



NATURAL RESOURCES DEFENSE COUNCIL

FACSIMILE TRANSMITTAL SHEET

To:	From:
Attn:	
Dr. John Lyon, Bureau of Land Management Eastern States Office	Natural Resources Defense Council

Fax number:	Date:
(703) 440-1551	1/22/13

Re:	Total no. of pages including cover:
Protest of Parcels Included in the Bureau of Land Management, Eastern States Office Notice of Competitive Oil and Gas Lease Sale, March 21, 2013	56

Phone & Fax Numbers:
(312) 234-9633

URGENT CONFIDENTIAL PLEASE REPLY

NOTES/COMMENTS:

Faxed from NRDC's Chicago office. Will call to confirm the fax was received.



NATURAL RESOURCES DEFENSE COUNCIL

January 22, 2012

VIA FACSIMILE: (703) 440-1551

Dr. John Lyon
 Director
 Bureau of Land Management Eastern States Office
 United States Department of the Interior
 7450 Boston Boulevard
 Springfield, Virginia 22153

RE: Protest of Parcels Included in the Bureau of Land Management, Eastern States Office Notice of Competitive Oil and Gas Lease Sale, March 21, 2013

Dear Dr. Lyon:

The Natural Resources Defense Council ("NRDC") hereby submits this protest letter on behalf of Atchafalaya Basinkeeper, the Center for Biological Diversity, Louisiana Audubon Council, Louisiana Environmental Action Network, Louisiana Wildlife Federation, Lower Mississippi Riverkeeper, NRDC, Ouachita Riverkeeper, Rapides Wildlife Association, the Delta Chapter of the Sierra Club, and Wild South ("protesting parties") in accordance with 43 C.F.R. § 3120.1-3.¹ These parties protest the Bureau of Land Management's ("BLM") planned offering of forty-seven lease parcels at the March 21, 2013 oil and gas lease sale. The parcels are publicly owned lands of the Kisatchie National Forest in Louisiana, and the Bienville and Homochitto National Forests in Mississippi, and will hereinafter be referred to as "the parcels" or "the leases."²

¹ All materials cited herein, the majority of which are readily available online, are incorporated in full herein by reference. The protesting parties have included some materials are not readily available online as exhibits.

² The contested leases are: ES-006-03/13 LAES 057697 ACQ, ES-007-03/13 LAES 057698 ACQ, ES-008-03/13 LAES 057699 ACQ, ES-009-03/13 LAES 057700 ACQ, ES-010-03/13 LAES 057701 ACQ, ES-011-03/13 LAES 057702 ACQ, ES-012-03/13 LAES 057703 ACQ, ES-013-03/13 LAES 057704 ACQ, ES-014-03/13 LAES 057705 ACQ, ES-015-03/13 LAES 057706 ACQ, ES-016-03/13 LAES 057707 ACQ, ES-017-03/13 LAES 057708 ACQ, ES-018-03/13 LAES 057709 ACQ, ES-019-03/13 LAES 057710 ACQ, ES-020-03/13 LAES 057711 ACQ, ES-021-03/13 LAES 057712 ACQ, ES-022-03/13 LAES 057713 ACQ, ES-023-03/13 LAES 057714 ACQ, ES-024-03/13 LAES 057715 ACQ, ES-025-03/13 LAES 057716 ACQ, ES-026-03/13 LAES 057717 ACQ, ES-027-03/13 LAES 057718 ACQ, ES-028-03/13 LAES 057719 ACQ, ES-029-03/13 LAES 057720 ACQ, ES-030-03/13 LAES 057721 ACQ, ES-042-03/13 MSES 057733 ACQ, ES-043-03/13 MSES 057734 ACQ, ES-044-03/13 MSES 057735 ACQ,

Should BLM proceed with the planned sale of these leases, it will violate federal law and BLM policies. For the reasons stated below, the parcels should be withdrawn from this lease sale by BLM.

I. PROTESTING PARTIES AND THEIR INTERESTS

Atchafalaya Basinkeeper

Atchafalaya Basinkeeper is a non-profit organization dedicated to preserving the ecosystems within the Atchafalaya Basin. It is a Waterkeeper under the Waterkeeper Alliance, which is a grass roots advocacy organization consisting of over 200 local Waterkeeper programs worldwide, and dedicated to preserving and protecting water from polluters.

Center for Biological Diversity

Center for Biological Diversity is a national non-profit organization with more than 450,000 members and online activists. We have 4,503 members and online activists in Louisiana and Mississippi. The Center's mission is to secure a future for all species, great and small, hovering on the brink of extinction. We do so through science, law, and creative media, with a focus on protecting the lands, waters, and climate that species need to survive. The Center has made climate change a primary focus of its work nationally, focusing on the needs of species imperiled by rising temperatures and changing climatic regimes, as well as defending crucial habitat threatened by fossil fuel extraction, especially on public lands.

Louisiana Audubon Council

Louisiana Audubon Council is a statewide conservation non-profit corporation composed of representatives from various Audubon Society chapters and at-large delegates from across the state. A major Council goal is maintaining a healthy human environment by protecting the diverse habitats in which birds and other wildlife flourish.

Louisiana Environmental Action Network

Louisiana Environmental Action Network's Mission is to foster communication and cooperation among individuals and organizations to address the environmental problems of Louisiana. Our goal is to create, maintain and preserve a cleaner and healthier Louisiana.

ES-045-03/13 MSES 057736 ACQ, ES-046-03/13 MSES 057737 ACQ, ES-047-03/13 MSES 057738 ACQ, ES-048-03/13 MSES 057739 ACQ, ES-049-03/13 MSES 057740 ACQ, ES-050-03/13 MSES 057741 ACQ, ES-051-03/13 MSES 057742 ACQ, ES-052-03/13 MSES 057743 ACQ, ES-053-03/13 MSES 057744 ACQ, ES-054-03/13 MSES 057745 PD, ES-055-03/13 MSES 057746 ACQ, ES-056-03/13 MSES 057747 ACQ, ES-057-03/13 MSES 057748 ACQ, ES-058-03/13 MSES 057749 ACQ, ES-059-03/13 MSES 057750 ACQ, ES-060-03/13 MSES 057751 ACQ, ES-061-03/13 MSES 057752 ACQ, ES-062-03/13 MSES 057753 ACQ, and ES-063-03/13 MSES 057754 ACQ.

Louisiana Wildlife Federation

The Louisiana Wildlife Federation (LWF) is a statewide, nonprofit conservation education and advocacy organization dedicated to conserving Louisiana's natural resources and the right to enjoy them. LWF membership includes 27 state and local affiliated clubs and 10,000 members. It represents a broad constituency of hunters, fishers, campers, birders, boaters and other outdoor-oriented citizens.

Lower Mississippi Riverkeeper

Lower Mississippi Riverkeeper's mission is to protect, preserve and restore the ecological integrity of the Mississippi River Basin, for current users and future generations, through advocacy and citizen action.

Natural Resources Defense Council

NRDC is a non-profit environmental membership organization with more than 565,000 members throughout the United States. Over 4,500 NRDC members and activists reside in Louisiana and about 2,000 reside in Mississippi. NRDC members use and enjoy national forest lands in Louisiana and Mississippi, including specific lands at issue in this protest. NRDC members use these public lands for a variety of purposes, including: recreation, solitude, scientific study, and conservation of natural resources. NRDC has had a longstanding and active interest in the protection of the nation's public lands. For many years, NRDC has worked with both the Bureau of Land Management and the Forest Service to enhance public participation in government decision making and to protect important lands and wildlife.

Ouachita Riverkeeper

Ouachita Riverkeeper is a non-profit corporation which monitors the Ouachita watershed in both Arkansas and Louisiana. Our goal is to return the river to its original condition and restore its reputation as one of the 10 most beautiful rivers in the world. If necessary we will take legal action to protect the river and its watershed from pollution. Communicating with and educating the public on the importance of the watershed and how they can help will be a priority.

Rapides Wildlife Association

Rapides Wildlife Association has been in the forefront of protecting central Louisiana's wildlife and water resources for over half century. From going to court to keep agricultural runoff out of the productive Saline Lake overflow fishery to maintaining the integrity of seasonal draining and reflooding in Catahoula Lake, one of the 10 most important wetlands in North America, the group has risen to the occasion time and again. The Bayou Boeuf watershed in Rapides Parish is one of only two known habitats for the Louisiana pearlshell mussel, an excellent indicator of water quality.

Sierra Club, Delta Chapter

The Delta Chapter is the Statewide Chapter of the Sierra Club in Louisiana. The Sierra Club is a non-profit corporation organized under California law, with more than 700,000 members nationwide. Sierra Club's mission is to explore, enjoy, and protect the wild places of the Earth; to practice and promote the responsible use of the Earth's resources and ecosystems; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.

Wild South

Wild South is regional non-profit organization that has worked throughout the South for over twenty years to inspire people to value, protect, and enjoy the wild character and natural legacy of the South. Our work involves thousands of people working together to protect and restore national forest ecosystems, maintain biodiversity, and promote responsible recreation. Our members routinely use and enjoy the national forests of Mississippi and Louisiana for recreation, solitude, and to connect with their heritage. We are actively engaged in efforts all across the Southeast to preserve the integrity of our last wild places and ensure that our lands, air, water, and wildlife are protected today and for future generations.

II. STATEMENT OF REASONS

Were the BLM to offer the leases for sale, the agency would violate the Federal Onshore Oil and Gas Leasing Reform Act, 30 U.S.C. §§ 181 *et seq.* ("FOOGLRA"); the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.* ("NEPA"); the National Forest Management Act, 16 U.S.C. §§ 1600 *et seq.* ("NFMA"), the Federal Land Policy and Management Act, 43 U.S.C. §§ 1701 *et seq.* ("FLPMA"), and the Endangered Species Act, 16 U.S.C. §§ 1531 *et seq.* ("ESA"), because the BLM has (1) Failed to provide adequate information in violation of the Federal Onshore Oil and Gas Leasing Reform Act and BLM policies; (2) Failed to provide an adequate environmental analyses in violation of NEPA; (3) Violated NFMA by failing to conform the lease sale to the Kisatchie National Forest Plan; (4) Violated FLPMA by failing to show compliance with an applicable Resource Management Plan; and (5) Violated the ESA by failing to properly consult and/or to reinitiate consultation with the Fish and Wildlife Service. Accordingly, BLM should withdraw the parcels from the lease sale until the BLM and the Forest Service have fully complied with federal law.

A. BLM has Failed to Provide Adequate Information to the Public Regarding the Proposed Leasing, in Violation of BLM Policies and Federal Law.

BLM has not provided sufficient information to the public regarding the parcels involved in this lease sale. As a result, it is extremely difficult for concerned members of the public to understand the impacts of oil and gas leasing and development here and how it would affect them. The failure to provide this information prevents members of the public from exercising

their right to file a well-informed, meaningful protest founded on information about potential environmental and public health impacts, the locations of the parcels, and the resources which leasing might impact.

1. BLM has not provided documents demonstrating compliance with the National Environmental Policy Act.

BLM policies require that each lease sale notice must contain a link to the NEPA documentation for that sale.³ Without BLM providing such a link, the public cannot readily determine what documents might provide relevant environmental analysis or gauge whether the agency is in compliance with the law. However, no such link was provided in the March 2013 Lease Sale Notice for the protested parcels and the BLM has not otherwise furnished NEPA documentation or indicated its reliance on any documents related to the protested parcels.

2. BLM will violate the Federal Onshore Oil and Gas Leasing Reform Act if it proceeds with leasing the parcels because it has not provided adequate maps.

The BLM has not provided maps of “the location of all lands to be leased, and of all leases already issued in the general area,” a requirement of the Federal Onshore Oil and Gas Leasing Reform Act.⁴ In connection with the lease sale, BLM provided twenty-five separate maps in Portable Document Format (PDF) file. Of these, nine relate to the protested parcels. These maps encompass the lands containing the parcels the BLM proposes to lease. However, no lease sale parcels are labeled by parcel number.

The maps also do not show lease boundaries. Although the maps show boundaries of the total area to be leased, the boundaries of individual parcels are not included. Further, there are numerous inconsistencies between the different maps provided by BLM and the description of parcels in the lease sale notice.⁵ These inconsistencies make it impossible for the public to understand what areas are actually being leased.

³ See Instruction Memorandum No. 2010-117 Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews part III.G (5/17/2010) available at http://www.blm.gov/wo/si/cp/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2010/TM_2010-117.html.

⁴ See 30 U.S.C. § 226(f).

⁵ For instance the description of parcel ES-008-03/13 LAES 057669 ACQ in the lease sale notice states that it includes the east half of section 4 as well as the eastern half of the west half of the section. The description below the map for the parcel indicates that all of section 4 should be included in the leased lands, and the map itself does not include the east half at all. Thus, there are three conflicting descriptions of parcel ES-008-03/13 with no way for the public to determine the actual lands proposed for lease. Many other inconsistencies also exist. The description for parcel ES-014-03/13 LAES 057705 ACQ does not include the north half of the northwest quarter of section 20, but the map appears to include this land as proposed for lease. The description for parcel ES-019-03/13 LAES 057710 ACQ includes the northwest quadrant of the northeast quarter of section 28, but the map shows that the southwest quadrant of the southeast quarter of the section will be leased instead. The description for parcel ES-042-03/13 MSSES 057733 ACQ states that it includes the northeastern quadrant of the northwest quarter of section 6,

The maps provided by BLM do not reasonably provide sufficient information for the public to understand where specific lease sale parcels are located. Nor do the maps inform the public about the potential cumulative effects that might be implicated by existing leasing in the area. An NRDC staff member used Geographic Information Systems (GIS) software in conjunction with the PLSS definitions of the lease sale parcels and the maps in order to understand more precisely where federal mineral rights are being sold in Louisiana and Mississippi. Those maps are attached as exhibits 1, 2, 3, and 4. However, it should be noted that insufficient information is provided by BLM to specify precisely where all the lands that are proposed for lease are situated. These maps provide an approximation based on the available information in order that the protesting parties can attempt to provide information on the likely impacts of this leasing.

