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Comments Submitted Electronically via:

<https://cara.fs2c.usda.gov/Public/CommentInput?Project=56882>

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Re: Oil and Gas Leasing Availability, National Forests and Grasslands in Texas

We are writing to submit information for the U.S. Forest's Services consideration in its scoping of the Oil and Gas Leasing Analysis for the National Forests and Grasslands of Texas (NFGT). The Forest Service proposes to end the current moratorium on oil and gas leasing throughout its Texas planning area totaling 1.92 million acres, which is spread out over six noncontiguous management units, including the Angelina, Davy Crockett, Sabine, and Sam Houston national forests, and the Caddo and Lyndon B. Johnson national grasslands. Lifting the moratorium would open these public lands and adjacent areas to over 1,500 new hydraulic fracturing ("fracking") wells, and would result in clearing thousands of acres of forest habitat, harmful air pollution, and depletion and contamination of water resources, including public drinking water supplies such as Lake Conroe, Toledo Bend Lake, and Sam Rayburn Reservoir.

The U.S. Forest Service has never considered the impacts of fracking in its prior forest planning efforts. Accordingly, it is critical the Environmental Impact Statement (EIS) prepared by the Forest Service thoroughly examine the dangers and impacts of fracking and horizontal drilling.

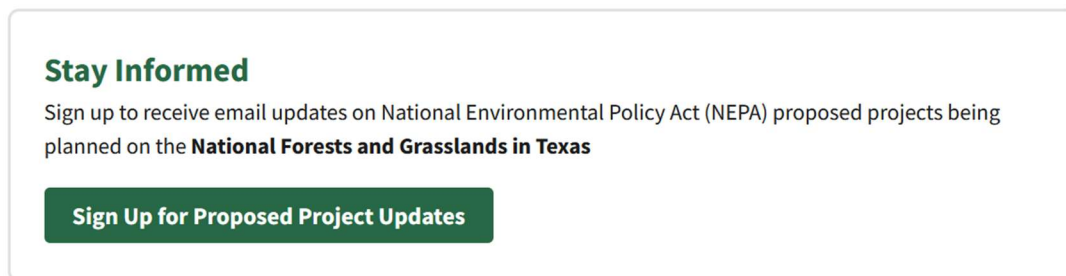
These comments supplement our prior scoping comments that we submitted in 2019 (attached as Exhibit A).

A. USFS Should Extend or Reopen the Public Comment Period on the Notice of Intent, Circulate a Draft EIS for Public Comment, and Conduct an Objection Process

USFS's process for the revised notice of intent and leasing availability analysis appears calculated to shut out the public and limit the consideration of opposing viewpoints and information submitted by the public. The inadequate public notice, extremely short six-day comment period, and apparent intent to limit future opportunities for public participation violate NEPA and its goals to improve environmental decisionmaking. *California v. Block*, 690 F.2d 753, 770-71 (9th Cir. 1982). ("NEPA's public comment procedures are at the heart of the NEPA review process," "reflect[ing] the paramount Congressional desire to internalize opposing viewpoints into the decision-making process to ensure that an agency is cognizant of all the

environmental trade-offs that are implicit in a decision.”). They also violate NFMA and the Forest Plan.

First, USFS published a revised notice of intent to prepare an EIS in the Federal Register without notifying interested parties—including individuals who have closely followed and asked for updates on BLM’s and USFS’s leasing plans in the NFGT for the last decade including most recently as late February.¹ These individuals have relied on NFGT’s longstanding practice of providing email notice of opportunities to comment on NEPA reviews. Sometime last year, the Forest Service created the following new email list for project updates,² in an apparent attempt to replace NFGT’s old email list for project updates, which agency staff informed volunteers from interested organizations, they’d no longer be using:



Individuals with both the Center and Sierra Club have signed up for this list but neither received notice of the revised notice of intent for the leasing analysis. It is unclear whether this new list is working as intended, or why the Forest Service changed its policy of providing email notice to interested parties, despite its effectiveness and efficiency in notifying interested parties, compared to simply publishing a notice in the Federal Register, or on USFS’s website. The latter methods do not reach as many individuals interested in ongoing activities on the NFGT in a timely manner and require more time and work for interested parties to make sure they receive timely notice of public comment opportunities.

Moreover, instead of allowing informal updates through agency staff, USFS/NFGT has tightly controlled the release of information about the leasing plan by referring all public inquiries about the project to USFS’s “Public Services Staff Officer.” These significant changes in agency practice beg the question whether USFS has instituted a formal policy that limits any project updates to the public, other than through limited channels (i.e., only the Federal Register notice, project website, and select agency officials)—rather than through all reasonably available channels—and the grounds for this change in policy. Given that the prior policy caused little to no extra burden on agency officials compared to its new practice, and certainly improved public involvement, that change in policy appears to lack any good reason.

Second, the Federal Register notice itself is inadequate. Although it enumerates a number of elements that will be included in the “proposed action,” and solicits comment on the proposed

¹ See, e.g., Email chain between Sierra Club activist Brandt Mannchen and Juanita Garcia (Feb. 25, 2026).

² See <https://www.fs.usda.gov/r08/texas/projects>.

action, alternatives, and environmental impacts, it fails to point out that these changes are more specifically detailed in a revised 159-page revised report titled “National Forests and Grasslands in Texas Oil and Gas Leasing Availability Analysis Proposal” (“Revised Proposal”), which includes proposed alternatives and stipulations, including varying stipulations for different alternatives. The notice only notes that “additional information about the project can be found here: <https://www.fs.usda.gov/r08/texas/projects/56882>.” Nor does the Federal Register notice mention that USFS revised its 2018 reasonably foreseeable development scenario—the foundation for the EIS’s analysis—or the availability of that document for public comment. It is also unclear whether elements in the proposed action are changes compared to the “No Action” alternative or changes compared to USFS’s proposal in the initial notice of intent.

Another flaw in the notice is the failure to clearly identify the “proposed action” among the several alternatives. The Revised Proposal does not refer to any “proposed action” but refers to “alternatives.” More confusingly, the Federal Register notice states that USFS will consider three alternatives and that other alternatives “may” be developed and considered. 91 FR at 21787 (“The Forest Service will analyze the No Action Alternative (the existing oil and gas leasing alternative), the Proposed Action Alternative, and a No Leasing Alternative. Additional alternatives may also be developed and considered to address issues raised during the scoping process.”). But the Revised Proposal lists five alternatives—Alternatives 1-5 (so, again, it is unclear which one is the proposed action).

Only on p. 11 does the USFS state that “Alternative 5 has been selected as the preferred alternative”—presumably the proposed action. No explanation is provided, depriving the public of the opportunity to suggest alternatives that may better meet the USFS’s objectives. Third, the six-day comment period for a project that the public has not weighed in on since 2019 is inadequate to generate meaningful public comment on a complex leasing plan spanning hundreds of thousands of acres across six separate national forest units, that will affect numerous resources, including Clean Air Act nonattainment areas, drinking water reservoirs, sensitive streams, rare species, neighboring communities, and seismic activity. It would be unrealistic to assume that most interested parties would have found out about the revised notice of intent on the same day it was issued, or shortly after, and could immediately engage in the public review process, given that most people have other plans and responsibilities to attend to beyond tracking NFGT projects. And without any advance notice of the potential reissuance of a notice of intent, much less when it might issue or how long the comment period might last, the public did not have the chance to plan for time to comment. Either USFS expects that interested parties will drop everything to submit comments, if they find out about the revised notice at all, or that interested parties will simply not have the time to review a 159-page document and weigh in, reducing public input and the need to address opposing viewpoints. A six-day public comment period without any advance notice of the potential timeframe for public comment or direct email notice—which individuals tracking the NFGT have long relied on (and reasonably believed they could still rely on by signing up for the new email list)—does not provide the public meaningful opportunity to comment.

Fourth, going forward, USFS apparently will not have a draft EIS comment period or administrative objection process, further curtailing longstanding opportunities for public

involvement. USFS’s project schedule³ suggests that it will not hold public comment period on the draft EIS, noting only the scheduled date for the final EIS and decision:

Location Summary:

National Forests and Grasslands in Texas

Project Milestones:

Milestone	Date
NOI in Federal Register	04/23/2026
FEIS NOA in Federal Register	07/2026 (Estimated)
Decision	08/2026 (Estimated)
Implementation	08/2026 (Estimated)

The opportunity to comment on the Revised Proposal is not an adequate substitute for comment on a draft EIS. The Revised Proposal lacks adequate context as to the resources at stake—for example, it fails to mention the several public drinking and recreational water bodies that could be subject to oil and gas leasing.

USFS has also taken the unusual step of transferring decisional authority over the leasing analysis from the Forest Supervisor to the USDA Under Secretary of Agriculture and Natural Resources, thereby circumventing the administrative objection process and consideration of public input on the EIS. 91 FR at 21788. USFS does not explain why it has transferred authority to the Under Secretary. The only apparent reason is to limit the public’s opportunity to review the EIS and express opposing viewpoints.

This skirting of the objection process appears to conflict with the requirement that “[l]easing consent decisions made pursuant to this subpart shall be subject to a predecisional objection process conducted in accordance with the procedures set forth in 36 CFR part 219, subpart B, whether the leasing consent decision is made as part of a land management plan or separately.” 36 C.F.R. § 228.103(c)(2) (2026). 36 C.F.R. § 219, subpart B establishes a pre-decisional administrative review process for plans, plan amendments, or plan revisions. Further, 36 C.F.R. § 219.51(b) states that “[p]lans, plan amendments, or plan revisions proposed by the Secretary of Agriculture or the Under Secretary for Natural Resources and Environment are not subject to the procedures set forth in this section.” However, § 228.103 would appear to apply to all leasing consent decisions regardless of whether it is part of a land management plan or not.

³ See <https://www.fs.usda.gov/r08/texas/projects/56882>.

The intent of § 228.103 appears to be to subject all leasing consent decisions to the predecisional objection process, whatever process is used.

In addition, where revisions to the forest plan will be required, this process runs afoul of NFMA, which requires:

The Secretary shall provide for public participation in the development, review, and revision of land management plans including, but not limited to, making the plans or revisions available to the public at convenient locations in the vicinity of the affected unit for a period of at least three months before final adoption, during which period the Secretary shall publicize and hold public meetings or comparable processes at locations that foster public participation in the review of such plans or revisions.

16 U.S.C. § 1604(d)(1).

The curtailed public process contemplated here fails to clearly identify proposed revisions to the Forest Plan, does not allow the public to weigh in through the objection process, and fails to provide meaningful opportunity for public review of the proposed revisions, in violation of NFMA. The procedures planned here do not adequately “publicize and hold public meetings or comparable processes at locations that foster public participation in the review of such plans or revisions.” *Id.*

The NFGT leasing analysis process also violates NFMA, because it does not conform to the NFGT Forest Plan, which provides the following desired future conditions, that “[o]pportunities for the public’s involvement in planning and management will become more common,” and “[a] greater sense of communication, cooperation, and partnerships between Forest and Grassland management and local communities will exist.”⁴ The public involvement procedures here compared to the recent past, offer less opportunities for public involvement and a lesser sense of communication, cooperation, and partnerships than has previously existed over the last several decades.

