April 27, 2015

Via U.S. Mail & E-mail

Director (210)
Attention: Protest Coordinator, WO-210
P.O. Box 71383
Washington, D.C. 20024-1383
Email: protest@blm.gov

Dear Director Kornze:

This Resource Management Plan Amendment Protest is submitted on behalf of the Center for Biological Diversity ("Center") regarding the Bureau of Land Management's (BLM) Proposed Resource Management Plan Amendment (RMPA) and Final Environmental Impact Statement (FEIS) for the White River Field Office (WRFO). The Notice of Availability of the RMPA and FEIS was published by the Environmental Protection Agency (EPA) in the Federal Register on March 27, 2015 (80 FR 16424); therefore this Protest is being timely filed in accordance with 43 C.F.R § 1601.5-2. Pursuant to the instructions contained in BLM's "Dear Reader" letter accompanying the RMPA, this protest is being provided via email with a timely postmarked copy sent via U.S. Mail to the address above.

PROTEST

1. Protesting Parties: Contact Information and Interests:

This Protest is filed on behalf of the Center for Biological Diversity, Rocky Mountain Wild, and their boards and members by:

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The Center is a non-profit environmental organization with 50,400 member activists, including members who live and recreate in the areas in and affected by actions taken within the areas governed by the White River Field Office planning area in Colorado. 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 BLM. 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 greater sage-grouse, and many other species which will be affected by actions authorized or allowed under the RMPA. The Center's board, staff, and members use the lands and waters within the planning area, including the lands and waters that would be affected by actions under the RMPA, for quiet recreation (including hiking and camping), scientific research, aesthetic pursuits, and spiritual renewal.

Rocky Mountain Wild (formerly Center for Native Ecosystems) has a longstanding interest in the management of BLM lands in Colorado and engages frequently in the decision-making processes for land use planning and project proposals that could adversely affect biodiversity, wildlife populations, rare and imperiled species, and natural areas. Rocky Mountain Wild's staff and members enjoy a wide variety of recreational activities on BLM-managed public lands, including viewing wildlife and plants (including rare and imperiled species), wildlife and nature photography, hiking, biking, rafting, and enjoying solitude. The planning area includes key habitat for a wide variety of animal and plant species that Rocky Mountain Wild has worked to protect, including elk, mule deer, pronghorn, greater sage-grouse, black footed ferret, white tailed prairie dog, graham's penstemon, white river penstemon, narrowleaf evening

primrose, and many other species that will be adversely affected by actions authorized or allowed under the RMPA.

Living Rivers is a nonprofit organization based in Moab, Utah that promotes river restoration through mobilization. By articulating conservation and alternative management strategies to the public, Living Rivers seeks to revive the natural habitat and spirit of rivers by undoing the extensive damage done by dams, and water-intensive energy development on the Colorado Plateau. Living Rivers has approximately 1,200 members in Utah, Colorado and other states.

Utah Rivers Council is a grassroots organization dedicated to the conservation and stewardship of Utah's rivers and sustainable clean water sources for Utah's people and wildlife. Founded in 1995, Utah Rivers Council works to protect Utah's rivers and clean water sources for today's citizens, future generations and healthy, sustainable natural ecosystems. It implements its mission through grassroots organizing, direct advocacy, research, education, community leadership, and litigation.

The Center and Rocky Mountain Wild participated in the planning process to the degree required by law. On January 28, 2013 Michael Saul submitted comments on the Draft Environmental Impact Statement (DEIS) and the draft proposed RMPA on behalf of the Colorado and National Wildlife Federations. This comment is included in Attachment A and is incorporated by reference herein. Mr. Saul is now a member and employee of the Center, and the Center now submits this protest on behalf of its members, including Mr. Saul. Thus, the Center properly has associational administrative standing to file this protest based on Mr. Saul's standing to file this protest. Mr. Saul has administrative standing, because he previously participated in the planning process and has an interest in the area affected by the RMPA. Mr. Saul has hiked and viewed wildlife on BLM lands within the planning area, and will visit the area again to view wildlife, including greater sage-grouse.

Rocky Mountain Wild participated in all stages of the planning process through the submission of scoping comments, comments on the DEIS, and various letters submitted to BLM regarding the impacts of plan activities on threatened and endangered species and other resources of the plan area. Its comments addressing numerous issues with the RMPA are attached as Attachment A and incorporated by reference herein. Rocky Mountain Wild submitted scoping comments on September 29, 2006, and March 9, 2007, including nominations for several Areas of Critical Environmental Concern (ACECs). It also submitted comments on the Draft Plan Amendment on January 28, 2013, including a Master Leasing Plan Proposal for the Dinosaur Lowlands Area. Rocky Mountain Wild will continue to participate in the RMPA process and other opportunities to ensure protection of key habitat and natural areas within the White River Field Office.

As detailed in those comment and others, and as explained below, the Center, Rocky Mountain Wild, Living Rivers, and Utah Rivers Council, believe that the RMPA and accompanying FEIS are inadequate to ensure compliance with the procedural and substantive mandates of the Federal Land Policy and Management Act (FLPMA), the National

Environmental Policy Act (NEPA), and the Endangered Species Act (ESA) and other federal and state laws and policies.

If the Director finds that none of the parties to this letter has administrative standing to file this protest, we request that BLM still consider these comments on the FEIS and RMPA and include them in the administrative record, as required by the Council on Environmental Quality (CEQ) regulations. *See* 40 CFR § 1503.1(b) ("An agency may request comments on a final environmental impact statement before the decision is finally made. In any case other agencies or persons may make comments before the final decision….")

2. Issues and Parts of the RMPA Protested:

The Center protests the proposed adoption of the BLM's preferred alternative which, absent modification, provides for continued and expanded oil leasing and development on BLM lands and mineral estate without adequate analysis of, or mitigation for, the direct, indirect and cumulative impacts of such activities on air and water quality, wildlife and climate. As outlined below, by adopting the preferred alternative, BLM would find itself in violation of the ESA, NEPA, and FLPMA. BLM should therefore withdraw the RMPA and FEIS, prepare a Supplemental Environmental Impact Statement (SEIS) that addresses the deficiencies in the FEIS, and issue a new RMPA that complies with applicable statutory mandates and better protects the resources BLM is entrusted to manage.

3. Statement of Reasons as to Why the Proposed Decision to Adopt the RMPA Is Unlawful:

As noted above, BLM's proposed decision to adopt the RMPA is substantively and procedurally flawed. A concise statement of those reasons is provided below.

I. <u>BLM and Fish and Wildlife Service Must Formally Consult Regarding the Impacts of Water Depletion and Spills and Leaks Resulting from Oil and Gas Development.</u>

The Service's failure to complete formal consultation regarding the effects of the RMPA on the ESA-listed Colorado pikeminnow, humpback chub, bonytail, and razorback sucker (collectively "endangered fish") violates the ESA. BLM determined that "implementation of the WRFO RMPA may affect, but is not likely to adversely affect any of the endangered fish or their critical habitats beyond the effects of water depletions, which have undergone separate section 7 consultation." The Service's determination and BLM's reliance on it are improper because the Service and BLM cannot reasonably rely on the "separate section 7 consultation," i.e., the 2008 Programmatic Biological Opinion for Water Depletions Associated with Bureau of Land Management's Fluid Mineral Program within the Upper Colorado River."[1] This is because the Programmatic Biological Opinion ("PBO") did not anticipate the full scope of water use required by the RMPA. The Service also erroneously failed to complete formal consultation regarding the heightened risk of spills and leaks that the RMPA poses to endangered fish and their habitat in

[1] *See* Fish and Wildlife Service, "Programmatic Biological Opinion for Water Depletions Associated with Bureau of Land Management's Fluid Mineral Program within the Upper Colorado River," Dec. 19, 2008 (Ex. A).

the Upper Colorado Basin. Before approving the RMPA, the Service and BLM must (1) formally consult or reinitiate formal consultation regarding the RMPA's water depletion effects on the endangered fish; and (2) complete formal consultation regarding the increased risk of spills and leaks from oil and gas development on the endangered fish.

No public comments previously commented on the adequacy of the Biological Assessment for the RMPA and the Service's concurrence, because these documents were not available at the time the draft EIS was published.

A. The Service's Determination Regarding the RMPA's Water Depletion Effects on Endangered Fish Is Flawed.

The Service cannot reasonably rely on the PBO regarding the RMPA's water depletion effects on the endangered fish. In its concurrence letter to BLM regarding the RMPA, the Service concluded that "implementation of the WRFO RMPA may affect, but is not likely to adversely affect any of the endangered fish or their critical habitats beyond the effects of water depletions, which have undergone separate section 7 consultation."[2] But that prior section 7 consultation – the PBO – did not fully take into account water depletion of hydraulic fracturing; nor did it anticipate the potential for horizontal drilling and its enormous water depletion effects.

In 2008, the Service issued the PBO regarding the water depletion effects of fluid mineral development in the WRFO and other Upper Colorado Basin planning areas. The PBO determined that BLM's water depletions from the Colorado River Basin are likely to adversely affect the endangered fish and their designated critical habitats. PBO, p. 1. However, the PBO concluded that the water depletions are not likely to jeopardize the continued existence of the endangered fish and not likely to destroy or adversely modify the endangered fishes' designated critical habitat. *Id*., p. 50.

The PBO's water depletion projections for the WRFO is based on BLM's 2007 Reasonably Foreseeable Future Development ("RFD") report for the WRFO planning area ("RFD," available at FEIS, Appendix R). While the RFD predicts that new technologies in hydraulic fracturing will allow operators to tap into unconventional reserves that were not previously accessible,[3] the PBO does not appear to account for the water depletion required by such technologies.

Based on the development scenario contemplated in the RFD, the PBO finds that the average water depletion amount per well in the WRFO would be 2.62 acre-feet per well. PBO, p.

[2] Letter from Fish & Wildlife Service to White River Field Office, BLM re Section 7 Consultation on the Oil and Gas Amendment to the Resource Management Plan (RMP), March 11, 2015 ("FWS Concurrence Letter"), p. 4 (Ex. B).

[3] *See* RFD, p. 22 ("The emerging interest in the Mesaverde basin-centered play in the central part of the WRFO is principally related to the development of new completion technology (i.e. modern hydraulic fracturing techniques) coupled with the sustained elevation in gas prices (>$5.00/thousand cubic feet of gas) over the past few years."); RFD, p. 1 (noting "past conventional drilling and extraction technologies have not been successful in producing the unique geologic traps containing the gas" in the area covering much of the WRFO, but that "new technology" recently developed allow them to be tapped).