Unfortunately, many members of the public do not have the resources to create these maps for themselves. Without adequate maps, the public is unable to determine the specific or cumulative impacts of leasing on human health, important forest resources, and the environment. BLM also cannot realistically comply with its obligations under NEPA to conduct a site-specific environmental analysis or provide sufficient information to allow surface management agencies such as the Forest Service to do so. Moreover, neither the Forest Service nor BLM can meet their legal obligations under the National Forest Management Act to ensure the proposed leasing is consistent with the applicable forest plans without adequate maps indicating the exact boundaries of the parcels to be leased. If BLM does not have sufficient resources to map all parcels itself, BLM should require that a map is included with expressions of interest for leasing as a prerequisite for moving forward with a proposed sale of a parcel.

Additionally, none of the maps indicate whether and where land in the general area is already under lease. The failure for BLM to include maps of the lands in the area already under lease makes it impossible for the public, BLM, or the Forest Service to adequately evaluate the cumulative impacts that leasing of these parcels may have. Since the start of 2008, the BLM has sold oil and gas leases to more than 245,000 acres in the Kisatchie National Forest.⁶ If the BLM proceeds to lease the 24,470 acres proposed in the March 2013 sale, total leasing during this time could represent over 44% of the total acreage of the Kisatchie National Forest. See Kisatchie EIS at 1-2. In the Bienville National Forest, the BLM has leased 35,294 acres since the beginning of 2008. With the additional 11,875 acres proposed for lease in this sale, the total forest acreage leased could reach 26%. See Mississippi EA at 5. And in the Homochitto

while the map does not show that land included in the parcel but does show the southeastern quadrant of the northwest quarter. And the description for parcel ES-044-03/13 MSES 057735 ACQ includes the west half of the southwest quarter of section 21, yet the map does not show that area as proposed for lease, but does indicate that the west half of the southeast quarter of the section may be leased.

⁶ This figure includes leases which were previously protested by certain of the protesting parties in the September 2012 and December 2012 Eastern States lease sales. These protests have not yet been resolved. The protesting parties do not admit the validity of any leases stemming from these sales but include the acreage to illustrate the potential cumulative impacts that the BLM's repeated leasing proposals in the forest may have.

National Forest, the BLM has leased 78,902 acres for oil and gas development since the start of 2008. With the additional 1997 acres proposed for lease in the March 2013 sale, the total portion of the forest acreage leased could top 42% in this time. These figures do not include leases that may have been sold prior to 2008. Given the fact that BLM oil and gas leases generally have a primary term of ten years and can be extended after that, there may be many more acres under lease on the forests. BLM has a legal duty to provide the public with maps which show not only the parcels proposed for lease, but also the other lands in the area under lease. The agency has not done so in this case. To comply with the FOOGLRA, the agency must not lease the parcels at issue until it has done so.

Without the required NEPA documentation and mapping of the lease parcels, the public cannot adequately participate in the BLM Lease Protest process, nor can BLM or other agencies comply with federal legal requirements. Therefore, at minimum, BLM must postpone leasing of the parcels until the legal requirements can be met and the public is given an adequate time to review the necessary information.

B. BLM will Violate NEPA if the Parcels are Included in the Lease Sale.

NEPA requires that where an agency proposes a "major Federal action[] significantly affecting the quality of the human environment," it must prepare an Environmental Impact Statement (EIS) in which the agency considers the potential impacts of the proposed action on the environment and considers the impact of reasonable alternatives. *See* 42 U.S.C. § 4332(2)(C). To comply with NEPA, an EIS must provide a "full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1.

To determine whether a project will have a significant impact on the environment requiring preparation of an EIS, an agency may prepare an Environmental Assessment (EA). Regardless of whether an EIS or an EA is prepared, NEPA requires that agencies take a "hard look" at environmental consequences of the federal action. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

NEPA analysis must be performed prior to any irreversible or irretrievable commitment of resources in order to ensure that agencies and the public are informed about the "disruptive environmental effects that may flow from their decisions at a time when they "retain [] a maximum range of options." *Conner v. Burford*, 848 F.2d 1441, 1446 (9th Cir. 1998) quoting *Sierra Club v. Peterson*, 717 F.2d 1409, 1414 (D.C.Cir.1983). Leasing represents that critical stage of agency decisionmaking which results in an irreversible and irretrievable commitment of resources. *See Sierra Club*, 717 F.2d at 1414. BLM may defer a full NEPA analysis only if it

disallows all surface disturbing activities by placing a "No Surface Occupancy" (NSO) stipulation on all parcels. However, without an NSO requirement, BLM relinquishes the absolute right to preclude all surface-disturbing activities by leasing a parcel. Therefore, unless the BLM proceeds to lease the contested parcels with complete NSO stipulations, a NEPA review must be undertaken before leasing.⁷

1. *BLM will violate NEPA if it proceeds with leasing because a site-specific analysis has not been performed.*

A site-specific environmental analysis must be performed before parcels are leased by the BLM. *See Sierra Club v. Peterson*, 717 F.2d at 1415. This is necessary to ensure that assessment of all reasonably foreseeable impacts occurs at the earliest practicable point.⁸

The BLM's own NEPA Handbook states that NEPA is triggered by proposals to develop subsurface minerals where, as here, BLM manages the subsurface rights and another agency manages the surface. *See BLM, National Environmental Policy Act Handbook H-1790-1* at 16 (2008). BLM may "tier" to an existing environmental analysis, if the existing analysis provides the requisite "hard look" at *site-specific* impacts. *See id.* at 22. However, if BLM relies on past analyses, it must, at minimum, develop a Determination of NEPA Adequacy (DNA) which identifies the relevant documents provide this information to the public for review. *See id.* As noted above, no such documentation has been provided.

a. The Kisatchie National Forest Plan and EIS do not provide a site-specific analysis upon which BLM can rely to lease the Louisiana parcels.

The Kisatchie National Forest Plan and Environmental Impact Statement⁹ do not contain a site-specific analysis of leasing the Louisiana parcels. While the EIS provides some analysis of the effects of oil and gas development, the analysis does not consider the effects of leasing the parcels at issue, but provides only a general discussion of potential impacts from oil and gas development forest-wide. This analysis does not meet the "site-specific" requirement.

⁷ *See Southern Utah Wilderness Alliance*, IBLA No. 2000-358, 159 IBLA 220, 241 (Jun. 16, 2003) ("BLM regulations, the courts and our precedent proceed under the notion that the issuance of a lease without an NSO stipulation conveys to the lessee an interest and a right so secure that full NEPA review must be conducted prior to the decision to lease."). *See also Pennaco Energy, Inc. v. U.S. Dep't of the Interior*, 377 F.3d 1147 (10th Cir. 2004); *Conner v. Burford*, 848 F.2d 1441 (9th Cir. 1988); *Sierra Club v. Peterson*, 717 F.2d 1409 (D.C. Cir. 1983).

⁸ *See New Mexico ex rel. Richardson v. Bureau of Land Management*, 365 F.3d 683, 717-20 (10th Cir. 2009) (holding that where "any environmental impacts [are] reasonably foreseeable at the leasing stage," NEPA requires an analysis of the site-specific impacts of leasing).

⁹ U.S. Forest Service, *Revised Land and Resource Management Plan, Kisatchie National Forest* (Aug. 1999) ("Kisatchie Forest Plan"); U.S. Forest Service, *Final Environmental Impact Statement for the Revised Land and Resource Management Plan, Kisatchie National Forest* (Aug. 1999) ("Kisatchie EIS").

In fact, the EIS specifically states at the outset of the chapter on "Environmental Consequences" that "The effects disclosed . . . are at the programmatic forest plan level. The analysis is presented for comparison and evaluation of alternatives forestwide. *Future site-specific environmental analyses and decisionmaking will determine the location, design, extent, and impacts of project-level activities.*" See Kisatchie Forest Plan EIS at 4-1 (emphasis added). The EIS itself recognizes that it does not provide the requisite site-specific analysis, but that such analysis must be performed at a later date. Therefore, BLM and the Forest Service must perform such an analysis before leasing can proceed.

Forest Service regulations also require that such a site-specific analysis be performed. Specifically, the regulations require that the Forest Service determine that "operations and development could be allowed somewhere on each proposed lease, except where stipulations will prohibit all surface occupancy." 36 C.F.R. § 228.102. There is no evidence that such a determination was made in this case, and the lack of adequate maps and NEPA documentation call into question the Forest Service's compliance with this regulation. BLM should not go forward with leasing until the requirements of Forest Service regulations and the National Environmental Policy Act are satisfied and a site-specific analysis has been performed.

- b. The Mississippi National Forests Plan and EIS do not provide the requisite site-specific analysis for leasing the Mississippi parcels.

The Mississippi Plan and EIS¹⁰, originally drafted in 1985, was supplemented with an Environmental Assessment related to Oil and Gas Leasing in 2010.¹¹ The Mississippi Oil and Gas EA also does not provide the requisite site-specific analysis. While the EA provides some analysis concerning the effects of oil and gas development, it does not analyze the effects of potential development on the particular lands at issue in the protest. Instead the EA provides a generalized analysis of effects from oil and gas development that may occur related to all National Forest lands in Mississippi.

The analysis in the EA is not sufficient to satisfy NEPA, which mandates the completion of a site-specific analysis before leasing can go forward. Each of the documents at issue provides only a general discussion of the impacts of oil and gas development at the statewide level without considering the impacts from leasing the particular parcels at issue here. Thus, a site-specific analysis must be performed before leasing can proceed.

- c. BLM has provided no other documents which include a site-specific analysis.

¹⁰ U.S. Forest Service, *Land and Resource Management Plan, National Forests in Mississippi* (Sept. 1985) ("Mississippi Forests Plan"); U.S. Forest Service, *Final Environmental Impact Statement, National Forests in Mississippi Land and Resource Management Plan* (Sept. 1985) ("Mississippi EIS").

¹¹ U.S. Forest Service, *Lands Available for Oil and Gas Leasing, Environmental Assessment* (Aug. 2010) ("Mississippi Oil and Gas EA" or "Oil and Gas EA").

BLM has furnished no other documents which could be deemed to fulfill the legal requirement for site-specific analysis. Because BLM has not provided documentation to indicate that it has fulfilled the legal requirements of the National Environmental Policy Act, we assume that no such documentation exists. However, even if it is BLM's position that such documentation does exist, the public has not been provided with the documents nor given an opportunity to review them during the protest period. Therefore, BLM should withdraw the parcels from the March 2013 Lease Sale until such time as the legal requirements of NEPA can be fulfilled and the public is given an adequate opportunity to review the documentation indicating compliance with the law.

2. *BLM must supplement existing NEPA documentation to take a "hard look" at the effects of unconventional oil and gas development.*

NEPA requires that an agency supplement its original analysis when "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." *See* 40 C.F.R. § 1502.9(c)(1)(ii). "The standard for determining when [a supplemental EIS (SEIS)] is required is essentially the same as the standard for determining when an EIS is required." *Sierra Club v. U.S. Army Corps of Eng'rs*, 295 F.3d 1209, 1215-16 (11th Cir. 2002) (quotation marks and citation omitted). A supplemental EIS must be prepared if there remains major federal action to occur, and if the new information is sufficient to show that the remaining action will affect the quality of the human environment in a significant manner or to a significant extent not already considered. *Sierra Club v. Bosworth*, 465 F. Supp. 2d 931, 937 (N.D. Cal. 2006) (citations and quotations omitted).

The agency must "take a 'hard look' at the new information to assess whether supplementation might be necessary." *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 72-73 (2004). Whether new circumstances are significant depends on a number of factors, including "[t]he degree to which the proposed action affects public health or safety," "[u]nique characteristics of the geographic area," such as proximity to historic or cultural resources, park lands, wild and scenic rivers, or ecologically critical areas, "[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial," "[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks," "[t]he degree to which the action . . . may cause loss or destruction" of significant resources, "[t]he degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act," and "[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment." 40 C.F.R. § 1508.27(b). As is discussed below, an analysis of these factors demonstrates that supplementation under NEPA is warranted here.

The emergence of commercially economical shale gas drilling is exactly the sort of new circumstance that requires supplementation under NEPA. The BLM and the Forest Service have not considered the environmental and health impacts that may arise from the drilling and hydraulic fracturing of a large number of potential new wells within the boundaries of the National Forests in Louisiana and Mississippi. A hard look at the impacts from unconventional oil and gas development and high volume hydraulic fracturing is required by NEPA before BLM proceeds with leasing these parcels.

a. Overview of the existing environmental analysis in relevant documents

The Kisatchie National Forest Plan and EIS, drafted in 1999, do apply to the parcels BLM proposes to lease in Louisiana. But while the 1999 EIS provided a brief discussion of the potential impacts of oil and gas development, this analysis did not and likely could not have anticipated the significant changes in the oil and natural gas industry that have emerged in the ~~paying years~~. Therefore, the Kisatchie EIS does not satisfy the requirements of NEPA and must *Kisatchie EIS* at 3-107. The analysis goes on to caution that despite positive results in two wells "it is too early to predict long-term success," noting that "a geological review of the [formation] concluded that . . . only selected 'sweet spots' will yield commercial production." *Id.* At the time the plan and EIS were developed, there were 42 producing oil and gas wells on the Kisatchie National Forest. *Id.* at 3-108.

Based on the relatively low level of existing and predicted development activities, the Kisatchie National Forest Plan EIS briefly describes potential environmental impacts on air quality, soil and water quality, vegetation, wildlife, scenery, recreation, and wilderness. Overall, the EIS predicted that between 23 and 137 wells would be drilled on the forest over the subsequent 10 years, with the moderate scenario estimate being 60, for an average of 6 wells drilled per year. *Kisatchie EIS* at 3-108. BLM has provided no other documentation that analyzes the effects of oil and gas drilling on the relevant parcels.

The Mississippi Oil and Gas Leasing EA was drafted in 2010, but relied on a Reasonably Foreseeable Development (RFD) scenario developed in 2005. *See Oil and Gas EA* at 23. The EA contains no mention of horizontal drilling or high-volume hydraulic fracturing and the associated impacts they bring. The EA provides very general discussions of the impacts from oil and gas development and potential mitigation measures on mineral, soil and water resources, air quality, vegetation, wildlife, cultural resources, visual resources, recreation, and the economy.