Further, the Forest Plan directs that “[p]ublic involvement and participation will be a vital part of development, review, and accomplishment of project implementation,”⁵ and that “[t]he public play[] a vital role in project planning. The opinions and concerns of interested publics will be sought early on in the planning process for site-specific projects. ... [T]heir comments will be given full consideration during the site-specific analysis.”⁶ Decisions will be issued only “after extensive public involvement.”⁷ The NFGT leasing availability analysis process is in violation of the Forest Plan and NFMA.

Public comment on a draft EIS (or the objection process) would be particularly useful here, given the broad planning area; the many sensitive and significant resources affected; the

⁴ NFGT Forest Plan at 44.

⁵ *Id.* at 4.

⁶ *Id.* at 295.

⁷ *Id.* at 290.

complex environmental issues raised by oil and gas leasing and drilling; the high level of public interest, especially with respect to the impact of fracking on scarce drinking water resources (including public drinking water reservoirs in the planning area), dam safety, and public health; and the likelihood that many individuals and communities that use and/or live near the NFGT would offer useful on-the-ground information, data, or studies to inform the EIS's analysis, ultimately for the benefit of USFS's decisionmaking.

Fifth, that USFS, in its discretion, provided a 30-day scoping comment on an analogous scoping period for an EA Leasing Availability Analysis for the Conecuh National Forest, plus a 30-day comment on an EA and a 45-day objection period, only underscores the arbitrariness of USFS's public review process here.⁸ The Conecuh Leasing Availability Analysis, which was approved in February, concerns only one national forest unit spanning 81,300 acres, a much smaller area than is involved here. Although the Conecuh project also involves many sensitive resources, and has sparked widespread public interest, it is unclear why USFS has exercised its discretion in such a way so as to severely limit public participation with respect to the NFGT leasing plan, where oil and gas leasing in the NFGT has previously generated intense public interest and scrutiny. Back in 2016 numerous organizations objected to the leasing of 31,000 acres in the NFGT, pointing out numerous deficiencies in the BLM and USFS's analysis,⁹ and resulting in the Forest Supervisor's withdrawal of consent to leasing.¹⁰ Ironically, among the reasons the Forest Service cited for withdrawing consent was "insufficient public notification" and "insufficient opportunity for public involvement" with respect to the proposed leases.¹¹

That USFS was able to substantially complete the Conecuh leasing availability analysis within the prescribed 1-year deadline for EAs (not counting the predecisional objection process), despite having provided several opportunities for public comment and objection, strongly suggests that USFS should also be able to timely complete the 2-year EIS process for the NFGT, without depriving the public of adequate public comment opportunities.

NEPA itself requires that federal agencies "to the fullest extent possible," 42 U.S.C. § 4332, (1) "identify and develop methods and procedures ... which will ensure that presently unquantified environmental amenities and values may be given appropriate consideration in decision making along with economic and technical considerations," *id.* § 4332(2)(B); (2) "in cooperation ... with concerned public and private organizations ... use all practicable means and measures ... in a manner calculated to" serve NEPA's environmental objectives, 42 U.S.C. § 4331(a); and (3) "use all practicable means ... to improve and coordinate Federal plans, functions, programs, and resources" for NEPA's environmental protection aims, *id.* § 4331(b). USFS fails to explain why a longer comment period than the typical 30-day period that USFS

⁸ Conecuh National Forest, Leasing Final Decision Notice and FONSI at 4-5, 8 (Feb. 25, 2026), available at <https://usfs-public.app.box.com/v/PinyonPublic/file/2147750011008>.

⁹ CBD, Letter to USFS, Army Corps, BLM (Feb. 9, 2016).

¹⁰ USFS Letter to BLM (Feb. 18, 2016), available at https://www.biologicaldiversity.org/campaigns/keep_it_in_the_ground/pdfs/2820_Texas-Withdrawal_Consent_to_BLM_2016_02_18.pdf.

¹¹ USFS NFGT, Oil and Gas Leasing Availability Analysis, available at <https://www.fs.usda.gov/sites/nfs/files/r08/texas/publication/NFGT%20Oil%20and%20Gas%20-%20Project%20and%20Purpose%20%28updated%29.pdf>.

has typically offered is not a possible or practicable means to achieving NEPA's objectives here. *Cf. Montana Wildlife Federation v. Haaland*, 127 F. 4th 1, 39-40 (9th Cir. 2025) (holding that BLM violated NEPA when it failed to explain "how a 15-day comment or scoping period engages the public 'to the extent practicable' 40 C.F.R. § 1501.4(b), or to 'the fullest extent possible,' § 1500.2(d), where the agency offered a comment period twice as long under [prior policy]" and where BLM "eliminated in some instances and severely shortened in others the various public participation periods for NEPA review ... without providing a 'reasoned explanation' for the change").

We request that USFS re-notice the revised notice of intent to prepare an EIS by directly reaching out to interested parties via email (including all individuals who previously requested public notice about any project developments and opportunities for comment, previously commented, or signed up for email updates on NFGT projects (under the old and new email list). We also request that USFS extend and/or reopen the public comment period for another 30 days to allow adequate opportunity for public comment on the leasing availability analysis proposal, prepare a draft EIS for public comment, and conduct an administrative objection process.

B. There is No National Energy Emergency

Evidence does not support the existence of a "national energy emergency" as declared in Executive Order 14156, 90 Fed. Reg. 8,433 (Jan. 29, 2025). Thus, the Forest Service may not rely on a baseless and unsupported declaration of a "national energy emergency" to support or guide its decision or the EIS. For a detailed discussion as to why the so-called national energy emergency cannot justify oil and gas leasing, please refer to the May 16, 2025, letter submitted to the Secretary of the Interior, which this comment letter incorporates by reference.¹²

C. The EIS Must Assess Impacts from a Changed and Changing Regulatory Landscape

In July 2025, significant components of the EPA's Methane Rule were suspended: among other things, compliance with the Methane Super Emitter Program was delayed until 2027; state compliance with the 2024 Emission Guidelines was delayed until 2027; and compliance deadlines for New Source Performance Standards related to control devices, equipment leaks, storage vessels, process controllers, and vent systems were delayed until 2027.¹³ Given recent regulatory delays and repeals, as well as the absence of enforceable compliance obligations before 2027, the EIS cannot reasonably assume that the Methane Rule will operate as a stable or effective constraint on future emissions.

¹² See Letter from Earthjustice et al. to Doug Burgum, Sec. of the Interior on Department of the Interior Emergency NEPA Procedures (May 16, 2025).

¹³ Oil and Natural Gas Sector Climate Review: Extension of Deadlines in Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources, 90 Fed. Reg. 55671 (Dec. 3, 2025).

In February 2026, EPA rescinded its 2009 greenhouse gas endangerment finding and repealed all associated emission standards for light-duty, medium-duty, and heavy-duty vehicles.¹⁴ Rescission of the endangerment finding has implications beyond the transportation sector, including the removal or weakening of regulatory drivers that have historically produced co-benefits such as reductions in ozone precursors and other pollutants commonly associated with oil and gas development.

Another recent rulemaking by EPA, finalized in April 2026, further loosens requirements on oil and gas operators by dramatically reducing monitoring and testing obligations, expanding permitted flaring exemptions, and allowing additional time for flaring.¹⁵

Taken together, these actions reflect a broader shift in the federal regulatory landscape toward reduced constraints and safeguards on oil and gas development and associated emissions. These changes depart from standard practice and foundational assumptions that underpin federal assessments of oil and gas impacts. The Forest Service must assess the impacts that these regulatory shifts will have on air, water, species, and other resource values impacted by oil and gas development.

D. Forest Service Should Use its Discretion to Not Open NFGT to Oil and Gas Development

In the Leasing Availability Analysis Proposal, the Forest Service identifies Alternative 5 as the preferred alternative, which would open all but 9,800 acres to leasing.¹⁶ Under this alternative, fewer than 63,000 acres would be subject to no surface occupancy (NSO) stipulations and 401,200 acres would be open subject to controlled surface use (CSU) stipulations.

Alternative 5 leaves significant sensitive resources without meaningful protection. The Forest Service expressly states that “Alternative 5 does not apply stipulations for Louisiana pine snake habitat, some erosive soils, and most streams, springs, and aquatic sites.”¹⁷ Protections for red-cockaded woodpeckers are limited to CSU stipulations in Management Area 2 and apply only to areas with currently identified or priority clusters based on existing “staff knowledge and observations.”¹⁸ The reliance on CSU stipulations and narrowly scoped NSO areas is not sufficient to protect sensitive resources across the NFGT. CSU stipulations are designed to condition development, not prevent it, and will allow oil and gas activities to occur so long as certain operational constraints are met. Even where NSO stipulations apply, subsurface development may still occur beneath protected areas, meaning the lands with and without surface

¹⁴ Rescission of the Greenhouse Gas Endangerment Finding and Motor Vehicle Greenhouse Gas Emission Standards Under the Clean Air Act, 91 Fed. Reg. 7686 (Feb. 18, 2026).

¹⁵ Reconsideration of Standards of Performance for New, Reconstructed, and Modified Source and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 91 Fed. Reg. 18056 (April 9, 2026).

¹⁶ USDA Forest Service, National Forests and Grasslands in Texas Oil and Gas Leasing Availability Analysis Proposal, April 2026, at 11.

¹⁷ *Id.*

¹⁸ *Id.*

occupancy does not reliably translate into protections of resources like water or species dependent on those resources.

Alternative 5 also reflects a fragmented approach to resource protection. It limits stipulations to known or mapped resources based on current employee knowledge. This assumption poses significant risks, where aquatic systems, wildlife movement, and habitat use extend beyond current employee knowledge.

Recent regulatory and statutory amendments make these concerns highly important to consider at this stage. First, on January 28, 2026, the USDA published a final rule revising the regulations that govern the process for analyzing whether the Forest Service will consent to making certain lands available for oil and gas leasing by the BLM.¹⁹ Among other things, the revisions affect 36 C.F.R. § 228, governing the oil and gas leasing consent analysis. Changes to the leasing consent analysis are made under 36 C.F.R. § 228.103. The USDA explains the changes to subsection (b) as follows:

The leasing consent analysis process directs the Forest Service to *make a single decision* identifying lands on which the Agency would consent to the BLM's offering oil and gas leases for the affected National Forest System lands. The existing regulation directs an administrative review by the Forest Service at the time that specific lands, which have already been subject to an area or forest-wide leasing analysis, are being scheduled for leasing by the BLM.²⁰

Similarly, the USDA explains the changes to 36 C.F.R. § 228.103 (c) as: "The paragraph clarifies that the Forest Service has one decision point in the process and clearly defines the required components of the Forest Service decision: which lands are open to leasing and under what conditions (standard lease terms or added stipulations); and which lands are closed through exercise of management direction, statute, regulation, or withdrawal EOI's on a regular and recurring basis."²¹ "The final rule removes section 228.103(e) titled Withdrawing Leasing Consent and adds a new section 228.103(e) titled Review of Leasing Consent Decision for Specific Lands, with the review leading to either a confirmation of the leasing consent decision or a withdrawal of consent (based on new information necessitating further analysis, for example)."²²

Additionally, the 2025 Reconciliation Act provided amendments to the Mineral Leasing Act (MLA) that further augment the oil and gas leasing process. As relevant here, the MLA now states that:

Any parcel of land subject to disposition under this Act that is known or believed to contain oil or gas deposits *shall be made available for leasing*, subject to

¹⁹ 91 Fed. Reg. 3643.

