the upstream reaches of the North Fork drainage.

- 150 Well Bull Mountain MDP: The Bull Mountain Unit Master Development Plan involves the exploration and development of up to 146 natural gas wells, 4 water disposal wells, and associated roads, pipelines and infrastructure on federal and private mineral leases, in the watershed of the North Fork of the Gunnison River.[306] The Bull Mountain Unit includes approximately 19,645 acres of federal and private subsurface mineral estate located about 30 miles northeast of the Town of Paonia and bisected by State Highway

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[302] Paonia Ranger District Natural Gas Projects, Project Description and Issues (emphasis added), attached as Ex. 83, available at https://drive.google.com/file/d/0B2JbC6r59_1KcVRwZm9iY0Z5eEk/edit (last viewed Jan. 15, 2016). *See also* See D. Webb, Roadless dispute clouds drilling proposal, Grand Junction Sentinel (Mar. 1, 2015) (describing proposal), attached as Ex. 84, available at http://www.gjsentinel.com/news/articles/roadless-disputeclouds-drilling-proposal (last viewed Jan. 15, 2016).

[303] BLM, Environmental Assessment, Dual Operator (Ex. 82) at 75.

[304] *Id*. *See also* BLM, webpage for Uncompahgre Field Office, Bull Mountain Master Development Plan EIS, http://www.blm.gov/co/st/en/BLM_Information/nepa/ufo/Bull_Mountain_EIS.html (last viewed Jan. 15, 2016).

[305] *See* BLM, *Categorical Exclusion DOI-BLM-CO-SO50-201-0035 CX* (August 2012), at 7-8 (maps), attached as Ex. 85, available at: http://www.blm.gov/pgdata/etc/medialib/blm/co/information/nepa/uncompahgre_field/ufo_nepa_documents0.Par.60636.File.dat/12-035CX%20SG%20USFS%20Lease%20Susp.pdf (last viewed Jan. 15, 2016).

[306] BLM, Environmental Assessment, Dual Operator (Ex. 82) at 74.

133. The Bull Mountain project area boundary is directly adjacent to the Pilot Knob Roadless Area, and about 8 miles from the Flatirons Roadless Area. The MDP and the proposed rulemaking here impact the same watershed (North Fork Gunnison), and many species of wildlife.[307]

- Spadafora Waste Disposal Pits: The Spadafora Water Storage Facility was approved by the Gunnison County Planning Commission on March 6, 2015. Three water storage pits, each with a pump station and a volume of about 9,240,000 gallons, will sit on roughly 19 acres and will store and recycle produced water for drilling and gas well operations, all within the watershed of the North Fork of the Gunnison River.[308] The Spadafora waste pits are located approximately six miles north of Pilot Knob Roadless Area.

The above actions are all documented as "reasonably foreseeable" actions by the Forest Service's Paonia Ranger District and are included in the cumulative impacts analysis in an EA for the Upper North Fork Valley. Yet this SDEIS does not even mention them, despite the fact that *the Petrox proposal and Deadman Gulch proposal are within the North Fork Roadless Area*. The other proposals are in close proximity to the North Fork Roadless Area, impact the same watershed and wildlife populations, and are considered reasonably foreseeable in the EA's cumulative impacts section. It is inexplicable that the SDEIS fails to mention them in its EIS for the same general area.[309]

The failure to mention the Bull Mountain MDP in the SDEIS is similarly baffling. The project area boundary is directly adjacent to the Pilot Knob Roadless Area, and about 8 miles from the Flatirons Roadless Area.

In an internal Forest Service document examining the Petrox 2 APD and MDP proposal, the agency acknowledges that "Major Project Concerns" include "*Cumulative effects associated with ongoing Bull Mountain EIS [and] roadless*."[310] And Colorado Parks and Wildlife has expressed alarm over the cumulative effects of the Bull Mountain project and others on wildlife of the Upper North Fork Valley. Comments submitted by the agency in April 2015 on the dual operator 25-well project north of Pilot Knob state:

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[307] The Bull Mountain MDP Draft EIS identified North Fork coal mining as among the projects or activities "having the greatest likelihood to generate potential cumulative impacts when added to the Bull Mountain Unit MDP alternatives." BLM, Bull Mountain MDP Draft EIS (Jan. 2015) at 4-11 – 4-12, excerpts attached as Ex. 86, available at http://www.blm.gov/style/medialib/blm/co/information/nepa/uncompahgre_field/13-22_bull_mountain.Par.23863.File.dat/Bull_Mtn_DEIS_Jan2015_508_reduced.pdf (last viewed Jan. 15, 2016). Beyond estimating the total acres disturbed by coal mining, however, the Bull Mountain MDP Draft EIS does not address the actual impacts of coal mining in its cumulative impacts analysis.

[308] BLM, Environmental Assessment, Dual Operator (Ex. 82) at 75.

[309] Other ongoing or foreseeable actions not addressed by the SDEIS are described in HCCA's scoping comments. HCCA Scoping Comment Letter at 66-69.

[310] Paonia Ranger District, Natural Gas Projects, Project Description and Issues (Ex. 83).

> The infrastructure in the adjacent Bull Mountain and Deadman Gulch Units and the facilities currently being developed on Federal and private lands in those areas will be used to recover the gas resources at the proposed pad locations discussed in this EA. As such, *these are connected actions under CEQ guidelines that should be addressed in a single NEPA document*.[311]

Comments submitted by CPW on these and related projects reflect this concern for cumulative impacts:

> *CPW recommends that BLM evaluate the proposed locations through a Master Development Plan or similar planning tool that provides a means to address*[] *the cumulative impacts to wildlife from all proposed oil and gas development in the area, including the Bull Mountain, Deadman Gulch, and Iron Point Units*. The infrastructure in the Bull Mountain and Deadman Gulch Units and the facilities currently being developed on Federal and private lands in those areas will be used to recover the gas resources at the proposed pad locations. As such, these are connected actions under Council on Environmental Quality (CEQ) guidelines that should be addressed in a single NEPA document.[312]
>
> *We are becoming increasingly concerned with the level of oil and gas development and potential landscape-scale impacts to wildlife populations* and recreational hunting and fishing opportunities in the area.[313]
>
> *The cumulative level of oil and gas development in the West Muddy Creek watershed is becoming a significant concern to CDOW*. The proposed MDP is adjacent to the 19,645-acre, 150 well plan of development being prepared by SG Interests for the Bull Mountain Unit.[314]
>
> Cumulative impacts to wildlife resources from the existing development patterns should be evaluated in a more comprehensive analysis of oil and gas development in the West Muddy Creek watershed prior to authorizing significantly expanded development.[315]

Comments from state and federal wildlife agencies and the public, as well as various Forest Service and BLM NEPA documents, paint a picture of an interconnected landscape with interconnected wildlife habitat, threatened by interconnected resource development. All of these projects are centered within one watershed: the upper reaches of the Upper North Fork Valley. They should be considered within the SDEIS's cumulative impacts analysis.

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311 Letter of J. Wenum, CPW to T. Stranathan, BLM re: 3160 (Ex. 22) at 2.

312 *Id*. at 3 (emphasis added).

313 *Id*. (emphasis added).

314 *Id*. at 2 (emphasis added).

315 Letter of J. Wenam, Colorado Division of Wildlife (June 30, 2010) (Ex. 23) at 1.

In sum, the roadless areas that make up the coal mine exception area are part of a larger landscape of the Upper North Fork Valley that is becoming increasingly impacted by coal mining and natural gas development. The North Fork Coal Mining Area exemption must be considered within the context of energy development actions in the North Fork Valley. Considering the high degree of disturbance caused by the current level of human activities to wildlife species and habitat near existing transportation routes, any incremental increase in negative impacts, short-term or long-term, such as additional roads, developments, or resource extraction, will have the cumulative effect of reducing wildlife habitat. As habitat is reduced, either directly or indirectly, populations of wildlife species become smaller in size and more isolated. The SDEIS's failure to consider the cumulative impacts of other past, present and reasonably foreseeable actions proximate to the proposed activities including, but not limited to, the impacts of mineral extraction on wildlife, violates NEPA.

C. The SDEIS Fails to Disclose The Cumulative Impacts Of Climate Change On Wildlife.

The estimated volume of recoverable coal resources made available by the coal mine exception is 172 million tons.[316] Besides the direct, indirect and cumulative impacts to wildlife from surface disturbing activities, the SDEIS should have disclosed the impacts to wildlife and habitat from burning over 170 million tons of coal and venting enormous amounts of methane. Climate change is directly and indirectly affecting the growth and productivity of forests[317] – directly due to changes in atmospheric carbon dioxide and climate, and indirectly through complex interactions in forest ecosystems. Climate also affects the frequency and severity of many forest disturbances.[318] It is predicted that many species will not be able to move into suitable habitat quickly enough to adapt to the changing climate.[319] Large changes in climate will reduce population, vigor, and viability of species that are spatially restricted, as in the proposed carve-out area where wildlife is confined to small and isolated habitats, mountaintops, and/or mountain streams.[320] For a more complete discussion of the growing impact of climate change on forest and wildlife health, please see our May 22 scoping letter.

With overwhelming consensus since 2012 that climate change will have significant impacts on wildlife and their habitat, it is unquestionable that a new direct, indirect, and cumulative impacts analysis for wildlife and their habitat should have been undertaken as part of this supplemental

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316 SDEIS at 29.

317 *See* EPA, Climate Impacts on Forests (updated Nov. 14, 2015), attached as Ex. 87, available at http://www3.epa.gov/climatechange/impacts/forests.html (last viewed Jan. 15, 2016).

318 J. Scholes, *et al.*, *Climate Changes 2014: Impacts, Adaptation, and Vulnerability, Part A.: Global and Sectoral Aspects, Contribution of Working Group II to Fifth Assessment Report of the Intergovernmental Plan on Climate Change, Chapter 4: Terrestrial and Inland Water Systems,* at 274 (2014), available at https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap4_FINAL.pdf (last viewed Jan. 13, 2016).

319 *Id*. at 275.

320 *Id*.

EIS process. The Forest Service is obligated to disclose the impacts on wildlife from climate change that would result from this exemption, which would allow access to coal and the venting of methane that otherwise would be inaccessible. An examination of SDEIS reveals that this analysis did not occur:

> It is not possible at this time using global climate models to predict the contribution to warming or other climate change effects (such as changes in the timing and distribution of precipitation or other weather events) from possible coal production on a local scale such as the North Fork Coal Mining Area. The climate change section the 2012 FEIS, and updated for this SDEIS, discussed potential future impacts in broad terms that might result from climate change.[321]

The SDEIS makes sweeping generalizations and broad statements concerning the impacts of climate change on the wildlife resources of the North Fork Coal Area,[322] and the extent of "analysis" of climate change impacts to flora and fauna in the affected landscape is limited to a few short paragraphs, none of which focus on the biota of the Upper North Fork Valley.[323] That discussion mentions only three specific wildlife species, two of which (White-tailed ptarmigan and wolverine) are most likely not present within the North Fork Coal Area.

The Forest Service has failed to conduct a hard look analysis of the impacts from climate change on the specific wildlife, including threatened, endangered and sensitive species, of the North Fork Coal Area. The significance of climate change and its impacts on Rocky Mountain wildlife has led the Forest Service's sister agency, USGS's Northern Rocky Mountain Science Center ("NOROCK"), to study the climate change nexus for both aquatic and terrestrial species.[324] Given the well-known fragility of species such as Canada lynx and native inland cutthroat species, it is critical that the Forest Service examine the ways that climate change will alter their habitat and population viability in the North Fork Coal Area. NOROCK has also identified climate change impacts to big game as a critical concern.[325] Of particular focus is how climate change-induced events such as decreased snow pack, early spring conditions, and increased drought may alter species migration routes and population numbers, influence disease prevalence such as brucellosis in feed grounds, and impact abundance of vegetation such as aspen.[326] An extensive and growing literature exists that examines the interaction between climate change and

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[321] SDEIS at 40.

[322] *Id*. at 47.

[323] *Id.* at 62-63.

[324] *See* Northern Rocky Mountain Science Center, Wildlife as Indicators of Climate Change (no date), attached as Ex. 88, and available at http://nrmsc.usgs.gov/science/feature/wildlife_climate (last viewed Jan. 15, 2016).

[325] *Id*.

[326] *Id*.

many of the species and habitat types prevalent in the North Fork Coal Area,[327] and the SDEIS is remiss in not considering this in its NEPA analysis.

V. THE SDEIS FAILED TO EVALUATE A RANGE OF REASONABLE ALTERNATIVES OR EVALUATE MITIGATION MEASURES.

A. NEPA Mandates That Agencies Evaluate All Reasonable Alternatives.

NEPA requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternatives uses of available resources." 42 U.S.C. § 4332(2)(E), (2)(C). The analysis of alternatives "is characterized as 'the heart' of the environmental impact statement." *Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999) (quoting 40 C.F.R. § 1502.14). In the EIS, the agency must "[r]igorously explore and objectively evaluate *all* reasonable alternatives" in response to a "specif[ied] ... purpose and need." 40 C.F.R. §§ 1502.13, 1502.14(a) (emphasis added); *see also New Mexico ex rel. Richardson*, 565 F.3d at 703 (stating that "an EIS must 'rigorously explore and objectively evaluate' all reasonable alternatives to a proposed action, in order to compare the environmental impacts of all available courses of action" (quoting 40 C.F.R. § 1502.14)).

Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded. *See Baltimore Gas & Elec. Co. v. Natural Res. Defense Council*, 462 U.S. 87, 97 (1983). While NEPA "does not require agencies to analyze the environmental consequences of alternatives it has in good faith rejected as too remote, speculative, or impractical or ineffective," it does require the development of "information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned." *Colo. Envtl Coal.*, 185 F.3d at 1174 (quotations and alteration omitted). *See also New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 708 (10th Cir. 2009). Courts hold that an agency need not provide a detailed study of alternatives that do not accomplish that purpose or objective, as those alternatives are not "reasonable." *Citizens' Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1031(10th Cir. 2002). Courts apply this same analysis to rulemakings such as the one at issue here, as well as to site-specific project. *See*, *e.g.*, *Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1243-44 (10th Cir. 2012) (applying NEPA's mandate that agencies analyze all reasonable alternative in a challenge to national Roadless Rule).

While an agency has some discretion in fashioning an action's purpose and need, agencies may not constrain the range of alternatives by "defin[ing] its objectives in unreasonably narrow terms." *City of Carmel-by-the-Sea v. United States Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997). *See also Wyoming*, 661 F.3d at 1244 ("agencies are not permitted to define the objectives [of a proposed action] so narrowly as to preclude a reasonable consideration of

[327] For further discussion of climate change impacts to wildlife, *see* HCCA Scoping Comment Letter at 66-69.

alternatives"); *Davis v. Mineta*, 302 F.3d 1104, 1119 (10th Cir. 2002); *Citizens' Comm. to Save Our Canyons*, 297 F.3d at 1030.

B. NEPA Mandates That Agencies Analyze Potential Mitigation Measures.

NEPA's statutory language implicitly charges agencies with mitigating the adverse environmental impacts of their actions. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-52 (1989); *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1522 (10th Cir. 1992). Mitigation measures are required by NEPA's implementing regulations. 40 C.F.R. §§ 1502.14(f), 1502.16(h).

The CEQ has stated: "All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperation agencies . . . ." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026, 18031 (March 23, 1981). According to the CEQ, "[a]ny such measures that are adopted must be explained and committed in the ROD." Forty Questions, 46 Fed. Reg. at 18036.

The Tenth Circuit has held that an agency's analysis of mitigation measures "must be 'reasonably complete' in order to 'properly evaluate the severity of the adverse effects' of a proposed project prior to making a final decision." *Colo. Envt'l Coalition*, 185 F.3d at 1173 (quoting *Robertson*, 490 U.S. at 352). Mitigation "must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated." *City of Carmel-by-the-Sea*, 123 F.3d at 1154 (quoting *Robertson*, 490 U.S. at 353).

"[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." *Robertson*, 490 U.S. at 353. A "perfunctory description," of mitigation, without "supporting analytical data" analyzing their efficacy, is inadequate to satisfy NEPA's requirements that an agency take a "hard look" at possible mitigating measures. *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998). An agency's "broad generalizations and vague references to mitigation measures ... do not constitute the detail as to mitigation measures that would be undertaken, and their effectiveness, that the Forest Service is required to provide." *Id.* at 1380-81. *See also Northwest Indian Cemetery Protective Association v. Peterson*, 795 F.2d 688, 697 (9th Cir. 1986), rev'd on other grounds, 485 U.S. 439 (1988) ("A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA."); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1988) ("Without analytical data to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a 'mere listing' of good management practices."). Moreover, in its final decision documents, an agency must "[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." 40 C.F.R. § 1505.2(c).

The CEQ also recognizes that the consideration of mitigation measures and reasonable alternatives is closely related. For example, CEQ's guidance on mitigation and monitoring states that "agencies may commit to mitigation measures considered as alternatives in an EA or EIS so

as to achieve an environmentally preferable outcome." Council on Environmental Quality, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact (Jan. 14, 2011) at 1 (hereafter "CEQ Mitigation Guidance"); *see also id.* at 6-7 ("When a Federal agency identifies a mitigation alternative in an EA or an EIS, it may commit to implement that mitigation to achieve an environmentally-preferable outcome.").

C. The Forest Service Must Evaluate Alternatives That Foreclose Exploration And Mining On Some Of The North Fork Coal Mining Area.