Because the Mississippi EA does not analyze effects of unconventional oil and gas development, NEPA requires that it be supplemented.

b. Failure to analyze the effects of unconventional oil and gas development

A full analysis of unconventional oil and gas development must now be done in order to comply with NEPA. This analysis must take a hard look at the effects of unconventional oil and gas extraction techniques, especially horizontal drilling and hydraulic fracturing or "fracking".

Hydraulic fracturing, which was not widely used in the United States until around 2005, involves the extraction of natural gas from shale formations deep below the surface, and is one of the fastest growing trends in American on-shore domestic oil and gas production.¹² Large scale production of shale gas has become widespread in the past several years due to these advances in horizontal drilling and hydraulic fracturing, which have significantly improved the industry's ability to produce natural gas in shale basins around the country, including the Barnett, Hayessville, Fayetteville, Woodford, Utica, and Marcellus shale formations.¹³ In 2009, 63 billion cubic meters of gas were produced from deep shale formations. In 2012, this production doubled to 137.8 billion cubic meters, and the U.S. Energy Information Administration projects that by 2035, production will increase to 340 billion cubic meters per year.¹⁴

This process of natural gas drilling differs significantly from conventional oil and gas drilling. Fracking typically involves millions of gallons of fluid that are pumped into a well at high pressure to create fractures in shale or other rock containing hydrocarbon deposits.¹⁵ This pressure exceeds the rock strength, and the fluid enlarges fractures in the rock, allowing gas to flow from the fractures and up into the wellbore.¹⁶ Wells may extend to depths greater than 8,000 feet, and horizontal drilling may extend several thousand feet away from the location of the drill pad on the surface.¹⁷

¹² Ground Water Protection Council and ALL Consulting, *Modern Shale Gas Development in the United States: A Primer*. Prepared for U.S. Dep't of Energy, Office of Fossil Energy and National Energy Technology Laboratory (Apr. 2009), available at http://www.rrc.state.tx.us/does/shale/Shale_Gas_Primer_2009.pdf. See also Energy Information Administration, Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays (July 2011), available at <http://www.eia.gov/analysis/studies/usshalegas/pdf/usshaleplays.pdf>; Secretary of Energy Advisory Board Shale Gas Production Subcommittee, 90-Day Report (Aug. 18, 2011), available at http://www.shalegas.energy.gov/resources/081811_90_day_report_final.pdf (noting that "it was only around 2008 that the significance of shale gas began to be widely recognized").

¹³ Robert B. Jackson *et al.*, Duke University, Research and Policy Recommendations for Hydraulic Fracturing and Shale-Gas Extraction, Center on Global Change (2011), available at <http://www.nicholas.duke.edu/cgc/HydraulicFracturingWhitepaper2011.pdf>.

¹⁴ U.S. Energy Information Administration, Annual Energy Outlook 2011 with Projections to 2035 (Dec. 2010), available at <http://www.eia.doe.gov/oiaf/aeo/electr/olty.html>.

¹⁵ Jackson *et al.*, *supra* note 13, at 1.

¹⁶ U.S. Envtl. Prot. Agency, Office of Research and Development, *Hydraulic Fracturing Research Study* (June 2010), available at <http://www.epa.gov/safewater/ulc/pdfs/hfrresearchstudyfs.pdf>.

¹⁷ *Id.*

It is now clear that unconventional oil and gas development, using horizontal drilling and hydraulic fracturing is undergoing a boom in relevant areas of Louisiana and Mississippi. See, e.g., Ted Griggs, *Industry Lighting Up Third La. Oil Shale Site*, Baton Rouge Advocate, Sept. 1, 2011, at A1 (noting that companies were exploring three separate shale formations in Louisiana with unconventional drilling, including one considered the nation's "top-producing" shale play); *Series on Fracking to Begin Sunday*, McComb Enterprise-Journal (May 17, 2012) (describing the "apparent fracking boom" beginning in southwest Mississippi). See also exhibits 5, 6, and 7 (showing data from the Energy Information Administration, which has determined that the Texas-Louisiana-Mississippi Salt Basin, a significant shale resource, lies under all three National Forests at issue in this protest, and that specific accumulations of interest to the industry overlap parts of the Kisatchie and Homochitto National Forests, including parts in which leasing is proposed).

i. *Changes to the level of reasonably foreseeable development within the forests*

The development of horizontal drilling and high-volume hydraulic fracturing have allowed economic oil and gas extraction in many areas where it was not previously feasible. In Louisiana where there was already significant development, there was a 10.4% increase in the number of producing oil and gas wells from 1999-2009, while in Mississippi the increase was 61.9%.¹⁸ Thus it is reasonably foreseeable that significant new drilling will occur on the parcels at issue if leasing goes forward, beyond the level of development contemplated by previous analyses. BLM must supplement existing analyses to take account of the increased number of wells likely to occur from leasing because of new techniques like horizontal drilling and hydraulic fracturing and the presence of relevant resources, like the shale basins, under the forests.

ii. *No hard look at the impacts of unconventional oil and gas development on water resources*

Hydraulic fracturing entails the use of large quantities of water. Estimates vary depending on the size and depth of the well, but two to four million gallons of water per well is an often-used figure, and water use can be as high as five million gallons or more.¹⁹ In addition, wells are often "fracked" multiple times in order to maximize the resources extracted. The vast amount of

¹⁸ Data from: Energy Information Administration, *Distribution and Production of Oil and Gas Wells by State*, available at http://205.254.135.7/pub/oil_gas/energy_system/energy_sov.html.

¹⁹ See U.S. Env't. Prot. Agency, Office of Research and Development, *Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*, pp. 19 (Feb. 7, 2011), available at http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/upload/HFStudyPlanDraft_SAB_020711-Q8.pdf. See also 2011 Draft Environmental Impact Statement for the Revised Land and Resource Management Plan, George Washington National Forest (Apr. 2011) at 3-311, available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelordb5297823.pdf.

water needed to drill these wells must come from somewhere, likely either from the streams and rivers of the National Forests or from local groundwater resources. Water withdrawals in other parts of the country for hydraulic fracturing have had significant effects on lakes, streams, rivers and reservoirs, impacting aquatic life and local residents.²⁰ The lowering of water levels can also impact water quality, depleting aquifers and causing chemical changes in the water, affecting solubility and mobility; stimulating bacterial growth; and lowering surface water resources, causing changes in flow depth, velocity, and temperature and reducing the dilution effect on contaminants.²¹ The BLM has provided no analysis of the local area-specific impacts of such water withdrawals on the National Forests or on the nearby communities that rely on these forests as drinking water sources, making it unclear how large volume water withdrawals may impact this region. This failure is particularly concerning because there are significant water bodies near the leased parcels. Both Kincaid Reservoir and Oden Lake border leased parcels in the Kisatchie NF. *See* Exhibit 1. Leasing is also proposed in the watersheds of state scenic streams like the Whiskey Chitto and Six Mile streams on the Vernon Unit. Kisatchie EIS at 3-9, Exhibit 2. Additionally, leasing is proposed in close proximity to wetlands in the Kisatchie National Forest. *See, e.g.*, Exhibit 8.

It is also noteworthy that groundwater in the Kisatchie National Forest is used for municipal water supplies. *Kisatchie EIS* at 3-12. In the Homochitto National Forest, parcels lie adjacent to the Homochitto River. *See* Exhibit 4. In all three forests, the parcels overlie numerous streams and creeks. *See* Exhibits 1, 2, 3 and 4. And according to U.S. Forest Service data, many of the proposed leases lie in areas deemed to be of moderate to high importance for surface drinking water supplies. *See* Exhibits 9, 10 and 11.

The huge volumes of water used in fracking are mixed with large amounts of chemicals and sand and then forced under high pressure down a well in order to blow out underground seams and increase the volume of gas extracted. The volume of chemicals can differ, but for a well that uses 3 million gallons of fracturing fluids, there will potentially be up to 60,000 gallons of chemicals used.²² These chemicals are typically stored in tanks on-site and blended with water and proppant prior to injection.²³ Due to a loophole in the federal Safe Drinking Water Act, the exact chemicals, amounts, and combinations are not required to be disclosed, despite reports that many of these chemicals are harmful and potentially cancer-causing. For example, the EPA has found that chronic toxicity has been associated with some identified "fracking" chemicals, such as ethylene glycol, glutaraldehyde, and n,n-dimethyl formamide.²⁴

²⁰ Donald Gilliland, *The Patriot-News*, *SRBC suspends water withdrawal permits for drilling due to low stream flows* (July 19, 2011), available at http://www.pennlive.com/mld/state/index.ssf/2011/07/srbc_suspends_water_withdrawal.html.

²¹ *See* Drinking Water Study Draft Plan, *supra* at note 19, at 21.

²² *See Id.* at 24.

²³ *Id.*

²⁴ *Id.* at 25.

After fracturing, the pressure is decreased and the direction of fluid flow is reversed, allowing the fracturing fluid and naturally occurring substances to return to the surface.²⁵ These returning fluids, known as *flowback* or *process wastewater*, may be highly contaminated with heavy metals, carcinogens, and naturally occurring radioactive materials.²⁶ These have been known to include brine, mercury, lead, arsenic, radium, uranium, and volatile and semi-volatile organic compounds.²⁷

This flowback water, which comprises as much as 60-80 percent of the fracturing fluid injected into the well, can be contaminated with tens of thousands of pounds of chemicals, salt, and sand, posing difficulties for disposal.²⁸ Initially, flowback fluids can amount to as much as 100,000 gallons per day for several days, which is generally stored on-site in storage tanks and waste impoundment pits prior to treatment or disposal.²⁹ While certain lease sale stipulations relate to the storage of wastewater, they do not eliminate the risk of spills and they do not prohibit discharges onto land or into streams nor ensure that no environmental effects will occur from wastewater management.

Wastewater disposal is carried out in a number of ways. One method is to discharge water into surface waters after treatment at a wastewater treatment facility. However, flowback water can pose challenges for treatment facilities that are generally unable to remove radioactive and other harmful materials found deep underground, as well as large amounts of sodium, chloride and bromide.³⁰ As an alternative, flowback water is sometimes disposed through land application, which involves spraying of the wastewater onto the forest floor. This method has been known to kill trees and foliage in the area, and deposit high levels of chloride, calcium and sodium in the soil.³¹ Flowback water may be returned underground using a permitted underground injection

²⁵ *Id.* at 35.

²⁶ For example, the West Virginia Department of Environmental Protection found arsenic, lead and hexavalent chromium in wastewaters. See Letter from West Virginia Department of Environmental Protection to William Goodwin, Superintendent, Clarksburg Sanitary Board (July 23, 2009). New York State's Department of Environmental Conservation has reported levels of radium 226 in flowback water from the Marcellus Shale in amounts over 250 times the limit for safe drinking water. See N.Y. Dep't of Env'tl. Conservation, Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program 13 (2009), available at <http://ftp.dec.state.ny.us/dmn/download/OGdSGEISFull.pdf>. The known carcinogen benzene has also been found in flowback waters from Pennsylvania and West Virginia at average concentrations nearly 100 times the maximum acceptable contaminant levels. *Id.* at 5-104.

²⁷ See Drinking Water Study Draft Plan, *supra* note 19, at 30.

²⁸ See *Hydraulic Fracturing Research Study*, *supra* note 16. See also Rebecca Hammer & Jeanne VanBriesen, *In Fracking's Wake: New Rules are Needed to Protect Our Health and Environment from Contaminated Wastewater* (May 2012) available at <http://www.nrdc.org/energy/fracking-wastewater.asp>.

²⁹ See Drinking Water Study Draft Plan, *supra* note 19, at 36.

³⁰ See Ian Urbina, N.Y. Times, *Regulation Lax As Gas Wells' Tainted Water Hits Rivers* (Feb. 26, 2011), at A1 ("Yet sewage treatment plant operators say they are far less capable of removing radioactive contaminants than most other toxic substances. Indeed, most of these facilities cannot remove enough of the radioactive material to meet federal drinking-water standards before discharging the wastewater into rivers, sometimes just miles upstream from drinking-water intake plants.") It is unclear whether local wastewater treatment facilities in the vicinity of the Kisatchie, Homochitto, and Bienville National Forests have the capacity to treat flowback waters.

³¹ See Adams *et al.*, U.S.D.A., *Effects of Development of a Natural Gas Well and Associated Pipeline on the Natural and Scientific Resources of the Farnow Experimental Forest* (June 2010), available at http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs76.pdf. See also Nicholas Kusnetz, ProPublica, *Anatomy of a Gas Well*:

well.³² Research has shown that currently available methods of wastewater disposal are inadequate and that improper handling, treatment, and disposal of shale gas wastewater can expose people, fish, and wildlife to toxic, radioactive, or carcinogenic chemicals.³³

It is unclear what the potential impacts would be to the waters of Louisiana and Mississippi from releases of fracturing fluids or wastewater through accidental spills, land application, surface water discharges and groundwater contamination, or whether such releases could violate state and federal water quality standards. The Kisatchie EIS does briefly discuss the risk of spills, but contains no analysis of the effects on local water sources other than stating that during periods of low stream flow the material could be concentrated, while a flowing stream would allow the material "to enter a body of water fed by the stream." *Kisatchie EIS* at 4-10. The EIS does not assess the ability of local wastewater treatment facilities to treat flowback water or analyze land application's impacts on the parcels. The Mississippi EA also has insufficient analysis related to spills, land application, or discharges of wastewater. While the EA mentions spills and their potential effects on water bodies, it does not consider the effects of a major spill. While it acknowledges that "brine and oil leaks and spills have occasionally occurred" it simply states that spills "seldom reach streams." Mississippi EA at 40. This does not satisfy the requirement that a site specific analysis take into account the real risk of wastewater spills on the many water bodies which border on the parcels in the Mississippi forests. Nor do the lease stipulations require disclosure of fracking chemicals, limit land application, or prevent the discharge of flowback and produced water into surface waters of the National Forests.

Those fracturing fluids that remain (or are later injected) underground have the potential to impact groundwater resources. For example, there have been numerous reports from homeowners of contamination of drinking water wells in areas of extensive shale gas drilling.³⁴ These fluids also have the potential to migrate into aquifers, as appears to be the case in Pavilion, Wyoming, where EPA has made a preliminary determination that hydraulic fracturing fluids have contaminated groundwater.³⁵ Contamination of groundwater may also originate from spills or leaks of fracturing fluids at the surface.