²⁰ 91 Fed. Reg. 3643, 3646 (Emphasis added), *compare* 36 C.F.R. § 228.103 (b) (effective through February 26, 2026).

²¹ *Id.*

²² *Id.*

paragraph (2), by the Secretary of the Interior, not later than 18 months after the date of receipt by the Secretary of an expression of interest in leasing the applicable parcel of land available for disposition under this section, *if the Secretary determines that the parcel of land is open to oil or gas leasing under the approved resource management plan* applicable to the planning area in which the parcel of land is located that is in effect on the date on which the expression of interest was submitted to the Secretary (referred to in this subsection as the “approved resource management plan”).²³

Thus, the 2025 Reconciliation Act amended the MLA to replace language providing that lands subject to disposition which are known or believed to contain oil or gas deposits “*may* be leased,”²⁴ with a provision stating that such lands “*shall* be made available for leasing . . . not later than 18 months after the date of receipt . . . of an expression of interest in leasing the applicable parcel.”²⁵ Additionally, the 2025 Reconciliation Act provides that any oil and gas leases issued “may not require any stipulations or mitigation requirements not included in the approved resource management plan.”²⁶

While, to our knowledge, the BLM has not provided an interpretation of the 2025 Reconciliation Act’s impact on oil and gas leasing, the state of Wyoming has asserted in litigation (to which the United States is a party) that the MLA now strips the BLM of discretion to determine which parcels should be offered for lease: “there is no discretion—nominated lands open under an RMP must be leased.”²⁷ Wyoming further asserted that “Congress has mandated” an approach in which the BLM’s response to industry nominations may “create[] widespread leasing, even in sensitive habitat.”²⁸

To be clear, we do not endorse Wyoming’s interpretation; however, the position advanced by Wyoming gives rise to serious questions about BLM’s ability to balance oil and gas development against other public land values and achieve its statutory obligations. Taken as a whole, considering the repeated references and apparent intent to make the leasing analysis the single “decision point,” as well as the changes to BLM’s leasing process under the MLA, there are serious concerns regarding agency discretion at later stages of oil and gas development that the Forest Service must now address and make clear.

Finally, although the new Forest Service regulations allow the Forest Service to withdraw its consent to lease certain lands, it is unclear whether its ability to do so is now restricted to instances where there is “significant new information or a circumstance that requires additional environmental analysis be conducted, or leasing would not be consistent with the applicable land

²³ 30 U.S.C. § 226(a)(1).

²⁴ 30 U.S.C § 226(a) (2024) (emphasis added).

²⁵ 30 U.S.C. § 226(a)(1) (2025) (emphasis added).

²⁶ 30 U.S.C. § 226(a)(2)(A)(ii).

²⁷ See Int.-Def. State of Wy. Not. of Supp. Auth., *W. Watersheds Proj. v. Bernhardt*, 1:18-cv-00187 (D. Idaho, filed 8/12/25), at *2.

²⁸ *Id.*

management plan,” under the revised 36 C.F.R. § 228.103(e)(2).²⁹ If Forest Service and BLM interpret this language as restricting the Forest Service’s ability to withdraw consent, then this would constrain the Forest Service’s ability to prevent mineral development on acreage of the Conecuh that is open for leasing at a later date. Moreover, if BLM and the Forest Service further believe that the recent MLA amendments restrict BLM’s discretion over oil and gas leasing, then the Forest Service faces even greater burdens at the leasing availability analysis stage in demonstrating that its analysis comports with NFMA’s substantive mandates and in demonstrating compliance with NEPA.

The Forest Service retains discretion at this stage to determine which lands should be made available for oil and gas leasing and which should be closed. The Agency has not shown that Alternative 5 is sufficient to protect NFGT surface resources. The Forest Service should instead exercise its discretion to select Alternative 2, which would close all acres in the decision area to oil and gas leasing.

E. The EIS Must Consider Other Alternatives

None of the alternatives that the Forest Service considered meaningfully assesses the possibility of closing areas to leasing. Alternatives 1, 3, 4, and 5 would close the bare minimum of 9,800 acres to leasing and Alternative 2 would close all 499,800 acres to leasing. This does not constitute a reasonable range of alternatives. The Forest Service should consider additional alternatives, including alternatives that would constitute a middle-ground in terms of lands open/closed to leasing. Moreover, the Forest Service should consider the following alternatives including:

1. Managed Decline Alternative, where no further extraction infrastructure is developed, new areas are not opened to development, and existing fields are depleted over time
2. No New Land Disturbance Alternative / No Surface Occupancy, where all federal surface is off limits to surface development
3. No Oil and Gas Activities in Critical Habitat or Known Occupied Habitat by Listed or Special Status species
4. Closed leasing for lands with critical habitat and sensitive habitats

See N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 709 (10th Cir. 2009) (holding BLM failed to consider reasonable range of alternatives when it rejected an alternative that closed entire sensitive area to leasing and did not consider an alternative that closed more than 17% of the plan area to leasing).

F. The EIS Must Take a Hard Look at Impacts on Species

- a. Red-Cockaded Woodpecker

²⁹ 91 Fed. Reg. 3643, 3661.

The red-cockaded woodpecker is a territorial, non-migratory bird species that lives in mature pine forests in the southeastern United States. Once abundant from New Jersey to Florida, west to Texas and north to Missouri, the red-cockaded woodpecker's range dwindled to a few states by the 1960s, following more than a century of habitat loss.

Red-cockaded woodpeckers were federally listed in 1970. Recently, they were downlisted to threatened, but persistent threats remain. As few as 7,800 clusters of red-cockaded woodpeckers occur in pine forests across the South, and none of the bird's recovery criteria have been fully met. Many clusters are isolated and vulnerable to large-scale disturbance and fragmentation from industrial activities such as oil and gas drilling. The effects of climate change will pose additional challenges to red-cockaded woodpecker population rates, especially increased hurricane events.³⁰ While other woodpeckers excavate cavities in dead trees, red-cockaded woodpeckers are the only species that bore holes for nests solely in living pine trees—primarily longleaf pine—that are generally 60-80 years old. Longleaf pine ecosystems are among the most endangered ecosystems on earth. The red-cockaded woodpecker remains a threatened species, at risk of becoming endangered again due to habitat loss, random events like hurricanes, ice storms, and wildfires as well as the challenges posed by small population sizes.

Texas National Parks are among the most important locations in the state for red-cockaded woodpeckers. Although state-managed lands and privately owned lands in Texas have seen declines of 70 percent and 17 percent respectively between 1991 and 2019, the most robust populations in the state occur on federal lands, which house 90.5 percent of total species in the state.³¹

Oil and gas development carries specific potential harms to red-cockaded woodpeckers, such as noise impacts that can adversely affect bird populations. Noise impacts are of particular concern to this species because they have known hearing sensitivities.³²

Human-caused noise in oil and gas fields comes from diverse sources such as heavy construction and drilling machinery, hydraulic fracturing, long-term production machinery, truck traffic, aircraft, and human activity. Noise from heavy equipment, machinery, trucks, and aircraft is generally intense across a broad spectrum of audible frequencies. Some types of infrastructure (for example, compressor stations that aid in transportation of natural gas) can produce sound 24 hours per day through the course of several years of production. Research has found that human-caused noise can affect wildlife health and behavior . . . In songbirds and other small avian species, several studies have documented effects of noise from oil and gas development on behavior, occupancy, community composition, distributions,

³⁰ Melissa Lucash, et al., Managing for red-cockaded woodpeckers is more complicated under climate change (Sept. 21, 2022), <https://wildlife.onlinelibrary.wiley.com/doi/abs/10.1002/jwmg.22309>.

³¹ 89 Fed. Reg. 85294 at 85298.

³² David Delaney, et al., Response of red-cockaded woodpeckers to military training operations, Wildlife Monograph (July 5, 2011), available at: <https://wildlife.onlinelibrary.wiley.com/doi/10.1002/wmon.3>; Logan Maxwell et al., Effects of Noise from Oil and Gas Development on Raptors and Songbirds, Scientific Investigations Report 2024-5087 (2024), at 7, available at: <https://pubs.usgs.gov/sir/2024/5087/sir20245087.pdf>.

and reproductive success—an indicator of fitness. Whether individuals are affected by noise from oil and gas development can vary by species and habitat system and is often dependent on the degree to which a species is able to adjust its calls to counteract the masking effects of the noise.³³

Even if limited to only a handful of wells—oil and gas development would have substantial impacts on the red-cockaded woodpecker. Oil and gas drilling activities require extensive roads, pipelines, and infrastructure, cause excessive noise, and have other harmful effects on this imperiled species. Decades of work and millions of dollars invested in the successful management of this species would be lost if oil and gas drilling significantly expands in the Conecuh.

Compounding these concerns, protections for red-cockaded woodpeckers are limited to CSU stipulations in Management Area 2 and apply only to areas with currently identified or priority clusters based on existing “staff knowledge and observations.”³⁴ Management Area 2, described in a footnote on page 8 of the Leasing Availability Analysis Proposal, encompasses management zones surrounding active red-cockaded woodpecker clusters and “most of the zones surrounding inactive” clusters. These descriptions pose serious concerns and do not evidence that the Forest Service is poised to take a hard look at impacts to this species. Instead, the Forest Service must perform site-specific analysis to determine and adequately document species presence and establish a species baseline. Deferral to later stages will not sufficiently protect species, especially considering that some areas might be so important/vulnerable that they should be closed to leasing altogether. Moreover, if Management Area 2 is bound to specific known current and historical clusters, Forest Service is arbitrarily binding its ability to expand red-cockaded woodpecker protections based on future discoveries.

To ensure that Texas populations of the species maintain healthy numbers, the Forest Service must fully catalog red-cockaded woodpecker presence, and close all lands designated as critical, known, historical, or suitable habitat for red-cockaded woodpecker for leasing. Or, at the minimum, it must require NSO stipulations for all such lands.

b. Louisiana Pinesnake

The Louisiana pinesnake is a longleaf pine ecosystem specialist. Unfortunately, destruction and fragmentation of the historical longleaf pine-dominated forest have contributed to range-wide declines in Louisiana pinesnake populations. Much of the natural longleaf pine habitat has been lost or degraded through conversion of native forests to intensive pine plantation, suppression of the naturally occurring fire regime, urbanization, and development. The Louisiana pinesnake will continue to face destruction, modification, and curtailment of its habitat and range for the foreseeable future.

³³ Maxwell (2024) Effects of Noise from Oil and Gas Development on Raptors and Songbirds at 1-2.

³⁴ USDA Forest Service, National Forests and Grasslands in Texas Oil and Gas Leasing Availability Analysis Proposal, April 2026, at 11.

Roads and rights-of-way construction further increase habitat fragmentation, and Louisiana pinesnakes are killed by road and off-road vehicle strikes.³⁵ Erosion control blankets placed in road and pipeline rights-of-way are also potential threats because they cause entanglement.³⁶ In addition to these threats, climate change has a potential to alter the Louisiana pinesnake's habitat through increased temperatures and decreases in summer precipitation. Oil and gas development in the pinesnake's habitat would worsen these threats.