5. This figure includes water use required for drilling and completion (2.41 acre-feet), dust abatement (0.10 acre-feet), and hydrostatic pipeline testing (0.11 acre-feet). *Id.* It is unclear, however, whether this figure accounts at all for water use required for hydraulic fracturing. The PBO relied on the 2008 Programmatic Biological Assessment ("PBA") prepared by BLM for its water use estimate.[4] The PBA states that its projections for "drilling and completion" water use account for "fracing," PBA p. 5, pp. 6-7; on the other hand, the PBA states that these projections apply to water use required for "*Primarily Conventional* Natural Gas Development with some Limited Coalbed Methane Activity." (PBA, p. 8). "Primarily conventional natural gas development" is undefined, and has no precise meaning, but in recent years "*unconventional* natural gas development" has typically been used to denote the development of unconventional, "tight" gas reserves that require fracking, like those in the Mesaverde Play Area covered by the RMPA.[5] It is thus entirely unclear to what extent the PBA took into account the freshwater needs of hydraulic fracturing for unconventional natural gas reserves other than coalbed methane development.

This is especially troubling, because hydraulic fracturing requires water volumes that far exceed the amounts used in conventional natural gas development.[6] Indeed, considering that these estimates did not account for the potential for water reuse and recycling, *see* PBA, p. 9, these estimates are remarkably low. According to FracFocus, a database reporting fracking fluid composition for individual wells, from January 2011 through February 2013, the median "total volume of water" use to frack an individual well in Rio Blanco County (which covers most of the WRFO area) was 2,248,291 gallons of water or 6.9 acre feet.[7] The FracFocus figure only represents the volume of water used in fracking fluids, and thus does not include the amount of water needed to also drill and complete the well.[8] But that figure (6.9 acre feet) is almost three

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[4] Programmatic Biological Assessment for BLM's Fluid Minerals Program in Western Colorado re: Water Depletions and effects on the Four Endangered Big River Fishes: Colorado pikeminnow (Ptychocheilus lucius), humpback chub (Gila cypha), bonytail chub (Gila elegans), and razorback sucker (Xyrauchen texanus), November 3, 2008 (Ex. C).

[5] NaturalGas.org, Unconventional Oil and Gas, available at "http://naturalgas.org/overview/unconventional-ng-resources/ (Ex. E); Alberta Energy Regulator, "What is Unconventional Oil and Gas?," available at, https://www.aer.ca/about-aer/spotlight-on/unconventional-regulatory-framework/what-is-unconventional-oil-and-gas (Ex. F); RFD, p. 15, 17 ("Mesaverde continuous, basin-centered, tight sand gas accumulation… contains the bulk of the technically recoverable reserve in the Basin").

[6] *See* Clark, Corrie E. et al., Life Cycle Water Consumption for Shale Gas and Conventional Natural Gas, Environ. Sci. Technol., 2013, 47 (20), pp 11829–11836, abstract available at http://pubs.acs.org/doi/abs/10.1021/es4013855 (Ex. G).

[7] EPA, State-level Summaries of FracFocus 1.0 Hydraulic Fracturing Data, March 2015, pp. 1-2, 4, 14, available at http://www2.epa.gov/sites/production/files/2015-03/documents/ff_statesummarysheets_final_508.pdf (Ex. H).

[8] "Drilling and completion" are separate steps from "hydraulic fracturing" of a well. "Drilling" refers to drilling the borehole into the earth; "fracking" refers to the process of injecting fracking fluids into the well to create high pressure that fractures underground formations and forces trapped hydrocarbons to the surface once the pressure is released; and "well completion" refers to isolating the well from the surrounding environment and turning it into an actively producing well. *See* Jiang, Mohan, et al. Life Cycle Water Consumption and Wastewater Generation Impacts of a Marcellus Shale Gas Well. Environ Sci Technol. 2014 Feb 4; 48(3): 1911–1920, p. 1912, available at

times the PBO's and EIS's estimate of the amount of water needed for "drilling and completion," plus fracking (2.41 acre feet).

While the Biological Assessment for the RMPA notes that water depletion per well "is expected to decline over time as BMPs involving water recycling and treatment are more fully integrated into standard drilling and completions operations," the integration of those technologies is entirely speculative and not required by any provision of the PBO or RMPA.[9] RMPA Biological Assessment (or "BA"), PDF 67.

The EIS similarly brushes aside the potential for higher levels of water use, noting "typically fresh water is only needed for surface drilling operations and for cementing requirements for all casing strings that are run. For hydraulic fracturing, recycled produced water and/or flow back water can be used which helps cumulatively by reducing the overall amounts of water used for oil and gas operations." FEIS, Appendix K, PDF 20; *see also id*., PDF 92 (noting "majority of water and chemicals are recovered after stimulation" without citing any reference or data). No data, however, reveals what proportion of water use is "recycled produced water and/or flow back water" and what proportion is non-recycled fresh water. In the Marcellus Shale, only 20-40% of fracking fluids are recovered as flowback,[10] suggesting that the majority of fracking fluids are *not* recoverable. Further, no data reveals the extent to which operators recycle, or that recycling is technically feasible in the WRFO, or how soon operators will be relying on such technology. Indeed, the PBA's water use projections previously noted that "sophisticated water treatment, holding, reuse, and associated transmission facilities are not in place. Thus *limited water reuse* is occurring in this region…." PBA, p. 9 [emphasis added]; *see also* FEIS Chapter 4, pdf 140, 160 (noting "freshwater use volume of 2.62 acre-feet per well with limited reuse and recycling of freshwater"). One 2013 report notes that in Colorado only 2% of water used for oil and gas production is reused or recycled.[11] This is because readily available underground wastewater disposal sites and cheap sources of freshwater have reduced incentives to recycle.[12]

Nor does the PBO take into account the much higher fresh water requirements of horizontal drilling. The PBO's and PBA's water depletion projections make no mention of this technique or its freshwater requirements. Indeed, water depletion logs submitted by BLM to Fish and Wildlife Service report on the water use of horizontal drilling separately from the water

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http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3915742/ (describing steps of drilling, fracking, and completing a well) (Ex. I); Kargbo, David M., et al. Natural Gas Plays in the Marcellus Shale: Challenges and Potential Opportunities, Environ. Sci. Technol. 2010, 44, 5679–5684, pp. 5680-81, available at http://pubs.acs.org/doi/pdf/10.1021/es903811p (same) (Ex. J); "How Does Well Completion Work?" Rigzone.com, available at http://www.rigzone.com/training/insight.asp?i_id=326 (describing well completion process) (Ex. K).

[9] U.S. BLM, White River Field Office Oil and Gas Development Proposed RMP Amendment and Final EIS Revised Biological Assessment, February 2015 (Ex. D).

[10] Schramm, E. 2011. What is flowback, and how does it differ from produced water? Institute for Energy and Environmental Research of Northeastern Pennsylvania Clearinghouse website, available at http://energy.wilkes.edu/pages/205.asp (Ex. L).

[11] Lynn, Steve. "Frack-water recycling lacking in Northern Colorado," BizWest.com, Oct. 16, 2013, available at http://bizwest.com/frack-water-recycling-lacking-in-northern-colorado-2/. (Ex. M.)

[12] *Id*.

depletion of vertical wells. While vertical wells are assumed to require 2.62 acre feet of water (as estimated in the PBO) and BLM reports total number of vertical wells multiplied by this standard depletion factor, BLM's logs report actual water use for horizontal drilling.[13] Those logs show that horizontal drilling typically entails fresh water depletion much greater than 2.62 acre feet per well. The average water use of horizontal drilling projects from 2011-2014 in the Field Offices covered by the PBO (White River, Grand Junction, Kremmling, Colorado River Valley, Gunnison, Uncompahgre, San Juan Public Lands, and Little Snake) was 11.6 acre feet of water.[14] Recent horizontal drilling projects in the Grand Junction Field Office in 2014 depleted 68.3 and 70.8 acre feet of freshwater.[15] The use of this technique is likely to increase. FEIS, Appendix K, PDF 367, 374, 380 (energy companies noting EIS's failure to consider advancements in this "widespread" technique).

The EIS itself seems to admit that the water depletion of horizontal drilling was not accounted for in the PBO, noting that additional consultation may be needed for projects that exceed an unspecified water depletion estimate – likely that provided in the PBO:

> The water depletion process also requires an annual estimate of freshwater use. Exploratory wells outside the [Mesaverde Play Area], particularly horizontal completions, may result in water use *significantly above the estimate*. Each drilling proposal is considered and impacts of freshwater use analyzed in environmental assessments during the consideration of APDs. If freshwater use increases dramatically, additional consultation with FWS would most likely be required.

FEIS, Ch. 4, PDF 134 (emphasis added). But this piecemeal approach masks the collective impact of horizontal drilling projects in the WRFO area in connection with other projects, and its overall impact on sensitive species including the endangered fish. Moreover, the trigger for additional consultation is unclear. The EIS does not specify what counts as a "dramatic[]" increase and relative to what standard – possibly, an increase above the "annual estimate of freshwater use" made in the 2008 PBO (3,227 acre feet in the White River Basin), or above some other annual estimate made by BLM would trigger consultation, but the reader is left guessing.

High-volume fracking or "massive fracs" requiring millions of gallons of water may even be performed on vertical wells and directional non-horizontal wells in the WRFO.[16] ("Although many horizontal wells are given massive fracs, many vertical wells and directional non-horizontal wells, such as those in the Williams Fork formation of western Colorado, are also given massive fracs."); RFD, p. 30 (geology, drilling depth, and drilling practices can "vary significantly from wellbore to wellbore" in the Mesaverde/Williams Fork formation). Again, the

[13] BLM Water Depletion Logs Reported to Fish and Wildlife Service, 2009-2014 (Ex. N).
[14] Table Summarizing Average Water Depletions for Horizontal Drilling Projects, 2009-2014. (Ex. O.)
[15] BLM, 2014 Water Depletion Log.
[16] Getches-Wilkinson Center for Natural Resources, Energy, and the Environment, Intermountain Oil and Gas BMP Project: Hydraulic Fracturing, available at http://www.oilandgasbmps.org/resources/fracing.php. (Ex. P.)

PBO erroneously assumes an average of 2.62 acre feet of water per well, although water use could far exceed this amount.