As noted above, the Forest Service defines the rulemaking's purpose as follows:

> to provide management direction for conserving approximately 4.2 million acres of CRAs while addressing the State's interest in not foreclosing exploration and development of coal resources in the North Fork Coal Mining Area.[328]

This statement thus anticipates that the purpose and need can be met by providing management direction for conserving roadless character while not foreclosing exploration and development for coal within *some* of the North Fork Coal Mining Area, while foreclosing exploration and development on other parts of the Area. Such an alternative will "*address*[] the State's interest" in potential future coal mining "in the … Area," without leaving the door open to exploration and development on every acre of the Area.

We appreciate that the Forest Service identified and analyzed in detail Alternative C, which protects wilderness capable lands from coal mine road construction. However, this is not the only reasonable alternative that the Forest Service must analyze. To provide the public and the decisionmaker with a range of reasonable alternatives, the Forest Service must analyze in detail the additional alternatives.

1. The Forest Service Must Evaluate An Alternative That Does Not Permit Road Construction for Coal Mining in the Pilot Knob Roadless Area.

The Forest Service must evaluate an alternative that does not permit road construction for coal mining or exploration in the Pilot Knob Roadless Area, for several reasons. First, protecting the Pilot Knob area would provide an alternative that would provide access to a greater volume of coal than Alternative C, but less than Alternative B, given the public and decisionmakers an additional opportunity to balance opportunities for coal mining against ecological values. Second, the Pilot Knob area is the least likely to be mined, given that no active mine is operating in the area now. By contrast, the Sunset Roadless Area is being actively mined and has pending lease applications from an ongoing mining operation. Third, the Pilot Knob area is geographically and ecologically distinct from the other roadless areas; protecting this area from road construction and mining will protect values that differ from those in the other roadless lands.

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[328] SDEIS at 1 (emphasis added). This purpose and need represents a change from that in the scoping notice. *See infra* at 96-97.

This alternative meets the rulemaking's purpose and need because it would not foreclose road construction for coal mining and exploration within the vast majority of the North Fork Coal Mining Area, including lands south of Highway 133 in the Sunset and Flatirons Roadless Areas. It would also better conserve the roadless character of the Pilot Knob area.

a. The 'Protect Pilot Knob' Alternative Provides A Unique And Intermediate Balancing Of Coal Production And Roadless Protection.

The Pilot Knob Roadless Area includes only that part of the North Fork Coal Mining Area north and west of Highway 133 and directly adjacent to lands leased by Oxbow's idled Elk Creek mine.[329] The area is approximately 4,900 acres in size, representing roughly one-fourth of the lands within the 19,700-acre exception area. Because the SDEIS assumes that the volume of recoverable coal is a multiplier of the surface area available for mining, this alternative would foreclose recovery of only 25% of the coal of Alternative A, leaving about 128 million tons available for mining. This amount is almost midway between the volume made available by Alternatives B (172 million tons) and C (95 million tons).[330] This alternative would thus provide an intermediate and unique alternative in terms of balancing the State's interest in not foreclosing exploration and development of most of the North Fork's coal resources with conserving roadless and natural values.

b. The 'Protect Pilot Knob' Alternative Protects Those Roadless Land Least Likely To Be Mined.

The "Protect Pilot Knob" alternative is also reasonable because while the State of Colorado may have an interest in "not precluding" coal mining and exploration within the Pilot Knob area, such development appears, at a minimum, to be less likely than coal mining in the other roadlesss areas, and, at most, may have already been effectively foreclosed. The only mine likely to develop the Pilot Knob Roadless Area – the only one with adjacent leases – is Oxbow's Elk Creek mine. That mine is idled, and has been for more than two years, due to mine fire which prevented the company from using its $100 million long wall mining equipment.[331] The mine has produced zero tons of coal since December 2013.[332]

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329 *See* SDEIS at 14, Figure 2-1.

330 SDEIS at 96, Table 3-19 (displaying coal tonnage for Alternatives B and C).

331 *See* A. Svaldi, Elk Creek Mine in Somerset will go idle, Denver Post (Dec. 2, 2013), attached as Ex. 89.

332 *See* Colorado Division of Reclamation, Mining and Safety (DRMS), Monthly Coal Detail Report, Jan. 2014 through Dec. 2014 (Feb. 2, 2015) at 2-3 (showing zero tons mined in 2014), attached as Ex. 90; Colorado DRMS, Monthly Coal Detail Report, Nov. 2015 (Jan. 11, 2016) (showing zero tons mined in 2015 through November, the last month for which DRMS figures are publicly available), attached as Ex. 5. The Forest Service noted that on March 5, 2015, Oxbow Mining announced that the "marketplace for coal is so soft there are no plans to re-open Elk Creek Mine at this time." *See* email of J. Robertson (Mar. 20, 2015) (Ex. 6).

Since scoping was initiated, additional evidence demonstrates Oxbow's intent to abandon mining at the area. Oxbow has:

- auctioned off virtually all of its movable equipment.[333]

- demolished much, if not all, of the infrastructure necessary for removing and processing coal at the site, including fans, conveyors and even buildings.[334]

- sealed its mine entries with cement walls, and sealed its ventilation shafts with "concrete caps."[335]

- received approval of the state mine regulatory agency to modify the use of the mine's private surface to uses unrelated to coal mining, including: generating electricity from methane; providing office space for Oxbow's sister company, Gunnison Energy, which produces natural gas; and providing land for a local firefighting district.[336]

Elk Creek's decision to liquidate its movable equipment, demolish its mining operations, seal its mine entries and ventilation shafts, and repurpose the mine's surface property demonstrates that

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[333] J. Stark, Colorado DRMS, July 2015 Terror Creek and Elk Creek Inspection Reports (Aug. 13, 2015) at 2 of 4 (noting that at the Elk Creek mine: "The remaining coal stockpile was sold and hauled off site several months ago and much of the remaining equipment was auctioned off. Some of this equipment, which is queued up at the Elk Creek facilities area and the pad for the coal stockpile, was being loaded and hauled away during the inspection."), attached as Ex. 91.

[334] L. Simmons, Colorado DRMS, Elk Creek Mine, C1981022, September Inspection Report (Oct. 7, 2015) at 3 of 13 (detailing long list of Elk Creek facilities removed and/or sold, including rock dust tanks, compressors, a fan, fan building, and ducting), attached as Ex. 92; L. Simmons, Colorado DRMS, Elk Creek October inspection report, C1981022 (Nov. 6, 2015) at 3 of 12 ("DEMCO of Buffalo, NY, have been contracted to do the structure demolition at the Elk Creek mine. At the time of the inspection they were in the process of cutting up the conveyor that had been damaged by fire. Their tentative schedule is to demolish the silos in February and to be off site in April of 2016"), attached as Ex. 93; L. Simmons, Colorado DRMS, C1981022, Elk Creek Mine November Inspection Report (Dec. 2, 2015) at 2 of 13 ("DEMCO contractors were on site working on the demolition of conveyors. The Reclaim, Silo Feed and Loadout Feed Conveyors, and the remaining section of the Sanborn Creek Mine Overland Conveyor … had been cut into manageable sections with a torch and piled at various locations around the site"), attached as Ex. 94.

[335] L. Simmons, Elk Creek Mine November Inspection (Ex. 95) at 2-3 of 13; L. Simmons, C1981022, Elk Creek Mine December Inspection Report (Dec. 30, 2015) ("The sealing of the portals was complete…. All fans had been removed from the site and all the vent shafts had been filled and capped."), attached as Ex. 95.

[336] *See* letter of J. Kiger, Oxbow Mining to R. Reilly, Colorado DRMS (July 31, 2015) (proposing to change land uses at Elk Creek mine), attached as Ex. 96; letter of L. Simmons, Colorado DRMS to J. Kiger, Oxbow Mining (Dec. 1, 2015) (approving Oxbow's proposal), attached as Ex. 97.

this mine – or any other that might replace it – will be unable to operate in the medium- to long-term, absent a massive infusion of new capital.

The unlikelihood that any mine will reopen is reinforced by the general downward trend in the coal market. Over the next five years, U.S. domestic demand for coal is expected to drop 20%, and U.S. seaborne exports are estimated to fall by more than 40%.[337] There is thus little, if any, demonstrated need for "not foreclosing exploration and development of the coal resources" in the Pilot Knob Roadless Area. Opening the area to road construction for mining will not achieve the project's purpose of addressing the State's interest in exploration and mining because there is little evidence that any entity is currently interested or capable of mining coal there.[338]

In short, whatever economic interest the State has in promoting coal mining at the expense of roadless areas is unlikely to be realized in the Pilot Knob Roadless Area via Oxbow's defunct mining operations. At a minimum, it is simply far less likely that coal reserves in Pilot Knob will be exploited than those adjacent to the still-operating West Elk mine. We are aware of no company that has an interest in acquiring leases, or exploiting the current leases, in Pilot Knob. If the Forest Service is aware of such interest, it should inform the public in any subsequently prepared NEPA document. By taking the least-likely-to-be-mined coal off the table, the "Protect Pilot Knob" alternative will protect the State's interest in not foreclosing exploration and development of most of the North Fork's coal resources, and those most likely to be mined.

The SDEIS dismisses the "Protect Pilot Knob" alternative from detailed consideration on three grounds, none of which has merit. First, the SDEIS argues that "Oxbow Mining, LLC has continued to show interest to mine in the area as recently as the scoping period for this SDEIS."[339] That apparent interest is a May 2015 letter from an Oxbow official expressing the "hope[]" that economics might improve sufficient to allow Oxbow to "reenter the mine."[340] Oxbow's action in sealing its mine, selling or demolishing structures essential to mining and shipping coal, and transferring the use of remaining structures to a local fire district and natural

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[337] McKinsey & Company, "Downsizing the US coal industry: Can a slow-motion train wreck be avoided?," (Nov. 2015) at 6-7, attached as Ex. 98.

[338] As discussed in scoping comments (*see* HCCA Scoping Comment Letter (May 22, 2015) at 61-62), the Forest Service must also explain why it seeks to reward this operator – Oxbow – with the ability to potentially mine coal in the Pilot Knob Roadless Area, given the company's recent and systematic failure to comply with rules meant to protect public lands. The SDEIS did not respond to these comments. We request that any subsequently prepared NEPA document respond to this concern.

[339] SDEIS at 10. *See also* SDEIS Appendix B at B-1 ("During the public scoping period, Oxbow LLC provided comments maintaining their interest in coal mining opportunities within the Pilot Knob CRA.").

[340] Letter of M. Ludlow, Oxbow Mining to Colorado Roadless Rule (May 20, 2015), attached as Ex. 99. This letter predates Oxbow's subsequent actions demolishing many of its structures and mining facilities.

gas development company speak louder than words.[341] At most, Oxbow basing its potential to return to mining on "hope" for a turn-around in the coal industry does not contradict the fact that mining remains less likely at Pilot Knob than it does in the Sunset Roadless Area.[342]

Second, the SDEIS asserts that "even if Oxbow Mining closes their operations in the area, another company could operate in this area."[343] But Oxbow has closed its operations. The fact that another company *could* operate in the area highlights the fact that none have expressed interest, and underscores the contrast between Pilot Knob, where coal operations are not ongoing and never may be again, and the Sunset Roadless Area, where coal operations continue.

Third, the SDEIS argues that the "Protect Pilot Knob" alternative cannot be considered because "inclusion of the Pilot Knob Roadless Area meets the purpose and need for this SDEIS."[344] This statement is irrelevant and misleading. The fact that including Pilot Knob in the lands to be open for coal mine road construction meets the purpose and need does *not* mean that excluding Pilot Knob does not *also* meet the purpose and need. The stated purpose and need for reinstating the North Fork coal mine area exception is to provide direction for conserving roadless lands "while addressing the State's interest in not foreclosing exploration and development of coal resources in the North Fork Coal Mining Area." Opening 75% of the recoverable coal in the North Fork coal mining area, as the "Protect Pilot Knob" alternative does, addresses the State's interest in not foreclosing all coal development in the North Fork. Further, it is arbitrary and capricious for the Forest Service to conclude that opening 75% of North Fork roadless coal to mining does not meet the purpose and need while simultaneously considering in detail Alternative C, which opens even less of such coal to mining.

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[341] Further, a month before sending the May 2015 letter to the Forest Service, the president of Oxbow told BLM that the company wished to continue the ongoing five-year suspension of operations at Elk Creek mine, and declined to provide a date when the company would reenter the mine because "[w]e are uncertain at this time when economic conditions will improve sufficient to justify" reentry. Letter of M. Ludlow, Oxbow Mining to C. Beecham, BLM (Apr. 7, 2015), attached as Ex. 100.

[342] The Forest Service may also point to a lease by application Oxbow submitted to BLM in 2014. *See* letter of K. Free, BLM to Oxbow Mining, LLC (Apr. 29, 2015) (acknowledging Oxbow's September 2014 coal lease by application for the Elk Creek Mine), attached as Ex. 101. That application predates Oxbow's actions in selling its equipment and demolishing its structures, and those actions speak louder than words.

[343] SDEIS at 10. *See also* SDEIS Appendix B at B-1 ("Even if an existing coal company in the area is no longer interested or able to mine, another company could take advantage of the opportunity.").

[344] SDEIS at 10. *See also* SDEIS Appendix B at B-1 ("[t]he state specific concern is the stability of local economies in the North Fork Valley recognizing the contribution coal mining provides to those communities. Coal mining opportunities in this area is [sic] a means of providing community stability.").

c. The 'Protect Pilot Knob' Alternative Would Protect A Geographically And Ecologically Distinct Landscape.

Analyzing an alternative that would protect the Pilot Knob Roadless Area from road and drill pad construction would serve a critical role in the NEPA process by ensuring that the Forest Service evaluated the values and resources within Pilot Knob that would be damaged by coal development, and contrasted that harm to those resources with the values at stake in the other two roadless areas.

The Pilot Knob Roadless Area differs from the Sunset and Flatirons Roadless Areas. While Sunset and Flatirons are part of a larger complex of wildlands adjacent to the West Elk Wilderness, and south and east of the North Fork of the Gunnison, Pilot Knob, on the north side of the river, is part of the forest that descends from the Muddy Creek drainage toward the North Fork. Pilot Knob has slopes that generally face south; those in the other two areas generally face west and north. As a result, the lands of Pilot Knob that overlap the North Fork coal mining area are generally drier and typified by less forest and more grasslands and more areas dominated by shrubs.[345] The "Thousand Acre Flats" area – a large, generally tree-less landscape, is found here.[346] As a result, Pilot Knob has the only winter range for deer and bald eagles found in the North Fork Coal Mining Area, and the only severe winter range for elk in the area.[347]

Criss-crossing the Pilot Knob area with roads and methane drainage wells will thus have different impacts, and impact different wildlife habitat in different ways, than will roads and drilling pads in the other roadless areas. Analyzing a "Protect Pilot Knob" alternative would serve the critical function of disclosing the differences and tradeoffs between protecting the values of the Pilot Knob area as opposed to those of the other areas. In dismissing the "Protect Pilot Know" alternative without consideration, the SDEIS failed to even address this issue.

D. The Forest Service Must Revoke The Proposed Rule's Modified Purpose And Need, Or Consider A Wider Range Of Alternatives.

The SDEIS reflects a change to the proposal's "purpose and need." Because the revised purpose and need does not properly reflect the actual purpose of the proposal or the

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[345] *See* Earthjustice, Map, Vegetation Cover - Type (Ex. 35).

[346] *See* Gunnison National Forest, "1000 Acre Flats Trail #806," (no date), attached as Ex. 102, available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5310592.pdf (last viewed January 15, 2016).

[347] *See* Earthjustice, Map, Elk (Ex. 30); Earthjustice, Map, Mule Deer (Ex. 31); Earthjustice, Map, Bald Eagle (Jan. 11, 2016), attached as Ex. 103. *See also* U.S. Forest Service, Draft EIS, Colorado Roadless Rule (2008), Appendix F at F-3 (listing distinct "special status species … known or likely to occur" in Pilot Knob, including bald eagle and purple marten, that are not likely to occur in the Sunset Roadless Area, and indicating Pilot Knob is a "big game winter area" although Sunset is not), available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5053089.pdf (last viewed Jan. 15, 2016)

alternatives, we request that the Forest Service revert to the purpose and need established in the scoping notice.

In scoping, the Forest Service announced:

> The purpose and need for this supplemental EIS is to provide management direction for conserving roadless characteristics *within the area* while addressing the State interest in not foreclosing exploration and development of the coal resources in the North Fork Coal Mining Area.[348]

This purpose and need makes sense because the potential trade-off at the proposal's heart involves either protecting the roadless lands within the North Fork Coal Mining Area or opening the door to bulldozing roads and scraping well pads for coal mining across those same lands.

The SDEIS modifies the purpose and need so that it no longer focuses on the roadless character of lands "within the area."

> [T]he specific purpose and need for reinstating the North Fork Coal Mining Area exception is to provide management direction for *conserving approximately 4.2 million acres of CRAs* while addressing the State's interest in not foreclosing exploration and development of coal resources in the North Fork Coal Mining Area.[349]

Expanding the purpose and need to include roadless areas "across the State" is arbitrary and capricious because it ignores the fact that the 4.2 million acres across the State are already subject to whatever protection the Colorado Roadless Rule affords. Further, no alternatives in the SDEIS address "management direction for conserving 4.2 million acres across the State;" all alternative focus instead on management within the fraction of those millions of acres that are within the North Fork Coal Mining Area.

If the Forest Service intends to rely on this new purpose and need for its final EIS, that analysis must address a wider range of alternatives, including alternatives that provide enhanced protection for some or all of the 4.2 million acres of lands outside the North Fork Coal Mining Area to offset the degradation of roadless values within that Area.

Those alternatives should include revisiting additional upper tier protection for roadless forest across the State, as analyzed in Alternative 4 in the Colorado Roadless Rule 2012 FEIS. The original purported "trade-off" between roadless destruction in the North Fork Coal Mining Area did not address the billions of dollars in social costs due to coal mining and combustion (because the Forest Service failed to disclose them).