What Happened When a Well Was Drilled in a National Forest (Feb. 4, 2011), available at <http://www.propublica.org/article/anatomy-of-a-gas-well-what-happened-when-a-well-was-drilled-in-a-national-f>.

³² See Hydraulic Fracturing Study, *supra* at note 16. A new study performed by scientists at the U.S. Geological Survey concluded that the increased rate of earthquakes in the mid-continental U.S. is almost certainly manmade, and potentially is linked to oil and gas extraction, particularly to deep waste disposal injection wells. See W.L. Ellsworth, US Geological Survey, *et al.*, *Abstract: Are Seismicity Rate Changes in the Midcontinent Natural or Manmade?*, to be presented at Seismological Society of America 2012 Annual Meeting, available at <http://www.sclamo.gov/meetings/2012/app/#12-137> (April 2012).

³³ See Hammer & VanBriesen, *supra* note 28.

³⁴ See Jackson *et al.*, *supra* note 13, at 2.

³⁵ Natural Resources Defense Council, *Comments on Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program* (Dec. 31, 2009) (submitted to the New York State DEC); see also U.S. Envtl. Prot. Agency, Office of Research and Development, *Draft Investigation of Ground Water Contamination near Pavilion, Wyoming* (2011), available at www.epa.gov/region8/superfund/wy/EPA_ReportOnPavilion_Dec-8-2011.pdf.

Gas may also migrate up through fractures in the overlying rock layers into groundwater. This shale gas is typically comprised of over 90 percent methane.³⁶ This form of methane contamination of drinking water wells is another clear and well documented potential risk of hydraulic fracturing, as demonstrated by a recent Duke University study. The study found that methane concentrations were on average 17 times higher in drinking water wells located near natural gas drilling and fracking sites in Pennsylvania and New York than in drinking water wells not located within 1 km of a gas well.³⁷ The average concentration in gas areas was high enough to be a potential explosion hazard. This migration can occur through corroded well casings, failures in the integrity of cement surrounding the casing, or even potentially through direct movement of methane or flowback water upwards from underground following hydraulic fracturing.³⁸ State environmental agencies also have reported incidents of drinking water contamination resulting from methane leaks from fracked gas wells.³⁹

But the Kisatchie EIS and the Mississippi EA provide no analysis of the potential impacts on surface or groundwater, private water wells, or other drinking water supplies. Yet the National Forests provide the source of water for many communities in or near the forests. Before leasing goes forward, the BLM must take a hard look at the environmental and health consequences of potential impacts on nearby drinking water resources, including possible contamination of aquifers, private drinking wells, groundwater and surface waters, from such drilling practices.

The re-evaluation of oil and gas development's impacts on aquatic resources is particularly critical due to the important National Forest resources that stand to be harmed by these activities. For instance, it appears that leasing on the Kisatchie National Forest is proposed in the watersheds of multiple state scenic streams including the Whiskey Chitto and Six Mile Creek on the Calcasieu district. See Exhibit 2, Kisatchie EIS at 3-9. It is also noteworthy that groundwater in the Kisatchie National Forest is used for municipal water supplies. *Kisatchie EIS*, at 3-12.

³⁶ See Jackson *et al.*, *supra* note 13, at 2.

³⁷ Stephen G. Osborn, *et al.*, *Methane Contamination of Drinking Water Accompanying Gas-Well Drilling and Hydraulic Fracturing*, 108 PNAS 8172 (2011), available at <http://www.nicholas.duke.edu/cgs/pnas2011.pdf>.

³⁸ Pennsylvania State College of Agricultural Sciences Cooperative Extension, *Water Facts 28: Gas Well Drilling and Your Private Water Supply* at 2 (Mar. 2010), available at http://www.cesi.psu.edu/news_events/EarthTalks/2009Spring/materials2009spr/gasdrilling.pdf.

³⁹ For example, the Pennsylvania DEP has brought a series of enforcement actions against Cabot Oil & Gas for drinking water well contamination. See Abraham Lustgarten, ProPublica, *Cabot Oil & Gas's Marcellus Drilling to Slow After PA Environment Officials Order Wells Closed* (Apr. 16, 2010), available at <http://www.propublica.org/article/cabotoil-and-gas-ordered-to-shut-down-problem-wells-and-pay-massive-fine-a>. See also Ohio Dept. of Natural Resources, *Report on the Investigation of the Natural Gas Invasion of Aquifers in Bainbridge Township of Geauga County, Ohio* (2008), available at http://s3.amazonaws.com/propublica/assets/natural_gas/ohio_methane_report_080901.pdf.

The Mississippi Oil and Gas Leasing EA makes clear that oil and gas development can increase sedimentation in surface waters, affect local drinking water supplies, and affect aquatic life. *See Mississippi EA* at 10, 40-41. The EA notes that surface disturbance from oil and gas development could increase sedimentation in local waterways. It also notes that consumptive water uses could negatively impact groundwater levels and mentions that improperly constructed wells could result in groundwater pollution. *See id.* However, the EA makes no attempt to estimate the environmental or health effects that would accompany any of these impacts. Nor does the EA engage in the site-specific analysis required by NEPA to determine whether oil and gas development on the parcels proposed for lease would risk pollution of particular waterbodies or drinking water sources.

BLM has not provided an environmental analysis of the full lifecycle of the horizontal drilling and high volume hydraulic fracturing process, from the impact on water sources from sedimentation, to the potential contamination from "fracking" fluids used to extract natural gas, to the proper treatment and disposal of these fluids at the end of the process. Therefore, without providing such an analysis, leasing of the parcels at issue violates NEPA.

iii. *No hard look at the surface impacts of unconventional oil and gas development*

During site preparation for a shale well, an area must be cleared to provide space for one or more wellheads, pits or tanks for holding water, used drilling fluids, and other materials; and space for trucks and other large equipment. The average size of a single high-volume hydraulic fracturing operation is significantly larger than that of a conventional drill pad. The *Kisatchie EIS* assumed that a total of 315 - 2,555 acres would be disturbed by well pads, roads, and pipelines over a ten-year period, with a medium estimate of 927 acres, or about 93 acres per year. *Kisatchie EIS* at 4-123 to 4-124. However, an analysis of surface impacts of unconventional wells in the Marcellus shale found that approximately 30 acres of surface disturbance could be expected for each well. This surface disturbance destroys and indirectly degrades forests and forest habitat, and this level of ground disturbance can increase sedimentation in streams, such as those discussed above, adversely affecting water quality. Because unconventional wells may lead to an average disturbance of about 30 acres, only three wells drilled each year could lead to impacts on a level approximately the same as the "moderate" estimate of 93 acres of disturbance each year in the *Kisatchie EIS*. Yet, the cumulative leasing in the *Kisatchie National Forest* could easily lead to many times the level of development that was anticipated when the Forest Plan and EIS were prepared.

The Mississippi Oil and Gas EA estimates that there would be surface disturbance on the *Bienville National Forest* of 61-341 acres and on the *Homochitto National Forest* of 255 - 1401 acres. *See Mississippi EA* at 29. Yet the given the large areas of disturbance that can be

associated with unconventional oil and gas development and the cumulative acreage that could be leased in these forests, additional leasing in these forests could easily result in effects that are orders of magnitude greater than that anticipated in the EA. BLM must analyze how the emergence of unconventional oil and gas development in these areas may change the surface disturbance associated with leasing these parcels before offering them for sale.

As noted in section II(A)(2), above, if BLM goes forward with all of the leasing it has proposed in the September 2012, December 2012 and March 2013 lease sales, BLM will have leased approximately 44% of the total acreage in the Kisatchie National Forest, 26% of the total acreage in the Bienville National Forest, and 42% of the total acres in the Homochitto National Forest just since 2008. BLM must provide an analysis of the cumulative surface impacts for all proposed leasing before offering these parcels.

Truck traffic associated with horizontal natural gas wells is also significantly heavier than traffic associated with conventional drilling operations. For example, the National Park Service estimates that in Marcellus Shale production areas, between 300 and 1,300 truck trips would occur per well.⁴⁰ Other documents have estimated that between 2,920 and 4,445 truck trips are necessary for a three well multi-well pad.⁴¹ Narrow dirt roads may need to be widened or paved to accommodate this high volume of traffic, increasing surface impacts and stormwater runoff. Additionally, the increase in the number of truck trips required for each well also increases the risk of chemical transportation accidents.⁴²

Additionally, many horizontal hydraulic fracturing operations use open storage pits to hold brine and flowback. These pits can have impacts on bird and bat species, which can mistake the pits for bodies of water.⁴³ These pits can also impact the environment from leaks and spills. For example, in Ohio, a fracturing flowback storage pit was cut with a track hoe in 2010, causing more than 1.5 million gallons of fluid to spill into the environment.⁴⁴

There is also no substantive environmental analysis in either the Kisatchie EIS or the Mississippi EA related to the potential impacts of solids disposal. The total volume of drill cuttings from drilling a horizontal well may be one-third greater than from the drilling of a conventional well.⁴⁵ This may necessitate the use of a larger reserve pit, and increase the amount of heavy metals and naturally occurring radioactive materials on the site. Prior to offering the parcels for lease, BLM or the Forest Service must supplement the NEPA analysis to consider the potential effects from all these surface impacts.

⁴⁰ See Drinking Water Draft Plan, *supra* note 19, at 55.

⁴¹ See George Washington DEIS, *supra* note 19, at 3-338.

⁴² See Drinking Water Draft Plan, *supra* note 19, at 14.

⁴³ See U.S. Fish and Wildlife Service, Region 6, Env'tl. Contaminants Program, *Reserve Pit Management: Risks to Migratory Birds*, at 1 (2009), available at <http://westernenergyalliance.org/wp-content/uploads/2009/09/Reserve-Pits.pdf>.

⁴⁴ Ohio Dep't of Natural Resources, Notice of Violation No. 1278508985 (June 21, 2010).

⁴⁵ See N.Y. D.E.C. Draft Supplemental GEIS, *supra* note 26, at 6-63.

Additionally, there is no discussion of the impact of oil and gas development on areas of old growth forest in the Kisatchie EIS. The preferred alternative in the Kisatchie EIS states that "81,000 acres of the forest will be designated and managed as old-growth forest patches" with an additional 215,000 acres containing old-growth attributes. *See Kisatchie EIS* at 2-28. However, no analysis of oil and gas development on old-growth forests is provided. The discussion in the Mississippi EA is extremely brief, concluding that the effects would be "minimal." However, there is no analysis of the sites at issue in this protest or a consideration of whether leasing these lands could impact old growth stands in the area. BLM must comply with NEPA by evaluating the potential site-specific impacts of leasing these parcels on old-growth within the forests.

iv. *No hard look at the impacts of unconventional oil and gas development on recreation*

The Kisatchie EIS provides virtually no analysis of the effects of oil and gas development on recreation. The EIS states only that "Recreational settings would be disturbed through increased activity, noise, and use of heavy equipment associated with minerals activities. Recreation use of active mineral extraction sites would be temporarily eliminated." *Kisatchie EIS* at 4-70. The EIS also states that No Surface Occupancy stipulations are required in "developed recreation areas," but provides no other analysis. *See Kisatchie EIS* at 3-108.

A site-specific analysis of the effects of leasing is crucial in this case, because it appears that oil and gas leasing could have very significant impacts on recreational uses in the Kisatchie National Forest. For instance it appears that some of the parcels for lease in the Vernon Unit are covered in a network of hiking trails. *See Exhibit 12*. Due to the relatively small size of these parcels, development on a parcel would have to occur in very close proximity to these trails. A site-specific analysis is designed to anticipate these conflicts and to allow the BLM and Forest Service to make an informed decision regarding leasing. Unfortunately, no such analysis appears to have been undertaken.

The Mississippi Oil and Gas EA provides only the most cursory discussion of the impacts of oil and gas development on recreational opportunities within the Mississippi forests. In effect it defers that analysis until the development stage, stating that "Prior to drilling on any lease, a site-specific NEPA analysis would be completed." *See Mississippi EA* at 59-60. The EA all but admits that a site-specific analysis has not been undertaken by noting that it will be completed at a later stage. However, the proposed leasing poses potentially significant impacts to recreational opportunities on the forests in Mississippi. For instance, leasing in the Homochitto National Forest would overlap with Mount Nebo Lake – a popular recreation area and fishing spot. *See Exhibit 13*. Leasing represents an irreversible and irretrievable commitment of resources because it offers the right to lessees to drill somewhere on the parcels at issue. BLM must

provide a site-specific analysis of the effects of leasing on recreational opportunities before proceeding with leasing.

v. *No hard look at the impacts of unconventional oil and gas development on human health*

Oil and gas drilling and hydraulic fracturing have the potential to affect human health in multiple ways. Potential impacts to drinking water supplies, discussed above, could lead to exposure to toxic substances. Additionally, air emissions from natural gas development have been found at levels that pose increased risks of cancer and other health threats to those living near gas wells.⁴⁶ Noise and light produced by round-the-clock drilling operations also have the potential to affect health, potentially contributing to hypertension, psychological symptoms, loss of sleep, and fatigue.⁴⁷

An analysis of the potential effects on health is especially important because certain parcels proposed for lease would allow for oil and gas development to be in extremely close proximity to homes and other structures. BLM has provided no analysis of the potential impacts to human health from oil and gas drilling and hydraulic fracturing. Such an analysis is legally required before leasing the parcels can proceed.

vi. *No hard look at the impacts of unconventional oil and gas development on wildlife, including threatened and endangered species*

Oil and gas drilling operations can impact wildlife by killing and harming animals that cannot leave habitats affected by construction of access roads, clearing and leveling of drill pad sites, or construction of pipelines and facilities. As noted by the Kisatchie EIS, “[p]ermanent loss of habitat and isolation due to habitat fragmentation” can also occur. Wildlife and their habitat will be affected to a greater extent because of the increased footprint of high volume drilling operations compared to conventional drilling and the greater interest in oil and gas development. There are also potential adverse impacts from the creation of forest edge from construction activities, with research demonstrating that measurable impacts often extend at least 330 feet into the forest area adjacent to the edge.⁴⁸

Multiple threatened and endangered species could also be impacted by development of the parcels. The Kisatchie National Forest is home to the endangered Red-cockaded Woodpecker,

⁴⁶ See, e.g., Lisa M. McKenzie et al., *Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources* (2012) available at <http://www.ncbi.nlm.nih.gov/pubmed/22444058>.