In addition, the water depletion logs disclose other oil and gas activities that have occurred over the past several years that are likely to continue and significantly impact water use in the Colorado River Basin. These activities were not accounted for in the PBO, although they are reasonably foreseeable as part of the RMPA. Infrastructure development projects, including pipeline and road improvement projects require high amounts of water (up to 29.1 and 9 acre feet of water in 2011, respectively),[17] but the PBO only accounts for water use associated with well production. Because new pipelines and roads are expected to be constructed under the RMPA, *see* EIS, Ch. 4, PDF 74, 84, the PBO must take into account the water depletion of these projects as well.

In sum, because the PBO does not assess the full scope of anticipated fluid mineral development activities on endangered fish in the Upper Colorado Basin, the Service cannot reasonably rely on the PBO to assess the RMPA's impacts on the endangered fish and its critical habitat. Further, because the Service has determined that any water depletion in the Upper Colorado River Basin may adversely affect the endangered fish, PBA, p. 1, the Service must complete formal consultation regarding the RMPA's water depletions.

In the alternative, the Service and BLM must reinitiate formal consultation regarding the RMPA's water depletion impacts on the endangered fish. "Reinitiation of formal consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and…[i]f 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." 50 CFR § 402.16(b). New information reveals that horizontal drilling, hydraulic fracturing, and other related infrastructure projects in the WRFO planning area will require water depletions "to an extent not previously considered." *Id*.

In a reinitiated consultation, BLM and the Service must reevaluate not just the water depletion effects of fluid mineral development under the RMPA, but it must do so with respect to *all* fluid mineral development projected to occur throughout the entire western Colorado planning area. The PBO's water use projections for these other planning areas neither take into account increased water use due to hydraulic fracturing, horizontal drilling, and infrastructure projects, although these activities are also occurring in these areas and are expected to increase.[18]

Finally, BLM is not complying with the terms of the PBO, because it has failed to report to the Service actual water depletions of vertical and directional non-horizontal wells in the WRFO and other field offices covered by the PBO. *See* pp. 7-8 above; *see also* FWS Concurrence Letter, p. 4 ("All water depletions from the Colorado River Basin involved with

[17] BLM, 2011 Water Depletion Log.
[18] *See* 2011-2014 Water Depletion Logs (water depletion logs showing water use due to horizontal drilling in other field offices); PBA, p. 5 (projecting thousands of new drilling projects throughout Upper Colorado Basin).

fluid mineral extraction from BLM administered lands must be reported to the BLM state office annually so that they can be included in the annual water depletion report submitted to our Ecological Services Office in Grand Junction."). Instead it is reporting the number of vertical and directional wells drilled annually multiplied by a standard depletion factor that does not accurately reflect actual water use. This is despite the PBO's clear intent that actual water use should be monitored. *See* PBO, p. 5 ("The BLM State Office will track all projects that result in water depletions from the upper Colorado River Basin. The BLM will complete and submit a log of all water depleting projects by river sub-basin to the Service by October 31 of each year. *The logs showing depletion amounts resulting from wells drilled will be used to track compliance with the threshold depletion amount.*" [emphasis added].) Reporting of actual water use would ensure that water depletions are not exceeding the annual water depletion threshold. In a reinitiated consultation, the Service should require BLM to collect such data from operators and report actual water depletions (or the RMPA should include these measures), given the inherent uncertainties in predicting future water use.

B. The Service Must Initiate Formal Consultation Regarding the Impacts of Spills on Endangered Fish.

The Service erroneously declined to initiate formal consultation regarding the effects of the RMPA on endangered fish, when it determined that implementation of the RMPA other than water depletion activities "may affect but is not likely to adversely affect" the endangered fish. "Formal" consultation is required when a proposed action is "likely to adversely affect" a species or its critical habitat. *See* 50 C.F.R. §§ 402.13(a), 402.14(b)(1). The Service's determination that RMPA implementation "is not likely to adversely affect" the endangered fish fails to take into account the increased risk of leaks and spills that will occur with increased fluid mineral development. These leaks and spills will pollute nearby streams, rivers, and stream-connected groundwater, exposing endangered fish to toxic pollutants and degrading their habitat.

1. Accidental Spills and Leaks Are Foreseeable and Likely to Increase Under the RMPA.

As earlier comments pointed out, fluid mineral development activities within the Upper Colorado River Basin have resulted in nearly 500 spills in Rio Blanco County between 2000 and 2012, including a 90% increase in spills since 2000. FEIS, Appendix K, PDF 234. An analysis of spills reports within the Basin between January 1, 2008 and July 31, 2014 revealed 12 self-reported spills in the WRFO planning area that resulted in contamination of surface waters or groundwater, or an average of two spills per year.[19] The number could actually be higher, as spills commonly go unreported.[20] Currently, the number of actively producing wells in the

[19] *See* Upper Colorado River Basin Spills (Ex. Q, hereinafter "Spills Data"). This document consists of data reporting spills in the Upper Colorado River Basin that we compiled from the following sources: Colorado: Colorado Oil and Gas Conservation Commission, http://cogcc.state.co.us ("inspection/incident" database for "spill/release"); Utah: Utah Department of Environmental Quality, http://eqspillsps.deq.utah.gov/Search_Public.aspx; New Mexico: State of New Mexico Oil Conservation Division, https://wwwapps.emnrd.state.nm.us/ocd/ocdpermitting//Data/Incidents/Spills.aspx. The analysis does not include data from Wyoming or Arizona.

[20] Souther, Sara, et al. Biotic Impacts of Energy Development from Shale: Research Priorities and

WRFO planning area is a little over 1,800 wells. FEIS, Ch. 3, PDF 118. With the number of producing wells expected to increase over nine-fold over the next 20 years (15,040 new wells, plus the 1,800 existing wells), the risk of spills contaminating surface waters or groundwater could likewise increase proportionally to over 18 spills per year in the WRFO planning area. This risk could be even higher since the WRFO contains no limits on the rate or number of wells drilled. *See* FEIS, Ch. 2, PDF 11, 12.

Some of these spills could result in the release of large quantities of flowback, produced water (or brine water), fracking chemicals, or hydrocarbons. For example:

- In 2010, 1,750 barrels of produced water (over 55,000 gallons) released due to a tear in a pit liner, contaminating Little Creek, which was 1000 feet away from the pit.

- In 2011, 2,028 barrels of brine water (over 63,000 gallons) leaked from an injection line, some of which may have contaminated the White River.

- In 2011, 230 barrels of drill cuttings (over 7,200 gallons) were washed away from a well pad into an ephemeral drainage, none of which was recovered.

All the above incidents occurred within the WRFO planning area.[21] And just within the last six months, at least three incidents occurred within Rio Blanco County that resulted in the release of produced water to "waters of the state" – in two of them, over 100 barrels of produced water leaked, some of which reached erosion channels presumably connected to surface waters.[22] A number of spills in the WRFO planning area and Upper Colorado Basin were of "unknown" quantity and/or substance but could potentially be quite large, given their belated discovery.[23]

The potential for spills to move from tributaries into endangered fish critical habitat within main-stem rivers was shown by a 2014 spill into the Green River. On the night of May 20, 2014 an oil well operated by SW Energy on lands administered by BLM "blew out," leaking estimated 100 barrels per hour of crude oil and production water into Salt Wash which leads to the Green River. SW Energy did not shut-in the well until 1:20 p.m. on May 22, at least 36 hours later. On May 24, flooding from a thunderstorm "overcame prevention measures" washing an

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Knowledge Gaps, Front Ecol Environ 2014; 12(6): 330-338, p. 332 (noting that companies routinely violated Pennsylvania's spill reporting requirement; only 59% of documented spills were reported by the drilling company) (Ex. R); Gulf Monitoring Consortium Report on Activities from April 2011 to October 20, pp. 3-6, available at http://skytruth.org/gmc/wp-content/uploads/2012/05/Gulf-Monitoring-Consortium-Report.pdf (Ex. S) (uncovering evidence of non-reporting and chronic under-reporting of oil spills in Gulf of Mexico 2012, using analysis of National Response Center reports and comparison with satellite imagery); Samira Daneshgar Asl, John Amos, Paul Woods, Oscar Garcia-Pineda, Ian R. MacDonald, Chronic, Anthropogenic Hydrocarbon Discharges in the Gulf of Mexico, Deep-Sea Research II, available at http://www.sciencedirect.com/science/article/pii/S0967064514003725 (Ex. T) (peer-reviewed study by scientists at Florida State University validating previous report's analysis).

[21] *See* Spills Data (WRFO tab); Spills Data Incident Reports (Ex. U – 2008-2014 WRFO incidents for Berry, Chevron, and Williams Production).

[22] *Id*. (2014-15 surface water incidents).

[23] *Id*. (2014-15 "unknown" incidents); Spills Data (All Upper Basin tab, columns J-L).

unknown quantity of oil and produced water 1.5 miles from Salt Wash into the Green River and critical habitat for endangered fish.[24] The U.S. Fish and Wildlife Service's recent Biological Opinion for the Gasco Energy Inc. Field Development Project anticipates these events and the potential for more frequent spills given expanded drilling:

> There is a greater potential for impacts from pollutants, if a pipeline, well pit, or other source were to inadvertently release contaminated fluids into waterways at points near the Green and White Rivers. Through direct or indirect discharge, these pollutants could reach the Green River and negatively impact water quality to the point of affecting native fish populations. Direct impacts will result from a discharge from a pipeline or well pit reaching the Green River in its original form or within a single release event. Indirect effects occur when discharges are released to the ground and are later released to the river after being carried by an erosion event or carried by rain or snowmelt runoff. As more well and pipeline development occurs in the project area the chance of pollutants reaching the Green River increases, thus increasing the potential of harm to native fish populations.[25]

Like the above Green River incident, some spills or leaks are not detected until long after they have started.[26] Thus, it is quite possible that large volumes of chemical substances escape undetected until reaching surface sediments or waters. The Gasco Biological Opinion explains that this is especially possible with smaller leaks:

> The effects of smaller leaks that may cause chronic, sub-lethal effects to fish populations may be more prevalent. While the oil and gas industry has a wide variety of methods available to detect substantial leaks or integrity breeches, the technology for detection of small "pinhole" leaks is not as advanced. This creates a significant problem in that the current available methodology may allow small

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[24] Bureau of Land Management. 2014. Update: Salt Wash Oil Spill, available at http://www.blm.gov/ut/st/en/fo/moab/SaltWashSpill.html (Ex. QQ).