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[348] 80 Fed. Reg. 18598, 18599 (Apr. 7, 2015) (emphasis added).

[349] SDEIS at 1 (emphasis added). *See also* SDEIS Appendix B at B-1 ("The purpose of this proposal is to establish regulations to conserve roadless area values *across the State of Colorado* while not foreclosing coal mining opportunities within roadless areas *in the North Fork Valley*" (emphasis added)).

It thus is only reasonable that the Forest Service revisit a more protective alternative (Alternative 4) to offset the more destructive impacts of the coal mining exception, disclose its impacts, and make Alternative 4 an alternative that the agency can adopt in this rulemaking.

E. The Supplemental EIS Must Analyze Alternatives That Require Mitigation Measures That Limit Carbon Pollution.

As explained above, in an EIS federal agencies must "[r]igorously explore and objectively evaluate *all* reasonable alternatives." 40 C.F.R. sec. 1502.12, 1502.14(a) (emphasis added). This requirement is true both for site-specific projects and rulemakings. *Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1243-44 (10th Cir. 2012).

In the SDEIS, the Forest Service should have considered and analyzed mitigation measures that will reduce the climate pollution damage of coal mining that the proposed rule seeks to unleash. For example, we suggested that the Forest Service analyze in full:

- at least one action alternative that significantly reduces the climate change impacts of methane emissions caused by mining made possible by road construction within the North Fork Coal Mining Area. The Forest Service could achieve this goal by analyzing in full an alternative that: (1) requires any mine that will build roads within the North Fork Coal area to use best available technology to capture and/or combust the vast majority of methane to be emitted from the mine, including from methane drainage wells; and/or (2) requires any mine that will build roads within the North Fork Coal area to use best available technology to capture and/or combust a set amount (e.g., 33%, or 50%) of methane to be emitted from the mine. Technology in use today abroad and in the United States could significantly reduce such emissions.[350] Further, Oxbow is using flaring and capture technology at its closed Somerset mine to reduce methane's climate impacts while generating electricity.[351]

- at least one action alternative that offsets some or all of the climate change impacts likely to occur as a result of future mining, and of combusting the coal from, the North Fork Coal Mining Area. The Forest Service could achieve this goal by analyzing in full an alternative that: (1) includes as a mitigation measure a requirement that any mine seeking to construct roads within the North Fork Coal area offset all of the carbon emissions caused by mine operations, coal transport, and coal combustion, thereby making the mine "carbon neutral;" (2) includes as a mitigation measure a requirement that any mine seeking to construct roads within the North Fork Coal area offset a set amount (e.g., 33%, or 50%) of the carbon emissions caused by mine operations, coal transport, and coal combustion; (3) factors in the cost of greenhouse gas emissions and global warming when determining the fair market

[350] *See* letter of E. Zukoski, Earthjustice to G. Wallace, BLM (Mar. 17, 2009) at 42-48 (attached as Ex. 104).

[351] J. Blevins, Aspen Skiing Co. partners with coal mine for methane power, Denver Post (Nov. 12, 2012), attached as Ex. 105, available at http://www.denverpost.com/ci_21966674/aspen-skiing-co-partners-coal-mine-methane-power (last viewed Jan. 15, 2016).

> value of coal made available by the proposed rule; (4) includes as a mitigation measure a requirement that any coal mined from the coal mine exception area can only be sold to those facilities using Integrated Gasification Combined Cycle (IGCC) technology or verified carbon capture and storage (CCS) technology to significantly reduce the GHG emissions of downstream coal; (5) requires any coal mined from the coal mine exception area to be combusted in the U.S., or in a country with environmental standards for coal combustion that are equal to or stronger than those in the United States. Numerous tools exist to reduce or offset the harmful effects of greenhouse gas pollution.[352]

The Forest Service violated NEPA by failing to address any alternatives to mitigate the most significant, costly, and damaging impact at issue in this analysis: climate change pollution.

1. The Supplemental EIS Must Analyze Alternatives That Require Mitigation Measures That Limit Carbon Pollution.

   a. The Forest Service's Excuses For Declining To Evaluate Alternatives Lack Merit.

Here, the Forest Service refused to consider in detail any alternative incorporating any of the feasible methane capture or flaring technologies currently in use in this country for a litany of unavailing reasons: 1) "critical design criteria that bear upon the feasibility of such capture mitigation are too speculative at this time"; 2) these types of measures are typically considered later when specified tracts are proposed for leasing; 3) BLM published an Advanced Notice of Proposed Rulemaking studying the potential for that agency to institute a mine methane capture program for underground coal mines on public lands in April 2014; and finally, 4) that reinstating the coal mining exception "allows for infrastructure for the capture or use of methane."[353]

All of these excuses fail to justify the Forest Service's "head in the sand" approach to even considering feasible technologies that would dramatically reduce the methane emissions and climate impacts of the Forest Service's proposal.

First, the Forest Service never specifies which "critical design features" are so problematic as to preclude detailed consideration, nor does the agency provide any insight into why technologies currently in use at other mines are deemed "speculative." As explained in detail below, there are several methane capture or flaring technologies that are in use at mines both in the U.S. and elsewhere. These technologies are feasible, as evidenced by their current use at other coal mines and therefore not speculative. Agency refusals to consider alternatives are evaluated by courts under a rule of reason, often taking into account whether an alternative will serve the purpose and need of the proposal, whether an alternative is the same or very similar to the proposed action, and whether the alternative allows the agency to carry out the proposal in a different manner. Here, the proposal to require capture or flaring of methane is a reasonable alternative

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[352] See letter of E. Zukoski to G. Wallace (Ex. 104) at 42-48.

[353] SDEIS at 9.

that preserves the purpose and need of the proposal (would still allow for mining); entails significant environmental benefits (by significantly reducing methane emissions); and would allow the applicant to carry out the mining in the same manner with a simple additive of capture or flaring technology installed above the mine.

Moreover, NEPA Guidelines instruct agencies to consider alternatives broadly. The Guidelines direct federal agencies to "rigorously explore and objectively evaluate all reasonable alternatives;" "devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits;" and "include reasonable alternatives not within the jurisdiction of the lead agency."[354] The

Second, the Forest Service gives no legal justification for failing to consider mitigation measures at the earliest opportunity, simply because some other agency might consider incorporating them into a leasing decision made at a later date. The potential for mitigation to be considered later cannot absolve the Forest Service's NEPA's failures now. As the Supreme Court has stated, "omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action forcing' function of NEPA." *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 352, 371 (1989). Indeed, there is a long line of cases invalidating NEPA analyses because the agency EIS failed to include mitigation measures that should have been discussed, and none support an agency's refusal to consider an alternative simply because it might be considered at some unspecified date in the future. *E.g., Navajo Nation v. United States Forest Service*, 479 F.3d 9th Cir. 2007) (ski resort and failure to mitigate impacts of water use) *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002) (failure to adequately analyze mitigation for highway project).

Third, the Forest Service, apparently, would prefer to wait to study potential mitigation measures until after BLM publishes a final rule and provides its completed rulemaking. Again, the Forest Service offers no legal justification for refusing to consider any of the viable technologies that exist today simply because a different federal agency might be able to provide it with updated information on available technologies later. If the Forest Service wants to know the range and details of the technologies the public highlighted for BLM in comments in 2014, BLM can surely provide those comments to the Forest Service. The Forest Service does not need to wait for BLM to finalize a rulemaking in order to fully consider information that is available to the Forest Service now.

Finally, the Forest Service asserts that it does not need to consider available technologies to capture and use methane because opening up this roadless area would "allow for infrastructure" to actually capture and use the methane that, under the current proposal, would be vented into the atmosphere as waste. The agency does not get to dodge consideration of an alternative requiring mitigation on the justification that the preferred alternative makes that mitigation possible. That is the point. The mitigation is possible and must be considered.

[354] 40 C.F.R. § 1502.14(a)-(c).

b. Overview of Available Methane Capture and Flaring Technologies.

Because of methane's potency as a greenhouse gas, EPA has concluded that out of all the non-carbon dioxide greenhouse gases, methane "has the greatest mitigation potential."[355] This is also in part because methane has a significantly shorter atmospheric lifespan (12 years) compared to the lifespan of carbon dioxide (100 years and more).[356] Thus, reducing methane emissions has a greater effect in the short term to mitigate potential harms from climate disruption, and particularly during the next two crucial decades.

Existing coal mine methane capture operations are economical and feasible. As early as 2009, methane recovery projects were already operating at some of the gassiest mines in the U.S., and EPA concluded that there were numerous additional gassy mines where methane recovery projects could be developed.[357] As of 2006, at least 23 mines operated drainage systems, with drainage efficiencies in the range of 3% to 88%. Twelve of these mines already sell recovered methane, and two mines consume methane onsite for power generation and to heat mine ventilation air. Mines that already use drainage systems may be especially good candidates for the development of cost-effective methane recovery and use projects. BLM staffers acknowledge this feasibility. Nearly seven years ago, a BLM staffer evaluating a mine expansion in Colorado concluded:

> Clearly, there are very real limitations to the applicability of CMM [coal mine methane] projects. However, *they have been successfully demonstrated in many places* and we need to *fully and honestly explore the possibilities* before we claim we cannot require or even allow them . . . .[358]

It is worth noting that EPA has an entire program decided to encouraging coal mines in the U.S. and around the world to mitigate or eliminate methane emissions.[359]

Coal mines around the world are successfully and efficiently incorporating capture, use, or destruction of waste-mine methane and ventilation air methane as described below. At least one major coal company – CONSOL Energy – has said that it will build on its current methane

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[355] EPA, Mitigation of Non-CO2 Greenhouse Gases in the United States: 2010 to 2030 (April 2014), attached as Ex. 106, available at http://www3.epa.gov/climatechange/Downloads/EPAactivities/Non_CO2_US_Summary_Report_SinglePg.pdf (last viewed Jan. 14, 2016).

[356] http://epa.gov/climatechange/ghgemissions/gases/ch4.html (last visited Jan. 13, 2016).

[357] EPA 2009 STUDY: IDENTIFYING OPPORTUNITIES at 1-4 (2009), attached as Ex. 107.

[358] Email of A. Worstell, BLM to B. Sharrow, BLM (May 7, 2009 2:11 PM) (emphasis added), attached as Ex. 108.

[359] For more information on EPA's Coalbed Methane Outreach Program, *see* http://www.epa.gov/cmop/ (last visited Jan. 13, 2016).

capture projects to "evaluate options for generating electric power from low-quality methane streams that currently are intentionally vented or not captured."[360]

A 2007 EPA presentation documents numerous methods for preventing methane waste, including 10 capture and utilization projects at active mines in the United States that involve natural gas pipeline injection, mine air heating, and coal drying.[361]

- Capture and sale through pipeline injection. Methane released from ventilation wells is pressurized and injected into a commercial pipeline for sale.

- Capture and use for electricity production. Methane from drainage wells is used to fire generators to make electricity to power mine operations and to sell to the local power grid.

- Capture and use for production of process heat. Methane from ventilation wells is used in the boiler for supporting in-mine heating, and in coal-drying.

- Capture and conversion to liquefied natural gas. Methane from ventilation wells is turned into liquefied natural gas ("LNG") for transportation and sale to market.

- Flaring. Where none of the above options are technically feasible, flaring methane from ventilation wells is used to reduce the greenhouse gas potential of those emissions by 95% or more.

i. Waste Methane Capture and Use – Pipeline Injection

Mines can capture methane for: 1) pipeline injection and 2) recovery for electricity generation.[362] These options vary in cost-effectiveness according to regional energy prices and capital equipment requirements (including proximity to a commercial pipeline, and the terrain through

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[360] CONSOL, Corporate Responsibility Report (2012) at 53, attached as Ex. 109, available at http://www.consolenergy.com/CorporateResponsibilityReport/2012New/files/assets/common/downloads/Layout%201.pdf (last visited Jan. 13, 2016).

[361] *See* P. Franklin, US EPA Coalbed Methane Outreach Program, "Coal Mine Methane Recovery & Utilization in the United States" (Sept. 25, 2007), at 8-11, attached as Ex. 110, available at http://www.epa.gov/cmop/docs/cmm_conference_sep07/franklin_cmop_st_louis_sept2007.pdf (last visited Jan. 13, 2016). Additional documentation of methane utilization projects is available in the EPA Coalbed Methane Outreach Program Technical Options Series on the Coalbed Methane Outreach Program's website, www.epa.gov/coalbed/resources/technical_options.html (last visited Jan. 13, 2016).

[362] EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses: 2010-2030, EPA-430-R-13-011 (Sept. 2013) at II-9, Ex. 111, available at: http://www.epa.gov/climatechange/Downloads/EPAactivities/MAC_Report_2013.pdf (last visited Jan. 13, 2016).

which the mine must build additional pipeline).[363] In 2009, a study by the EPA found that many of the gassy mines in the U.S. "appear[ed] to be strong candidates for cost-effective recovery projects."[364] It should be noted that EPA's conclusions were made before the IPCC released the updated values concluding that methane has a global warming potential that is 86 times that of CO_2 is used. When this higher figure is used, all of the techniques above become cost-effective.

For injection into pipelines, generally methane must have a concentration of at least 95% and contain no more than 2% concentration of inert gases (*i.e.*, carbon dioxide, nitrogen, helium).[365] Coal mine methane is typically free of hydrogen sulfide and other impurities, and requires little or no additional treatment and processing aside from water removal.[366] Because of the high methane concentrations required, pre-mining degas wells are preferred for pipeline injection, though high-quality methane obtained from gob wells may, in some cases, be upgraded to pipeline quality by blending with pre-mine drained gas or removing oxygen.[367]

Capture and sale of waste methane has been feasible for decades. For example, CONSOL energy first began capturing and selling methane in the 1980s,[368] and continues to profitably sell captured methane today.[369]

As of 2009, EPA found that twelve of the gassiest mines in the US already sold recovered methane.[370] For example:

- The Alpha coal gas recovery project in Pennsylvania captures methane from pre-mine degasification of the coal seam, with the extracted gas processed and delivered to a pipeline. [371]

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[363] *Id.*

[364] EPA 2009 STUDY: IDENTIFYING OPPORTUNITIES (Ex. 107) at 1-7.

[365] *Id.* at 2-9.

[366] *Id.*

[367] *Id.*

[368] CONSOL 2014 Form 10K at 5 (CONSOL Energy entered the natural gas business in the 1980s capturing methane from coal seams prior to mining), attached as Ex. 112, available at http://www.sec.gov/Archives/edgar/data/1070412/000107041215000009/cnx-123114x10k.htm (last viewed Jan. 13, 2016).

[369] *Id.*; *see also* Scheyder, Ernest. Reuters. "PREVIEW-Consol to showcase coal-to-gas move after new U.S. EPA rules" (June 11, 2014) ("Consol captures coal bed methane . . . and sells it at a profit"), available at http://in.reuters.com/article/2014/06/11/consolenergy-epa-idINL2N0OQ1N320140611 (last visited Jan. 13, 2016).

[370] *See* EPA 2009 STUDY: IDENTIFYING OPPORTUNITIES (Ex. 107).

[371] Sindicatum, Coal Mine Methane, US: Alpha CGR, Pennsylvania, attached as Ex. 113. available at www.sindicatum.com/portfolio_item/coal-mine-methane-us-alpha-cgr-pennsylvania/ (last visited Jan. 13, 2016).

- Cliff's Oak Grove mine in Alabama recovers a total of 140,000 cubic feet of 90 percent high concentration methane each day, and directs it into the natural gas pipeline.[372]

ii. Waste Mine Methane Capture and Use – Electricity Production

Coal mine methane can be used to power generators to make electricity to power mine operations, and to sell to the local power grid.[373] EPA has found that this option can utilize methane in concentrations as low as 30% – much lower than is required for pipeline injection.[374]

Moreover, General Electric markets its Jenbacher engines based on how effective they are at using low concentration, variable methane emissions, at concentrations down to 25%.[375] Utilizing this option could result in significant savings to coal mines due to the energy-intensity of coal mining operations.[376] Coal mining can demand more than 24 kWh per ton of coal produced, and ventilation systems alone can occupy up to 60% of a mine's electricity usage.[377] The EPA estimates that total installed capital cost for implementing a 2 MW facility would be $4.5 million, and estimates annual net income from the operation to be $400 thousand.[378] This is a return on investment of 8.9%.

Other examples include:

- In November, 2012, a $6 million, 3 MW power plant fueled by coal mine methane from the Elk Creek coal mine in Colorado began producing power.[379] The coal mine methane is captured from coal mine emissions with an approximately 30% concentration of

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[372] Cliffs, 2012 Sustainability Report, attached as Ex. 114, available at www.cliffsnaturalresources.com/EN/CorpResponsibility/ArchivedReports/Sustainability2012/Pages/default.aspx (last visited Jan. 13, 2016).

[373] EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses (Ex. 111) at 34.

[374] *Id.*

[375] GE Energy, Promotional flyer (2009), attached as Ex. 115

[376] EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses (Ex. 111).

[377] *Id.*

[378] *Id.* at II-10 to II-11. The EPA estimates annual Operating and Maintenance costs of $800,000 and annual revenues from electricity sales as $1.2 million based on an electricity price of 7.5 cents/kWh.