Today, the Louisiana pinesnake is one of the rarest snakes in the United States. It exists only in six isolated populations located in four parishes in Louisiana and three counties in Texas (including Angelina County), as well as a seventh introduced population in Louisiana founded by individuals produced from a captive breeding program conducted through a partnership between the Service, the U.S. Forest Service, and several zoos.

The Louisiana pinesnake was listed as threatened on May 7, 2018.³⁷ The Service completed a five-year status review for the species on September 13, 2023.³⁸ In that review, the Service found that the Louisiana pinesnake continues to be subjected to habitat loss and fragmentation, predation, disease, and mortality associated with road and off-road vehicles.³⁹ These threats and their effects on the Louisiana pinesnake are exacerbated by its small, isolated populations.⁴⁰ Because of ongoing threats and the current condition of the species, the Service concluded that the Louisiana pinesnake continues to meet the definition of a threatened species.⁴¹

Currently, the U.S. Fish and Wildlife Service is considering designation of critical habitat for the Louisiana pinesnake, including more than 14,400 acres within the Angelina National Forest, which includes occupied habitat.⁴² These areas—and all suitable habitat in the NFGT—should be entirely off limits to oil and gas leasing, or at a minimum, prohibited from surface disturbance. USFWS recommends special management to minimize habitat fragmentation and subsurface disturbance affecting the Baird's pocket gopher, the pinesnake's preferred prey.⁴³ Special protections that should be applied in these areas include minimizing subsurface disturbance from silvicultural practices (or presumably any type of subsurface disturbance that could disturb the Baird's pocket gopher or its habitat) and minimization of new road construction and closure of unused roads.⁴⁴ Vehicle traffic within the pinesnake's habitat should also be

³⁵ USFWS, Candidate Conservation Agreement for the Louisiana Pine Snake (*Pituophis ruthveni*) at 23, Aug. 2013, available at https://ecos.fws.gov/docs/plan_documents/tcca/tcca_2340.pdf.

³⁶ *Id.* at 4, 21, 23; *see also* Ebert, Sarah E. et al., Correlates of snake entanglement in erosion control blankets, June 2019, Wildlife Society Bulletin, available at https://www.srs.fs.usda.gov/pubs/ja/2019/ja_2019_saenz_001.pdf.

³⁷ USFWS, 83 FR 14958.

³⁸ USFWS, Louisiana Pinesnake (*Pituophis ruthveni*) 5-Year Status Review 2023, https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/10176.pdf.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² USFWS, 87 FR 60580, 60592.

⁴³ *Id.* at 60592.

⁴⁴ *Id.* at 60587, 60592.

prohibited. Alternatives to erosion control blankets should also be considered to prevent erosion blanket entanglement.

The EIS must address existing status and population numbers of the Louisiana pinesnake within the analysis area and the impacts of oil and gas development, including habitat destruction and fragmentation, vehicle traffic, pipeline construction, and erosion control blankets on the Louisiana pinesnake and the Baird's pocket gopher, and alternatives and mitigation measures to avoid or minimize these impacts. The EIS must quantify direct and indirect habitat loss and degradation and analyze population-level effects, including the potential for declines or extirpation of local populations, loss of connectivity between isolated populations (increasing the risk of genetic isolation and inbreeding), and the potential for jeopardy to the entire species, whose population has dropped to critically low levels. These effects on local populations and the continued existence of the species must be analyzed in light of the existing and future affected environment, as shaped by foreseeable environmental trends and projects, including climate change (and associated stochastic events such as droughts or heat waves), timber production, surrounding private land development, and existing pipelines, roads, and vehicle traffic.

c. Louisiana Pigtoe, Texas Heelsplitter, Ouachita rock pocketbook, Texas fawnsfoot

Two freshwater mussels proposed for listing occur within the NFGT Texas heelsplitter (proposed endangered) and Louisiana pigtoe (proposed threatened). Critical habitat for these two mussels has been proposed for designation in the NFGT and areas downstream (among other areas). In addition, two listed freshwater mussels' ranges occur in the NFGT, Ouachita rock pocketbook (endangered) and Texas fawnsfoot (threatened).

The Texas heelsplitter and Louisiana pigtoe are threatened by water pollution, declining river flows, and higher water temperatures resulting from climate change. The rivers where the mussels live are being polluted by wastewater treatment plants, oil and gas development, and sand and gravel mining.⁴⁵

The Texas heelsplitter, named for its sharp shell, is 7 inches long with a tan to black elliptical shell and may live up to 50 years. Texas heelsplitters live in the Trinity, Neches and Sabine rivers in east Texas and western Louisiana. There are only five remaining populations — all of which are on the brink of extinction.

The Louisiana pigtoe has a brown to black triangular shell with green rays and grows to 2.5 inches long. There are 13 remaining populations, but only two are considered to be healthy. The Louisiana pigtoe lives in rivers in east Texas, including the Big Cypress-Sulphur, Neches-Angelina, Sabine and San Jacinto.

The Texas fawnsfoot is found in the lower reaches of the Colorado and Brazos rivers, and in the Trinity River. The Service proposed designating 917.2 river miles of critical habitat for the fawnsfoot along the Clear Fork Brazos, Upper Brazos, Lower Brazos, Little, Lower San Saba, Upper and Lower Colorado, East Fork Trinity and Trinity rivers.

⁴⁵ USFWS, 88 FR 16776, 16783 (March 20, 2023).

The Ouachita rock pocketbook's range includes tributaries of the Red River and the Caddo National Grassland.⁴⁶

Oil and gas exploration and extraction can result in accidental spills, discharges, and increased sedimentation, degrading aquatic habitat or causing habitat loss.⁴⁷ In addition, water withdrawals for fracking can reduce stream flows, reducing available aquatic habitat. The EIS must take a hard look at these threats to the listed/proposed listed mussels and other aquatic species, as well as their cumulative impacts in connection with climate change and pollutants from other activities, which are part of the existing and future "affected environment." The EIS must demonstrate that proposed mitigation measures would effectively protect local mussel populations and other sensitive aquatic species.

Species Surveys

The EIS's analysis of aquatic species impacts must begin by describing and analyzing baseline conditions for aquatic species habitat in the NFGT, including where in the NFGT suitable habitat and individual populations occur. This baseline analysis would allow USFS to consider whether there are particularly sensitive habitats or important refugia, and alternatives that place those areas (or areas upstream) off limits to leasing or development. This analysis must rely on the best available information, which would be on-the-ground surveys. The 2022

Water Depletion Impacts

The EIS must analyze likely sources of freshwater for fracking; whether water depletions from those sources could impact aquatic habitat for the listed/proposed listed mussels and their host species (including areas upstream of this habitat); and alternatives and measures to avoid or minimize those impacts. Water depletions for fracking pose a serious threat to streams and aquatic species species. Median water use for a single horizontal well was almost 11.2 million gallons in Texas in early 2017.⁴⁸ These depletions occur over a relatively short period—over days or weeks—and the real-time impact of such massive depletions should be disclosed.

In addition, USFWS's 2022 species status assessment for the Louisiana pigtoe and Texas heelsplitter note that direct mortality is a risk of low-flow conditions:

During periods of low flow, terrestrial predators have increased access to portions of the river that are otherwise too deep under normal flow conditions, resulting in unnaturally high levels of predation that can decimate mussel populations. Predation during drought has been observed for the Texas Heelsplitter on the Sabine River (Walters and Ford 2013,

⁴⁶ USFWS, Ouachita Rock Pocketbook (*Arkansia wheeleri*) Recovery Plan (March 2004) at iii, available at https://ecos.fws.gov/docs/recovery_plan/040602.pdf.

⁴⁷ U.S. Fish and Wildlife Service Region 3, Species Status Assessment Report for the Salamander Mussel (*Simpsonia ambigua*), (May 2023) ("Salamander Mussel SSA") at 18.

⁴⁸ Backstrom, Jesse, Strategic Reporting and the Effects of Water Use in Hydraulic Fracturing on Local Groundwater Levels in Texas (Dec. 2019), available at <https://www.thecgo.org/wp-content/uploads/2020/04/working-paper-2019.014.pdf>.

p. 479). Drought and low flow conditions are predicted to occur more often and for longer periods due to the effects of future climate change; therefore, the tributaries and upper portions of focal areas for Louisiana Pigtoe and Texas Heelsplitter are expected to experience additional predation pressure into the future. Increased predation pressure may become especially problematic during summer months due to projected reductions in summer minimum base flows (Lafontaine et al. 2019, entire). Predation is expected to be less of a problem for the lower portions of the main stem river populations where the rivers are significantly larger than the tributary streams and these species are less likely to be located in exposed or very shallow habitats.⁴⁹

Stranding of mussels (even absent predation) is also a risk of high-volume water depletions from small streams.⁵⁰ The EIS should analyze the impacts of low-flow conditions resulting from water depletions for drilling and fracking. Given the potential for high-volume withdrawals exceeding millions of gallons in a short time period, and the potential for such withdrawals to affect smaller streams, stream flows could severely decline even in non-drought conditions. These impacts should be analyzed in light of the compounding effects of climate change and declining water availability.

No fracking water depletions should be allowed within mussel habitat or upstream of that habitat. For example, in the Wayne National Forest, the Bureau of Land Management has represented that it will prohibit water depletions in the Little Muskingum River and other “mussel streams” to avoid harm to listed mussels (actual leasing stipulations in the Wayne leasing plan, however, fall short of a meaningful prohibition).⁵¹ Otherwise, USFS should (1) determine what specific flow conditions must be maintained in streams harboring sensitive mussels so as not to degrade habitat, (2) require that water flows be maintained at those levels if stream withdrawals are proposed from mussel streams or upstream of those streams, and (3) require strict monitoring of stream flows.

Water Quality Impacts

The EIS must analyze how increased sedimentation from the construction of well pads, roads, and pipelines would degrade aquatic habitat. Sedimentation poses a significant threat to mussel species in juvenile and adult life stages. As explained by USFWS:

⁴⁹ USFWS, Species Status Assessment Report for Two Freshwater Mussels: Louisiana Pigtoe (*Pleurobema riddellii*) and Texas Heelsplitter (*Potamilus amphichaenus*), Version 1.2 at 58 (Feb. 2022) (“Pigtoe/Heelsplitter SSA”), available at <https://iris.fws.gov/APPS/ServCat/DownloadFile/230326>.

⁵⁰ USBLM, Wayne National Forest Supplemental EA at 124 (“Wayne SEA”) (April 2025), available at <https://eplanning.blm.gov/Documents/?id=3efaeeda-a7f2-f011-8407-001dd80db62a&spid=4a672883-a8f2-f011-8407-001dd80c29f3> (“Water withdrawals during low-flow conditions could impact mussel species by temporarily

stranding mussels, resulting in mortality.”).

⁵¹ USBLM, Wayne National Forest Supplemental EA FONSI at 12 (April 17, 2025), available at <https://eplanning.blm.gov/Documents/?id=3efaeeda-a7f2-f011-8407-001dd80db62a&spid=4a672883-a8f2-f011-8407-001dd80c29f3> (“[F]or all leases issued under the Proposed Action, the BLM will prohibit water withdrawals from Little Muskingum River and Muskingum River. . .”).