⁴⁷ See Colorado School of Public Health, *Battlement Mesa Health Impact Assessment, Draft 2* at 52-54 available at <http://www.garfield-county.com/environmental-health/battlement-mesa-health-impact-assessment-draft2.aspx>.

⁴⁸ See Neal Johnson et al., The Nature Conservancy, *Pennsylvania Energy Impacts Assessment, Report 1: Marcellus Shale Natural Gas and Wind* (Nov. 15, 2010) at 10, available at http://www.nature.org/media/pa/mc_energy_analysis.pdf.

as well as threatened species including the Louisiana black bear, and the Louisiana pearlshell mussel, as well as a threatened plant, the earth fruit.⁴⁹ For instance, leasing is proposed within areas containing Louisiana Pearlshell Mussel tributaries. See *Kisatchie EIS* at 3-9, Exhibit 1. According to the 1985 Mississippi Forest Plan EIS, the National Forests in Mississippi are home to the red-cockaded woodpecker, and the endangered Mississippi sandhill crane. See *Mississippi EIS* at 3-22. Unfortunately, it is not clear from the information given which forests these species occur on. Analysis of the effects on the critical habitat of listed species must also be performed. For instance, the Leaf River and its tributaries occur within leases on the Bienville National Forest. And portions of the Leaf River downstream of the Bienville NF have been designated critical habitat for the gulf sturgeon. See Exhibit 14.

The existing analysis does not fulfill the requirements of NEPA to assess the impacts of oil and gas leasing on wildlife, including threatened and endangered species and critical habitat. Site-specific analysis is necessary to understand these effects before leasing proceeds.

C. Leasing of the Parcels Would Conflict with the Kisatchie National Forest Plan and Mississippi National Forests Plan, a Violation of the National Forest Management Act.

The Forest Service and BLM will violate the National Forest Management Act (NFMA) if they offer the parcels for sale. Under the NFMA, the Forest Service's land management plans must achieve several goals, including: (1) insuring consideration of the economic and environmental aspects of renewable resource management, "including the related systems of silviculture and protection of forest resources, to provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish"; (2) providing for diversity of plant and animal communities; and (3) insuring research on and evaluation of the effects of each management system to ensure that it will not produce substantial and permanent impairment of the productivity of the land, among other goals. 16 U.S.C. § 1604(g). In addition, NFMA requires that "[r]esource plans and permits, contracts and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans." 16 U.S.C. § 1604(i).

Essentially, this means that the Forest Service, in its Plan, must provide for certain resources such as outdoor recreation, watershed integrity, fish and wildlife, plant and animal diversity, and soil productivity, and all oil and gas development activities must be consistent with the Forest Plan. See *Northwoods Wilderness Recovery, Inc. v. U.S. Forest Service*, 323 F.3d 405, 407 (6th Cir. 2003) ("Implementation of the forest plan is achieved through individual site-specific projects, and all projects must be consistent with the forest plan."); see also *Cherokee Forest*

⁴⁹ See U.S. Forest Service, *Kisatchie National Forest Plan Amendment #9: Prohibiting Dog Deer Hunting*, Appendix C (May 2012).

Voices v. U.S. Forest Service, 2006 U.S. App. LEXIS 13214 at *11-12 (6th Cir. May 25, 2006); *Sierra Club v. Martin*, 168 F.3d 1, 4-5 (11th Cir. 1999); *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1068 (9th Cir. 1998); *National Audubon Soc'y v. Hoffman*, 132 F.3d 7, 19 (2nd Cir. 1997).

Both the Forest Service and BLM have a duty to ensure that the amount of drilling permitted by this lease sale does not conflict with the varying objectives set forth in the Forest Plans. This the agencies have not done. Rather, the leasing appears to violate the NFMA by placing oil and gas development above other management prescriptions and other natural resources and by failing to ensure that lease stipulations for oil and gas development activities are sufficient to enforce all applicable Forest Plan standards.

It should be noted that the Forest Service is required by its own regulations to determine that "operations and development could be allowed somewhere on each proposed lease" for any lease offered without a No Surface Occupancy stipulation. See 36 CFR § 228.102 (e). Given the wide range of potential impacts from unconventional oil and gas development and their potential to frustrate other forest management goals, it is essential that a site-specific analysis be performed. Otherwise, the Forest Service cannot ensure that development could go forward on each parcel, consistent with the forest plan.

The inconsistency of parcel descriptions and failure to produce maps with individual lease boundaries also prevents the Forest Service and BLM from fulfilling their legal obligations to ensure that leasing on the forest is consistent with the Forest Plan and could go forward on each lease parcel. If neither the BLM nor the Forest Service has created accurate maps of the parcels in the Kisatchie National Forest, the agencies cannot determine exactly what effects leasing might have. They also cannot adequately evaluate whether forest resources or other uses of the forest may be affected. Nor can BLM and the Forest Service ensure that leasing is consistent with the forest management plan, as required by NFMA.

D. BLM has Not Provided Documentation of Compliance with an Applicable Resource Management Plan, in Violation of the Federal Land Policy and Management Act

FLPMA requires that BLM develop Resource Management Plans ("RMP") for lands and minerals it manages. See 43 U.S.C. § 1712 ("The Secretary shall, with public involvement and consistent with the terms and conditions of this Act, develop, maintain, and, when appropriate, revise land use plans . . ."). Federal law and BLM's regulations prohibit agency action that is inconsistent with the RMP. 43 U.S.C. § 1732(a) (mandating that the Secretary "shall manage the public lands . . . in accordance with the land use plans"); 43 C.F.R. § 1610.5-3(a) ("resource management authorizations and actions" must conform to the applicable resource management plan). See also *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 69 (2004) ("The statutory directive that BLM manage 'in

accordance with' land use plans, and the regulatory requirement that authorizations and actions 'conform to' those plans, prevent BLM from taking actions inconsistent with the provisions of a land use plan.").

BLM's NEPA Handbook states that "the BLM includes within all its NEPA documents a statement about the conformance of the proposed action and alternatives with the existing land use plan (LUP)." See BLM, *National Environmental Policy Act Handbook H-1790-1* at 6 (2008). Yet, BLM has not done so in this case. BLM has not met even the first step of its legal obligations. The agency has not identified an applicable resource management plan for the minerals it proposes to lease. Without such plan, BLM cannot meet its obligation under FLPMA to ensure compliance with its land use plans. BLM must withdraw the leases from the sale, ensure that future leasing is consistent with any existing RMP, and provide documentation to the public of such consistency before proposing further leasing.⁵⁰ In the event that no applicable RMP exists, BLM must complete one before proceeding with leasing.

E. BLM and the Forest Service Will Violate The ESA If They Offer These Parcels For Sale.

BLM and the Forest Service must consult with the U.S. Fish and Wildlife Service ("FWS") on the impacts to listed species and critical habitat from oil and gas development prior to issuing oil and gas leases. As noted in section II (B)(2)(b)(vi), above, threatened and endangered species and their critical habitat may be impacted by the proposed oil and gas activities. Some of these impacts, such as surface disturbance, noise, and erosion and sedimentation of waterways are likely to be difficult or impossible to avoid. Oil and gas leasing and development are likely to adversely affect a number of listed species, including the Red-Cockaded Woodpecker, Louisiana Pearlshell Mussel and Gulf Sturgeon.

The ESA requires federal agencies to consult with the U.S. Fish and Wildlife Service regarding the impacts of proposed federal actions on threatened and endangered species. 16 U.S.C. § 1536(a)(2). Agencies, in consultation with FWS, must insure that their actions are not likely to jeopardize the existence of listed species or to destroy or adversely modify any designated critical habitat. *Id.* Further, ESA's implementing regulations mandate that "[e]ach federal agency shall review its actions at the *earliest possible time*" to determine whether an action may affect protected species and, if so, to engage in the appropriate consultation. 50 C.F.R. § 402.14(a) (emphasis added); see also *Wilderness Soc'y v. Wisely*, 524 F. Supp. 2d 1285, 1301 (D. Colo. 2007) ("[T]he BLM's duty to confer with the FWS arises as of the time that it was possible for the two agencies to engage in meaningful conference regarding the decision to be made"). If a proposed action "may affect listed species or critical habitat," then the agency must

⁵⁰ Protesting parties reserve the right to challenge any such consistency determination at the time that it is made or that documentation of such a decision is provided. NRDC contacted the BLM Southeastern States Field Office in order to obtain copies of any applicable RMP and accompanying EIS and has received no response.

formally consult with FWS, unless, as a result of informal consultation, the agency determines that the action "is not likely to adversely affect listed species or critical habitat," and the FWS concurs in writing. 50 C.F.R. §§ 402.13(a), 402.14(a)-(b).

In addition, the ESA's regulations mandate that federal agencies reinitiate consultation when a new species is listed or critical habitat is designated and those agencies' actions may affect it. See 50 C.F.R. § 402.16(d). Further, these regulations also mandate that federal agencies reinitiate consultation when "new information reveals effects that may affect listed species or critical habitat in a manner or to an extent not previously considered." *Id.* at 402.16(b).

There is no indication that either the Forest Service or BLM consulted with FWS under the ESA before permitting lease of these parcels. This failure violates the ESA.

III. REQUEST FOR RELIEF

The protesting parties request that BLM withdraw the protested parcels from the March 2013 Competitive Oil and Gas Lease Sale until such time as BLM and the Forest Service have complied with federal laws and regulations, including NEPA, FOOGLRA, FLPMA, NFMA, and the ESA. In conducting its NEPA supplementation, BLM and the Forest Service should consider whether sensitive parcels may be inappropriate for oil and gas development due to the presence of nearby wilderness, aquatic resources, listed or sensitive species, important recreational features, or other characteristics. The protesting parties further request that BLM suspend the offering of the parcels while the agency considers this protest.

Thank you for your consideration of this protest letter. For your records, the names and contact information for each of the protesting parties NRDC is representing (in addition to itself) are:

Atchafalaya Basinkeeper
Dean Wilson, Executive Director
162 Croydon Ave.
Baton Rouge, La 70864
225-692-4114

Center for Biological Diversity
Mollie Matteson, Conservation Advocate
P.O. Box 188
Richmond, VT 05477
802-434-2388

Louisiana Audubon Council
Barry Kohl, President
1522 Lowerline St.
New Orleans, La 70118
504-861-8465

Louisiana Environmental Action Network
Marylee M. Orr, Executive Director
P.O. Box 66323
Baton Rouge, LA 70896
225-928-1315

Louisiana Wildlife Federation
Rebecca Triche, Executive Director
PO Box 65239
Baton Rouge, LA 70896
225-344-6707

Lower Mississippi Riverkeeper
Paul Orr, Director
P.O. Box 66323
Baton Rouge, LA 70896
225-928-1315

Ouachita Riverkeeper
Cheryl Slavant, Director
2610 Washington Street
Monroe, La. 71201
318-381-0996

Rapides Wildlife Association
Richard Bryan, Past President
2405 Evergreen
Pineville, LA 71360
318-640-0198

Sierra Club, Delta Chapter
Haywood Martin, Chair
P.O. Box 52503
Lafayette, LA 70505
337-232-7953

Wild South
Tracy Davids, Executive Director
16 Eagle Street, Suite 200
Asheville, NC 28801
828-258-2667

Should you have any questions, please contact Matthew McFeeley or Rebecca Riley at the Natural Resources Defense Council.

Sincerely,



Matthew McFeeley
Attorney
Natural Resources Defense Council
Tel: (202) 513-6250

Rebecca Riley
Attorney
Natural Resources Defense Council
Tel: (312) 651-7913

Sharon Buccino
Senior Attorney & Director, Land and Wildlife Program
Natural Resources Defense Council
Tel: (202) 289-6868

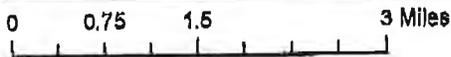
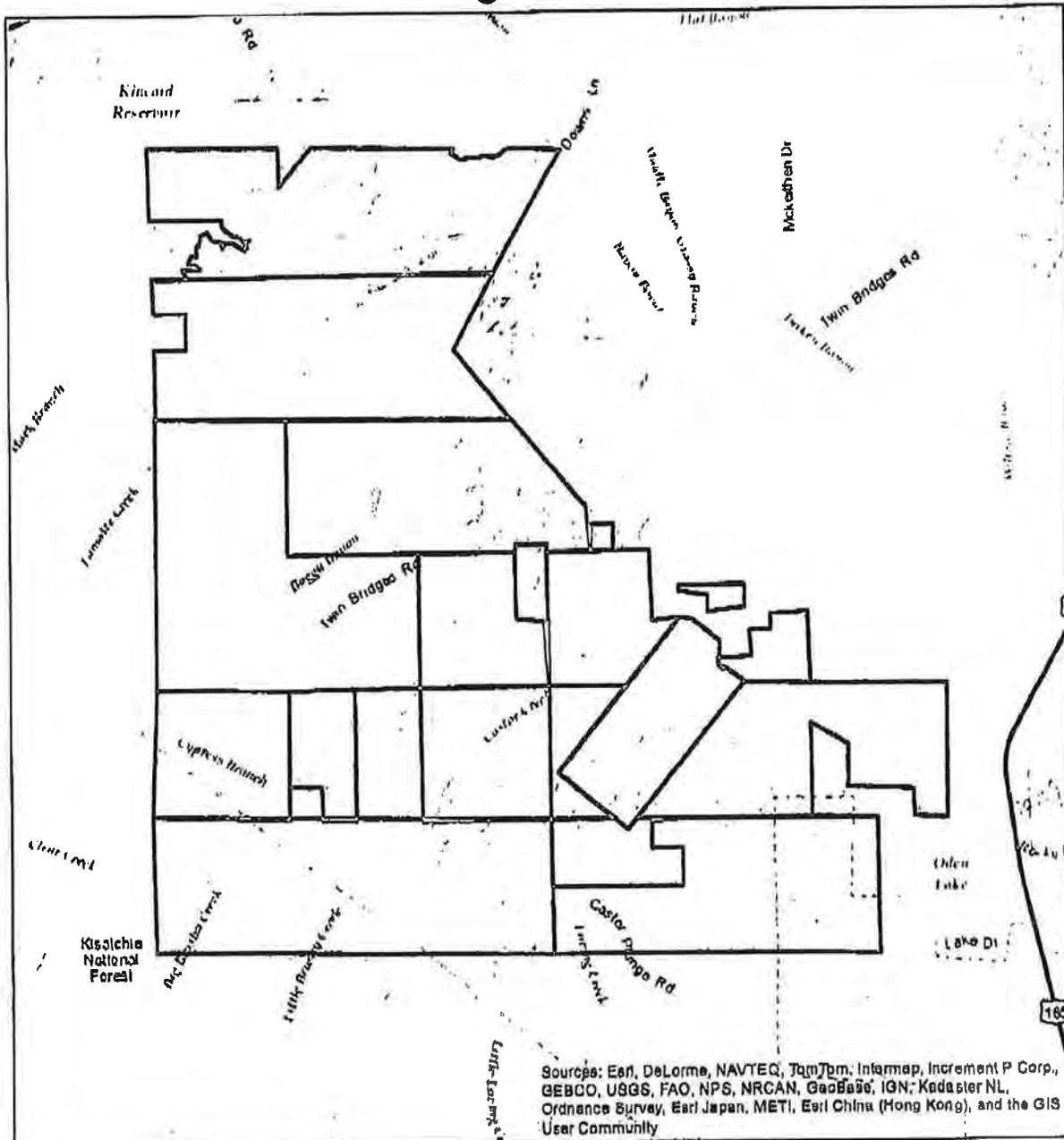
cc: Elizabeth Agpaoa, Regional Forester, U.S. Forest Service Southern Region
Michael Balboni, Kisatchie National Forest Supervisor
Margrett Boley, Mississippi National Forests Supervisor

