November 11, 2016

Karen Mouritsen
State Director
Bureau of Land Management
Eastern States Office
20 M Street, Suite 950,
Washington, D.C. 20003

Via Overnight Mail and Fax:

RE: Center for Biological Diversity, et al., Protest of the December 2016 Competitive Oil and Gas Lease Sale, Wayne National Forest - DOI-BLM-Eastern States-0030-2016-0002-EA

Dear Ms. Mouritsen:

The Center for Biological Diversity (the "Center"), Friends of the Earth, Heartwood, Ohio Environmental Council, and Sierra Club hereby file this Protest of the Bureau of Land Management's ("BLM") planned December 13, 2016 Competitive Oil and Gas Lease Sale and the programmatic Final Environmental Assessment for oil and gas leasing in the Wayne National Forest, Marietta Unit of the Athens Ranger District, Monroe, Noble, and Washington Counties, Ohio (DOI-BLM-Eastern States-0030-2016-0002-EA) ("EA"), pursuant to 43 C.F.R. § 3120.1-3. We formally protest the inclusion of each of the 33 parcels, covering 1,600.69 acres in Ohio:

ES-003-12/2016 OHES 058185 ACQ
ES-004-12/2016 OHES 058186 ACQ
ES-005-12/2016 OHES 058187 ACQ
ES-006-12/2016 OHES 058188 ACQ
ES-007-12/2016 OHES 058189 ACQ
ES-008-12/2016 OHES 058190 ACQ
ES-009-12/2016 OHES 058191 ACQ
ES-010-12/2016 OHES 058192 ACQ
ES-011-12/2016 OHES 058193 ACQ
ES-012-12/2016 OHES 058194 ACQ
ES-013-12/2016 OHES 058195 ACQ
ES-014-12/2016 OHES 058196 ACQ
ES-015-12/2016 OHES 058197 ACQ
ES-016-12/2016 OHES 058198 ACQ
ES-017-12/2016 OHES 058199 ACQ
ES-018-12/2016 OHES 058200ACQ
ES-019-12/2016 OHES 058201 ACQ
ES-020-12/2016 OHES 058202 ACQ
ES-021-12/2016 OHES 058203 ACQ
ES-022-12/2016 OHES 058204 ACQ
ES-023-12/2016 OHES 058205 ACQ
ES-024-12/2016 OHES 058206 ACQ
ES-025-12/2016 OHES 058207 ACQ
ES-026-12/2016 OHES 058208 ACQ
ES-027-12/2016 OHES 058209 ACQ
ES-028-12/2016 OHES 058210 ACQ
ES-029-12/2016 OHES 058211 ACQ
ES-030-12/2016 OHES 058212 ACQ
ES-031-12/2016 OHES 058213 ACQ
ES-032-12/2016 OHES 058214 ACQ
ES-033-12/2016 OHES 058215 ACQ
ES-034-12/2016 OHES 058216 ACQ
ES-035-12/2016 OHES 058217 ACQ

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PROTEST

I. Protesting Party: Contact Information and Interests:

This Protest is filed on behalf of the Center for Biological Diversity, Sierra Club, Ohio Environmental Council, Heartwood, and Friends of the Earth:

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The Center is a non-profit environmental organization dedicated to the protection and recovery of native species on the brink of extinction and their habitats through science, policy, and environmental law. The Center has and continues to actively advocate for increased protections for species and their habitats in Ohio and the Wayne National Forest. The lands that will be affected by the proposed lease sale include habitat for listed, rare, and imperiled species that the Center has worked to protect, including the Indiana bat, Northern long-eared bat, fanshell, pink mucket pearly mussel, sheepnose mussel, and snuffbox mussel. The Center also works to reduce greenhouse gas emissions to protect biological diversity, our environment, and public health. The Center has over 1 million members and online activists, including those living in Ohio who have visited these public lands in the Wayne National Forest for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the proposed oil and gas leasing.

The Sierra Club is a national nonprofit organization of approximately 640,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Ohio Chapter of the Sierra Club has more than 18,000 members in the state of Ohio. For more than four decades, the Sierra Club has worked to protect the Wayne National Forest and Ohio's other public lands from harmful activities such as clear-cutting, mineral extraction, commercial development, pipelines, and oil and gas drilling. Sierra Club members use the public lands in Ohio, including the lands and waters that would be affected by actions under the lease sale, for quiet recreation, scientific research, aesthetic pursuits, and spiritual renewal. These areas would be threatened by increased oil and gas development that could result from the proposed lease sale.

The Ohio Environmental Council is a non-profit environmental organization whose mission is to secure healthy air, land, and water for all who call Ohio home. OEC has over 100 environmental and conservation member organizations and thousands of individual members throughout the state of Ohio. The OEC has a long history of working to protect the ecological integrity, and recreational and aesthetic qualities of the Wayne National Forest. Many of our members have visited these public lands in the Wayne National Forest for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future.

Heartwood is a non-profit regional environmental organization dedicated to protecting the public forests of the Central Hardwood Region. Heartwood represents over seventeen hundred individual members and numerous member organizations who depend on these public lands, including the Wayne National Forest, for recreational, spiritual and ecological purposes. Heartwood members have, do and will continue to use these public lands, including the Wayne National Forest, for nonconsumptive purposes and they derive important tangible and intangible ecological benefits from the presence and ecological integrity of these public lands, including the lands that will be affected by the oil and gas leasing proposed by this action.

Friends of the Earth is a 501(c)(3) organization with over 33,000 members and 496,000 activists nationwide. Friends of the Earth fights to create a more healthy and just world. Our

current campaigns focus on promoting clean energy and solutions to climate change, ensuring the food we eat and products we use are safe and sustainable, and protecting marine ecosystems and the people who live and work near them. Thousands of our members submitted comments in opposition to the proposed action in DOI-BLM-Eastern States-0030-2016-0002-EA, that would authorize leasing up to 40,000 federally-owned oil and gas acres in the Wayne National Forest, Athens Ranger District, Marietta Unit. Opening up more federal acres to oil and gas development is the wrong direction for our climate, the vitality of the Wayne National Forest, and the health and safety of Ohio residents.

II. Statement of Reasons as to Why the Proposed Lease Sale Is Unlawful:

BLM's proposed decision to lease the parcels listed above is substantively and procedurally flawed for the reasons discussed below, as well as those discussed in (1) the Center et al.'s May 31, 2016 comment letter on the draft programmatic Environmental Assessment,[1] (2) the Center et al.'s August 11, 2016 letter to the USDA Forest Service Eastern Regional Office and Forest Supervisor,[2] (3) Heartwood et al.'s May 31, 2016 comment letter on the draft EA,[3] and (4) Buckeye Forest Council's January 22, 2016 scoping comments.[4] These letters are attached hereto as exhibits A-D. This protest incorporates each of these letters by reference herein. The proposed lease sale is unlawful for the following additional reasons.

A. The EA and Finding of No Significant Impact ("FONSI") Violate the National Environmental Policy Act's ("NEPA") "Hard Look" Requirement

NEPA requires agencies to undertake thorough, site-specific environmental analysis at the earliest possible time and prior to any "irretrievable commitment of resources" so that the action can be shaped to account for environmental values. Pennaco Energy, Inc. v. United States DOI, 377 F.3d 1147, 1160 (10th Cir. 2004). Oil and gas leasing is an irretrievable commitment of resources. S. Utah Wilderness All. v. Norton, 457 F. Supp. 2d 1253, 1256 (D. Utah 2006). Thus, NEPA establishes "action-forcing" procedures that require agencies to take a "hard look," at "all foreseeable impacts of leasing" before leasing can proceed. Center for Biological Diversity v. United States DOI, 623 F.3d 633, 642 (9th Cir. 2010); N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 717 (10th Cir. 2009). Chief among these procedures is the preparation of an environmental impact statement ("EIS"). Id.

BLM, however, did not prepare an EIS; nor did BLM even bother to prepare an EA for the proposed lease sale. Instead BLM merely prepared a programmatic EA that discusses, in very broad terms, the general leasing of all federal mineral estate underlying National Forest System ("NFS") lands "within the proclamation boundary of the Wayne National Forest (WNF), Athens Ranger District, Marietta Unit," approximately 40,000 acres federal mineral estate. Based on its review of the programmatic EA, BLM concluded that the proposed lease sale (which was not actually discussed or mentioned in the programmatic EA) "is not a major Federal action" and "will not significantly affect the quality of the human environment." BLM never

[1] Attached hereto as Exhibit A.
[2] Attached hereto as Exhibit B.
[3] Attached hereto as Exhibit C.
[4] Attached hereto as Exhibit D.

conducted any analysis of the foreseeable impacts to site-specific resources that may be adversely affected by this particular lease sale or any site-specific impacts that are likely to result from the lease sale, before coming to such a conclusion.

Instead, BLM presupposes that because leasing is an administrative act, it can auction off the parcels and issue the leases first, and then fulfill its NEPA obligations after the leases enter into the development stage.[5] As we have stated in previous comments, this approach to NEPA has already been rejected by the courts. See Richardson, 565 F.3d at 688 (rejecting BLM's position that it was not required to conduct any site-specific environmental reviews until the issuance of an APD and holding that "NEPA requires BLM to conduct site-specific analysis before the leasing stage").

Further, BLM Instruction Manual 2010-117 specifically directs BLM to conduct site-specific analysis of lease parcels in NEPA documentation.[6] See, e.g., IM 2010-117 § III(E) ("The IPDR Team will complete site-specific NEPA compliance documentation for all BLM surface and split estate lease sale parcels..."); id. ("Most parcels that the field office determines should be available for lease will require site-specific NEPA analysis."). IM 2010-117 also calls upon BLM to consider a host of factors in deciding whether to propose parcels for lease, each of which calls for site-specific analysis. For example, BLM must consider whether "[c]onstruction and use of new access roads or upgrading existing access roads to an isolated parcel would have unacceptable impacts to important resource values."[7] Another consideration is whether "[p]arcel configurations would lead to unacceptable impacts to resources on the parcels or on surrounding lands and cannot be remedied by reconfiguring."[8] Moreover, IM 2010-117 directs BLM to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[9] Such an evaluation would necessarily require a consideration of site-specific resource uses.[10] BLM cannot proceed with new leasing without the requisite "hard look" of site-specific impacts, including consideration of all factors set forth in IM 2010-117 and consideration of alternatives that would allow BLM to meaningfully examine unresolved resource use conflicts. See S. Utah Wilderness All. v. United States DOI, 2016 U.S. Dist. LEXIS 42696, 14-15 (D. Utah Mar. 30, 2016) (failure to comply with IM 2010-117 can result in NEPA violation); see also Cotton Petroleum Corp., 870 F.2d 1515, 1527 (10th Cir. 1989) (failure to follow internal guidance document can constitute arbitrary and capricious decisionmaking).