Juvenile and adult Louisiana Pigtoe and Texas Heelsplitter inhabit microhabitat along river stream beds that have abundant interstitial spaces or small openings in an otherwise closed matrix of substrate, created by gravel, cobble, boulders, bedrock crevices, tree roots, and other vegetation, with some amount of fine sediment (i.e., clay and silt) necessary to provide appropriate shelter. However, excessive amounts of fine sediments can reduce available microhabitat in an otherwise suitable mussel bed by filling in these interstitial spaces, effectively smothering mussels in place. Louisiana Pigtoe and Texas Heelsplitter generally require stable substrates, and loose silt deposits do not generally provide adequate substrate stability. Interstitial spaces provide essential habitat for juvenile mussels in particular, offering protection from predation and vital nutrients. Juvenile freshwater mussels burrow into interstitial substrates, making them particularly susceptible to degradation of this habitat feature. When clogged with sand or silt, interstitial flow rates and spaces may become reduced (Box and Mossa 1999, p. 100) and no longer provide suitable habitat for juveniles. While adult mussels can be physically buried by excessive sediment, “the main impacts of excess sedimentation on unionids are often sublethal” and include interference with feeding mediated by valve closure (Box and Mossa 1999, p. 101). Many land use activities can result in excessive erosion, sediment production and channel instability, including, but not limited to oil and gas development....⁵²

Mussels are particularly vulnerable to these effects because they “are sedentary and are not able to move long distances to more suitable areas in response to heavy silt loads.”⁵³

Road construction is a significant source of sedimentation. The best available science shows that roads cause significant adverse impacts to aquatic resources.⁵⁴ The construction and presence of forest roads can significantly change the hydrology and geomorphology of a forest system, leading to reductions in the quantity and quality of aquatic habitat. Compacted roadbeds reduce rainfall infiltration, intercept and concentrate water, and contribute more sediment to streams than any other land management activity.⁵⁵

These impacts are chronic: “Every time it rains, sediment from the road surface and from cut-and fill-slopes is picked up by rainwater that flows into and on roads (fluvial erosion). The sediment that is entrained in surface flows are often concentrated into road ditches and culverts and directed into streams. The degree of fluvial erosion varies by geology and geography, and

⁵² *Id.* at 56; *see also id.* at 27.

⁵³ U.S. Fish and Wildlife Service, Recovery Plan For The Appalachian Elktoe (*Alasmidonata raveneliana*) Lea, (Aug. 26, 1996) at 3 (describing other effects from sedimentation including irritation and clogging of gills, resulting in reduced feeding and respiration; limiting habitat for fish hosts; increase in the potential of the mussels to other pollutants; and corrosive effects on shells).

⁵⁴ *See* 66 Fed. Reg. at 3208 (“Scientific evidence compiled to date suggests that roads are a significant source of erosion and sedimentation and are, in part, responsible for a decline in the quality of fish and wildlife habitat.”).

⁵⁵ WildEarth Guardians, The Environmental Consequences of Forest Roads and Achieving a Sustainable Road System (March 2020) (“WEG Literature Review”) at 4, available at: https://pdf.wildearthguardians.org/support_docs/Roads-Lit-Review-2020.pdf.

increases with increased motorized use (Robichaud et al. 2010).”⁵⁶ Further, increased truck traffic in the Wayne along access roads and existing roads has the potential to worsen sedimentation. “Closed roads produce significantly less sediment than open drivable roads.”⁵⁷

Catastrophic road bed failure and massive sedimentation events are also a risk: Roads also precipitate catastrophic failures of road beds and fills (mass wasting) during large storm events leading to massive slugs of sediment moving into waterways (Gucinski et al. 2000, Endicott 2008). This typically occurs when culverts are undersized and cannot handle the volume of water funneled through them, or they simply become plugged with debris and sediment. The saturated roadbed can fail entirely and result in a landslide, or the blocked stream crossing can erode the entire fill down to the original stream channel.⁵⁸

Climate change can exacerbate the impacts of roads, as roads designed for storms and water flows typical of past decades may be unable to handle the effects of more extreme weather events such as increased flood severity, more frequent landslides, and changes in sedimentation rates and delivery processes.⁵⁹ Pipeline development poses similar risks.

This increased sedimentation could have a profound impact on fish and aquatic habitat, as it has been linked to decreased fry emergence, decreased juvenile densities, loss of winter carrying capacity, increased predation of fish, and reductions of macro-invertebrate populations that are a food source to many species.⁶⁰ Mussels could be impacted in the same way and/or harmed by the decline in fish species, as they are dependent on fish for development and dispersal of juveniles.⁶¹

The EIS must take a hard look at the impacts of pollution from fracking operations on mussel populations, including fracking chemical and wastewater spills. Water pollution increasing total dissolved solids, salinity, and other contaminants can have both short-term and long-term adverse effects. “Although spills are relatively short-term events and may be localized, depending on the types of substances and volume released, water resources nearby can be severely impacted and degraded for years after the incident along with the biological resources that inhabit the area.”⁶² Fracking fluid and produced water spills from trucks, pipelines, tanks, or underground migration from leaky wells all pose a threat to water quality. “Extraction of petroleum produces water with high chlorine concentrations, to which all stages of freshwater mussels are highly sensitive. The degradation of water quality as a result of land-based oil and gas drilling activities is a significant adverse effect on freshwater mussels.”⁶³ The release of

⁵⁶ *Id.* at 4.

⁵⁷ *Id.*

⁵⁸ *Id.* at 5.

⁵⁹ *Id.* at 13.

⁶⁰ *Id.* at 5.

⁶¹ Pigtoe/Heelsplitter SSA at 57.

⁶² *Id.* at 50.

⁶³ U.S. Fish and Wildlife Service Region 4, Species Status Assessment Report for the Longsolid (*Fusconaia subrotunda*), (Oct. 2018), (“Longsolid SSA”) at 54-55.

drilling mud can impact rivers and streams and frack fluids used in the well drilling process, which are high in chlorides and other chemicals.⁶⁴

The EIS must analyze the potential for a spill or contamination event to affect streams in the NFGT, and the potential for permanent or long-term loss of aquatic habitat or mussel populations.

In addition, the EIS must justify proposed buffers or setbacks for development near streams (e.g., 1/2 mile buffer (NSO) around protected river and stream corridors as proposed for Alternative 3, and 1/4 buffer (CSU) around protected river and stream corridors for Alternative 4. The best available science suggests that limiting road and other infrastructure density could be an important way to protect aquatic species:

A number of studies show that higher road densities also impact aquatic habitats and fish (Table 3). Carnefix and Frissell (2009) provide a concise review of studies that correlate cold water fish abundance and road density, and from the cited evidence concluded that . . . [“]no truly ‘safe’ threshold road density exists, but rather negative impacts begin to accrue and be expressed with incursion of the very first road segment; and 2) highly significant impacts (e.g., threat of extirpation of sensitive species) are already apparent at road densities on the order of 0.6 km/km² (1.0 mi/mi²) or less, (Carnefix and Frissell (2009), p. 1).[”]⁶⁵

USFS should consider limiting road densities in a localized watershed to 0.6 km/km² to avoid harmful impacts to aquatic species.

Larger stream buffers would further limit sedimentation and provide other important benefits for the ecological health of the aquatic system. “Loss of vegetated riparian buffers along streams, lakes and wetlands can result in a loss of flood retention and base flow regulation. Without adequate vegetated buffers, the ability of floodplains to store flood flows associated with major storm events and wet seasons might be significantly reduced, resulting in increased flooding and scour.”⁶⁶ Additionally, “[f]orested riparian buffers provide shade, which can help maintain stream temperatures, as well as food and cover for many aquatic species. For headwaters, creeks and small rivers, a riparian buffer that does not extend shade to at least half of the stream or wetland might increase risk to the temperature regime, impacting fish and invertebrate communities.”⁶⁷

In addition, USFS should require monitoring of buffered streams to ensure that buffers are effective in avoiding sedimentation and water pollution from oil and gas activities.

⁶⁴ U.S. Fish and Wildlife Service Region 4, Species Status Assessment Report for the Round Hickorynut Mussel (*Obovaria subrotunda*) at 81 (Oct. 2019).

⁶⁵ WEG Literature Review at 9.

⁶⁶ The Nature Conservancy, Reducing Ecological Impacts of Shale Development: Recommended Practices for the Appalachians, Ecological Buffers at 3 (2015).

⁶⁷ *Id.*

The EIS should detail and discuss the effectiveness of other best management practices that would be used to avoid and reduce sedimentation. “General maintenance [best management practices] are usually vegetative practices used to contain polluted runoff . . . from erosion and sedimentation generated at small construction sites. A variety of practices are used at construction sites to control both erosion and polluted runoff.”⁶⁸ Any proposed conditions for managing disturbed areas must include performance standards for ensuring that sedimentation is avoided or minimized.

Soil stabilization measures that should be considered include: seeding and revegetation to promote strong growth and stabilization of exposed surfaces, silt fences for the perimeter to provide sediment control, and stabilized entrances to reduce the amount of sediment carried off the construction site, among others recommended by EPA.⁶⁹ In addition, USFS should require monitoring of erosion control practices and stream conditions to ensure adequate soil stabilization.

USFS should also prohibit in-stream work in any stream that provides suitable habitat for mussels or other sensitive aquatic species. According to an environmental oil and gas leasing analysis prepared by BLM for the Wayne National Forest, instream water work can result in crushing and direct mortality of mussels, generation of silt and sedimentation that can suffocate mussels, and the destruction and degradation of in-stream mussel habitat.⁷⁰ BLM has therefore prohibited development in streams inhabited by listed mussels, but USFS here should prohibit disturbance in any suitable mussel habitat, including critical habitat.⁷¹ At a minimum, USFS should require that species surveys occur in any stream where in-water work is proposed to occur, and, if so, prohibit such work in those streams.

d. Other species

A number of other species with ranges or critical habitat overlapping the NFGT may be affected by the USFS’s leasing plan. Species with designated or proposed critical habitat in or near the NFGT include the following (also listed in Exhibit B).

Common name	Scientific name	Status	Miles from NFGT boundary
Neches River rose-mallow	Hibiscus dasycalyx	Threatened	0
Texas golden Gladecress	Leavenworthia texana	Endangered	0
Navasota False Foxglove	Agalinis navasotensis	Proposed Endangered	2.38

⁶⁸ U.S. Environmental Protection Agency, Erosion, Sediment, and Runoff Control for Roads and Highways, Dec. 1995, available at: https://archive.epa.gov/water/archive/web/html/road_runoff.html.

⁶⁹ U.S. Environmental Protection Agency, Erosion, Sediment, and Runoff Control for Roads and Highways, Dec. 1995, available at: https://archive.epa.gov/water/archive/web/html/road_runoff.html.

⁷⁰ Wayne SEA at 115.

⁷¹ *Id.*

Additional species with overlapping ranges in or near the NFGT are listed in Exhibit C.

The EIS must take a hard look at whether these species have suitable habitat and occur in the NFGT and, if so, how oil and gas development could affect populations and their habitat.