Exhibit List

- Exhibit 1- NRDC Map: March 2013 Lease Sale Parcels, Kisatchie National Forest, Evangeline Unit
- Exhibit 2- NRDC Map: March 2013 Lease Sale Parcels, Kisatchie National Forest, Vernon Unit
- Exhibit 3- NRDC Map: March 2013 Lease Sale Parcels, Bienville National Forest
- Exhibit 4- NRDC Map: March 2013 Lease Sale Parcels, Homochitto National Forest
- Exhibit 5- NRDC map: Shale Resources in the Kisatchie National Forest
- Exhibit 6- NRDC map: Shale Resources in the Bienville National Forest.
- Exhibit 7- NRDC map: Shale Resources in the Homochitto National Forest.
- Exhibit 8- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Kisatchie National Forest: Wetlands
- Exhibit 9- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Kisatchie National Forest: Surface Drinking Water Importance
- Exhibit 10- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Bienville National Forest: Surface Drinking Water Importance
- Exhibit 11- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Homochitto National Forest: Surface Drinking Water Importance
- Exhibit 12- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Kisatchie National Forest: Hiking Trails
- Exhibit 13- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Homochitto National Forest: Mount Nebo Lake
- Exhibit 14- NRDC map: March 21, 2013 BLM-ES Oil and Gas Lease Sale, Bienville National Forest: Leaf River Tributaries

Exhibit 1

Mar. 21, 2013 BLM-ES Oil & Gas Lease Sale Kisatchie National Forest, LA Evangeline Unit



 Lease Sale Parcels

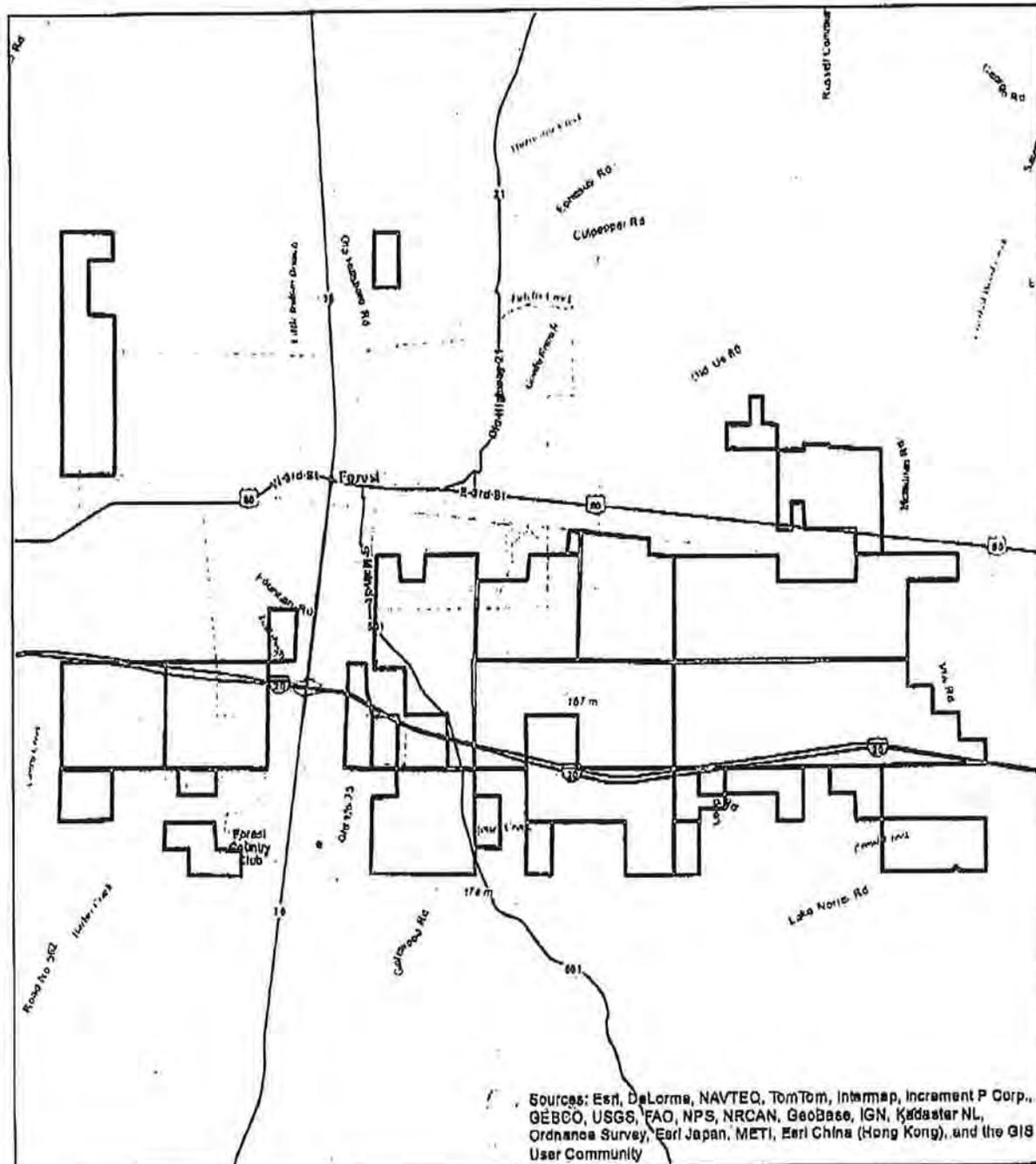


NATURAL RESOURCES DEFENSE COUNCIL
THE EARTH'S BEST DEFENSE

Exhibit 2

Exhibit 3

Mar. 21, 2013 BLM-ES Oil & Gas Lease Sale Bienville National Forest, MS



0 0.75 1.5 3 Miles

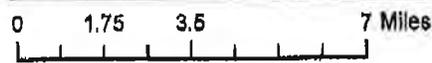
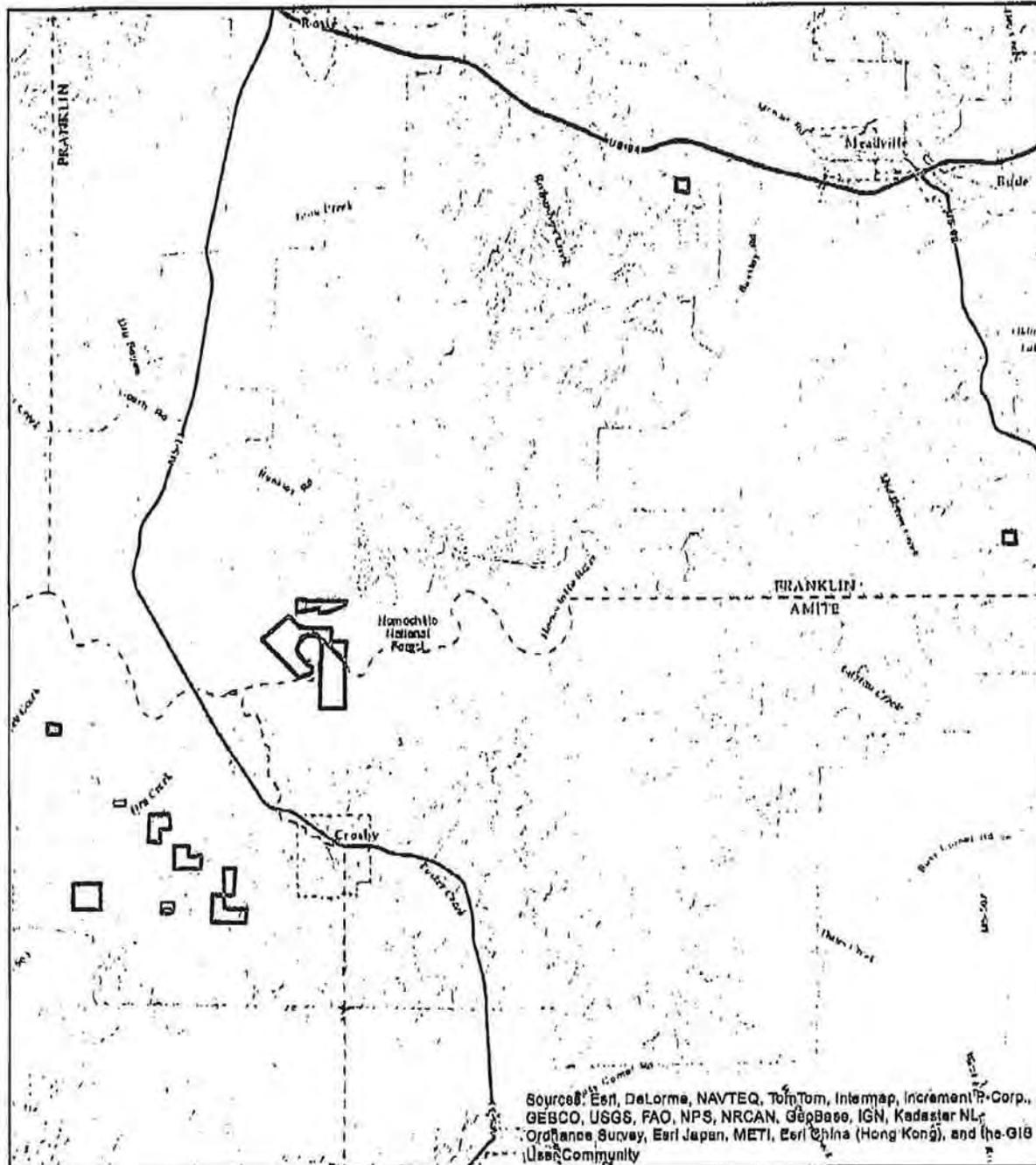
 Lease Sale Parcels



NATURAL RESOURCES DEFENSE COUNCIL
THE EARTH'S BEST DEFENSE

Exhibit 4

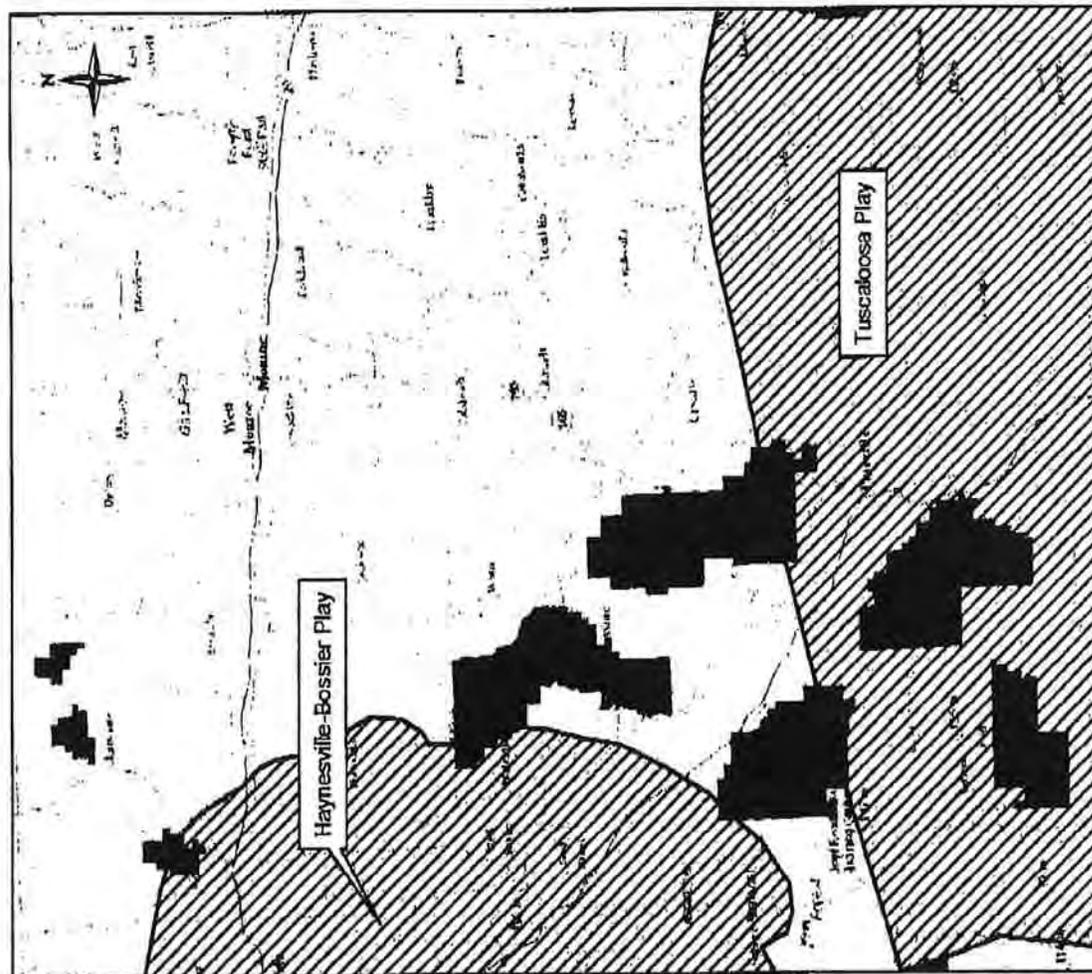
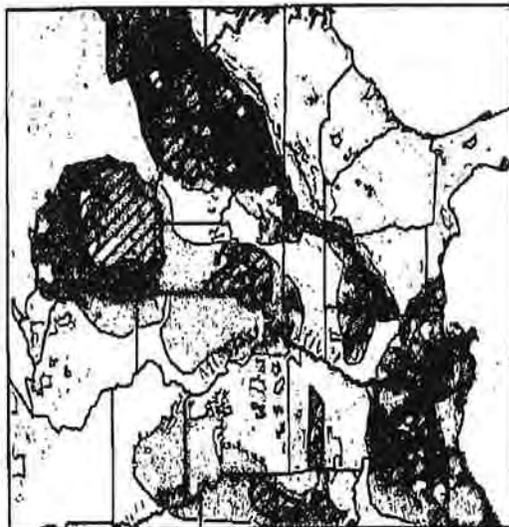
Mar. 21, 2013 BLM-ES Oil & Gas Lease Sale Homochitto National Forest, MS