[25] Fish and Wildlife Service, Biological Opinion for the Gasco Energy Inc. Field Development Project ("Gasco BO"), Dec. 2011, p. 26, available at http://www.blm.gov/style/medialib/blm/ut/vernal_fo/planning/gasco_eis/gasco_rod.Par.56176.File.dat/Gasco%20ROD%20Attachment%205%20BO.pdf (Ex.V).

[26] *See also* MacPherson, James, "ND wants answers on ruptured pipeline inspections," AP, Oct. 16, 2013, available at http://bigstory.ap.org/article/experts-question-north-dakota-oil-spill-estimates (spill released from quarter-inch pipeline hole contaminated wheat field the size of seven football fields); Vanderklippe, Natha. "Spill sends 22,000 barrels of oil mix into Alberta muskeg," *The Globe and Mail*, May 30, 2012, available at http://www.theglobeandmail.com/globe-investor/spill-sends-22000-barrels-of-oil-mix-into-alberta-muskeg/article4219809/ (22,000-barrel wastewater pipeline spill not detected until after it had reached surface waters and was spotted by aircraft); Vanderklippe, "Toxic waste spill in northern Alberta biggest of recent disasters in North America," *The Globe and Mail*, June 12, 2013, available at http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/apache-pipeline-leaks-60000-barrels-of-salty-water-in-northwest-alberta/article12494371/ (9.5 million liter spill of produced water from pipeline suspected to be "longstanding" given the extent of damage over 42 hectares). (Ex.W.)

leaks to go undetected for extended periods of time often evading detection until they are manifested on the surface sediments or water.[27]

Spills and leaks from oil and gas development routinely occur not just in the WRFO but also throughout the Upper Colorado Basin. Between January 2008 and July 2014, at least 135 spills or leaks resulted in releases to surface or groundwater in the Upper Basin – many of these from facilities under BLM's jurisdiction.[28] With increasing oil and gas development expected to occur throughout the upper Basin, *see* PBA p. 5, it is entirely foreseeable that the risk of spills in this region will only increase. Moreover, a substantial portion of these spills have occurred upstream from the confluence of the Colorado River and the Green River, in the Green River Subbasin, where some of the most conducive habitat for endangered fish conservation and recovery exists, including the only known spawning bar for razorback sucker in the Upper Colorado River Basin.[29] The cumulative effects of this increased risk of spills on endangered fish in the region must also be accounted for in the Service's analysis of the RMPA's effects on the endangered fish.

The Service's determination also fails to take into account the unprecedented sheer volume of chemicals and wastewaters that will be generated by increased hydraulic fracturing in the WRFO. Millions of pounds of fracking chemicals will be transported to the WRFO planning area, injected into the ground, and either reinjected underground or transported offsite for disposal.[30] Currently, over a hundred million gallons of fracking wastewaters are produced annually in the WRFO, *see* EIS, Ch. 3, PDF 118, and that number is likely to increase with increasing rates of hydraulic fracturing.[31]

2. Spills and Leaks under the RMPA Are Likey to Adversely Affect the Endangered Fish.

Fracking chemicals and fracking wastewaters can be highly toxic to fish. Produced waters that fracking operations force to the surface from deep underground can contain high levels of total dissolved solids, salts, metals, and naturally occurring radioactive materials.[32] Flowback waters (i.e., fracturing fluids that return to the surface) may also contain similar

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[27] Gasco BO, p. 27.
[28] Spills Data (all Upper Basin tab).
[29] Valdez, R.A. and P. Nelson. 2004. Green River Subbasin Floodplain Management Plan. Upper Colorado River Endangered Fish Recovery Program, Project Number C-6, Denver, CO., available at http://www.coloradoriverrecovery.org/documents-publications/technical-reports/hab/GreenFMP.pdf. (Ex. X.)
[30] *See* EPA, "Analysis of Hydraulic Fracturing Fluid Data from the FracFocus Chemical Disclosure Registry 1.0 ," Webinar Presentation, March 2015, p. 14, available at http://www2.epa.gov/sites/production/files/2015-04/documents/fracfocus_public_webinars_508_0.pdf (noting that hundreds or thousands of pounds may be brought to, stored, and mixed on the well pad). (Ex. Y.)
[31] Souther, p. 332 (noting 570% increase in wastewater production since 2004 from development of the Marcellus Shale).
[32] Brittingham, Margaret C., et al. Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats. *Environ. Sci. Technol.* 2014, 48, 11034-11047, p. 11039. (Ex. Z.)

constituents along with fracturing fluid additives such as surfactants and hydrocarbons.[33] The identity and effects of many of these additives is unknown, due to operators' claims of confidential business information. Compounds in mixtures can have synergistic or antagonistic effects, but it is impossible to know these effects without full disclosure.[34]

Nonetheless, accidental spills and intentional dumping of fracking fluids and wastewaters can cause large-scale harm to aquatic life. Numerous incidents of fracking wastewater contamination from pipelines, equipment blowouts, and truck accidents have been reported, and have resulted in kills of fish.[35] In 2013, a company admitted to dumping wastewater from fracking operations into the Acorn Fork Creek in Kentucky, causing a massive fish kill.[36] Among the species harmed was the blackside dace, a threatened minnow species.[37] An analysis of water quality of Acorn Creek and fish tissues taken shortly after the incident was exposed showed the fish displayed general signs of stress and had a higher rate of gill lesions than fish in areas not affected by the dumping.[38] The lead author (a scientist at USGS) noted that the "study is a precautionary tale of how entire populations could be put at risk even with small-scale fluid spills," "especially…if the species is threatened or is only found in limited areas, like the Blackside dace is in the Cumberland."[39]

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[33] *Id*.
[34] Souther, p. 334.
[35] *See, e.g.*, Department of Environmental Protection, Commonwealth of Pennsylvania, Inspection Report, May 27, 2009, www.marcellus-shale.us/pdf/CC-Spill_DEP-Insp-Rpt.pdf (pipeline accidentally discharged an estimated 4,200 gallons of wastewater, as well as sediments and state investigation report concluded, "The creek was impacted by sediments all the way down to the lake and there was evidence of a fish kill as invertebrates and fish were observed lying dead in the creek."); Kathie O. Warco, "Fracking truck runs off road; contents spill", The Observer-Reporter, October 21, 2010, available at http://www.uppermon.org/news/Other/OR-Frac_Truck_Spill-21Oct10.html (tanker truck hauling fracking liquid ran off a road and spilled almost 5,000 gallons of liquid spill, resulting in the contamination of a stream and several dead minnows); Michaels, C., J.L. Simpson, and W. Wegner. 2010. "Fracture Communities, Case studies of the environmental impacts of industrial gas drilling," Riverkeeper, p. 6, available at www.riverkeeper.org/wp-content/uploads/2010/09/Fractured-Communities-FINAL-September-2010.pdf (blowout released nearly 1 million gallons of wastewater into nearby creeks, resulting in uncontrolled discharge of wastewater into a tributary of Little Laurel Run, a high-quality coldwater fishery); Department of Environmental Protection, Commonwealth of Pennsylvania, DEP Fines Talisman Energy USA for Bradford County Drilling Wastewater Spill, Polluting Nearby Water Resource," August 2, 2010, available at http://www.portal.state.pa.us/portal/server.pt/community/newsroom/14287?id=13249&typeid=1 (spill of used natural gas drilling fluids in Bradford County, PA, sent 4,200-6,300 gallons of fluids into a wetland and a tributary of Webier Creek, which drains into a coldwater fishery). (Ex. AA.)
[36] Vaidyanathan, Gayathri, *Fracking Spills Cause Massive Ky. Fish Kill*, E&E News, Aug. 29. 2013 (Ex. BB),
[37] *Id*.
[38] Papoulias, D.M. and A.L. Velasco. Histopathological analysis of fish from Acorn Fork Creek, Kentucky, exposed to hydraulic fracturing fluid releases, 12 Southwestern Naturalist (Special Issue 4):92 (2013), available at http://www.eaglehill.us/SENAonline/articles/SENA-sp-4/18-Papoulias.shtml (Ex. CC).
[39] *See* US Geological Survey, "Hydraulic Fracturing Fluids Likely Harmed Threatened Kentucky Fish Species, Aug. 28, 2013, available at

Wastewaters can have high levels of salinity, which aquatic organisms are sensitive to (including plants and invertebrate species that fish may depend on); thus, accidental releases of produced and flowback waters may have harmful effects on fish and their habitat.[40] Increased levels of total dissolved solids in surface waters are associated with higher rates of fish mortality.[41] Further, produced waters can contain copper, iron, lead, manganese, arsenic, cadmium, nickel, zinc, chromium, selenium, and sodium bicarbonate at levels above thresholds that are harmful to aquatic organisms, including fish.[42] The discharge of fracking wastewater into the Susquehanna River in Pennsylvania is suspected to be the cause of fish abnormalities, including high rates of spots, lesions, and intersex.[43] Fracking fluids may also contain hydrocarbons,[44] which can cause deterioration of body tissues of aquatic organisms and reduced growth.[45] Drilling fluids may also cause impaired immune function in fish.[46] Other contaminant effects may include "changes in heart and respiratory rates; gill hyperplasia; enlarged liver; reduced growth; fin erosion; impaired endocrine system; a variety of biochemical, blood, and cellular changes; and behavioral responses."[47] As Fish and Wildlife Service has previously noted, "[d]isruption of behavioral functions can result in population declines or changes in year-class strength if enough individuals are affected."[48] Thus, chronic and persistent pollution from spills and leaks could result in harm to endangered fish at the population-scale.

3. Measures to Protect the Endangered Fish Are Inadequate.

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http://www.usgs.gov/newsroom/article.asp?ID=3677#.VTf3oCFVhBd (Ex. DD).

[40] Brittingham, p. 11039; Souther, p. 332 (noting small increases in salinity can harm or kill aquatic plants and invertebrates).

[41] Tuckwiller, Ross, Annotated Bibliography: Potential Impacts of Energy Development on Fisheries in the Rocky Mountain West Prepared for Theodore Roosevelt Conservation Partnership Fish, Wildlife, & Energy Working Group, p. 17 (Ex. EE).

[42] *Id*. pp. 21-22 (extremely elevated chromium concentrations in fish exposed to produced waters), p. 23 (fish showing lesions and kidney damage after exposure to sodium bicarbonate).