[379] EPA, Coalbed Methane Extra, EPA-430-N-00-004 (Winter 2013) at 7, attached as Ex. 116 available at: www.epa.gov/cmop/newsroom/newsletter.html (last visited Jan. 13, 2016); J. Blevins, Denver Post, "Aspen Skiing Co. partners with coal mine for methane power" (Nov. 9, 2012), attached as Ex. 105, available at: www.denverpost.com/ci_21966674/aspen-skiing-co-partners-coal-mine-methane-power (last visited Jan. 13, 2016).

methane.[380] The project is estimated to reduce emissions by 96,000 tons of CO_2e per year.[381]

- CONSOL Energy installed a 200 kW microturbine powered by CBM at its Fallowfield gas processing plant in Pennsylvania. The system will prevent emissions of nearly 6,500 tons of CO_2e per year, and continuously while using gas with low methane content of only around 33%. An executive from Capstone, the company that manufactured the turbine, observed that such "microturbines . . . can easily operate on methane gas, produce extremely low emissions, and are exceptionally reliable."[382]

- In Australia, the 32 MW German Creek Power Station at the German Creek Coal Mine utilizes captured methane to produce an estimated 250,000 MWh per annum.[383]

- In Kazakhstan, coal mine methane ("CMM") from the Lenina Mine powers a generator that produced more than 8.7 million kWh between November, 2011 and early 2014, which is sufficient to reduce the electricity import of the mine by 20%.[384]

- Alkane Energy PLC in the UK has actively drained and sold methane for electricity generation from its Streetley and Markham mines, in addition to capturing methane from its abandoned mines. Alkane is also seeking to expand capture and sale at its Bevercotes, Whitwell, and Warsop mines.[385]

- The Duerping project in China produces 12 MW from CMM drained from the Duerping coalmine. Excess methane is flared. [386]

- Tunlan is a 24 MW CMM co-generation project in China utilizing captured CMM, of which the first phase of 12 MW is complete. Excess methane is flared.[387]

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[380] EPA, Coalbed Methane Extra (Winter 2013) (Ex. 116) at 7.

[381] *Id.*

[382] EPA, Coalbed Methane Extra, EPA-430-N-00-004 (Winter 2014) at 7, attached as Ex. 117, available at: http://www3.epa.gov/cmop/docs/Winter_2014.pdf (last visited Jan. 13, 2016); CONSOL, Corporate Responsibility Report (Ex. 109) at 51.

[383] Ecogeneration. "German Creek Power Station" (Nov./Dec. 2007), attached as Ex. 118, available at http://ecogeneration.com.au/news/german_creek_power_station/004239/ (last visited Jan. 13, 2016).

[384] EPA, Coalbed Methane Extra (Ex. 117) at 8, "Kazakhstan CMM Success Story."

[385] *Id.*

[386] Sindicatum, Coal Mine Methane, China: Duerping Phase 1 & 2, Shanxi Province, attached as Ex. 119, available at www.sindicatum.com/portfolio_item/coal-mine-methane-china-duerping-phase-1-2-shanxi-province/ (last visited Jan. 13, 2016).

[387] *Id.*

In sum, there is a mature industry in using coal waste methane to generate electricity.

iii. Waste Mine Methane Capture and Use – Process Heat

Mines can also recover gas 1) for use in the boiler for supporting in-mine heating, and 2) for use in coal-drying.[388] For use in mine-heating, existing boilers may need to be retrofitted to burn methane.[389]

For coal-drying, the existing coal-drying process can be retrofitted to burn methane in addition to burning coal.[390]

iv. Waste Mine Capture and Use – Liquefied Natural Gas ("LNG")

Methane from ventilation wells could potentially be essentially frozen and turned into liquefied natural gas ("LNG") for transportation and sale to market.[391] The EPA supported a demonstration project for conversion to LNG at the Zory coal mine in Poland, as well as at six mines in the Chongquing municipality of China.[392,393] The Zory project "proved that the [coal mine] methane resources . . . represent a promising potential for extraction and conversion to LNG in a way which is technically feasible and economically viable in the near future."[394]

v. Waste Mine Methane Flaring

Where it is technically infeasible to capture and use waste methane (and only under these circumstances), it can feasibly be flared where methane concentrations are greater than 30%

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[388] EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses (Ex. N111) at II-11.

[389] *Id.*

[390] *Id.*

[391] *See* Ray Zahradnik, Conversion of Coal Mine Methane to LNG for Heavy Vehicle Fuel (April 19, 2005), attached as Ex. 120, available at http://www.epa.gov/cmop/docs/cmm_conference_apr05/ray_zahradnik.pdf (last viewed Jan. 15, 2014).

[392] *See* U.S. EPA, The U.S. Government's Methane to Markets Partnership Accomplishments (Oct. 2009) at 16-17, attached as Ex. 121, available at: http://www.epa.gov/globalmethane/pdf/2009-accomplish-report/m2m_usg_fullreport.pdf (last visited Jan. 13, 2016).

[393] *See* EPA, "Feasibility Study of CMM Utilization for Songzao Coal and Electricity Company Coal Mines." (May 2009) at 85-105, attached as Ex. 122, available at www.epa.gov/cmop/docs/feasibility_study.pdf (last visited Jan. 13, 2016).

[394] Institute for Ecology of Industrial Areas, Katowice, Poland. "Methane to LNG Zory Coal Mine Project Final Report" (February 2010) at 78. attached as Ex. 123. Available at https://www.globalmethane.org/data/348_lng2m_raport_final_8_12_10.pdf (last visited Jan. 13, 20164).

using burners where the flame is exposed (open) or enclosed in a stack.[395] EPA proposed a conceptual design for a coal mine methane flare nearly 15 years ago.[396] Further, there is a long and safe history of flaring at working coal mines in the United Kingdom and Australia. Active mine flaring has been conducted in at least six UK Coal collieries.[397]

Flaring projects at underground mines exist in Australia, the United Kingdom, the United States, South Africa, China, and Mexico.[398]

- In 2012, Minera del Norte S.A. de C.V. (MINOSA) began operating flares at active coal mines in Mexico.[399] As of early 2013, MINOSA reported nearly 100% destruction efficiency, with no reported operational problems.[400]

- The Elk Creek Mine in Colorado incorporated an enclosed flare system, capable of oxidizing up to 3.7 million cubic feet of methane per day.[401]

- In addition, the Solvay Trona mine in Wyoming has utilized a mine gas flare, and is transitioning to a CMM utilization project.[402] The system has the capacity to capture or destroy 300,000 tons of CO_2e annually, and is expected to reduce emissions by 1.3 million tons CO_2e over its lifetime.[403]

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[395] EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses (Ex. 111) at II-12.

[396] EPA, Conceptual Design for a Coal Mine Gob Well Flare (Aug. 1999), attached as Ex. 124, available at http://www.epa.gov/cmop/docs/red009.pdf (last visited Jan. 13, 2016).

[397] *See* Harworth Power Ltd., CMM Flaring (Sept. 2007) at 5, attached as Ex. 125, available at www.epa.gov/cmop/docs/cmm_conference_sep07/uk_coal_flaring.pdf (last visited Jan. 13, 2016); Global Methane Initiative Coal Subcommittee, Policy White Paper ver 2.0, "Flaring of Coal Mine Methane: Assessing Appropriate Opportunities," August 2013, (describing flaring in a number of countries, including Australia), attached as Ex. 126, available at http://www.vesselscoalgas.com/Coal_Flaring_WP_Rev_Final_EPA.pdf (last visited Jan. 13, 2016).

[398] EPA, Coalbed Methane Extra, EPA-430-N-00-004 (Winter 2013) (Ex. 116) at 2.

[399] *Id.* (these flares were installed at the Mine VII in the Sabinas Basin and the Esmeralda Mine in the Saltillo Basin).

[400] *Id.*

[401] *Id.* The equipment has continued operating even as the coal mine operations at Elk Creek have been idled. EPA, Coalbed Methane Extra, EPA-430-N-00-004, "Elk Creek Mine Idled – CMM Project Still Operating" (Winter 2014) (Ex. 117) at 7.

[402] EPA, Coalbed Methane Extra, (Winter 2013) (Ex. 116) at 3, 6; EPA, "Methane Recovery at Non-coal Mines," attached as Ex. 127, available at www.epa.gov/cmop/docs/CMOP-Noncoal%20Flyer.pdf (last visited Jan. 15, 2015).

[403] EPA, Coalbed Methane Extra, EPA-430-N-00-004 (Winter 2013) (Ex. 116) at 6.

- The Beatrix Gold Mine in South Africa captures waste methane to power 4 MW of energy generation, which it anticipates will eliminate 1.7 million tons of CO_2e over its lifetime.[404]

At a conference sponsored by EPA in St. Louis in September 2007, evidence was presented that methane flaring at working coal mines is "[s]imple, low cost and reliable to operate" with "[l]ow maintenance requirements."[405]

In the U.S., a coal mine in Wyoming has put in place a system that is functionally equivalent to flaring (on-site incineration). MSHA's approval was apparently not required for this mitigation measure.[406]

vi. Ventilation Air Methane Capture and Use

Nearly 70% of total fugitive coal mine methane emissions are emitted through Ventilation Air Methane ("VAM") at low concentrations of less than 1%.[407] Yet, since 2007, demonstrations have shown that despite its low methane content, VAM may be successfully used in power production by utilizing Thermal Flow-Reversal Reactor Technology.[408] At the West Cliff Colliery in New South Wales, VAM with 0.9% methane content was used for combustion in gas-fired internal combustion engines, producing 6 MW of electrical power while consuming 250,000 cubic meters per hour (150,000 standard cubic feet per minute) of ventilation air at 0.9 percent methane.[409] The project reduced methane emissions by 13,095 tons per year.[410] Through the 3rd quarter of 2012, the project had produced over 180 GWh of electricity.

In 2009, the U.S. and China also agreed to a joint project "to generate electricity from ventilation air methane (VAM) at a Chinese coal mine."[411]

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[404] EPA, "Methane Recovery at Non-coal Mines" (Ex. 127).

[405] *See* Harworth Power Ltd., CMM Flaring (Ex. 125) at 6.

[406] *See* J. Liebert, Extracting Value from Coal Mine Methane, Coal Age (June 2009), attached as Ex. 128.

[407] Karacan, Ozgen, *et al.* "Coal Mine Methane: A review of capture and utilization practices with benefits to mining safety and to greenhouse gas reduction." International Journal of Coal Geology, 86 (2011) at 123.

[408] Somers, J.M. and Schultz, H.L. "Thermal oxidation of coal mine ventilation air methane," 12th U.S./North American Mine Ventilation Symposium 2008 – Wallace (ed) at 303, attached as Ex. 129, available at http://www3.epa.gov/cmop/docs/2008_mine_vent_symp.pdf (last visited Jan. 13, 2016).

[409] EPA 2009 STUDY: IDENTIFYING OPPORTUNITIES (Ex. 107) at 1-7.

[410] *Id.* (identifying methane reduction as 275,000 tons of CO2e, using a methane global warming potential of 21).

[411] EPA, Coalbed Methane Extra (Dec. 2009) at 1, attached as Ex. 130, available at http://www.epa.gov/cmop/docs/december_2009.pdf (last visited Jan. 13, 2016).

vii. Ventilation Air Methane Destruction

Where VAM is not used productively, as above, destruction of the methane at concentrations between 0.25% and 1.25% is possible through use of thermal or catalytic oxidation technology.[412] Oxidizers have been demonstrated successfully since 1994, when it was first used at British Coal's Thoresby Mine in Nottinghamshire, United Kingdom.[413] For concentrations below this amount, supplemental gas may be added to bring the concentration into the feasible range for destruction.[414]

EPA has compiled numerous examples of the use or destruction of VAM in coal mines in the U.S., U.K., Australia, and China by at least seven companies.[415]

Many mines around the world have begun incorporating VAM destruction into their operations:

- In 2012, Verdeo Sindicatum Corp. (Verdeo) began operating a Regenerative Thermal Oxidizer (RTO) powered by ventilation air methane (VAM) on a ventilation shaft at CONSOL Energy's McElroy coal mine in northern West Virginia. The system is capable of processing VAM with methane concentrations up to 1.2%, and will reduce emissions by 322,000 metric tonnes of CO_2e per year.[416] This is equivalent to the CO_2 emitted by a 50 MW coal-fired power plant.[417]

- CONSOL has also partnered with Green Holdings to install a VAM abatement system on the Enlow Fork Mine in Pennsylvania. As of 2012, the system was in its design stage, but will be capable of reducing emissions by 201,000 metric tonnes of CO_2e per year.[418]

- In 2007, the USEPA and CONSOL energy ran a demonstration project to oxidize simulated VAM emissions on the abandoned Windsor Mine in West Virginia.[419] The

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[412] EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses (Ex. 111) at II-12.

[413] Somers, J.M. and Schultz (Ex. 129) at 3.

[414] *Id.*

[415] *See* Environmental Protection Agency, Ventilation Air Methane (VAM) Utilization Technologies (Sept. 2009), attached as Ex. 131, available at http://www.epa.gov/cmop/docs/vam_technologies-12-2010.pdf (last visited Jan. 13, 2016).

[416] EPA, Coalbed Methane Extra, EPA-430-N-00-004, "Microturbine Installed at CONSOL Gas Processing Plant" (Winter 2013) (Ex. 116) at 6; CONSOL Corporate Responsibility Report (Ex. 109) at 51.

[417] CONSOL Corporate Responsibility Report (Ex. 109) at 51.

[418] *Id.*

[419] Somers and Schultz (Ex. 129) at 304-306.

project demonstrated that that the technology can effectively oxidize simulated VAM containing less than 1.0 percent methane.[420]

- The Mine Safety Health Administration in 2008 approved the use of technology to eliminate VAM at an active coal mine in Alabama.[421]

c. Case Study of Economically Feasible Capture and Flaring at the West Elk Mine in Colorado

In the case study attached to this comment letter, Ph.D. economist Dr. Tom Power demonstrates the economic feasibility of methane capture and flaring projects at the West Elk mine in Colorado.[422]

In 2009 BLM directed Mountain Coal Company, which owns and operates the West Elk Mine near Somerset, Colorado, to analyze the economic feasibility of capturing and using coal mine methane released into the atmosphere at West Elk. Mountain Coal Company, through a series of consultants, carried out a study but found that there were no available technologies that could capture methane in a way that was economically feasible.

Dr. Power's report provides a critical review of the Mountain Coal Company's economic analysis of the coal mine methane releases from the West Elk drainage wells. He concludes that there were in fact at least three economically viable means of capturing methane, two of which had been considered and rejected by Mountain Coal Company. These methane mitigation strategies include flaring, electricity generation, and conversion of methane into liquid natural gas (LNG). Notably, these alternatives became economically feasible when the economic value of reducing emissions of methane – a powerful agent in climate disruption – was incorporated into the analysis. The company's conclusion that there was no economically feasible solution to the methane waste problem was tied in part to its flawed assumption that there was no economic value associated with the reduction of methane emissions.

Moreover, rather than treating any pollution control technology as part of the cost of doing business, Mountain Coal Company asserted the need to make greater than a 10% return on investment in that technology in order to be considered economically feasible. While Dr. Power's analysis shows how the company could nonetheless meet that criterion, that should not be the standard for the Forest Service's evaluation of whether or not methane capture should be considered in detail as an alternative here.

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[420] *Id.* at 306.

[421] *See* Biothermica, VAMOX, Create Value with VAM, attached as Ex. 132, available at www.biothermica.com/sites/biothermica.com/files/Biothermica%20VAM%20Brochure.pdf (last visited Jan. 15, 2016). As the company touts, the system has been fully operational since March 2009 at Walter Energy's Mine No. 4 in Brookwood, Alabama.

[422] Thomas Power, An Economic Analysis of the Capture and Use of Coal Mine Methane at the West Elk Mine, Somerset, Colorado (Dec. 2011), attached as Ex. 133.

Finally, Dr. Power's case study refutes seven critical and erroneous assumptions that Mountain Coal Company made to support its rejection of economic feasibility, including the volume of methane available for use, the cost of operating methane collection systems, the cost of electricity generation (applicable where a mine uses recovered methane to generate electricity), the length of time methane recovery equipment can be used, and treating pollution control costs as a corporate commercial investment, among others.

d. The Supplemental EIS Must Consider an Alternative Requiring The Purchase Carbon Offsets to Mitigate Climate Pollution.

The Forest Service's SDEIS fails to consider the reasonable alternative of securing mitigation for climate harms by requiring mining companies that take advantage of the proposed North Fork mining exemption to purchase carbon offsets before securing final approval to mine publicly-owned mineral reserves. The Forest Service justified its refusal to consider this reasonable, available alternative by providing true but irrelevant statements: there is no Congressionally-mandated use of national offset markets or cap-and-trade program; and that requiring offsets is outside the scope of the agency's purview.[423] Neither justification has merit.

First, although it is true that Congress has not passed a law requiring coal mining companies to participate in any of the available national offset markets, that does not excuse the Forest Service's decision not to consider this proposed mitigation measure as a reasonable alternative. Neither this proposed alternative nor the use of offsets requires a mandatory national trading program created by Congress. There are several companies that provide the opportunity for the public to purchase retail carbon offsets sold in the voluntary market.[424] The process is straight-forward and could be utilized by coal companies that operate in Colorado. For example, here is how one company that sells voluntary carbon offsets describes its product: "Carbon offsets are purchased to . . . diminish the impact of your own GHG emissions . . . for emissions that are impossible to reduce, you can use funds to help reduce emissions elsewhere."[425] There is not valid reason for the Forest Service to exclude this reasonable alternative simply because Congress has not established a national carbon cap-and-trade program.

Second, that the Forest Service considers carbon offsets to be outside of scope of roadless area conservation is legally irrelevant. As noted above, NEPA regulations explicitly reject the Forest Service's reason for failing to consider a reasonable alternative. In fact, the regulations direct agencies to consider alternatives that are not just beyond the scope of the proposed project, but even those that are outside the jurisdiction of the lead agency. The regulations state that "agencies shall: . . . Include reasonable alternatives not within the jurisdiction of the lead

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[423] SDEIS at 9.