G. Public Health Impacts from Oil and Gas

Protecting public health is fundamental to NEPA's underlying purpose. NEPA was enacted in part to "stimulate the health and welfare of man," 42 U.S.C § 4321, and mandates that agencies consider the degree to which their proposed actions affect public health or safety. 40 C.F.R § 1501.3(b)(2)(iii). NEPA requires federal agencies "to use all practicable means, consistent with other essential considerations of national policy" to "assure for all Americans safe, healthful, productive and aesthetically and culturally pleasing surroundings." 42 U.S.C 4331(b). In addition, NEPA's use of the term "human environment" expressed Congressional intent that NEPA should promote public policy attentive to the inexorable link between human well-being and environmental integrity.⁷²

1. Oil and gas drilling exacerbates public health harms to communities

In Texas, approximately 5.3 million people reside within a half-mile radius of at least one active oil or gas well.⁷³ Living in proximity to oil and gas exacerbates environmental conditions and causes serious public health and safety impacts. Even a *single* well drilled near communities has been found to adversely affect health.⁷⁴

So called "zombie wells" pose particular threats to communities in Texas. Zombie wells are uncapped orphan wells or plugged wells that fail when injected wastewater makes its way into the well, resulting in anything from a geyser to a slow ooze of toxic wastewater.⁷⁵

⁷² Rajiv Bhatia and Aaron Wernham, *Integrating Human Health into Environmental Impact Assessment: An Unrealized Opportunity for Environmental Health and Justice*, 116 ENVTL. HEALTH PERSPECTIVES, 991 (Apr. 16, 2008) (Noting that "the statutory and procedural requirements of EIA provide a powerful and underutilized mechanism to institutionalize a holistic, cross-sectoral approach to addressing health in public policy" and describing the then-emerging and now well-established practice of health impact assessment as a "catalyst" for integrating health considerations into environmental assessments under NEPA and its state analogs).

⁷³ Danielle Zaleski and Luke Metzger, How oil and gas impacts Texas' environment and public health, Environment Texas (April 28, 2025), <https://environmentamerica.org/texas/center/articles/how-oil-and-gas-impacts-texas-environment-and-public-health/>. See also T. Srebotnjak & M. Rotkin-Ellman, NRDC, Drilling in California: Who's at Risk? (2014), <https://www.nrdc.org/resources/drilling-california-whos-risk>; Earthjustice, In the Shadow of Big Oil: Neighborhood Drilling in California (2021), <https://earthjustice.org/features/buffer-zones-oil-drilling-california-neighborhoods>.

⁷⁴ See, e.g., E. L. Hill, Shale Gas Development and Infant Health: Evidence from Pennsylvania (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6629042/>.

⁷⁵ Amanda Drane, What are 'zombie wells'? 5 things to know about Texas oil wells threatening Texas groundwater, Houston Chronicle (Nov. 28, 2025),

Wastewater purges from leaks in holes in a well, leaks from cracks in rock layers, and improperly plugged wells is becoming a concern across the nation, as the rate of events increases.⁷⁶ Well data sourced from the Texas Railroad Commission in 2025 revealed 2,700 Texas wells at risk of leaking, including 500 potential zombie wells.⁷⁷ Oil companies have known of these risks since the 1970s.⁷⁸

2. Respiratory Illnesses

Oil and gas operations increase rates of respiratory illnesses by worsening air quality conditions. One study found significant concentrations of volatile organic compounds (VOCs) and other toxic pollutants near oil and gas operations.⁷⁹ Another study assessed data from the U.S. EPA Air Quality System from 2006 to 2019 and documented higher concentrations of air pollutants including PM_{2.5}, nitrogen dioxide (NO₂), VOCs, and ozone (O₃) as far away as 4 kilometers (13,123 feet) from well sites.⁸⁰

Oil and gas development releases significant amounts of methane, another contributor to ozone formation, and one study found that regional impacts from oil and gas production in the United States is responsible for 7,500 excess deaths, 410,000 asthma attacks, and over 2,000 new cases of asthma per year.⁸¹ This results in health costs that are attributable to oil and gas development of \$77 billion every year.⁸²

These pollutants are common at oil and gas sites and pose serious health and safety dangers to nearby communities. For example, PM_{2.5} is one of six “criteria” air pollutants regulated by EPA and causes some of the most alarming adverse health effects, including cardiovascular and respiratory hospitalizations, irregular heartbeat, decreased lung function, and

<https://www.houstonchronicle.com/business/energy/article/zombie-wells-texas-oil-orphan-rrc-commission-21114839.php>.

⁷⁶ Nick Bowlin, Toxic Wastewater From Oil Fields Keeps Pouring Out of the Ground. Oklahoma Regulators Failed to Stop It., ProPublica (Oct. 29, 2025), <https://www.propublica.org/article/oklahoma-oil-gas-wastewater-pollution>; Nick Bowlin, Salty, Oily Drinking Water Left Sores in Their Mouths. Oklahoma Refused to Find Out Why., ProPublica (February 12, 2026), <https://www.propublica.org/article/oklahoma-oil-polluted-drinking-water-boarman-family>.

⁷⁷ Houston Chronicle, Texas Zombie Wells: Map, <https://www.houstonchronicle.com/projects/2026/zombie-oil-wells-map-search/> (accessed April 28, 2026).

⁷⁸ Justin Nobel, The Oil Industry’s Latest Disaster: Trillions of Gallons of Buried Toxic Wastewater, DeSmog (Feb. 12, 2026), <https://www.desmog.com/2026/02/12/the-oil-industrys-latest-disaster-trillions-of-gallons-of-buried-toxic-wastewater/>.

⁷⁹ J. Arbelaez & B. Baizel, Californians at Risk: An Analysis of Health Threats from Oil and Gas Pollution in Two Communities (2015), available at : <https://cleanwater.org/publications/californians-risk-analysis-health-threats-oil-and-gas-pollution-two-communities>.

⁸⁰ D.J. Gonzalez et al., Upstream Oil and Gas Production and Ambient Air Pollution in California, Science of The Total Environment, 806, 150298 (2022), <https://doi.org/10.1016/j.scitotenv.2021.150298>.

⁸¹ Buonocore, Jonathan, et al., Air Pollution and Health Impacts of Oil and Gas Production in the United States (2023), <https://www.psehealthyenergy.org/work/air-pollution-and-health-impacts-of-oil-and-gas-production/>.

⁸² *Id.*

premature death.⁸³ Ozone can inflame and damage the airways, increase susceptibility to lung infection, and aggravate lung diseases like emphysema and chronic bronchitis.⁸⁴ In fact, the scientific advisory panel of public health experts convened by the state of California concluded “with a high level of certainty that concentrations of health-damaging air pollutants, including criteria air pollutants and toxic air contaminants, are more concentrated near [oil and gas development] activities compared to further away.”⁸⁵ The panel further noted that oil and gas development is “responsible for the majority of emissions of multiple toxic air contaminants including acetaldehyde, benzene, formaldehyde, hexane and hydrogen sulfide” in the already overburdened fence line communities.⁸⁶

These emissions from active oil and gas wells are also known to cause and worsen asthma.⁸⁷ One study found that physician-diagnosed asthma rates were elevated in communities close to drilling operations.⁸⁸ Another study indicates that populations residing in close proximity to oil and gas activity have almost four times the risk of asthma exacerbation than those that do not.⁸⁹

Studies have also identified deserted, unplugged wells as “super-emitting” sources of methane and hydrogen sulfide.⁹⁰ Texas has roughly 103,600 inactive wells, and 22,400 wells that

⁸³ U.S. EPA, NAAQS Table, <https://www.epa.gov/criteria-air-pollutants/naaqs-table>; Cal. Air Resources Board, Overview: Diesel Exhaust & Health, available at: <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health> (accessed Apr. 10, 2025); U.S. EPA, Health and Environmental Effects of Particulate Matter (PM), <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>.

⁸⁴ U.S. EPA, Health Effects of Ozone Pollution, <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>.

⁸⁵ Letter from Cal. Oil & Gas Public Health Rulemaking Scientific Advisory Panel, Response to CalGEM Questions at 11 (2021), https://www.conservation.ca.gov/calgem/Documents/public-health/Public%20Health%20Panel%20Responses_FINAL%20ADA.pdf; see also Cal. Oil & Gas Public Health Rulemaking Scientific Advisory Panel, Report for CalGEM).

⁸⁶ Letter from Cal. Oil & Gas Public Health Rulemaking Scientific Advisory Panel at 10.

⁸⁷ B. Shamasunder et al., Community-Based Health and Exposure Study Around Urban Oil Developments in South Los Angeles (2018), <https://doi.org/10.3390/ijerph15010138>; L. Peng et al., The Health Implications of Unconventional Natural Gas Development in Pennsylvania (2018), <https://doi.org/10.1002/hec.3649>; M.D. Willis et al., Unconventional Natural Gas Development and Pediatric Asthma Hospitalizations in Pennsylvania (2018), <https://pmc.ncbi.nlm.nih.gov/articles/PMC6110967/>; S.G. Rasmussen et al., Association Between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations (2016), <https://doi.org/10.1001/jamainternmed.2016.2436>.

⁸⁸ B. Shamasunder et al., Community-Based Health and Exposure Study around Urban Oil Developments in South Los Angeles (2018); see also J.E. Johnston et al., Respiratory Health, Pulmonary Function and Local Engagement in Urban Communities Near Oil Development. *Envtl. Research*, 111088 (2021), <https://doi.org/10.1016/j.envres.2021.111088>.

⁸⁹ S.G. Rasmussen et al., Association Between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations (2016).

⁹⁰ J. Sullivan, Abandoned Wells Can Be ‘Super-Emitters’ of Greenhouse Gas (2014), <https://www.princeton.edu/news/2014/12/09/abandoned-wells-can-be-super-emitters-greenhouse-gas>; M. Pianko, California Lagged in Capping Century-old Oil Wells Leaking Under Homes of LA Residents

have been inactive for 15 years or longer.⁹¹ Idle wells are a common source of leaks at “dangerously explosive levels of methane” and in recent years dozens of leaking idle wells have been discovered that pose tremendous risks to nearby communities.⁹²

According to the American Lung Association, if you live in communities in or nearby Dallas or Houston, you live in one of the top ten ozone-polluted cities in the country.⁹³ Both counties’ air quality is graded as “F” for at least one of the American Lung Association metrics.⁹⁴ Ozone pollution “is a powerful lung irritant,” that, when inhaled, “reacts with the delicate lining of the small airways, causing inflammation and other damage that can impact multiple body systems” and “can be deadly.”⁹⁵ Ozone can also cause a number of health effects including asthma, various respiratory and cardiovascular diseases, and premature death.⁹⁶ At low levels, hydrogen sulfide gas can cause difficulty breathing, headaches, poor memory, tiredness, loss of balance, and eye, nose, or throat irritation.⁹⁷ Higher exposure levels may lead to respiratory distress, loss of consciousness, or even death.⁹⁸ One study by Lim et al. found that long-term exposure to ambient ozone is “significantly associated with multiple causes of

Plagued by Illness and Odors (2020), <https://www.desmogblog.com/2020/02/13/los-angeles-vista-hermosa-cap-orphan-oil-wells-leaking-doggr>; M. Kang et al., Identification and Characterization of High Methane-Emitting Abandoned Oil and Gas Wells (2016), <https://www.pnas.org/content/pnas/113/48/13636.full.pdf>.