[43] Piette, Betsy, BP Oil Spill, Fracking Cause Wildlife Abnormalities, Workers World, April 27, 2012, available at http://www.workers.org/2012/us/bp_oil_spill_fracking_0503/ (Ex. FF); Pennsylvania Fish & Boat Commission, Ongoing Problems with the Susquehanna River smallmouth bass, a Case for Impairment, May 23, 2012, www.fish.state.pa.us/newsreleases/2012press/senate_susq/SMB_ConservationIssuesForum_Lycoming.pdf (Ex. GG).

[44] EPA, State-level Summaries of FracFocus 1.0 Hydraulic Fracturing Data, p. 38 (Colorado fracking chemical disclosures showing high incidence of naphthalene and "solvent naphtha, petroleum, and heavy arom.").

[45] Gasco BO, p. 27; In the Matter of Changes to the Rules and Regulations of the Oil and Gas Conservation Commission of the State of Colorado, Cause No. 1R, Dkt No. 0803-RM-02, Testimony of Colorado Division of Wildlife Staff Regarding Surface Occupancy Restrictions, p. 39 (describing effects of toluene, naphthalene, and crude oil on various fish) (Ex. HH).

[46] Tuckwiller, p. 22.

[47] Gasco BO, p. 27.

[48] *Id*.

BLM's Biological Assessment and the Service's Concurrence discuss a few measures that might avoid the impacts of potential spills and leaks on the endangered fish, but these measures are wholly inadequate.

First, the Biological Assessment misleadingly suggests that measures to protect endangered fish critical habitat are required when they are not. The BA states:

> [T]he absence of automatic shutoff valves for natural gas pipelines that cross the White River's critical habitat has been identified as a potential threat to endangered Colorado River fishes. In response to these concerns, Alternative E *has adopted the following measures* (see Attachment 1 Table 19 Record 18):
>
> • Pipelines would not be constructed in sites considered important for pikeminnow reproduction;
>
> • Pipelines crossing the river's 100-year flood plain or within the lower mile of larger perennial tributaries (e.g., Piceance Creek, Yellow Creek, and Crooked Wash) would be double-walled and equipped with automatic shut-off valves;
>
> • Project proponents would be required to prepare a spill/leak contingency plan as part of BLM's biological assessment.

RMPA Biological Assessment, PDF 69.

However, the EIS notes that only a "spill/leak contingency plan would be analyzed integral with BLM's biological assessment to the FWS," and that the above pipeline measures merely "could be considered" in granting an exception to NSO stipulations that apply to endangered fish critical habitat. *See* FEIS, Appendix A, NSO 27 ("Specific measures that could be considered for granting exceptions include, but would not be limited to the following…1) Pipelines could not be constructed in sites identified by the CPW or FWS as important for Colorado pikeminnow reproduction and recruitment of young. 2) Pipelines transporting potential contaminants would be equipped with automatic shutoff valves"; double-walled pipelines "may be required"). The NSO may also be modified "if the proposed action can be sited, conducted, or conditioned to remain compatible with habitat protection and species recovery objectives" – and without imposing any of the "requirements" as described above. The Service, however, relies on the Biological Assessment's misrepresentation of the NSO stipulation in its concurrence that the RMPA is not likely to adversely affect the endangered fish, rendering the Service's determination fatally flawed.[49]

[49] *See* FWS Concurrence, p. 4 ("A No Surface Occupancy (NSO) stipulation will be applied to designated Colorado pikeminnow critical habitat on Federal estate that addresses specific aquatic habitat issues, including the avoidance of special fishery habitats and management of potential contamination (e.g., installation of emergency shut-off valves and development of spill contingency plans) as a precursor to ESA Section 7 consultation.")

The Service's Concurrence also cites to other measures intended to protect sensitive habitat, but they contain exceptions without specifying any measures as to how leaks and spills will be avoided. These include:

- NSO-55-E, a "no surface occupancy" restriction that applies to the ACEC-designated "White River Riparian" (950 acres) planning area;

- CSU-02, which requires avoidance of surface-disturbance activities in
  1) Mapped 100-year floodplains;
  2) Areas within 500 feet from perennial waters, springs, water wells, and wetland/riparian areas; and
  3) Areas within 100 feet from the inner gorge of ephemeral or intermittent stream channels; and

- CSU-06, which requires avoidance of surface-disturbance activities in riparian and wetland habitats (and potential habitats).

FWS Concurrence, p. 4; FEIS, Appendix A (listing NSO and CSO measures). All of these restrictions are subject to exception if, essentially, the values or functions of the protected area would not be compromised. *See* NSO-55 (exception applies if "values or functions for which the ACEC was established " would not be compromised); CSU-02 (exception for activity that "would not degrade the resource identified"); CSU-06 (exception if "proper functioning condition of the riparian/wetland area" would not be degraded). But the potential for spills and leaks to compromise or degrade local values and functions, or simply harm downstream endangered fish, would exist in any case seeking an exception, and, as already noted, the local impacts of just one spill can be devastating. Rather than deferring consideration of the risks and protective measures until an exception is applied for, the Service and BLM must formally consult over those issues now.

Finally, the Biological Assessment cites to conditions of approval that would purportedly protect the endangered fish from contaminants, which the Service's Concurrence appears to rely on. *Compare* RMPA Biological Assessment, PDF 72 (specifying conditions of approval that "effectively contend with insults to aquatic systems" and "require riparian avoidance") *with* FWS Concurrence, p. 4 (referring generally to "Conditions of Approval (COAs)" that do same). These measures, however, either do not relate to the avoidance of spills or leaks, or they appear to be incorrect references. The BA cites to its own Attachment 1, Table 19, Records 17 and 22 as COAs "that effectively contend with insults to aquatic systems," but Table 19 relates to cultural resources. *See* BA, PDF 147. Table 9 was most likely the intended reference, which pertains to water resources. However, the cited COAs simply restrict development on steep slopes (Record 17) and require "[u]se of evaporation facilities for the disposal of produced water [to] be evaluated on a case-by-case basis," but without any standards for evaluation (Record 22). Neither of these specifically address mitigating the risk of spills and leaks. The BA also cites to "Attachment 1 Table 13 Record 20," which purportedly requires "riparian avoidance," but this provision relates to sage grouse forbs. Further, as already discussed above, CSO-06 which does relate to riparian avoidance, is not sufficiently protective, as it allows exceptions without any protective standards for spill avoidance or mitigation.

II. The RMPA Fails to Incorporate Adequate Regulatory Measures to Prevent the Extirpation of Greater Sage-Grouse.

In March 2010 the U.S. Fish and Wildlife Service (FWS) found that the greater sage grouse (*Centrocercus urophasianus*) is warranted but precluded for listing under the Endangered Species Act (ESA) of 1973, as amended, 16 U.S.C. § 1531–1544.[50] In July 2011, FWS signed landmark agreements settling litigation brought by the Center and WildEarth Guardians over FWS's long-standing failure to make ESA determinations in response to listing petitions for hundreds of species, including the sage grouse. Under these agreements, FWS is required to determine by September 30, 2015, whether the listing remains warranted.[51]

The science is unequivocal that loss of habitat, including from livestock grazing and energy development, and inadequacy of regulatory mechanisms, including land management of federal public lands, are primary factors contributing to the risk of extinction for greater sage grouse.[52] FWS's 2010 warranted but precluded finding identified U.S. Bureau of Land Management (BLM) resource management plans and U.S. Forest Service (USFS) land and resource management plans as the principal mechanism by which these agencies could adequately regulate land management to conserve sage grouse, but determined that current plans lacked adequate measures and/or are inconsistently applied to conserve the species. FWS found that

> the BLM has the regulatory authority to address [threats to greater sage grouse] in a manner that will provide protection for sage grouse. However, BLM's current application of those authorities in some areas falls short of meeting the

[50] 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered, 75 Fed. Reg. 13,910 (proposed Mar. 23, 2010) ("12-Month Findings"); *see also Western Watersheds Project v. United States Forest Serv.*, 535 F. Supp. 2d 1173 (D. Id. 2007) (holding prior USFWS "not warranted" finding for greater sage-grouse arbitrary and capricious). The 2010 findings found that listing of greater sage grouse is warranted both rangewide and with respect to the bi-state distinct population segment ("DPS"), which occurs only in the Mono Basin area of Mono County, California, and Lyon County, Nevada. 12-Month Findings, 75 Fed. Reg. 13,988, 14,007. All references cited in this section (except case law) can be found in Exhibit RR.

[51] 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered, 75 Fed. Reg. 13,910 (proposed Mar. 23, 2010) ("12-Month Findings"); *see also Western Watersheds Project v. United States Forest Serv.*, 535 F. Supp. 2d 1173 (D. Id. 2007) (holding prior USFWS "not warranted" finding for greater sage-grouse arbitrary and capricious). The 2010 findings found that listing of greater sage grouse is warranted both rangewide and with respect to the bi-state distinct population segment ("DPS"), which occurs only in the Mono Basin area of Mono County, California, and Lyon County, Nevada. 12-Month Findings, 75 Fed. Reg. 13,988, 14,007.

[52] *See* 12-Month Findings, 75 Fed. Reg. at 13,962 ("habitat conversion for agriculture, urbanization, infrastructure (e.g. roads, powerlines, fences); fire, invasive plants, pinyon-juniper woodland encroachment, grazing, energy development, and climate change are all contributing, individually and collectively, to the present and threatened destruction, modification, and curtailment of the habitat and range of the greater sage-grouse."); *id.* at 13,982 ("Based on our review of the best scientific and commercial information available, we conclude that existing regulatory mechanisms are inadequate to protect the species. The absence of adequate regulatory mechanisms is a significant threat to the species, now and in the foreseeable future.").

> conservation needs of the species. This is particularly evident in the regulation of oil, gas, and other energy development activities.[53]

Consistent with the National Greater Sage-grouse Planning Strategy[54] and associated instruction memoranda[55] to avoid risk of sage grouse extinction, the land management agencies should amend the plans with a combination of land allocations and management prescriptions, including new terms and conditions, on activities permitted in sage grouse habitat.