[424] *See* http://www.green-e.org/getcert_ghg_products.shtml (last visited Jan. 13, 2016) (listing eight different retail carbon credit companies that receive independent credit verifications from Green-e), attached as Ex. 134).

[425] TerraPass, http://www.terrapass.com/climate-change/carbon-offsets-explained/ (last visited Jan. 13, 2016), attached as Ex. 135.

agency."[426] The Forest Service may not want to consider an alternative that it considers to be beyond the scope of the proposed North Fork exemption, but that does not excuse the failure to do so.

Finally, coal mine methane has been included in several other voluntary emission reduction strategies that would make methane flaring or capture in the North Fork region more economical. The Climate Action Reserve ("CAR") comprises one of the largest, most experienced and illustrious offset registries in North America. The reserve sets high quality standards for carbon offset projects, oversees third party verification bodies, issues carbon credits and tracks transaction of credits over time in a transparent, publicly accessible system.[427] CAR adopted the Coal Mine Methane Project protocol which establishes standards and quantifies emission reductions for mine methane capture.[428]

The Verified Carbon Standard (VCS) similar to CAR is a voluntary greenhouse gas program, which employs Clean Development Mechanism (CDM) methodology, allowing emission reduction projects in developing countries to earn certified emissions credits.[429] They also encourage and promote the development of new, innovative emission reduction methodologies. The VCS currently include CMM emissions from surface, abandoned and underground mines.

The American Carbon Registry (ACR) oversees the registration and verification of carbon offset projects that follow approved carbon accounting protocols, and issues offsets in a transparent public registry in both the voluntary carbon market and California's regulated carbon market.[430] Both CAR and ACR have been approved by the California Air Resource Board to serve as an Offset Project Registry for the Compliance Offset program under the Cap-and-Trade program.

Additionally, the passing of Assembly Bill 32 (AB 32) and the Global Warming Solutions Act led to the establishment of California's Cap-and-Trade regulation, which sets an enforceable emissions cap that diminishes overall emissions over time. Although California has no active coal mines and does not cap CMM emissions, in 2013 the California Air Resource Board developed and adopted a coal mine methane emissions protocol that provides compliance offset credits to out-of-state coal mines.[431] CAR's coal mine methane protocol both informed and

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[426] 40 C.F.R. § 1502.14(c).

[427] Climate Action Reserve, Annual Report (2014), attached as Ex. 136, available at http://www.climateactionreserve.org/about-us/ (last visited Jan. 13, 2016).

[428] *Id*.

[429] CDM, "What is the Clean Development Mechanism," attached as Ex. 137, available at http://cdm.unfccc.int/about/index.html (last visited Jan. 15, 2016).

[430] ACR, "American Carbon Registry: What we do," available at http://americancarbonregistry.org/how-it-works/what-we-do (last visited Jan. 15, 2016).

[431] California Air Resources Board, Compliance Offset Protocol, Mine Methane Capture Projects (April 2014), attached as Ex. 138, available at http://www.arb.ca.gov/regact/2013/capandtrade13/ctmmcprotocol.pdf (last visited Jan. 13, 2016).

prompted the California Air Resource Board to adopt Compliance Offset Protocol Mine Methane Capture Projects to provide methods of quantifying GHG emissions reductions associated with the capture and destruction of methane from active and abandoned underground mines, as well as active surface mines.

Under California's Cap- and-Trade Program, private sector entities may use compliance offset credits to satisfy up to 8% of their compliance obligation.[432] These compliance offsets serve as tradable credits representing verified greenhouse gas emissions reductions or removal enhancements that meet regulatory criteria. MMC projects must be located in the US and comply with project eligibility criteria and regulatory program requirements. Details regarding eligibility and regulatory criteria can be found in the ARB's MMC protocol manual.[433] Offset credit verification services must be an approved ARB-accredited offset verification body such as the ACR or CAR.[434] The inclusion of compliance offset credits is intended to help incentivize voluntary GHG emission reductions and promote development of innovative projects and technologies both inside and outside of California.

The fact that there are two existing cap-and-trade programs that allow companies that emit GHGs to purchase offset credits for coal mine methane captured anywhere in the United States certainly changes the calculus of what is economically feasible for mines operating in the North Fork, and the Forest Service must take this into consideration.

VI. THE SDEIS FAILS TO DISCLOSE IMPACTS TO ROADLESS AND WILDERNESS VALUES.

The SDEIS fails to properly disclose the impacts of coal mine road and drill pad construction on roadless and wilderness character.

For example, the Colorado Roadless Rule Final EIS in part seeks to justify permitting road and drill pad construction throughout Pilot Knob, Sunset and Flatirons Roadless Areas based on the assumption that such impacts are temporary, and that reclamation has succeeded in eliminating impacts of prior bulldozing within a few years. The Final EIS states:

> About 75 miles of roads have been constructed or reconstructed since the 1960s in IRAs and CRAs on the GMUG National Forests for coal exploration, surface uses (such as methane drainage), and monitoring activities….
>
> Decommissioning has occurred on about 55 of these miles. Decommissioning by obliteration has been effective in restoring disturbed lands to the post-mining land use (livestock grazing and wildlife habitat) …. Based on experience in the West Elk [Inventoried Roadless Area], the decommissioning and subsequent

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[432] *Id.*

[433] *Id.*

[434] *Id.*

> reclamation (revegetation) is well-established two to three years after reclamation ….[435]

The Colorado Rule preamble itself goes even farther, claiming that "decommissioning roads by obliteration, along with land reclamation, effectively *restores* these underground mined areas."[436]

The SDEIS repeats this contention.[437] These statements are hyperbole at best. Reclamation activity, after several years, can and has, reestablished ground cover in some locations. But the areas will not be "restored" to their pre-bulldozed condition for generations, especially where mature aspen or spruce-fir forests are removed. Further, the vast majority of prior road and methane drainage well construction on forest lands at West Elk and Elk Creek mines, and thus lands where reclamation has been attempted, have occurred at elevations of 8,000 feet or less, whereas most of the coal mine exception lands within the Flatirons Roadless Area, and nearly all of it in the Sunset and Pilot Knob Roadless Areas, exceed 8,000 feet in elevation. The Sunset Roadless Area tops out at about 9,800 feet. At higher elevation, growing seasons are shorter, and recovery times longer. Vegetation eliminated by bulldozing will take even longer to recover in these areas.[438] The SDEIS does not address these issues.

The U.S. Fish and Wildlife Service also concluded that "restoring" habitat to its former state will likely not occur on West Elk mine's drill pads for 30-40 years, if ever. In assessing the impact of the Lease Modifications, the FWS stated: "lynx habitat may recover to year-round functionality approximately 30-40 years post disturbance."[439] Thus while reclamation may eventually lead to habitat restoration, that process will take a generation or more.

Further, while the Rule preamble claims reclamation "restores" areas, the GMUG National Forest concluded in its 2005 roadless inventory that road and drill pad clearing for exploration that occurred years before within a part of the Flatirons Roadless Area disqualified that area from wilderness consideration:

> The area west of Muddy Fork has been altered by temporary road construction [for coal exploration]; even though the roads have been closed, the remnants of those roads are of such a density that the area does not retain its naturalness nor a sense of remoteness.[440]

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[435] Colorado Roadless Rule Final EIS at 71

[436] Colorado Roadless Rule, 77 Fed. Reg. 39,576, 39,586 (July 3, 2012) (emphasis added).

[437] SDEIS Appendix B at B-7 ("past experience indicates that roadless values can be temporarily impacted and *restored* through proper reclamation" (emphasis added)).

[438] *See* HCCA Scoping Comment Letter (May 22, 2015) at 77-78 and exhibits attached (displaying limited success of reclamation at several sites).

[439] *See* letter of A. Pfister, FWS to C. Richmond, GMUG NF (June 16, 2010) at 3, attached as Ex. 139.

[440] GMUG National Forest, 2005 Roadless Inventory & Evaluation Of Potential Wilderness Areas (July 2006) at 52, excerpts attached as Ex. 140.

Thus, the Forest Service concluded that even the "remnants" of "temporary" roads for exploration, even after the roads were closed, degraded the area's naturalness.

The Forest Service cannot have it both ways. It cannot proclaim that the coal mine exception will have few impacts because the land can be promptly "reclaimed" and "restored," while concluding areas are so degraded by such actions that an area does not retain its "naturalness." The SDEIS fails to disclose the potential impacts of blanketing these roadless areas with an additional 480 drainage pads and 67 miles of road, given that reclamation will not "restore" the former habitat for decades, and that former vegetative structure and sense of naturalness that recreationists enjoy may also be eliminated over the medium- to long-term.

The SDEIS's only response is that reclamation has proven successful in the past (a dubious proposition), and that "[p]ast reclamation efforts indicate roadless values can be restored over time."[441] But how long will restoration take? Decades? Longer? The SDEIS does not estimate the time necessary for restoration, as it must to take a hard look at the proposed action's impacts.

Further the SDEIS's statement addresses only one component of wilderness character (roadlessness) that will be degraded on the wilderness-capable lands that are to bulldozing in Alternative B (but not Alternative C). Other components – naturalness, opportunities for solitude, sense of remoteness – may also be degraded, and could be degraded for many more years than roadlessness (the absence of a road), as the GMUG 2005 inventory indicated when it found "remnants of roads" in sufficient density rendered an area not natural enough to possess wilderness character. Neither the SDEIS nor the Colorado Roadless Rule disclose or analyze the potential for long-term damage to wilderness *capability*, which is, after all, the central reason the Forest Service chose to consider Alternative C (which protects wilderness capable lands). Any subsequently-prepared NEPA document must address the potential impacts of road and drill pad construction under Alternative B on the wilderness capable lands off-limits to road construction under Alternative C.

VII. THE FOREST SERVICE MUST RE-INITIATE CONSULTATION WITH THE FISH AND WILDLIFE SERVICE ON THE COLORADO ROADLESS RULE AND, SEPARATELY, CONSULT ON THE PROPOSED COAL MINE EXCEPTION.

The Endangered Species Act ("ESA") requires the Forest Service to consult with the Fish and Wildlife Service and prepare separate Biological Assessments ("BAs") regarding two distinct agency actions that may affect endangered species: 1) the ongoing 2012 Colorado Roadless Rule; and 2) the Forest Service's present proposal to open the North Fork roadless area to coal mining.

The ESA requires the Forest Service to consult with the Fish and Wildlife Service on "any action authorized, funded, or carried out by such agency." In the case of the Forest Service's proposed amendment to the Colorado Roadless Rule, the law requires formal consultation on two distinct agency actions that may affect endangered species: 1) the 2012 Colorado Roadless Rule; and 2)

[441] SDEIS Appendix B at B-7.

the Forest Service's present proposal to open the North Fork Coal Mining Area to road construction for coal mining.

Section 7 of the ESA, and the Fish and Wildlife Service's implementing regulations, establish a multi-phase process for consultation on the effects of agency actions. Once the presence of listed species and/or designated critical habitat is identified, the action agency prepares a Biological Assessment to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of species that are proposed for listing; or (3) adversely modify proposed critical habitat.[442] If the agency finds, and the Fish and Wildlife Service concurs, that the action is likely to meet any of those criteria, the Fish and Wildlife Service then prepares a Biological Opinion to determine whether or not a Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat.[443]

In 2012, the Forest Service prepared a Biological Assessment for the Colorado Roadless Rule as then adopted, which used the 2001 national Roadless Rule as a baseline.[444] The 2012 Colorado Roadless Rule BA contains a brief, general discussion of the impacts of road building for coal-mining in the North Fork roadless area, but does specifically address the impacts from coal-mining, nor does it address water depletions caused by coal-mining.[445] The 2012 Colorado Roadless Rule BA found the overall effects of the Colorado Roadless Rule, which addressed protection of about 4.2 million acres of roadless areas, to be beneficial.[446]

In 2014, a federal court set aside the North Fork Coal Mining Area exception to the Colorado Roadless Rule, leaving the rest of the rule intact. In response, the Forest Service began preparing the 2015 SDEIS to reinstate the vacated Coal Mine Exception. As part of its environmental review process, the Forest Service relied upon the 2012 Colorado Roadless Rule BA,[447] but noted two distinct problems with its ESA compliance.

First, the Forest Service noted that since the adoption of the 2012 Colorado Roadless Rule, changed circumstances and new information (including changes to a threatened species' known range, new listings and new critical habitat designations) compelled the agency to reinitiate

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[442] *See* 50 C.F.R. § 402.02.

[443] *See* 50 C.F.R. §§ 402.02, 402.14(h).

[444] *See* Forest Service, Rulemaking for Colorado Roadless Areas Biological Assessment (Revised) (February 2012) ("2012 Colorado Roadless Rule BA"), attached as Ex. 141.

[445] *See id.* at 27; SDEIS at 58.

[446] 2012 Colorado Roadless Rule BA (Ex. 141) at 44 ("The provisions of the Colorado Roadless Rule would generally provide a high level of protection for the 4.19 million acres of CRAs.").

[447] SDEIS at 50 ("The rationale and conclusions of effect about special status species for the 2012 FEIS generally apply given the relatively short time that has elapsed.").

consultation concerning a "portion of the earlier analysis" on the Rule, which at the time of reinitiation did not contain an exception for coal mining roads.[448]

Second, the Forest Service acknowledges a significant failure to consider likely adverse affects to listed species from coal mining:

> Our conclusion is that the 2012 determinations may have been in error, or at least should have been included in dialogue with the U.S. Fish and Wildlife Service during consultation but was not because of that determination (U.S. Forest Service is not required to consult on "no effects").[449]

Because the Colorado Roadless Rule, as of today, does not contain the coal mine exception, the issue of water depletions from coal mining is one that the Forest Service must address in a *separate* consultation on a *separate* action: the proposal to re-adopt the North Fork Coal Mine Area exception.

However, the Forest Service's stated course of action is to conflate these two distinct triggers for separate actions – (1) the ongoing implementation of the Colorado Roadless Rule; and (2) the proposed action of reinstating the coal mining exception – and combine them in a single re-consultation on a fiction that does not now exist: the Colorado Roadless Rule *including* the now-vacated coal mining exception. This violates ESA Section 7's requirement to evaluate "any action." The Forest Service has correctly determined that it must *re-initiate consultation* on the ongoing agency action of the Colorado Roadless Rule due to changed circumstances and new information, but has failed to understand that it must *consult* separately on its present, discrete proposed action—the North Fork Coal Mining Area exception. The Forest Service cannot, in determining whether its proposed action "may effect" listed species and/or designated critical habitat under the ESA, rely on potentially beneficial effects from other aspects of the 2012 Colorado Roadless Rule to offset adverse effects from the coal mining exception.[450]

In addition, the Forest Service must re-consult with the Fish and Wildlife Service regarding its ongoing action of implementing the Colorado Roadless Rule, but not only because of changes in species designations and known species range.[451] The Forest Service must also re-initiate consultation on the 2012 Colorado Roadless Rule because "new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered."[452] The 2012 BA contains several other gaps in the analysis of water

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[448] *Id.*

[449] *Id.* at 58.

[450] *See* Fish and Wildlife Service, Endangered Species Act Consultation Handbook, 4-19 (1998), attached as Ex. 142. ("When used in the context of the Act, "conservation measures" represent actions pledged in the project description that the action agency or the applicant will implement to further the recovery of the species under review.").

[451] *Id.* at 50.

[452] 50 C.F.R. § 402.16(b).

depletions, including the failure to properly account for the impacts of water depletions from oil and gas development allowed by the Colorado Roadless Rule.

Finally, the Forest Service cannot rely on the 2007 Biological Opinion regarding small water depletions associated with mineral development on the GMUG forests ("GMUG PBO") to address water depletions from coal mining, as the SDEIS argues.[453] The Forest Service cannot do so because, by its own terms, the GMUG PBO requires re-consultation when the endangered pikeminnow have not recovered to certain levels as of the Fish and Wildlife Service's 2015 review.[454] Based on the latest information available from the Fish and Wildlife Service, those population goals have not been met, and, therefore, the Forest Service cannot rely on the 2007 GMUG PBO.[455]

A. Legal Background: The Duties To Consult And Avoid Take

The ESA requires that: "all Federal Departments and agencies shall seek to conserve endangered species and threatened species." 16 U.S.C. § 1531(c)(1). An "endangered species" is a species of plant or animal that is "in danger of extinction throughout all or a significant portion of its range," while a "threatened species" is one which is likely to become endangered within the foreseeable future. 16 U.S.C. § 1532(6), (20). The operative core of the ESA is a list maintained by the Secretary of the Interior of threatened and endangered species. 16 U.S.C. § 1533(b)(3)(A).

At the heart of the ESA is Section 7, which places affirmative obligations upon federal agencies to consult with the Fish and Wildlife Service to ensure their actions do not jeopardize the continued existence of endangered species. Section 7(a)(1) provides that all federal agencies "shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species . . . ." 16 U.S.C. § 1536(a)(1). The directive of Section 7(a)(2) is even clearer: "Each Federal agency shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical . . . ." 16 U.S.C. § 1536(a)(2).

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[453] *Id.* at 58.

[454] *See* Fish and Wildlife Service, Reinitiation of Consultation for GMUG NF, No. ES/GJ-6-CO-99-F-033-CP602 (April 27, 2007) ("GMUG PBO"), attached as Ex. 143.

[455] *See* Fish and Wildlife Service, Draft 2014—2015 Assessment of Sufficient Progress Under the Upper Colorado River Endangered Fish Recovery Program in the Upper Colorado River Basin, and of Implementation of Action Items in the December 20, 1999, 15-Mile Reach Programmatic Biological Opinion and December 4, 2009, Gunnison River Basin Programmatic Biological Opinion (Sept. 2, 2015) ("2015 Sufficient Progress Memo"), attached as Ex. 144.