Accordingly, BLM's FONSI is deficient. It appears to be based solely upon BLM's unsupported finding that all impacts associated with potential future oil and gas development would be "controlled through the use of BMPs, SOPs, mitigation measures, and lease stipulations to minimize potential adverse impacts to these resources." But without analysis of

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[5] Environmental Assessment Oil and Gas Leasing, Wayne National Forest, Marietta Unit of the Athens Ranger District, Monroe, Noble, and Washington Counties, Ohio, DOI-B LM-E5-0030-2016-0002- EA, ("EA") Finding of No Significant Impact at 5-10.
[6] Bureau of Land Management, IM 2010-117, Oil and Gas Leasing Use Planning and Lease Parcel Reviews (2010).
[7] IM 2010-117 § III(C)(4).
[8] *Id.*
[9] *Id.* § III(E).
[10] *Id.*

site-specific impacts at the parcel level, there is no basis for concluding that such measures would reduce impacts to less than significant levels, or that lease stipulations attached to a lease are adequate to address site-specific concerns.

Furthermore, even at the programmatic level, the meager analysis BLM has provided thus far is unlawfully deficient. Relying on the programmatic EA as the basis for BLM's FONSI was improper: the broad-brush analysis contained in the programmatic EA omits several significant environmental consequences specific to the proposed lease sale, which we discuss in detail below. The EA and FONSI also violate NEPA for the following reasons:

i. BLM Failed to Take a Hard Look at the Environmental Impacts of Opening Up Private Minerals

As we stated in our May 31, 2016 comment letter on the draft EA, leasing federal minerals would open up substantial private minerals and private surface for development. The Final EA's acknowledgement that leasing federal minerals within the Marietta Unit "*may* lead to additional future mineral development on private land and private minerals within the area"[11] understates the reality that leasing federal minerals within the Unit would not only certainly enable private mineral and surface development, but also appears geared towards that end.[12] The Final EA, however, is less than forthcoming about this purpose and need, as well as these foreseeable consequences of federal leasing.

On the one hand, the Final EA suggests that one of the purposes of the action is to enable private mineral development that could not otherwise occur without federal leasing. In rejecting the "NSO stipulation alternative"—which would have prohibited surface occupancy on all lands available for leasing—BLM noted that this alternative "would not fulfill the purpose and need" of the action as it "would unnecessarily constrain oil and gas occupancy, *especially in this highly fragmented landscape*, where the ability to cross federal land *may be critical* to enabling an operator to develop."[13] This explanation strongly suggests that BLM is not simply concerned with allowing operators to develop federal land and minerals, but is also concerned with allowing development of private land and minerals in the Wayne National Forest's "highly fragmented landscape." As our previous comments and private mineral owners have noted, [14] private mineral access in the Wayne National Forest cannot occur without BLM opening up federal minerals for leasing.

On the other hand, the Final EA understates the importance of federal leasing in allowing private mineral development and fails to analyze the extent to which private oil and gas development could occur by suggesting that (1) private mineral and private surface development are merely *possible* effects of federal leasing (federal leasing "*may* lead to additional future

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[11] EA at 120 (emphasis added).
[12] EA at 21 (One of the issues identified through public scoping is that "[e]nabling oil and gas activities will provide private landowners the opportunity to develop their minerals, and withholding leasing the federal minerals will pose an obstacle to development of private minerals."). See also id. at 30 ()
[13] Id. at 30 (emphases added).
[14] Ex. A at 12-14; Ex. B at 2-4.

mineral development on private land and private minerals within the area"[15]) and (2) by treating private mineral and surface development as a "cumulative action" that would not necessarily directly result from federal leasing, but could happen coincidentally alongside federal mineral development.[16] Further, the Final EA's analysis of the No Action Alternative (i.e., no leasing) misleadingly suggests that private mineral development within the Wayne National Forest would occur regardless of federal leasing: "Without a lease (No Action Alternative), operators would not be authorized to access federal minerals at the time of development but could develop adjacent privately owned minerals, potentially resulting in drainage of federal minerals without benefit to the government. Therefore, not leasing the parcel would not meet the purpose of and need for the Proposed Action."[17] This statement, however, contradicts numerous statements by proponents of federal leasing who have argued that development of private minerals would be difficult, if not impossible, without BLM's leasing of federal minerals for development. As Senator Andy Thompson explained in his comments to BLM:

> The main issue here isn't merely mineral extraction; it's property rights. Unlike federal lands in the Western U.S., the Wayne National Forest is not one large contiguous piece of property. Wayne National Forest property is often next to or surrounding property owned by individual Ohioans. Leasing of Wayne National Forest property simply gives private citizens the opportunity, if not the guarantee, to develop the minerals they own.[18]

Congressman Bill Johnson's comments to BLM echoes this concern that private mineral leases cannot be developed unless federal minerals in the Wayne National Forest are opened for leasing:

> Some residents, particularly in Monroe and Washington Counties, have elected to lease their private mineral rights for the purpose of oil and natural gas development. But many are finding themselves in a situation where their private leases are at risk of not being developed because their private mineral leases are adjacent to, or under the surface of, the Wayne National Forest.[19]

Numerous other comments on the proposed lease sale indicate that a big reason for the interest in opening up federal leasing in the Marietta Unit is that private land owners within the region of the Wayne National Forest are unable to extract their minerals unless the Wayne allows the drillers to go underneath federal property as well.[20] Indeed, the EA summarizes one of the common issues in the approximately 3,400 comments it received in scoping as follows: "Enabling oil and gas activities will provide private landowners the opportunity to develop their

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[15] EA at 120 (emphasis added).
[16] EA at 23.
[17] EA at 30.
[18] Downing, B. Strong support in southern Ohio for Wayne NF drilling. Akron Beacon Journal. Ohio.com. January 22, 2016. Available at http://www.ohio.com/blogs/drilling/ohio-utica-shale-1.291290/strong-support-in-southern-ohio-for-wayne-nf-drilling-1.656368 (accessed November 4, 2016).
[19] *Id.*
[20] See, e. g., Chenetski, Hannah. Washington Co. Commissioners support drilling in Wayne National Forest. The News Center. May 26, 2016. Available at http://www.thenewscenter.tv/content/news/Washington-Co-Commissioners-support-drilling-in-Wayne-National-Forest-381011331.html (accessed November 4, 2016)

minerals, and withholding leasing the federal minerals will pose an obstacle to development of private minerals."[21]

Although BLM appears at times in the EA to be cognizant of the fact that opening up the parcels in the Wayne National Forest for oil and gas leasing would open up substantial private minerals and private surface for development, BLM still refuses to look at the foreseeable impacts of doing so. Instead, BLM inserts Appendix C: Permitting of Oil and Gas Operations on Non-Federal Surface, which merely discusses the state and federal agencies (such as the Ohio Department of Natural Resources, Ohio Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and U.S. Environmental Protection Agency)[22] that have jurisdiction over non-federal land and non-federal minerals. BLM seems to assume either that its obligations to analyze and disclose foreseeable impacts of its decision to open up federal leasing in the WNF are somehow fulfilled by the mere existence of other agencies that have jurisdiction over such operations, or that no impacts could possibly result from oil and gas leasing simply because there are permitting and reporting requirements as well as other regulations in place. But BLM cannot pass on its NEPA obligations by assuming all significant adverse impacts will be taken care of by these agencies or regulations. Even if other state and federal agencies are charged with overseeing oil and gas drill operations on private surface, BLM nevertheless has a duty to perform a thorough analysis of foreseeable environmental impacts of its leasing decision, subject to the public's review and input, prior to leasing public lands for oil and gas development. BLM may take into account any regulations in its analysis of foreseeable impacts, but cannot claim – without analysis and quantification of potential effects and of effectiveness of potential mitigation or state regulations – that no significant impacts would result from its action simply because other agencies have regulatory authority. A quick review of state law and regulation reveals that these do not provide the protections specified in the Forest Plan. For example:

- The Forest Plan requires "closed systems" for storing wastewater instead of wastewater ponds and prohibits netting, to protect the ESA-listed Indiana bat.[23] However, Ohio law allows wastewater pits to remain in operation throughout the producing life of a well, so long as standing wastewater is drained and removed at least every 180 days.[24] Ohio law does not prohibit the screening or netting of these pits.

- The Forest Plan's restrictions on water depletions to only "when water is plentiful" would supposedly mitigate the tremendous water depletion impacts of fracking—over 56 million gallons for a single horizontal well pad (over 7 million gallons per well x up to 8 wells per well pad).[25] But this restriction would not apply to depletions on private surface or outside the Wayne. Because "[t]here is no agency (federal or state) that regulates water withdrawals from streams and rivers in the State of Ohio,"[26] the only

[21] EA at 21.
[22] EA, Appendix C, at 192-199.
[23] 2012 Supplemental Information Report ("SIR") at 47.
[24] Ohio Administrative Code ("OAC") 1501:9-3-08(A).
[25] 2012 SIR at 29, 41.
[26] 2012 SIR at 29.

limits on an operator's ability to withdraw water from private surface would be the private landowner's consent.[27]

- Forest Plan Stipulations pertaining to species-related mitigation measures, e.g. Stipulation 10, 12, 13, and 14, are not reflected in state laws. There are no provisions in the state oil and gas laws that require, for example, species reviews, surveys, or other species-related mitigation measures.

- Forest Plan Stipulation 15, "Controlled Surface Use – Riparian areas," allows Forest Service to impose occupancy conditions to protect riparian areas in the Wayne. However, this stipulation is not reflected in state law and will therefore not apply to riparian areas on private surface. Ohio law contains only the waivable requirement that new wells and tank batteries not be located within fifty feet of a water body.[28]

The entire EA is infected by BLM's refusal to acknowledge that private land and private mineral development is a foreseeable impact of leasing federal minerals in the Marietta Unit. BLM attempts to sweep potential significant impacts that could result from development of private minerals under federal surface under the rug by mischaracterizing the impact as a "potential cumulative action," and performing only cursory analysis of their effects in the Final EA's "cumulative effects" section.[29] Private mineral development and overlying private surface disturbance resulting from federal leasing are reasonably foreseeable consequences of the proposed action. By opening up federal *and* private minerals to drilling, and consequently overlying private surface, the proposed leasing could dramatically increase the total number of new well pads and wells, total surface disturbance, watershed impacts, cumulative air pollution emissions, public health risks, habitat loss, and disturbance to wildlife. Yet BLM did not conduct any quantitative or qualitative analysis of air, water, soil, or any other impacts from oil and gas development on the adjacent private lands. Below are some of the impacts that are likely to arise from opening up private mineral development, which BLM needs to consider in its NEPA review:

a. The EA Fails to Analyze Disturbance from Private Surface Development

BLM's analysis of impacts from private development is cursory, if not completely lacking. This is especially troubling given that (1) development on private surface is more likely than development on federal surface (when federal and private mineral resources are pooled), as

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[27] *See id.*

[28] Ohio Revised Code ("ORC") 1509.021(L): "The location of a new well or a new tank battery of a well shall not be within fifty feet of a stream, river, watercourse, water well, pond, lake, or other body of water."