Although the White River RMP may ultimately be amended further by ongoing BLM range-wide sage-grouse habitat planning, FEIS at 1-8, the proposed alternative makes significant decisions regarding oil and gas development within priority and general greater sage-grouse habitat. *See* FEIS at 2-31. Unfortunately, by the BLM's own acknowledgment, none of the alternatives it considered are likely to prevent the extirpation, due to habitat loss, of the Parachute-Piceance-Roan ("PPR") population of greater sage-grouse.[56]

Strategies for avoiding such extirpation can be found in the U.S. Department of the Interior (DOI) and U.S. Department of Agriculture's (USDA) expert recommendations made in the National Technical Team (NTT) report of 2011, whose charter was "to ensure that BLM management actions are effective and based on the best available science" for conserving and restoring greater sage grouse populations and habitat. The National Technical Team was comprised of 23 federal and state agency biologists and land managers—including 16 DOI and two USDA experts—and drew from the extensive scientific literature on sage grouse to produce "A Report on National Greater Sage-grouse Conservation Measures."[57] The NTT report recommends concrete management actions based on review of published scientific literature. Specifically for oil and gas development, the NTT report and available science call on land management agencies to:

- Restrict development to one site per section in priority habitat.[58]

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[53] 12-Month Findings, 75 Fed. Reg. at 13,979.

[54] Bureau of Land Management, National Sage-Grouse Planning Strategy (Aug. 22, 2011), *available at* http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/sage-grouse_planning/documents.Par.2415.File.dat/Final%20Signed%20GSG%20Planning%20Strategy%20Charter.pdf.

[55] Bureau of Land Management, Greater Sage-Grouse Interim Management Policies and Procedures, Instruction Memorandum No. 2012-043 (Dec. 22, 2011); Sage-Grouse National Technical Team, A Report on Greater Sage-Grouse Conservation Measures ("NTT report") (Dec. 21, 2011), *available at http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2012.Par.52415.File.dat/IM%202012-044%20Att%201.pdf.*

[56] FEIS at 4-229 ("It appears likely that conventional development practices applied to PPR sage-grouse habitats, regardless of alternative well development intensities, would result in the extirpation of the PPR population within the life of the plan.")

[57] Sage-Grouse National Technical Team, A Report on Greater Sage-Grouse Conservation Measures ("NTT report") (Dec. 21, 2011), *available at http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/im_attachments/2012.Par.52415.File.dat/IM%202012-044%20Att%201.pdf.*

[58] *See* NTT report at 21, 24; Matthew Holloran & Stanley Anderson, *Spatial Distribution of Greater*

- Limit surface disturbance to less than 3 percent per section in priority habitat.[59]
- Allow no new mineral leasing within priority habitat.[60]
- Require conditions of approval for existing fluid minerals leases as outlined in the NTT report, including four-mile no-surface-occupancy lek buffers.[61] Larger buffers may be required to conserve the species.[62]

Participants in the planning process, including Rocky Mountain Wild (formerly Center for Native Ecosystems), brought the NTT recommendations to the attention of the White River Field Office throughout the planning process.[63] The White River Field Office, however, rejected the NTT findings and recommendations, electing instead to employ a demonstrably ineffective buffer of only 660 feet, that will cause "at least 70 to 80 percent of all available habitat (within 660 to 990 feet of infrastructure) would be heavily influenced by development activity." FEIS 4-269. Instead of employing the NTT recommendations of no new leasing and a four-mile buffer around leks for existing leases, BLM elects an admittedly "unproven," FEIS 4-270 strategy of allowing "adverse influences" on a full 10 percent of suitable sage-grouse habitat within mapped Priority Habitat, FEIS 4-270. The BLM claims that it did not consider the NTT standard because:

> The DEIS did not consider managing lands within 4 miles of a sage-grouse lek and we did not add it to the FEIS because it would have been a substantial change from the DEIS and because decisions on how to manage sage-grouse will ultimately be made in the Northwest Colorado Greater Sage-Grouse EIS (Section 1.3.3), which does consider the use of NSO stipulations within 4 miles of a lek.[64]

The fact that management of sage-grouse habitat within the WRFO may ultimately be further amended by the range-wide grouse planning decision does not provide a reasonable justification to eliminate from consideration in this plan revision measures that could prevent the species'

Sage-grouse Nests in Relatively Contiguous Sagebrush Habitats, 107 CONDOR 742–52 (2005); Kevin Doherty et al., *Greater Sage-Grouse Nesting Habitat: The Importance of Managing at Multiple Scales*, 74 J. WILDLIFE MGMT. 1544–53 (2010).

[59] *See* NTT report at 7–8; Steven T. Knick et al., *Modeling Ecological Minimum Requirements for Distribution of Greater Sage-grouse Leks: Implications for Population Connectivity Across Their Western Range*, U.S.A. Ecology & Evolution 9 (2013).

[60] *See* NTT report at 22, 24–26.

[61] *See* NTT report at 22–24.

[62] A four-mile lek buffer may include an average of 80 percent of nesting females, *see* NTT report at 21; larger buffers may be recommended to conserve the species. *See* Daniel Manier et al., Conservation Buffer Estimates for Greater Sage-Grouse—A Review, United States Geological Survey Open-File Report 2014-1239 (2014).

[63] *See* Attachment A: Wilderness Society, et al. Comments on the White River Draft Resource Management Plan Amendment and EIS for Oil and Gas Development ("DEIS Comment"), 10-11 (Jan. 28, 2013); Letter from Center for Native Ecosystems to Kent Walter, WRFO 2 (March 9, 2007) (nominating four-mile area around greater sage-grouse leks for Area of Critical Environmental Concern designation).

[64] FEIS K-25.

local extirpation that the BLM concedes as inevitable under all the alternatives it considered in detail. Even if subsequent decisions may change grouse management practices, in the interim, under the proposed White River amendment, BLM will likely continue to approve drilling locations on existing leases wholly inconsistent with the recommendations of the NTT and its obligations under FLPMA, the ESA, and its sensitive species policy to avoid actions impairing the viability of species warranted for listing under the ESA.

III. The RMPA EIS Is Deficient under NEPA.

A. The EIS's discussion of the RMPA's impacts on water depletion and indirect effects on water-dependent species is deficient.

As already alluded to above, the EIS fails to properly disclose the amount of freshwater that will be needed for new natural gas development, and as a result, fails to fully disclose the RMPA's impacts on endangered fish and other freshwater-dependent species. *See* section I.A above. The EIS does not clearly state the amount of water that will be required for new natural gas development and underestimates the amount needed, failing to take into account the higher water use required by horizontal drilling and hydraulic fracturing. These issues were previously raised in public comment. *See* FEIS, Appendix K, PDF 20, 92, 95, 232. The EIS further fails to analyze site-specific impacts in which significant water depletion will be required; misleads the public as to the significance of the RMPA's overall water use consumption; and fails to descibe adequate mitigation for these impacts.

The EIS suggests that 2.62 acre feet of water will be needed for each well (with depletions to decrease over time), but then elsewhere suggests that horizontal wells will deplete significantly greater amounts of water and that average water depletion may be higher than 2.62 acre-feet per well. *Compare* FEIS, Ch. 4, PDF 134, 160 (citing 2.62 figure with expectation of declining use due to recycling) with *id*. PDF 134 (suggesting horizontal drilling may cause excess depletions), PDF 318 ("surface water depletions of approximately 2.62 acre-feet per well *or greater* would be expected" [emphasis added]). The EIS must provide a clear estimate of how much water will be required for each well and the total water use expected under the RMPA. To the extent that 2.62 acre feet of water per well represents the RMPA's water use, this figure is a severe underestimate. As already discussed in section I.A it fails to account for the full scope of water use expected under the RMPA, including the water required by hydraulic fracturing, horizontal drilling, and infrastructure projects, which all require significant amounts of water.

The EIS also fails to acknowledge local, site-specific impacts that could occur near horizontal and directional drilling sites and other areas where significant drilling could occur. Such an analysis is especially important because horizontal drilling operations could be required near sensitive areas that support numerous species dependent on water resources. Because horizontal drilling may be the only way to reach NSO areas that contain riparian and wetland areas (because no surface drilling is allowed on these lands), water withdrawals close to these areas are likely to adversely affect sensitive species that rely on aquatic and riparian habitat. *See* FEIS, Ch. 4, PDF 105 (noting "concentration of development and exploration activities along the border of [NSO] areas using directional and horizontal drilling techniques"). But the EIS fails to

assess the impacts of high rates of water depletion near these sensitive areas, or even acknowledge the potentially significant impacts. *See* FEIS, Appendix K, PDF 20 ("Indirect impacts to other resources such as wildlife from this water use may be speculative and difficult to predict.")

In addition, the EIS's attempt to minimize the RMPA's overall water consumption by comparing it to total water use, including irrigation withdrawals, in the Yampa and White River Basins is a red herring. *See* FEIS Ch. 4, PDF 134; *id.*, Appendix K, PDF 20. This reasoning ignores significant localized impacts of water depletion in sensitive areas and sub-watersheds within these Basins. It further ignores the plain fact that water depletion by oil and gas development results in a permanent loss of the Colorado River Basin's water; freshwater used for fracking will be irreversibly contaminated and permanently disposed of underground.[65] In contrast, "[r]oughly 90–95% of water used indoors returns to a wastewater treatment plant and is ultimately released to streams."[66] The USGS estimates that 45% of irrigation water returns to surface waters.[67] This permanent loss of water to natural systems in the Colorado River Basin is entirely ignored in the EIS.

Finally, the EIS fails to describe effective mitigation to reduce the impacts of increased water use under the RMPA. The supposed requirement for operators to develop water management plans for site-specific areas is a sham. *See* FEIS, Ch. 4. PDF 169; *id.* Appendix K PDF 107 (EPA comment). Not only does such deferred planning and analysis sweep under the rug the RMPA's cumulative impacts on water resources, such planning is unlikely to ever occur. While the EIS purports to impose water use planning for multi-well developments, the requirement is entirely illusory. A water management plan is only required when an operator submits a "development plan," *see* FEIS, Ch. 2, Table 2-2, Record Number 19, but Alternative E includes no corresponding requirement for submitting a development plan. The submission of development plans is only "encourage[d]." *See id.* Table 2-17, Record Number 12 ("Encourage industry to submit development plans that would direct time referenced, managed activities intended to concentrate development, promote effective reclamation, and to reduce the cumulative adverse resource effects attributable to oil and gas activities.") The EIS thus misleadingly represents that water management plans will effectively mitigate or avoid cumulative water depletion impacts in site-specific areas.

B. The EIS Fails to Disclose the Risk of Increased Spills and Leaks from Oil and Gas Development on Water Resources and Sensitive Species.