Thus, section 7(a)(2) imposes two obligations upon federal agencies: 1) a *procedural* requirement that agencies consult with the FWS to determine the effects of their actions on endangered or threatened species and their critical habitat; and 2) a *substantive* requirement that agencies ensure that their actions not jeopardize endangered or threatened species or their critical habitat. *See* 16 U.S.C. § 1536(a)(2); *Florida Key Deer v. Paulison,* 522 F.3d 1133, 1138 (11th Cir. 2008).

The ESA's requirements are triggered by any "agency action" that may jeopardize the continued existence of the species or adversely affect its habitat. 16 U.S.C. § 1536(a)(4). The meaning of "agency action" under ESA section 7(a)(2) is extremely broad. *See, e.g., NRDC v. Houston*, 146 F.3d 1118, 1125 (9th Cir. 1998). An agency action is "any action authorized, funded, or carried out" by a federal agency. 16 U.S.C. § 1536(a)(2). The phrase is further defined in ESA regulations as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies." 50 C.F.R. § 402.02. These include: "(b) the promulgation of regulations" and "(d) actions directly or indirectly causing modifications to the land, water or air." *Id.*

Each federal agency must review its "actions" at "the earliest possible time" to determine whether any action "may affect" listed species or critical habitat in the "action area." 50 C.F.R. § 402.14; 50 C.F.R. § 402.02. When there exists a chance that such species "may be present," the agency must conduct a biological assessment ("BA") to determine whether or not the species "may be affected" by the action. *See* 16 U.S.C. § 1536(c). The term "may affect" is broadly construed by the Fish and Wildlife Service to include "[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character," and is thus easily triggered. 51 Fed. Reg. at 19926. If a "may affect" determination is made, "formal consultation" is required and a biological opinion ("BiOp") must be prepared.

An agency must re-initiate consultation where the agency retains discretion and when "new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;" or "a new species is listed or critical habitat designated that may be affected by the identified action." 50 C.F.R. § 402.16.

Agency consultation on the effects of a proposed agency action, including a rule, must consider the direct, indirect, and cumulative effects of both the action itself and federal and non-federal actions that "are caused by or result from the proposed action, are later in time, and are reasonably certain to occur."[456] "Cumulative effects" are defined as "those effects of future State or private activities . . . that are reasonably certain to occur within the action area."[457] An "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."[458] "Effects" of the agency's action is further

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[456] Fish and Wildlife Service, Endangered Species Consultation Handbook 4-27 (Ex. 142); 50 C.F.R. § 402.02.

[457] 50 C.F.R. § 402.02; *see also Sierra Club v. United States*, 255 F. Supp. 2d 1177, 1187 (D. Colo. 2002).

[458] 50 C.F.R. § 402.02.

defined as "direct and indirect effects of an action on the species or critical habitat together with the effects of other activities that are interrelated or interdependent with that action."[459] Further, interrelated actions "are those that are part of a larger action and depend on the larger action for their justification," while interdependent actions "are those that have no independent utility apart from the action under consideration."[460]

Section 9 of the ESA prohibits the unlawful "take" of an endangered species, 16 U.S.C. § 1538(a)(1)(B), a term that is broadly defined to include harassing, harming, pursuing, wounding, or killing such species. 16 U.S.C. § 1532(19). The term "harm" means "an intentional or negligent omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." 50 C.F.R. § 17.3. The ESA's legislative history supports "the broadest possible" reading of "take." *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 704-05 (1995). "Take" includes direct as well as indirect harm and need not be purposeful. *Id.* at 704; *see also Nat'l Wildlife Fed'n v. Burlington No. R.R.,* 23 F.3d 1508, 1512 (9th Cir. 1994). If an action constitutes a take under Section 9 of the ESA, a party must apply for and be granted an "incidental take permit" ("ITP") from FWS pursuant to Section 10 of the ESA. 16 U.S.C. § 1539(a)(1)(B). If such a party takes a listed species without an ITP, the ESA authorizes civil and criminal penalties against that party. *See* 16 U.S.C. § 1540.

While the Forest Service has stated it must reconsult due to new listings, changes in listings, and its previous failure to account for water depletions from coal-mining, for this proposed rulemaking, and for the ongoing action of the Colorado Roadless Rule, the Forest Service's effects analysis must include an assessment of: 1) direct habitat loss for Canada lynx; 2) the effects to sage grouse unoccupied habitat; 3) all reasonably foreseeable water depletions from resource extraction and other activities; 4) pollution to be emitted by the reasonably foreseeable combustion of that coal; 5) the effects of extending the life of the West Elk mine on private land; and 6) any new information regarding the impacts of climate change, human population growth and development, and energy demand.[461]

B. The Forest Service Must Re-Consult With The Fish And Wildlife Service On The Ongoing Colorado Roadless Rule.

The Forest Service must re-initiate consultation on the Colorado Roadless Rule. The Colorado Roadless Rule, absent the North Fork Coal Mining Area exception, is an ongoing agency action

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459 *Id.*

460 *Id.*

461 *Diné Citizens Against Ruining Our Environment v. U.S. Office of Surface Mining Reclamation and Enforcement*, No. 12-cv-01275, slip op. at 13 (D. Colo. March 2, 2015) (citing 40 U.S.C. § 1508.8, *Utahns for Better Transp. v. U.S. Dep't of Transp.*, 305 F.3d 1152, 1176 (10th Cir. 2002)) (Agencies must analyze coal combustion impacts from mine expansion decisions when "(1) 'but for' the proposed expansion, the coal-combustion impacts would not occur and (2) the coal-combustion impacts are reasonably foreseeable.").

requiring consultation.[462] Indeed, in the SDEIS, the Forest Service acknowledged that it must re-initiate consultation for the Colorado Roadless Rule regarding new information and changed circumstances, including the listing of the threatened Gunnison sage-grouse; several other changes in species designations; the newly discovered presence of threatened greenback cutthroat trout "around the North Fork Coal Mining Area;" and critical habitat designation for the DeBeque phacelia.[463]

However, the Forest Service must also correct omissions in the 2012 Colorado Roadless Rule BA when re-initiating consultation. For instance, the Forest Service failed to consider the impacts of water depletions for numerous activities authorized by the Colorado Roadless Rule. The 2012 BA, the 2012 Final Environmental Impact Statement for the Colorado Roadless Rule, and the SDEIS all fail to quantify water depletions and the resulting impacts to species from several activities known to cause such water depletions that are foreseeable consequences of the Rule, including oil and gas operations, logging, fire suppression, road building, and snowmaking in ski areas. Yet the Forest Service presumably has this information in its possession, since the GMUG PBO requires the agency to submit yearly reports of water depletions to the Fish and Wildlife Service.[464] Further, the Forest Service understands these types of activities cause water depletions, as evidenced by some of its own analysis and BLM's analysis involving Forest Service land.[465] Indeed, the Forest Service has admitted that it makes such yearly reports regarding water depletions from resource development.[466] And, the Forest Service admitted that

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[462] *See* 2012 Colorado Roadless Rule BA; *Lockyer v. U.S. Dep't of Agric.*, 575 F.3d 999, 1018-19 (9th Cir. 2009) (finding nationwide Roadless Rule was agency action for purposes of consultation because it designated areas where logging and roadbuilding can and cannot occur); 50 C.F.R. § 402.16.

[463] SDEIS at 50-59.

[464] GMUG PBO (Ex. 143) at 3.

[465] *See., e.g.*, Bureau of Land Management, Final Environmental Impact Statement, Bull Mountain Natural Gas Pipeline ("Bull Mountain FEIS), p. 202 (estimating depletions of 5 acre feet per year), available at http://www.blm.gov/pgdata/etc/medialib/blm/co/information/nepa/glenwood_springs_field/2007_documents.Par.68015.File.dat/Bull_Mtn_Natural_Gas_Pipeline_FEIS_17july07.pdf), excerpts attached as Ex. 145; Fish and Wildlife Service, letter to Forest Service dated January 13, 2010, Consultation regarding the Tomichi Dome Geothermal Lease Nomination project in 2010 (estimating depletions of 11 acre feet per year, or 1 acre foot per year over an 11-year project period), ("Tomichi Dome Consultation") available at (http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/66280_FSPLT2_033262.pdf), excerpts attached as Ex. 146.

[466] SDEIS at 58 ("Each year the Forest reports the total volume of water depletions that are associated with resource development.").

the Colorado Roadless Rule would result in more oil and gas drilling and road-building as compared with the 2001 Roadless Rule.[467]

The Forest Service must consider new information relevant to effects on the threatened Gunnison sage-grouse as discussed in more detail in the next section. The Forest Service must also consider any new information regarding increasing human population growth and development, increasing energy demand, and the impacts of pollution caused by activities allowed by the Colorado Roadless Rule, such as oil and gas extraction, insofar as this new information relates to species covered by the ESA.

C. The Forest Service Must Consult With The Fish And Wildlife Service On Its New Agency Action: The Proposed Coal Mining Exception.

The Forest Service admits that coal mining in the North Fork, prohibited by the Colorado Rule at present but permitted by the North Fork Coal Mining Area exception as proposed, will result in water depletions that may affect the four endangered Colorado River fish.[468] But instead of consulting on this separate action, the Forest Service proposes to undertake a re-consultation on the Colorado Roadless Rule. The Forest Service cannot do so.

It is not enough to re-initiate consultation regarding the Colorado Roadless Rule. The Forest Service must also consult with Fish and Wildlife Service regarding the *separate* agency action of its present proposal to re-open the Coal Mine Exception. In examining the "no action" alternative in the SDEIS, the Forest Service stated that "[b]ecause roads are not authorized in CRAs other than under the exceptions, it is reasonable to conclude that the 2012 Colorado Roadless Rule is *overall positive* over the long term for conservation of species of special concern like Regional Forester sensitive species, compared to non-roadless area environments."[469] This "overall positive" determination, like the similar determination in the 2012 Colorado Roadless Rule BA, likely stems from the fact the Colorado Roadless Rule contains some protective provisions for some of the 4.2 million acres of roadless areas. While the 2012 BA's conclusion that the Colorado Roadless Rule was, on balance, beneficial to species

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[467] The Forest Service admitted that the adoption of the rule would result in about ten more oil and gas wells when compared with the 2001 Roadless Rule (the baseline). Compare Colorado Roadless Rule FEIS at 87, Table 3-11 with Colorado Roadless Rule FEIS at 91, Table 3-13. The proposed action would also result in 3 more miles of road overall, including 12 more miles on the San Juan National Forest; depletions may also occur as a result of the need to maintain and suppress dust on roads. *See id*; *see also id.* at 46, Table 2-7.

[468] SDEIS at 57-58.

[469] *Id.* at 56 (emphasis added). "The Forest Service further concluded that "the North Fork Coal Mining Area exception ... by itself does not compromise the 2012 programmatic determinations ['may adversely impact individuals, but not likely to result in a loss of viability in the planning area, nor cause a trend toward federal listing']." *Id.* at 59.

was based on the alleged benefit of the Rule over millions of acres of land,[470] the impacts of the Coal Mine Exception would be wholly negative—there is nothing beneficial about paving the way for the elimination of hundreds of acres of species' habitat by using heaving machinery to scrape forest down to bare dirt to construct roads and pads on otherwise protected habitat, depleting the waters upon which the species depend, or emitting harmful pollutants into the air. Thus by combining the two separate actions, the Forest Service apparently hopes that the alleged benefits of the Colorado Roadless Rule will counteract, and permit the agencies to ignore, the local and negative impacts of the coal mine exception. Further, the Forest Service stated for all alternatives considered, depletions are likely to be "sufficiently small" to fit within the terms of the GMUG PBO.[471]

Because these Forest Service assertions lack merit, the Forest Service must consult on the separate coal mine exception, and, in doing so, cannot rely on the GMUG PBO. First, after the Court's decision striking down the coal mine exception, [472] the proper baseline is the status quo—the Colorado Roadless Rule without the exception—and the re-institution of the coal mine exception thus constitutes a new agency action requiring separate ESA consultation.

Second, the Forest Service cannot attempt to minimize the impacts of the coal mine exception by lumping this new agency action, which is generally harmful to species due to water depletions and habitat disruption caused by coal extraction, together with the ongoing Colorado Roadless Rule, which offers varying levels of protection for about 4.2 million acres of land. That misconstrues the scope of the action at issue. The proper scope of this consultation will involve 20,000 acres in the North Fork Valley together with activities occurring on private lands that impact endangered, threatened, and sensitive species.

Third, the Forest Service's discussion of the North Fork Coal mining area in the 2012 Colorado Roadless Rule BA was generalized, and the 2012 Colorado Roadless Rule BA never distinctly addressed impacts of the coal mining exception, so any conclusions drawn from the 2012 Colorado Roadless Rule BA about the effects of coal mining are likely uninformed.

Fourth, the Forest Service's assumption in the SDEIS that impacts from the coal mine exception would be *de minimus* makes little sense in light of its express admission that the 2012 Colorado Roadless Rule BA entirely failed to account for impacts from water depletions due to coal mining.

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[470] As admitted by the FS, the 2001 national Roadless Rule would have been more protective to species than the Colorado Roadless Rule including the Coal Mine Exception. 2012 Colorado Roadless Rule BA (Ex. 141) at 44.

[471] SDEIS at 58 (for Alternative A), affirmed for Alternatives B and C on pages 59 and 61. Interestingly, the bulk of the discussion regarding impacts to Colorado River listed fishes occurs in the alternatives analysis regarding Alternative A, which does not authorize new coal mining. The GMUG PBO is further discussed in the following section.

[472] *See High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174 (D. Colo. 2014).

Finally, it is not clear how, without providing more detailed analysis, the Forest Service could reasonably conclude that alternative courses of action that differ greatly could yield the same result. In terms of years of coal production, Alternatives A and B differ by about 15 years, and in terms of forest habitat disturbed, Alternatives B and C differ by as much as 100 acres.[473]

The Forest Service can estimate the impacts of water depletions in a more detailed manner, and should use this information when consulting with the Fish and Wildlife Service. For example, the Forest Service and the Bureau of Land Management have recently consulted on depletions caused by a proposed natural gas drilling project in the North Fork Valley that is directly adjacent to the Pilot Knob Roadless Area.[474]

The Forest Service acknowledges that it must address the current and reasonably foreseeable use of water due to coal extraction. To do so, the Forest Service must address four items. First, the Forest Service can reasonably anticipate that there will be water depletions related to methane drainage well pad construction and drilling within the North Fork Valley coal mine exception area. The Forest Service must furnish detailed and substantiated information regarding current and foreseeable water usage by mining and methane drilling operations. Further, the Forest Service must consider *all* of the impacts associated with extending the life of coal mines in the area, potentially for decades, not just methane and well drilling. Colorado water court filings make clear that the West Elk mine utilizes water from the Gunnison River and its tributary waters for purposes beyond merely methane drainage well drilling,[475] and the Forest Service accordingly needs to analyze the impacts of withdrawing water for mine land reclamation, sedimentation, pollution control, mining, industrial, commercial, manufacturing, domestic and municipal purposes, irrigation pursuant to land reclamation, dust suppression, fire protection, and other mine operation uses where appropriate.[476] The Forest Service cannot ignore these direct and indirect impacts of its action off of Forest lands, and the agency's conclusory statement that water depletions will be *de minimus* is insufficient, absent reliable information regarding the water demands and sources for existing and future mining operations.

Second, the Forest Service must consider water depletions for drill pad construction and drilling that occur *outside* the North Fork Valley coal mine exception area, including on private lands

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[473] *See* SDEIS at 20, 56-61.

[474] *See, e.g.*, Bull Mountain FEIS (Ex. 145).

[475] *See* State of Colorado, D. Ct. Water Div. 4, Resume of Applications for August 2009, Case No. 2009CW107 (describing West Elk Mine use of Gunnison River water for "Mine land reclamation, sedimentation, and pollution control, mining, industrial, commercial, manufacturing, domestic and municipal purposes, and irrigation (pursuant to land reclamation)"), attached as Ex. 147; State of Colorado, D. Ct. Water Div. 4, Resume of Applications for December 2012, Case No. 2012CW151 (describing West Elk Mine use of Gunnison River water for mining and mine reclamation, including but not limited to irrigation for mine reclamation, dust suppression, fire protection, and other mine operation uses."), attached as Ex. 148; Colorado Division of Mining, Reclamation and Safety, Department of Natural Resources, Inspection, December 3, 2015, attached as Ex. 149.

[476] *See id*.

that coal companies may access as a result of the exception. In its 2012 final EIS on Arch Coal's proposed lease modification expansion in the North Fork Coal Mining Area, the Forest Service predicted that the public lands lease would make possible a significant amount of coal mining on adjacent private land.[477]

Third, the Forest Service must consider not only the impacts of allowing coal mining pursuant to the present proposal in the North Fork area, but also must consider the impacts of the effects of the exception significantly extending the life of the West Elk mine on private land. Because the Coal Mine Exception will significantly extend the life of the West Elk mine, *all* of the mine's operations that require water *off* of Forest Service lands and on private lands at the mine portal and load out facilities – mining, reclamation, coal washing, etc. – will continue for decades longer than they otherwise would, as will those uses *on* Forest Service lands that require additional water (methane drainage well and pad construction, reclamation, etc.). As previously stated, Colorado water court filings reveal that the West Elk mine utilizes water from the Gunnison River and its tributary waters for purposes beyond merely methane drainage well drilling. The Forest Service cannot ignore those direct and indirect impacts of its action off of Forest lands. The Forest Service should note that these effects would be similar if any other mine is constructed to mine coal at Pilot Knob Roadless Area. Notably, the SDEIS failed to address these issues though High Country Conservation Advocates raised them in their scoping comments.[478]

Fourth, the Forest Service must consider new information relevant to effects on the threatened Gunnison sage-grouse. The Gunnison sage-grouse , *Centrocercus minimus*, was listed as threatened under the Endangered Species Act in November 2014.[479] Habitat loss and fragmentation is the primary cause of the species' decline in abundance and distribution.[480] The listing decision found substantial negative effects on Gunnison sage-grouse from mineral development, including both direct loss of habitat, and more significantly, disruption from habitat fragmentation. Although the proposed North Fork Coal Mining Area is not within designated critical habitat for the Gunnison sage-grouse,[481] the Forest Service must nevertheless consider the effects of the proposed coal mining exception on the potential for the species' recovery and re-occupation of unoccupied habitat.