[29] EA at 23 ("These lands and minerals [i.e., private inholdings with private minerals] were not included in the Proposed Action, but are acknowledged as a potential cumulative action."). The EA is actually incoherent in defining the scope of its analysis. Elsewhere, it suggests that its analysis of the proposed action includes effects on private surface: "All anticipated resource impacts would be associated with the potential impacts of future oil and gas development on both the Forest Service lands and on adjacent private lands within the Marietta Unit." EA at 80.

we pointed out in our May 31, 2016 comment letter,[30] and (2) BLM and Forest Service regulations would not necessarily mitigate the effects of such development, as the EA suggests.[31]

The Final EA utterly fails to analyze or quantify how much new private surface disturbance could result from new leasing, among a host of other potential effects discussed further below. There is thus absolutely no evidentiary or scientific basis for the Final EA to conclude that "[t]he amount of surface disturbance projected on the WNF with the use of high-volume, horizontal fracturing technology is within the amount of surface disturbance analyzed in the 2006 Forest Plan Final EIS (2012 SIR, p. 45, 47, 49)."[32] The 2006 Forest Plan Final EIS did not take into account private surface disturbance, nor did the 2006 Reasonably Foreseeable Development Scenario ("RFDS") include any projections of disturbance on private lands.[33] BLM obviously has the means to quantify this disturbance, as it has done in other Reasonably Foreseeable Development Scenarios.[34]

BLM also failed to take into account the disturbance on private surface that would be left unmitigated, which could impact streams, exacerbate the spread of invasive species, and increase fragmentation. Although BLM intends to require operators to reclaim disturbed areas on federal surface, BLM will only require an operator using private land to have a land use agreement with the private owner, "which *may* detail minimum reclamation requirements."[35] The EA therefore does not provide adequate assurance that impacts from private surface disturbance will be mitigated to less than significant levels.

b. The EA Fails to Consider Impacts to Vegetation and Sensitive or Endangered Species Habitat from Development of Private Minerals / Private Lands

The EA failed to meaningfully analyze vegetation impacts on private lands. This missing analysis is important for determining potential habitat impacts on the Indiana bat, for example, which would be adversely affected by the removal of oak hickory and other suitable habitat. The Final EA notes that while "vegetative cover types on the federal lands are well delineated" — enabling BLM "to state where development may have different types of impact and where

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[30] *See, e.g.*, Ex. A at 14; Ex. B at 2; *cf.* EA at 30 (noting only that "operators could choose to locate potential future well pads and other infrastructure on land owned by the WNF").

[31] *Compare* EA at 23 ("There would be very little federal oversight in the development of private minerals under federal surface....") and EA at 120 (noting "federal oversight of mineral development on federal land/federal minerals is more stringent than on private land/private minerals") *with* EA at 23 (suggesting that BLM and Forest Service have control over activities "no matter the ownership status of the minerals"), *id.* at 105 (noting "BLM and Forest Service would not approve water withdrawals that would draw down a surface waterbody to the extent that aquatic life would be measurably adversely impacted," without addressing whether this applies to well development on private surface), and *id.* at 57 (stating "when federal minerals are leased by BLM, all *surface* and downhole activities must comply with federal regulations," without noting BLM's limited authority over private surface development [emphasis added]).

[32] EA at 95.

[33] EA at 25.

[34] *See, e.g*, BLM's White River and Grand Junction RFDs' quantification of private surface disturbance.

[35] EA at 102 (emphasis added).

development would be restricted in order to protect plant and animal habitat and populations"—"[t]his is not true for the private lands."[36]

The Final EA notes that for private lands, such analysis "may be done through aerial photo analysis and on-the-ground observation, but a complete assessment of vegetative cover on the private lands would be prohibitively expensive."[37] Even if an analysis of the entire Marietta unit is too costly, this says nothing about whether such analysis can be done for the specific parcels offered in the December lease sale, or whether this analysis would even be done at the APD stage. Moreover, given the lack of existing information about baseline vegetation conditions, the severity of harm that oil and gas development could have on vegetation on private surface and suitable habitat for the Indiana bat is "highly uncertain," which requires preparation of an EIS. 40 C.F.R. § 1508.27(b)(5) (EIS must be prepared when an action's effects are "highly uncertain or involve unique or unknown risks"); see also Nat'l Parks & Conservation Ass'n v. Babbitt, 241 F.3d 722, 732 (9th Cir. 2001) (preparation of EIS "mandated where uncertainty may be resolved by further collection of data" or where the collection of such data may prevent speculation on potential effects). Although the EA discusses proposed lease stipulations that target particular species, and mentions other measures that may be taken at the APD stage, BLM fails to acknowledge that these protections do not apply to or are not enforceable on private lands. Even if they were, simply identifying stipulations and existing regulations or mentioning potential protective measures, without any analysis or discussion as to the adequacy or efficacy of these measures in protecting resources in the area, does not meet the requirements of NEPA. Further, the Final EA notes that "[e]ach separate private landowner would be responsible for setting the terms for land clearing and reclamation,"[38] suggesting that no regulatory agency would prevent Indiana bat habitat from being destroyed or require it to be reclaimed.

The EA discusses generally potential loss of forest vegetation such as in the oak-hickory and pine forests from oil and gas development. The decline of oak-hickory in forest communities is not favorable for the endangered Indiana bat because oak-hickory species possess exfoliating bark, which makes the oak-hickory species possible for roosting.[39] The EA however dismisses these losses, concluding that vegetation loss associated with potential future oil and gas development would not be expected to adversely affect the sustainability of oak-hickory forest areas in the Marietta Unit "overall" because "[t]he 2006 Forest Plan goal for herbaceous or shrubby habitat in the Diverse Continuous Forest Management Area is 2 to 4%; an APD may not be approved that threatens to create open habitat in excess of that goal." However, this does not account for vegetation loss associated with potential future oil and gas development of private mineral and private lands, and Forest Plan goals do not apply to private surface. The EA should have but failed to discuss the impacts that these losses could have on the Indiana bat.

c. The EA Fails to Consider Private Land-Use Changes

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[36] EA at 96.
[37] EA at 96.
[38] EA at 96.
[39] USDA Forest Service. Final Environmental Impact Statement for the Wayne National Forest 2006 Land and Resource Management Plan Appendix F1 Final Biological Assessment at F1-46.

The EA notes that "future mineral development would lead to construction of well pads, roads, and other supporting infrastructure."[40] Although these potential land use changes on federal land are required to be in conformance with "desired management objectives (such as vegetation and species) identified in the 2006 Forest Plan, the same cannot be said of private land, which would only need to be in conformance with "local planning and zoning requirements."[41] The EA does not analyze baseline private land use conditions surrounding the areas for lease or look at the potential for private land-use changes, even though it is apparent that private oil and gas developers are eager to acquire federal minerals so that they can develop their private minerals, and are more likely to do so on private land.

d. The EA Lacks Adequate Analysis of What Federal Regulations or Mitigation Measures Would Apply to Private Surface Development that Access Federal Minerals

It is unclear from the EA what authority BLM has over private surface development that would reach federal minerals. For example, the EA states that if some development were to occur on privately owned surface, "federal and state regulation do exist in order to address any potential concerns regarding contamination or spills. However, if the development occurs on private lands and pipelines or well development reaches federal minerals, the BLM would ensure that the construction of such well is in compliance with all applicable safety standards."[42] However, the EA never actually identifies what authority BLM has over pipelines that reach federal minerals or well pads on private surface, or pipelines crossing private surface; nor does the EA identify which federal and state regulations would apply to the spills.

The EA also mentions that the "use of large volumes of water in [hydraulic fracturing]" would be "closely monitored" by BLM before, during, and after the drilling of wells.[43] However it is unclear here whether BLM's authority to "closely monitor" water use would apply to wells developed on private surface where they accessed federal minerals. It is similarly unclear whether private surface activities that access federal minerals are included in the EA's statement that "[w]hen federal minerals are leased by BLM, all *surface* and downhole activities must comply with federal regulations."[44] This does not square with the statement in the Final EA that where private surface development is concerned, "[e]ach separate private landowner would be responsible for setting the terms for land clearing and reclamation."

Furthermore, while the EA states that BLM would not approve water withdrawals "that would draw down a surface waterbody to the extent that aquatic life would be measurably adversely impacted,"[45] the EA does not disclose whether, or how, this would apply to private surface development.

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[40] EA at 81.
[41] *Id.*
[42] EA at 27.
[43] EA at 28.
[44] EA at 57.
[45] EA at 105.

Development on the proposed parcels and on adjacent private surfaces are connected and inextricably linked, such that private surface development is reasonably foreseeable. See Sierra Club v. United States DOE, 255 F. Supp. 2d 1177, 1185 (D. Colo. 2002) ("NEPA regulations define a connected action as one that 'cannot or will not proceed unless other actions are taken previously or simultaneously.'") (citing 40 C.F.R. § 1508.8(a)(1)(ii)). Further, the EA's assumption that all impacts of oil and gas development on private surface within the Marietta Unit would be "minimized" by State of Ohio regulations is baseless. BLM must take a hard look at the impacts of private mineral and surface development in an EIS.

ii. BLM Failed to Adequately Address Potential Impacts to Threatened and Endangered Species, as Required by NEPA

BLM failed to adequately address in the EA the potential impacts from the proposed oil and gas leasing on species that are federally designated as threatened or endangered with extinction, including the Indiana bat, Northern long-eared bat, fanshell, pink mucket pearly mussel, sheepnose mussel, and snuffbox mussel.