⁹¹ Luis Fernandez Intriago, Texas can create 150,000 jobs by plugging non-producing wells, Environmental Defense Fund (April 4, 2025), <https://blogs.edf.org/markets/2025/04/04/texas-can-create-150000-jobs-by-plugging-non-producing-wells/>.

⁹² Cal. Oil & Gas Public Health Rulemaking Scientific Advisory Panel, Report for CalGEM at 6-13; *see also* A. Cantu, California Lets Companies Keep ‘Dangerous’ Oil Wells Unplugged Forever (2023), <https://laist.com/news/climate-environment/california-lets-companies-keep-dangerous-oil-wells-unplugged-forever>; M. Secaira, How Idle Wells Leaked Explosive Levels of Methane in Bakersfield, CapRadio (2022), <https://www.caprado.org/articles/2022/06/21/how-idle-oil-wells-leaked-explosive-levels-of-methane-in-bakersfield/>; K. Ferrar, FracTracker Finds Widespread Hydrocarbon Emissions from Active Idle Oil and Gas Wells and Infrastructure in California (2022), <https://www.fractracker.org/2022/08/fractracker-finds-widespread-hydrocarbon-emissions-from-active-idle-oil-and-gas-wells-and-infrastructure-in-california/>.

⁹³ American Lung Association, State of the Air 2026: Most Polluted Cities, <https://www.lung.org/research/sota/city-rankings/most-polluted-cities>.

⁹⁴ American Lung Association, State of the Air 2026: Harrison County, Texas, <https://www.lung.org/research/sota/city-rankings/states/texas/harrison>; American Lung Association, State of the Air 2026: Dallas County, Texas, <https://www.lung.org/research/sota/city-rankings/states/texas/dallas>.

⁹⁵ American Lung Association, State of the Air 2026 Report at 34, <https://www.lung.org/getmedia/32f0646d-c5de-4501-b0ac-07cd63c974d4/State-of-the-Air-2026-Report.pdf>.

⁹⁶ Air & Waste Management Assn. (AWMA), Air Pollution Issues Associated at fn. 3-4 (2012), <https://www.edf.org/sites/default/files/AWMA-EM-airPollutionFromOilAndGas.pdf>; U.S. EPA, Health Effects of Ozone in the General Population, <https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population>.

⁹⁷ Agency for Toxic Substances & Disease, Public Health Statement for Hydrogen Sulfide, <https://www.atsdr.cdc.gov/ToxProfiles/tp114-c1-b.pdf>.

⁹⁸ *Id.*; New Jersey Dept. of Health, Right to Know: Hazardous Substance Fact Sheet at 1-2, <https://www.nj.gov/health/eoh/rtkweb/documents/fs/1017.pdf>.

mortality, including cardiovascular disease, ischemic heart disease, respiratory disease, and [chronic obstructive pulmonary disease].”⁹⁹

Ozone is created when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react in the presence of sunlight. VOCs are created and emitted from both natural and anthropogenic sources, and are commonplace in herbicides, fertilizers, and pesticides.¹⁰⁰ In fact, the increase in agricultural activities across the world has greatly contributed to the rise in VOCs in the atmosphere.¹⁰¹

3. Cancer

Air pollution emitted by oil and gas development is also linked to higher rates of cancer. Populations living near oil and gas sites may face heightened risk for developing cancer, with those living closest to wells facing an especially critical threat.¹⁰² One 2018 study found an association between cancer rates and living near oil and gas wells.¹⁰³ It concluded that oil and gas development can expose a large population to known hematologic carcinogens.¹⁰⁴

Studies also show that oil and gas operations contaminate groundwater through the common practice of disposing wastewater in unlined pits, which are prone to leaking.¹⁰⁵ The contaminants, which include arsenic, uranium and other naturally occurring toxic elements and make their way into water used for human consumption and agricultural crop irrigation, have been shown to include potentially carcinogenic chemicals.¹⁰⁶

4. Adverse Birth Outcomes

⁹⁹ Lim, Chris, et al., Long-Term Exposure to Ozone and Cause-Specific Mortality Risk in the United States (2019), at page 1027.

¹⁰⁰ David, Elena and Violeta-Carolina Niculescu, Volatile Organic Compounds (VOCs) as Environmental Pollutants: Occurrence and Mitigation Using Nanomaterials (2021), <https://pmc.ncbi.nlm.nih.gov/articles/PMC8700805/>.

¹⁰¹ *Id.*

¹⁰² EDF, Filling the Void: The Value of New Technology to Reduce Air Pollution and Improve Information at Oil and Gas Sites in California (2017) at 13, https://www.edf.org/sites/default/files/california-monitoring_filling-the-void.pdf.

¹⁰³ L.M. McKenzie et al., Childhood Hematologic Cancer and Residential Proximity to Oil and Gas Development (2017), <https://doi.org/10.1371/journal.pone.0170423>.

¹⁰⁴ *Id.*

¹⁰⁵ EPA, Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (EPA-600-R-16-236ES), <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=332990>; K. Graham, Unlined Waste Disposal Pits Endanger Groundwater in San Joaquin Valley (2021), <https://www.digitaljournal.com/tech-science/unlined-waste-disposal-pits-endanger-groundwater-in-san-joaquin-valley/article>.

¹⁰⁶ S.B.C. Shonkoff et al., Hazard Assessment of Chemical Additives Used in Oil Fields that Reuse Produced Water for Agricultural Irrigation, Livestock Watering, and Groundwater Recharge in the San Joaquin Valley of California: Preliminary Results at 9 (2016), https://www.psehealthyenergy.org/wp-content/uploads/2017/04/Preliminary_Results_13267_Disclosures_FINAL-1.pdf.

Several important studies analyzing the effects of oil and gas drilling have found a significant association between nearby oil and gas production and adverse birth outcomes.

A 2020 study determined that prenatal exposure to active oil and gas production from both conventional and unconventional wells was associated with low birth weight and small gestational age.¹⁰⁷ The study relied on analysis of births in communities near oil and gas wells and found a strong association between exposure to wells and adverse birth outcomes in rural areas.¹⁰⁸ It found that mothers exposed to oil and gas production during pregnancy were 1.4 times more likely than unexposed mothers to have low-weight births and 1.22 times more likely to have a small gestational age birth.¹⁰⁹ The study also determined that pregnancy exposure was associated with decreases in term birth weight of 36 grams on average.¹¹⁰

Another 2020 study found that living near oil and gas operations may increase the risk of preterm births.¹¹¹ Researchers examined 225,000 births from mothers in the San Joaquin Valley, California who lived within about six miles of oil and gas wells.¹¹² They found that women who lived near wells during pregnancy were 8 to 14 percent more likely to experience a spontaneous preterm birth, which is the leading cause of infant death in the United States.¹¹³ One study found that even a single well drilled within 2.5 kilometers (8,200 feet) of a maternal residence was associated with adverse birth outcomes.¹¹⁴

5. Recurring Symptoms

As discussed above, drilling for oil and gas emits chemicals, fine particulate matter, and pollutants that form ozone, and even abandoned wells emit methane and other toxic air pollutants. Scientific studies have linked these emissions to acute recurring symptoms in nearby residents, including headaches, fatigue, burning eyes and throats, nausea, and nosebleeds.¹¹⁵

¹⁰⁷ K.V. Tran et al., Residential Proximity to Oil and Gas Development and Birth Outcomes in California: A Retrospective Cohort Study of 2006–2015 Births (2020), <https://ehp.niehs.nih.gov/doi/full/10.1289/EHP5842>.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ D.J. Gonzalez et al., Oil and Gas Production and Spontaneous Preterm Birth in the San Joaquin Valley, CA: A Case-Control Study (2020).

¹¹² *Id.*

¹¹³ D.T. Tucker, Living Near Oil and Gas Wells May Increase Preterm Birth Risk, According to Stanford Research (2020), <https://news.stanford.edu/2020/06/09/living-near-oil-gas-wells-may-increase-preterm-birth-risk/>.

¹¹⁴ E.L. Hill, Shale Gas Development and Infant Health: Evidence from Pennsylvania (2018).

¹¹⁵ Liberty Hill Foundation, Drilling Down: The Community Consequences of Expanded Oil Development in L.A. (2015), <https://www.libertyhill.org/news/reports/urban-oil-drilling-report>; Los Angeles County Dep't of Public Health, Public Health and Safety Risks of Oil and Gas Facilities in Los Angeles County (2018): http://publichealth.lacounty.gov/eh/docs/ph_oilgasfacilitiesphsafetyrisks.pdf; N. Steinzor et al., Investigating Links Between Shale Gas Development and Health Impacts Through a Community Survey Project in Pennsylvania (2013), <https://pubmed.ncbi.nlm.nih.gov/23552648/>.

Studies also show that unlined pits used to store wastewater from oil and gas development release noxious odors and may cause nausea and headaches.¹¹⁶

Some people living near oil and gas wells report that these symptoms are a constant part of their lives and that they are “conditioned to think [it] is normal.”¹¹⁷ One resident who has been experiencing severe nosebleeds since age nine described getting nosebleeds at night and having to “sleep upright in a chair to stop from choking on [her] own blood.”¹¹⁸ According to another resident, “[t]he oil wells are hidden, but everybody seems to feel [their impacts].”¹¹⁹

H. The Forest Service Must Comply with Clean Air Act Conformity Requirements

The Clean Air Act (CAA) aims “to protect and enhance the quality of the Nation’s air resources . . .” 42 U.S.C. § 7401(b)(1). To achieve this goal, states are required to submit a State Implementation Plan (SIP) to EPA that regulates the states’ fulfillment of the CAA and the enforcement of the National Ambient Air Quality Standards (NAAQS).¹²⁰ Functionally, NAAQS work by establishing upper limits for six common criteria pollutants in order to protect public health and welfare.¹²¹ Namely, the six criteria pollutants are: ozone (O₃), particulate matter (PM_{2.5} and PM₁₀), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), lead (Pb), and carbon monoxide (CO).¹²² When an area is unable to comply with one or more NAAQS, the EPA designates it as “nonattainment” and requires it to abide by stricter regulations that are intended to drive the area toward attainment.¹²³ One such requirement for areas designated as nonattainment is that they must comply with the General Conformity Rule pursuant to United States Code section 7506(c).

The CAA states, “[n]o department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity” that does not conform to an approved state air quality implementation plan. 42 U.S.C. § 7506(c)(1). “The assurance of conformity . . . shall be an affirmative responsibility of the head of such . . . agency.” To ensure conformity, agency actions must not “cause or contribute to any new violation of any [air quality] standard” or “increase the frequency or severity of any existing violation of any standard in any area.” *Id.* § 7506(c)(1)(B).

CAA conformity is broadly applicable. The “assurance of conformity” to a SIP “shall be an affirmative responsibility” of a federal agency. 42 U.S.C. § 7506(c)(1). For Federal actions not related to transportation plans, “a conformity determination is required for each criteria

¹¹⁶ D. Hasemyer, Hazards of Open Pits for Storing Wastewater from Fracking is Focus of New Study (2014), <https://insideclimatenews.org/news/20112014/hazards-open-pits-storing-wastewater-fracking-focus-new-study/>.