The proposed action falls within the Gunnison Basin range of the Gunnison sage-grouse. The Service found that "the Gunnison Basin population is the most important population for the

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[477] *See* Lease Mods. FEIS (Ex. 43) at 51.

[478] *See* HCCA Scoping Comment Letter (May 22, 2015) at 81-83.

[479] U.S. Fish and Wildlife Service, Final Rule, Threatened Status for Gunnison Sage-Grouse, 79 Fed. Reg. 69,192 (Nov. 20, 2014). As USFS is no doubt aware, this decision is currently the subject of pending litigation. *See Center for Biological Diversity v. U.S. Fish and Wildlife Service*, No. 1:15-cv-00130-CMA (D. Colo. amended complaint filed April 21, 2015).

[480] Final Listing Rule, Threatened Status for Gunnison Sage-Grouse, 79 Fed. Reg. at 69,227.

[481] U.S. Fish and Wildlife Service, Final Rule, Designation of Critical Habitat for Gunnison Sage-Grouse, 79 Fed. Reg. 69,312; 69,340-41; 69,357 (Nov. 20, 2014).

species' survival with approximately 63 percent of occupied habitat, approximately 60 percent of the leks, and 84 percent of the rangewide population."[482] It further found that "[u]noccupied habitat in the Gunnison Basin population is also needed for movement and migration of birds to outlying areas and satellite populations and for potential range expansion. Consequently, we do not believe that occupied habitat alone is sufficient to ensure conservation of the species."[483]

Under the ESA, 16 U.S.C. § 1536(a)(2), action agencies must consult with the Fish and Wildlife Service to evaluate the direct and indirect and cumulative effects of a proposed project on listed species and critical habitat in the formal consultation process.[484] The courts have held that:

> An agency's failure to adequately consider recovery needs in its adverse modification or jeopardy analysis renders the agency's determination arbitrary and capricious. *Gifford Pinchot Task Force*, 378 F.3d at 1070 (critical habitat); *Nat'l Wildlife Fed'n*, 524 F.3d at 933–34 (explaining that although recovery impacts alone may not necessarily require a jeopardy finding, an agency must consider recovery).

Nw. Envtl. Advocates v. EPA, 855 F. Supp. 2d 1199, 1223 (D. Or. 2012). Here, the Service has acknowledged that unoccupied habitat may be essential to recover the Gunnison sage-grouse as a whole and the essential Gunnison Basin population in particular. Yet the SDEIS contains no analysis of whether any portion of the coal mining area could be suitable and/or necessary for recovery of a viable Gunnison Basin population.

Finally, as mentioned above, the Forest Service must consider any new information regarding climate change, increasing human population growth and development, increasing energy demand, and the impacts of pollution caused by coal development, as this information impacts species covered by the ESA.

D. The Forest Service Cannot Rely On The GMUG PBO.

The Forest Service may not rely on compliance with an invalid Biological Opinion as it has stated it intends to do in the SDEIS.[485]

The Forest Service, Fish and Wildlife Service, and the courts have confirmed any water depletions within the Colorado River system jeopardize the continued existence of the endangered humpback chub, Colorado pikeminnow, razorback sucker, and bonytail (the "Four

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[482] Final Listing Rule, Threatened Status for Gunnison Sage-Grouse, 79 Fed. Reg. at 69,288.

[483] *Id.* at 69,316.

[484] 50 C.F.R. § 402.14(g)(3).

[485] SDEIS at 58.

Endangered Fish").[486] All four of these fish are critically endangered due chiefly to alterations in the historical flow regime of the Upper Colorado River and its tributaries.

Beginning in the 1970s, the Fish and Wildlife Service determined that any water depletions would jeopardize the continued existence of the Four Endangered Fish and adversely modify their critical habitat, and, as a result, adopted in 1988 a Recovery Implementation Program (since amended) it identified as the reasonable and prudent alternative for avoiding jeopardy.[487]

Prior ESA consultation for the lease modifications that would be made possible by the proposed coal mine exception has identified that the mine expansion may affect, and is likely to adversely affect, the Four Endangered Fish due to water depletions from mining-related water withdrawals.[488] Specifically, in August of 2012, the Forest Service issued a Record of Decision ("Lease Modification ROD") stating its proposed action of leasing land for coal-mining pursuant to coal mine exception "may affect" and is "likely to adversely affect" the lynx and the Colorado River fishes.[489] At that time, the Forest Service contended, and the Fish and Wildlife Service concurred, that these withdrawals would be covered under the Recovery Implementation Program and the GMUG PBO.[490] The GMUG PBO covers small depletions related to mineral development and other activities, road construction, on the GMUG national forests.[491] Similar to its conclusion regarding the lease modifications in 2012, the Forest Service stated in the SDEIS that "[c]ontinued water depletions associated with mining activities in the area designated as the North Fork Coal Mining Area are likely to be sufficiently small to be within the requirements of

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[486] *See Rocky Mountain Wild v. Kornze*, No. 13-01988, Mem. Op. at 16, 20 (D. Colo. Feb. 10, 2015); SDEIS at 58.

[487] *See* Upper Colorado River Endangered Fish Recovery Program, Recovery Implementation Program Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement 2 (Oct. 15, 1993, rev. March 8, 2000), attached as Ex. 150; GMUG PBO (Ex. 143); Fish and Wildlife Service, Biological Opinion, BLM Vernal Field Office, October 23, 2008, attached as Ex. 151.

[488] *See* Forest Service, Record of Decision for Federal Coal Lease Modifications COC-1362 and COC-67232 at 17 (2012) ("Lease Modifications ROD"), attached as Ex. 152; Fish and Wildlife Service, Letter to Charles Richmond 1-2, No. ES/CO:FS/GMUG/Paonia RD (June 16, 2010) ("Lease Modifications Concurrence") (explaining that actions similar to the propose lease modifications for coal mining have resulted in water depletions and providing the Forest Service with information regarding same) attached as Ex. 153.

[489] Lease Modifications ROD (Ex. 152), 17.

[490] *Id.* at 17, 29; Lease Modifications Concurrence 1-2. (Ex. 153). The Biological Assessment for the lease modifications addresses only Canada lynx impacts, contending that "[f]ish species are being analyzed separately." Forest Service, Biological Assessment for Federal Coal Lease Modifications COC-1362 & COC-67232 at 7 (Apr. 2010), attached as Ex. 154.

[491] GMUG PBO (Ex. 143) at 1.

the forest-wide 2007 Programmatic Biological Opinion from the U.S. Fish and Wildlife Service for small, one-time water depletions on the GMUG National Forests."[492]

The GMUG PBO, by its terms, covers only total water depletions of less than 100 acre-feet per year for the three forests, and no individual project exceeding 50 acre-feet.[493] Notably, the GMUG PBO requires reinitiation of consultation under a number of conditions, including failure of the Recovery Program to meet its expected population goals of 1,100 adult Colorado pikeminnow.[494] The GMUG PBO requires a review of fish populations and the effectiveness of recovery actions following 50,000 total acre-feet of withdrawals, or in 2015 (last year), whichever comes first.[495] The Fish and Wildlife Service's 2015 Sufficient Progress Memorandum plainly shows that the 1,100 adult pikeminnow goal has not been met by a large margin.[496]

The Fish and Wildlife Service concluded that projects meeting water depletion limits could avoid jeopardy under the 1999 Programmatic Biological Opinion for Recovery Program Actions in the Upper Colorado if project proponents sign the Recovery Agreement, make a monetary payment towards recovery actions, and the Forest Service retains discretionary authority for reinitiation of consultation, if required.[497] The Fish and Wildlife Service in 2010 concurred that the mine expansion lease modifications were covered by the GMUG PBO based on Forest Service representations that water withdrawals would be limited to approximately 1 acre-foot per year for a period of 5 years associated with the drilling of approximately 45 methane drainage wells.[498]

The Forest Service has admitted it erred by failing to account for water depletions from coal-mining in the 2012 Colorado Roadless Rule BA, yet stated these depletions are likely to fall with the 2007 GMUG PBO.[499]

Yet, it is unclear on what basis the Forest Service makes this statement, given that the 2012 Colorado Roadless Rule BA *never analyzed* impacts from water depletions from allowing coal mining in the North Fork Valley. Contrary to the Forest Service's statement, in consulting with the Fish and Wildlife Service on the impacts of the proposed coal mining exception, the Forest

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[492] SDEIS at 57; *see also id.* at 55 ("Based on an initial reconsideration of the 2012 analysis of the Colorado River listed fishes . . . our conclusion is that these fishes should be carried forward for further analysis under the current alternatives to confirm that the earlier 'no effect' determinations still apply.").

[493] GMUG PBO (Ex. 143) at 1.

[494] *Id.* at 4-7.

[495] *Id.* at 6.

[496] 2015 Sufficient Progress Memo (Ex. 144) at 5.

[497] *Id.* at 2-3.

[498] Lease Modification Concurrence (Ex. 153) at 2; *see also* Lease Mods. FEIS (Ex. 43) at 110.

[499] SDEIS at 58.

Service cannot rely either on conclusory, unsubstantiated statements that water withdrawals will be *de minimis*, nor, given newly-available information, can it rely on the 2007 GMUG PBO to cover water withdrawals.

In addition, the most recent information available from the Recovery Program indicates that, due to a lack of sufficient progress in recovery, continued reliance on the GMUG PBO as a reasonable and prudent alternative is no longer valid. The Recovery Program's 2015 Sufficient Progress Memo finds that the Colorado pikeminnow is not meeting recovery goals nor is self-sustaining:

> The current downlisting demographic criteria for Colorado pikeminnow (USFWS 2002a) in the Upper Colorado River Subbasin is a self-sustaining population of at least 700 adults maintained over a 5-year period, with a trend in adult point estimates that does not decline significantly. Secondarily, recruitment of age-6 (400–449 mm TL; Figure 3), naturally produced fish must equal or exceed mean adult annual mortality (estimated to be about 20%). The average of all adult estimates (1992 – 2014; estimates from 2013 and 2014 are considered preliminary) is 613. The average of the five most recent annual adult population estimates is 501. Osmundson and White (2014) determined that recruitment rates were less than annual adult mortality in six years and exceeded adult mortality in the other six years when sampling occurred. The estimated net gain for the 12 years studied was 32 fish $\geq$ 450 mm TL. Although the Colorado River population appears to meet the trend or 'self-sustainability' criterion, it has not met the abundance criteria of 'at least 700 adults' during the most recent five year period. The Service is reevaluating the demographic and threat removal criteria for Colorado pikeminnow through revision of the species' recovery plan.[500]

The Forest Service's reliance on the GMUG PBO is fundamentally founded on that document's tiering to the assumed success of the overall recovery program. The 2015 population data makes clear that not only are the explicit terms of the GMUG PBO not satisfied, but that the overall recovery program is not achieving its anticipated goals for recovery of Colorado pikeminnow. Therefore, the Forest Service cannot rely on compliance with the GMUG PBO, which requires re-initiation of consultation. The fact that the Service is "reevaulating" the recovery criteria for the species does not excuse the Forest Service from its Section 7 obligations.

For all of the above-stated reasons, the Forest Service must: re-initiate consultation with the Fish and Wildlife Service regarding the ongoing Colorado Roadless Rule; consult separately on the proposed action of reinstating the Coal Mine Exception; and provide detailed information regarding water withdrawals. The agencies cannot rely on compliance with the outdated GMUG PBO.

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[500] Sufficient Progress Memo (Ex. 144) at 4.

VIII. THE FOREST SERVICE MUST PREPARE A NEW REGULATORY IMPACT ANALYSIS AND COST-BENEFIT ANALYSIS.

In the notice to announcing the SDEIS's availability, the Forest Service states that "USDA consulted with the Office of Management and Budget and determined this proposed rule does not meet the criteria for a significant regulatory action under Executive Order 12,866."[501] That determination is in error.[502] But even if it were not, the Forest Service still has a duty to explain why the benefits of opening the door to road construction through roadless areas for coal mining outweighs the billions of dollars in likely social costs, particularly in light of the agency's own admission that costs may outweigh benefits.[503]

The proposal to adopt the North Fork Coal Mining Area exception to the Roadless Rule is a significant regulatory action under Executive Order 12,866. The proposed action – proposing to amend a rule – clearly meets the definition of a "regulatory action" under Executive Order 12,866.[504] A "significant" regulatory action includes actions "likely to result in ... an annual effect on the economy of $100 million or more or adversely effect in a material way ... the environment."[505] The coal mine exception rulemaking meets both the monetary and the environmental criteria for significance.

The monetary threshold considers both a rule's gross costs and benefits, whether costs result from compliance with new regulation or are social costs of deregulation. Here, the Forest Service's own flawed undercount of the social cost of the climate pollution estimates that the lower-range estimate of the social cost of carbon will likely be between $1.6 billion and $2.4 billion total over a 12-36 year period.[506] As explained above, because these social cost figures omit the social cost of methane, and due to the fact that lower coal prices would encourage more electricity consumption (and thus additional climate costs) that the Forest Service's model fails to account for, the SDEIS projections of social cost estimates likely greatly under-predict social

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[501] Forest Service, Roadless Area Conservation, National Forest System Lands in Colorado, 80 Fed. Reg. 72,665, 72,668 (Nov. 20, 2015). *See also* SDEIS Appendix B at B-9 (stating that OMB "determined this rule note to be significant.").

[502] Further, the statement itself, implying that OMB's determination is final, also appears to be in error. Internal USDA email indicate that the determination of non-significance would be revisited before the final EIS is issued and "we may get a significant designation at that stage." Email of J. West, USDA to L. Jones, USDA (Sep. 15, 2015), attached as Ex. 155.

[503] As explained in our scoping letter, neither the Forest Service nor OMB can rely on the regulatory impact analysis previously prepared for the 2012 Colorado Roadless Rule, since that analysis is outdated and failed to address at all the social cost of carbon. HCCA Scoping Comment Letter (May 22, 2015) at 84-85.

[504] Executive Order 12,866, § 3(d) (Oct. 4, 1993).

[505] *Id.* § 3(f).

[506] SDEIS at 99, Table 3-21 (figures are from global boundary 3% discount rate for the proposed action compared to no action); *id*. at 72, Table 3-12 (coal mine exception would permit coal to be mined for an additional 12-36 years, depending on the rate of mining).

costs. Therefore, it is highly likely that the social costs of carbon and methane from the proposed rulemaking will outweigh the social benefits by more than $100 million per year while coal mining is active, making this a significant rule from a monetary perspective.

The proposed rule will also "adversely effect [the environment] in a material way." It will open the door to road construction throughout 20,000 acres of roadless national forest, degrading those wild areas into a landscape criss-crossed by spider-webs of roads and pockmarked with drill pads. Habitat for imperiled species like the lynx will be rendered useless for decades. Climate impacts will also be severe. Millions of tons of CO2eq of methane will be wasted each year additional coal is mined under the rule, in part because the Forest Service has declined to mitigate those impacts through its rulemaking. Combustion of coal made available by the rulemaking will generate 130 million tons of additional CO2, not counting an *additional net* increase of 1.0 – 2.1 million tons of CO2eq from methane emissions during each additional year of coal mining.[507] Thus the total net GHG emission increases attributable to the proposed action are likely closer to 150 million tons of CO2eq. Thus, this rulemaking is likely to produce as much greenhouse gas emissions as EPA's proposed methane standards for the oil and gas industry (a "significant" rule) will mitigate over a 15- to 20-year period (at 7.7 to 9 million tons of CO2eq per year).[508] The SDEIS predicts that the rulemaking will also be responsible for undercutting cleaner renewable electricity generation by a total of 40,000 gigawatt hours. The rulemaking will undercut the President's commitment to reducing greenhouse gas emissions, to supporting clean energy, and to keeping some fossil fuel in the ground. The Forest Service received more than 100,000 comments from those opposed the project at the scoping stage on environmental grounds; the Forest Service is likely to receive as many if not more comments during this comment period now that the agency has attempted to disclose the coal mine exception's climate costs. For all of these reasons, the proposed action's materially adverse effects on the environment should qualify it as "significant."

Even if the Forest Service and OIRA/OMB conclude (erroneously) that this rule is not significant, the Executive Order applies to all regulations, and mandates that: "Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs."[509] When evaluating the present net value of the proposed rule at the global boundary – the only boundary that it makes sense to assess the social cost of GHGs – and eliminating the 10th percentile SCC value (a value the IWG does not recognize), the value of either action alternative will be negative under all scenarios. These costs will only become more negative when significant, currently unmonetized costs, such as from methane emissions, are also subtracted from the sum.[510] The Forest Service acknowledges that, from the global perspective, "no-action might be the preferred

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[507] SDEIS at 97–98 & Table 3-20.