In determining whether NEPA requires an EIS for a proposed action, agencies must consider the degree to which the action may adversely affect threatened or endangered species, or their critical habitat. 40 C.F.R. § 1508.27(b)(9). In the Oil and Gas Leasing EA, the BLM failed to provide the required hard look at the potential impacts to listed species and their habitat.

a. The EA Does Not Properly Document Baseline Conditions for Species within the Areas for Lease

In order to properly assess the potential environmental impacts of a proposed action, it is first necessary to assess the affected environment. See 40 C.F.R. § 1502.15. It remains unclear, however, whether surveys for the Indiana bat, Northern long-eared bat, and other threatened and endangered species and their habitat have been performed on the Marietta Unit. The EA only indicates that BLM "conducted site visits on October 26 and 27, 2015 within portions of the Marietta Unit that have already been requested for leasing to document the physical characteristics of the area and collect information on baseline conditions."[46] These limited visits on "portions" of the areas that have "already been requested for leasing," do not provide a sufficient basis to document baseline conditions and identify issues of concern for all areas of the Marietta Unit in which leasing is proposed. Without performing such surveys in advance, appropriate stipulations for the protection of sensitive wildlife (or other resources) may be lacking, and it may be too late to include them when site-specific drilling is proposed

b. The EA Fails to Adequately Analyze Impacts to the Indiana Bat

BLM acknowledges in the EA that the Indiana bat "is well-documented on all units of the [Wayne National Forest] and is present year-around."[47] Moreover, BLM acknowledges that oil and gas activities "are likely to adversely affect Indiana bat."[48] The EA, however, devotes only

[46] EA at 19.
[47] EA at 48.
[48] *Id.* at 99.

three sentences to address the potential impacts of the proposed action on this endangered species.[49] Remarkably, BLM neglects to even mention white-nosed syndrome, which is widely recognized as the greatest threat to the Indiana bat. As recognized by the Forest Service, "[w]hite-nose syndrome has caused extremely high mortality in six bat species, including the endangered Indiana bat."[50] BLM also neglects to mention how climate change may impact the habitat for the Indiana bat. Without considering the impacts of the proposed action in the context of these critically important threats, along with the effects of private surface and private mineral development activities, BLM has failed to take the required hard look and its conclusion that the proposal will not have measurable negative impacts is unsupported.

c. The EA Fails to Adequately Analyze Impacts to the Northern Long-Eared Bat

According to the EA, the Marietta Unit "contains ample suitable foraging and roosting habitat" for the northern long-eared bat.[51] Unlike its analysis for the Indiana bat, BLM recognized in the EA that white-nosed syndrome is the primary threat to the northern long-eared bat.[52] As with the Indiana bat, however, BLM again failed to consider how climate change may already be impacting this species and its habitat.

In assessing potential impacts to the northern long-eared bat from the proposed action, BLM stated that tree removal may result in impacts to individuals.[53] BLM failed to consider, however, the significance of this loss of trees in the context of the ongoing threats from white-nosed syndrome and climate change, as well as private surface development. Moreover, BLM failed to consider how the proposed leasing and drilling activities could fragment the bat's remaining habitat for spring staging/fall swarming and foraging, disrupt breeding and foraging patterns, pollute and degrade the bat's drinking water sources, and result in death traps for bats in the form of wastewater pits.

d. The EA Fails to Adequately Analyze Impacts from Water Depletion, Surface Disturbance, and Toxic Spills From Horizontal Drilling Will Harm Aquatic Species

BLM states in the EA that the fanshell and pink mucket pearly mussel are not documented on the Wayne National Forest.[54] The fanshell, however, is found immediately downstream of the Marietta Unit in the Belleville and Racine pools of the Ohio River in Wood County, West Virginia and in the lower Muskingum River.[55] And the pink mucket has been found in the Belleville, Racine, Gallipolis, and Greenup pools of the Ohio River and potentially still exists in the lower Muskingum River; its distribution is presumed to be in Gallia, Meigs,

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[49] *Id.*
[50] http://www.fs.fed.us/research/invasive-species/terrestrial-animals/white-nose-syndrome.php
[51] EA at 48.
[52] *Id.*
[53] EA at 100.
[54] EA at 49.
[55] Forest Plan EIS, Appendix F1, Biological Assessment at F1-112.

Morgan, Washington, and Lawrence counties.[56] Moreover, BLM acknowledges that the endangered snuffbox mussel and sheepnose mussel may be present in waterways within the Wayne National Forest.[57]

The EA provided no analysis for impacts to these endangered species, claiming that forest activities are "not likely to adversely affect" fanshell and pink mucket pearly mussel, and will have "no effect" on sheepnose and snuffbox mussels.[58] The BLM relied on a 2012 "Supplemental Information Report" (SIR), which is not a NEPA analysis because it did not go through public comment and review. Tiering the required analysis in a NEPA document to a non-NEPA document is improper. 40 C.F.R. § 1508.28 (noting that tiering under NEPA is appropriate only when the initial broader analysis is found in an EIS).

In addition, the 2012 SIR acknowledges that these species are threatened by reduced water flows. High volume water depletions for fracking and horizontal drilling would certainly impact these species, whether or not those depletions occur on private or federal surface. And the 2012 SIR was wrong to conclude that "[a]t the site specific level the WNF will be able to control withdrawals and limit them to periods when water is plentiful," as many depletions could occur in connection with private surface activities.

iii. BLM's Analyses of Air Quality and Greenhouse Gas Emissions are Deficient and Fail to Examine the Relevant Data

a. The EA Failed to Provide Quantitative Analysis for Criteria Air Pollutants

Oil and gas operations—both conventional and unconventional—emit large amounts of air pollutantion, including multiple "criteria" air pollutants for which EPA has set National Ambient Air Quality Standards (NAAQS) due to their potential to cause primary and secondary health effects. Concentrations of these pollutants—ozone, particulate matter (PM), carbon monoxide, nitrogen oxides (NOx), sulfur dioxide (SO2) and lead—will likely increase in regions where unconventional oil and gas recovery techniques are permitted. The EA did not include any quantitative analysis of these criteria pollutants. For example, BLM failed to provide data or monitoring reports that reflect pollutant levels and whether they meet the NAAQs. The EA should have included monitoring data for the past 3-5 years for each criteria pollutant. BLM failed to adequately analyze direct, indirect, or cumulative impacts from increased ozone and other pollution in the area based on reasonably foreseeable development.

b. The EA Arbitrarily Underestimates the Impact of Methane and Nitrous Oxide Emissions

BLM's analysis of greenhouse gas emissions arbitrarily and capriciously uses a long-outdated estimate of the "global warming potential," or "GWP," of greenhouse gases other than

[56] Forest Plan EIS, Appendix F1, Biological Assessment at F1-126 – F1-127.
[57] EA at 49.
[58] EA at 100.

carbon dioxide. GWP expresses warming caused by a greenhouse gas relative to the warming caused by an equivalent mass of carbon dioxide. GWP allows emissions of non-CO_2 pollutants to be expressed in terms of CO_2-equivalent. BLM uses a GWP for methane of 25 and for nitrous oxide of 298.[59] These GWP estimates are derived from a report published by the Intergovernmental Panel on Climate Change nearly a decade ago.[60] They were superseded in September 2013, when the IPCC released its Fifth Assessment Report.[61] For example, the more recent report estimates, on the basis of more recent and thorough science, that methane from fossil sources has 36 times the global warming potential of carbon dioxide over a 100 year time frame and at least 87 times the global warming potential of carbon dioxide over a 20-year time frame.[62] Both the EPA and the Department of Energy have recognized that the newer estimates represent the best available science regarding the impact of non-CO2 GHGs. EPA does use the older IPCC values in one narrow regulatory context: compiling EPA's GHG Inventory pursuant to an international convention that specifically requires the old value.[63] But EPA has explicitly stated that it believes, on the basis of the new report, that the old values are scientifically unsupported and are too low.[64] The Department of Energy has similarly recognized that the Fifth Assessment Report values using climate feedbacks (*e.g.*, 36 and 87 for methane) reflect the current scientific consensus.[65]

In light of serious controversy and uncertainties regarding GHG pollution from oil and gas development, it is critical that BLM's quantitative assessment account for methane's long-term (100-year) global warming impact and, also, methane's short-term (20-year) warming impact using the latest peer-reviewed science to ensure that potentially significant impacts are not underestimated or ignored. See 40 C.F.R. § 1508.27(a) (requiring consideration of "[b]oth short- and long-term effects"). Use of the 20-year value is particularly appropriate because it corresponds with the 20-year planning and environmental review horizon used in the SIR and, typically, by BLM. See SIR at 4-1 thru 4-45 (discussing BLM-derived reasonably foreseeable development potential in each planning area). BLM has significantly underestimated the near-term benefits of keeping methane emissions out of the atmosphere. 40 C.F.R. §§ 1502.16(e), (f); id. at 1508.27. These estimates are important given the noted importance of near term action to ameliorate climate change – near term action that scientists say should focus, *inter alia*, on preventing the emission of short-lived but potent GHGs like methane while, at the same time, stemming the ongoing increase in the concentration of carbon dioxide.[66] These uncertainties –

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[59] EA at 40.

[60] *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, Fourth Assessment Report, Working Group 1, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Ch. 2, p. 212, Table 2.14, available at: www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

[61] *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Working Group I Contribution to the IPCC Fifth Assessment Report Climate Change 2013: The Physical Science Basis,* at 8-58 (Table 8.7) (Sept. 2013).

[62] *Id.*

[63] https://www3.epa.gov/climatechange/ghgemissions/gwps.html

[64] *Id.*

[65] Department of Energy, Opinion and Order 3357-C, DOE/FE Dkt. 11-161-LNG, at 30 (Dec. 4, 2015) ("We agree with Sierra Club that using 20- and 100-year methane GWPs of 87 and 36 is most appropriate for use today and that climate carbon feedbacks should be captured in the GWP values for methane."), *available at* www.fossil.energy.gov/programs/gasregulation/authorizations/2011_applications/ord3357c.pdf

[66] *See, e.g., Limiting Global Warming: Variety of Efforts Needed Ranging from 'Herculean' to the Readily Actionable, Scientists Say*, SCIENCE DAILY (May 4, 2010), available at: http://www.sciencedaily.com/releases/2010/05/100503161328.htm; *see also,* Ramanathan, et. al., *The Copenhagen*

which, here, the agency does not address – necessitate analysis in an EIS. 40 C.F.R. §§ 1508.27(a), (b)(4)-(5).

c. The EA Failed to Analyze The Significance and Severity of Greenhouse Gas Emissions

The EA estimates that development of the leases will cause, directly and indirectly, greenhouse gas emissions amounting to more than four million metric tons of carbon dioxide equivalent.[67] NEPA requires BLM to inform the public of direct and indirect effects the "significance" of these emissions, 40 C.F.R. § 1502.16(a)-(b); for example, BLM must "evaluate the[ir] severity." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989). To serve NEPA's "twin aims" of informing agency decisionmakers and the public, this evaluation must be in terms that will meaningfully inform these intended audiences of the magnitude and consequences of these effects. *Natural Res. Def. Council v. Nuclear Regulatory Comm'n*, 685 F.2d 459, 487 n.149 (D.C. Cir. 1982) *rev'd on other grounds sub nom. Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 106-107 (1983); *Columbia Basin Land Prot. Ass'n v. Schlesinger*, 643 F.2d 585, 594 (9th Cir. 1981).