¹¹⁷ Earthjustice, In the Shadow of Big Oil: Neighborhood Drilling in California (2021), available at <https://earthjustice.org/feature/buffer-zones-oil-drilling-california-neighborhoods>.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.* § 7410(a).

¹²¹ EPA. (2021). *NAAQS Table*, available at: <https://www.epa.gov/criteria-air-pollutants/naaqs-table> (accessed May 30, 2025).

¹²² EPA. (2015). *Criteria Pollutants, Environments and Contaminants*.

¹²³ 42 U.S.C. §§ 7407 (on area designation), 7502-7509(a) (on requirements for nonattainment areas).

pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a Federal action would equal or exceed” 10 (extreme); 25 (severe); 50 (serious); or 100 (other) tons per year. 40 C.F.R. § 95.153(b).

Before action is taken, a federal agency must make a determination that the federal action conforms to “certain threshold emission rates set forth in § 93.153(b).” *Pub. Citizen*, 541 U.S. at 771. If the action’s direct and indirect emissions will exceed *de minimis* levels, then the agency must demonstrate conformity. *Ctr. for Biological Diversity v. Bureau of Land Mgmt.*, 833 F.3d 1136, 1148 (9th Cir. 2016); *see also* 40 C.F.R. § 93.153(b)(1) (defines *de minimis* emission rates).

Estimating a project’s emissions for comparison with the region’s *de minimis* levels is an important component of the applicability analysis. To determine whether a project’s emissions are *de minimis*, the federal agency must show that total direct and indirect emissions, combined, are below the region’s stipulated thresholds.¹²⁴ Direct emissions are those that are caused by the action and indirect emissions are those that may be separated by time or space but are of the type that “the agency can practically control” and for which “the agency has continuing program responsibility.”¹²⁵ All emissions must be “reasonably foreseeable,” which means that they may be calculated based on reasonable assumptions regarding techniques and equipment to be used.¹²⁶ The portion of a project’s emissions that must be permitted or are otherwise presumed to conform may be excluded from the *de minimis* calculations.¹²⁷

Among other things, conformity requires BLM to provide details on the “process for implementation and enforcement . . . including an implementation schedule containing specific timelines for implementation.” 40 C.F.R. § 93.160(a); *see also Ctr. for Biological Diversity v. Culver*, 2024 WL 4505468, at *31 (N.D. Cal. Oct. 15, 2024).

While some activities can qualify as exempt from the CAA’s General Conformity Rule by producing *de minimis* emissions, being presumed to conform, or having no reasonably foreseeable emissions, enabling oil and gas operations through an Forest Service oil and gas leasing availability analysis does not qualify for an exemption. Drilling and extraction operations cause significant emissions, which are reasonably foreseeable and directly caused by the Forest Service’s decision.

The Lyndon B. Johnson National Grassland is primarily located within Wise County, which is currently in nonattainment for the 2008 ozone NAAQS (severity level of “severe”) and the 2015 ozone NAAQS (severity level of “serious”).¹²⁸ The Sam Houston National Forest is

¹²⁴ EPA. (2010). *General Conformity Training Module* at 21.

¹²⁵ 40 C.F.R. § 93.152.

¹²⁶ EPA. (2010). *General Conformity Training Module* at 21.

¹²⁷ *Id.*; 40 C.F.R. § 93.153(d)(1).

¹²⁸ EPA, Texas Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants, https://www3.epa.gov/airquality/greenbook/anayo_tx.html (last updated March 31, 2026).

partially located in Montgomery County, which is in nonattainment for the 2008 and 2015 ozone NAAQS (severity levels of “severe” and “serious” respectively).¹²⁹

To properly comply with the general conformity analysis provisions of the CAA, Forest Service must calculate air emissions tables with detailed calculations that reasonably describe its emissions estimates, model its calculations after the best data available or else explain why it has chosen other modeling sources, and perform a site-specific air analysis for all areas in nonattainment. The Forest Service must not improperly omit the full suite of activities involved in oil and gas production. For example, the Forest Service must consider emissions from the construction of the well pads, power poles, and pipelines that are slated to be built and from emissions due to power and water generation needed to supply well operations. Then, assuming activities enabled by the leasing availability analysis produce more than *de minimis* emissions, the Agency must fully comply with the CAA conformity determination rules.

I. New Information Concerning Seismicity in Eastern Texas Should Be Considered

USFS should consider new information concerning the impacts of fracking and related wastewater disposal on seismicity that has arisen since the 2019 scoping period. This information is summarized below:

- “More than 200 earthquakes of 3 magnitude and greater shook Texans in 2021, more than double the 98 recorded in 2020, according to a Texas Tribune analysis of state data maintained by the Bureau of Economic Geology at the University of Texas at Austin. The record-setting seismic activity is largely concentrated in West Texas’ Permian Basin, the most productive oil and gas region in the state. Scientific studies show that the spike in earthquakes is almost certainly a consequence of disposing huge quantities of contaminated, salty water deep underground — a common practice by oil companies at the end of the hydraulic fracturing process that can awaken dormant fault lines.”¹³⁰ Oil companies have been disposing hundreds of millions of gallons of wastewater underground every day for years, slowly increasing the pressure on ancient fault lines. Rystad Energy provided an analysis of wastewater injected underground to The Texas Tribune which showed “that the amount of wastewater injected underground in the Permian Basin quadrupled in a decade, from 54 billion gallons in 2011 to 217 billion gallons last year.”¹³¹ “The huge jump in seismic activity compelled the Railroad Commission of Texas, the state’s oil and gas regulatory agency, to indefinitely suspend underground water injections late last year in a swath of land from Odessa north to Midland, and west to Andrews and Martin counties. The decision affected all 33 disposal wells in the targeted area.”¹³²

¹²⁹ *Id.*

¹³⁰ Douglas, Erin, Earthquakes in Texas doubled in 2021. Scientists cite years of oil companies injecting sludgy water underground, The Texas Tribune, Feb. 8, 2022, available at: <https://www.texastribune.org/2022/02/08/west-texas-earthquakes-fracking/>.

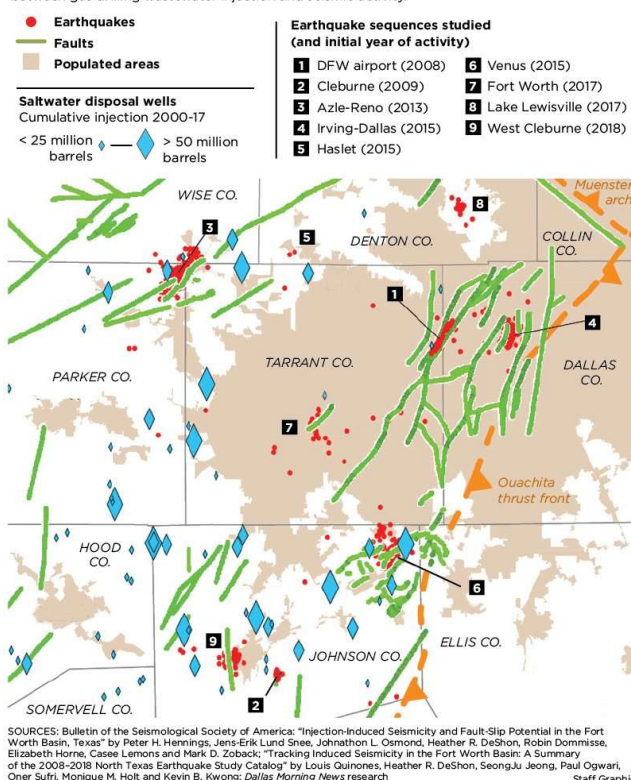
¹³¹ *Id.*

¹³² *Id.*

- New research also shows that wastewater injection from oil and gas operations makes faults much more likely to slip. When scientists modeled fault behavior before and after wastewater disposal, they found that disposal pressures could double the chance of earthquakes. The findings solidify the conclusion that North Texas quakes have been triggered by humans and not by Mother Nature.”¹³³ Researchers at the University of Texas at Austin, Stanford University and Southern Methodist University “mapped and analyzed 251 fissures in North Texas with a total length of more than 1,800 miles. They found that short segments of a majority of these faults can rupture if they're affected by pressure changes from the disposal of wastewater into deep wells.” “That leads us to the conclusion that most of the faults in the entire area are sensitive,” said Peter Hennings, the paper's lead author and a research scientist at UT-Austin's Bureau of Economic Geology.”

North Texas quakes

Scientists studying North Texas earthquakes found new fault lines and a strong correlation between gas drilling wastewater injection and seismic activity.



- “The Texas Seismological Network (TexNet) has enabled real-time monitoring of induced earthquakes since 2017. Before 2017, location uncertainties and temporal gaps in seismic data obscure correlations across Texas between seismicity and saltwater disposal

¹³³ Kuchment, Anna, Wastewater injection can make faults twice as likely to fail, quake study says, The Dallas Morning News, July 25, 2019, available at: <https://www.dallasnews.com/news/2019/07/25/wastewater-injection-can-make-faults-twice-as-likely-to-fail-quake-study-says/>.

or hydraulic fracturing.”¹³⁴ TexNet relocated “73 *M* 1.5+ earthquakes from the TXAR catalog (2009–2016) relative to the centroid of a calibrated core cluster consisting of 116 earthquakes from the TexNet catalog post-2020, in the southern Delaware basin south of the Grisham fault zone.”¹³⁵ The results showed “[t]he majority of relocated TXAR events indicate the triggering of northwest-trending faults at a mean depth of 1 km below sea level, suggesting a causal connection with shallow saltwater disposal and consistency with post-2017 seismicity. Spatiotemporal patterns of pre-2017 seismicity and saltwater disposal highlight initial triggering via pore-pressure stress perturbations from nearby low-volume injections and later from southeastward pressure diffusion along permeable anisotropic conduits and fracture zones.”¹³⁶

Conclusion

The public review process for the NFGT Oil and Gas Leasing Analysis is wholly inadequate and should be re-noticed to directly invite interested parties, individuals who previously commented on the oil and gas leasing analysis, and surrounding communities. In addition, given the dearth of information in the Revised Proposal about the particular resources to be affected and potential impacts, USFS should prepare and circulate a draft EIS for public comment and/or conduct a formal objection process. USFS should also consider a reasonable range of alternatives—one that closes more than just a small percentage of the project area to leasing. Additionally, baseline surveys for sensitive and listed species are necessary for USFS to conduct an adequate review of the project’s environmental impacts and to determine whether additional leasing closures or stipulations should be required in specific areas. USFS must also initiate Section 7 consultation under the ESA concerning the project’s impacts on listed species and critical habitat.

Thank you for considering our comments.

Sincerely,

Emma Yip
Wendy Park
Elise Ferguson

Center for Biological Diversity

¹³⁴ Zanjani, Asiye et al., Insights into Temporal Evolution of Induced Earthquakes in the Southern Delaware Basin Using Calibrated Relocations from the TXAR Catalog (2009-2016), *The Seismic Record*, 4 (2): 140-150, (2024), <https://doi.org/10.1785/0320240011>, available at [link](#).

¹³⁵ *Id.*

¹³⁶ *Id.*