The EIS provides only a cursory discussion of the potential impacts of leaks and spills on soil, water resources (including surface waters and groundwater), and aquatic species. *See* FEIS, Ch. 4, PDF 131-133, 164-165, 171;*id.*, Appendix K, PDF 108, 115, 151, 232, 234 (public comments). It provides no sense of the magnitude of release that could occur and the potentially

[65] *See* Western Resources Advocates, Fracking Our Future, July 2012, pp. 14-15 available at http://www.westernresourceadvocates.org/frackwater/fracking_our_future_july_2012.pdf (Ex. II).
[66] *Id.* at 15.
[67] *See* U.S. Geological Survey, Estimated Withdrawals and Use of Water in Colorado, 2005 (2010), p. 47, available at http://pubs.usgs.gov/sir/2010/5002/pdf/SIR10-5002.pdf (Ex. JJ).

devastating harms to water quality and aquatic species that might result from a significant release. *See* pp. 13-15 above.

In response to comments, the EIS minimizes the risk of harm to water resources and aquatic species, dismissing the potential for spills and leaks to reach surface waters, based on the past history of spills in Rio Blanco County. FEIS, Appendix K, PDF 235. But, again, this reasoning fails to consider the enormous quantities of chemicals that will be transported into the region for fracking purposes; the massive amount of wastewaters produced by fracking; and the unprecedented level of oil and gas development that will occur under the RMPA. As discussed earlier, recent data show that spills reaching surface waters have occurred on a fairly regular basis in the Upper Colorado River Basin. Indeed, the EIS notes several spills of produced water, but it fails to acknowledge the potentially harmful effects of produced-water spills, suggesting that only spills of hydrocarbons are of concern. *Id*.; *cf.* pp. 14-15 above (discussing effects of produced water on fish and aquatic habitat). It further minimizes the potential harm resulting from accidental spills and leaks, claiming that "[r]apid and effective containment and cleanup are typical responses to spills in the WRFO." But again, spills and leaks may potentially go undetected for a long time until they become visible on land or surface waters, and after severe damage has already occurred.

The EIS also fails to discuss the effectiveness of mitigation measures to reduce the impacts of spills. This includes groundwater monitoring measures (especially where funding for such monitoring appears to be limited, FEIS, Appendix K, PDF 111, 115 ["Monitoring is expected to continue in the same directions as funds allow."), pipelines (instead of truck transport), clean-up measures, and spill prevention plans. *See* FEIS, Ch. 4 PDF 131-33, 164-165, 171. Further, while it suggests that pipelines are a (voluntary) mitigation measure that is a safer alternative to truck transport and that operators will increasingly use in the WRFO planning area, pipelines have been prone to massive leaks and spills that may not be detected until severe contamination and damage has already occurred. *See* footnote 26 above.

The National Park Service recommended several mitigation measures to reduce the impacts of spills and leaks from pipelines, but the EIS fails to discuss their effectiveness. These measures include a "no surface occupation of sites in critical habitat for the endangered species, including the 100-year floodplain that is part of designated critical habitat *without exceptions*," and "emergency shut-off-valves for pipelines, including temporary lines from each well, or some other suitable preventative method to prevent contamination of water bodies, *regardless of how far the site is from permanent water*." FEIS, Appendix K, PDF 232 (emphases added). The EIS includes the NSO measure in Alternative B, and one with exceptions in Alternative E. *See* Appendix A, NSO 26 & 27. However, it fails to explain whether either of these measures would be feasible or effective or provide any comparison of the two measures. Likewise, the EIS adds to Alternative E "consideration" of an emergency valve requirement for pipelines crossing critical habitat, but fails to include or discuss the Park Service's recommendation that *all* pipelines, "including temporary lines" be equipped with emergency shut-off valves "regardless of how far the site is from permanent water," or at least for sites within a certain distance of surface waters. Emergency shut-off valves are feasible and have been required in large-scale projects. For example, the Gasco Uinta Basin Natural Gas Development project adopted the following condition of approval to protect endangered fish and water resources:

> Natural gas-condensate pipelines that cross perennial, intermittent, and ephemeral stream channels or…100-year floodplain, mapped riparian or wetland areas, or perennial, intermittent, or ephemeral stream channels will be routinely pigged and will have emergency/automatic shutoff valves located directly beyond the area at risk of flooding to reduce the magnitude of contamination in the event of an accidental pipeline break.[68]

The EIS must discuss the effectiveness of these proposed mitigation measures to fulfill its "action-forcing" function under NEPA.

C. The EIS Must Analyze the RMPA's Indirect Impacts, Including the Effet of Increased Carbon Dioxide and Methane Emissions on Climate.

The EIS fails to provide any analysis of the consequences of carbon emissions that would result from the RMPA's implementation. NEPA requires agencies to analyze the effects of its actions on global climate change, *see Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1217 (9th Cir. 2008), including "ecological,… economic, [and] social" impacts, "whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8(b).

Public comment on the DEIS raised the EIS's failure to consider the environmental, social and economic effects carbon emissions that would result from more oil and gas development under the RMPA, while the BLM explicitly considers the economic benefits of the production and sale of oil and gas. *See* FEIS, Appendix K, PDF 459 ("Our atmosphere cannot safely absorb any more carbon dioxide, and this liability to human welfare and survival must be incorporated into BLM's assessment of the net economic value of the oil and gas to be extracted, which would likely become a number less than zero."). The FEIS's response to the comment is entirely non-responsive, simply indicating BLM's "commitment to work on curbing global warming as well as a mission for multiple use on our public lands." *Id*. This failure to respond violates 40 C.F.R. § 1502.9(b), which requires the FEIS to "discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised." If comments "do not warrant further agency response," the FEIS must "explain why…, citing the sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response." 40 C.F.R. § 1503.4(a)(5). The FEIS fails to provide any rationale as to why it need not account for the social cost of carbon in the EIS.

Although cost-benefit analysis is not necessarily the ideal or exclusive method for assessing contributions to an adverse effect as enormous, uncertain, and potentially catastrophic as climate change, BLM does have tools available to provide one approximation of external costs, and is required to at least provide a reasonable justification should it elect to not use those

[68] Record of Decision for the Gasco Energy Inc. Uinta Basin Natural Gas Development Project, Attachment 2, pp. 2-13, 2-18, available at http://www.blm.gov/style/medialib/blm/ut/vernal_fo/planning/gasco_eis/gasco_rod.Par.20707.File.dat/Gasco%20ROD%20Attachment%202%20COA%202012.pdf (Ex. KK).

tools. The EIS states that "BLM does not have an established mechanism to accurately predict the effect of resource management-level decisions from the planning effort on global climate change," FEIS, Ch. 4, PDF 27, but this excuse lacks merit. Perfect accuracy is not required: "[r]easonable forecasting and speculation is implicit in NEPA." *Scientists' Inst. For Pub. Info, Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973). Further, BLM has previously perfomed such analyses in prior environmental reviews.[69] Its own internal memo identifies one available analytical tool: "For federal agencies the authoritative estimates of [social cost of carbon] are provided by the 2013 technical report of the Interagency Working Group on Social Cost of Carbon, which was convened by the Council of Economic Advisers and the Office of Management and Budget."[70] As explained in that report:

> The purpose of the "social cost of carbon" (SCC) estimates presented here is to allow agencies to incorporate the social benefits of reducing carbon dioxide (CO2) emissions into cost-benefit analyses of regulatory actions that impact cumulative global emissions. The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services due to climate change.[71]

Thus, there is no reason that BLM cannot include an analysis of the RMPA's social costs of carbon.

Without analyzing these costs, BLM's analysis of the RMPA's economic benefits is improperly skewed. *See* FEIS, Ch. 4, PDF 604 (estimating "Energy-Associated Revenue Projections" for Alternative E, including natural gas jobs, production value, state severance tax

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[69] *See High Country Conserv'n Advocates v. United States Forest Serv.*, 2014 U.S. Dist. Lexis 87820 (D. Colo. 2014) (invalidating environmental assessment ["EA"] for improperly omitting social cost of carbon analysis, where BLM had included it in preliminary analysis); *Greenwire*, "BLM crafting guidance on social cost of carbon -- internal memo," April 15, 2015, available at http://www.eenews.net/greenwire/stories/1060016810/ (Ex. LL); BLM Internal Memo from Assistant Director of Resources and Planning Ed Roberson (Roberson Internal Memo), April 2015, available at http://www.eenews.net/assets/2015/04/15/document_gw_01.pdf (Ex. MM) (noting "some BLM field offices have included estimates of the [social cost of carbon] in project-level NEPA documents"); *see also* Council on Environmental Quality, Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts, p. 18, available at www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance (quantitative analysis required if GHGs > 25k tons/yr (Ex. NN).

[70] BLM, Roberson Internal Memo.

[71] *See* 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, May 2013, available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf (Ex. OO); *see also* Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government, Feb. 2010, available at http://www.epa.gov/otaq/climate/regulations/scc-tsd.pdf (Ex. PP).

and other state revenues, and county property tax revenues); *id*., PDF 560-65 (noting metrics for RMPA's economic and social benefits, which do not include social cost of carbon); FEIS, Appendix G, PDF 57-62 (describing expected severance tax, royalty, and property tax revenues). "[B]y deciding not to quantify the costs at all, the agenc[y] effectively zeroed out the cost in its quantitative analysis" of the RMPA's economic impacts. *See High Country*, 201 U.S. Dist. LEXIS 87820, at *36 (citing *Ctr. for Biological Diversity*, 538 F.3d at 1200 [$0/ton to greenhouse emissions arbitrary and capricious, where evidence did not support such estimate], *Border Power Plant Working Grp. v. U.S. Dep't of Energy*, 260 F. Supp. 2d 997, 1028-29 (S.D. Cal. 2003) [same]).

By omitting this analysis, significant carbon emission costs are ignored. Alternaitve E will result in 4,195,058 metric tons of CO2e emissions per year. FEIS, Ch. 4, PDF 38. Applying the 2013 SCC estimates to the RMPA's CO2e emissions, by 2035, the RMPA's annual social cost of carbon would be $83.9 to $784.5 million, in 2011 dollars. The total SCC over the lifetime of the RMPA would be an order of magnitude higher. The EIS must be revised to provide a full accounting of the RMPA's climate change impacts, when analytical tools are available to assess these impacts.