Here, the EA provides no analysis of the impact or severity of greenhouse gas emissions. One widely used approach to evaluating the impact of GHG emissions is to estimate the costs of those emissions to society. The federal Interagency Working Group on the Social Cost of Carbon has developed estimates of the present value of the future costs of carbon dioxide, methane, and nitrous oxide emissions as a proxy for the magnitude and severity of those impacts.[68] These tools are easy to use by agencies, easy to understand by the public, and supported by years of peer-reviewed scientific and economic research. The EPA and other federal agencies have used these social cost protocols to estimate the effects of rulemakings on climate, and certain BLM field offices have used these tools in project level NEPA analysis. These protocols estimate the global financial cost of each additional ton of GHG pollution emitted to the atmosphere, taking into account factors such as diminished agricultural productivity, droughts, wildfires, increased intensity and duration of storms, ocean acidification, and sea-level rise. The Council on Environmental Quality has explicitly endorsed these tools, explaining that they were "[d]eveloped through an interagency process committed to ensuring that [these] estimates reflect the best available science and methodologies and used to assess the social benefits of reducing carbon dioxide emissions across alternatives in rulemakings, [the social cost protocols] provide[] a harmonized, interagency metric that can give decision makers and the public useful information for their NEPA review."[69]

Accord for Limiting Global Warming: Criteria, Constraints, and Available Avenues (Feb. 2010).

[67] EA at 92.

[68] *See* Interagency Working Group on the Social Cost of Carbon, United States Government, *Technical Support Document: Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866* (May 2013) at 2 (hereinafter 2013 TSD); Interagency Working Group, Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide (August 2016), available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/august_2016_sc_ch4_sc_n2o_addendum_final_8_26_16.pdf (last visited October 30, 2016).

[69] Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews at 33

The EA improperly determined that "including monetary estimates of the social cost of GHGs (SC GHG) in its NEPA analysis for this Proposed Action would not be useful. Since the BLM is not doing a cost-benefit analysis in this NEPA document, we do not believe monetizing only SC GHG would be instructive."[70] However, analysis of the social cost of greenhouse gases plays an important—and otherwise unfilled—role regardless of whether BLM engages in a broader cost benefit analysis. Because BLM cannot identify the physical consequences of the greenhouse gas emissions caused by the leases, BLM must use "generally accepted" methods to discuss those impacts. 40 C.F.R. § 1502.22(b)(4). The social cost protocols, developed by a consortium of federal agencies specifically to address the impact of federal actions, are precisely such a generally accepted method. Given BLM's failure to adopt any other method for discussing these impacts, BLM's failure to use the social cost protocols was arbitrary and contrary to NEPA's requirements.

In addition, BLM's assertion that it is not conducting a cost benefit analysis ignores the fact that BLM *does* quantify economic benefits of the leases. The EA acknowledged and quantified various purported socioeconomic benefits of increased oil and gas development in the region.[71] Discussing those benefits without discussing costs skews the public's understanding of the full costs and benefits of oil and gas production.

BLM argues that CEQ guidance gives BLM "discretion" in determining whether to monetize the impacts of greenhouse gas emissions.[72] The guidance does not and cannot relieve BLM of the regulatory obligation to use generally accepted methods to assess the impacts of greenhouse gas emissions. Insofar as BLM has discretion, it is discretion to choose between available methods to analyze the significance, severity, and impact of greenhouse gas emissions, but BLM does not have discretion to provide no such analysis whatsoever. Here, where BLM has not identified any alternative method, use of the social cost protocols was required. In 2014, the district court for the District of Colorado faulted the Forest Service for failing to calculate the social cost of carbon, refusing to accept the agency's explanation that such a calculation was not feasible. High Country Conservation Advocates v. U.S. Forest Service, 52 F.Supp.3d 1174 (D.Colo. 2014) (a decision the agency decided not to appeal, thus implicitly recognizing the importance of incorporating a social cost of carbon analysis into NEPA decisionmaking). In his decision, Judge Jackson identified the IWG's SCC protocol as a tool to "quantify a project's contribution to costs associated with global climate change." Id. at 1190.[73] To fulfill this mandate, they agency must disclose the "ecological[,] … economic, [and] social" impacts of the proposed action. 40 C.F.R. § 1508.8(b). Simple calculations applying the SCC to GHG

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n.86 (August 1, 2016), available at https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf

[70] EA at 94.

[71] *See* EA at 28.

[72] EA at 94.

[73] *See also id.* at 18 (noting the EPA recommendation to "explore other means to characterize the impact of GHG emissions, including an estimate of the 'social cost of carbon' associated with potential increases in GHG emissions.") (citing Sarah E. Light, *NEPA's Footprint: Information Disclosure as a Quasi-Carbon Tax on Agencies*, 87 Tul. L. Rev. 511, 546 (Feb. 2013)).

emissions from this project offer a straightforward comparative basis for analyzing impacts, and identifying very significant costs.[74]

iv. BLM Arbitrarily Underestimated Surface Disturbance Impacts from Limits Of Disturbance ("LODs"), Gathering Lines, Well Pads, and Compressor Stations

We also explained in our May 31, 2016 comment letter that the FONSI is a result of inaccurate estimates of surface disturbance for well pads, compressor stations, and gathering lines. It appears BLM largely ignored our comments on this issue. Especially problematic is BLM's deflated projections of land-use change. According to research by Ted Auch at FracTracker Alliance,[75] limits of disturbance (such as the clearing and earth moving impacts immediately adjacent to the pad itself) increase average well pad disturbance from an average of 4-5 acres to 10-14 acres, more than 2-3 times the estimates BLM proposes. BLM's response to comments on this point are dismissive. BLM makes no effort to clarify what the "total estimated surface disturbance" includes, other than "clearing and grading."[76] BLM's failure to conduct any site-specific review of the parcels is especially problematic in this light, given that these estimates are sensitive to topography with steeper slopes which require more gradual well pad tapering to offset "angles of repose."[77] According to Dr. Auch, this could result in LODs in excess of 15 acres.[78] BLM also fails to quantify or analyze the effects of surface disturbance from water and wastewater impoundments, which can disturb roughly up to 28 acres of land, such as one pond in Noble County, Ohio.[79]

Furthermore, each well pad will require 3-9 acres of gathering line to service it.[80] The EA provides no quantification of the acreage of gathering line that will be needed, and BLM's only response to this point is that "Section 4.6, Cumulative Effects, also acknowledges there could be additional surface disturbance on private lands."[81] Surface disturbance from gathering lines are a foreseeable impact of oil and gas development, yet BLM does not consider these impacts in its analysis. Despite raising these foreseeable surface disturbance impacts in our previous comments on the draft EA, BLM failed to revise its analysis to include these impacts.

v. BLM Failed to Adequately Address Potential Impacts of Proposed Action on Human Health and Safety

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[74] It is important to note that, although the 2010 IWG SCC protocol did not address methane impacts, the 2013 IWG Technical Update explicitly addresses methane impacts. Thus, it is appropriate to calculate a SCC outcome that takes into account the full CO_2e emissions associated with the proposed leasing.

[75] *See* Exhibit A at fn. 90 & accompanying text; *see also* Exhibit E (Dr. Auch's CV); *see also* McClaugherty, Charles et al., Landscape impacts of infrastructure associated with Utica shale oil and gas extraction in eastern Ohio (abstract), 100th Ecological Society of America Annual Meeting (2015) (describing analytical methods used in Dr. Auch's research).

[76] EA, Appendix A: Public Comment Matrix ("Appendix A") at 177.

[77] E-mail communication with Dr. Auch and Nathan Johnson (Oct. 27, 2016) (Exhibit F).

[78] *Id.*; *see also* U.S. Forest Service, Slope Stability Reference Guide for National Forests in the United States, Vol. II (August 1994), available at http://www.fs.fed.us/rm/pubs_other/wo_em7170_13/wo_em7170_13_vol2.pdf.

[79] Exhibit G, Auch 2016 Consol Energy Impoundment Noble County.

[80] McClaugherty 2015.

[81] *Id.*

Our May 31, 2016 comments on the Draft EA identified several potential threats that the proposed action poses to human health and safety, including carcinogenic, developmental, reproductive, and endocrine disruption effects. We pointed to numerous studies, including those that show residents living within one-half mile of a fracked well were significantly more likely to develop cancer than those who live more than one-half mile away[82]; and people living in proximity to fracked gas wells commonly report skin rashes and irritation, nausea or vomiting, headache, dizziness, eye irritation and throat irritation.[83] Further studies have raised substantial questions regarding air pollution from Uinta Basin drilling for example and its public health effects on communities.[84] The EA did not discuss any harms oil and gas operations have been shown to have on human health and safety, instead concluding without providing any analysis to support its conclusion, that "[t]hrough the NEPA process and adherence to federal, state, and local regulations, laws, permits and policy, as well as numerous safety standards and protocols, the BLM and Forest Service ensures that future oil and gas leasing operations would not compromise public health and safety. Additional site-specific analysis on public health and safety will be conducted at the APD stage."[85] Again, here BLM essentially concludes that there are no significant impacts on public health and safety because BLM will not look at those impacts until later.

Although the EA states that, "[f]uture mineral development operations within the Marietta Unit that would violate a state and/or federal air quality standard would not be approved," BLM provides absolutely no analysis, data, or studies concluding that there have been no impacts to human health and safety from oil and gas operations that comply with state and/or federal air quality standards. BLM cannot arbitrarily assume that any action that does not violate state or federal air quality standards will have no impact on public health and safety, or that compliance with these standards will automatically reduce all impacts to human health and safety to an insignificant degree.

vi. BLM Failed to Adequately Address Potential Impacts of Hydraulic Fracturing, Horizontal Drilling, and Other Unconventional Well Stimulation Techniques on Water Resources

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[82] McKenzie, L. et al., Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources, 424 Science of the Total Environment 79 (2012) ("McKenzie 2012").

[83] Rabinowitz, P.M. et al., Proximity to Natural Gas Wells and Reported Health Status: Results of a Household Survey in Washington County, Pennsylvania. Environmental Health Perspectives Advance Publication (2014); Bamberger, Michelle and R.E. Oswald, Impacts of Gas Drilling on Human and Animal Health, 22 New Solutions 51 (2012); Steinzor, N. et al., Gas Patch Roulette: How Shale Development Risks Public Health in Pennsylvania, Earthworks Gas & Oil Accountability Project (2012).

[84] *See Siddika N, Balogun HA, Amegah AK, Jaakkola JJ. Prenatal ambient air pollution exposure and the risk of stillbirth: systematic review and meta-analysis of the empirical evidence. Occup Environ Med. 2016 May 24. pii: oemed-2015-103086. doi: 10.1136/oemed-2015-103086*; *see also* Annie Knox, "At Vernal forum, questions about air pollution, pregnancies, research," Salt Lake Tribune (April 19, 2015); Solotaroff, "What's Killing the Babies of Vernal, Utah?"

[85] EA at 109

Despite the likelihood of hydraulic fracturing occurring on the parcels to be leased,[86] and the severity of the impacts that would ensue from such controversial practices, BLM provides hardly any analysis on said impacts.