[508] EPA, Fact Sheet, Proposed Climate, Air Quality and Permitting Rules for the Oil and Natural Gas Industry (2015) at 2, attached as Ex. 156, available at http://www3.epa.gov/airquality/oilandgas/pdfs/og_fs_081815.pdf (last viewed Jan. 15, 2016).

[509] Executive Order 12,866, § 1(b)(6).

[510] SDEIS at 100, Table 3-22.

alternative."[511] Further, in its sensitivity analysis, the Forest Service found that when monetizing methane on the basis of carbon dioxide-equivalent values, even the present net value at the national and forest-only boundaries is close to $0.[512] Given its own analysis, and the fact that its analysis likely significantly under-estimates the rulemaking's social costs, the Forest Service will almost certainly be unable to make a "reasoned determination that the benefits of the intended regulation justify its costs."[513]

CONCLUSION

Thank you again for this opportunity to comment. If you have any questions about this letter, please call Ted Zukoski or Katie Dittelberger at Earthjustice (303 623 9466).

Sincerely,

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[511] SDEIS at 100.

[512] SDEIS Appendix E at E-25.

[513] Our previous comments noted that the Forest Service cannot rely on the regulatory impact analysis prepared for the 2012 Colorado Roadless Rule because of that analysis's legal and factual flaws. *See* HCCA Scoping Comment Letter (May 22, 2015) at 84-85. Agencies typically update RIA analysis when, as here, the data on which the previous analysis was based has substantially changed or the agency has been ordered to consider other data, such as the social cost of carbon. *See, e.g.,* Office of Transportation and Air Quality, U.S. Environmental Protection Agency, National Highway Traffic Safety Administration U.S. Department of Transportation, Final Rulemaking to Establish Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, Regulatory Impact Analysis, 76 Fed. Reg. 57,106 (Sep. 15, 2011) (prepared subsequent to 2009 decision requiring the agencies to consider climate impacts).

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Mr. Shaun McGrath, Administrator, EPA Region VIII
Ms. Barb Sharrow, Field Manager, Uncompahgre Field Office, BLM

INDEX OF EXHIBITS

Exh. #	Description
Ex. 1	Colorado Dep't of Public Health and Environment, Fact Sheet, Revisions to Colorado Air Quality Control Commission's Regulation (Mar. 2014).
Ex. 2	The White House, Statement by the President on the Keystone XL Pipeline (Nov. 6, 2015).
Ex. 3	A Photo Report of the Sunset Roadless Area and Threats from Coal Mining at Arch Coal's West Elk Mine (Jan 14, 2016).
Ex. 4	Forest Service, West Elk Mine (powerpoint) (Dec. 2014).
Ex. 5	Colorado Division of Reclamation, Mining and Safety, Monthly Coal Summary Report, Period 1/2015 through 11/2015 (Jan. 11, 2016).
Ex. 6	Email of J. Robertson, Forest Service to J. Schaefers, Forest Service *et al.* (Mar. 20, 2015).
Ex. 7	Letter of K. Welt, Mountain Coal Co. to J. Stark, Colorado Division of Reclamation, Mining and Safety (DRMS) (May 8, 2015).
Ex. 8	Mountain Coal Co., Map 52, B Seam Projected Operations (May 8, 2015).
Ex. 9	G. Ruland, Coal dead, but real estate, construction our best hope, Grand Junction Sentinel (Dec. 14, 2015).
Ex. 10	Forest Service, "Where Do We Go From Here?" (Dec. 2015).
Ex. 11	Earthjustice, Map, North Fork Coal Mine Exception Area (May 21, 2015).
Ex. 12	Declaration of Kathy Welt, Arch Coal (Mar. 14, 2013).
Ex. 13	Declaration of Weston Norris (May 8, 2014).
Ex. 14	Email of N. Mortenson, Forest Service to L. Broyles, Forest Service et al. (Dec. 8, 2014 12:57:14 PM).
Ex. 15	D. Dyer, BLM, Combined Geologic And Engineering Report (GER) And Maximum Economic Recovery Report (MER) For Coal Lease Modifications (COC1362 & COC67232) (Dec. 17, 2010).
Ex. 16	San Juan National Forest, Planning page, Final Environmental Impact Statement Maps (displaying 74 different maps prepared for Forest Plan EIS).
Ex. 17	San Juan National Forest, Final Environmental Impact Statement, Forest Plan Revision, Chapter 3: Affected Environment and Environmental Consequences (2013).
Ex. 18	Forest Service, Map, 2015 North Fork Coal Mining Area, Alternative C (July 8, 2015).
Ex. 19	Forest Service, Map, 2015 North Fork Coal Mining Area, Alternative B (July 9, 2015).

Ex. 20	Earthjustice, Map, Hoodoo Creek Watershed Area (Jan. 11, 2016).
Ex. 21	U.S. Forest Service, *Profiles of Grand Mesa, Uncompahgre and Gunnison National Forests Roadless Areas* (July 23, 2008)
Ex. 22	Letter of J. Wenum, CPW to T. Stranathan, BLM re: 3160 (CO-S05) (Apr. 24, 2015).
Ex. 23	Letter of J. Wenum, CPW to USDA Forest Service re: Gunnison Energy MDP (June 30, 2010).
Ex. 24	Letter of J. Wenum, CPW to L. Broyles, Forest Service re: SG Interests (Aug. 10, 2012).
Ex. 25	Letter of J. Wenum, CPW to T. Stranathan, BLM re: Bull Mountain Geographic Area Plan (Nov. 6, 2009).
Ex. 26	Rocky Mountain Wild, Wildlife Screen for North Fork Coal Mining Area (2015).
Ex. 27	Earthjustice, Map, Lynx Potential Habitat (Jan. 11, 2016).
Ex. 28	Forest Service, *Profiles of Grand Mesa, Uncompahgre and Gunnison National Forests Roadless Areas.*
Ex. 29	Colorado Div'n of Wildlife, *Field Recommendations SW Region Area 16 for GMUGNF IRAs* (Feb. 21, 2006).
Ex. 30	Earthjustice, Map, Elk (Jan. 11, 2016).
Ex. 31	Earthjustice, Map, Mule Deer (Jan. 11, 2016).
Ex. 32	Earthjustice, Map, Black Bear (Jan. 11, 2016).
Ex. 33	Earthjustice, Map, Gunnison sage grouse (Jan. 11, 2016).
Ex. 34	Earthjustice, Map, Spruce-fir (Jan 11, 2016).
Ex. 35	Earthjustice, Map, Vegetation Cover - Type (Jan. 11, 2016).
Ex. 36	U.S. Environmental Protection Agency, "Fact Sheet: Social Cost of Carbon" (Nov. 2013).
Ex. 37	Interagency Working Group on Social Cost of Carbon, "Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866" (Feb. 2010).
Ex. 38	Executive Office of the President of the United States, Council of Economic Advisers, "The Cost of Delaying Action to Stem Climate Change" (July 2014).
Ex. 39	Letter of Center for Biological Diversity (Mar. 25, 2015).
Ex. 40	Letter of M. Ludlow, Oxbow Mining LLC to C. Beecham, BLM (May 18, 2015).
Ex. 41	Letter of U.S. Senator R. Wyden to S. Jewell, Secretary of the Interior (Feb. 6, 2014).
Ex. 42	T. Power, *et al.* Comments on the Rulemaking for the Colorado Roadless Areas Supplemental Draft Environmental Impact Statement (Jan. 14, 2016).
Ex. 43	U.S. Forest Service, Final Environmental Impact Statement, Federal Coal Lease Modifications COC-1362 & COC-67232 (Aug. 2012).
Ex. 44	T.C. Bond *et al*., "Bounding the role of black carbon in the climate system: A scientific assessment," Journal Of Geophysical Research: Atmospheres, Vol. 118, at 5380, 5384-85 (June 6, 2013).

Ex. 45	Ramanathan and Carmichael, "Global and Regional Climate Changes Due to Black Carbon," Nature Geoscience (April 2008).
Ex. 46	J. Hansen, *et al*., "Climate change and trace gases," The Royal Society (May 18, 2007).
Ex. 47	M.S. Reddy, *et al*., "Climate impact of black carbon emitted from energy consumption in the world's regions," Geophysical Research Letters, Vol. 34 (2007).
Ex. 48	J. Hansen and L. Nazarenko, Soot Climate Forcing Via Snow and Ice Albedos, 101 Proc. of the Nat'l Acad. Of Sci. 423 (2004).
Ex. 49	W. Chameides, "Soot Takes Center Stage," Science Vol. 297 (Sept. 27, 2002).
Ex. 50	M. Flanner, *et al*., "Present-day climate forcing and response from black carbon in snow," J. of Geophys. Res. Vol. 112 (2007).
Ex. 51	T.C. Bond, *et al*., A technology-based global inventory of black and organic carbon emissions from combustion, J. Geophys. Res.109 (D14203) (2004).
Ex. 52	J.R. McConnell, *et al*., 20th-Century Industrial Black Carbon Emissions Altered Arctic Climate Forcing, Science 317: 1381-1384 (2007).
Ex. 53	U.S. Environmental Protection Agency, Regulatory Impact Analysis of the Proposed Emission Standards for New and Modified Sources in the Oil and Natural Gas Sector, 4-12 to 4-17 (August 2015).
Ex. 54	U.S. Environmental Protection Agency, Regulatory Impact Analysis: Final New Source Performance Standards and Amendments to the National Emissions Standards for Hazardous Air Pollutants for the Oil and Natural Gas Industry, at 4-31 to 4-34 (April 2012).
Ex. 55	Dr. T. M. Power *et al*., Assessing the Ability of Contemporary Models to Calculate the GHG Implications of Federal Coal Leasing Decisions and Other Federal Energy Management Decisions (May 2015).
Ex. 56	T. Power, *et al.*, The National Energy Modeling System's ability to model the impacts of the increase in coal production in the North Fork Valley (Jan. 14, 2016).
Ex. 57	Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 Interagency Working Group on Social Cost of Carbon, United States Government. Revised July 2015 (2015).
Ex. 58	Bureau of Land Management, Environmental Assessment, Sunset Trail Area Coal Exploration Plan (June 2013).
Ex. 58	BLM, Sunset Trail Area Coal Exploration Plan EA.
Ex. 59	R. Bonnie & A. Castle, Our Forests and Climate Change (Sep. 12, 2013).
Ex. 60	W. Chen *et al.*, Effects of climatic variability on the annual carbon sequestration by a boreal aspen forest, Global Change Biology (1999).
Ex. 61	Christophe McGlade & Paul Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 [deg] C*, NATURE Vol. 517, pp. 187-190 (Jan. 7, 2015).
Ex. 62	Barack Obama, President of the United States, Weekly Address (Apr. 18, 2015).

Ex. 63	United Nations, Framework Convention on Climate Change, Paris Agreement, Article 2 ¶ 1(a) (Dec. 11, 2015).
Ex. 64	IPCC, Working Group I Contribution to the IPCC Fifth Assessment Report: Climate Change 2013: the Physical Science Basis: Summary for Policy Makers (2013).
Ex. 65	Bill McKibben, *Global Warming's Terrifying New Math*, Rolling Stone (Aug. 2, 2012).
Ex. 66	Bill McKibben, *Obama and Climate Change: The Real Story* (Dec. 17, 2013).
Ex. 67	*Climate Sensitivity, Sea Level and Atmospheric Carbon Dioxide*, 371 Phil. Trans. R. Soc'y (2013).
Ex. 68	Global Carbon Project, Global Carbon Budget 2014 (Sept. 14, 2014).
Ex. 69	EPA, Fact Sheet, Clean Power Plan (2014).
Ex. 70	EPA, Regulatory Impact Analysis for the Proposed Carbon Pollution , Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants, 3-26 to 3-29 (June 2014).
Ex. 71	White House Fact Sheet, U.S.-China Joint Announcement on Climate Change and Clean Energy Cooperation (November 11, 2014).
Ex. 72	West Elk Mine, E Seam Gathering Options (Sep. 2009) at 25 (setting forth gas component analysis for two MDWs).
Ex. 73	Gas Sample Analysis, Oxbow Elk Creek Mine..
Ex. 74	E-mail of B. Cappa, Air Pollution Control Division to P. Carr, Air Pollution Control Division, "Recent Oxbow Gas Analysis and Mine VOC Summary" (Aug. 7, 2014).
Ex. 75	"Coal Mine VOC Gas Analysis Calculations 9/2/2014."
Ex. 76	Air Pollution Control Division, "Field Inspection Report, Oxbow Mining-LLC Elk Creek Mine" (Nov. 20, 2012).
Ex. 77	Air Pollution Control Division, "Field Inspection Report, Mountain Coal Co-LLC West Elk Mine" (April. 4, 2013).
Ex. 78	Clean Power Plan, 80 Fed. Reg. 64,662, 64,914 (Oct. 23, 2015).
Ex. 79	IPCC, Climate Change 2014: Impacts, Adaptation, and Vulnerability: Summary for Policymakers (2014).
Ex. 80	Letter of R. Welch, BLM to J. Hickenlooper, Gov. (Dec. 4, 2015).
Ex. 81	English *et al.*, Racial and Income Disparities in Relation to a Proposed Climate Change Vulnerability Screening Method for California, The International Journal of Climate Change: Impacts and Responses, Vol. 4, Issue 2 (Apr. 2013).
Ex. 82	United States Department of the Interior Bureau of Land Management and United Stated Department of Agriculture Forest Service, *Environmental Assessment, Dual Operator Proposal: Development of 25 Federal Natural Gas Wells and Associated Infrastructure on 5 Multi-well Pads* (Sep. 2015).
Ex. 83	Paonia Ranger District Natural Gas Projects, Project Description and Issues.
Ex. 84	D. Webb, Roadless dispute clouds drilling proposal, Grand Junction Sentinel (Mar. 1, 2015).
Ex. 85	BLM, *Categorical Exclusion DOI-BLM-CO-SO50-201-0035 CX* (August 2012).
Ex. 86	BLM, Bull Mountain MDP Draft EIS (Jan. 2012) at 4-11 – 4-12 (excerpts).
Ex. 87	EPA, Climate Impacts on Forests (updated Nov. 14, 2015).

Ex. 88	Northern Rocky Mountain Science Center, Wildlife as Indicators of Climate Change (no date).
Ex. 89	A. Svaldi, Elk Creek Mine in Somerset will go idle, Denver Post (Dec. 2, 2013).
Ex. 90	Colorado Division of Reclamation, Mining and Safety (DRMS), Monthly Coal Detail Report, Jan. 2014 through Dec. 2014 (Feb. 2, 2015) at 2-3 (showing zero tons mined in 2014).
Ex. 91	J. Stark, Colorado DRMS, July 2015 Terror Creek and Elk Creek Inspection Reports (Aug. 13, 2015).
Ex. 92	L. Simmons, Colorado DRMS, Elk Creek Mine, C1981022, September Inspection Report (Oct. 7, 2015).
Ex. 93	L. Simmons, Colorado DRMS, Elk Creek October inspection report, C1981022 (Nov. 6, 2015).
Ex. 94	L. Simmons, Colorado DRMS, C1981022, Elk Creek Mine November Inspection Report (Dec. 2, 2015).
Ex. 95	L. Simmons, C1981022, Elk Creek Mine December Inspection Report (Dec. 30, 2015).
Ex. 96	Letter of J. Kiger, Oxbow Mining to R. Reilly, Colorado DRMS (July 31, 2015) (proposing to change land uses at Elk Creek mine).
Ex. 97	Letter of L. Simmons, Colorado DRMS to J. Kiger, Oxbow Mining (Dec. 1, 2015).
Ex. 98	McKinsey & Company, "Downsizing the US coal industry: Can a slow-motion train wreck be avoided?," (Nov. 2015).
Ex. 99	Letter of M. Ludlow, Oxbow Mining to Colorado Roadless Rule (May 20, 2015).
Ex. 100	Letter of M. Ludlow, Oxbow Mining to C. Beecham, BLM (Apr. 7, 2015).
Ex. 101	Letter of K. Free, BLM to Oxbow Mining, LLC (Apr. 29, 2015) (acknowledging Oxbow's September 2014 coal lease by application for the Elk Creek Mine).
Ex. 102	Gunnison National Forest, "1000 Acre Flats Trail #806," (no date).
Ex. 103	Earthjustice, Map, Bald Eagle (Jan. 11, 2016).
Ex. 104	Letter of E. Zukoski, Earthjustice to G. Wallace, BLM (Mar. 17, 2009).
Ex. 105	J. Blevins, Aspen Skiing Co. partners with coal mine for methane power, Denver Post (Nov. 12, 2012).
Ex. 106	EPA, Mitigation of Non-CO2 Greenhouse Gases in the United States: 2010 to 2030 (April 2014)
Ex. 107	EPA 2009 STUDY: IDENTIFYING OPPORTUNITIES at 1-4 (2009).
Ex. 108	EMAIL OF A. WORSTELL, BLM TO B. SHARROW, BLM (MAY 7, 2009 2:11 PM).
Ex. 109	CONSOL, Corporate Responsibility Report (2012).

Ex. 110	P. Franklin, US EPA Coalbed Methane Outreach Program, "Coal Mine Methane Recovery & Utilization in the United States" (Sept. 25, 2007).
Ex. 111	EPA, Global Mitigation of Non-CO_2 Greenhouse Gasses: 2010-2030, EPA-430-R-13-011 (Sept. 2013).
Ex. 112	CONSOL 2014 Form 10K.
Ex. 113	Sindicatum, Coal Mine Methane, US: Alpha CGR, Pennsylvania.
Ex. 114	Cliffs, 2012 Sustainability Report.
Ex. 115	GE Energy, Promotional flyer (2009).
Ex. 116	EPA, Coalbed Methane Extra, EPA-430-N-00-004 (Winter 2013).
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