D. The EIS Fails to Consider a Reasonable Range of Alternatives

The EIS fails to consider a reasonable range of alternatives. By improperly narrowing the EIS's statement of purpose and need to accommodate increased drilling within the WRFO planning area, BLM unreasonably restricted the range of alternatives for consideration. In addition, BLM improperly rejected consideration of alternatives that restricted development in certain areas, even though they would still be consistent with BLM's planning objective to "manage the projected increase in oil and gas activity."

The EIS states that: "The purpose of this Amendment to the 1997 White River RMP is to provide effective management direction for public lands administered by the WRFO based on an analysis of oil and gas exploration and development in excess of levels evaluated in the 1997 White River RMP." FEIS Ch. 1, PDF 7. This purpose arises from the following need:

> The BLM has determined that the level of oil and gas activities and the primary area of development evaluated in the 1997 White River RMP has changed considerably. The BLM has determined it needs to update the 1997 White River RMP *to reflect a greater Reasonable Foreseeable Development (RFD) Scenario developed in 2007, and changes to where the primary oil and gas development activity would occur*. This would include establishing appropriate goals, objectives, management actions, priorities, and procedures *to manage the projected increase in oil and gas activity* in relation to other resources within the WRFO Planning Area and to address the potential environmental and socioeconomic impacts of the predicted oil and gas development.

Id. The underlying assumption driving the RMP amendment, then, is that oil and gas development *will* increase in the RMP, in excess of levels projected in 1997. This sole focus on the "need" to accommodate more oil and gas development to the exclusion of observing BLM's

multiple use mandate under FLPMA is improper. BLM must develop and revise land use plans so as to "observe the principle[ ] of multiple use." 43 U.S.C. § 1712(c)(1). "Multiple use" means "a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values." *Id*. § 1702(c). "It is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses." *New Mexico ex rel. Richardson v. BLM*, 565 F. 3d 683, 710 (10th Cir. 2009).

This exclusive focus on managing an expected increase in oil and gas development foreclosed consideration of any alternatives that limited development below the current management direction, although such an alternative would have fit within BLM's mandate to "take any action necessary to prevent unnecessary or undue degradation of the lands." 43 U.S.C. § 1732(b). This included an alternative that would have restricted development to 5,000 wells to match the pace of existing development rates and defer further leasing above that level, so as to limit the overall footprint of development and impact on wildlife and wilderness-quality lands.[72]

That a large portion of the planning area is already leased for oil and gas does not prevent BLM from taking reasonable measures under the Mineral Leasing Act, FLPMA, the ESA, and the terms of those leases to protect the non-mineral resources with whose management it is charged:

> The Secretary has general statutory authority to condition post-lease approvals in accordance with section 17(g) of the Mineral Leasing Act of 1920, as amended by section 5102(g) of the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (FOOGLRA), 30 U.S.C. § 226(g) (2000) (determine actions required "in the interest of conservation of the surface resources"), section 302(a) of the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. § 1732(a) (2000) (manage the public lands under principles of multiple use and sustained yield, in accordance with land use plans), and section 301(b) of FLPMA, 43 U.S.C. § 1732(b) (2000) ("take any action necessary to prevent unnecessary and undue degradation of the lands").[73]

BLM regulations governing the surface use of BLM lands subject to a mineral lease provide that the lessee may use the leased lands "subject to: Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed."[74] In addition to the species-specific stipulations proposed in the plan's Appendix A for future leases, existing leases of land that may contain potentially threatened, endangered, or other special status species, leases generally provide that:

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[72] Attachment A, Wilderness Society, et al. The Wilderness Society, et al., DEIS Comment, p. 5.
[73] *Yates Petroleum Corporation*, 176 IBLA 144, 155 (2008).
[74] 43 C.F.R. § 3101.1-2

> Surface occupancy or use is subject to the following special operating constraints: The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. The BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. The BLM will not approve any ground-disturbing activity that may affect any such species or requirements of the Endangered Species Act as amended, 16 U.S.C. § et seq., including completion of any required procedure for conference or consultation.

In addition to the explicit reservation of authority under this general special status species stipulation, 43 C.F.R. § 3101.1-2 acknowledges BLM's retained rights under the MLA, FOOGLRA, and FLPMA to impose "reasonable measures as may be required . . . to minimize adverse impacts to other resource values." In the *Yates Petroleum* case, the IBLA affirmed that these "reasonable measures" extend to species conservation measures such as establishing a three-mile buffer zone around sage-grouse leks.[75] Similarly, just to the north of the WRFO, the Colorado BLM's Little Snake Field office recently adopted a Resource Management Plan that imposes significant limitations on the density, siting, timing, and distribution of oil and gas development activities, for both new and existing mineral leases.[76] BLM thus has ample statutory and regulatory authority to impose reasonable conditions on lessee's use of existing mineral leases, and improperly narrowed its purpose and need to consider only small variations on unfettered oil and gas development within the resource area.

Even if BLM properly limited its purpose and need statement, BLM also unreasonably ruled out alternatives that limit oil and gas development in specific areas, even if they would have met the "need" for allowing and managing an overall expected increase in development. As the EIS notes:

> Consistent with the purpose of this action, issues addressed in this RMPA/EIS are those that deal specifically with *an increase in oil and gas exploration*, development and production, and the *potential effects of that increase* on other resource uses and values within the WRFO Planning Area. Resource outcomes and management actions were evaluated for all resources in the context of an increase in oil and gas development. Other topics that could be relevant to other planning issues within the WRFO Planning Area are not addressed in this RMPA/EIS.

[75] 176 IBLA at 157-58.
[76] Bureau of Land Management Colorado, Little Snake Field Office, Little Snake Record of Decision and Approved Resource Management Plan RMP-18 to RMP-21 (2011) (Ex. SS).

FEIS, Ch. 1, PDF 16 (emphasis added). For example, at the outset, in section 1.4.4 of the EIS ("Issues that were Considered but Not Further Analyzed"), BLM summarily rejected analysis of the following issues:

- Revisions to decisions on the acreage of lands available for oil and gas leasing.
- Designation of new Wilderness or Wilderness Study Area (WSA) designations.
- Designation of new Areas of Critical Environmental Concern (ACECs) or other special designations.

…

- Considering alternative energy sources (wind and solar energy) as substitutes for activities related to mineral development.

Id. at PDF 17. Ironically, however, proposals that fell within the above categories were presented to "deal specifically with an increase in oil and gas exploration, development…and the potential effects of that increase on other resource uses and values within the WRFO Planning Area." *Id*. at PDF 16. Specifically, they were presented as either mitigation to counter the effects of increased development or alternatives that might better balance competing uses in the WRFO planning area. This included proposals for a newly proposed "backcountry conservation area" designation, designation of new ACECs, and a "closed to lease" restriction on certain lands. *See, e.g.*, FEIS, Appendix K, PDF 26, 39, 258.[77]

Alternatives introducing new protections in sensitive areas are reasonable and would have been "significantly distinguishable from those [alternatives] already analyzed." *See New Mexico*, 565 F. 3d at 711 (finding closure of area from all fluid development to be reasonable option that BLM arbitrarily excluded from consideration). Moreover, none of these proposals would necessarily *reduce* overall development; increased development compared to existing levels could still be compatible with each. *See, e.g.*, Attachment A, The Wilderness Society, et al. DEIS Comment, p. 6 ("BLM needs to designate large areas for protection, using administrative tools such as areas of critical environmental concern and recreation management areas, to balance the increase in drilling.") BLM thus arbitrarily rejected alternatives that would provide special protections to certain sensitive areas on the basis that they would not fulfill BLM's purpose and need, when in fact those alternatives could fulfill that purpose.

IV. The RMPA Violates FLPMA.

A. BLM's Deferral of ACEC Designations Is Unlawful.

BLM's refusal to consider ACEC designations in the context of the RMPA planning process is contrary to FLPMA's mandate that BLM "give priority to the designation and protection of areas of critical environmental concern [ACEC]." 43 U.S.C. § 1712(c)(3). ACECs are areas where special management attention is required "to protect and prevent irreparable

[77] *See also* Attachment A, Letter from Center for Native Ecosystems to Kent Walter, WRFO 2 (March 9, 2007).

damage." 43 U.S.C. § 1702(a). Protestor Rocky Mountain Wild (formerly Center for Native Ecosystems) provided BLM with a detailed list and maps of proposed ACECs throughout the planning process, beginning as early as 2007.[78] While the EIS notes that new designations may be considered in a later RMP revision planning process, that process could be too late, as new development under the RMPA could prejudice the consideration of certain areas for this designation. BLM arbitrarily determined that ACEC designations should be considered in a separate, later process, when nothing prevents BLM from considering these issues jointly with the RMPA, and when "priority" for these designations is required.

B. BLM's Proposed Action Does Not Prevent Unncessary or Undue Degradation of Public Lands.

The RMPA is not consistent with FLPMA, which requires BLM to prevent unnecessary or undue degradation of public lands. 43 U.S.C § 1732(b). BLM has failed to show that it is necessary to allow continued and expanded oil leasing and development, including the utilization of hydraulic fracturing, or fracking, on BLM lands and mineral estate. Such activities, as presently authorized, and as proposed to be managed under the RMPA cause, or are likely to cause, unnecessary and undue degradation of the land, air, water and wildlife resources BLM is mandated to protect through measures regarding surface disturbance, habitat degradation, air pollution, methane leakage, and surface and groundwater depletion and contamination. Neither the RMPA nor the FEIS adequately explain how BLM management under the RMPA will prevent such impacts.

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For all of the reasons stated above, as well as in the attached and cited documents incorporated by reference herein, the RMPA and accompanying FEIS, will, if adopted unchanged, result in violations of BLM's obligations under ESA, NEPA, and FLPMA. An appropriate response to this protest would be for BLM to withdraw the RMPA, prepare an SEIS, and issue a new RMPA consistent with statutory obligations as outlined above.

Please do not hesitate to contact me if you have any questions or to schedule a protest resolution meeting.

Sincerely,

Wendy Park
Staff Attorney
Center for Biological Diversity

John Weisheit
Conservation Director
Living Rivers

Megan Mueller
Senior Conservation Biologist
Rocky Mountain Wild

[78] *See id.*

Zach Frankel
Executive Director
Utah Rivers Council

Cc: Heather Sauls, Planning & Environmental Coordinator, BLM White River Field Office Meeker, CO

Acting Field Supervisor, Western Colorado Field Office, Fish and Wildlife Service, Grand Junction