BLM assumes that because there is not enough groundwater or surface water in the Marietta Unit to satisfy the large amount needed in the use of fracking, it is unlikely that a proposal would ever be made to utilize these water sources from the WNF.[87] BLM therefore declined to analyze any potential impacts of fracking or other techniques on the water resources in the proposed action area. BLM does not even identify these resources that are on or surrounding the parcels at issue. The programmatic EA mentions that water may have to be "brought in" to fulfill the needs of fracking, either from the Ohio River or elsewhere, "although a local waterway may be used if it is determined to be an appropriate water source."[88] BLM does not identify any potential local waterways that may be impacted if they are determined to be appropriate for use in fracking, though a number of waterways cross these parcels or are adjacent to them.[89] BLM further concludes that any risk of depletion and contamination from hydraulic fracturing or other unconventional technique is minimized by policies for water withdrawal, waterway protection, and additional protections required by the Onshore Oil and Gas Orders. As we argued above, existing regulations or protective measures do not automatically minimize the foreseeable impacts of oil and gas operations. BLM cannot pass off its legal obligations under NEPA to take a "hard look" at and disclose to the public all foreseeable impacts of its actions by pointing at existing policies and regulations or by assuming other regulatory agencies will nullify these impacts. BLM provided no evidence or analysis showing that the impacts of fracking on water resources. In failing to do so, BLM violated NEPA.

These same deficiencies apply to the EA's treatment of the potential impacts of hydraulic fracturing on soil, vegetation, wildlife and wildlife resources, as well as human health and safety. BLM provided no analysis of the impacts of fracking or other unconventional extraction techniques on these resources. As we pointed out above, BLM's conclusion that impacts to human health are not anticipated fails to cite to any supporting data, studies, or any scientific evidence.

vii. BLM Failed to Account for New Drilling Project on Ohio River

Recently, we learned that operator Eclipse plans to propose drilling in the WNF along the Ohio River, with boreholes going beneath the river and reaching into West Virginia upstream from Parkersburg.[90] According to Eclipse's November 1, 2016 meeting with West Virginia's Oil

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[86] EA at 27 ("If the parcels are developed the wells would likely be completed using hydraulic fracturing (HF) techniques.")

[87] See, e.g., EA at 105 ("Local aquifers (within the Marietta Unit) do not yield sufficient water to support industrial activities within the Marietta Unit. Therefore, the likelihood that the proposed leasing action and potential future mineral development would affect groundwater quantity is negligible.")

[88] EA at 105.

[89] Center for Biological Diversity, Maps of December 2016 parcels using BLM's GIS data ("WNF Parcels Map") (Exhibit H), available at http://center.maps.arcgis.com/apps/View/index.html?appid=07133d7627244faba92d398b92fb049a.

[90] Information about this project was obtained from a member of the public who attended a meeting about this proposal. *See also* Cocklin, Jamison, West Virginia Efforts to Lease State-Owned Oil/Gas Rights Slow with

and Gas Commission and other state officials in Charleston, West Virginia, Eclipse plans to develop 15 shallow well pads in the Marcellus shale bed and another 10 or 12 deep well pads in the Utica bed. These wells would run for about five miles from Ohio to West Virginia along the Ohio River, with a potential of up to 150 wells on these pads. The operator plans to request an exception to well spacing restrictions in West Virginia and has stated it will not pursue the proposed project without the exception. Drilling would begin in June 2017, and the project would last two years.

It is unclear whether this project would occur on any of the proposed leases in the December sale, but according to BLM records, on January 6, 2015, "Eclipse Resources" nominated 4,312.92 acres within the WNF for leasing.[91] Moreover, a number of parcels proposed for the December sale are very close to the Ohio River.[92] If these parcels have been nominated by Eclipse, they would appear to be part of Eclipse's above-described plans, such that BLM should analyze the effects of Eclipse's contemplated project on WNF, Ohio River, and West Virginia resources, as a reasonably foreseeable consequence of new leasing. At the very least, BLM must analyze the cumulative effects of new leasing in connection with Eclipse's drilling proposal. Moreover, this proposal indicates that drilling along and beneath the Ohio River is a reasonably foreseeable consequence of new leasing, but the EA fails to discuss potential effects of such activities. A number of potential effects must be addressed, including risks of contaminating the river and groundwater sources around and along the river, impacts on special wildlife management areas (in both Ohio and West Virginia), and scenic byways along the river.

B. BLM Violated its Statutory Duty to Prepare an EIS under NEPA

NEPA requires a federal agency prepare an EIS before taking a "'major [f]ederal action[] *significantly* affecting the quality' of the environment." Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1067 (9th Cir. 2002) (emphasis added). The issues discussed above show that the potential impacts that the proposed action could have on the environment are indeed significant, which compels the preparation of an EIS.

An EIS must be prepared if substantial "questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor."[93] It is not necessary to show that significant effects will in fact occur; raising substantial questions about whether a project *may* have a significant effect is enough to trigger BLM's obligation to prepare an EIS.[94] Because the aforementioned impacts are likely to have a significant effect on the environment, BLM is legally required under NEPA to prepare an EIS. This is especially true in light of the likelihood that fracking would occur on the leases.

Downturn, NaturalGasIntel.com (Dec. 18, 2015), available at http://www.naturalgasintel.com/articles/104750-west-virginia-efforts-to-lease-state-owned-oilgas-rights-slow-with-downturn (noting Eclipse's plans to drill wells from Ohio and obtain "mineral rights in West Virginia to extend its laterals" into Wetzel County).

[91] BLM, Wayne National Forest EOI Spreadsheet (Feb. 8, 2016) (Exhibit I).

[92] WNF Parcels Map, available at http://center.maps.arcgis.com/apps/View/index.html?appid=07133d7627244faba92d398b92fb049a

[93] *Ocean Advocates v. United States Army Corps of Eng'rs*, 402 F.3d 846, 864-65 (9th Cir. 2005) (internal quotes omitted).

[94] *Id.*

In considering whether the proposed oil and gas leasing would have significant effects on the environment, NEPA's regulations require BLM to evaluate ten factors regarding the "intensity" of the impacts.[95] The existence of any "one of these factors may be sufficient to require preparation of an EIS."[96] Several of these "significance factors" are implicated in this proposed action and clearly warrant the preparation of an EIS:

The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The degree to which the proposed action affects public health or safety.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.[97]

Here, individually and considered as a whole, there is no doubt that significant effects may result from this proposal; thus, NEPA requires that BLM must prepared an EIS for the action.

i. The effects on the human environment will be highly controversial

A proposal is highly controversial when "substantial questions are raised as to whether a project . . . may cause significant degradation" of a resource, Nw. Envtl. Def. Ctr. v. Bonneville Power Admin., 117 F.3d 1520, 1536 (9th Cir. 1997), or when there is a "substantial dispute [about] the size, nature, or effect of the" action. Blue Mtns. Biodiversity, 161 F.3d at 1212. A "substantial dispute exists when evidence, raised prior to the preparation of [a] . . . FONSI, casts serious doubt upon the reasonableness of an agency's conclusions." Nat'l Parks & Conserv. Ass'n, 241 F.3d at 736. When such a doubt is raised, "NEPA then places the burden on the agency to come forward with a 'well-reasoned explanation' demonstrating why those responses disputing the EA's conclusions 'do not . . . create a public controversy.'" Id. See also Center for Biological Diversity, 937 F. Supp. 2d 1140.

We provided abundant evidence that oil and gas operations can cause significant impacts to human health, water resources, air quality, and imperiled species, raising substantial disputes

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[95] 40 C.F.R. § 1508.27(b); *see also Center for Biological Diversity, et al. v. Bureau of Land Management, et al.*, 937 F. Supp. 2d 1140, 1155-59 (holding that oil and gas leases were issued in violation of NEPA where BLM failed to prepare an EIS and failed to properly address the significance factors for context and intensity in 40 C.F.R. § 1508.27).

[96] *Ocean Advocates*, 402 F.3d at 865; *Nat'l Parks & Conservation Ass'n*, 241 F.3d at 731.

[97] 40 C.F.R. § 1508.27(b)(4), (5), (2) & (9); *See Center for Biological Diversity*, 937 F. Supp. 2d at 1158-59 (holding that BLM failed to properly address the significance factors regarding controversy and uncertainty that may have been resolved by further data collection (citing *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1240 (9th Cir. 2005)).

about the "size, nature, or effect of the action." In addition, there is a substantial dispute regarding whether oil and gas activities on private surface, or federal surface overlying private minerals, would be sufficiently mitigated by state and Forest Service regulations.

ii. The lease sale presents highly uncertain or unknown risks

An EIS must also be prepared when an action's effects are "highly uncertain or involve unique or unknown risks." 40 C.F.R. § 1508.27(b)(5). Preparation of an EIS is "mandated where uncertainty may be resolved by further collection of data, or where the collection of such data may prevent speculation on potential . . . effects."[98] As one court recently explained regarding oil and gas leasing that may facilitate fracking, "BLM erroneously discounted the uncertainty from fracking that may be resolved by further data collection."[99] There is also great uncertainty, for example, in the contributions of this action to the resulting effects of climate change, which are potentially catastrophic. While it is clear that oil and gas activities can cause great harm, there remains much to be learned about the specific pathways through which harm may occur and the potential degree of harm that may result. Additional information is needed, for example, about possible rates of natural gas leakage, the effects of certain fracking chemicals, including synergistic and cumulative effects of fracking fluid mixtures, the potential for fluids to migrate through the ground in and around the parcels, and the potential for drilling to affect local faults. NEPA dictates that the way to address such uncertainties is through the preparation of an EIS

iii. The lease sale poses threats to public health and safety

As discussed in great detail above in section "II(A)," subsection "v," of this protest, the oil and gas activities that may occur as a result of the lease sale could cause significant impacts to public health and safety. 40 C.F.R. § 1508.27(b)(2). Fracking would pose a grave threat to the region's water resources, harm air quality, pose seismic risks, negatively affect wildlife, and fuel climate change.

As a congressional report noted, oil and gas companies have used fracking products containing at least 29 products that are known as possible carcinogens, regulated for their human health risk, or listed as hazardous air pollutants.[100] The public's exposure to these harmful pollutants alone would plainly constitute a significant impact. Furthermore, and as previously discussed, information continues to emerge on the risk of earthquakes induced by wastewater injected into areas near faults. It is undeniable that these earthquakes pose risks to the residents of the area and points beyond.

The use of fracking fluid, which is likely to occur as a result of the lease sale, poses a major threat to public health and safety and therefore constitutes a significant impact. BLM therefore must evaluate such impacts in an EIS.