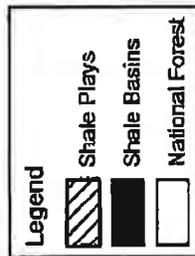
 Lease Sale Parcels

Exhibit 5

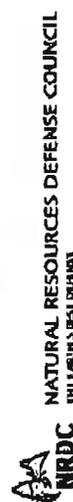
Shale Resources in the Kisatchie National Forest



• Entire area of inset map is within the TX-LA-MMS Salt Basin



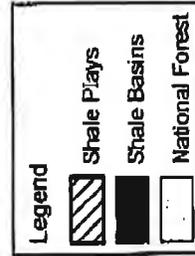
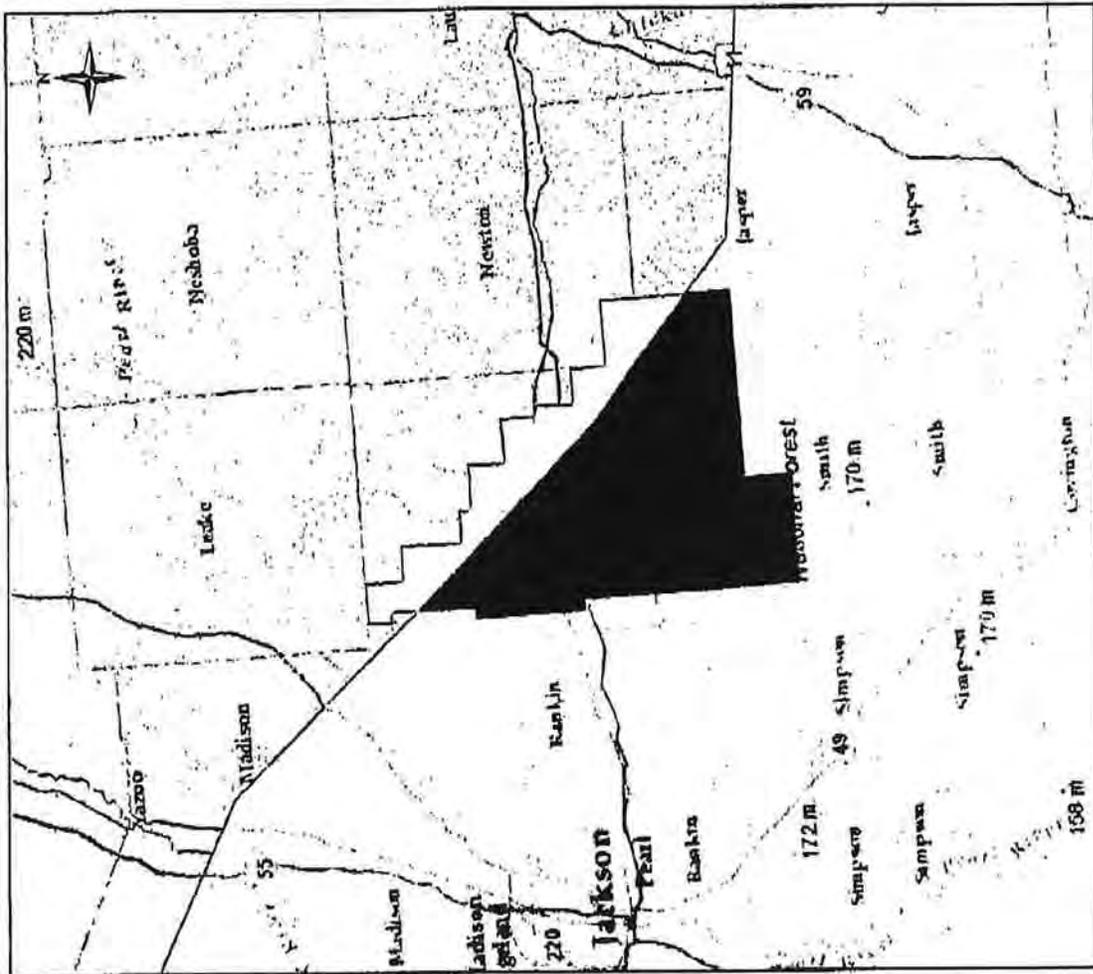
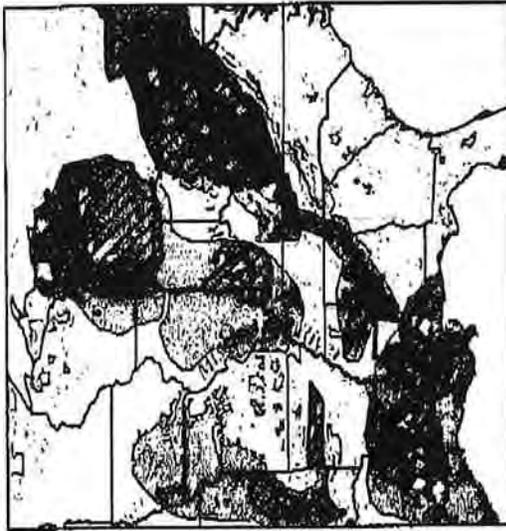
Data from U.S. Energy Information Administration (EIA)



NATURAL RESOURCES DEFENSE COUNCIL
1117 16TH ST, NW, WASHINGTON, DC 20036

Exhibit 6

Shale Resources in the Bienville National Forest



Data from U.S. Energy Information Administration (EIA)



NATURAL RESOURCES DEFENSE COUNCIL
1101 17th Street, N.W.
Washington, D.C. 20036

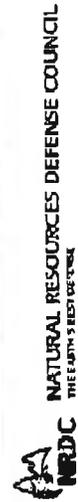
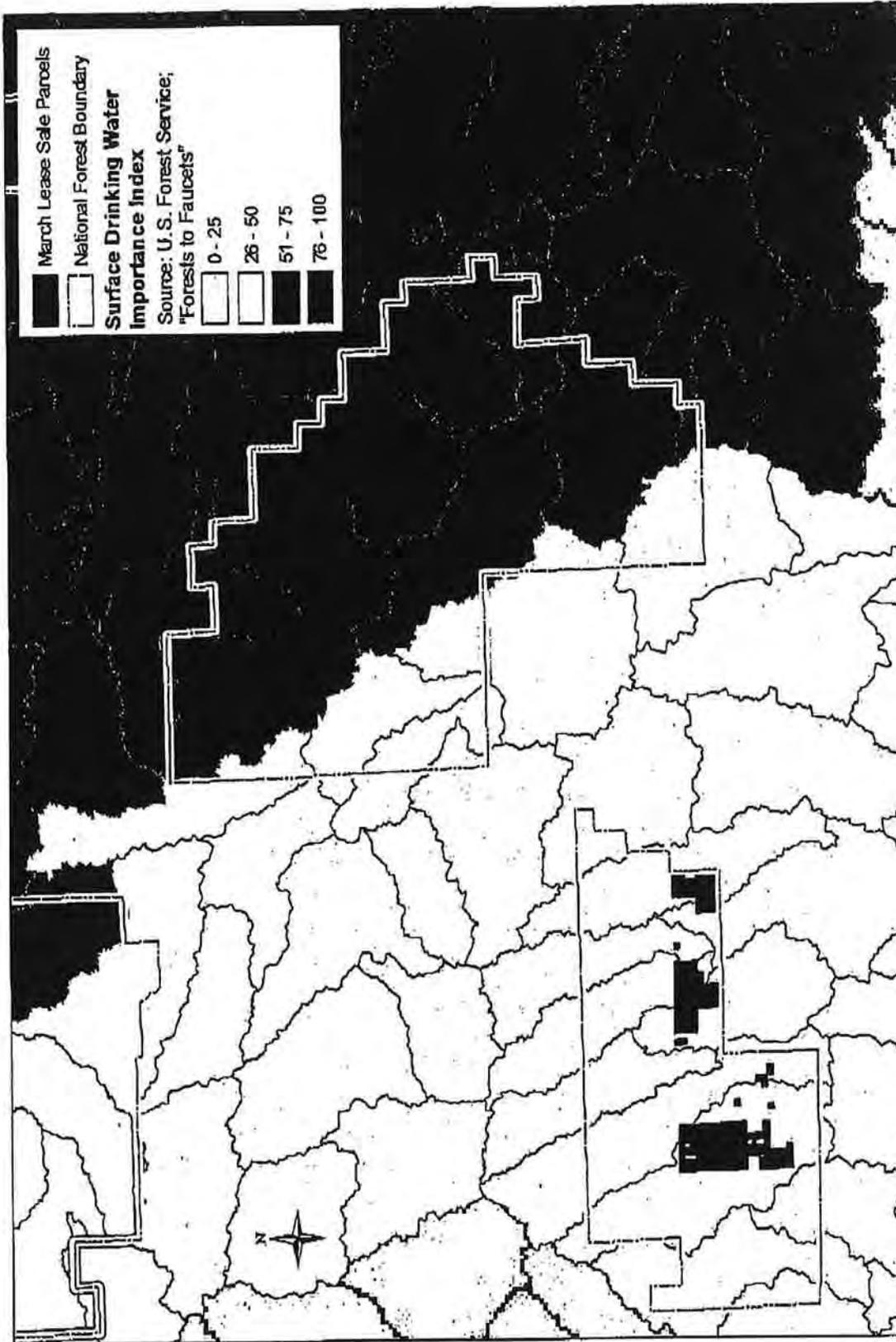
* Grey portion of inset map represents the TX-LA-MS Salt Basin