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[98] *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1240 (9th Cir. 2005) (internal citations omitted).
[99] *Center for Biological Diversity,* 937 F. Supp. 2d at 1159.
[100] Waxman, Henry et al., United States House of Representatives, Committee on Energy and Commerce, Minority Staff, Chemicals Used in Hydraulic Fracturing (Apr. 2011) ("Waxman 2011")

iv. The action may adversely affect endangered, threatened, candidate, and agency sensitive species and their habitat

As we argued above, an EIS is required when an action "may adversely affect an endangered or threatened species or its habitat." 40 C.F.R. § 1508.27(b)(9). Although a finding that a project has "some negative effects does not mandate a finding of significant impact," an agency must nonetheless fully and closely evaluate the effects on listed species and issue an EIS if those impacts are significant. Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv., 373 F. Supp. 2d 1069, 1081 (E.D. Cal. 2004) (finding agency's conclusion that action "may affect, is likely to adversely affect" species due to "disturbance and disruption of breeding" and "degradation" of habitat is "[a]t a minimum, . . . an important factor supporting the need for an EIS"). Impacts to some of the BLM sensitive and other rare species threatened by the proposed lease have been highlighted in section "II(A)" subsection "ii" of these comments.

C. BLM Violated Section 7 of the ESA by Failing to Consult with FWS on the Impacts of the Proposed Oil and Gas Leasing on Threatened and Endangered Species

Congress enacted the ESA to provide "a program for the conservation of . . . endangered species and threatened species." 16 U.S.C. § 1531(b). Section 2(c) of the ESA establishes that it is "the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." 16 U.S.C. § 1531(c)(1). The ESA defines "conservation" to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this [Act] are no longer necessary." 16 U.S.C. § 1532(3). Section 7(a)(1) of the ESA explicitly directs that all federal agencies "utilize their authorities in furtherance of the [aforesaid] purposes" of the ESA. 16 U.S.C. § 1536(a)(1).

Section 7 of the ESA requires BLM, in consultation with FWS, to insure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species, or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2). For each proposed federal action, BLM request from FWS whether any listed or proposed species may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. If listed or proposed species may be present in such area, BLM must prepare a "biological assessment" to determine whether the listed species may be affected by the proposed action. Id.

If BLM determines that its proposed action may affect any listed species or critical habitat, the agency must engage in formal consultation with FWS. 50 C.F.R. § 402.14. To complete formal consultation, FWS must provide BLM with a "biological opinion" explaining how the proposed action will affect the listed species or habitat. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14. If FWS concludes that the proposed action will jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat, the biological opinion must outline "reasonable and prudent alternatives." 16 U.S.C. § 1536(b)(3)(A).

BLM's oil and gas leasing proposal for the Wayne National Forest is an agency action under the ESA. Action is broadly defined under the ESA to include all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies, including the granting of leases, and actions that will directly or indirectly cause modifications to the land, water, or air. 50 C.F.R. § 402.02. BLM, however, failed to request from FWS whether any listed or proposed species may be present in the action area. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12.

Moreover, there are listed species in the action area, and thus BLM further violated the ESA by failing to prepare a biological assessment. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. As BLM admits in the EA, the Indiana bat is "well-documented on all units" of the Wayne National Forest, the Marietta Unit "contains ample suitable foraging and roosting habitat" for the northern long-eared bat, and sheepnose and snuffbox mussels "may be present on waterways within the [Wayne National Forest]." EA at 48-49. Additionally, the fanshell is found immediately downstream of the Marietta Unit, and the pink mucket has been found in the Belleville, Racine, Gallipolis, and Greenup pools of the Ohio River and potentially still exists in the lower Muskingum River in the Belleville and Racine pools of the Ohio River in Wood County, West Virginia and in the lower Muskingum River.[101]

The proposed action may affect the threatened and endangered species in the action area, and downstream from the action area. As stated in the EA, the Forest Service has already determined that "oil and gas activities are likely to adversely affect Indiana bat," and "tree removal may result in impacts to individual northern long-eared bats." EA at 99-100. Additionally, the water depletions, increased surface disturbance, and toxic spills from hydraulic fracturing and horizontal drilling throughout the Marietta Unit "may affect" the sheepnose and snuffbox mussels, as well as fanshell and pink mucket pearly mussels found downstream from the proposed areas for lease. BLM therefore violated the ESA by failing to consult with FWS concerning the impacts of its oil and gas leasing proposal on these listed species. 16 U.S.C. § 1536(a)(2). And because BLM has failed to comply with the Section 7 consultation procedures, it cannot insure that the proposed oil and gas leasing will not jeopardize any listed species, or destroy or adversely modify any critical habitat, in further violation of Section 7 of the ESA. Id.

BLM asserts in the EA that it can wait to engage in ESA consultation with FWS when it receives an application for a permit to drill. EA at 20. This position, however, has been rejected by the courts and violates the ESA. For instance, in Conner v. Burford, the Forest Service issued oil and gas leases on national forests in Montana, without preparing an EIS, and without consulting on all phases of the oil and gas leases. 848 F.2d 1441 (9th Cir. 1988). The United States Court of Appeals for the Ninth Circuit held that the sale of a non-NSO oil and gas lease constitutes an irreversible commitment of resources. Id. at 1451. For BLM's oil and gas leasing proposal on the Wayne National Forest, NSO leases are proposed for only a small portion of the overall lease sale, with non-NSO leases proposed for the majority of the national forest. See EA at 43.

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[101] Forest Plan EIS, Appendix F1, Biological Assessment at F1-112, F1-126 – F1-127.

The federal agency defendants in Conner v. Burford did not even dispute that the agencies were required to consult under Section 7 of the ESA, and that FWS was required to prepare a biological opinion, before any of the leases could be sold. Conner, 848 F.2d at 1453. The Ninth Circuit further held that FWS was required to consider all phases of the oil and gas leases within the biological opinion, including all post-leasing activities. Id. "Therefore the FWS was required to prepare, at the leasing stage, a comprehensive biological opinion assessing whether or not the agency action was likely to jeopardize the continued existence of protected species." Id. BLM's failure to consult with FWS on its oil and gas leasing proposal for the Wayne National Forest plainly violates Section 7 of the ESA. 16 U.S.C. 1536(a)(2).

D. BLM's Reliance on the 2005 Forest Plan Biological Opinion Violates the ESA

BLM relies extensively on the 2005 Biological Opinion prepared by FWS for the 2006 Forest Plan for the Wayne National Forest. EA at 19. BLM acknowledges, however, that this 2005 Biological Opinion is programmatic and "non-site-specific." Id. This 2006 programmatic biological opinion for the Forest Plan does not excuse BLM's obligation to consult under the ESA for its oil and gas lease proposal.

Moreover, BLM's reliance on the 2005 Biological Opinion is misplaced because it is out of date. Agencies are required to reinitiate ESA consultation if (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) 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; (3) the action is modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. 50 C.F.R. § 402.16. Despite years of new information, and newly listed species, the Forest Service and FWS have failed to reinitiate consultation on the 2005 Biological Opinion

i. New Information

The 2006 Biological Opinion for the 2006 Forest Plan does not address three issues where there has been significant new information over the past decade that are directly relevant to the Forest Plan and its impacts on listed species and critical habitat: new drilling techniques, white-nosed syndrome, and climate change. The agencies failure to reinitiate consultation on the 2005 Biological Opinion to address this decade of significant new information violates the ESA. 50 C.F.R. § 402.16.

a. Horizontal Well Development

The 2005 Biological Opinion for the Forest Plan is woefully outdated, failing to address the grave impacts of hydraulic fracturing and horizontal drilling on the Indiana bat or other species. As discussed, the Forest Service only analyzed the effects of vertical well development on the federal surface in the EIS for the 2006 Forest Plan. The rise in fracking and horizontal drilling and recent data regarding horizontal well pad surface disturbance constitutes new information revealing effects of the action that may affect listed species in a manner or to an

extent not previously considered, and triggers the duty of the BLM, Forest Service, and FWS to reinitiate consultation on the 2005 Biological Opinion. 50 C.F.R. § 402.16(b).

The likelihood that new federal leasing will open up private minerals for development and entail the development of horizontal well pads on private surface also triggers reinitiation. The effects of the proposed leasing must be evaluated "together" with these "interdependent" private surface activities in a reinitiated consultation, regardless of whether BLM or the Forest Service authorizes the private surface activities. 50 C.F.R. §§ 402.02, 402.16; *Sierra Club v. U.S. DOE*, 255 F. Supp. 2d 1177, 1188 (D. Col. 2002) (agency that granted easement to mine required to analyze mine's impacts on listed species, even though another agency authorized mine). While the number of new horizontal well pads on private surface that federal leasing could lead to has never been analyzed, significant habitat loss (e.g., fragmentation of maternal summer roost areas) that is not accounted for in the 2005 Biological Opinion and hazardous conditions endangering listed species could result from these activities. This is especially because of weaker state regulations, such as those permitting wastewater ponds would govern these private activities.

The same holds true for effects of horizontal drilling on federal surface activities overlying private minerals (which could also be opened up with new federal leasing)—in these split estate situations, the Forest Service can only request operators to voluntarily comply with Standards and Guidelines set forth in the Forest Plan. Indeed, if well development on private and federal surface were proportionate to the Marietta Unit's private and federal surface acreages, a significant portion of wells within the Forest (75%) would escape mandatory federal controls. The resulting take could be cumulatively significant and lead to forest-wide, population-level effects on the Indiana bat and other species.

BLM's implicit determination in the EA that existing regulatory mechanisms will reduce or avoid effects on the Indiana bat and other listed species from private surface and mineral development activities is not a proper basis for not consulting with Fish and Wildlife Service regarding these impacts. That is not BLM's call to make. Because it is clear that private surface and mineral development adjacent to federal surface in the WNF "may" affect listed species—issues that have never been considered in prior consultations—BLM and the Forest Service must reinitiate consultation with Fish and Wildlife Service on the 2005 Biological Opinion to ensure that oil and gas leasing does not jeopardize the Indiana bat or others species before these leases can proceed.

b. White-Nose Syndrome

White-nose syndrome is a fatal disease affecting hibernating bats that is named for a white fungus that appears on the muzzle and other parts of bats. The disease has spread rapidly across the eastern and midwestern United States, and is estimated to have killed more than 6 million bats in the Northeast and Canada.[102] Bats with white-nose syndrome "act strangely during cold winter months, including flying outside during the day and clustering near the entrances of caves and other hibernation areas."[103] These abnormal behaviors "may contribute to

[102] USFWS, White-nose syndrome: The devastating disease of hibernating bats in North America (May 2016), *available at* https://www.whitenosesyndrome.org/sites/default/files/resource/white-nose_fact_sheet_5-2016_2.pdf.
[103] *Id.*

the untimely consumption of stored fat reserves causing emaciation, a characteristic documented in a portion of the bats that die from WNS."[104]

White-nose syndrome has spread to 16 counties in Ohio,[105] including in the Wayne National Forest in Lawrence County.[106] In 2011, the Forest Service performed a review of new information regarding the Wayne National Forest Plan and white-nose syndrome and concluded that supplementation of the environmental review for the Forest Plan was not necessary at that time. However, since then, a 2013 study has determined that white nose syndrome threatens the Indiana bat with a high risk of extirpation throughout large parts of its range.[107] The study concluded:

> Our sensitivity analyses indicated that management actions devoted to increasing, in order, winter, summer, and fall survival of breeding adult females would have the greatest potential for mitigating impacts of WNS on Indiana bat populations. Management actions for improving survival, however, may be difficult to achieve because these parameters are quite high (95% seasonal survival) in the absence of WNS. Alternatively, increasing reproduction, while less efficient at addressing a declining population trajectory, has more room for improvement; further, if management actions on the breeding grounds to improve reproduction also improve adult female summer survival, our global sensitivity analyses suggest improved performance in the other parameters may occur as well. *Because of the heightened risk faced by small, range-restricted populations* (Terborgh and Winter, 1980; Gilpin and Soulé, 1986; Schoener and Spiller, 1987), *it is also prudent in the face of this potential extinction agent to limit additive sources of mortality.* Our model suggests a timeframe for action, for the species is expected to reach its lowest level of abundance by the early 2020s, no more than a decade hence.[108]

The potential for white-nose syndrome to wipe out the Indiana bat in large parts of its range makes the bat's population much more sensitive to other threats, including oil and gas development. It is therefore crucial to reduce these threats. New information concerning this devastating disease reveals effects of the leasing proposal that "may affect [the Indiana bat]…in a manner or to an extent not previously considered," and compels reinitiation.

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[104] USGS, National Wildlife Health Center, White-Nose Syndrome, *available at* http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome/.

[105] Ohio Dept. of Natural Resources, White-nosesSyndrome.org, *available at* https://www.whitenosesyndrome.org/partner/ohio-department-natural-resources; White-nose Syndrome.org, Updated white-nose syndrome map (May 10, 2016) https://www.whitenosesyndrome.org/resource/updated-white-nose-syndrome-map-may-10-2016.

[106] USFS, White-nose Syndrome Detected in Ohio (Mar. 30, 2011), *available at* http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_AI8zPyhQoY6BdkOyoCAGixyPg!/?ss=110914&navtype=BROWSEBYSUBJECT&cid=STELPRDB5288711&navid=180000000000000&pnavid=null&position=News&ttype=detail&pname=Wayne%20National%20Forest-%20News%20&%20Events.

[107] Thogmartin, Wayne E. et al. White-nose syndrome is likely to extirpate the endangered Indiana bat over large parts of its range, Biological Conservation, Vol. 160, pp. 162-172 (April 2013), *available at* http://www.sciencedirect.com/science/article/pii/S0006320713000207.

[108] *Id.*

c. Climate Change

Climate change is also projected to shift the Indiana bat's range, because the species' reproductive cycles, hibernation patterns, and migration are closely linked to temperature. One landmark study projects that warming summer temperatures will cause "maternity colonies in the western portion of the range [including Ohio]...to begin to decline and possibly disappear in the next 10–20years," causing the range to shift northeast-ward.[109] The researchers note that "the effects of climate change should be considered in future threats analyses and conservation strategies for the Indiana bat," and that "management actions which foster high reproductive success and survival...will be critical for the conservation and recovery of the species."[110] The 2005 Biological Opinion does not account for climate change effects. BLM and the Forest Service must consult with FWS regarding these effects on the Indiana bat.

ii. Newly Listed Species

In addition to the significant new information, there have also been species listed since the 2005 Biological Opinion that may be affected by the Forest Plan, and oil and gas leasing proposal. The agencies, however, have again failed to reinitiate consultation, in ongoing violation of the ESA. 50 C.F.R. § 402.16. At least the following species have been designated by FWS as threatened or endangered under the ESA subsequent to the 2006 Forest Plan, and may be impacted by the projects and activities authorized by the Plan: (1) the Northern long-eared bat, designated as threatened on May 4, 2015; (2) the sheepnose mussel, designated as endangered on April 12, 2012; and (3) the snuffbox mussel, designated as endangered on March 15, 2012. The agencies, however, have not reinitiated consultation on the Forest Plan to address the potential impacts on these listed species.

E. BLM Failed to Respond to Comments

We pointed out various significant foreseeable impacts in our comments on the draft EA. BLM's responses in its Final EA have dismissed nearly all of these issues without providing any evidentiary support or scientific analysis to conclude that the impacts are insignificant. Instead, BLM insists that it will look at these impacts after the leases have been issued and have entered the development stage. BLM's failure to consider and adequately respond to public comments violates NEPA's requirement that agencies take a "hard look" at environmental consequences. See W. Watersheds Project v. Kraayenbrink, 620 F.3d 1187, 1206 (9th Cir. 2010).

F. The Forest Service Violated NEPA by Failing to Conduct Any Independent Environmental Review and by Consenting Prior to Any Adequate NEPA Review

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[109] Loeb, Susan C.& Eric A. Winters, Indiana bat summer maternity distribution: effects of current and future climates, Ecology and Evolution 2013; 3(1):103–114, *available at* http://onlinelibrary.wiley.com/doi/10.1002/ece3.440/abstract.

[110] *Id.*

i. The Forest Service Cannot Consent to the Lease Sale Before Verifying that the Proposed Parcels Have Been Adequately Reviewed in NEPA Document

Before BLM can issue leases in the Wayne National Forest, BLM must obtain the Forest Service's authorization (or "consent") from the Forest Service. See 30 U.S.C. § 226(h).[111] The Forest Service may consent to leasing only after it verifies that "leasing of the specific lands [1] has been adequately addressed in a NEPA document, and [2] is consistent with the Forest land and resource management plan." 36 C.F.R. § 228.102(e)(1).[112] As detailed above, NEPA has not been adequately addressed; the EA disregards a multitude of environmental consequences from opening shale gas development and hydraulic fracturing. As we addressed in our previous, herein incorporated comments, the 2004 RFDS, the 2006 Forest Plan and EIS, and the 2012 SIR all also fail to adequately address the impacts of new leasing. To the extent that the Forest Service relies on these outdated and inadequate analyses for consent to leasing, that reliance is improper. See Kunaknana v. United States Army Corps of Eng'rs, 23 F. Supp. 3d 1063, 1070 (D. Alaska 2014) ("The agency must be alert to new information that may alter the results of its original environmental analysis, and continue to take a hard look at the environmental effects of its planned action.") (internal quotations omitted). This failure to fulfill the Forest Service's independent duty to ensure "leasing of the specific lands has been adequately addressed in a NEPA document" under NEPA renders its consent to the auction invalid, such that the auction must be cancelled. Before consenting to the lease sale, the Forest Service must undertake a supplemental environmental review of the proposed action. Id.

ii. The Forest Service Is a Cooperating Agency for the Proposed Lease Sale, and Must Independently Review the Sufficiency of the EA

That BLM has adopted an EA for the proposed lease sale does not relieve the Forest Service of its duty to ensure that new information arising since the 2006 Forest Plan EIS and 2012 SIR is taken into consideration. The Forest Service has an independent obligation as a cooperating agency to evaluate the effects of the proposed lease auction. Under CEQ regulations, "[a] cooperating agency may adopt without recirculating the [EIS] of a lead agency when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied." 40 C.F.R. § 1506.3(c). The Forest Service's consent is required before BLM may lease minerals underlying Forest Service lands. See 30 U.S.C. § 226(h); 36 C.F.R. § 228.102(e)(1). Because its consent is required by statute and regulation, the Forest Service is an agency that has "jurisdiction by law," and therefore "shall be a cooperating agency" under NEPA. 40 C.F.R. § 1501.6(a).

As the "lead agency" BLM has primary responsibility in preparing the environmental document. Id. § 1501.5. Cooperating agencies may "adopt an environmental assessment that another federal agency has prepared, so long as the agency adopting the assessment reviews it and accepts responsibility for its scope and content." Anacostia Watershed Soc'y v. Babbitt, 871

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[111] "The Secretary of the Interior may not issue any lease on National Forest System Lands reserved from the public domain over the objection of the Secretary of Agriculture." 30 U.S.C. § 226(h).

[112] Explicitly prohibiting authorization of leasing "[i]f NEPA has not been adequately addressed, or if there is significant new information or circumstances as defined by 40 CFR 1502.9 requiring further environmental analysis," or "[i]f there is inconsistency with the Forest land and resource management plan".

F. Supp. 475, 485 (D.D.C. 1994). "If the [cooperating] agency adopts an environmental assessment, however, it must issue its own FONSI [Finding of No Significant Impact]." Id.

Here, there is no indication that the Forest Service independently reviewed and adopted the EA before providing consent to the lease sale, nor any indication that the Forest Service has issued its own FONSI. Instead, the Forest Service relied solely on BLM's judgment in BLM's adoption of the EA; this reliance is improper. "To rely entirely on the environmental judgments of other agencies is in fundamental conflict with the basic purpose of NEPA: to require federal agencies to make an informed judgment of the balance between the economic and technical benefits of an action and its environmental costs." See Anacostia Watershed, 871 F. Supp. at 484 (internal quotation marks and alterations omitted).

The procedural requirement of independent environmental analysis by the Forest Service is not merely a formality, but is there to allow the agencies and the public to understand the consequences of the proposed lease auction. Without expert assessment from the Forest Service of the potential consequences of leasing for the resources within its jurisdiction, the agencies and the public are deprived of a meaningful opportunity to evaluate the potential consequences of BLM's proposed action. A prime example of this is the effects of new leasing on private surface and mineral development, and how such development could impact Forest Service resources. The Forest Service has never addressed this issue in any of its previous environmental analyses, and BLM's weak attempt at addressing it in the EA lacks the benefit of the Forest Service's expert assessment. The public is therefore deprived of meaningful information and adequate assurances that these effects have been adequately reviewed.

IV. Conclusion

Unconventional oil and gas development not only fuels the climate crisis but entails significant public health risks and harms to the environment. Accordingly, BLM should prepare an EIS that thoroughly analyzes the effects of the proposed lease auction, as compared to the alternative of no new fossil fuel leasing and no fracking or other unconventional well stimulation methods within the WNF planning area. We strongly urge BLM to defer the proposed lease sale, prepare a legally adequate EIS for this proposed oil and gas leasing action, and consult under Section 7 of the ESA, prior to allowing the proposed action to move forward. Thank you for your consideration of these comments.

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Myke Luurtsema, Heartwood Council Chair
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Elly Benson, Staff Attorney,
Sierra Club

Marissa Knodel, Climate Campaigner,
Friends of the Earth

List of References

Auch, T., Consol Energy Impoundment Noble County (2016), attached as Exhibit G

Auch, T., Curriculum Vitae (2016), attached as Exhibit E

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