Exhibit 7

Exhibit 8

Exhibit 9

Surface Drinking Water Importance in the Kisatchie National Forest



• Watershed Boundary Dataset (WBD) from USDA Geospatial Data Gateway

Exhibit 10

Surface Drinking Water Importance in the Bienville National Forest

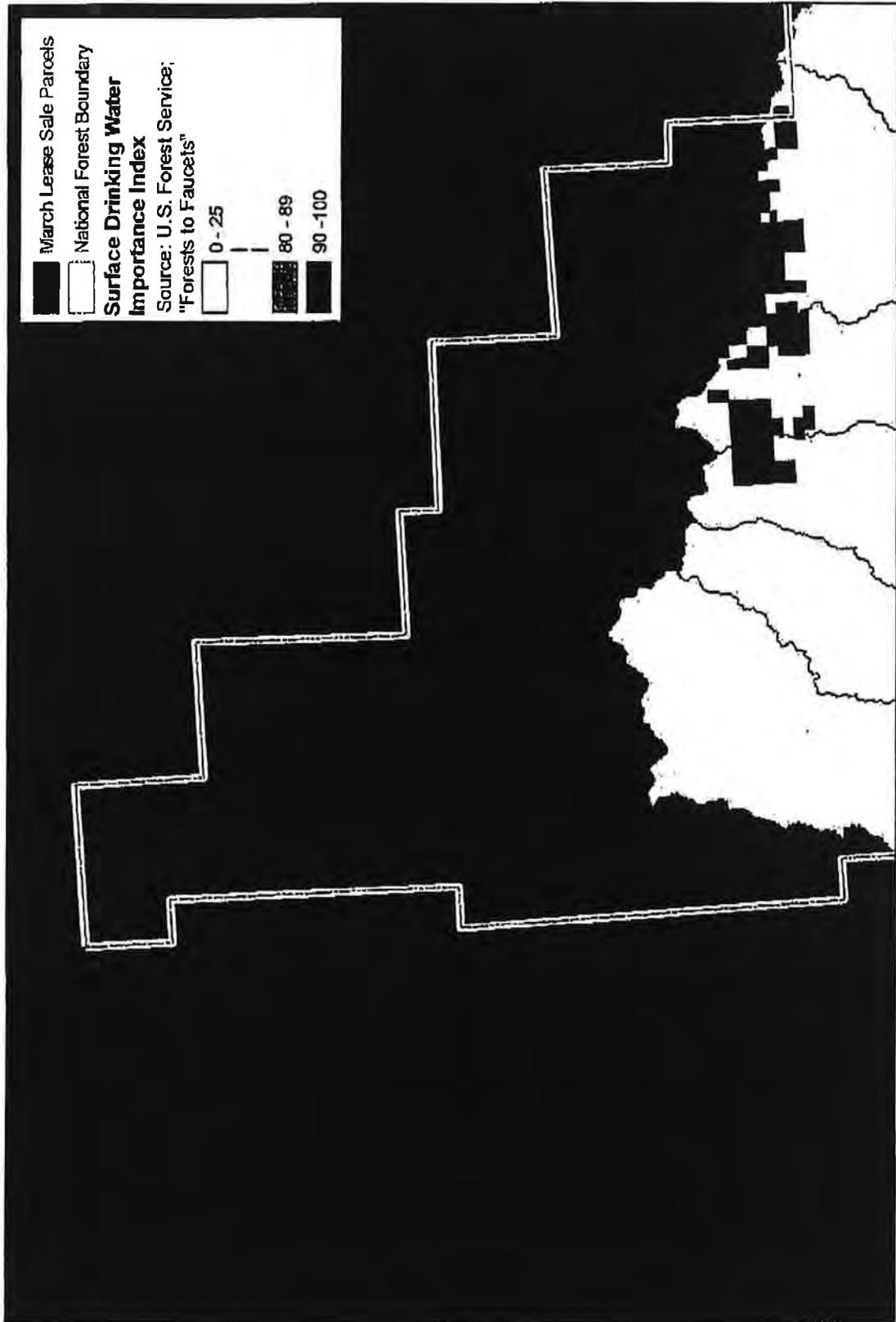


Exhibit 11

Surface Drinking Water Importance in the Homochitto National Forest

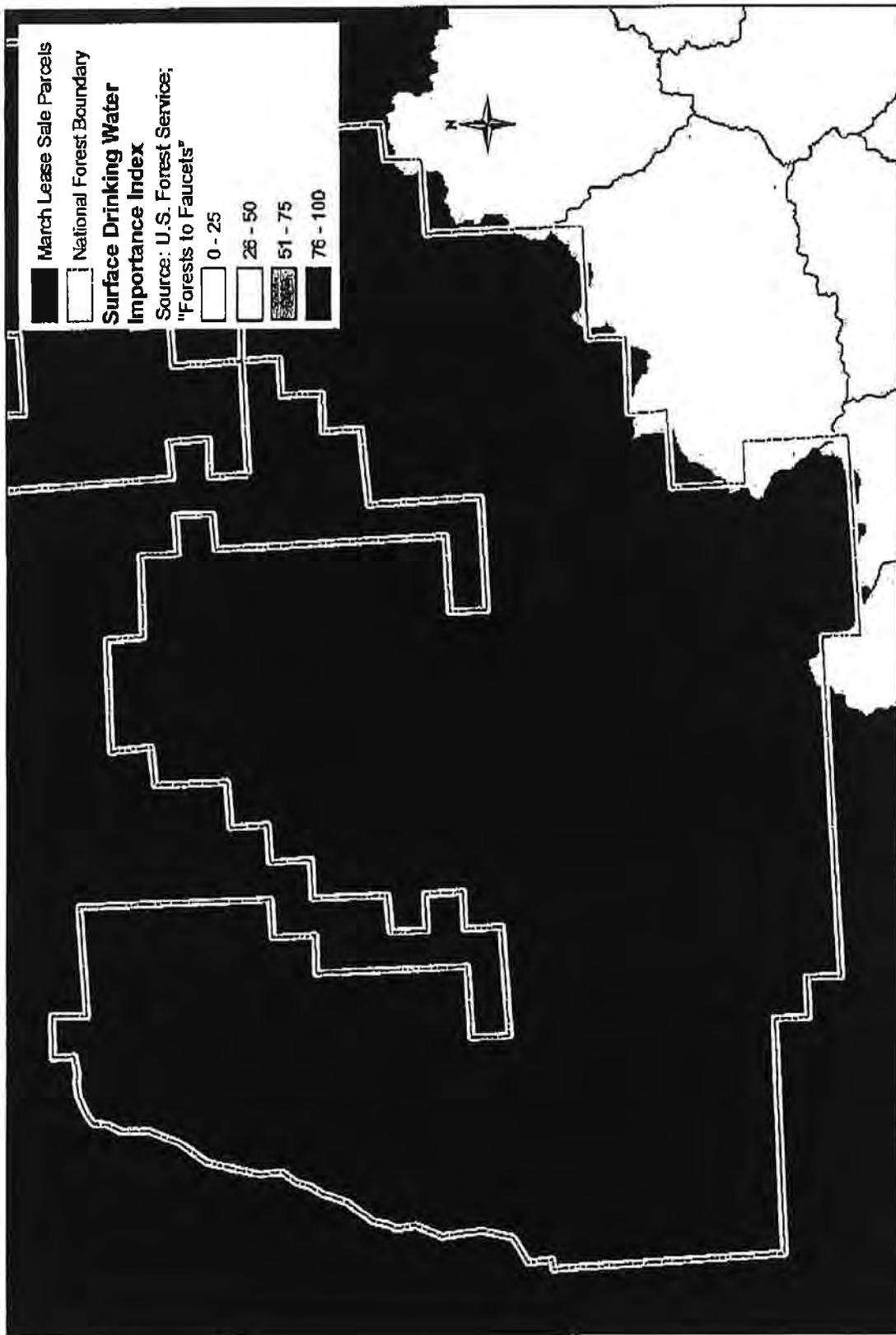
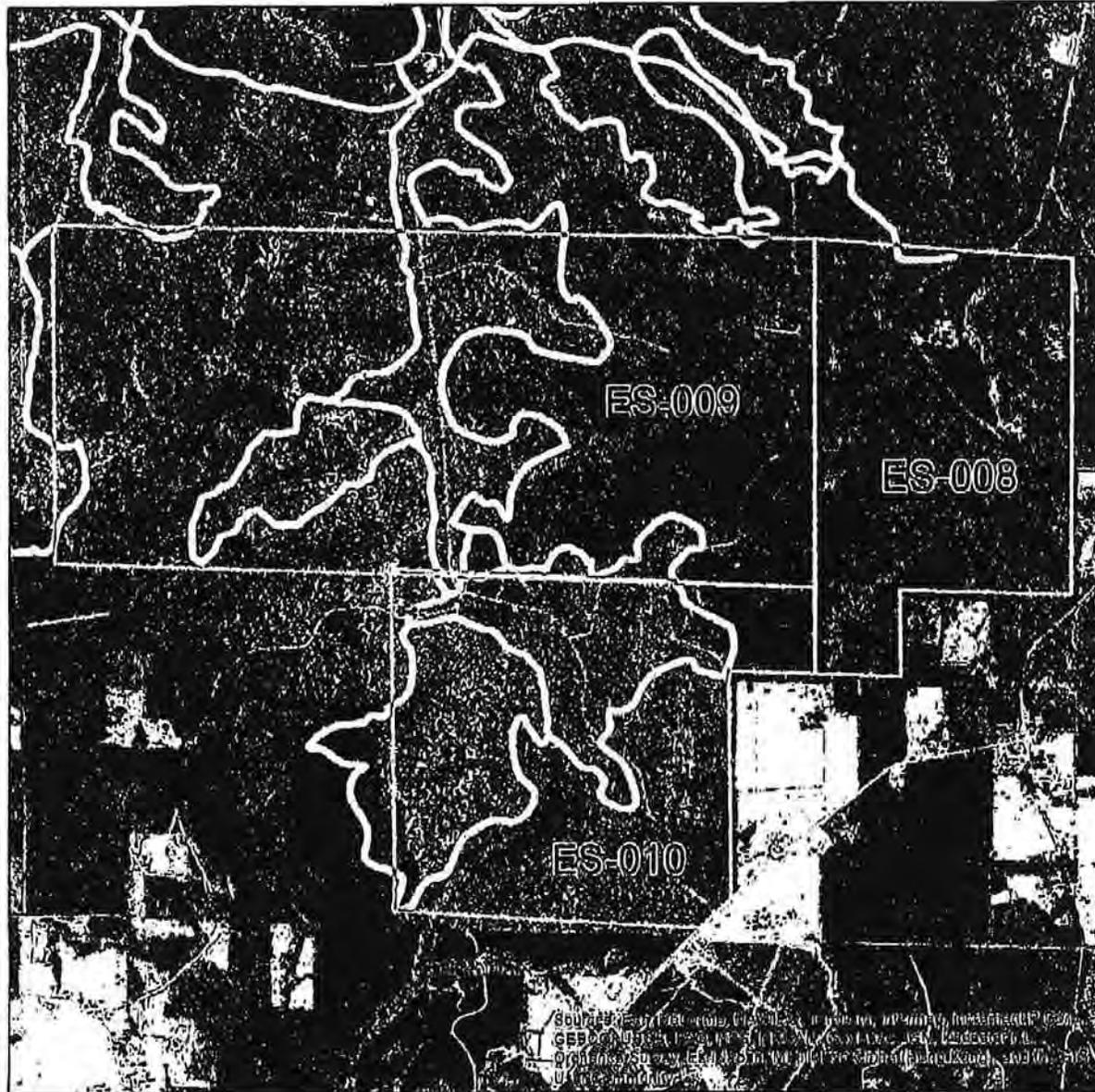
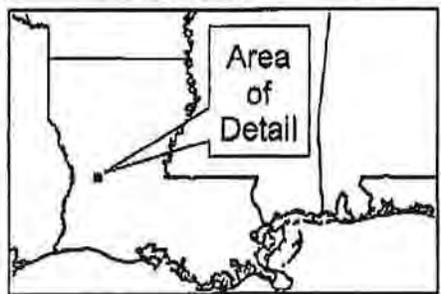
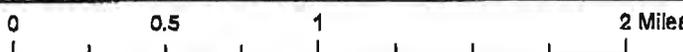


Exhibit 12

Mar. 21, 2013 BLM-ES Oil & Gas Lease Sale Kisatchie NF, LA



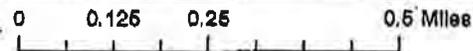
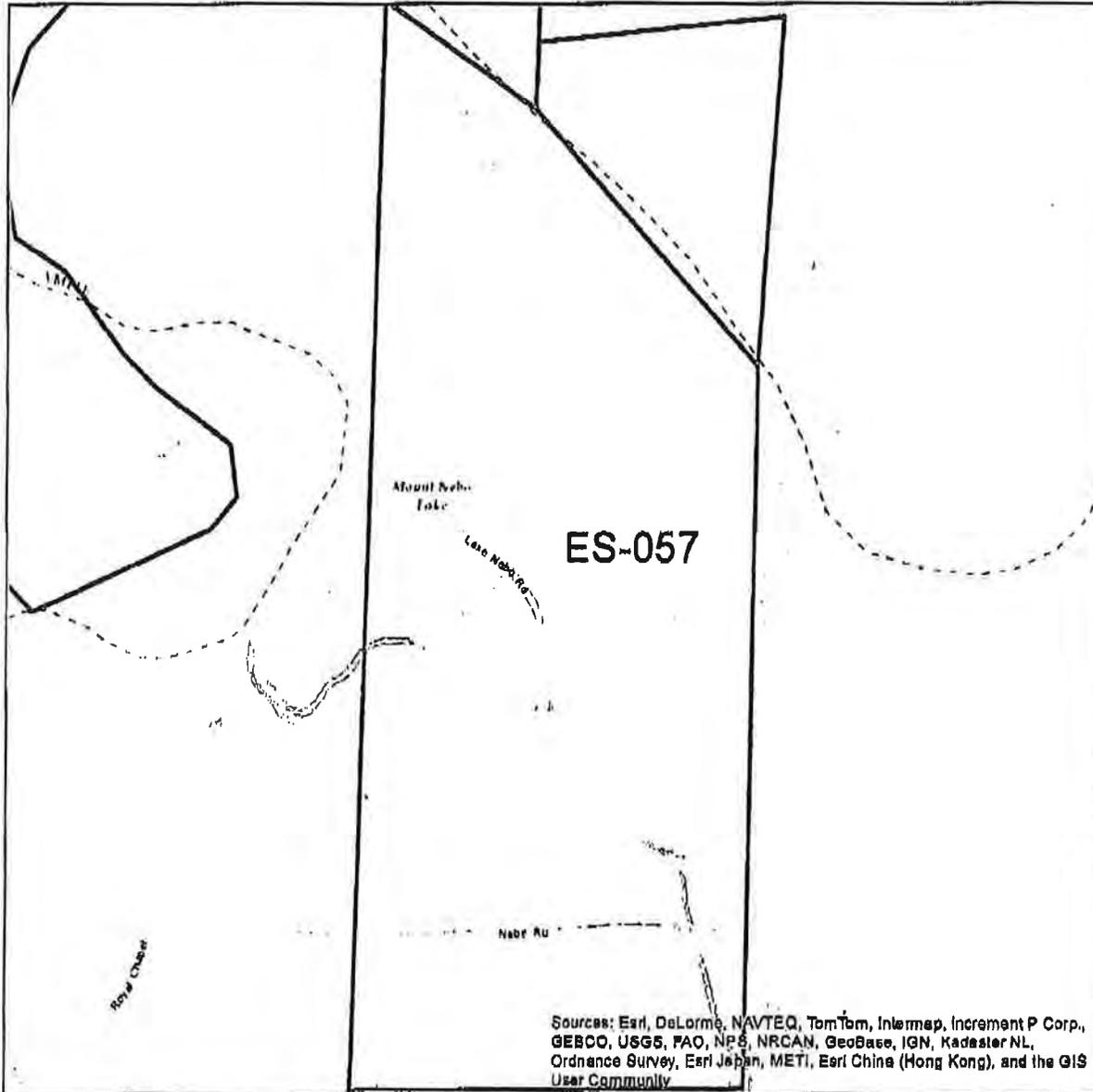
Source: Esprit, Inc. (2012). "Oil & Gas Lease Sale ES-008, ES-009, ES-010, and ES-011." U.S. Department of the Interior, Bureau of Land Management. <http://www.blm.gov>. Accessed 1/15/2013.
Original Survey Data from the U.S. Geological Survey, 1980s.
U.S. Department of the Interior, Bureau of Land Management.



	Lease Sale Parcels
	Trail

Exhibit 13

Mar. 21, 2013 BLM-ES Oil & Gas Lease Sale Homochitto NF, MS



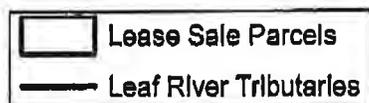
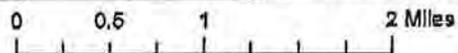
Lease Sale Parcels



NATURAL RESOURCES DEFENSE COUNCIL
THE EARTH'S BEST DEFENSE

Exhibit 14

Mar. 21, 2013 BLM-ES Oil & Gas Lease Sale Bienville NF, MS



NATURAL RESOURCES DEFENSE COUNCIL
THE EARTH'S BEST DEFENSE